



THE AERONAUTICS INDUSTRY IN AUSTRIA

Expertise in Technology

aeronautics.at

edited by **bm vti**

*Federal Ministry
for Transport,
Innovation and Technology*

CONTENTS

Preface	5
Austrian Aeronautics Industry	6
Products and Services	8
Companies from A to Z	13
Competences	102
Research Institutions	104
Index	112

PREFACE





More than 100 years ago, Austrian aeronautics had pioneered aviation history: In 1909, Austrian Igo Etrich developed the Etrich Taube, a monoplane aircraft that was the first military plane ever mass-produced in Austria and Germany. This plane became famous during World War I as the so called "Invisible Aircraft" and sometimes is also referred to as the "world's first stealth plane".

Throughout the past 100 years, business in aeronautics has changed. All over the world, companies involved in aeronautics gathered around the industrial supply chains of the original equipment manufacturers, among them a lot of Austrian companies. These companies successfully adapted to the supply chains that have a strong orientation towards exports and niche products. Austrian competences in aeronautics lie in seven market segments of which the biggest ones are "complex aircraft structures and components, innovative materials and manufacturing technology", "cabin interiors" and "equipment and aircraft electronics".

At the beginning of the new millennium, the Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT) initiated the Austrian aeronautics research and technology promotion programme called TAKE OFF in order to provide the most efficient support to the Austrian aeronautics (supply) industries.

The dynamic growth of aeronautics in Austria is a direct outcome of the development of the Austrian aeronautics strategy for research, technology and innovation in 2007 in close cooperation between government and industry. Based on long-term considerations, this strategy aims to strengthen the industry and to improve its competitiveness and productivity by further development and coordination of the sector.

In 2009, the Austrian Federal Ministry for Transport, Innovation and Technology (BMVIT) commissioned a survey to acquire a database of all Austrian companies involved in aeronautics and their competences. 241 companies were identified, and 87 of them volunteered to present their competences and technologies in the brochure at hand and on the website www.aeronautics.at.

Last but not least, the Austrian Federal Ministry for Transport, Innovation and Technology invites all Austrian companies, research organisations and competence centres involved in aeronautics, which are not yet listed in this brochure, to register and present themselves. The website www.aeronautics.at should be as dynamic as the topic it deals with.

A handwritten signature in black ink that reads "Doris Juretschke".

Federal Minister for Transport, Innovation and Technology

AUSTRIAN AERONAUTICS INDUSTRY

The Austrian aeronautics industry consists of more than 240 companies, according to the study "Austrian Aeronautics Industry: a Database of Market Participants". The study captures the whole value chain for technology-based products and services. The data was collected in 2009. The following main results refer to the 132 companies that participated in the survey. Turnover and employees are projected for 241 companies.

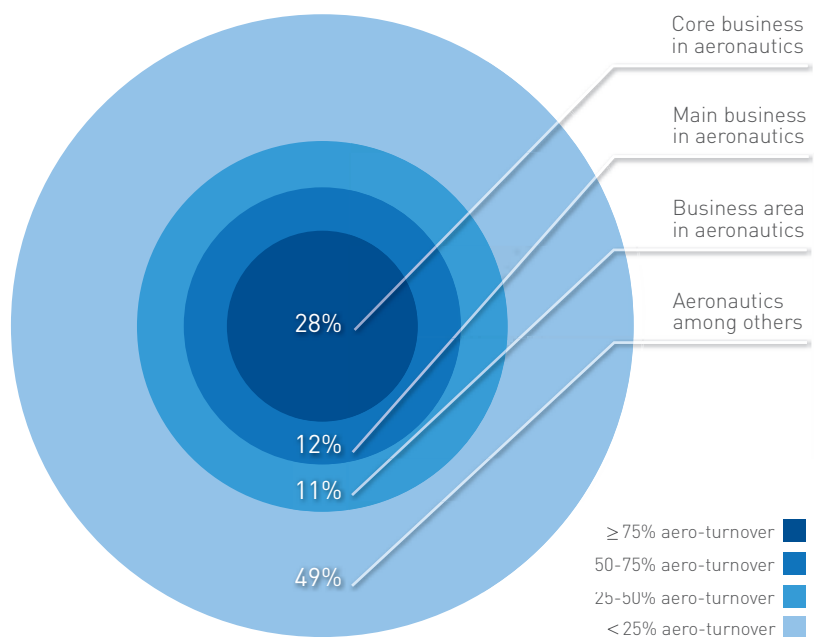
The study was commissioned to BRIMATECH Services within the Austrian aeronautics programme TAKE OFF, and funded by the Austrian Federal Ministry for Transport, Innovation and Technology. All company information was updated in 2010 for this brochure.

Download report:

http://www.bmvit.gv.at/innovation/downloads/oelink_endbericht.pdf



LEVEL OF INVOLVEMENT



(percent of companies)



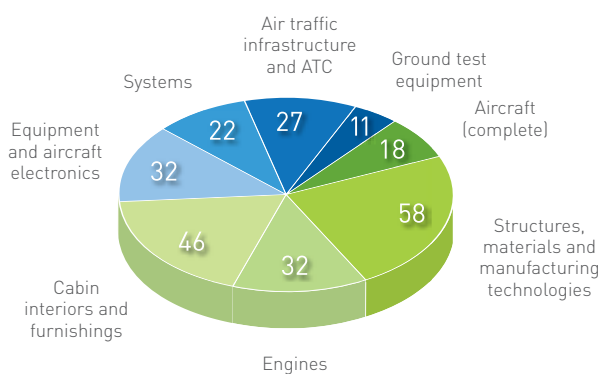
WWW.AERONAUTICS.AT

- Austrian competence and technologies
- Web-based tool
- Supporting networking of national and international players

AUSTRIAN AERONAUTICS INDUSTRY

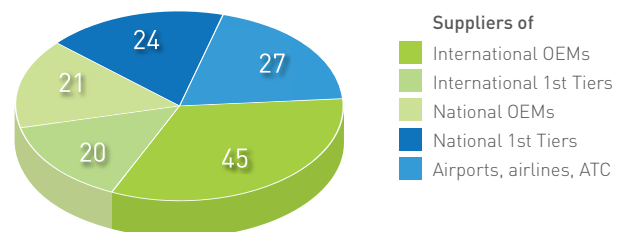
- ✈ more than 240 companies in the aeronautics industry considering the whole value chain
- ✈ more than 8,500 employees in aeronautics
- ✈ more than 1.6 B EUR turnover in aeronautics
- ✈ mainly (62%) micro and small enterprises
- ✈ 20 companies with more than 10 M EUR annual turnover in aeronautics
- ✈ almost 100% export rate in large companies (all over the world)
- ✈ 50% co-operate in R&D
- ✈ most important fields of application: aircraft structures, materials and manufacturing technologies; cabin interiors & furnishings; engines

✈ FIELDS OF APPLICATION



(number of companies)

✈ AUSTRIAN 1ST TIERS AND 2ND TIERS



Suppliers of

- International OEMs
- International 1st Tiers
- National OEMs
- National 1st Tiers
- Airports, airlines, ATC

PRODUCTS AND SERVICES



AIRCRAFT COMPLETE (INCL. MAINTENANCE)

ABK-Akustikbau	16
Austrian Technik	28
Austro Control	29
CAE Simulation & Solutions	39
Carbo Tech	40
Diamond Aircraft Industries	43
Gate V	48
HB-Flugtechnik	52
Ingenieurbüro für Luftfahrt	60
Jetalliance Group	63
Luftfahrzeug Wartungsbetrieb Krems	67
Prime Aerostructures	80
Schiebel	84
SG concepts	86



AIRCRAFT STRUCTURES, MATERIALS AND MANUFACTURING TECHNOLOGIES

4a engineering	15
ABK-Akustikbau	16
Aerospace & Advanced Composites	17
AHC Oberflächentechnik	19
AMAG rolling	22
AMES	23
ANTEM0	25
Anton Paar ShapeTec	26
Austrian Technik	28
Austro Control	29
Böhler Bleche	32
Böhler Edelstahl	33
Böhler Profil	34
Böhler Schmiedetechnik	35
CADFEM	38
CAE Simulation & Solutions	39
Carbo Tech	40
CEST	41
CNC Solic	42
Diamond Aircraft Industries	43

FACC	44
Fill	45
Fuchshofer	47
Gate V	48
Haumberger	51
HB-Flugtechnik	52
Heuberger	53
HOFMANN Wärmetechnik	55
INTALES	61
Jetalliance Group	63
LOTUS Ingenieurleistungen	66
Luftfahrzeug Wartungsbetrieb Krems	67
Luxner Engineering	68
LYNX	69
Magna Steyr	70
MCE Maschinen- und Apparatebau	71
MCE Stahl- und Maschinenbau	72
MICADO	73
Pankl Aerospace	75
PAYR Engineering	76
PCCL	77
Pichler & Strobl	78
Prime Aerostructures	80
RISC Software	81
RO-RA	82
Schiebel	84
SG concepts	86
sia Abrasives	87
TCM International	91
TYROLIT	95
Wedco	97
WESTCAM Fertigungstechnik	98
WFL	99
Zoerkler Gears	101



ENGINES

ABK-Akustikbau	16
Aerospace & Advanced Composites	17
Böhler Bleche	32
Böhler Edelstahl	33
Böhler Profil	34
Böhler Schmiedetechnik	35
BRP-Powertrain	36

CADFEM	38
CAE Simulation & Solutions	39
CNC Solic	42
FACC	44
Gate V	48
Geislinger	49
Haumberger	51
HB-Flugtechnik	52
Jetalliance Group	63
Luftfahrzeug Wartungsbetrieb Krems	67
Magna Steyr	70
MICADO	73
Pankl Aerospace	75
Pichler & Strobl	78
Prime Aerostructures	80
Schiebel	84
SG concepts	86
Springer und Pieringer	89
TCM International	91
TYROLIT	95



CABIN INTERIORS AND FURNISHINGS

4a engineering	15
ABK-Akustikbau	16
Aerospace & Advanced Composites	17
AHC Oberflächentechnik	19
AMES	23
ANTEMO	25
Anton Paar ShapeTec	26
Austrian Technik	28
Böhler Profil	34
CADFEM	38
Carbo Tech	40
CNC Solic	42
Diamond Aircraft Industries	43
FACC	44
Gate V	48
HB-Flugtechnik	52
Heuberger	53
HTP Aircraft	56
HUBER+SUHNER	57
HYBRID COMPOSITE PRODUCTS	58

PRODUCTS AND SERVICES



CABIN INTERIORS AND FURNISHINGS

IB STEINER	59
ISOVOLTA	62
LIST components & furniture	65
Luftfahrzeug Wartungsbetrieb Krems	67
Luxner Engineering	68
LYNX	69
Magna Steyr	70
MICADO	73
PAYR Engineering	76
PCCL	77
Pichler & Strobl	78
Prime Aerostructures	80
RO-RA	82
SG concepts	86
TRIPAN Leichtbauteile	93
WESTCAM Fertigungstechnik	98
Wollsdorf Leder	100



EQUIPMENT AND AIRCRAFT ELECTRONICS

ABK-Akustikbau	16
AeroSpy	18
AICO	20
AMES	23
Austrian Technik	28
Austro Control	29
CNC Solic	42
Diamond Aircraft Industries	43
Gate V	48
GENA Systems	50
HB-Flugtechnik	52
HiCo	54
HUBER+SUHNER	57
Ingenieurbüro für Luftfahrt	60
Jetalliance Group	63
LIS Reinisch	64
Luftfahrzeug Wartungsbetrieb Krems	67
Magna Steyr	70
Novotech	74
Pichler & Strobl	78

PIDSO	79
Rosenbauer	83
Schiebel	84
SCOTTY	85
SG concepts	86
sia Abrasives	87
Staudinger	90
TTTech	94

SYSTEMS

ABK-Akustikbau	16
AHC Oberflächentechnik	19
AICO	20
CADFEM	38
CAE Simulation & Solutions	39
CNC Solic	42
Diamond Aircraft Industries	43
Gate V	48
HUBER+SUHNER	57
Ingenieurbüro für Luftfahrt	60
Jetalliance Group	63
Luftfahrzeug Wartungsbetrieb Krems	67
Magna Steyr	70
Prime Aerostructures	80
RO-RA	82
Schiebel	84
SG concepts	86
TEST-FUCHS	92
TTTech	94



AIR TRAFFIC INFRASTRUCTURE AND AIR TRAFFIC CONTROL APPLICATIONS

ABK-Akustikbau	16
AICO	20
AMST	24
Anton Paar ShapeTec	26
APUS	27
Austro Control	29
AviBit	30
BULMOR airground	37

FREQUENTIS	46
GENA Systems	50
HUBER+SUHNER	57
LIS Reinisch	64
PIDSO	79
Rosenbauer	83
SCOTTY	85
SOLITEC	88
TEST-FUCHS	92
UFIS Airport Solutions	96



GROUND TEST EQUIPMENT

ABK-Akustikbau	16
Aerospace & Advanced Composites	17
Akkutron	21
AMST	24
Anton Paar ShapeTec	26
Austrian Technik	28
AXIS	31
Gate V	48
HUBER+SUHNER	57
Magna Steyr	70
MCE Maschinen- und Apparatebau	71
MICADO	73
Novotech	74
Pichler & Strobl	78
PIDSO	79
SCOTTY	85
TEST-FUCHS	92
TTTech	94





COMPANIES FROM A TO Z

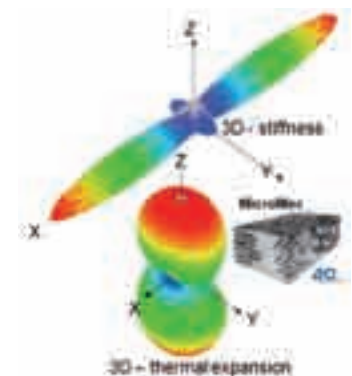
Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	
Engines			
Cabin interiors and furnishing	■	■	
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

4A ENGINEERING

4a engineering GmbH is a technology-oriented research and development company with a focus on the areas of plastics and materials science. Our team consists of highly qualified employees, the majority of whom have an academic background, who have excellent qualities in the area of the basics of physics and mechanics as well as materials science.

Technologies and competences

The core competence is in the development and optimisation of new products and processes by applying the laws of physics. The use and further development of simulation methods here is an important supply of understanding and innovation. Special know-how is found in mechanics and physics and their application in lightweight construction and fibre-reinforced composite structures.



Products and services in aviation

- development of fibre-reinforced composite components
- structure simulations
- testing of fibre-reinforced composite components



Fields of Activity	Research	Development	Production
Aircraft (complete)			■
Aircraft structures, materials and manufacturing technologies			■
Engines			■
Cabin interiors and furnishing			■
Equipment and aircraft electronics			■
Systems			■
Air traffic infrastructure and air traffic control applications			■
Ground test equipment			■

ABK-AKUSTIKBAU

We are an FBO service company located at the Vienna Neustadt-East airport and we offer comprehensive services in all areas of service, maintenance, overhauling and trade. In addition we market an extensive array of aircraft accessories and spare parts. The company was founded in 1989 with its headquarters in Klosterneuburg. The subsidiary in Vienna Neustadt was opened in 2010, where we also offer flight training and accommodation.

Technologies and competences

As part of our service business, we offer all-round service in all areas of general aviation. Besides trade with aircraft, we also work in avionics, hangaring, fuel supply, repairs, spare parts, aviation oil and leather care, and the sale of aircraft accessories as part of a pilot shop. We also have many years of experience in flight training and offer accommodation and meals.

Products and services in aviation

- aviation leather
- components
- oils
- aviation spare parts



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	
Engines	■		
Cabin interiors and furnishing	■		
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment		■	

AEROSPACE & ADVANCED COMPOSITES

AAC provides research, development and engineering capabilities in materials technology. It operates an ESA-certified materials test house and is the Austrian point of contact to the European aeronautics research organisations. The research is focussed on polymer and inorganic composites and coatings, novel test and monitoring methods and materials and components testing.

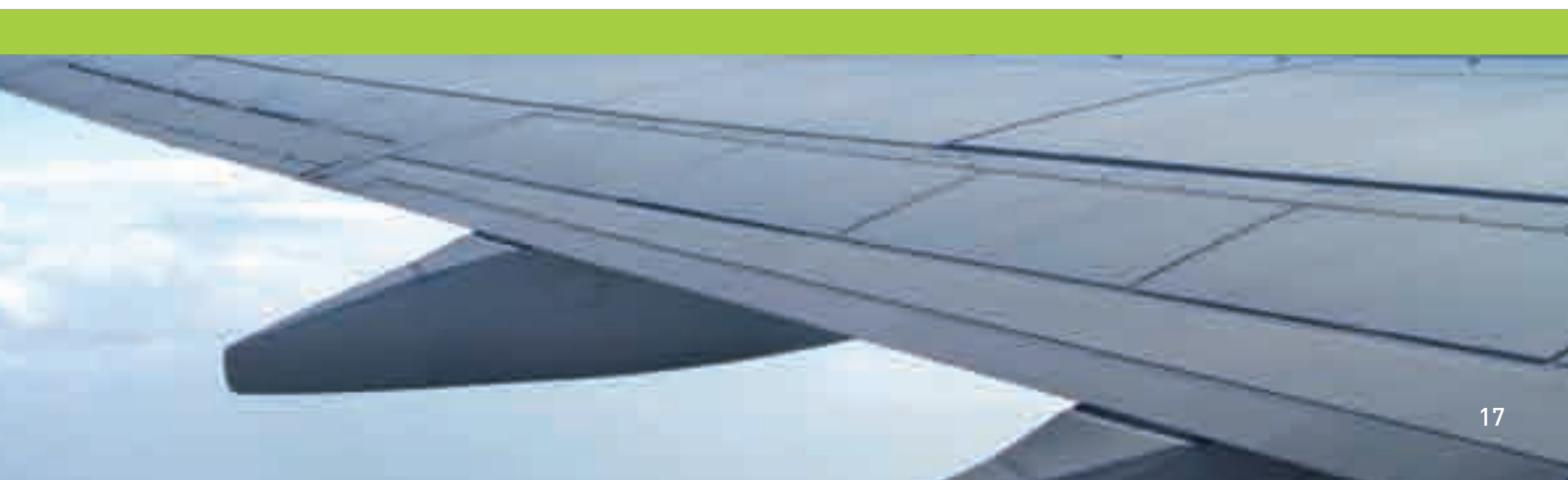
Technologies and competences

Materials: Process modelling and verification of resin infusion, modification of curable resins, functionalisation of ceramic nano powders, coatings for improved thermal and wear resistance.

Testing: Non destructive methods and SHM, friction, wear, mechanics, fatigue, life cycle, extreme environments, microstructure (SEM, EBSD, FIB).

Products and services in aviation

- structural health monitoring, mechanics and fatigue of materials/components
- development of resin infusion processes for fibre reinforced composites
- nano-powders and nano-modification of polymer and inorganic composites
- customer specified testing facilities and campaigns



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics	■	■	■
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

AEROSPY

Navigation – Sense – Avoid

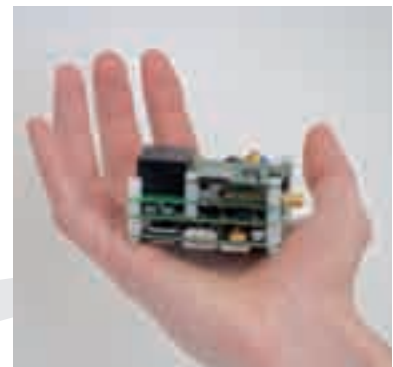
AeroSpy is one of the leading technology suppliers in the field of navigation, motion tracking, and mobile robotics in the air, on the ground, and at the water. Additionally we focus on the development of our Sense & Avoid demonstrator that allows the integration of UAS's into civilian airspace [awardee of the Thales UAS Innovation Award, 2010 for system aspects].

Technologies and competences

Based on Titan Cronus (autopilot) we teach various systems to be fully and semi-autonomous. These systems will know where they are (navigation), see the environment (sense), and be intelligent in avoiding obstacles (avoid). AeroSpy is a team of highly experienced technical experts, who developed the autopilot system and create customised solutions in high excellence.

Products and services in aviation

- autopilot systems (incl. integration)
- sense & avoid demonstrator (incl. integration)
- services with Unmanned Aircraft Systems



Titan Cronus Autopilot



Sense & Avoid Demonstrator

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			
Cabin interiors and furnishing			■
Equipment and aircraft electronics			
Systems			■
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

AHC OBERFLÄCHENTECHNIK

The AHC Group includes 14 plants in Germany, Italy, Austria, Poland and Switzerland. Our product range covers more than 100 processes, many of which we developed ourselves. We support our customers from the planning and construction phase, help with the definition of the exact requirements profile, and also with choosing the optimum materials and processes.



Technologies and competences

We consider ourselves to be primarily a service company for functional/technical surface finishing. We grant licenses for our patented coatings all around the world. With our network of business locations that spans industry sectors and regions, we are able to offer a reproducible process for everything from individual parts to large series as well as highly competent consulting.



Products and services in aviation

- HART-COAT® (hard anodising)
- technical anodising
- DURNI-COAT® (electroless nickel)
- GLISS-COAT® (anti-friction coatings)

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics	■	■	
Systems	■	■	
Air traffic infrastructure and air traffic control applications		■	
Ground test equipment			

AICO

AICO Software focuses on architecture in embedded systems. We support OEM's and their partners in the design of the software development process and take care of the quality assurance. We are specialised in methods for complex network-based systems and validation of system requirements and give advice on system conformity.

Technologies and competences

Our core competence is in consulting, quality assurance for aerospace on item level certification, DO-178B, DO-254 as well as gap analysis in the process and between process and implementation. We define effective ways to solve problems between process and daily business. A special part is the configuration management with its focus on effective implementation and work flow.

Products and services in aviation

- consulting on item level for embedded systems
- gap analysis for QA, QA/CM.
- support for DO-178B, DO254
- configuration management

Aviation standards and certifications

- EN/AS 9100
- DO-178B (SW)
- DO-254 (HW)

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment		■	■

AKKUTRON

Akkutron, which was founded in 2005, develops and manufactures power supplies for onboard batteries, testing units for onboard batteries (e.g.: Eurofighter), assisted starting devices for helicopters, and fuel cells up to 650 W for decentralised power supplies.

Technologies and competences

Akkutron's competences include microprocessor-controlled battery testing systems, power supplies in primary switched technology, custom equipment production, customer-specific measuring adapters and custom power supplies.

Products and services in aviation

- measuring adapter for the onboard battery of the Eurofighter
- charging and testing units for the onboard batteries of various aircraft
- ground power supplies
- fuel cells as power generators



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

AMAG ROLLING

AMAG rolling is a manufacturer of high-quality rolled aluminium products for industrial applications that operates on a global basis. It has successfully supplied the aerospace industry as a qualified supplier of plate, sheet and strip in accordance with international standards.

Technologies and competences

AMAG rolling has established itself as a specialist among rolling mills. The integrated location (foundry + rolling mill), close involvement of the employees as part of the continuous improvement process as well as the high quality standard facilitate rapid implementation of customer-specific methods of resolution.



Products and services in aviation

- aircraft plate
 (alloys 7050, 7075, 7475, 2024, 2219 etc.)
- aircraft sheet, strip
 (ALCLAD 2024, ALCLAD 7075, 2014, 6013 etc.)

Aviation standards and certifications

- EN/AS 9100
- Nadcap
- Product approvals
 (Airbus, Boeing, Embraer, etc.)

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	■
Engines			
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics		■	■
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

AMES

AMES is an EASA Part 21 certified design and production organisation and also provides CAMO services for airlines, all major aircraft leasing companies and other financial institutions. With experience from over 300 successful projects, we provide individual solutions for helicopter and aircraft projects.



Technologies and competences

We do development and research for new products including design, stress and fatigue analysis, production and certification (EASA Form 1) of parts. We use new materials and new technologies for lightweight products and fuel saving and we offer cabin/interior parts, electronic racks, EFB installations, camera and antenna installations. We provide CAMO services including export/import of aircraft and registration and de-registration.



Products and services in aviation

- aircraft cabin interior parts
- structural elements calculation - damage tolerance analysis
- EASA Part 21J design und 21G production
- CAMO Services

Aviation standards and certifications

- EN/AS 9100
- EASA Part 21 Subpart G POA
- EASA Part 21 Subpart J DOA
- EASA Part M Subpart G
- EASA Part M Subpart I



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications	■	■	■
Ground test equipment	■	■	■

AMST

AMST started working in the area of aerospace technology in 1978.

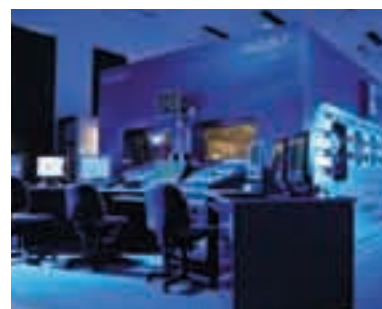
The company develops, constructs, and delivers turnkey training equipment in the aerospace sector. It also provides complete training courses for night vision and disorientation at the Ranshofen site in Austria. In addition there are complex electromechanical complete systems with high requirements of accuracy and safety.

Technologies and competences

Our competences include mechanical and electrical construction, structural calculations and flow simulations as well as control engineering and software development. In addition we do safety analyses, safety certification of complete plants as well as plant simulation and prototype construction.

Products and services in aviation

- flight simulation under G-force load: 3DoF-15g centrifuge, Desdemona 6DoF-3g, disorientation trainer 6DoF
- FTD - Flight Training Devices, PTT - Part Task Trainer
- user-oriented training equipment: decompression chambers, night vision equipment trainers, sports equipment
- pilot training: Basic and advanced disorientation, night vision and VFR/IFR training



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

ANTEMO

Antemo is a specialist in mechanical treatment of all metals and plastics as well as for the manufacturing of devices, lines, assembly of components for motorsports, medical instrumentation and computer industries

Technologies and competences

Antemo manufactures milled and turned parts from a very wide range of materials (all plastics, non-ferrous metal, aluminium, and steel), and we also provide advice in materials selection. We are specialised in fast manufacturing of single parts up to medium-size series production. We also focus on high-quality custom machines for aircraft technology.

Products and services in aviation

- bracket components (structure) and fasteners (milled and turned parts)
- holders and brackets (interiors)
- equipment building
- models and prototypes



Aviation standards and certifications

- Internal audits



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			
Cabin interiors and furnishing		■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			■
Ground test equipment			■

ANTON PAAR SHAPETEC

Anton Paar ShapeTec is an independent supplier located in Wundschuh and is part of the Anton Paar GmbH corporate group. Anton Paar ShapeTec provides customer-specific solutions in sheet metal and joining technology as well as metal-cutting production for manufacturing complex parts with low tolerances.

Technologies and competences

The core competences of Anton Paar ShapeTec are found in sheet metal technology (laser cutting, punching, edging), joining technology (hand welding, robot welding, laser welding, soldering, high-vacuum soldering, and so on), and surface technologies (painting, screen printing, anodising, chromating, powder coating, and so on). This range is completed by high-precision, metal-cutting production (CNC turning, CNC milling, CNC grinding).

Products and services in aviation

- locking systems
- primary parts (metal-cutting)
- landing gear systems



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications		■	
Ground test equipment			

APUS

APUS has specialised in solving complex customer software requirements like highly available monitoring and control systems for voice communication for air traffic control. We have provided eight European centre systems and eight tower systems. APUS develops highly available distributed control software for railways (communication, train location, ...) and embedded voice communication software for train dispatcher terminals.

Technologies and competences

Software systems: High availability, complex data processing, distributed systems, real-time systems, UNIX and LINUX system development, GUI development, database replication, cluster systems, safety related software development.

Operating systems and platforms: Linux, Windows, HP OS, Solaris, OS-X, Apache Tomcat, Apache Geronimo, IIS.

Products and services in aviation

- TMCS (Technical Monitoring and Control System) digital voice transmission systems for and with telephony
- Air Traffic Control Public Transport
- simulation software for flight simulators



Fields of Activity	Research	Development	Production
Aircraft (complete)			■
Aircraft structures, materials and manufacturing technologies			■
Engines			
Cabin interiors and furnishing			■
Equipment and aircraft electronics			■
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			■

AUSTRIAN TECHNIK

At Austrian Technik, 800 highly motivated and carefully trained technicians work on a round the clock to guarantee customer satisfaction. Our technicians are distinguished by their commitment, professionalism and quality.

Technologies and competences

For the various aircraft and engine types, we currently offer the following services: aircraft maintenance up to C-Checks, as well as technical modifications, component maintenance, technical training and engineering.

Products and services in aviation

- aircraft maintenance
- component maintenance
- full technical support
- training

Aviation standards and certifications

- EASA Part 21 DOA
- EASA Part 145
- EASA Part 147
- EASA Part M Subpart G
- FAA FAR145
- CAAC Part-145
- QCAA Part-145
- GCAA Part-145
- TCCA Part-145



Fields of Activity	Research	Development	Production
Aircraft (complete)		■	■
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics		■	■
Systems			
Air traffic infrastructure and air traffic control applications		■	■
Ground test equipment			

AUSTRO CONTROL

Austro Control is the Austrian Air Navigation Service Provider and responsible for safety in Austrian air space. The Cooperations & New Services Division was created to develop and coordinate commercial activities outside its core business. This division enables Austro Control to offer products in the innovative manner expected by customers, and to provide the bespoke services.

Technologies and competences

Austro Control offers operational and technical consultancy in the field of meteorology (as meteorological data or forecasts) and air traffic control (as operational airport solutions or technical evaluations). Furthermore Austro Control is a Single European Sky (SES) qualified partner for performing safety cases, training, risk and safety management systems.

Products and services in aviation

- data provision, licensing, lease management
- operations / service provision
- consulting
- system integration for ATM and MET solutions



Aviation standards and certifications

- SES-compliant
(EC 550/2004 and EC 2096/2005)



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications	■	■	■
Ground test equipment			

AVIBIT

AviBit was founded as a spin-off from the University of Technology Graz. We are specialised in software development for safety-critical systems like air traffic management systems. Our main focus is the delivery of airport tower systems including ground movement observations systems (A-SMGCS), flight data processing including electronic strips and arrival flow management.

Technologies and competences

AviBit's competence lies in the intensive know-how of ATC applications, sophisticated optimisation tools, software development and risk assessment. We use our know-how to provide turn-key solutions to our customers. The company strives to maintain an open and communicative relationship with the customer, while it applies high quality standards and constantly seeks for intelligent solutions.

Products and services in aviation

- surface movement guidance and control system (A-SMGCS)
- electronic flight strips
- system for optimisation of arrivals (Arrival Management)
- tower information systems



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment	■	■	■

AXIS

AXIS was founded in 2004 in order to develop ultramodern simulation technologies. Since then, the company has concentrated on the design and manufacture of flight simulators. Development focuses on the full flight simulator sector with the highest certification class LEVEL D.

Technologies and competences

The latest bus technology is used for the technical realisation. A modular system facilitates the realisation of all models of aircraft. The use of real time computers as well as the latest generation of the respective operating and communication systems guarantees excellent simulation quality as well as the highest stability and performance.

Products and services in aviation

- flight simulators
- training equipment for pilots



Aviation standards and certifications

- JAR-FSTD
- FAA PART 60

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	■
Engines		■	■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

BÖHLER BLECHE

Böhler Bleche is specialised in the manufacture of hot- and cold-rolled sheets, plates and blanks with different surfaces and cutting execution. The sheets, plates and blanks are made of various materials for the aviation industry, and are used in a great variety of areas in the aircraft as well as in helicopters.

Technologies and competences

Böhler Bleche is a worldwide leading manufacturer of single cross-rolled sheets and plates. This provides our customers with products of supreme uniformity in terms of mechanical/technological and physical properties.

Products and services in aviation

- engine mounts
- seat runners
- wing flaps

Aviation standards and certifications

- EN/AS 9100
- Audits (e.g. Airbus, Boeing, Bombardier, Liebherr, Rolls Royce)



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines	■	■	■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

BÖHLER EDELSTAHL

Böhler Edelstahl is one of the world's most important suppliers of steel and nickel-based alloys for the aviation industry. It concentrates on material solutions for the highest demands. An international distribution network and service equipment guarantee the worldwide availability of Böhler materials.

Technologies and competences

Metallurgical knowledge and competence are our strengths. Trendsetting and process-ready melting and re-melting processes like DESU, VAR and the latest equipment for forging and rolling the materials guarantee the highest level of quality and safety for our customers.

Products and services in aviation

- steel bar and nickel-based alloys as raw material for highly-stressed safety components
- fuselage construction (flap & slat systems, pressure cylinders, engine mounts, cargo and loading systems, ball screw spindles,...)
- engine (bearings, turbine blades, turbine shafts,...)



Aviation standards and certifications

- EN/AS 9100
- Audits (e.g. Airbus, Boeing, Bombardier, Liebherr, GE, Rolls Royce, PW, MTU)

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	■
Engines		■	■
Cabin interiors and furnishing		■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

BÖHLER PROFIL

Böhler Profil is a wholly-owned subsidiary of Böhler Uddeholm and hence voestalpine AG. It is a niche player in the field of near net-shape profiles and has many years of experience. Through thermomechanical rolling, cold drawing and subsequent heat treatment, we offer customer-oriented profile solutions right down to the finished product. Our profiles are found in all areas of aviation.

Technologies and competences

Böhler Profil offers its customers individual, customised, near net-shape profiles with the tightest tolerances. We are specialised in thermomechanical rolling of highly alloyed stainless steel, nickel-, cobalt- and titanium alloys, even in small batch sizes (as of 500 kg). We are distinguished by our competent consulting from many years of experience and by our fast processing. We are ISO EN9100 certified.

Products and services in aviation

- weatherstripping for loading hatches
- mounting rails for cargo aircraft
- guide rails for landing flaps
- blade profiles for engines



Aviation standards and certifications
– EN/AS 9100

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines	■	■	■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

BÖHLER SCHMIEDETECHNIK

Böhler Schmiedetechnik produces high quality die forged components for aerospace applications, power generation and other high-tech industries. The products are sold worldwide. Major aggregates for production are the world's two largest screw presses, as well as several closed and open die hammers. The quality control system is based on ISO9001 and AS9100.

Technologies and competences

The main competences are the design, simulation and thermo-mechanical processing including quality assurance of critical forgings close to final shape as well as machining. Products are made of difficult to form alloys such as titanium, nickel base alloys, high alloyed steels and titanium-aluminides, which involves tough process control in order to guarantee low process variations.

Products and services in aviation

- engine mounts and discs
- wing and fuselage components (tracks, fittings,...)
- landing gear parts



Aviation standards and certifications

- EN/AS 9100
- NADCAP approvals for NDT and heat treatment



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines	■	■	■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

BRP-POWERTRAIN

BRP-Powertrain is a subsidiary of Bombardier Recreational Products Inc. (BRP). It is a leader in the development and production of innovative Rotax® high-performance engines both for BRP products like Ski-Doo® and Lynx® snow mobiles, Sea-Doo® watercraft and sport boots, Can-Am® ATVs, side-by-side vehicles and roadsters, as well as for motorcycles, karts, ultralight and light aircraft.

Technologies and competences

ROTAX® Aircraft Engines offer outstanding performance, continued reliability and reduced emissions. The product portfolio consists of the 582 engine series (2-stroke) and the 912 / 914 engine family (4-stroke). All these engines are approved for use with ethanol 10 (E10) fuel, MOGAS and AVGAS.

Products and services in aviation

- 4-stroke aircraft engines from 80 - 115 hp
- 2-stroke aircraft engines (65 hp)
- spare parts

Aviation standards and certifications

- EASA Part 21 POA Subpart G
- EASA Part 21 DOA Subpart J
- ASTM F 2339
- CS -E
- FAR-33



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications		■	■
Ground test equipment			

BULMOR AIRGROUND

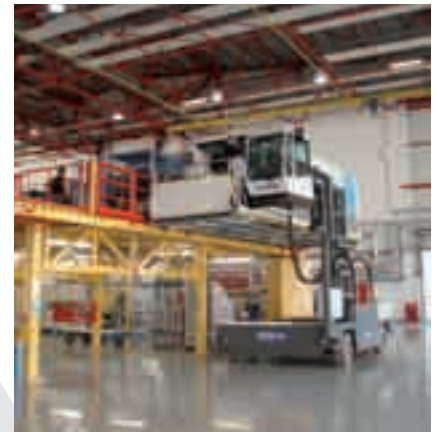
BULMOR airground technologies develops, manufactures and services ground support equipment such as vehicles with rising platforms and other special fields.

Technologies and competences

Our highlifter vehicles are based on side- and four-way sideloaders. The self-propelled machines do not need any stabilisers and can be driven at creep speed with raised cabins, trunks or platforms. Smooth lifting height from 0 – 10m.

Products and services in aviation

- highlifters for passenger transportation, in particular for PRM (Passengers with Reduced Mobility)
- rising platform vehicles with an interchange system for maintenance and work platforms with a lifting height of up to 10m



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	
Engines		■	
Cabin interiors and furnishing		■	
Equipment and aircraft electronics			
Systems		■	
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

CADFEM

CADFEM (Austria) GmbH is the Austrian subsidiary of one of the leading international engineering companies in the field of numerical simulation (Computer Aided Engineering – CAE). CADFEM offers an extensive range of high-end software solutions including all services that accompany the products like seminars, support and consulting.

Technologies and competences

Aircraft components often require extensive and expensive physical tests. Computer simulation makes it possible to test products virtually on the screen and that way reduce physical prototypes to a minimum, save costs, and shorten time to market. In this sector, CADFEM has extensive know-how in structural mechanics and flow simulation.

Products and services in aviation

- FEM software and services
- CFD software and services
- composite calculations

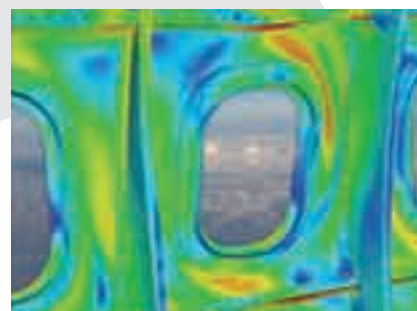


Image courtesy Airbus Deutschland GmbH



Image courtesy ANSYS Inc.

Fields of Activity	Research	Development	Production
Aircraft (complete)		■	
Aircraft structures, materials and manufacturing technologies		■	
Engines		■	
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems		■	
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

CAE SIMULATION & SOLUTIONS

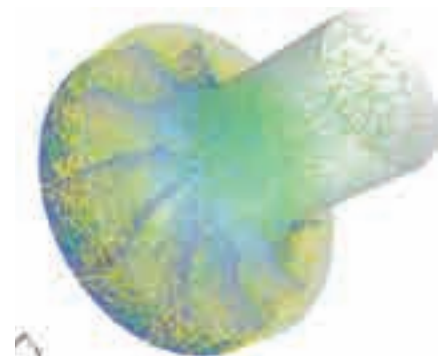
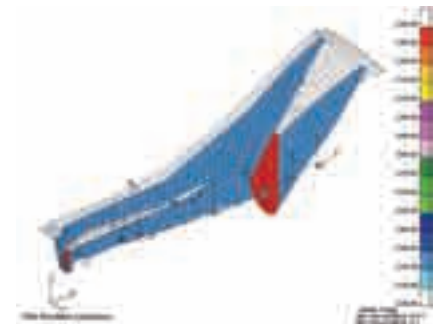
CAE Simulation & Solutions provides engineering services in terms of FEM, CFD and MBD analyses. Using Nastran, Abaqus and Fluent, a wide range of aerospace applications are supported. These include engine components of large aircraft (IOB, thrust reverser, ...) as well as fuselages of small aircraft (helicopters and UAV). In addition CAE performs aircraft wing design using CFD analysis.

Technologies and competences

The technologies we use are mainly highly specialised FE analysis using composite structures and evaluation tools to judge composite structures. Moreover, fatigue analysis of both metallic and composite structures are one of the main skills of CAE Simulation & Solutions. More than 50% of our projects include an FE analysis of shell structures incorporating fatigue life predictions.

Products and services in aviation

- FEM calculation for component and assembly development
- service life simulation of metallic structures and composites
- flow calculations (CFD simulations) for the design of aircraft and components
- thermomechanically coupled calculations of engine components



Fields of Activity	Research	Development	Production
Aircraft (complete)		■	■
Aircraft structures, materials and manufacturing technologies		■	■
Engines			
Cabin interiors and furnishing		■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

CARBO TECH

As a Tier One Supplier, Carbo Tech Composites is now one of the leading companies in the automotive industry for series production of lightweight structural elements in fibre composite technology (e.g. carbon, aramid, glass fibre...). The Industry and Aviation business segments in the civil and military sectors are becoming increasingly important.

Technologies and competences

With a high depth of production, an idea can be offered to the customer in a "one stop shop" solution starting with the initial drawing in 3D construction, with tool design and making, FEM calculation, right up to the finished (painted) part. Semiautomatic RTM and press mould manufacturing technology are in the foreground for series production. Autoclave technology and hand laminated procedures are also used.

Products and services in aviation

- ultra-light gyroplane
- experimental drones, new drive systems, rotors
- special fittings/attachments, camera carriers, carrier platforms, radome
- tool making



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

CEST

CEST is Austria's competence centre for electrochemical surface technology and operates as an innovation centre and trendsetter at the interface between science and industry. CEST was founded in 2008 as the successor to the ECEM Competence Centre for Applied Electrochemistry as part of the Austrian competence centre programme called COMET.

Technologies and competences

The CEST competence centre concentrates on electrochemical surface technology and corrosion research as well as surface characterisation. Through the results of the research work, it is possible to develop metal films and new layer systems with optimised properties, like nano-crystalline layers. It is also possible to design the manufacturing of surfaces to be more cost-effective and environmentally friendly.

Products and services in aviation

- research and development of new materials/treatment methods for surfaces
- research and development of new processing methods for surfaces



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			■
Cabin interiors and furnishing			■
Equipment and aircraft electronics			■
Systems			■
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

CNC SOLIC

CNC Solic has been a supplier for the aerospace industry since 1998. We produce small and miniscule parts in almost all areas of aviation (engines, tail units, interiors, etc.). Prototypes as well as small and large series are manufactured using the latest manufacturing technologies and under strict quality assurance in order to obtain the best-possible performance of the components and parts.

Technologies and competences

Our company manufactures individual components for aircraft construction on ultramodern CNC turning and milling machines. Parts are made from a great variety of materials (steel, plastic, composite materials, etc.). The latest measuring methods are used for quality assurance in order to guarantee the quality of these components. Even surface treatment is not a problem for us.

Products and services in aviation

- small parts for motors and engines
- small parts for the interior
- small parts for aircraft systems
- small parts for aircraft structures



Fields of Activity	Research	Development	Production
Aircraft (complete)	■	■	■
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing		■	■
Equipment and aircraft electronics		■	■
Systems		■	■
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

DIAMOND AIRCRAFT INDUSTRIES

Diamond Aircraft Industries is an international, worldwide operating manufacturer of glass fibre and carbon fibre composite aircraft. Innovative aircraft solutions at the highest level and quality are produced for flight schools and private customers. Known as an international specialist for glass and carbon fibre composite technology, we are active in many areas of research, development and application.

Technologies and competences

Our goal is to have automobile standards in aircraft production. We combine the best of material, engine and navigation technology and develop aircraft that are more economical to buy and maintain, and which are less of a burden on the environment. And we do this while meeting the highest demands of performance and safety.

Products and services in aviation

- DV 20: single-engine, propeller powered, 2-seater training and touring aircraft
- DA 40: single-engine, propeller powered, 4-seater training and touring aircraft with a diesel engine
- DA 42: twin-engine, propeller powered, 4-seater training and touring aircraft with a diesel engines
- DA 42 MPP: DA42 as a multifunctional sensor carrier



Aviation standards and certifications

- EASA Part 21 POA
- EASA Part 21 DOA
- EASA Part 145
- EASA Part 147
- EASA Part M Subpart G

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines	■	■	■
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

FACC

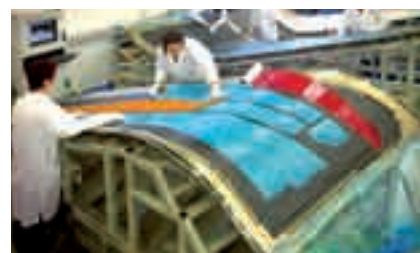
FACC is a worldwide leading company specialising in the design, development and production of light composite components and systems for the aerospace industry. The product range includes aerostructures on the fuselage and wings, engine and engine nacelle components and complete passenger cabins for commercial aircraft, business jets and helicopters.

Technologies and competences

FACC is a systems integrator and covers the entire value added chain of modern supply production - from conception to design, including static engineering and qualification, to tool design and manufacturing and full serial production. The company's strengths are creativity and flexibility in undertaking new development projects together with full and precise adherence to the high quality demands of the customers.

Products and services in aviation

- aerostructures
- engine nacelle and engine components
- aircraft interiors



Aviation standards and certifications

- EN/AS 9100
- EASA Part 21 POA
- EASA Part 145



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

FILL

Fill is an international, leading machine and plant construction company for the areas of metals, plastics and wood for the automotive, wind energy, aviation and construction industries. The company was founded in 1966 and has been operated as a GmbH since 1987. It is ISO 9001 certified and has a workforce of 440.

Technologies and competences

Fill is a specialist in the automation of production processes for composite components. One area of focus in this range is automatic ultrasound testing systems for CFRP structural elements. In 2010, Fill delivered a system for the flap track fairings of the Airbus A380 to Abu Dhabi. Fill offers the latest band saw technology for cutting honeycomb. The product range is completed by RTM production systems.

Products and services in aviation

- ultrasound testing systems
- speedliner (honeycomb block cutting systems)
- RTM press systems



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications	■	■	■
Ground test equipment			

FREQUENTIS

Frequentis is an Austrian company that operates in areas responsible for safety-of-life related decision making (ATM, Public Safety/Security). In ATM Frequentis provides voice communications services that support controller-pilot and controller-controller interaction, integrated tower services that optimise user-machine Interactions and AIS infrastructures (EAD) worldwide.

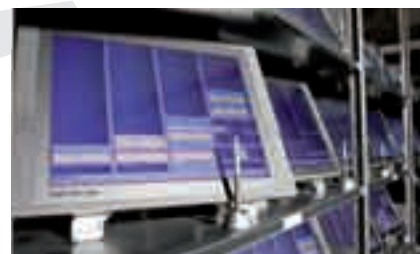
Technologies and competences

Our competences cover:

- networked voice communication services based on TDM and VoIP
- human factors and human-machine interface expertise
- safety analysis
- information systems

Products and services in aviation

- Voice Switch/Server
- radio network
- integrated tower
- AIS





FUCHSHOFER
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Production Software Service Competence Centre

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

FUCHSHOFER

Fuchshofer is a modern and committed manufacturing company that has specialised in CNC precision technology. We offer 2D and 3D processing in the precision range (3, 4, 5 axes machining in milling), multi-axis turning machining, complete machining as well as maintenance, repairs and spare parts. We are a system supplier from the raw material to assembly.

Technologies and competences

Our major strength is in our experience with a great variety of material qualities:

- 1) stainless steel, case-hardened steel and tempered steel
- 2) aluminium
- 3) titanium
- 4) non-ferrous metals like bronze or brass
- 5) plastics

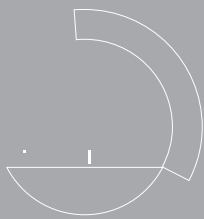
The most recent possibility in our company is the processing of so-called "advanced materials" (e.g. ceramic, glass, hard metals, composites, silicon, graphite, mother-of-pearl, gemstones) by means of ultrasonic technology.



Products and services in aviation

- mechanical manufacturing of components
- manufacturing consulting/pilots





Fields of Activity	Research	Development	Production
Aircraft (complete)			■
Aircraft structures, materials and manufacturing technologies			■
Engines			■
Cabin interiors and furnishing			■
Equipment and aircraft electronics			■
Systems			■
Air traffic infrastructure and air traffic control applications			
Ground test equipment			■

GATE V

Gate V is a maintenance, repair and overhaul facility for business jets and is a recognised service and repair facility for Cessna Citation, Bombardier Learjet, Honeywell, Pratt & Whitney, Williams, Rockwell Collins, Garmin and Universal Avionics. We are an EASA Part 145 and Part 21 approved maintenance and design organisation.

Technologies and competences

We are capable of performing line and base maintenance as well as a wide range of modifications, overhauls, repairs and upgrades on airframes, engines and avionics. We are certified and well experienced to repair, install and upgrade a variety of components such as: auto flight, comms and navs, electrical power, cabin equipment und cockpit instruments.

Products and services in aviation

- airframe
- engine
- avionic
- engineering



Aviation standards and certifications

- EASA Part 21 DOA
- EASA Part 145

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines	■	■	■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

GEISLINGER

For more than 50 years, Geislinger has developed and produced solutions to reliably protect crankshafts, camshafts, gearboxes or any other components in the driveline from damage by torsional vibrations. Geislinger products are used on high-output diesel and gas engines.

Technologies and competences

The torsional elastic, high damping Geislinger couplings are made of steel and perfectly meet the requirements for compactness, durability and lowest cost of ownership. They provide tailor-made properties which remain unchanged over their lifetime. The high power density offers the smallest overall size and low weight - thus making them perfectly suitable for aircraft engines.

Products and services in aviation

- torsional elastic couplings
- misalignment compensating couplings
- composite material components



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics		■	
Systems			
Air traffic infrastructure and air traffic control applications		■	
Ground test equipment			

GENA SYSTEMS

GENA Systems focuses on the development of innovative navigation and mission management solutions for aircraft. Innovative ideas, personnel with the best possible training and flexibility are our strengths. The one of a kind, modular, total range of hardware and software and our services are truly appreciated by our customers.

Technologies and competences

Our competence is found in the implementation of innovative ideas and special customer requirements for navigation and communication. GENA Sky Commander – Task Management System shows our competence in hardware and software development. Specially developed bidirectional communications technology by means of Iridium creates a worldwide connection to resources and integrates them into your operating infrastructure.

Products and services in aviation

- Mission management system
 - Navigation systems
 - Flight following
 - Fleet management
 - Obstacle management



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

HAUMBERGER

Haumberger produces high-quality CNC manufactured parts in the chip removal business unit. Through concentration on manufacturing individual parts and small series, a high level of flexibility and specialisation can be realised. The Engineering & Complete Solutions line of business accompanies customers in custom machine building and automation projects from the project phase up to the finished system.

Technologies and competences

For customers in the aviation sector, we perform contract manufacturing based on customer drawings in various chip removal machining technologies (milling, turning, eroding, drilling). Modern CNC-controlled and also conventional processing machines are used for chip removal by a well trained and experienced team. We have special competencies in the areas of 3D and 5-axis machining.

Products and services in aviation

- drive components
- chassis components
- engine components



Fields of Activity	Research	Development	Production
Aircraft (complete)	■	■	■
Aircraft structures, materials and manufacturing technologies		■	■
Engines		■	
Cabin interiors and furnishing		■	■
Equipment and aircraft electronics	■		
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

HB-FLUGTECHNIK

HB-Flugtechnik is an EASA Part M/F and M/G certified company with a focus on aircraft maintenance and repair. In addition, we offer airworthiness reviews for EASA (VLA, gliders, motor gliders) and national aircraft (ultra-lights and experimental). Our mission is to offer our customers the best service and competent solutions for fair prices with highly qualified employees.

Technologies and competences

During the course of our many years of successful work as a maintenance company, and through innumerable developments of our own (motor gliders, experimental, kits), HB-Flugtechnik is an absolute source of know-how in Austrian aviation. This makes it possible for us to not only competently assess individual components, but also the aircraft as a complete system, and to offer quick solutions.

Products and services in aviation

- maintenance
- repair
- airworthiness reviews
- spare parts sales



Aviation standards and certifications

- EASA Part 21 POA
- EASA Part M Subpart F
- EASA Part M Subpart G
- EASA Part 21 ADOA
- ACG: IW-01

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

HEUBERGER

Heuberger is a surface specialist in the field of non-ferrous light metals, especially aluminium, magnesium and titanium. The scope of applications range from anodising, pickling passivation up to customer-specific applications in surface technologies.

Technologies and competences

Heuberger has established its own headquarters dedicated to the surface technology of light metals where it is possible to develop surface coatings with defined layer properties and to characterise the layers and materials in detail. The focus is on the areas of anodisation and passivation.

Products and services in aviation

- aluminium anodisation
- titanium anodisation
- custom-made surface technologies



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics		■	■
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

HICO

HiCo, established in 1997, is a leading worldwide provider of enterprise IT-solutions for the civil and military environment of the aviation industry. We provide services and IT-solutions for securing the central storage of technical logistics information and product data as well as its use-oriented preparation for use in different media and formats.

Technologies and competences

We provide services and IT-solutions for creating, managing, publishing and communicating Interactive Electronic Technical Documentation (IETD) according to the standards ASD/AIA S1000D®, S2000M and ATA iSpec2200. The usage scenarios comprise solutions like interactive publications and operations within the technical systems (e.g. Electronic Flight Bag).

Products and services in aviation

- HiCo ietdSuite® - Content Management System (CMS)
- HiCo X-Browser® - IETM-Browser for Electronic Flight Bag
- HiCo ietdSuite®: Connector for Arbortext® Editor™ - editorial software solution
- Trainings & Workshops for international standards S1000D® / ATA iSpec2200



Aviation standards and certifications

- EN/AS 9100



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

HOFMANN WÄRMETECHNIK

HOFMANN Wärmetechnik has been building furnaces since 1946. The company is very customer and solution oriented in the way it works and is characterised by a very high quality standard and adherence to delivery dates. The systems delivered by HOFMANN Wärmetechnik are planned, built and tested in Hellmonsödt. With the slogan "Everything from a single source", the assembly and start-up is performed by their company's own personnel.

Technologies and competences

HOFMANN Wärmetechnik is specialised in the project work and manufacture of customer-specific heat treatment systems for materials. In particular, this includes furnaces for aluminium alloys that are used in the aviation industry. The systems meet the requirements of common aviation standards specifically with regard to temperature accuracy and recording and documentation of charge data.

Products and services in aviation

- solutionising furnaces
- soft annealing furnaces
- tempering furnaces
- ageing furnaces



Aviation standards and certifications

- AMS2750D (aerospace material specification, pyrometry)

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing		■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

HTP AIRCRAFT

HTP Aircraft is the HTI competence centre for the development and manufacture of lightweight components made of plastic for the aviation industry. The focus is on component design and development for all interior components in the aircraft (metal and plastic).

Technologies and competences

HTP Aircraft is specialised in the processing of high-temperature plastics using an injection moulding process. Here, we can implement built-to-print and built-to-spec variations, or alternatively deliver the product to our customers as finished assembly components. Furthermore we perform milling work (metal and plastic).

Products and services in aviation

- luggage compartment locks
- cabin windows
- cabin attachments



Aviation standards and certifications

- EN/AS 9100

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			■
Equipment and aircraft electronics	■	■	■
Systems		■	■
Air traffic infrastructure and air traffic control applications	■	■	■
Ground test equipment		■	■

HUBER+SUHNER

HUBER+SUHNER AUSTRIA is part of a 130 year old company with subsidiaries worldwide. The company's key competences are in wiring in the low and high frequency area, i.e. data lines and power supplies up to radio and radar systems. Another department supplies plastic moulded parts such as wastewater tanks for the A380.

Technologies and competences

We offer high-frequency coax cable of the highest precision and durability, which is also used in satellites. Our low-frequency lines are characterised by their lasting high temperature resistance and UV resistance.

Products and services in aviation

- wiring of onboard radar for the Eurofighter
- wiring and onboard telephone system for the Airbus
- high-frequency wiring of the Airbus



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing		■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

HYBRID COMPOSITE PRODUCTS

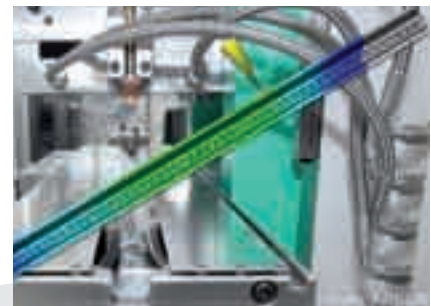
The business services of HYBRID COMPOSITE PRODUCTS, certified according to EN 9100, are focused in the fields of development, production and assembling of polymer and multi-material products.

Technologies and competences

Development and production of very long, thin-walled components with functional geometries by use of the new EXJECTION® technology. Development and production of injection moulded components made of multi-materials, e.g. polymer-metal, polymer-ceramics, polymer-carbon fibre, etc. Processing of high temperature polymers like PPS, PEI, PEEK. Development of injection and EXJECTION® moulds. Functional testing of polymer parts.

Products and services in aviation

- production of multi-material parts
- production of prototypes and test samples
- development of interior parts
- assembly of functional units



Aviation standards and certifications

- EN/AS 9100





Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing	■	■	
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

IB STEINER

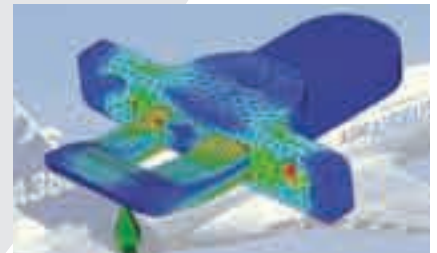
The business services of IB STEINER, certified according to EN 9100, are focused on the fields of technology and innovation management in polymer engineering. We implement development of products and components from the design stage to series production. Short development times, accurate achievement of objectives with calculable risk and low total costs.

Technologies and competences

For the entire range of polymer products, IB STEINER offers development and optimisation, for example for aircraft interior parts, feasibility studies, simulations of mechanical loading, failure analysis incl. thermal analysis, moldflow-simulation and development of EXJECTION® technology.

Products and services in aviation

- window reveal assys
- window shade assys
- latching units for overhead stowage compartments



Aviation standards and certifications

- EN/AS 9100



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 office@imb.aero
 www.imb.aero
 Contact: Manfred Bleyer

Production Software Service Competence Centre

Fields of Activity	Research	Development	Production
Aircraft (complete)	■	■	
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics		■	■
Systems		■	
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

INGENIEURBÜRO FÜR LUFTFAHRT

We are a flexible service provider in the area of development, design, test and certification of new developments and changes (focus on helicopters). We have helicopter testing know-how, in particular NVIS (night vision imaging system). Besides handling evaluations and certification, we offer expert reports (legal, private, assessment expert reports) and company assessments for the awarding of contracts.

Technologies and competences

We have EASA Part 21 alternative design and production approval. Furthermore, we offer rotary wing flight test know-how, NVIS cockpit modifications, NVIS training and operational support and are JAR-FCL 2 examiners and EC 135 simulator trainers.

Products and services in aviation

- design-development-test and certification of changes to aircraft (focus on helicopters)
- rotary wing flight test know-how - NVIS cockpit evaluation and operational support activity
- support service for factory qualifications in the development, production, ops and tech area
- quality service – quality management, auditing and company assessments, expert reports



Aviation standards and certifications

- EASA Part 21 ADOA
- EASA Part 21 Subpart F

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

INTALES

Founded in 2004 in Innsbruck by highly experienced engineers from the Austrian and German aerospace industry, INTALES offers the full spectrum of aerospace structural analyses. In cooperation with the University of Innsbruck and other European research institutes, we develop advanced strategies, methodologies and software tools to be used by our international customers.

Technologies and competences

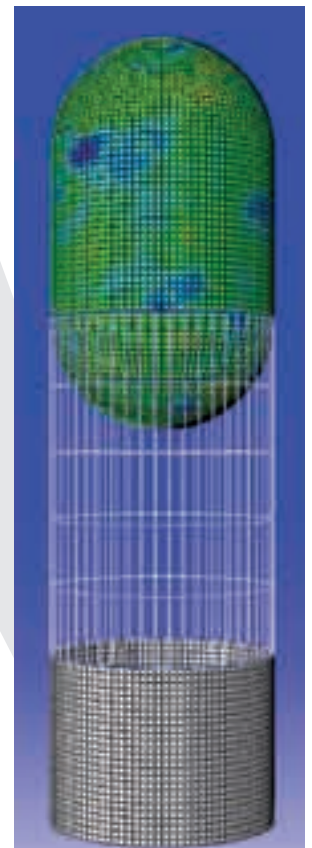
With our team consisting of analysis specialists and excellently educated young engineers, we provide innovative solutions for the analysis of highly loaded and complex lightweight structures. INTALES processes extremely large FE models, e.g. for nonlinear analysis, by automation of the complete analysis sequence. For the optimisation of structures, in-house sensitivity and random field analysis tools are available.

Products and services in aviation

- structural analysis
- development of analysis strategies and methods
- programming of analysis software
- design optimisation/risk-based design

Aviation standards and certifications

- EN/AS 9100





ISOVOLTA AG

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+43 5 9595-0
transportation@isovolta.com
www.isovolta.com
Contact: Kurt Bussecker

Production Software Service Competence Centre

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

ISOVOLTA

The ISOVOLTA Group belongs to Constantia Industries AG and is a leading manufacturer of electrical insulation materials, technical laminates and composite materials. ISOVOLTA was founded in Wernsdorf in 1949. Today the corporate network with its headquarters in Vienna Neudorf, Austria, is comprised of a total of 20 production and sales locations in 10 countries.

Technologies and competences

ISOVOLTA is the only company worldwide that can develop and deliver technical and decorative products for aircraft interior finishing. Its own design department, a laboratory for fire experiments as well as a development department expand our competences. Our products and services are qualified by many OEM manufacturers.



Products and services in aviation

- decorative laminates: impregnated multilayer films for the decoration of interior structural elements
- prepregs: different fabrics with phenol epoxy and cyanate ester resins
- technical laminates for aircraft interiors: prepregs, multilayer bonded



Fields of Activity	Research	Development	Production
Aircraft (complete)			■
Aircraft structures, materials and manufacturing technologies			■
Engines			■
Cabin interiors and furnishing			
Equipment and aircraft electronics			■
Systems			■
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

JETALLIANCE GROUP

Jetalliance is one of Europe's largest and most prestigious business aviation groups. The comprehensive power of all Jetalliance Group companies is based on our fundamental values of quality and safety. Our principles are transparency, reliability, exclusivity, and discretion.

Technologies and competences

The name Jetalliance represents a group of companies, strategically developed to cater to market requirements in business aviation. The JA Group offers all major services across the entire business aviation supply chain including aircraft sales, finance & leasing, management & charter, maintenance, flight training, asset management, and a pay-per-hour maintenance programme.



Products and services in aviation

- aircraft sales
- management & charter
- maintenance & technical management
- flight training

Aviation standards and certifications

- EASA Part 145
- EASA Part M Subpart G
- IOSA approved flight operation
- JAR-FCL approved Flight Training
- JAR-FSTD Level A certified Full Motion Simulator

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics		■	■
Systems			
Air traffic infrastructure and air traffic control applications		■	■
Ground test equipment			

LIS REINISCH

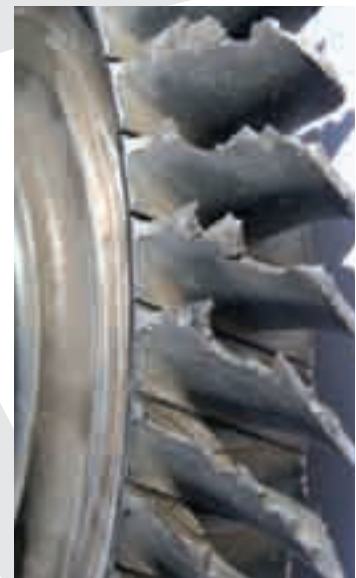
LIS Reinisch specialises in system integration and project management for small enterprises in commercial operation. The focus is on streamlining administration, production and quality management. We offer aircraft maintenance, document management, quality management, production administration and laboratory systems (DNA labs and forensic institutes).

Technologies and competences

We have special competences in SQL databases, workflow systems, document management systems and archives. We also developed an interactive business process reengineering tool for SMEs, called man.UML.

Products and services in aviation

- BaMit: Balloon and Aircraft Maintenance System
- AirMit: Aircraft Maintenance and Information System



Aviation standards and certifications

- EASA Part M Subpart F
- EASA Part M Subpart G



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

LIST COMPONENTS & FURNITURE

As an innovative Austrian company, LIST components & furniture GmbH specialises in the design and engineering as well as qualification and production of high-end cabin and furniture components for business aircraft, yachts, cruise ships and building constructions.

Technologies and competences

Our range of services starts with the development, construction, and production of custom products. Based on client requests, LIST works with a wide variety of classical and forward-looking raw materials and substances: the most select woods, precious metals, thin real stone veneers, feather-light bonded fabrics and many more.

Products and services in aviation

- cabin components e.g. galleys, lavatories, wardrobes, partitions, panels
- flame-retardant veneers (1-, 2- and 3-ply veneers)
- stone flooring & stone veneer (a thinly-cut natural stone surface)
- engineering & certification



Aviation standards and certifications

- EASA Part 21 POA

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

LOTUS INGENIEURLEISTUNGEN

LOTUS Ingenieurleistungen is an engineering office which provides services in automotive and aircraft design based on its 16 years of experience in design and development. From the beginning up to now professionalism, quality, reliability, efficiency and passion are our key to success.

Technologies and competences

Our fields of competence are the design of structures and CFRP toolings as well as developing die cast and injection moulded parts. By using the most advanced tools and methods in computational engineering like FEM and CatiaV5, we optimise the structure concurrently in the development phase. Therefore we are able to give you the weight and cost-optimised solution in one go.

Products and services in aviation

- CAD services (CATIA V5)
- FEM computations



Fields of Activity	Research	Development	Production
Aircraft (complete)			■
Aircraft structures, materials and manufacturing technologies			■
Engines			■
Cabin interiors and furnishing			■
Equipment and aircraft electronics			■
Systems			■
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

LUFTFAHRZEUG WARTUNGSBETRIEB KREMS

Luftfahrzeug Wartungsbetrieb Krems has worked in the field of maintenance and repair of aircraft and helicopters up to 5.7 tons since 1977.

Technologies and competences

As a maintenance company, we offer services in the areas of ultra-light, general aviation, helicopters, and we perform annual routine tests. We have been certified as a free CAMO since 2007 across the entire range of our maintenance activities.

Products and services in aviation

- maintenance of aircraft and helicopters up to 5,700 kg take-off mass
- CAMO management for aircraft and helicopters up to 5,700 kg



Aviation standards and certifications

- EASA Part 145
- EASA Part M Subpart G

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	
Engines			
Cabin interiors and furnishing	■	■	
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

LUXNER ENGINEERING

LUXNER Engineering is a comprehensive service provider in the field of analytical and numerical computations of aviation structures. In addition to mechanical modeling and analyses for strength, fatigue, and damage tolerance of lightweight structures (incl. finite element simulations) we offer development and software-implementation of analysis methods for customer-specific analysis tasks.

Technologies and competences

Numerous research and industry projects in the areas of failure and damage of composites, non-linear finite element simulations as well as fatigue and damage tolerance make LUXNER Engineering a link between research and industry and hence a preferred partner for the development and implementation of new analysis and evaluation methods in the aeronautics industry.

Products and services in aviation

- stress analysis for structural elements made of composite materials and/or metal
- development and implementation of customer-specific analysis tasks
- software development for the simulation and analysis of lightweight structures
- fatigue and damage tolerance assessment for structural elements

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	
Engines			
Cabin interiors and furnishing	■	■	
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

LYNX

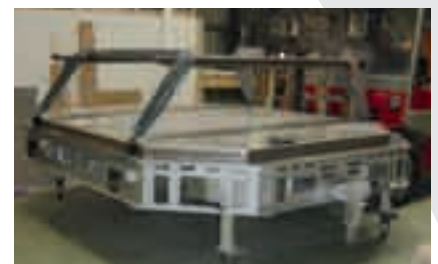
Lynx Composites focuses its core competences on the development of products, processes and quality management as well as the production of lightweight structures by "state of the art" composite technologies.

Technologies and competences

We offer product development in RTM/RIM/filament winding technologies and process integration to existing legacy systems. The design of new materials and processes are core competences of the engineering division of Lynx, together with quality assurance, qualification & certification, and R&D. Special equipment for prototyping and mass production at national and international locations define Lynx as a broadband supplier.

Products and services in aviation

- equipment for prototyping and mass production
- product development
- research & development (inspect & test)
- RTM, SMC, BMC, CAD



Aviation standards and certifications

- EN/AS 9100
- EASA Part 21 POA

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines		■	■
Cabin interiors and furnishing		■	
Equipment and aircraft electronics			■
Systems	■	■	■
Air traffic infrastructure and air traffic control applications			
Ground test equipment		■	■

MAGNA STEYR

MAGNA STEYR Space Technology is a business unit of MS Fahrzeugtechnik AG, a subsidiary of MAGNA Int. Inc., one of the largest automotive suppliers with approximately 73,000 employees worldwide. Space Technology works at research, development and the production of components and subsystems made of metallic and composite fibre materials in the aerospace sector, including cryogenic system competence.

Technologies and competences

Development and manufacturing are directed at products like tank systems and pipelines for cryogenic media (like LH₂/LHe/Lox) made of rustproof special steels connected with qualified welding processes. They are also directed at effective manufacturing methods for composite fibre materials to meet the requirements of lightweight construction. Other products are pipelines and structural elements made of steel/light metal alloys as well as the cleaning of surfaces.

Products and services in aviation

- development and series production of engine components
- development and manufacture of jigs and tools
- development and manufacture of doors and flaps
- development and manufacture of LH₂ storage and distribution systems



Aviation standards and certifications

- EN/AS 9100
- various MTU certifications

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			■

MCE MASCHINEN- UND APPARATEBAU

MCE Maschinen- und Apparatebau is one of the leading manufacturers of components for steam, gas, and water turbines as well as tanks, reactors, heat exchangers, and apparatus for the chemical and petrochemical processes industry. Furthermore, the company supplies structural elements and components for the aerospace industry as well as plant construction.

Technologies and competences

The company's core competence is found in the combination of complex welding techniques and highly accurate mechanical processing as well as the assembly of large, heavy, and complex components made of metallic materials. The ultra-modern machinery paves the way for precision processing of workpieces weighing up to 300 tons. Apparatuses up to a weight of around 1,000 tons can be delivered for the process industry.

Products and services in aviation

- lifting hooks for the Airbus A400M
- steel rails for the Eurofighter
- airbrakes for the Eurofighter
- human centrifuges for pilot training



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

MCE STAHL- UND MASCHINENBAU

MCE SMB, with the Structural Steel Plants line of business is a specialist for the planning and construction of intelligent, turnkey plants for the complex logistics and assembly tasks in the aviation industry. Supported by best practice project management and high quality standards (EN9100:2003 & ISO9001:2008), the company has been able to realise reference projects for the A320, A330/340, A380 as well as the new A350XWB.

Technologies and competences

MCE SMB plans and realises plants together with the customer in which customer-specific requirements are resolved and optimised for production with the combination of mechanical, electro-technical and mechatronic components and then integrated into the steel construction. Here, the spectrum ranges from intelligent manual solutions up to fully automated plants.

Products and services in aviation

- jigs, tools and fixtures for structural assembly
- jigs, tools and fixtures for equipment assembly
- jigs, tools and fixtures for furnishing assembly



Aviation standards and certifications

- EN/AS 9100

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	■
Engines		■	■
Cabin interiors and furnishing		■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment		■	■

MICADO

MICADO works in the areas of master models made of PU, curing tools made of aluminium, steel, invar and nickel, RTM tools, assembly, test and measurement fixtures, special machines and vacuum clamping fixtures. The services range from project management, continue with innovative tool concepts, 2D/3D design with CATIA V5, FEM calculations, electrical engineering, manufacturing, manuals, and right up to CE certification to deliver turnkey solutions.

Technologies and competences

There is special know-how in the development and manufacturing of universal clamping fixtures for reworking composite components. Some of the universal vacuum clamping fixtures are currently used for reworking flap track fairings and are capable of adapting fully automatically to a great variety of components with up to 40 servo axes.

Products and services in aviation

- vacuum clamping fixtures
- curing tools
- RTM tools
- assembly and testing equipment



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics		■	■
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment		■	■

NOVOTECH

Novotech Elektronik works with the development and manufacture of customer-specific electronic assemblies and systems. Together with the company Aerospy, we made an autopilot system ready for series production and conducted development in the area of drones for use in disasters.

Technologies and competences

We offer electronics development in digital and analogue technologies as well as electronics manufacturing with all popular manufacturing technologies.

Products and services in aviation

– systems for collision avoidance



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines	■	■	■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

PANKL AEROSPACE

Pankl Aerospace with operations in the US and Europe is serving the global aerospace market as a Tier One Supplier for transmission components, engine shafts, refuelling tubes and landing gear parts for fixed and rotary wing aircraft. We are qualified and approved to manufacture flight safety parts and assemblies for various primes.

Technologies and competences

Pankl Aerospace is involved in specific aircraft design projects, co-operating with prime manufacturers for design, test and qualification as well as series production of flight safety drivetrain systems. Advanced equipment combined with a highly trained and dedicated staff enables Pankl Aerospace to meet any challenge in the aerospace industry.

Products and services in aviation

- drive shafts for the rear and main rotor of helicopters
- engine shafts and components
- transmissions



Aviation standards and certifications

- EN/AS 9100
- EASA Part 21 POA



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing		■	
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

PAYR ENGINEERING

We are specialists in basic and detailed engineering and stand by our customers as a strong partner in the development and implementation of new systems, tools, special apparatuses and much more. Our customers are mainly in the aviation industry but some are in the automotive industry, as well as plant and special purpose machine construction. There is intensive work in research and development in our company.

Technologies and competences

Through close collaboration with PAYR Engineering (planning) and PAYR Production (manufacturing), we are able to offer complete solutions from the concept to the product. We consider our major advantage to be the fact that we can offer competence and quality from a single source through years of building up our knowledge in engineering and through our collaboration with PAYR Production.

Products and services in aviation

- drilling
- connecting
- positioning
- handling



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■		
Engines			
Cabin interiors and furnishing	■		
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

PCCL

The Polymer Competence Center Leoben GmbH (PCCL) is a cooperative research company in the area of polymer engineering and science. With respect to polymer matrix composites, PCCL is focusing on advanced testing and characterisation procedures. R&D projects have been carried out with a variety of companies (FACC, Airbus, Isovolta, Diamond Aircraft, Carbotech, etc.).

Technologies and competences

The PCCL laboratories contain the infrastructure necessary for research projects, e.g. basic mechanical and thermo-mechanical test equipment, systems for impact and fatigue measurements and non-destructive testing procedures for the investigation of polymers and composite materials. Process technologies for the manufacture of fibre reinforced thermoplastic and thermoset composites are available.



Products and services in aviation

- mechanical behaviour (structure-property-relationships) of polymer matrix composites
- damage tolerance and fatigue behaviour of polymer matrix composites
- processing of fiber reinforced thermoplastic and thermoset composites
- process simulation



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			■
Cabin interiors and furnishing			■
Equipment and aircraft electronics			■
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			■

PICHLER & STROBL

Pichler & Strobl produces mechanical components and assemblies for the aerospace industry, for medical technologies, the semiconductor and racing industry.

Technologies and competences

Our competences are found in industrial engineering, milling, turning, drilling, grinding, part assembling in clean-room quality, digital measuring technology, ultrasonic cleaning, logistics, support und surface treatment of titanium, steel, stainless steel, aluminium, ceramic, plastic and various special materials.

Products and services in aviation

- mechanical components for landing gears
- mechanical components for spoilers
- mechanical components for aircraft interiors
- mechanical components for aircraft exteriors



Aviation standards and certifications

- EN/AS 9100

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics	■	■	■
Systems			
Air traffic infrastructure and air traffic control applications	■	■	■
Ground test equipment	■	■	■

PIDSO

Founded in 2006 by Dr. Christoph Kienmayer, PIDSO - Propagation Ideas & Solutions GmbH is on the leading edge of antenna design and technology. The company has developed a benchmark in ultra-lightweight, carbon-based antennas for the unmanned aerial vehicles market. PIDSO operates according to the highest quality standards and technologies.

Technologies and competences

PIDSO's antennas weigh on average 40% less than competitors' - in several cases up to 90% - and substantially reduce space and weight requirements on unmanned aerial vehicles. PIDSO's advanced carbon-fiber design makes its antennas heat resistant, so they can be mounted close to the vehicle's engine wherever necessary.

Products and services in aviation

- ultra-lightweight carbon antennas
- shape antennas (ADSB, tail, fin, ...)
- patch and horn antennas
- tracker antennas



Fields of Activity	Research	Development	Production
Aircraft (complete)	■	■	
Aircraft structures, materials and manufacturing technologies	■	■	
Engines		■	
Cabin interiors and furnishing	■	■	
Equipment and aircraft electronics			
Systems		■	
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

PRIME AEROSTRUCTURES

The core business of Prime Aerostructures is focussing on design and analysis for the aerospace industry, by reflecting the entire development process and product life cycle. Prime Aerostructures aims to become the leader in its industrial sector for the development and application of new and innovative materials, technologies and processes.

Technologies and competences

We offer engineering services such as: conceptual and detailed design of metallic and FRP aerospace components with respect to the manufacturing process; aircraft system design and linear/nonlinear structural FE analysis, load analysis and creation of load manuals; certification analysis and support according to FAR23/CS23 and FAR25/CS25 as well as definition and support of structural components and sub-components testing.

Products and services in aviation

- conceptual design of fibre reinforced aerospace components (2D/3D)
- design of aircraft and aircraft structures by using metallic and composite materials (2D/3D)
- structural analysis by using linear and non linear finite element analysis tools
- analysis of metallic and composite structures according to FAR/CS requirements

Aviation standards and certifications

- EN/AS 9100 (2011)
- EASA Part 21 DOA (2011)



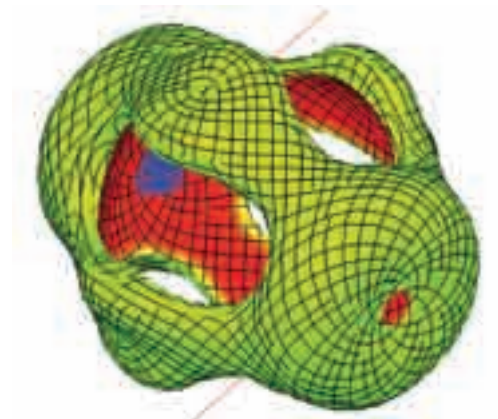
Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

RISC SOFTWARE

RISC Software was founded in 1993 as a spin-off from Johannes Kepler University Linz and is today an internationally operating IT company providing software development services for industrial engineering and scientific computing. The company focuses on the development of specialised, complex and highly reliable custom software solutions, which require efficient implementations of mathematical or geometric algorithms.

Technologies and competences

RISC Software combines engineering excellence from mathematics, computer science, and software engineering. This allows supporting projects that range from initial concept ideas to the development of mature systems, through deep domain knowledge in the areas of numerical mathematics, computational geometry, software design, and software development processes.



Products and services in aviation

- implementation of mathematical analysis and optimisation methods for lightweight structures
- development and software reengineering of CAE systems
- design and implementation of efficient, parallel numerical algorithms
- development of software systems for scientific visualisations

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics			
Systems	■	■	■
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

RO-RA

RO-RA specialises in the design, production and qualification of three product lines: 1) Draglinks (tie rods) 2) Antivibration Devices (shockmounts) and 3) Dampers, for interior and structural applications. Our aim is to achieve the most weight saving solution that absorbs the most noise and vibration. Therefore we focus our research on metal-, alloy-, titanium- and fibre-sandwich materials.

Technologies and competences

As a full service provider, we focus on solutions for complex requirements. Our designs use the latest FEM in construction, while our production is able to accomplish the whole metal machining, tube forming and plastic processing in-house. Furthermore, we provide special knowledge in testing and qualification test planning (QTP) and qualification test reporting (QTR).

Products and services in aviation

- tie rods and push rods for interior and structure applications
- shock absorber systems and innovative shockmounts for interior applications
- milled and turning parts from metals (titanium, aluminium, steel) mainly for engines
- injection moulded and silicon parts



Aviation standards and certifications

- EN/AS 9100
- EASA Part 21 POA

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics	■	■	■
Systems			
Air traffic infrastructure and air traffic control applications	■	■	■
Ground test equipment			

ROSENBAUER

The Rosenbauer Group is one of the world's leading manufacturers of fire-fighting vehicles. Rosenbauer is a "full-liner" that supplies the fire-fighting sector with a wide range of products and services. Rosenbauer products are in service in nearly every country in the world. We produce our extensive series of fire-fighting vehicles and aeri- als on three continents, to both European and US standards.

Technologies and competences

Rosenbauer serves airport fire services around the world with innovative and professionally designed quality PANTHER ARFF vehicles. Chassis, superstructure and fire fighting systems are fully integrated, designed and manufactured within the Rosenbauer group.

Products and services in aviation

- ARFF vehicles
- fire and safety equipment
- fire fighting technology



Aviation standards and certifications

- ICAO Doc. 9137-AN/898
- NFPA 414

Fields of Activity	Research	Development	Production
Aircraft (complete)	■	■	■
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines	■	■	■
Cabin interiors and furnishing			
Equipment and aircraft electronics	■	■	■
Systems	■	■	■
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

SCHIEBEL

The activities of the Schiebel group of companies, which is based in Vienna and was founded in 1951, focus on the development and production of ultramodern mine detectors and innovative unmanned high-tech helicopters. Schiebel has offered the new composite product group since 2010.

Technologies and competences

The unmanned helicopter CAMCOPTER® S-100, the revolutionary autonomous drone system, does not need a runway, can fly in narrow valleys, remain stationary in air space, and land safely in strong wind. The outstanding performance data, which corresponds to fixed-wing aircraft, is the result of a unique design and the high-tech materials that are used such as carbon fibre for the fuselage.

Products and services in aviation

- FADEC engine and engine control
- various composite parts for aircraft
- unmanned helicopter drone with a MTOW of 200 kg
- aircraft control for unmanned aircraft



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics	■	■	■
Systems			
Air traffic infrastructure and air traffic control applications	■	■	■
Ground test equipment	■	■	■

SCOTTY

SCOTTY has specialised in providing better airborne intelligence, surveillance, and reconnaissance capabilities through the use of our unique transmission systems. We provide a communications tool for customers such as border patrols, search and rescue teams, and the military to cut costs and increase the efficiency of their airborne capabilities.

Technologies and competences

SCOTTY is a manufacturer and an integrator of beyond line-of-sight video surveillance and communication equipment. Our products enable customers to have the best video surveillance and communication as well as full data exchange from remote and difficult environments - from the ground, moving vehicles, at sea, even from flying aircraft.

Products and services in aviation

- SCOTTY SCS
- SCOTTY Aero Mission Gear
- SCOTTY DA 42 Rack System
- SCOTTY Sky Eye 350 Platform



Fields of Activity	Research	Development	Production
Aircraft (complete)	■	■	■
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines	■	■	
Cabin interiors and furnishing	■	■	
Equipment and aircraft electronics	■	■	
Systems	■	■	
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

SG CONCEPTS

SG concepts was founded in 1999 as a small and flexible engineering company for design and development services. FE structure analysis have also been performed since 2003. Competences have been expanded since 2005 especially in the area of composites. The innovative strength of the company is shown by its involvement in research projects and its own patents. A prototype production facility was established for the company's own UAV development, which is ready for series production.

Technologies and competences

The company's interdisciplinary understanding of systems including electronics in particular has a positive effect on the project even as of the conceptual design phase. The core competences include the development of composites and piston engines from the concept up to the series production drawing. FE analysis with special tools for composites facilitate a design that is harmonised with the material properties in a closed process from a feasibility study right up to the prototypes.

Products and services in aviation

- UAV structure
- development, design and analysis of composite structures
- engine development (piston engines)
- tool and die construction (tooling)

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics	■	■	■
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

SIA ABRASIVES

The sia Group is a member of the Power Tools Division of Robert Bosch GmbH and one of the world's three leading suppliers of abrasives. We produce abrasive systems for all types of surface treatment and are represented in more than 80 countries. A non-slip coating was developed for gangway stairs for the aviation industry. Our abrasive systems enjoy widespread use in the production of aircraft.

Technologies and competences

Permanent, intensive research and development, years of know-how, Swiss precision and quality have made us into one of the world market leaders in the field of surface treatment. Ongoing investments in our ultramodern manufacturing plants ensure the excellent and consistent high quality, which we have defined as a goal for ourselves.

Products and services in aviation

- siaway non-slip coating
- sanding discs
- supporting pads
- special abrasives for the treatment of highly scratch resistant paints



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications		■	■
Ground test equipment			

SOLITEC

SOLITEC provides software services for EAD system integrators, starting with the analysis and then continuing with the design, implementation, test and maintenance. Due to the experience we have acquired during the development and maintenance of SDO, we can guarantee the provision of a highly qualified project team with outstanding technical skills and tremendous expertise in the area of AIS / AIM.

Technologies and competences

SOLITEC is a project-oriented IT service provider and has developed and implemented SDO (a subsystem of EAD). In the development process, mainly Oracle and Java technologies were used. Due to our broad technical and domain (AIS / AIM, AICM / AIXM) competence, we can deliver a high-quality software product that meets the customer's expectations exactly.

Products and services in aviation

– EAD (European AIS Database) / SDO (Static Data Operation)

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines	■	■	
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

SPRINGER UND PIERINGER

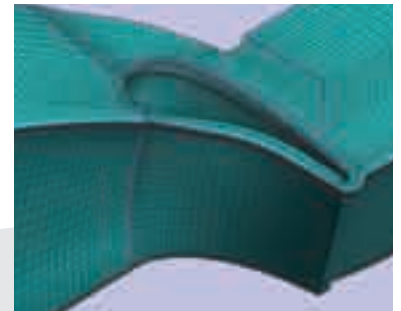
Springer and Pieringer is specialised in the creation of individual software for solving demanding and complex mathematical/technical problems.

Technologies and competences

We combine years of programming experience (C++) with high expertise in research and development in the CFD environment. Therefore, we can address specific problems in aerodynamics in great detail and offer possible solutions that commercial software packages cannot offer.

Products and services in aviation

– grid generator



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics		■	■
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

STAUDINGER

Staudinger offers all popular chip removal manufacturing methods for the field of mechanical discrete-part manufacturing in addition to sheet metal processing. Our employees are specialists with many years of experience who realise complete solutions with our modern machinery. Exactness in the execution as well as in the look and design gives rise to extraordinary results.

Technologies and competences

Thanks to our 3D CAD design department, we visualise, realise and document our customers' concepts in just a short amount of time. Years of experience simplify rapid implementation right up to the finished products. Complete solutions are possible with us thanks to laser systems, hi-tech edging presses, automated robot welding and our own powder coating.

Products and services in aviation

- Mechanik SCOTTY SCS (Computer System) incl. trays
- Mechanik SCI/ SSI (Cabin/ Satellite Interface) incl. trays
- Mechanik SCOTTY DA 42 MPP rack system
- Mechanik SCOTTY AERO Mission Gear

Aviation standards and certifications

- aircraft specific STC's with SCOTTY



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			■
Engines			■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

TCM INTERNATIONAL

TCM International is a service company in the manufacturing industry. One core area is tool management, which is the manufacturer-neutral supply of mechanical manufacturing with all tools. Here, the goal is to have the most economical solution with at least the same quality for the customer. Another complementary part of our portfolio is the Toolbase tool dispensing system including software development.

Technologies and competences

Through many years of practical experience and R&D in processing materials that are difficult to machine as well as in the development of manufacturing processes, we are able to offer our customers cost and product advantages in manufacturing with our multifaceted range of services.

Products and services in aviation

- automatic tool dispensing
- tool management
- tool grinding
- tool repair



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems	■	■	■
Air traffic infrastructure and air traffic control applications	■	■	■
Ground test equipment	■	■	■

TEST-FUCHS

TEST-FUCHS is one of the leaders in the design and manufacture of portable and fixed test equipment for hydraulic, pneumatic, electric/electronic and fuel components for all types of civil and military aircraft. Furthermore, we design, manufacture and test fuel and lubrication pumps, actuators and cryogenic valves. A large variety of GSE and standard products completes our product range.



Technologies and competences

TEST-FUCHS is distinguished by its high vertical integration and the associated, very short throughput times for the realisation of complete test bench projects. All competence, from the mechanical and electrical construction, parts manufacturing, electronics and software development, up to assembly and start-up are available in the company.



Products and services in aviation

- test benches
- aircraft component manufacturing
- aircraft component maintenance
- GSE / mobile hydraulics supply

Aviation standards and certifications

- EN/AS 9100
 - EASA Part 21 POA
 - EASA Part 145
 - FAA/FAR-145
- (under subcontractor Austrian Airlines)

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

TRIPAN LEICHTBAUTEILE

TRIPAN Leichtbauteile produces prefabricated parts in an aluminium honeycomb sandwich panel construction for vehicle superstructures, elevator construction, machine construction, architecture applications, cladding for indoors and outdoors as well as partitions for passenger cabins in aircraft.

Technologies and competences

We are specialised in the manufacture of light prefabricated parts in a sandwich panel construction. We have covering layers made of aluminium, GFRP, CFRP, steel, stainless steel, plastic, as well as cores made of aluminium honeycomb, rigid foam, and much more. Panel presses up to 4 x 1.2m are used for the processing as well as vacuum presses up to 6 x 2.7m and CNC milling machines (6 x 2m). PU, epoxy, prepregs or thermoplastic adhesives are used for gluing.

Products and services in aviation

– partitions



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics	■	■	■
Systems	■	■	■
Air traffic infrastructure and air traffic control applications			
Ground test equipment	■	■	■

TTTECH

TTTech offers products to improve the safety of networked computer systems in the transportation and automation industries. Solutions are based on TTP, TTEthernet and FlexRay. Benefits include easy to use products and best-in-class product cost performance. TTTech solutions are utilised in applications in the Airbus A380 and Boeing 787 Dreamliner.

Aviation standards and certifications

- EN/AS 9100
- DO 254, DO 178-B Level A

Technologies and competences

Time-triggered fieldbuses such as TTP, have the potential to solve system integration and engineering issues. TTP is a mature data communication system that is cost-effective and can handle safety-critical applications. Time-Triggered Ethernet – TTEthernet – allows the use of Ethernet in deterministic time-, mission- and safety-critical applications.



Products and services in aviation

- TTP-based solutions (Time-Triggered Protocol; up to 5 mbps; for safety-critical subsystems, ASIC, HW, SW)
- TTEthernet-based solutions (ARINC 664, Time-Triggered Ethernet, HW, SW)
- FlexRay-based solutions (automotive standard; will become more interesting also for the aerospace industry)
- network test equipment and design tools for integrated systems

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines	■	■	■
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

TYROLIT

TYROLIT is one of the world's largest producers of bonded abrasive tools. The company is based in Schwaz, Austria and has over 4,100 employees at 28 production locations. The TYROLIT products are supplied to customers worldwide through 29 sales companies and additional distributors in more than 65 countries. TYROLIT is market leader in grinding technology for turbine and compressor parts.

Technologies and competences

TYROLIT offers a full range of high performance grinding and dressing tools. Key product lines are STRATO, VIPER and high precision diamond roller dressers. TYROLIT is capable of providing comprehensive application and process know-how in order to efficiently grind turbine, compressor blades and nozzle guide vanes. TYROLIT maintains close partnerships with all strategic machine tool builders and relevant research institutes.

Products and services in aviation

- highly-porous ceramic-bonded grinding tools
- galvanically bonded super abrasive tools
- diamond profile roll dresser



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications		■	■
Ground test equipment			

UFIS AIRPORT SOLUTIONS

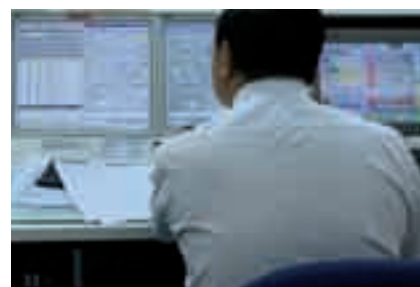
UFIS Airport Solutions (UFIS-AS) has been providing integrated solutions for single and multi-terminal and multi-airport operations for the global airport community for more than two decades. UFIS-AS is a group of 100% subsidiaries under the holding company UFIS Airport Solutions AS. The UFIS-AS companies, scattered around the world, form the structure to provide the best possible solutions and services to customers worldwide.

Technologies and competences

UFIS-AS is an industry leader in enabling its customers to carry out collaborative airport management. UFIS-AS' products and solutions are highly scalable and to be used in a wide range of airport projects - from small improvement projects, through major extensions right up to major projects as part of new airport construction, including consulting and programme management services.

Products and services in aviation

- AODB (Airport Operational Database)
- FIDS (Flight Information Display Systems)
- FIPS (Flight Information Processing System)
- RMS (Resource Management Systems)



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies		■	■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

WEDCO

WEDCO produces SC cutting tools for drilling, milling, reaming and counter bore. At our modern production site we manufacture high precision standard and special tools. These tools are used for aluminium, titanium, steel and nickel alloy, as well as FRC in structural elements, engine components and chassis. We also regrind those cutting tools.

Technologies and competences

We offer solutions which meet high demands with regard to quality, precision and performance. Therefore we use latest carbide grades and coatings. Special tools are constructed, manufactured and delivered according to drawings within a short period of time. Furthermore, we are constantly working on the development of geometry and cutting systems.

Products and services in aviation

- SC milling tools
- SC / PKD / CBN indexable inserts
- SC regrinding custom tools



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

WESTCAM FERTIGUNGSTECHNIK

WESTCAM Fertigungstechnik is a professional engineering and manufacturing partner for jigs & tools in the aerospace and automotive industry with an international customer base. In recent years, we built up excellent expertise as a tooling supplier for CFRP production. Moreover, WESTCAM Fertigungstechnik has had a strong focus on R&D activities since the beginning of its business activities.

Technologies and competences

WESTCAM Fertigungstechnik offers the whole tooling range, e.g. curing tools, RTM tools, preforming tools, assembly jigs etc. Moreover, our professional project management is able to transact large tooling projects. In addition to that, we focus on the development of innovative tooling technologies within national or European research projects and R&D partnerships with key customers.

Products and services in aviation

- lay-up and curing tools for autoclave and infusion processes
- RTM tools
- preform tools
- assembly and handling jigs



Aviation standards and certifications

- EN/AS 9100



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

WFL

WFL concentrates exclusively on the manufacture of multifunctional turning-boring-milling centres. Today, the brand name MILLTURN stands for the central means of manufacturing in many high-tech companies for the manufacture of complex components with the greatest precision. The modular construction of MILLTURN centres as well as individual custom solutions guarantee perfect adaptation to the respective manufacturing task.

Technologies and competences

The highest precision and complex geometries characterise typical applications in the aerospace industry. Difficult materials, large machining volumes as well as the frequent requirement for deep machining of inside diameters place the highest possible demands on processing machines.

Products and services in aviation

- CNC turning-boring-milling centres (metals processing):
different sizes



Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies			
Engines			
Cabin interiors and furnishing	■	■	■
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

WOLLSDORF LEDER

Wollsdorf Leder has supplied the highest quality of leather since 1932 for the automobile, furniture, aircraft and boat industries. In the area of aircraft leather, we offer our customers leather for seats, headrests and armrests, etc. As a partner of numerous large airlines, Wollsdorf ensures that passengers around the world can enjoy the unique comfort, the genuineness, and comfort of Wollsdorf leather, even above the clouds.



Technologies and competences

Besides high-quality leather for cars, furniture, aircraft, railed vehicles and boats, Wollsdorf Leder also offers special coverings and die-cut parts (also perforated, laminated or embossed).



Products and services in aviation

- manufacture of leather (whole hides as well as die-cut parts)
- fields of application: seats, cover parts, armrests, headrests, etc.

Aviation standards and certifications

- EN/AS 9100

Fields of Activity	Research	Development	Production
Aircraft (complete)			
Aircraft structures, materials and manufacturing technologies	■	■	■
Engines			
Cabin interiors and furnishing			
Equipment and aircraft electronics			
Systems			
Air traffic infrastructure and air traffic control applications			
Ground test equipment			

ZOERKLER GEARS

Zoerkler Gears is an international high tech enterprise. Our "spirit of precision" allows us to design, develop and produce transmission systems and various high quality machine parts quickly and flexibly. Zoerkler develops and produces powertrain technology, gearboxes for military vehicles, special applications, aeroplanes, main and tail rotor transmissions for helicopters.

Technologies and competences

Consulting: advice and support in new projects, from job planning, development of prototypes up to series production

Engineering: research and development, great technical know-how in various construction projects

Manufacturing: state of the art high-tech production facilities, from prototype to series production, expertise in documentation and high standard quality system

Products and services in aviation

- gearwheel, bevel gear wheels
- gearbox
- landing gear
- rotor parts, rotor mast



Aviation standards and certifications

- EN/AS 9100
- EASA Part 21 POA
- EASA Part 145

EXPERTISE OF THE AUSTRIAN AERONAUTICS INDUSTRY

ORGANISATIONS FROM A-H

EXPERTISE OF THE AUSTRIAN AERONAUTICS INDUSTRY												
ORGANISATIONS FROM A-H												
		Competences										
		4a engineering	ABK -Akustikbau	Aerospace & Advanced Composites	AeroSpy	AHC Oberflächentechnik	AICO	Akkutron	AMAG rolling	AMES	AMST	ANTEMO
Materials technology	metals		■	■					■	■	■	■
	composites	■		■						■	■	■
	plastics and leather*	■	■	■								■
	adaptive materials											■
Plant and mechanical engineering, tool making	stamping tools and machines											■
	drawing tools and machines											■
	spinning tools and machines											
	foundry tools and machines										■	
	plastic injection moulding tools and machines	■										■
	fixture construction										■	■
	mould making										■	■
	gauge construction											■
	plant engineering & manufacturing automation										■	■
Manufacturing technology	master forming								■			
	forming	■							■			
	machining									■	■	■
	joining									■		■
	coating and surface treatment		■			■			■			■
	changing material properties					■			■			■
Composite technology	compression moulding (out of autoclave)			■								
	resin transfer moulding (RTM, RIM, VAP, LRI, etc.)			■								■
	autoclave processes			■								
	fibre lapping											
	fibre braiding											
Integration	assembling		■							■	■	■
	system integration, aircraft		■				■			■		
	inspection / testing		■					■		■	■	
	documentation, certification		■				■			■		
Propulsion technology			■									
Electrical technology	energy technology							■				
	propulsion technology		■								■	
	electronics / micro electronics		■	■	■		■	■			■	
	information and communications technology						■				■	
Software	databases		■				■				■	
	embedded software				■		■				■	
	Man Machine Interface (MMI)				■						■	
	operating systems and middleware						■				■	
	other product related software										■	
	real time software				■						■	
	security incl. encryption											
	simulation software	■	■								■	
	software tools	■					■				■	
	artificial intelligence						■					
Engineering and design	assembly, test & operations			■						■	■	■
	design, analysis & simulation	■		■						■	■	■
	electronics & hardware											
	systems engineering and physics			■							■	
	support and other functions						■			■	■	■

EXPERTISE OF THE AUSTRIAN AERONAUTICS INDUSTRY

ORGANISATIONS FROM I-Z

EXPERTISE OF THE AUSTRIAN AERONAUTICS INDUSTRY		ORGANISATIONS FROM I-Z											
		Competences											
		IB STEINER	Ingenieurbüro für Luftfahrt	INTALES	ISOVOLTA	Jetalliance Group	LIS Reinisch	LIST components & furniture	LOTUS Ingenieurleistungen	Luftfahrzeug Wartungsbetrieb Krems	Luxner Engineering	LYNX	
Materials technology	metals									■	■		
	composites				■			■		■	■	■	
	plastics and leather*	■										■	
	adaptive materials											■	
Plant and mechanical engineering, tool making	stamping tools and machines												
	drawing tools and machines												
	spinning tools and machines												
	foundry tools and machines												
	plastic injection moulding tools and machines	■										■	
	fixture construction											■	
	mould making											■	
	gauge construction											■	
	plant engineering & manufacturing automation						■					■	
Manufacturing technology	master forming											■	
	forming												
	machining				■							■	
	joining												
	coating and surface treatment							■					
	changing material properties												
Composite technology	compression moulding (out of autoclave)							■				■	
	resin transfer moulding (RTM, RIM, VAP, LRI, etc.)											■	
	autoclave processes												
	fibre lapping											■	
	fibre braiding												
Integration	assembling		■					■				■	
	system integration, aircraft		■					■					
	inspection / testing		■					■					
	documentation, certification		■				■	■				■	
Propulsion technology													
Electrical technology	energy technology												
	propulsion technology												
	electronics / micro electronics		■					■					
	information and communications technology		■										
Software	databases			■			■						
	embedded software												
	Man Machine Interface (MMI)												
	operating systems and middleware						■						
	other product related software						■						
	real time software												
	security incl. encryption												
	simulation software			■								■	
	software tools			■			■					■	
	artificial intelligence						■						
Engineering and design	assembly, test & operations	■	■	■				■					
	design, analysis & simulation	■	■	■	■			■	■		■	■	
	electronics & hardware		■					■					
	systems engineering and physics	■	■	■			■	■			■		
	support and other functions	■	■	■			■	■			■		

105

AUSTRIAN RESEARCH INSTITUTIONS COVERING AERONAUTICS

GRAZ UNIVERSITY OF TECHNOLOGY

Institute	Aeronautics related research emphases
Department of Broadband Communication	Radar technology; microwave propagation; environmental radar system; weather radar; weather information systems and forecasting; hail detection; onboard weather display application; evaluation and simulation of ATC systems (ASR, SSR, Multilateration, ADS-B, ILS, VOR); radio and radar interference studies
Institute for Engineering and Business Informatics	Complex systems engineering; 3D sound simulation system; real-time system simulation; jet engine simulation; system identification; human-computer interfaces
Institute for Materials Science and Welding	Microstructure modelling; materials development (nickel-based superalloys; titanium alloys; TiAl-alloys; Al alloys); FEM process simulation; advanced joining processes
Institute for Thermal Turbomachinery and Machine Dynamics	Aero engines - overall system; turbine aerodynamics (numeric and experiment); new aero engine concepts; aero engine acoustics; interaction between high pressure turbine and low pressure turbine (mid turbine frame); noise propagation within the engine; analytical and experimental investigation of combustion chambers; emission analyses
Institute of Communication Networks and Satellite Communications	Broadband radio systems (air-to-ground, satellite); satellite communications; novel receiver architectures for aeronautical communications and satellite navigation; exploitation of new radio frequency bands; real-time communication systems for aircraft; communications protocols; conduct of flight measurement campaigns
Institute of Lightweight Design	Fatigue calculation and testing of high performance parts; development of new fatigue calculation methods; formulation of new material properties in the finite element calculation (carbonfiber materials with nanoparticles); fatigue tests of welding seams; calculation and tests of the dynamic and fatigue characteristics of part from any kind of machines (e.g. satellites, airplanes, railway vehicles)
Institute of Mechanics	Flight simulation research platform; avionics; flight guidance; algorithms for evasive manoeuvres in conflict situations; engine simulation; psychological studies for the situational perception and reaction of pilots; cockpit situation; complex air traffic scenarios; aviation psychology; collision avoidance scenarios

VIENNA UNIVERSITY OF TECHNOLOGY

Institute	Aeronautics related research emphases
Automation and Control Institute	Modelling of complex, dynamic systems; nonlinear and optimisation-based multi-variable controls, state estimation and online diagnostics methods; fault-tolerant system design; optimum sensor and gate placement; distributed parametric controller design; swarm regulation and navigation, electric/hydraulic/pneumatic drives; automation solutions
Institute of Chemical Technologies and Analytics	Materials development and advanced development based on powder technologies with a focus on Fe, Al, steel, hard metal; materials with special characteristics (e.g. expansion behaviour); materials for thermal management; high-tenacity materials; coating technology; CVD; chemical change on the surface; high-temperature analyses
Institute for Energy Systems and Thermodynamics	Turbomachinery leaf seals
Institute for Engineering Design and Logistics Engineering	Transmissions for aviation; all electric aircraft; more electric aircraft; helicopters; condition based maintenance; health monitoring; simulation techniques; medical engineering; drive shafts; lubrication; tribology; gears and transmissions
Institute for Powertrains and Automotive Technology	Drives for motor gliders, gyrocopters, drones, light and ultra-light aircraft with reciprocating and/or rotary piston engines; use of alternative fuels in engines; combustion process development
Institute of Lightweight Design and Structural Biomechanics	Modeling and simulation of structures and materials; nonlinear stiffness and strength predictions of high performance materials like carbon and glass fiber composites, metal matrix composites, and cellular materials; computational material characterisation, development of constitutive laws, and structural analyses
Institute of Management Science / Division Industrial and Systems Engineering Fraunhofer Austria Research GmbH	Supply chain design; transport and production logistics; production networks; factory planning; production design; lean management / value stream design; planning and control processes; maintenance; order processing processes; internal service processes; lean administration; process-oriented organisational design; simulation-based process analyses
Institute of Material Science and Technology	Characterisation of engineering materials, particularly light metals, steels, polymers, polymer and metal matrix composites; analyses of forming processes of metals and polymers
Institute of Mechanics and Mechatronics	Engineering mechanics; mechanical modelling; vehicle dynamics; vibrations; damping of vibrations and structures; suspension design; tire modelling; torsional and bending vibrations; simulation and analysis of vehicles; measurement techniques; magnetic bearings
Institute of Sensor and Actuator Systems	Micromachined devices and components for radar sensors; high temperature/high pressure MEMS sensors up to 700°C operation temperature; energy harvesters and low power wireless sensor nodes for SHM; micromachined actuators for flow control on aircraft wings; resonantly-driven devices for oil monitoring purposes

Aeronautics related test benches, laboratories, etc.	Contact	Website
RF-laboratory; anechoic chamber for RF and antenna measurements; hard- and software equipment for RF simulations	Helmut Schreiber	radar.tugraz.at
Platform flight simulation (adapted DC-10 flight simulator cockpit)	Siegfried Vössner	www.mbi.tugraz.at
Gleeble 3800; quenching and deformation dilatometer; friction stir welding facility; CMT welding; metallography; creep laboratory; LCF-tests; high temperature tensile tests; corrosion laboratory; electron beam welding facility (planned)	Christof Sommitsch	www.iws.tugraz.at
(1) Transonic turbine test facility, 5 bar, up to 20 kg/s mass flow (2-shafts for high and low pressure turbine) (2) Subsonic test facility, combustion chamber test facility, 8 bar, 700 K, 1.5 kg/s (in the future: 20 bar, 700 K; 3 kg/s) (3) Acoustic laboratory (4) Laboratory for optical measurement (3D-PIV; LDA; Raman; LV) (5) Laboratory for machine dynamics	Franz Heitmeir Emil Göttlich	www.ttm.tugraz.at
Clean Room for integration and testing of aerospace-qualified hardware; Vibration Test Facility (up to 60 g); Vacuum Chamber; Thermal Test Chamber; fixed and mobile ground stations for air-to-ground and aeronautical satellite communications systems; radio channel simulator	Otto Koudelka	www.iks.tugraz.at
Laboratory for fatigue testing: 450kW multichannel testrig; 25kN electrodynamic shaker; testbench for linear and bending tests; realisation of standard and customer specific tests	Christian Moser	www.leichtbau.tugraz.at
Research platform flight simulation; one fixed-base simulator for a wide-body aircraft; avionics: replicas of Collins ProLine 21 and Universal UNS-1 FMS, Honeywell EGPWS; three channel visual system and 3D-sound system; one fixed-base simulator for a light aircraft; glass cockpit with AP / FD mode controller	Reinhard Braunstingl	www.flightsimulation.tugraz.at

Aeronautics related test benches, laboratories, etc.	Contact	Website
Hardware and software equipment for modelling and simulation of complex dynamic systems; rapid prototyping systems for the real-time implementation of optimisation and control algorithms	Andreas Kugi	www.acin.tuwien.ac.at
Lab for thermal analyses: high-temperature up to 1650°C (deoxidising, neutral, oxidising); dilatometry, STA, can be coupled with QMS; lab for ultrasound fatigue (number of stress cycles up to 10exp10), analyses of damage mechanisms, crack growth; lab for material analyses and phase analyses	Christian Gierl	www.cta.tuwien.ac.at
Linear cascade wind tunnel; labyrinth seal test stand; five-hole pressure probes; hot-wire anemometry	Reinhard Willinger	www.iet.tuwien.ac.at
Laboratory for transmissions for aviation acc.to CS-EASA; soundproof test cells; FZG-test stand; full sound measurement equipment; balancing machine max. 200kg; test stand for helicopter drive shafts; in realisation: 300kW-universal test stand for transmissions; software FVA-workbench; KISSSOFT; MDesign and others	Michael Weigand	www.ikl.tuwien.ac.at/mel
15 engine test benches with up to 400 kW braking power; 1 flow test bench for injection and suction systems; consumption measurement systems; exhaust measurement cabinets; indexing systems for the measurement of pressure patterns; link to TU high-speed computer for simulations in the area of engine process calculations and flow simulations	Bernhard Geringer	www.ifa.tuwien.ac.at
Hard and software equipment for simulation of materials, structures, and components; commercial software packages; special purpose in-house developments	Heinz Pettermann	www.ilsb.tuwien.ac.at
Light laboratory for glare measurement	Walter Mayrhofer	www.imw.tuwien.ac.at www.fraunhofer.at/pl
Materialography including 3D-tomography; experimental simulation of deformation (Gleeble); creep test rigs	Guillermo Requena, H. Peter Degischer	www.tuwien.ac.at/wwwt
Vibrations laboratory; various vibration measuring systems	Horst Ecker	www.mec.tuwien.ac.at
Infrastructure and equipment for the realisation of MEMS devices including packaging on wafer level; design of miniaturised devices with finite element method; electrical characterisation up to high temperatures; set-up for the measurement of the thermal conductivity of substrate materials and thin films	Ulrich Schmid	www.isas.tuwien.ac.at

UNIVERSITY OF LEOBEN

Institute	Aeronautics related research emphases
Chair for Metal Forming, Department Product Engineering	Modelling and simulation of metal forming processes; characterisation of formability of structural materials; optimisation of manufacturing processes; thermomechanical treatment; roll bonding of dissimilar metals; forging of nickel base alloys and high temperature materials; systematic selection of proper manufacturing processes
Chair of Processing of Composites	Special research topics are in-situ consolidation in continuously running processes; impregnation of dry fiber structures; permeability; process simulation and automation
Department of Physical Metallurgy and Materials Testing, Faculty: Materials Science	Light-weight high-temperature materials based on titanium aluminides; alloy development; process development and heat-treatments; microstructural and mechanical characterisation
Institute for Materials Science and Testing in Plastics	Behaviour of plastic and composite materials under complex loading conditions, whereby the focus is on further development of test methods, determination of material laws and the ability to transfer them to component behaviour, and the derivation of structure property relationships

UNIVERSITY OF GRAZ

Institute	Aeronautics related research emphases
Department of Statistics and Operations Research	Optimisation of all operations involving airlines and ground handling, such as runway scheduling, departure sequencing, optimal utilisation in business aviation, airline fleet assignment and crew scheduling

UNIVERSITY OF KLAGENFURT

Institute	Aeronautics related research emphases
Institute of Networked and Embedded Systems	Research in the area of autonomous, networked aircraft; cellular radio networks; radar technology; stitching of aerial photographs; ad hoc networks, positioning algorithms

UNIVERSITY OF LINZ

Institute	Aeronautics related research emphases
Institute of Constructional Lightweight Design	Analyses of static strength; fatigue and damage tolerance of structures; numerical methods for structural design and structural analysis; specific properties of lightweight materials and joining technologies; integration of electronic subsystems; development of validated design concepts for industrial application
Institute of Fluid Mechanics and Heat Transfer	Numerical simulation of multicomponent airfoils; reduction of induced drag by wing tip devices; 3D numerical simulation of small aircrafts or aircraft components with finite volume- and vortex panel codes

UNIVERSITY OF SALZBURG

Institute	Aeronautics related research emphases
Centre for Geoinformatics	Geo-data processing; mobile real-time localisation, optimisation of ATM workflow with geo-processing and standardised GIS infrastructures; high-resolution 3D, 4D modelling of surfaces and building structures; GIS training or location-based services (LBS); real-time geo-analysis processes for ATM; OGC standards for aviation; GALILEO and GMES for aviation
Computer Sciences Institute	Development and performance evaluation of digital aeronautical communication systems (AeroMACS, L-DACS, SatCom) and evaluation of SESAR/ATM concepts (4D business trajectories, airborne-separation, collaborative decision making (CDM), SWIM); detailed simulation of today's / future world-wide gate-to-gate air traffic in fast time and real time, taking into account aircraft type performances and departure (SID), en-route, Arrival (STAR), approach routes

UNIVERSITY OF VIENNA

Institute	Aeronautics related research emphases
Department of Meteorology and Geophysics	Software for meteorological support in aeronautics, especially for small aircraft, gliders, hang gliders and balloonists; meteorological instrumentation (in situ as well as remote) to sense the atmospheric conditions for aeronautics; climatological data base for aeronautical applications

Aeronautics related test benches, laboratories, etc.	Contact	Website
Thermomechanical testing unit for simulation of hot forming technologies; Gleeble simulator; sheet metal test unit; strain field measurement device; mechanical testing machines; metallography lab	Bruno Buchmayr	www.metalforming.at
Processing techniques for manufacturing of polymer composites with oriented and continuously reinforcing fibres, i.e. tape placement, filament winding, forming, pultrusion, and liquid composite moulding techniques; furthermore special test rigs for characterisation of impregnation and consolidation mechanisms	Ralf Schledjewski	www.kunststofftechnik.at
Simulation tools based on ThermoCalc; metallography; differential scanning calorimetry; dilatometry; scanning electron microscope equipped with EDS and EBSD; atom probe tomography; X-ray diffractometry; access to neutrons and synchrotron radiation for diffraction and scattering experiments; facilities for hardness; tensile and fatigue testing	Helmut Clemens	www.unileoben.ac.at/content/view/1913/1983
Microscopy and structure analyses; physical material properties; mechanical testing under complex (uniaxial/multiaxial) loading conditions (up to 250 kN, 25 m/s, 50 Hz); material models and material laws for component behaviour	Gerald Pinter	www.iwpk.at

Aeronautics related test benches, laboratories, etc.	Contact	Website
	Ulrich Pferschys Hans Kellerer	www.uni-graz.at/soowww/

Aeronautics related test benches, laboratories, etc.	Contact	Website
	Bernhard Rinner	http://nes.uni-klu.ac.at

Aeronautics related test benches, laboratories, etc.	Contact	Website
Computer-aided optimisation and design tools for lightweight structures	Martin Schagerl	www.ikl.jku.at
Computing cluster; software (finite volume- and vortex panel code); measurement equipment (particle image velocimetry, constant temperature anemometer, acoustic Doppler velocimeter, highspeed-camera)	Philipp Gittler	http://fluid.jku.at

Aeronautics related test benches, laboratories, etc.	Contact	Website
Real-time geo-infrastructure and 'test bed' at the Salzburg airport	Cornelius Roth	www.uni-salzburg.at/zgis
NAVSIM/ USBGSim worldwide air traffic simulator; link with general aviation and business aviation flight simulators	Carl-Herbert Rokitansky	http://adc.cosy.sbg.ac.at

Aeronautics related test benches, laboratories, etc.	Contact	Website
Meteorological instruments of in situ sensors (e.g. automatic weather stations, radiosonde station, tether sonde, mobile devices) and remote sensing devices (e.g. rain radar, szintillometer, infrared thermometry); climate archive for aeronautical purposes, calibration equipment for meteorological sensors	Reinhold Steinacker	www.univie.ac.at/IMG-Wien/

FH JOANNEUM UNIVERSITY OF APPLIED SCIENCES

Institute	Aeronautics related research emphases
FH JOANNEUM GesmbH Bachelor and Master Degree Programmes Luftfahrt/Aviation	Working Groups representing the R&D focuses: (1) Avionics and ATC technology: CNS/ATM; integrated modular avionics; synthetic vision; flight safety/flight data analyses (2) Piloting: certified pilot training from ab-initio to ATPL/MCC (3) Flight simulation and control: modelling and simulation of flight dynamics/flight control systems; development and testing of flight control algorithms (4) Aerodynamics and thermodynamics: aerodynamic design process; validation of simulation methods with wind tunnel testing (5) Fluid mechanics and heat transfer: icing phenomena and de-icing systems, e.g. in the air-conditioning system and on the exterior structure (6) Business administration (7) Human factors and aviation psychology: flight safety/flight data analyses; effects of novel technologies in ATC on human beings (9) Aircraft design: structural components; modelling of material laws of composites

UPPER AUSTRIAN UNIVERSITY OF APPLIED SCIENCES

Institute	Aeronautics related research emphases
Upper Austrian University of Applied Sciences	Non-destructive testing and 3D-material characterisation including X-ray computed tomography, active thermography and shearography

AUSTRIAN INSTITUTE OF TECHNOLOGY

Institute	Aeronautics related research emphases
AIT Mobility Department, Light Metals Technologies Ranshofen	Material development (e.g. heat treatment optimisation to increase fracture toughness of aluminium); process optimisation (e.g. titanium machining by means of FEM modelling); material-based design (e.g. lightweight construction structures in the material mix; use of magnesium in aircraft seats)
Rail Tec Arsenal	Cold starting tests on aircraft engines; air conditioning of cockpit and cabin; testing of components under extreme temperatures and solar radiation; icing tests and flow analyses of aircraft engines and wings

JOANNEUM RESEARCH

Institute	Aeronautics related research emphases
DIGITAL - Institute for information- and communication technology	Image processing to support meteorology; non-contact measuring techniques for material and surface testing

LAKESIDE LABS

Institute	Aeronautics related research emphases
Lakeside Labs GmbH	Research in the area of autonomous, networked aircraft; stitching of aerial photographs; cellular radio networks; ad hoc networks

Aeronautics related test benches, laboratories, etc.	Contact	Website
(1) Programmable RF vector-signal generator; spectrum analyser; vectorised network analyser; RF oscilloscope; mixed signal oscilloscope; monitoring receiver; power meter/sensor; electronic design automation software; vector-signal analysis software (2) Training simulator JFNPT II-MCC; navigation laboratory (3) Research simulator JFS²; simulator laboratory; JXP-ES (UAS with ArduPilot equipment) (4) Wind tunnel (5) High Performance computation laboratory; BLTD-meter; fan test bed; icing wind tunnel (7) Simulators JFNPT II-MCC and JFS² (8) Curing oven; membran press; heating press; resin-infiltration plant; tension and compression testing machine; dynamic mechanical analyses (9) JXP: UAS designed as a motorglider for near field surveillance and R&D activities in respect to photovoltaic; wing span 7m and MTOW ← 25kg; propeller testbed	Bruno Wiesler	www.fh-joanneum.at/lav

Aeronautics related test benches, laboratories, etc.	Contact	Website
X-ray computer tomography systems (RayScan 250E and phoenix x-ray nanotom 180) for tomography of objects with a size of 2 m to 0.2 mm with a resolution of 0.3 mm to 0.5 µm; CT software: VG Studio Max 2.0, MAVI 1.2 and target/actual comparison software; Other equipment: grinding preparation; SEM with X-ray micro-probe; test system for active thermography and shearography	Johann Kastner	www.fh-ooe.at www.3dct.at

Aeronautics related test benches, laboratories, etc.	Contact	Website
Certified testing systems and measuring systems for material development and testing; analytic microstructure modelling; near-industrial systems for process optimisation [e.g. casting, forming, joining techniques]; process simulation methods; CAD, CAM, FEM software for material-based design of components/assemblies (AutoCAD, ANSYS, DEFORM, ProCAST)	Rudolf Gradingner	www.lkr.at www.ait.ac.at
Large climatic wind tunnel (length 100 m x width 5 m x height 6 m), max. wind speed 300 kph; small climatic wind tunnel (length 33,8 m x width 5 m x height 6 m), max. wind speed 120 kph; any weather condition can be produced (temperatures from to -45°C up to +60°C, humidity up to 98%, intense solar radiation, snow, rain and ice)	Gabriel Haller	www.rta.eu

Aeronautics related test benches, laboratories, etc.	Contact	Website
Flexible measuring system for 3D surface geometries; various camera systems at positions that are relevant to air traffic	Heinz Mayer	www.joanneum.at/digital/mva

Aeronautics related test benches, laboratories, etc.	Contact	Website
	Tanja Arzberger	www.lakeside-labs.com

Index

4a engineering	15
ABK-Akustikbau	16
Aerospace & Advanced Composites	17
AeroSpy	18
AHC Oberflächentechnik	19
AICO	20
Akkutron	21
AMAG rolling	22
AMES	23
AMST	24
ANTEMO	25
Anton Paar ShapeTec	26
APUS	27
Austrian Technik	28
Austro Control	29
AviBit	30
AXIS	31
Böhler Bleche	32
Böhler Edelstahl	33
Böhler Profil	34
Böhler Schmiedetechnik	35
BRP-Powertrain	36
BULMOR airground	37
CADFEM	38
CAE Simulation & Solutions	39
Carbo Tech	40
CEST	41
CNC Solic	42
Diamond Aircraft Industries	43
FACC	44
Fill	45
FREQUENTIS	46
Fuchshofer	47
Gate V	48
Geislinger	49
GENA Systems	50
Haumberger	51
HB-Flugtechnik	52
Heuberger	53
HiCo	54
HOFMANN Wärmetechnik	55
HTP Aircraft	56
HUBER+SUHNER	57
HYBRID COMPOSITE PRODUCTS	58

IB STEINER	59
Ingenieurbüro für Luftfahrt	60
INTALES	61
ISOVOLTA	62
Jetalliance Group	63
LIS Reinisch	64
LIST components & furniture	65
LOTUS Ingenieurleistungen	66
Luftfahrzeug Wartungsbetrieb Krems	67
Luxner Engineering	68
LYNX	69
Magna Steyr	70
MCE Maschinen- und Apparatebau	71
MCE Stahl- und Maschinenbau	72
MICADO	73
Novotech	74
Pankl Aerospace	75
PAYR Engineering	76
PCCL	77
Pichler & Strobl	78
PIDSO	79
Prime Aerostructures	80
RISC Software	81
RO-RA	82
Rosenbauer	83
Schiebel	84
SCOTTY	85
SG concepts	86
sia Abrasives	87
SOLITEC	88
Springer und Pieringer	89
Staudinger	90
TCM International	91
TEST-FUCHS	92
TRIPAN Leichtbauteile	93
TTTech	94
TYROLIT	95
UFIS Airport Solutions	96
Wedco	97
WESTCAM Fertigungstechnik	98
WFL	99
Wollsdorf Leder	100
Zoerkler Gears	101



IMPRINT

Owner, publisher and media proprietor:
Federal Ministry for Transport, Innovation and Technology (BMVIT)
Department of Mobility and Transport Technologies
A-1010 Vienna, Renngasse 5

Concept and data collection:
BRIMATECH Services GmbH
A-1030 Vienna, Lothringerstrasse 14/3

Images:
Copyright © 2011
respective companies

Design:
oposich & engel grafik
A-1140 Vienna, Cumberlandstrasse 4a



*Federal Ministry
for Transport,
Innovation and Technology*

