

Overview of the Austrian RTDI- Competences in Aeronautics

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On behalf of the Unit of Mobility and Transport Technologies within the
Austrian Federal Ministry for Transport, Innovation and Technology

- **Area:**
 - 83,872 km² (115th)
- **Population:**
 - 8,356,707 (92nd)
- **GDP:**
 - Total: \$330 billion (34th)
- **Sectors' employees**
 - Agriculture: 1 %
 - Industry: 27 %
 - Services: 68 %



Figures of the Members of the Austrian Aeronautics Industries Group



Sales of the Austrian Aeronautics/Supply/Industry (in M€)



* Manufacturers' sales 2008 (Total sales 2008 incl. aircraft maintenance: 945 M€)

Employment of the Austrian Aeronautics/Supply/Industry



* Manufacturers' employment 2008 (Total employment 2008 incl. aircraft maintenance: 5.555)

- **2006**
 - Initiated by the Austrian Federal Ministry for Transport, Innovation and Technology
- **2007**
 - Workshop with privat and public stakeholders
- **2008**
 - Presentation
- **2008 -**
 - Implementation



3rd objective

co-ordination and development

aviation sector

1st objective

development of technological
competencies

aeronautics/supply/industry

2nd objective

updating and exploitation of new
applications

air transport system

4 Packages of Measures

VISION 2020

Organisational Measures

Supporting Measures

**Enhancement Funding
and Financing**

**Human Resources and
Training**

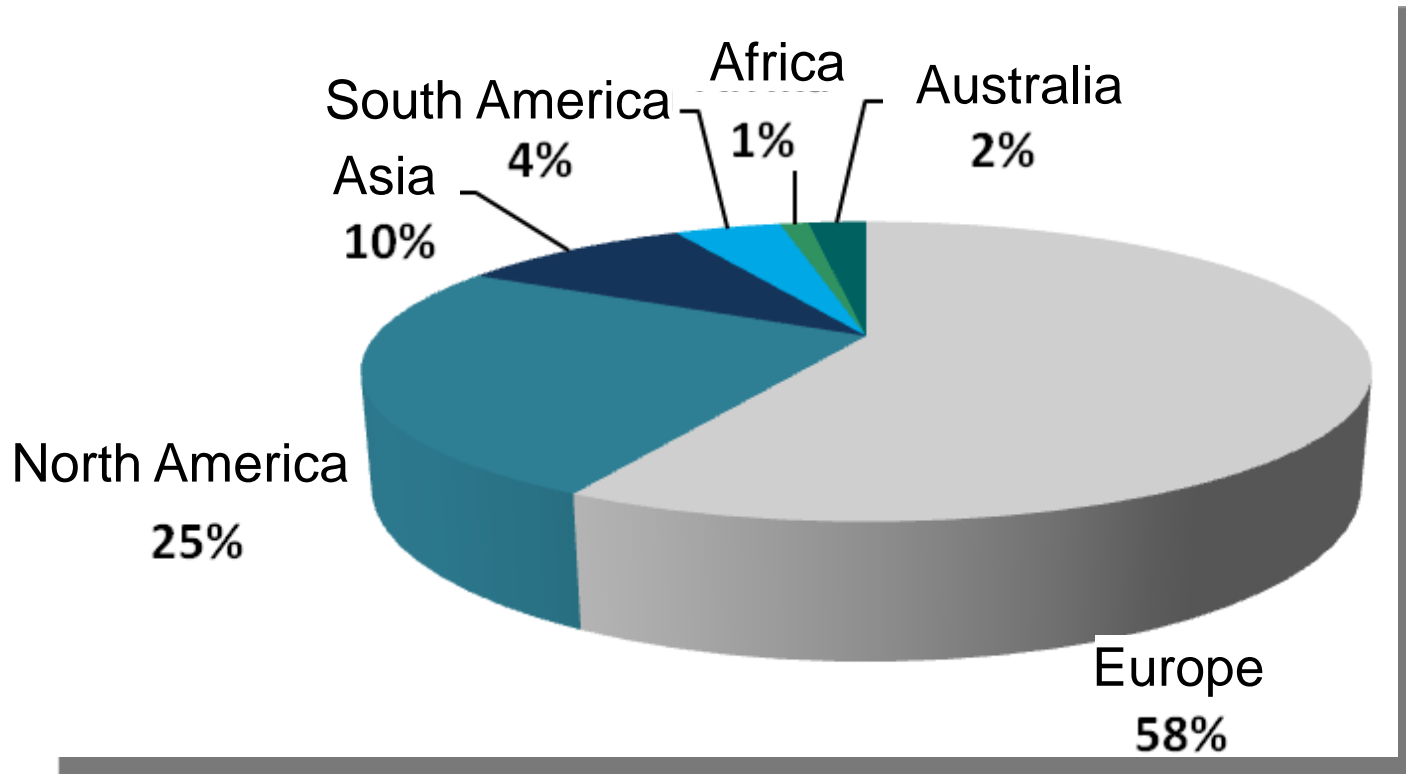
Dynamik mit Verantwortung

1. General aviation
 2. Complex aerostructures and components, innovative materials and manufacturing technologies
 3. Cabin equipment components
 4. Equipment, avionics
 5. Intelligent aircraft structures, ground test equipment
 6. ATM and airport technology (land- and airside)
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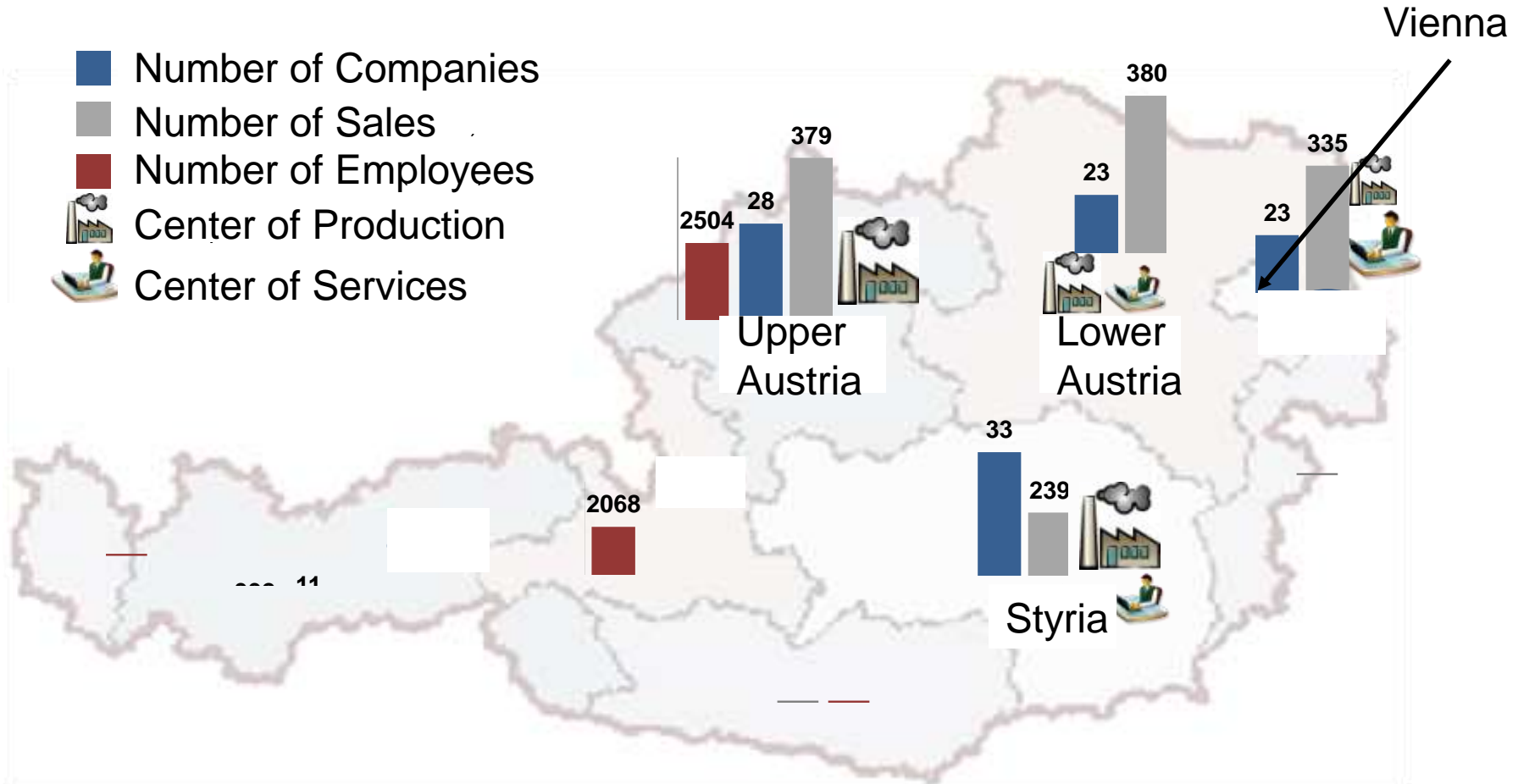
7. Basis systems
8. Engines

- **240 companies**
 - 132 companies: **75% SMEs**
 - 110 companies: **1.4 bn € sales in 2008**
 - 125 companies: **7.404 employees in 2008**
 - 13% employees in R&D
- **1 degree programme**
- **14 universities**
 - 40 institutes
- **7 research establishments**

- Export Rate: 75%



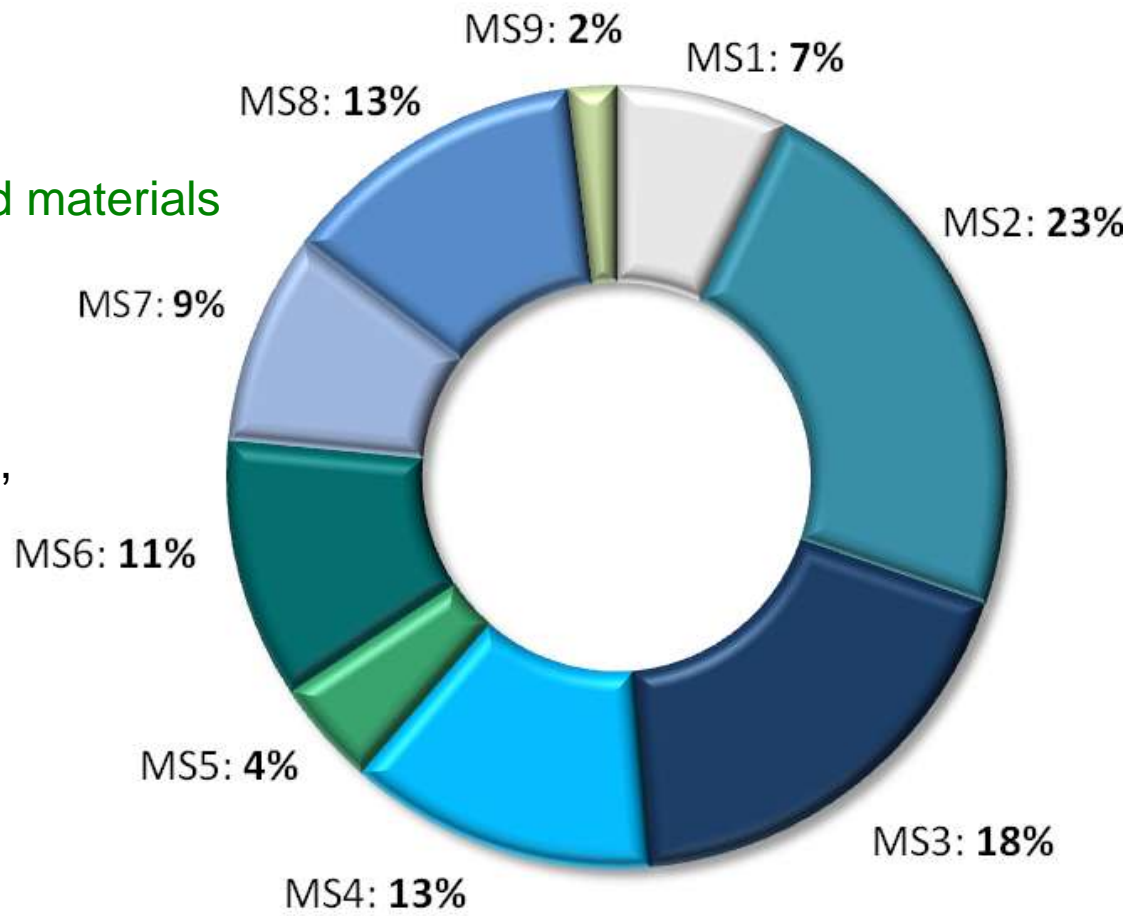
The regional distribution of the Austrian Aeronautics/Supply/Industry



The competences of the Austrian Aeronautics/Supply/Industry



- MS 1: General aviation
- MS 2: **Complex aerostructures and materials**
- MS 3: **Cabin equipment**
- MS 4: **Equipment, avionics**
- MS 5: Intelligent aircraft structures, ground test equipment
- MS 6: ATM and airport technology
- MS 7: Aircraft basis systems
- MS 8: **Engines**
- MS 9: Others



Schiebel Camcopter S-100



Schiebel Elektronische Geräte

DA42



**Diamond
Aircraft
Industries**

D-JET



Involvement of Austrian Companies in the A380 Programme



Involvement of Austrian Companies in the A380 Programme - Metals



Aluminiumfolien für den GLARE-Rumpf
ARINC Austria

Innenfenster Funktionsteile für Schloss der Gepäckfächer
STP

Internes Kommunikationssystem für das Kabinendruckregelsystem von Nord Micro
Tyssen

Querträger
FACC

Einlassgehäuse für die Hilfsgasturbine
FACC

Strukturkomponenten für Rumpf, Flügel und Höhenleitwerk
Böhler Schmiedetechnik

Triebwerksaufhängung / Pylon Landeklappenantriebssystem
Böhler Schmiedetechnik

Elektrische Bodenversorgung
Hitzinger

Hydraulische Bodenversorgung & Prüfeinrichtungen
Textl-Fuchs

Konstruktions- und Testeinrichtungen
ARCE

Nasen & Rippen für die Landeklappen
FACC

Landeklappenträger-Verkleidungen
FACC

Komponenten für Landeklappenträger
Wild Austria

Triebwerkskomponenten Verkleidungen des Triebwerkklappeinlasses Flügelpaneele
FACC

Fahrwerkteile aus Stahllegierungen
Böhler Schmiedetechnik

Kabinen-Komponenten
Isovolix

Involvement of Austrian Companies in the A380 Programme - Composites



Aluminiumfolien für den GLARE-Rumpf
WING Holding

Innenfenster
Funktionsteile für Schloss der Gepäckfächer
WIP

Internes Kommunikationssystem für das Kabinendruckregelsystem von Nord Micro
IT Tech

Querträger
FACC

Einfassgehäuse für die Hilfsgasturbine
FACC

Strukturkomponenten für Rumpf, Flügel und Höhenleitwerk
Böhler Schmiedetechnik

Nasen & Rippen für die Landeklappen
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Fahrwerkteile aus Stahlliegierungen
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Landeklappenträger-Verkleidungen
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Komponenten für Landeklappenträger
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Triebwerkskomponenten Verkleidungen des Triebwerkluftinlasses Flügelpaneele
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Kabinen-Komponenten
Isovolix

Elektrische Bodenversorgung
Hitzinger

Hydraulische Bodenversorgung & Prüfeinrichtungen
Test-Fuchs

Konstruktions- und Testeinrichtungen
WCE

■ Metals

- Böhler Schmiedetechnik GmbH & Co KG
- AMAG Austria Metall AG
- MCE Stahl- und Maschinenbau GmbH & Co KG
- Wild Austria GmbH

■ Composites

- FACC AG
- HTP High Tech Plastics AG
- Isovolta AG

■ Ground test equipment

- TEST-FUCHS GmbH
- Peters Engineering
- Dipl. Ing. Hitzinger GmbH

■ Avionics

- TTTech Computertechnik AG

Involvement of Austrian Companies in the B787 Programme



Dynamik

Foto: Boeing / Grafik: Österreichische Forschungsförderungsgesellschaft



Involvement of Austrian Companies in other Programmes



■ **SESAR**

- Frequentis AG
- Austro Control GmbH
- University of Salzburg
 - Department of Computer Sciences



■ **Bombardier Global Express**

- List components & furniture GmbH

■ **EMS/VIP/Mission conversions**

- Air Ambulance Technology GmbH



Dynamik mit Verantwortung

- **Technical University of Vienna**
 - Institute for Lightweight Design and Structural Biomechanics
 - Institute for Engineering Design and Logistics Engineering
 - Institute of Materials Science and -Technology
 - Institute of Chemical Technologies and Analytics
 - Institute of Solid State Electronics
 - Institute of Geodesy and Geophysics
 - Institute of Mechanics and Mechatronics
 - Institute for Microelectronics
 - Institute of Sensor and Actuator Systems
 - Institute for Thermodynamics and Energy Conversion
 - Institute for Internal Combustion Engines and Automotive Engineering
 - Institute of Mathematical Methods in Economics
 - Institute of Transportation

- **Technical University of Graz**
 - Institute of Thermal Turbomachinery and Machine Dynamics
 - Institute of Machine Components and Methods of Development
 - Institute of Process and Particle Engineering
 - Institute of Internal Combustion Engines and Thermodynamics
 - Institute of Fluid Mechanics and Heat Transfer
 - Institute of Materials Science, Welding and Forming
 - Institute of Automation and Control
- **Karl Franzens University of Graz**
 - Department of Psychology
 - Institut für Statistics and Operations Research

- **University of Leoben**
 - Institute for Designing Plastics and Composite Materials
 - Department Product Engineering
 - Institute for Materials Science and Testing of Plastics
- **Paris Lodron University of Salzburg**
 - Department of Computer Science
 - Centre for Geoinformatics
- **University of Klagenfurt** / Networked and Embedded Systems
- **Danube University Krems** / Interactive Media and Educational Technology
- **Johannes Kepler University of Linz**
 - Institute of Electronical Drives and Power Electronics
 - Institute of Fluid Mechanics and Heat Transfer
 - Institute of Communications and RF-Systems
 - Institute of Telecooperation

- **FH JOANNEUM**

- Aviation

- **FH Kärnten**

- Spatial Information Management
- Telematics/Network Engineering

- **FH St. Pölten GmbH**

- Computer Simulation

- **FH Campus Vienna**

- IT Security

- **FH Upper Austria**

- Automation Engineering

- **FH Technikum Wien**

- Embedded Systems
- Intelligent Transport Systems

- **AIT – Austrian Institute of Technology GmbH**
 - Advanced Materials and Aerospace Technologies
 - Dynamic Transportation Systems
 - LKR Leichtmetallkompetenzzentrum Ranshofen GmbH
 - Foresight & Policy Development

- **JOANNEUM RESEARCH Forschungsgesellschaft mbH**
 - Institute of Digital Image Processing
 - Institute of Applied Statistics and Systems Analysis

- **ofi Technologie & Innovation GmbH**
- **Austrian Academy of Science**
 - Institute for Geographic Information Science (GIScience)
 - Institute for Integrated Sensor Systems
 - Institute for Quantum Optics and Quantum Information
 - Space Research Institute
- **PROFACTOR GmbH**
- **Salzburg Research Forschungsgesellschaft m.b.H.**
- **TCKT - Transfercenter für Kunststofftechnik**

- **AeroSpy Sense & Avoid Technology**

- Navigation and control technology

- **Diamond Aircraft Industries**

- DA42 MPP

- **FH JOANNEUM**

- JXP

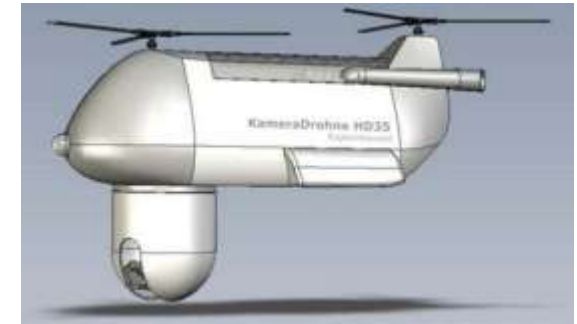
- **BRP-Powertrain**

- Engines to power small aircraft up to approximately 650 kg.



- **KameraDrohne**

- Flying platform for stabilized, qualitative outstanding pictures



- **Technical University of Graz**

- Communication technologies

- **University of Salzburg**

- Time-portable programme JAviator



- **Technical University of Vienna**

- Transmissions

Potential Cooperation Fields between Austria and Poland within Aeronautics



Adaptive materials systems morphing	Structural Health monitoring, MRO	Blades	CFD	High-lift issues / technologies	Nanotechnologies	Distributed systems	Biochemistry	Composites, Materials and process	Noise and vibration control / reduction	Adv. Metals processing	Surfaces	Electronics	Artificial intelligence	Energy and electric power management	GNC and autonomous systems	Propulsion
HU	RO, HU, AT	PL, RO	RO		CZ	CZ		PL, HU, AT	RO	PL, CZ, AT	PL, CZ, AT	CZ, HU, AT	PL, CZ	RO	HU, AT	PL, RO

- Cooperation Fields identified 10/2009 in Vienna
 1. Composite materials and processes
 2. Advances metal processing
 3. Surfaces

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