

# Technology Transfer in Germany - Status Quo and Recent Trends

Tokyo, UNITT/University of Tokyo Conference  
28th January

TechnologieAllianz e.V. – Alfred Schillert (RTTP)

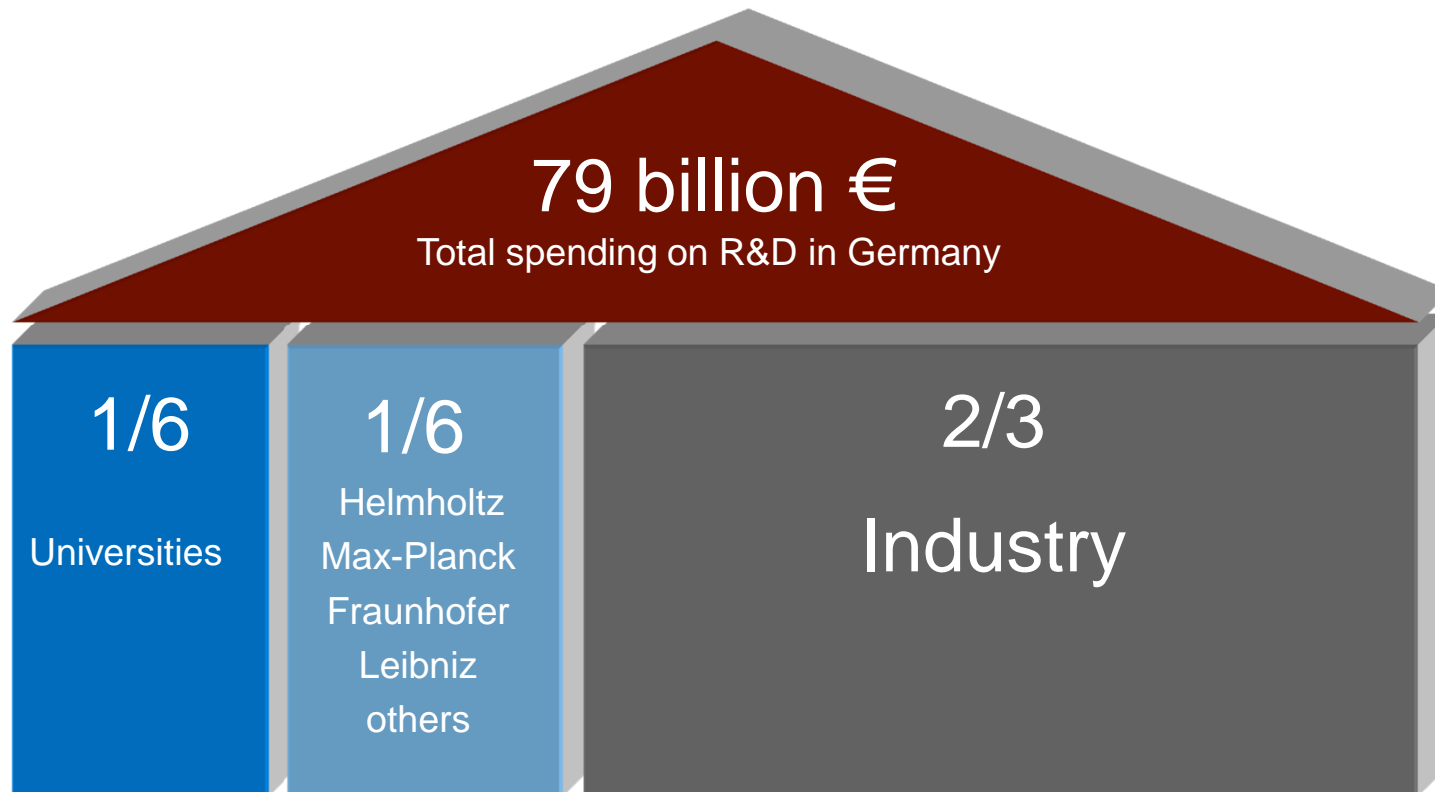
## Overview

- The German Research System
- The German Approach to Commercialisation of University Inventions

### Additional Hand-Out Slides:

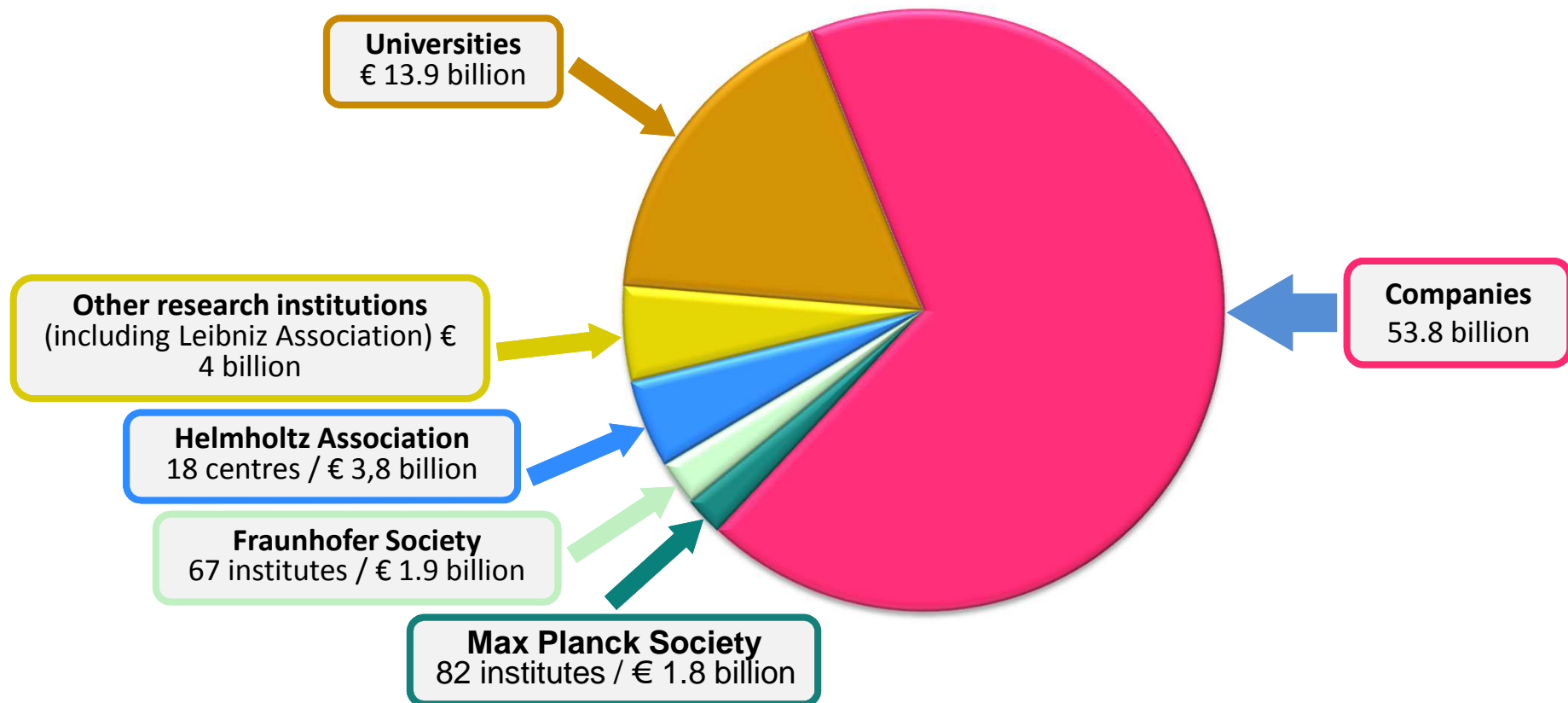
- *The TechnologieAllianz and its Tools (e.g. "invention store")*
- *PROvendis GmbH*

# THE GERMAN RESEARCH SYSTEM

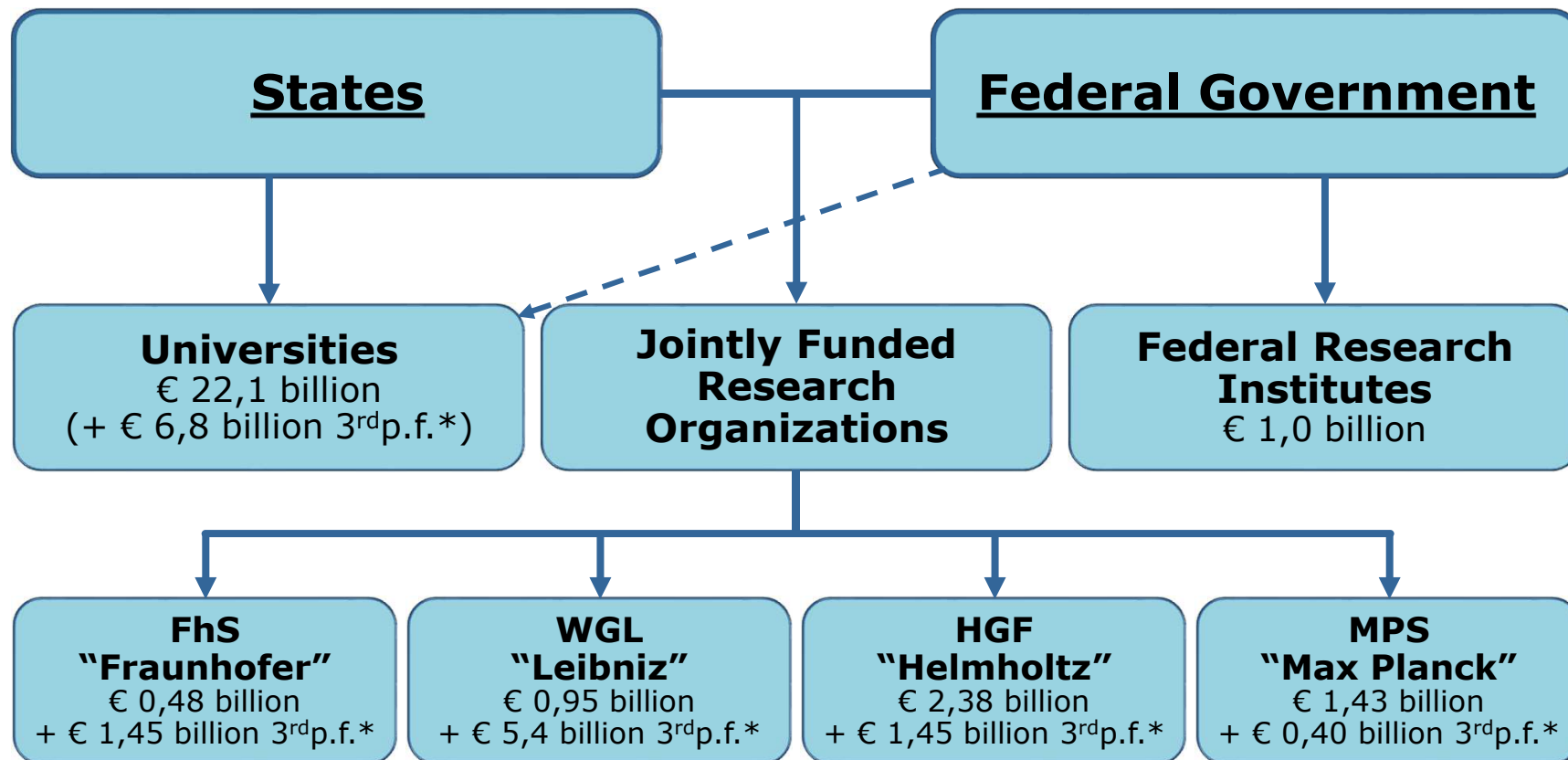


# R&D Expenditures in Germany (2012)

**Total R&D Expenditure: € 79 billion (2012)**



## Public R&D Funding in Germany (2012)



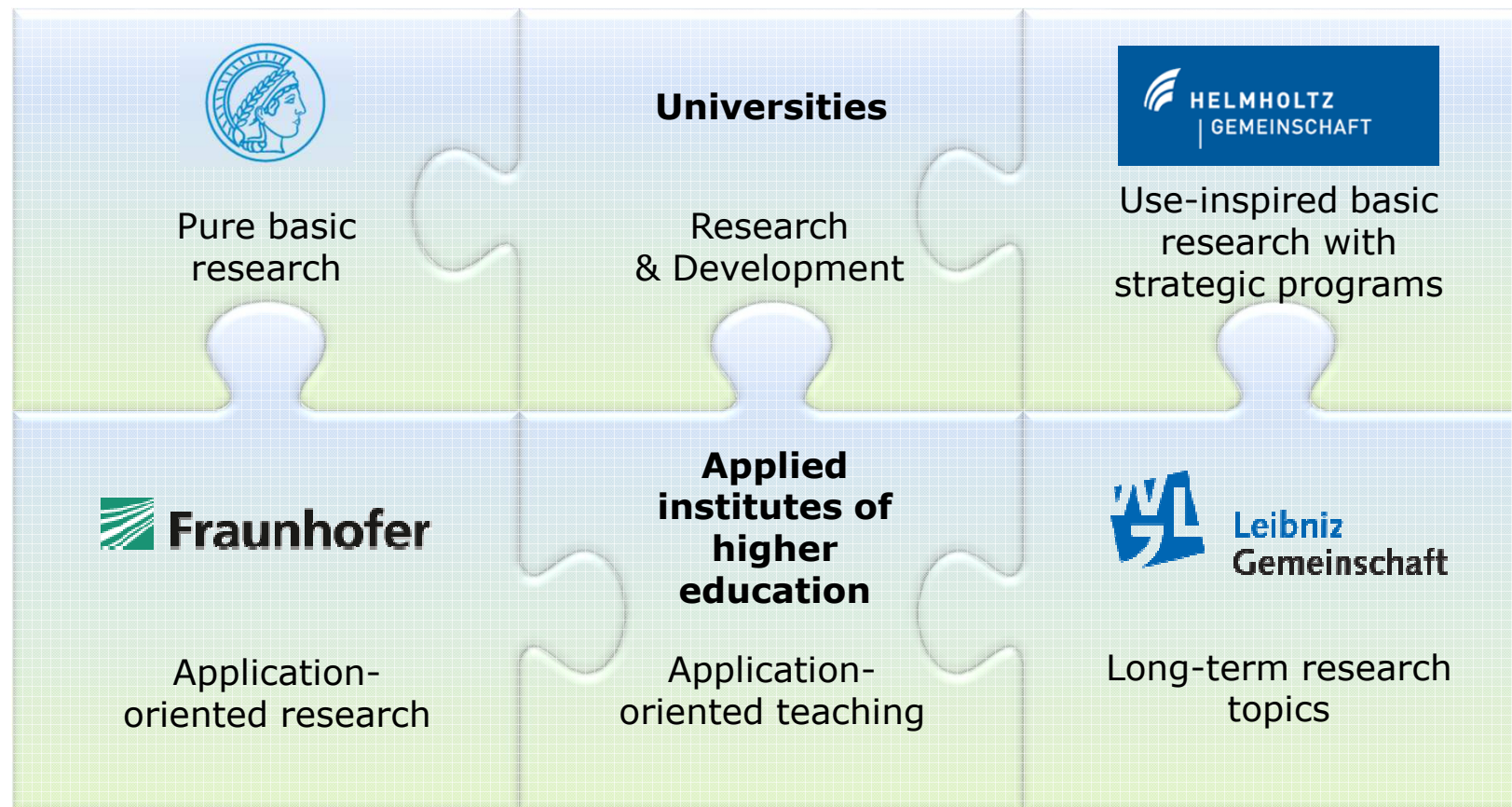
\* 3<sup>rd</sup>p.f.: third party funds

Source:

– Statistisches Bundesamt / June 12, 2014

– own publications of FhS, WGL, HGF and MPS

# Strength Through Diversity – Players in the German Research



## The Big „Challenge“ in Technology Transfer

- **Investments in research and development** are the central prerequisite for economic growth and prosperity
- **BUT**:
  - Academic research and industrial development are “drifting apart”
    - Reduced spending and resources in industrial research
    - Increased costs for the validation of scientific results (mainly in biotech, nanotech, energy)
    - Lack of money for patents
    - Lack of venture capital
  - This “drifting apart” results in an **“innovation gap”**



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# Instruments to Overcome the Innovation Gap: Federal Funding Programs



Federal funding programme towards universities to support the protection and commercialisation of their inventions by patent marketing agencies (PVAs)



Federal funding programme to increase the creation of technology-based start-ups at universities



VIP: Federal funding programme to validate the innovation potential of academic research

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Moreover there are about 15 further innovation-oriented federal funding programmes supported by BMWi, BMBF, etc.



## The Big „Difference“ in Technology Transfer between Universities und PROs

- **Universities and Public Research Organizations (PROs) can use (most of) these federal programs**
- **BUT:**
  - In addition the large PROs (MPG, HGF, FhG, WGL) have own validation and innovation programs
  - Technology transfer of German PROs joins forces
    - Life Science Incubator (supported by MPG, FhG and HGF)
    - Lead Discovery Center (MPG and first projects of HGF)
    - Enabling Innovation – new BMBF funded initiative to raise awareness for innovation/commercialization at German PROs
    - Etc.

## The Big „Difference“ in Technology Transfer between Universities und PROs

- **Public Research Organizations (PROs)**
  - Professional technology transfer established already more than 40 years ago
    - Inventions belonged always to the research organizations
    - all have established own technology transfer structures
- **Universities**
  - Professional technology transfer only for about 10 years (since 2002)
    - before 2002 “professor’s privilege” (universities did not own the inventions)

# The German Approach to the Commercialization of Academic Inventions

## The last 12 years

- Foundation of alliances/confederations of several universities in order to
  - Create critical mass of inventions
  - Establish/use (external) professional Patent- and Licensing Agencies (TLO) with a critical mass of experts
    - => Universities are regularly shareholders of the “external TLO”
- Strategies, structures, processes and tools in the (external) TLOs and between universities and TLOs were defined and established
- Mostly these external TLO deal only with inventions, that are free of third party rights
- Universities built up (basic) in-house competencies

# The German Approach to the Commercialization of Academic Inventions

## Status Quo

- Universities do increasingly acknowledge the value and potential of IP
  - however it is still being treated as a side topic
- Basic Technology Transfer Tools and Strategies are being established
- Advanced Technology Transfer Tools and Strategies are being implemented and tested. Examples:
  - University: incorporation of enterprises „formation“ at and with support from universities, systematic approach towards Joint Ventures, open innovation, Incubators
  - TLO: customized services for the universities
- Technology gaps, capacities and wages continue being the main challenges for the majority of universities and their TLO
- Framework conditions at universities are still not sufficient to exploit the full economic potential of scientific inventions.

## The German Approach to the Commercialization of Academic Inventions: Status Quo 2002-2013\*

- Universities belong to the TOP 10 patent applicants in the Germany Patent and Trademark Office ranking
- Over 21,000 invention disclosures from German academia
- Over 7,000 new patent applications
- Over 2,500 patent-based business deals with industry (e.g. license agreements, technology sales...): success rate = 36%
- Creation of numerous patent-based start-ups
- New industry co-operations, acquisition of third-party funds and public sponsorships

# The German Approach to the Commercialization of Academic Inventions

## The Future

- The relevance of transfer via IP will continue to increase (i.e. due to the EU-framework for state aid)
- Instruments and strategies for transfer will be treated more holistically (e.g. entrepreneurship, patents, valorization)
- Strategic cooperation between the economic and academic world will gain importance
- Inventions will be increasingly developed at and support from the universities ?
- Universities will establish Business development competence ?

# The German Approach to the Commercialization of Academic Inventions

## The Future

- The 3 critical factors of success for transfer organizations (i.e. in case of foundation of a company):
  - Framework conditions (budget for validation, staff and patents)
  - Personality and engagement of acting staff
  - Competence and level of experience of acting staff (= > ATTP)
- So far the focus has been on improving qualification of academic entrepreneurs and framework conditions
- In addition the identification, attitude and motivation of management personnel at TTOs, incubators as well as in the individual spin-offs has to gain in importance

Many thanks for  
your attention!

**Your contact at TechnologieAllianz:**

**Main Office**

(c/o PROvendis GmbH)

Laure Wolkers, +49 208 94 15 89 70

[info@technologieallianz.de](mailto:info@technologieallianz.de)

[www.technologieallianz.de](http://www.technologieallianz.de)

Technologie  Allianz

Your Gateway  
to Inventions.



TechnologieAllianz e.V.  
The network of German patent  
marketing and technology  
transfer agencies.



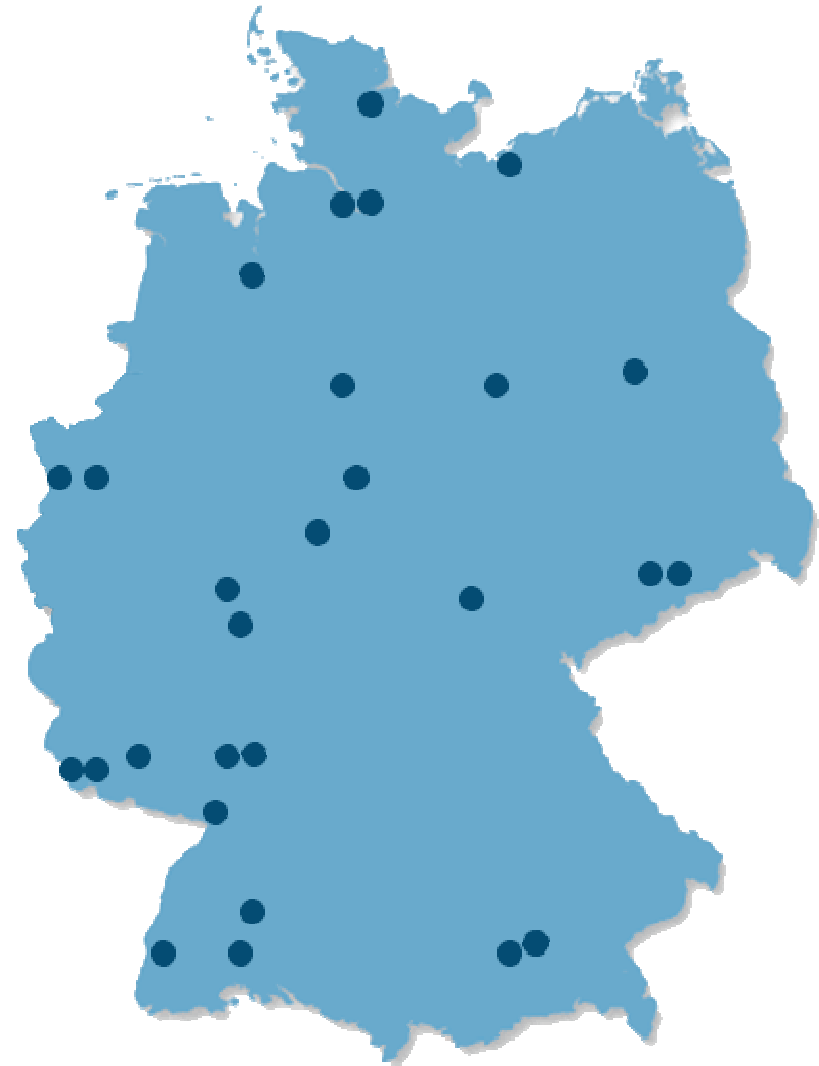
# Back-up

# TechnologieAllianz:

Cutting Edge Inventions from  
German Research

## TechnologieAllianz and its Members

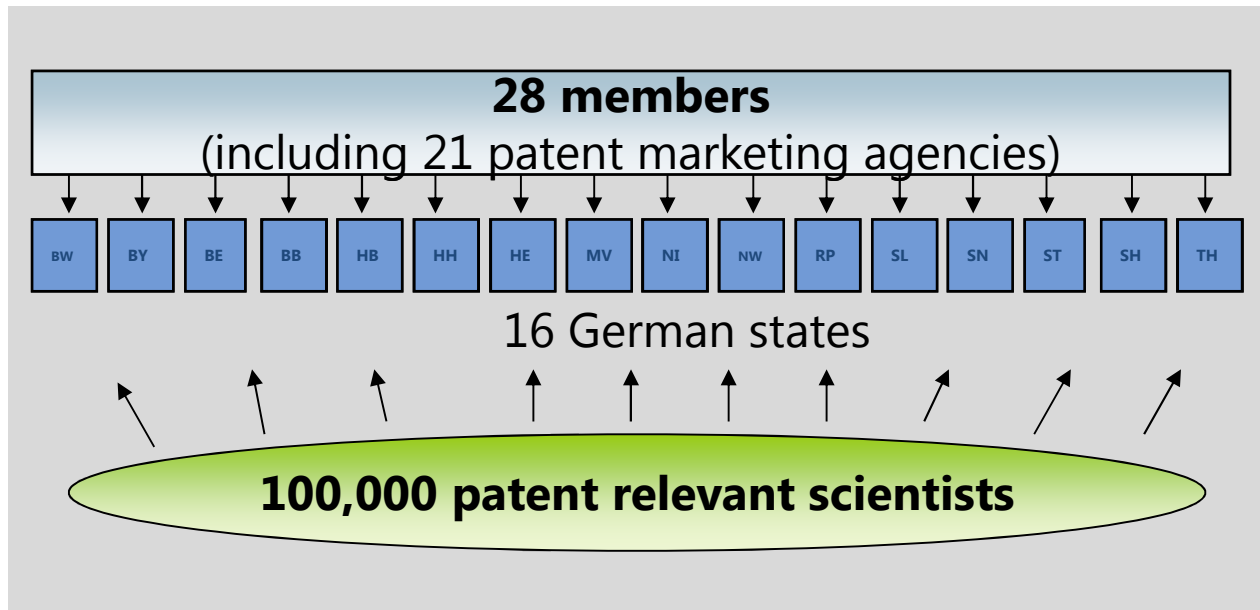
- **German network of patent marketing and technology transfer agencies**
- Founded in 1994
- More than **120 innovation managers** with industry, market and patent expertise
- More than **200 research institutions** with over 100,000 scientists (almost all German universities)
- Portfolio of more than **2,000 IP-protected technology offers**



# Partners for Technology Transfer



## Powerful Network for German Academia



- **One-stop shop for academic German patents**
- **One central contact point**
- **More than 120 innovation managers with industry, market and patent expertise**
- **Nationwide network with branches in all German states**
- **More than 200 universities represented**


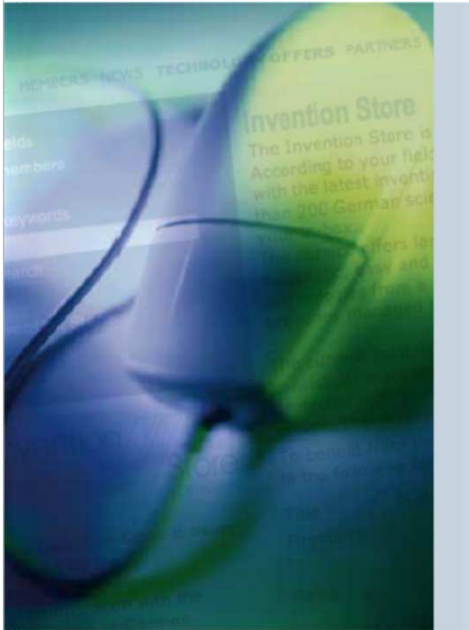
## Our Objectives

- Contribute to and speed up the traditional **technology transfer between science and industry** by offering new impulse and initiatives
- **Protect** academic inventions and make them **market-oriented**
- **Offer to industry** cutting edge technologies from German research
- Be a **competent and integrative partner for science and industry** in order to offer professional technology transfer of patented research results
- Offer **regional** access and **national/transnational** communication for the benefit of all parties


## Co-operation for Common Goals and Efficiency

### The Instruments of TechnologieAllianz

- **Biggest German website with IP-protected technology offers** from German research at [www.technologieallianz.de](http://www.technologieallianz.de) (English version included)
- **Free E-Mail service “Invention Store” for new technology offers**
- **Reciprocal commissioning** for the evaluation, patenting and marketing of inventions and for contract monitoring
- **Exchange of information** (technology, market, companies, etc.)
- Common marketing, in particular using **portfolios, common training** and qualification activities (ATTP)
- **Co-operation** with other national and international networks (BDI, EEN, ASTP-PROTON, etc.)

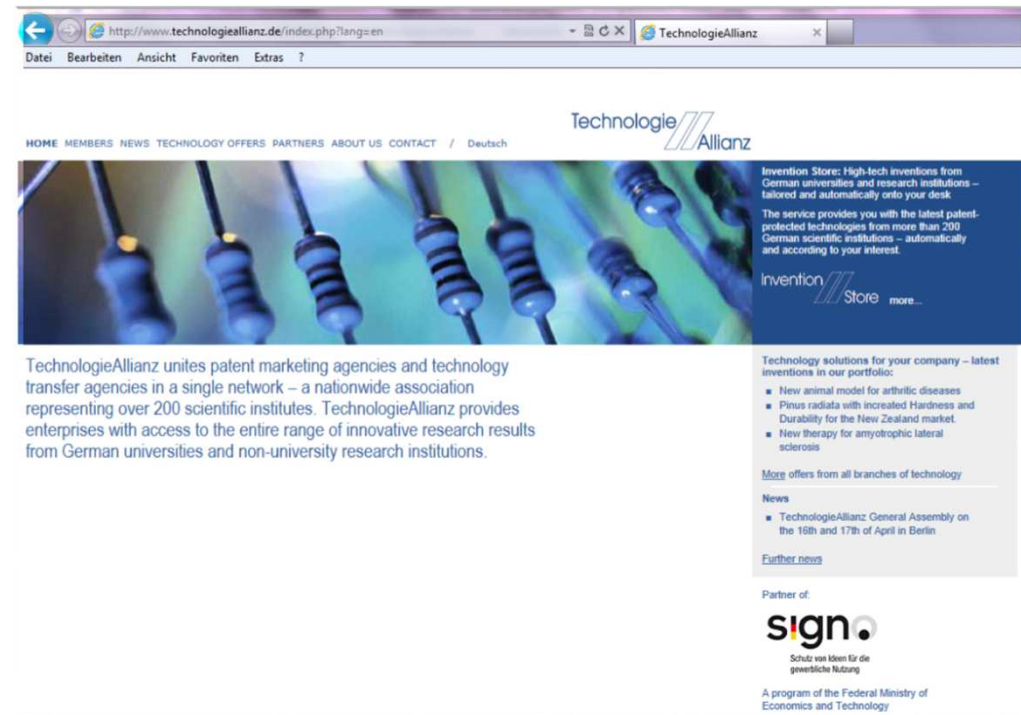
The automatic e-mail service for cutting edge inventions from German research



# Patents as Instruments of Technology Transfer

## Technology Offers for Industry

- **Biggest German website** with IP-protected **technology offers** from German Research
- **Free** automatic e-mail service with the newest technology offers, the **Invention Store**



[www.technologieallianz.de](http://www.technologieallianz.de)



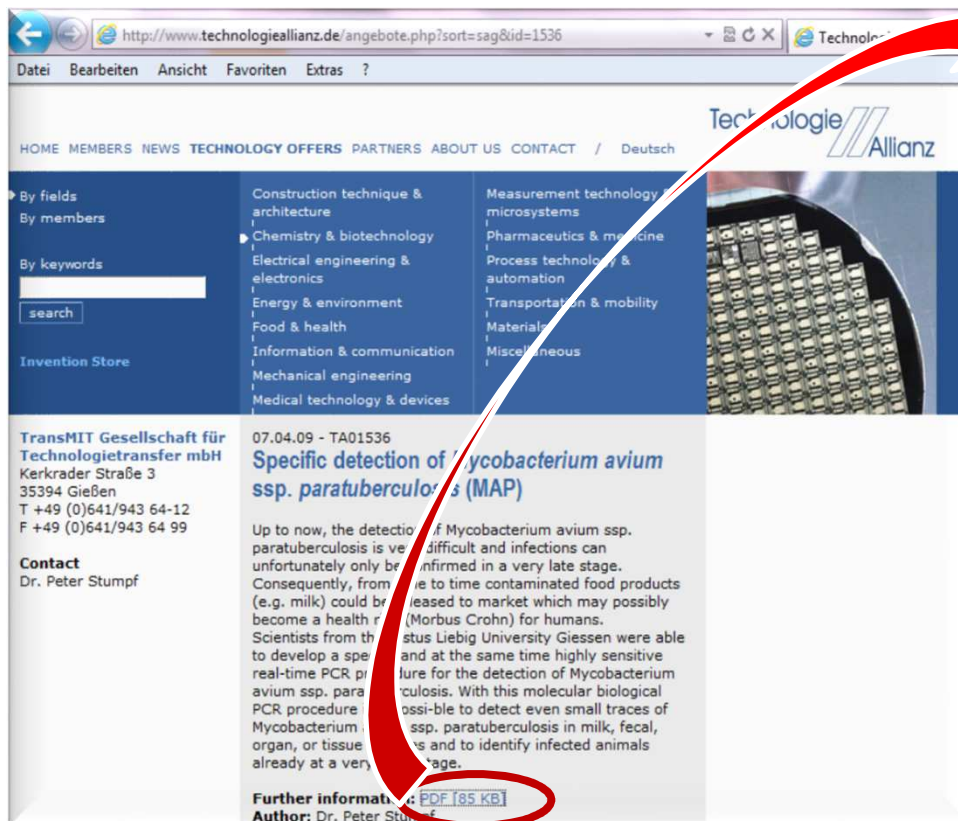
# Patents as Instruments of Technology Transfer

## More than 2,000 new technology offers

- From more than 200 German research institutions
- Searchable by technology field, key words or agencies

## Technology Profiles, comprehensively presented, downloadable in pdf, giving information on:

- *The technology and its particularities*
- *Field of application*
- *State of the Art*
- *Market potential*
- *Status of IP protection*
- *Suggested type of exploitation*
- *Contact*



## The E-Mail Service **Invention Store**

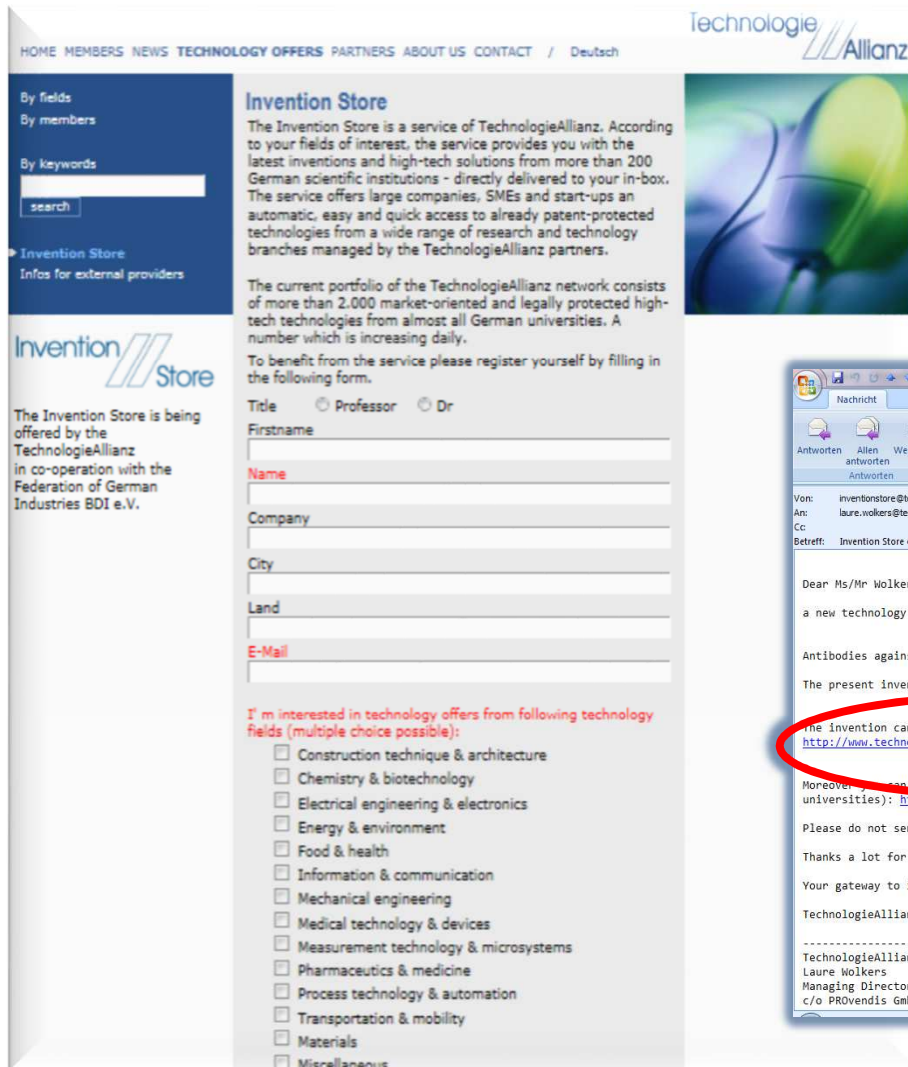
- **Automatic** e-mail service with the newest IP-protected top technologies for industry
- **Free of charge**, easy to use and **up-to-date**
- From a portfolio of more than **2,000 technology offers**
- **Demand-oriented**: selection of technology request by technology fields and key words
- Managed by **technology transfer experts**
- Over **150,000 e-mails with tech-offers** sent yearly

[www.inventionstore.de](http://www.inventionstore.de)



The advertisement features the 'Invention Store' logo at the top, with 'Invention' in blue and 'Store' in grey. Below the logo are three images: a green and blue abstract shape, a close-up of a soldering iron, and a circuit board. The website address 'www.inventionstore.de' is displayed in grey. Below that, the text 'The automatic e-mail service for cutting edge inventions from German research' is written in blue. At the bottom, it says 'A service for industry by Technologie  Allianz' and 'Your gateway to Inventions. TechnologieAllianz e.V.'

# The E-Mail Service **Invention Store** www.inventionstore.de



HOME MEMBERS NEWS TECHNOLOGY OFFERS PARTNERS ABOUT US CONTACT / Deutsch

**Invention Store**

The Invention Store is a service of TechnologieAllianz. According to your fields of interest, the service provides you with the latest inventions and high-tech solutions from more than 200 German scientific institutions - directly delivered to your in-box. The service offers large companies, SMEs and start-ups an automatic, easy and quick access to already patent-protected technologies from a wide range of research and technology branches managed by the TechnologieAllianz partners.

The current portfolio of the TechnologieAllianz network consists of more than 2.000 market-oriented and legally protected high-tech technologies from almost all German universities. A number which is increasing daily.

To benefit from the service please register yourself by filling in the following form.

Title  Professor  Dr

Firstname

**Name**

Company

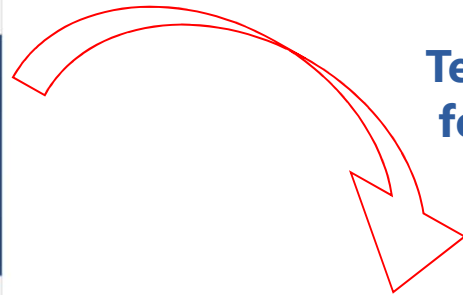
City

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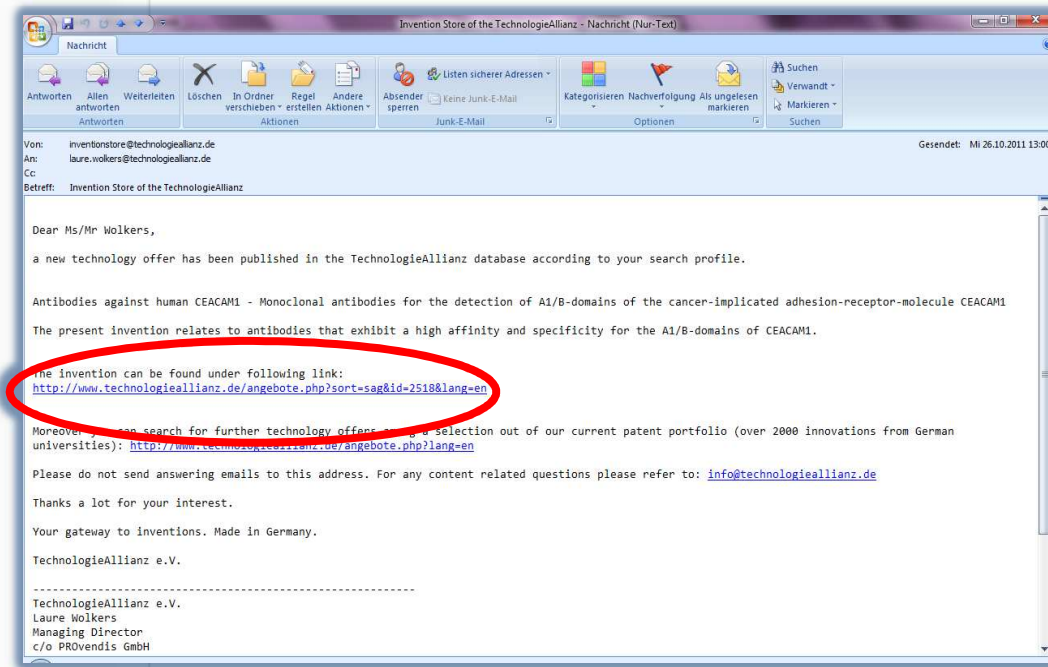
**E-Mail**

**I'm interested in technology offers from following technology fields (multiple choice possible):**

- Construction technique & architecture
- Chemistry & biotechnology
- Electrical engineering & electronics
- Energy & environment
- Food & health
- Information & communication
- Mechanical engineering
- Medical technology & devices
- Measurement technology & microsystems
- Pharmaceuticals & medicine
- Process technology & automation
- Transportation & mobility
- Materials
- Miscellaneous



## Technology Offers for Industry



Invention Store of the TechnologieAllianz - Nachricht (Nur-Text)

Von: inventionstore@technologieallianz.de  
An: laure.wolkers@technologieallianz.de  
Cc:  
Betreff: Invention Store of the TechnologieAllianz

Gesendet: Mi 26.10.2011 13:00

Dear Ms/Mr Wolkers,

a new technology offer has been published in the TechnologieAllianz database according to your search profile.

Antibodies against human CEACAM1 - Monoclonal antibodies for the detection of A1/B-domains of the cancer-implicated adhesion-receptor-molecule CEACAM1

The present invention relates to antibodies that exhibit a high affinity and specificity for the A1/B-domains of CEACAM1.

The invention can be found under following link:  
<http://www.technologieallianz.de/angebote.php?sort=sag&id=2518&lang=en>

Moreover you can search for further technology offers (using a selection out of our current patent portfolio (over 2000 innovations from German universities): <http://www.technologieallianz.de/angebote.php?lang=en>

Please do not send answering emails to this address. For any content related questions please refer to: [info@technologieallianz.de](mailto:info@technologieallianz.de)

Thanks a lot for your interest.

Your gateway to inventions. Made in Germany.


TechnologieAllianz e.V.

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TechnologieAllianz e.V.  
Laure Wolkers  
Managing Director  
c/o PROvendis GmbH

English and German offers available


## Innovative Service Package: Advantages for Companies

- High-tech technologies protected by **professional patent policy**
- **Economically feasible innovations** (technology, market potential and patentability checked)
- **Exclusive** technology solutions
- **Expert partner** with broad network at your service

- 
- ✓ **Time advantage** over competitors
  - ✓ **Reduced risks** of abortive developments
  - ✓ **Cost savings**
  - ✓ Product marketing in **monopoly** position

## Innovative Service Package: Advantages for Universities

- **Invention evaluation and check by experts**  
(market feasibility, technical feasibility, patentability, legal framework)
- **Joint development of a marketing strategy** taking the following factors into account (existing commercial contacts, existing contacts with industry, research targets, foundation projects)
- **Competent innovation managers** with **expertise and contacts** for successful project management and technology transfer

- 
- ✓ **Avoidance** of unnecessary patenting **costs/own transfer expertise**
  - ✓ **Quality management** of the marketing process
  - ✓ **Income from licensing**

# PROVendis

[www.provendis.info](http://www.provendis.info)

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Funded by:

Ministerium für Innovation,  
Wissenschaft und Forschung  
des Landes Nordrhein-Westfalen



**signo**

Marktschulen

Schutz von Ideen für die  
gewerbliche Nutzung

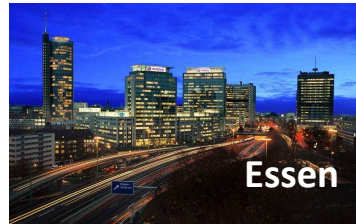
## Where we are

Germany

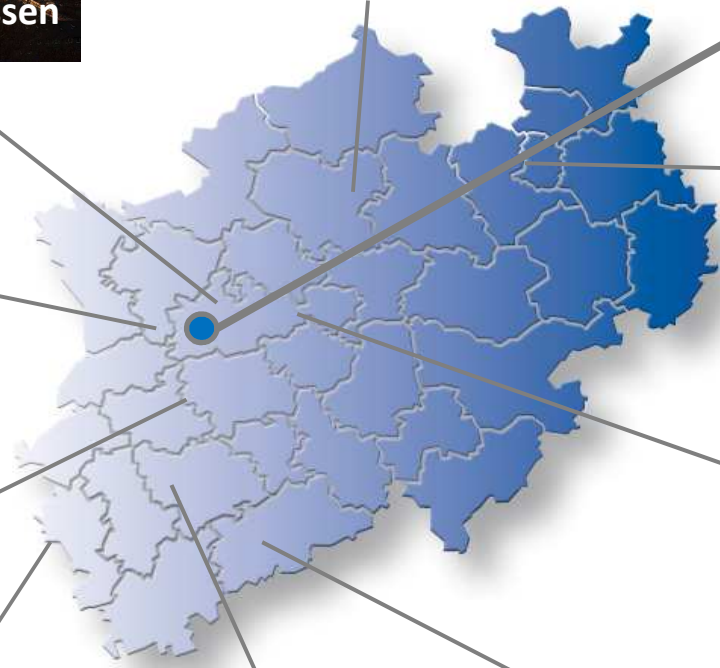
**PROvendis GmbH**  
Mülheim an der Ruhr  
(North-Rhine-Westphalia)



# Where we are



**PROvendis GmbH  
Mülheim an der Ruhr**





# Our Shareholders

The image features a central map of North Rhine-Westphalia, Germany, with various shades of blue. Surrounding the map are logos and names of the region's higher education institutions:

- Westfälische Hochschule**: Gelsenkirchen Bocholt Recklingha
- FH AACHEN**: UNIVERSITY OF APPLIED SCIENCES
- Hochschule Ostwestfalen-Lippe**: University of Applied Sciences
- HRW**: HOCHSCHULE RUHR WEST UNIVERSITY OF APPLIED SCIENCES
- BERGISCHE UNIVERSITÄT WUPPERTAL**
- HOCHSCHULE HAMM-LIPPSTADT**
- universität bonn**
- UNIVERSITÄT DUISBURG ESSEN**: *Offen im Denken*
- Hochschule Bonn-Rhein-Sieg**: University of Applied Sciences
- Hochschule Niederrhein**: University of Applied Sciences
- RWTH AACHEN UNIVERSITY**
- HOCHSCHULE RHEIN-WAAL**: Rhine-Waal University of Applied Sciences
- Fachhochschule Münster**: University of Applied Sciences
- Deutsche Sporthochschule Köln**: German Sport University Cologne
- RUB**: RUHR UNIVERSITÄT BOCHUM
- WESTFÄLISCHE WILHELMS-UNIVERSITÄT MÜNSTER**
- UNIVERSITÄT PADERBORN**: Die Universität der Informationsgesellschaft
- Fachhochschule Dortmund**: University of Applied Sciences and Arts
- UNIVERSITÄT SIEGEN**
- FH Bielefeld**: University of Applied Sciences
- tu**: technische universität dortmund
- Fachhochschule Köln**: Cologne University of Applied Sciences
- FH D**: Fachhochschule Düsseldorf University of Applied Sciences
- Hochschule Bochum**: Bochum University of Applied Sciences
- BO**
- Universität zu Köln**
- HEINRICH HEINE UNIVERSITÄT DÜSSELDORF**
- Fachhochschule Südwestfalen**: University of Applied Sciences
- Universität Bielefeld**

# Company Profile

**Established in 2001**

**Serving 27 Universities (owned by 24)**

**Covering 20.000 Scientists  
(engineering/natural sciences/medicine)**

**Comprising:**

- **16 “Innovation-Managers”**  
( > 200 “years commercial experience” )
- **2 Lawyers**
- **1 Patent attorney**
- **> 30 Employees in total**