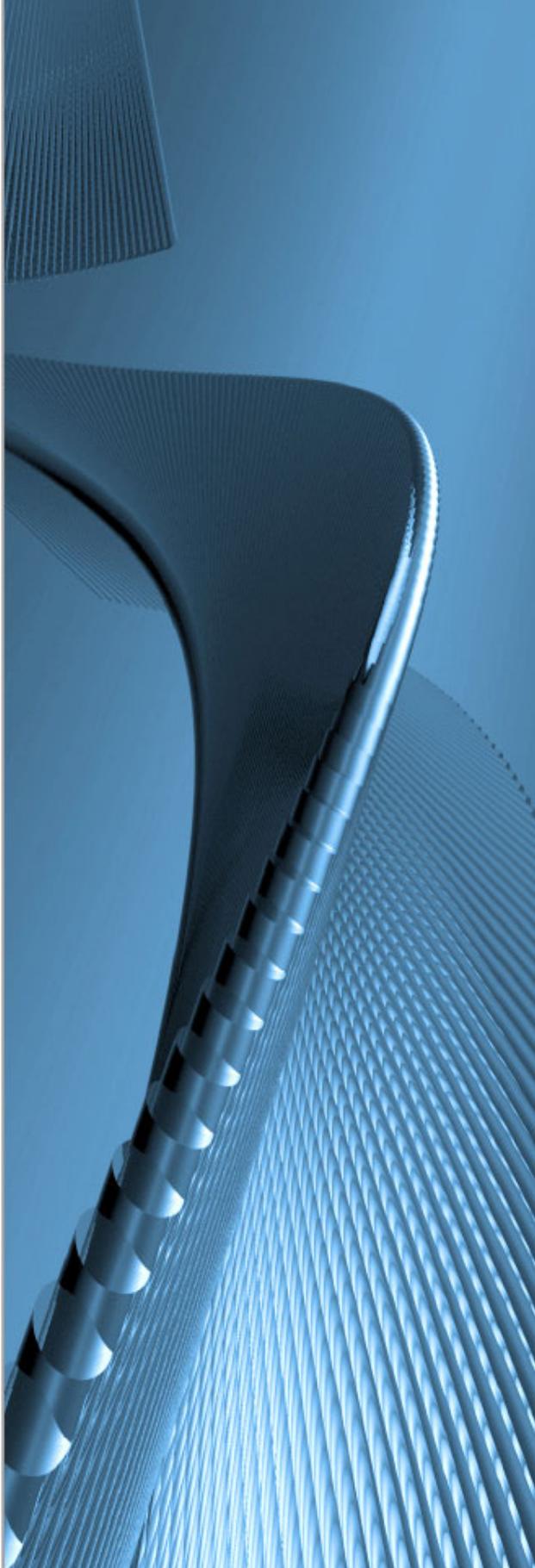
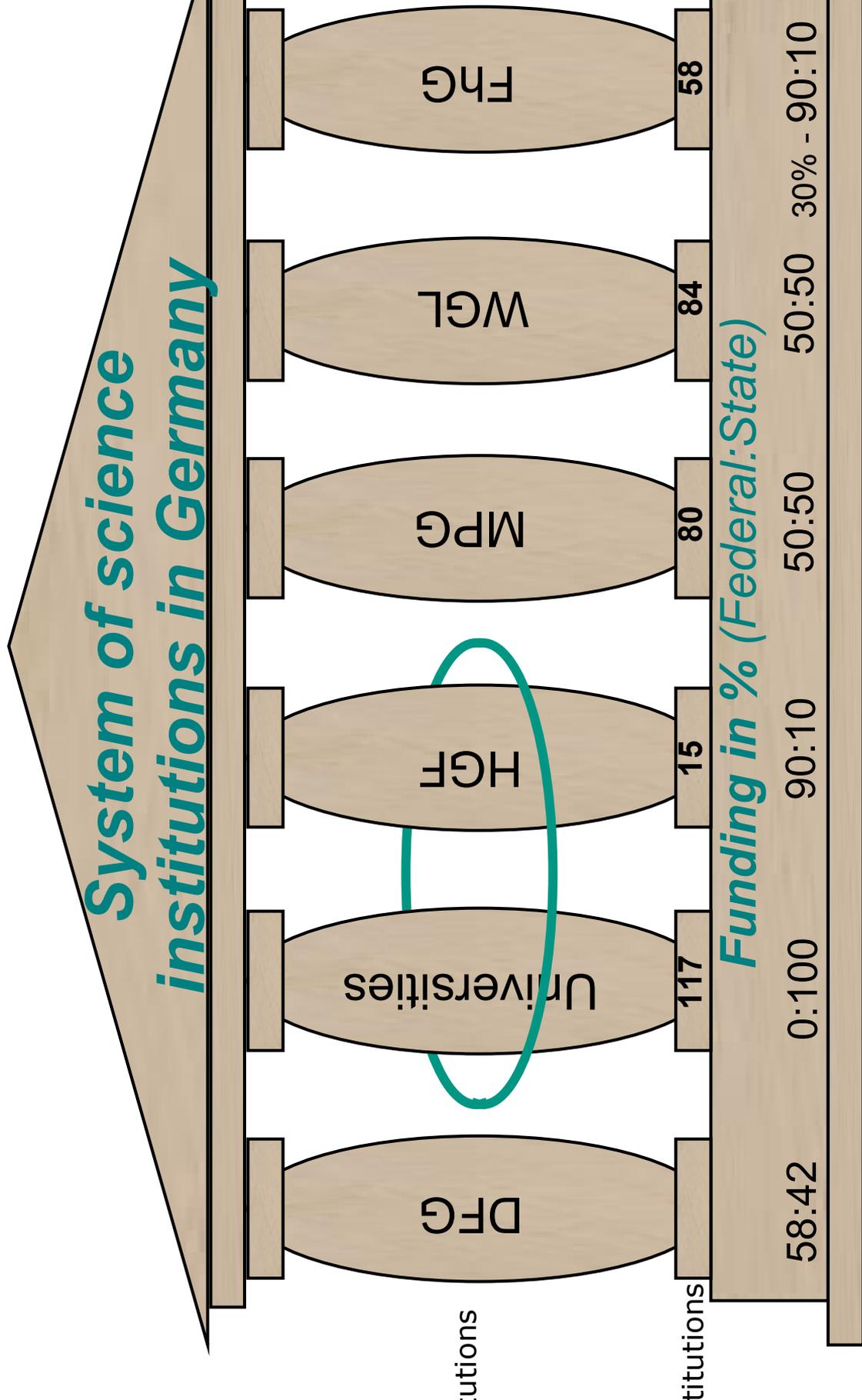


# Karlsruhe Institute of Technology KIT – new model in higher education presentation at Association Prospective Rhénane



# pillars of science in Germany



# Real Preconditions in Karlsruhe

## Research Centre Karlsruhe

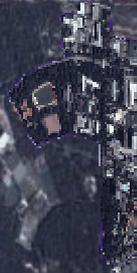
15	Programs
21	Institutes
3 700	Employees
300	UKA-Members
300 Mio.€	Budget



10 km, 15 min

## University of Karlsruhe

11	Faculties
120	Institutes
4 000	Employees
18 500	Students
300 Mio.€	Budget

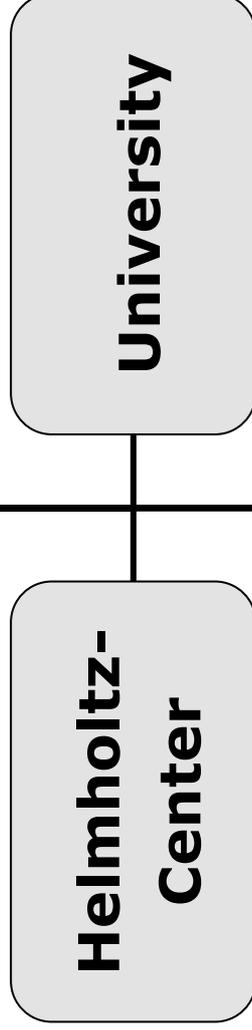


# T – One Entity, two Missions, three Tasks

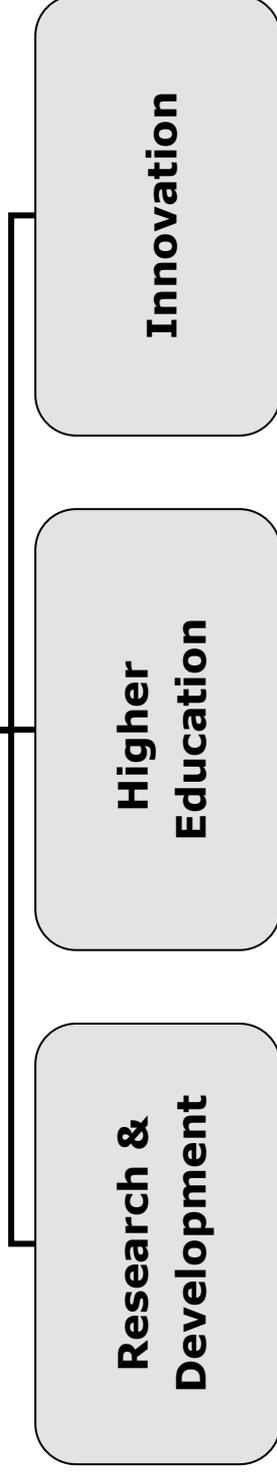
One  
Entity



Two  
Missions



Three  
Tasks



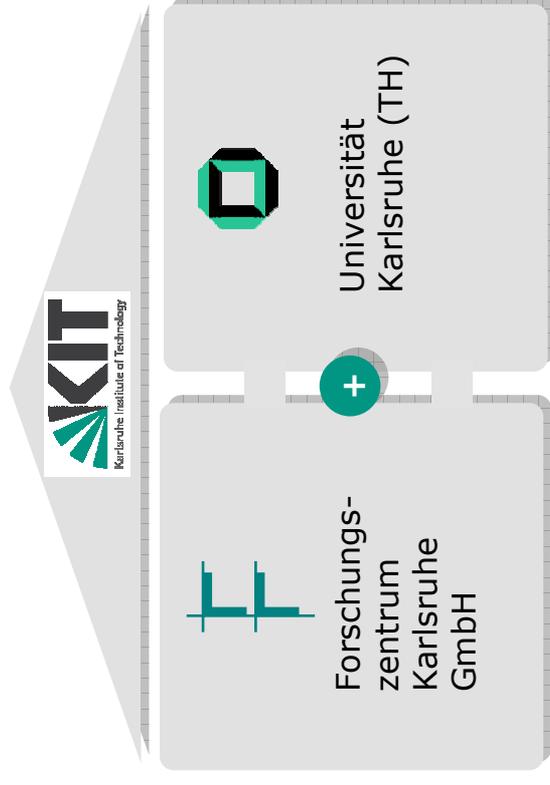
# vision for the Future of KIT

our targets  
within the first  
years:

- KIT will attract the best minds in the world
- KIT will set new standards in teaching and the promotion of young scientists
- KIT will be Europe's leading center for energy research
- KIT will play a globally visible role in nano sciences
- KIT will act as a key innovation partner for industry

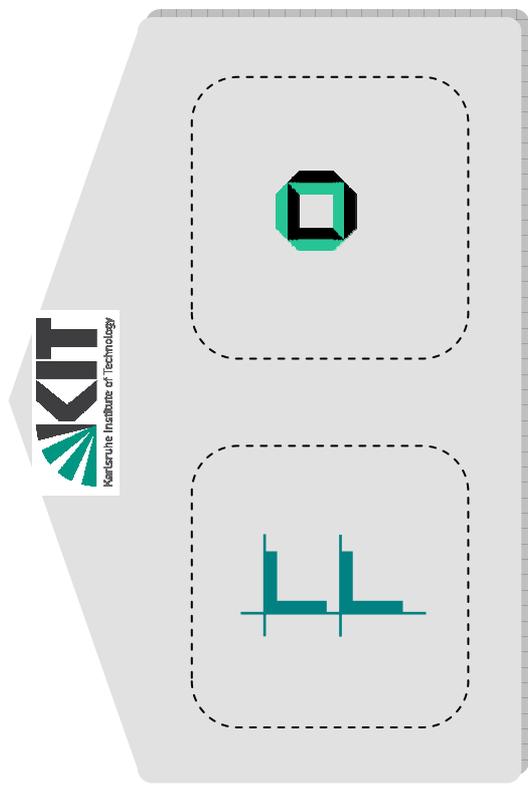
# T to be implemented in two phases

## Present: Close linkage



*"The first common goal is wide-ranging consolidation [...] under the auspices of KIT."*<sup>(1)</sup>

## Target concept: Unification



*"This will form the basis for new organization forms and structures."*<sup>(1)</sup>

# Management Bodies and Supervision

## KIT-Supervisory Board

Composition to be appointed by Ministries

Chair: Prof. Mlynek, Helmholtz

## KIT-Senate (Academic Co-Determination)

Professors

Administration/Service

Deans / Programs/ Centres

scientific Employees

Equal Opportunity

Students

## KIT-Executive Board

Chair

Chair

Research

Innovation

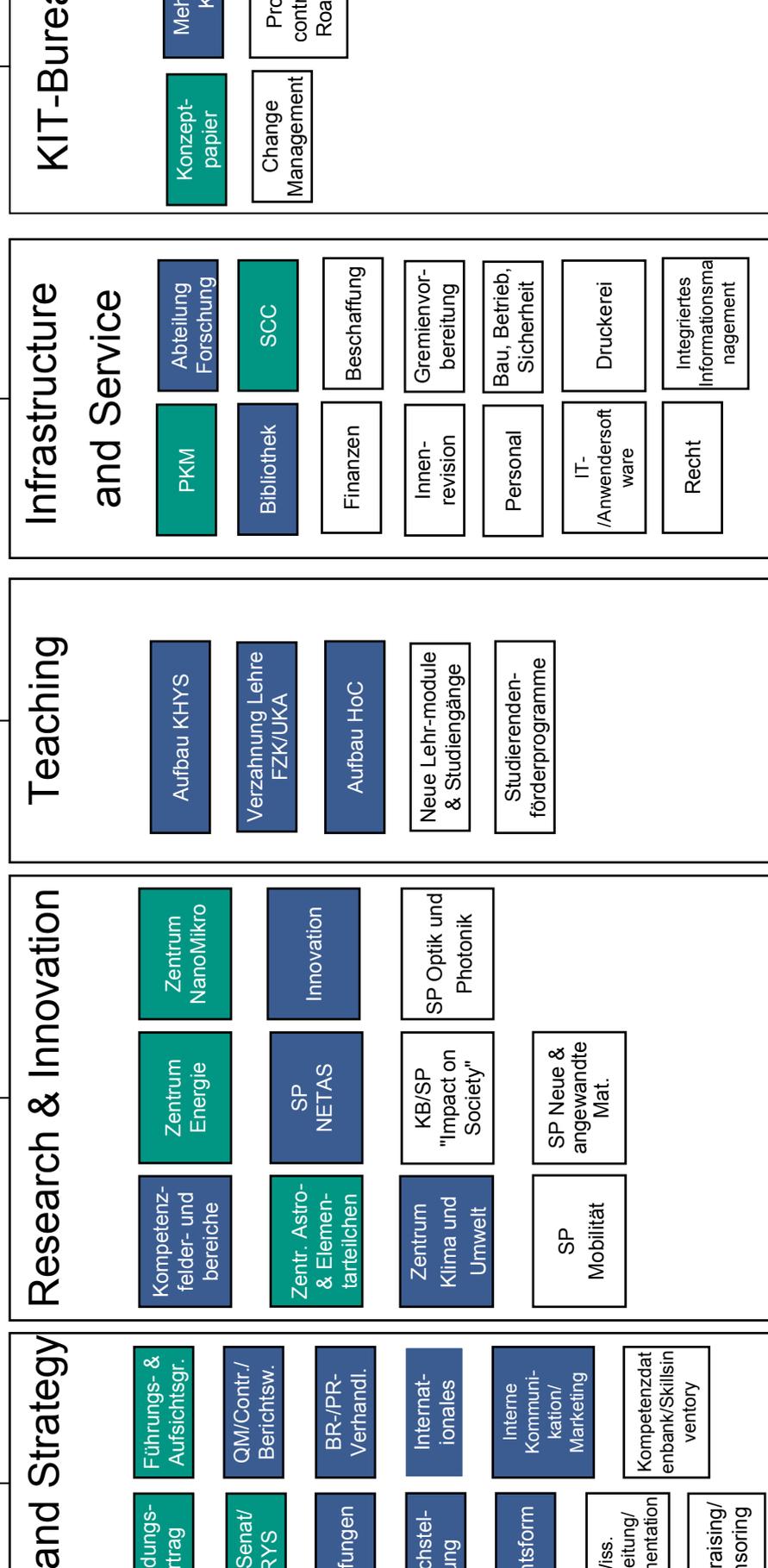
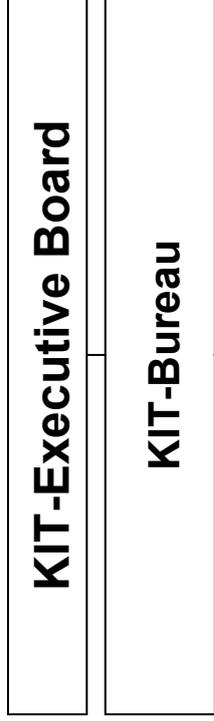
Finances

Personnel

Double Head

# Overview: The KIT-Process

- begonnen
- abgeschlossen
- noch nicht begonnen



# Das KIT-Triangle

## Research & Development

## Education

## Innovation



## 29 Fields of Competence in 6 Areas

### Impact on Society (3)

- Conservation of Cultural Heritage, Forming of Identity and Integration in Europe
- Business and Economics
- Interaction of Science and Technology with Society

### Earth and Environment (3)

- Atmosphere and Climate Research
- Disaster Management and Risk Reduction
- Environmental Engineering and Sustainable Urban Development

### Applied Life Sciences (4)

• Biotechnology  
• Toxicology and Food Science  
• Health and Medical Eng.  
• Cell Biology

### System and Process Engineering (7)

- Gas, Fluid, and Particle Dynamics
- Catalysis, and Thermodynamic and Kinetic Processes
- Fuel and Combustion
- Systems and Embedded Systems
- Mobile Systems and Mobility
- Power Plant Technology
- Product Life Cycles

### Matter and Materials (6)

- Elementary and Astroparticles
- Condensed Matter
- Nanoscience
- Microtechnology
- Optics and Photonics
- Applied and New Materials

### Information, Communication, and Organisation (6)

- Cognition and Information Engineering
- Communication Technology
- Algorithm, Software and System Engineering
- Organisation and Service Engineering
- High-Performance and Grid Computing
- Mathematical Models

# KIT Centers and 4 KIT Focuses

## KIT Centers<sup>(1)</sup>

KIT Center for  
Energy

KIT Center for  
Nano and Micro Scale Science

KIT Center for  
Elementary Particle and Astroparticle  
Physics

KIT Center for  
Climate and Environment

**Step 1: establishment by January 1, 2008**

## KIT Focuses<sup>(1)</sup>

KIT Focus for  
Information, Communication  
and Organization

KIT Focus for  
Applied and New Materials

KIT Focus for  
Mobility

KIT Focus for  
Optics and Photonics

**Step 2: Concept planned for 2008 (target concept)**

Names and exact definition of Centers and Focuses are under development

# Example: KIT-Center for Energy

## Topics

energy conversion  
renewable energy technology  
energy storage and distribution  
efficient energy use  
fusion technology  
nuclear technology  
energy systems analysis  
energy and society

## Data

**Budget:** ~ 100 M€

**Personnel:** 1090 FTE

**Involved Institutes:** FZK: 17, UKA: 15

### Structural units:

#### *Helmholtz-Programs:*

Nuclear safety research  
Nuclear fusion,  
Efficient energy conversion  
Renewable energies  
Energy systems analysis

#### *Programs/Projects:*

COORETEC  
COOREFF

#### *Additional structure*

School of Energy

#### *SFB:*

**SFB 606:** Instationary combustion:  
transport phenomena, chemical  
reactions, technical systems

#### *Research infrastruc*

Tritium Laboratory  
HELOKA;  
TOSKA;  
Rolls-Royce  
bioliq@-Pilot  
etc.

**Status:** Implementation January 1<sup>st</sup> 2008.

# Teaching: New possibilities for teaching and the promotion of young scientists

## Educational offer for students

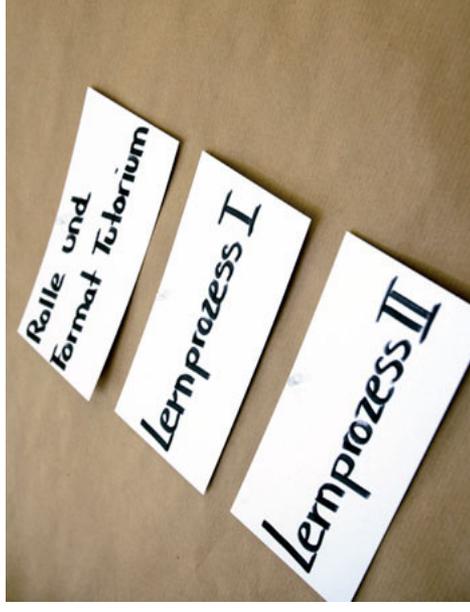
- **Integration of FZK employees** into teaching (100 new professorial positions (W2/W3))
- **Foundation of KIT Schools (KSOP, School of Energy)**
- **Special courses of study for excellent students**
- **Research-based educational modules**
- **KIT Scholarships** for excellent students
- **Complementary Skills: House of Competence (HoC)**

## Doctoral students and postdocs

- **KIT Scholarships** for excellent graduates and post-docs
- **Complementary Skills: House of Competence (HoC)**
- **Comprehensive support: "Karlsruhe House of Young Scientists" (KHYS)**
- **Promotion of young scientists: Feasibility Studies, Young Investigator Groups and Network, Research Groups**

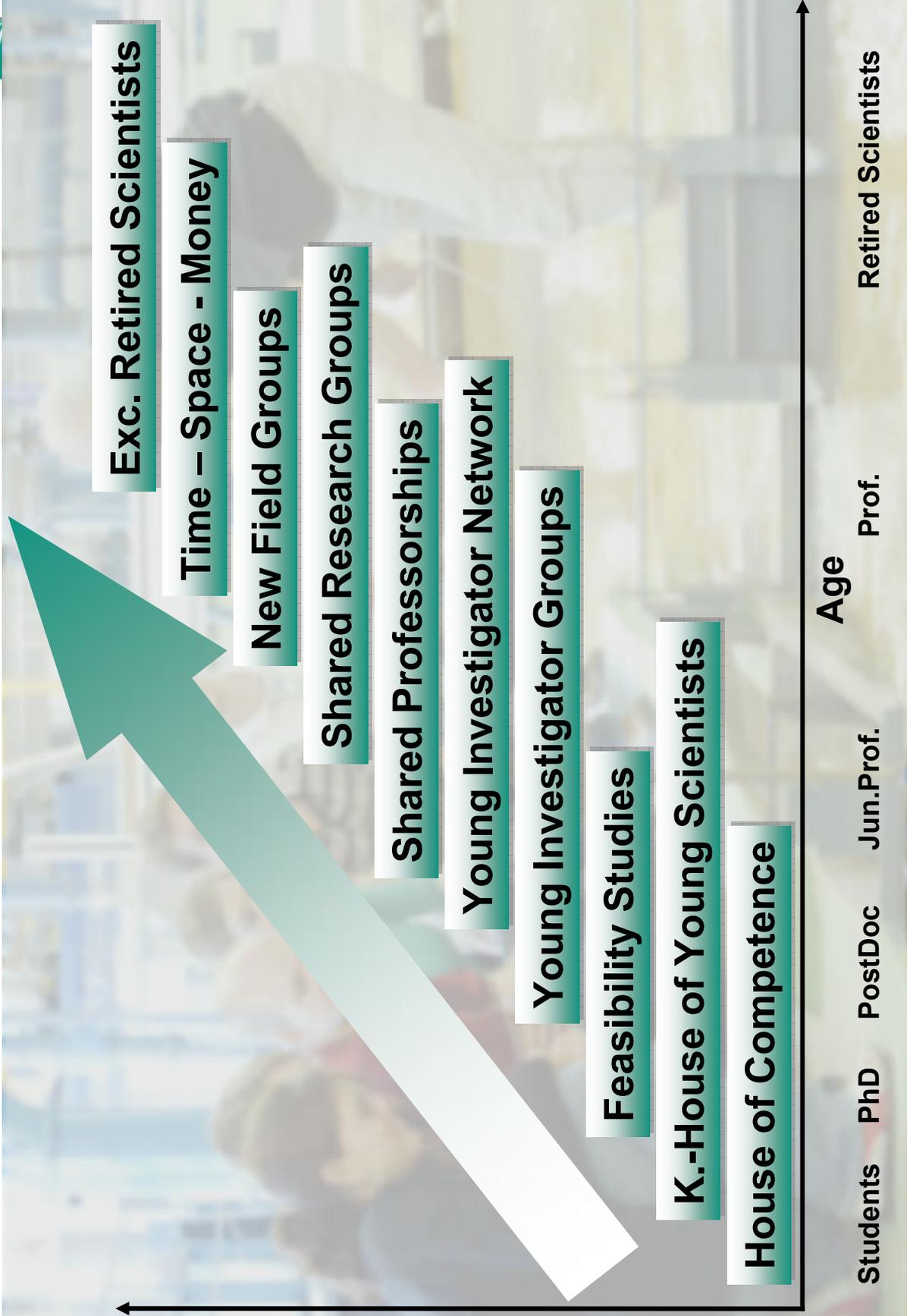
# House of Competence (HoC)

## Program



- Special trainings in key competencies for students and KIT postdocs
- Professional and general further education for staff and external customers
- Taster courses for high school students
- Mentoring and coaching programs on interdisciplinary level
- Development of innovative teaching and learning scenarios
- New products and ideas for the acquisition of competencies

# Institutional Strategy: Promotion of Scientists



# Three Dimensions of Innovation



**First Dimension:  
Innovation is Transfer of Ideas.**



**Second Dimension:  
Innovation is Business Development.**



**Third Dimension:  
Innovation is exchange of personnel.**

# Linkage of Science and Economy

Cooperation with economy also offers new paths in research.  
By end of 2008 we will have set up

**11 Shared Research Groups**  
**&**  
**7 Shared Professorships**

which will be financed by KIT and partners from economy  
equally.

# T and the economic region of Karlsruhe

share of employees in High Technology-branches over 20 percent

Karlsruhe (alongside Stuttgart) is the **main place** for High Technology in Baden-Württemberg

**top rankings** for Karlsruhe in national und international city-rankings

advancement in **access to scientific research** will strengthen regional economy even more

availability of **skilled workers, engineers** and highly motivated **graduates** creates a habitat for innovation – which will create new jobs. Almost **60 percent** of graduates stay in the region.

“Antroposphere“ Karlsruhe will be even more attractive because of **economic prosperity**

Karlsruhe: one of the most dynamic places in europe for the **foundation of high-tec enterprises** and for **research and development**

## IT – Cornerstone for the future of technology region Karlsruhe

# Cooperation between KIT and french partners: KIT-DeFI

- Centralisation of french-german activities
- Well-developed contacts to leading french universities
- Integrated dual degree courses (ENSAM, INSA: 45 students/a; overall: 480 graduates from 1994 to 2006)
- Close contact to french research institutions
- Common bilateral or international research projects
- Nanovaleley, CEA, Edelweiss Experiment, ITER
- Graduates in dual-degree courses are ideal stakeholders for research cooperations

# Main purpose of DeFI-KIT

- Summerschools
- Thèses en Cotutelle
- Graduate schools
- Cooperation of french-german research groups
- French-german colloquium
- Guest-Lectures and lectures en bloque
- Procurement of Study-, Diploma- and doctoral projects
- Practica
- Institutional partnerships
- Scholarships
- Annual Grants and awards
- Support for joint research projects
- Support in EU-Applications (Marie Curie etc.)

**Bureau d'économie théorique et appliquée,**

**Institut für Wirtschaftspolitik und Wirtschaftsforschung:**

## **Joint Proposal for a bilateral**

# **"Research Centre on Creative Economies RC<sup>2</sup>E"**

(Tentative Title)

Starting points: Strengthen the Upper Rhine Strasbourg – Karlsruhe academic collaboration that fits into KIT-DeFI activities.

Further enhance research excellence in social and economic sciences to develop and reach global relevance and visibility.

Exploit an exceptional local configuration on both sides of the Rhine to support the transformation of sciences and engineering towards the knowledge society.

# **new franco-german initiatives: BETA/IWW**

Combine world-class research with focused training in the broad field of creativity and knowledge creation in fast evolving economies.

State-of-the art in the scholarly study of creativity, knowledge creation and innovative processes in research organisations and enterprises: rather underdeveloped in France and Germany.

Bundle of disciplines and competences needed.

Recruitment of specialists: Joint master programme from 2010 onwards.

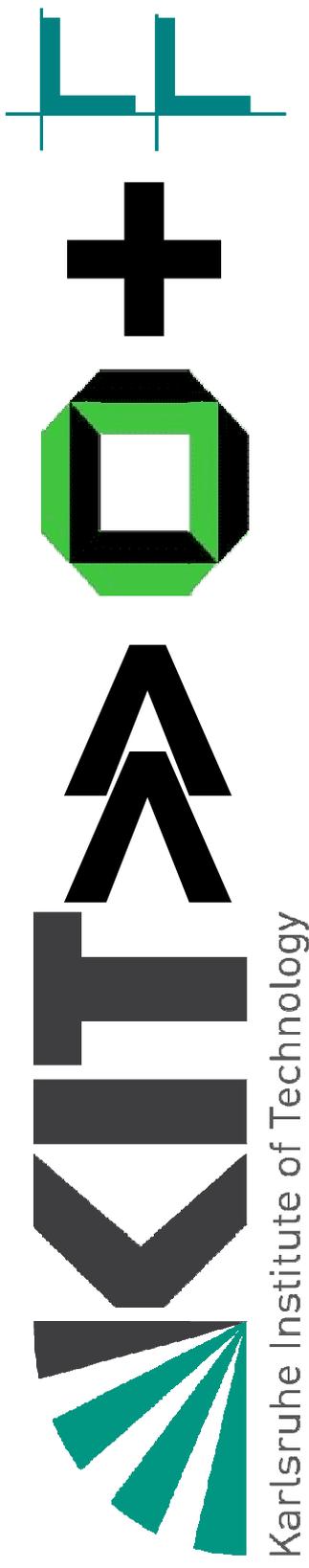
Bi-national interdisciplinary Graduate School on collaborative knowledge creation

Financial support: first steps of targeting under way. Does not fit into existing science policy instruments (like DGF-ANR).

Group of supporting institutes/chairs at ULP and KIT not yet formed, before basics are clarified.

Draft proposal available.

# the KIT-Inequality



Karlsruhe Institute of Technology

**„Coming together is a beginning,  
keeping together is progress,  
working together is success.“  
(Henry Ford)**