

DFG

Funding of the Priority Program „Wireless 100Gb/s and beyond“

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German Research Foundation
Electrical Engineering



DFG

Overview

- ▶ What is the DFG?
- ▶ What does the DFG fund?
- ▶ Priority Programmes
- ▶ Wireless 100Gb/s and beyond



What is the DFG?

Germany's largest research funding organisation

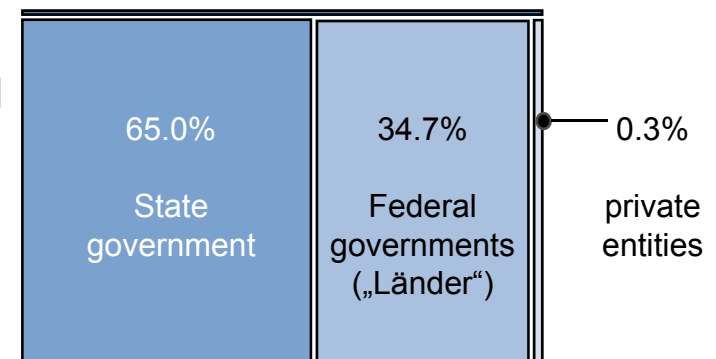
The DFG

- ▶ is the **self-governing organisation** for science and research in Germany.
- ▶ it serves **all branches** of science and the humanities.
- ▶ is an **association** under private law.
- ▶ its **membership** consists of **German research universities (69)**, **non-university research institutions (16)**, **scientific associations (3)**



The funds

- ▶ the large majority of its funds come from the **states** and the **Federal Government**, which are represented in all Grants Committees
- ▶ the voting system and procedural regulations guarantee **science-driven** decisions.



What is the DFG?

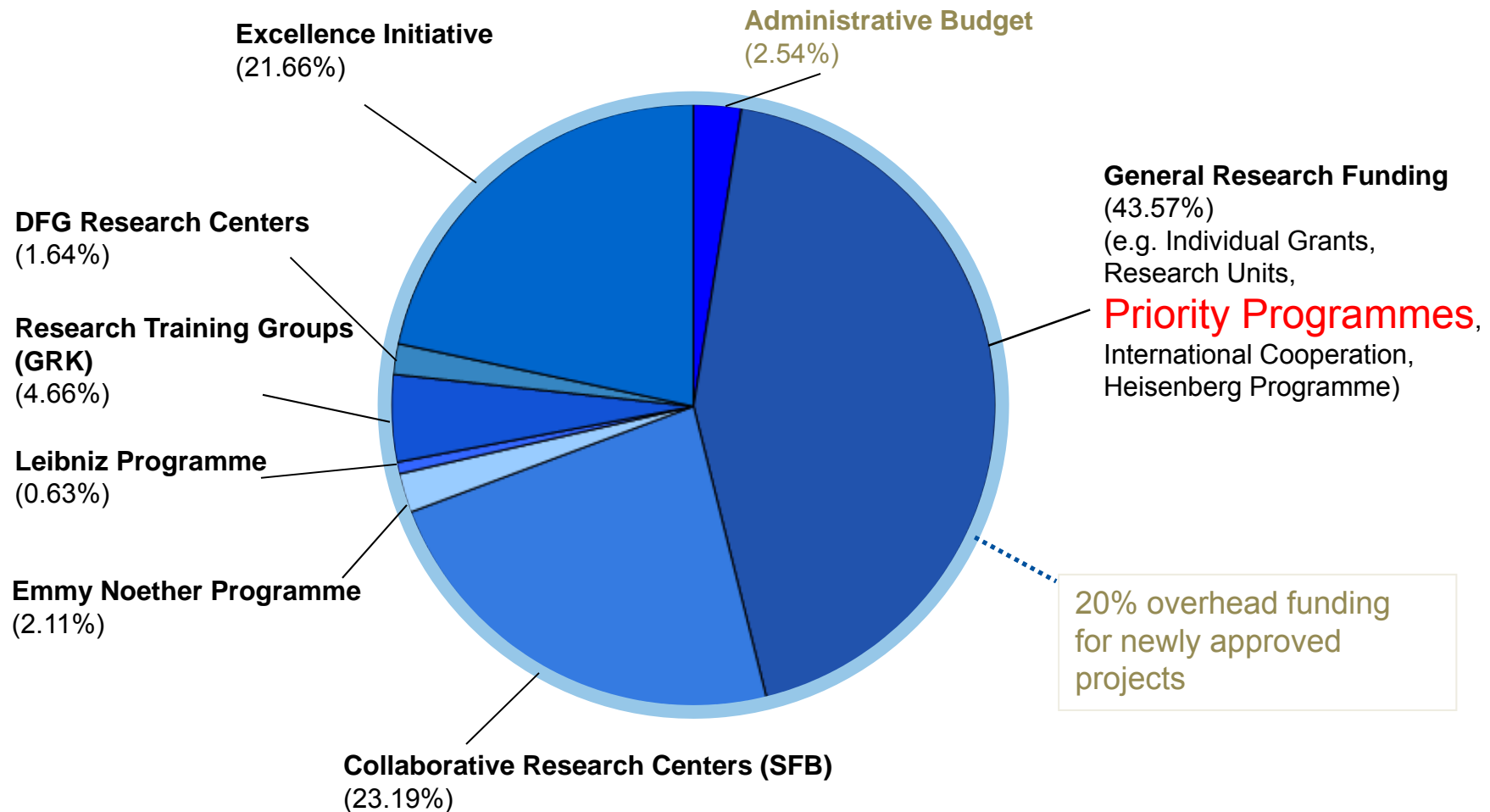
Our aims

- ▶ funding of projects in in **basic science** without deadlines
- ▶ ensure the best possible support for **outstanding scientists and young researchers**
- ▶ make research funding **open to all disciplines** in accordance with scientific standards of quality
- ▶ **keep Germany future-oriented** and **internationally competitive** as a scientific location



What is the DFG?

Funding portfolio



DFG- Priority Programmes-"Wireless 100Gbps and beyond"- ICC, Budapest - Damian Dudek

Priority Programmes (SPP)

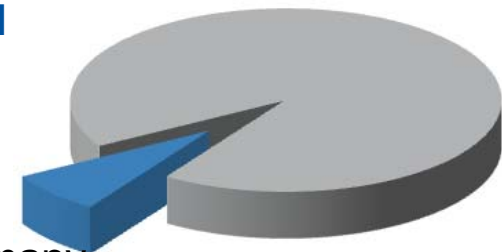
► Purpose

- advance knowledge in an **emerging field** of research through **collaborative networked support**
- enhanced quality of research through the use of **new methods** basic science
- added value through **interdisciplinary cooperation**
- collaborative networked support **over several locations national wide**
- Researchers prepared **call** approved by the DFG-senate

► **Eligibility:** Researchers at universities research institutions in Germany

► **Funding period:** 6 (3 + 3) years

► **Funding:** individual grants + coordination (~ 30 projects)



7,5%
from the total
funding budget.

Priority Programme “Wireless 100Gb/s and beyond”

Towards **wireless 100Gb/s** and beyond addresses directly an **emerging field** in **basic science** which is “per se” **interdisciplinary** because of the involved **engineering disciplines** from device technology over chip design to layers and protocols – analysis of the whole communication system

Coordinator: Prof. Dr. Rolf Kraemer

Department Head

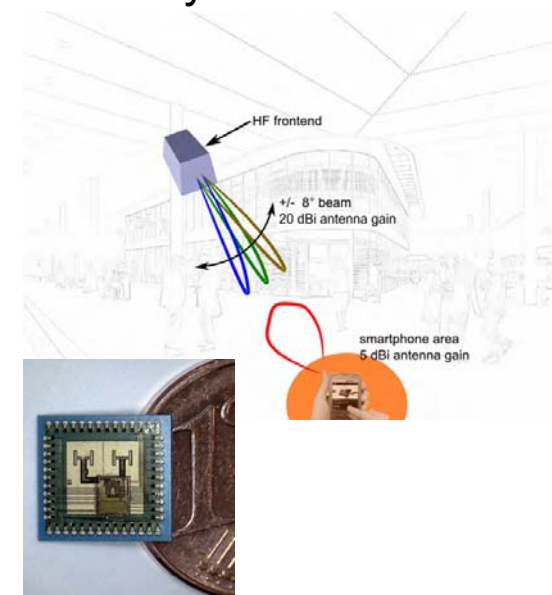
System Design

IHP Innovations for High Performance Microelectronics

Leibniz-Institut für innovative Mikroelektronik

Frankfurt (Oder), Germany

- Wideband RF front-end circuit architectures wireless communication in silicon process technologies
- Ultra-compact radio module with integrated antenna arrays
- Novel silicon based multi-antenna frontend concepts for high-speed data transmission
-



Priority Programme “Wireless 100Gb/s and beyond”

► Research targets:

- Establish new **methods** for a future wireless communication system with **less complexity** and higher **energy efficiency** at 100Gb/s
- Adequate **algorithms** for higher bandwidth efficiency
- New paradigm of **digital and analog** subsystems
- Development of adequate **semiconductor technology** for hf-devices at **f>100GHz**
- New **system architecture** to deal with high data rates

► Challenges:

- Trade-off between **bandwidth-efficiency** and **carrier-frequency, propagation of EM-waves at f>60GHz is a problem**
- Integration of devices
- Energy efficiency

Priority Programme “Wireless 100Gb/s and beyond”

► Projects in numbers:

- **64** applicants
- submitted **27** joint projects
- with a total applied sum of **15.9MEuro**
- coming from **24** different German cities

► Approved

- **10** research projects and **1** coordination project were approved
- with a total amount of **6.5MEuro** for the first 3 years
- Covering the whole range of the topics within “**Wireless 100Gb/s and beyond**”



Funding of the projects just started in the end of May 2013



Thank you for your attention

For more information

- ▶ on the DFG: www.dfg.de/en/
- ▶ on DFG-funded projects: www.dfg.de/gepris/
- ▶ on over 17,000 German research institutes: www.dfg.de/research_explorer/