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

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German Research Foundation
Electrical Engineering
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.

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>State government</td>
<td>65.0%</td>
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<tr>
<td>Federal governments („Länder“)</td>
<td>34.7%</td>
</tr>
<tr>
<td>Private entities</td>
<td>0.3%</td>
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</tbody>
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What is the DFG?
Our aims

► funding of projects 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

Excellence Initiative (21.66%)
Administrative Budget (2.54%)
General Research Funding (43.57%)
(e.g. Individual Grants, Research Units,
Priority Programmes, International Cooperation, Heisenberg Programme)

DFG Research Centers (1.64%)
Research Training Groups (GRK) (4.66%)
Leibniz Programme (0.63%)
Emmy Noether Programme (2.11%)
Collaborative Research Centers (SFB) (23.19%)

20% overhead funding for newly approved projects
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)
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/](http://www.dfg.de/en/)
- on DFG-funded projects: [www.dfg.de/gepris/](http://www.dfg.de/gepris/)
- on over 17,000 German research institutes: [www.dfg.de/research_explorer/](http://www.dfg.de/research_explorer/)