



Federal Ministry
of Education
and Research

**HIGHTECH
STRATEGIE** 
Köpfe. Kompetenzen. Innovationen.

Microelectronics from Germany Driver of innovation for the digital economy

Berlin, 11 September 2018

Federal Ministry of Education and Research

Division for
Electronics, Autonomous electric driving

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www.bmbf.de
www.elektronikforschung.de

Hightech Strategy 2025



- Strengthening science, industry and SME by innovation-friendly frameworks and conditions.
- Mobility of the future is considered as an integrated system and a driver for technology
- Research on safe, connected and clean mobility is one of the crucial areas of action of HTS 2025.
- Close cooperation of the relevant Ministries; furthermore enhanced cross-sectoral activities

Strategy for Automated and Connected Driving



Federal Ministry
of Education
and Research



Federal Ministry
for Economic Affairs
and Energy



Federal Ministry
of Transport and
Digital Infrastructure

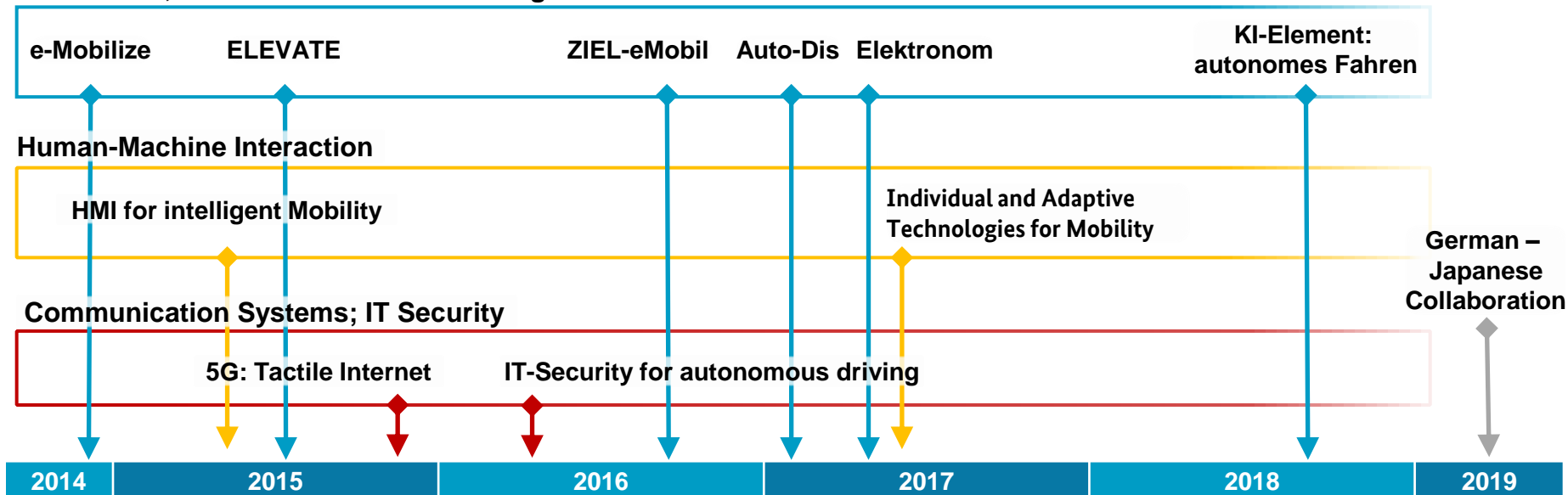
- **Action areas are:** Research & Innovation, Infrastructure, Legislation, Interconnectivity, Cyber security and data protection
- **Joint Research Action Plan** on Automated and Connected Driving
- **3rd Joint Conference** „Research and Technology for automated and connected driving“ in December 2018
- The strategy is followed regularly on State Secretary level

BMBF – Research Agenda “Automated Driving”

Funding of application-oriented research in **electronics, artificial intelligence, human-machine-interaction, communication systems** and **IT security**

Since 2014: ~150 Mio. €

Electronics, Autonomous electric driving



Strategic Lighthouse Project „UNICARagil“



UNICARagil is an important **element of the BMBF research agenda "Automated Driving"** and an academia-driven **lighthouse project**, unique in Germany.

Project coordinator

RWTH Aachen (Institute for Automotive Engineering).

A total of **14 university institutes** and **six companies**, including four SMEs.

The BMBF is funding the project within the call „*Disruptive Vehicle Concepts for Autonomous Electric Mobility (Auto-Dis)*“ with **26 million euros**.

Duration, Website

Feb 2018 – Jan 2022, www.unicaragil.de

KI-Element: Autonomous Driving

„KI-based electronic solutions for safe autonomous driving“

General goals:

- Substantial improvements of **safety** and **reliability** when using **artificial intelligence** for autonomous and connected driving
- **High-performing** and **energy-efficient electronics** as fundamental enabler for applying artificial intelligence in **autonomous driving**
- Optimised hardware/software solutions for the use of artificial intelligence
- Tamper-proof and reliable data interpretation and safeguarded decision making

Deadline: 31 October 2018

Framework Programme Microelectronics 2016 – 2020



BMBF is strengthening and pooling its activities with this Framework Programme for Research and Innovation in order to expand microelectronics in Germany. The goal is to further enhance the innovation dynamics of German economy.

- ***Collaborative Research: 400 Mio. € from 2016 to 2020***
- ***Research Fab Microelectronics Germany (FMD): 350 Mio. €***
- ***Research Laboratories Microelectronics Germany (ForLab): 50 Mio. €***

Research Fab Microelectronics Germany (FMD)

FMD is a cross-regional **research factory for microelectronics and nanoelectronics**, aiming at reinforcing the position of Europe's semiconductor and electronics industry; Cooperation of:

- *Fraunhofer Alliance for Microelectronics,*
- *Ferdinand-Braun-Institut (FBH) and*
- *Leibniz-Institute for Innovations for High Performance Microelectronics (IHP).*

Investment: 350 Mio. €

Duration: April 2017 to December 2020





Funding of European transnational joint projects

- industry-driven and pre-competitive,
- cross-border value chains,
- complementary competencies



Health and the Ageing Society



Automotive and Transport



Production and Technology



Equipment, Materials and Manufacturing



Process Technology and Integration

Partners from at least 2 EUREKA-Member states,
500 million euros funding from 2016 to 2020



Partners from at least 3 member states,
national and European funding, 5 billion euros
project volume in 2014-2020

KMU-innovativ – Research programme for SMEs

- The objective is to **strengthen the innovation potential of small and medium-sized enterprises (SMEs)** in the field of cutting-edge research. Innovative SMEs can receive financial support to develop technologies, product solutions, processes and services in their company, that are well beyond the state of the art.
- **Simplified and accelerated application and approval procedures** as well as comprehensive advisory services for SMEs.

With "**KMU-innovativ: Electronics; Autonomous Electric Driving**", the BMBF is supporting small and medium-sized enterprises to develop **innovative electronic systems and technologies for autonomous electric driving**.

Deadlines are every six months, on **April 15** and **October 15**.

<https://www.bmbf.de/de/kmu-innovativ-elektroniksysteme-elektromobilitaet-2576.html>

BMBF – Programme for promoting young scientists

Investing in young talents - opening up new career paths: The promotion of junior scientists is a central concern of the BMBF.

INVENT a CHIP

Student competition of grades 8 - 13.

SolarMobil

Student competition of grades 4 - 13.

COSIMA

Students with innovative ideas on microelectronic systems.

DRIVE-E-Programm

Award for outstanding master theses on E-mobility and excursions to well-known car manufacturers and suppliers.



Further information

Federal Ministry of Education and Research

www.bmbf.de

Research on Microelectronics

www.elektronikforschung.de

Funding of small and medium-sized enterprises (SMEs)

<https://www.bmbf.de/de/mittelstand-3133.html> und www.kmu-innovativ.de

Programme to promote young scientists

<https://www.elektronikforschung.de/nachwuchsfoerderung>

Research Fab Microelectronics Germany (FMD)

www.forschungsfabrik-mikroelektronik.de

Thank you for your attention!

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