



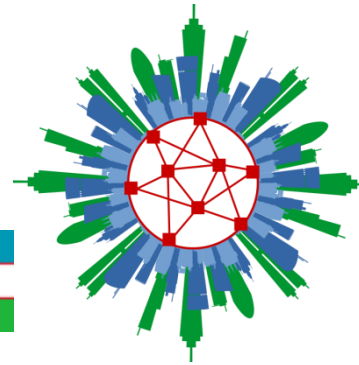
DLR

Deutsches Zentrum
für Luft- und Raumfahrt
German Aerospace Center

Institute of Transportation Systems

SuMoCoS

Sustainability and Mobility
in the Context of Smart Cities



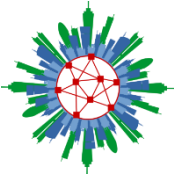
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Federal Ministry
of Education
and Research

Introduction of German Aerospace Center (DLR) and Delegation

Mathias Höhne

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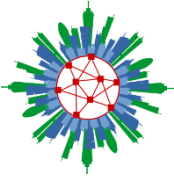


Research Institution – Space Agency – Project Management Agency

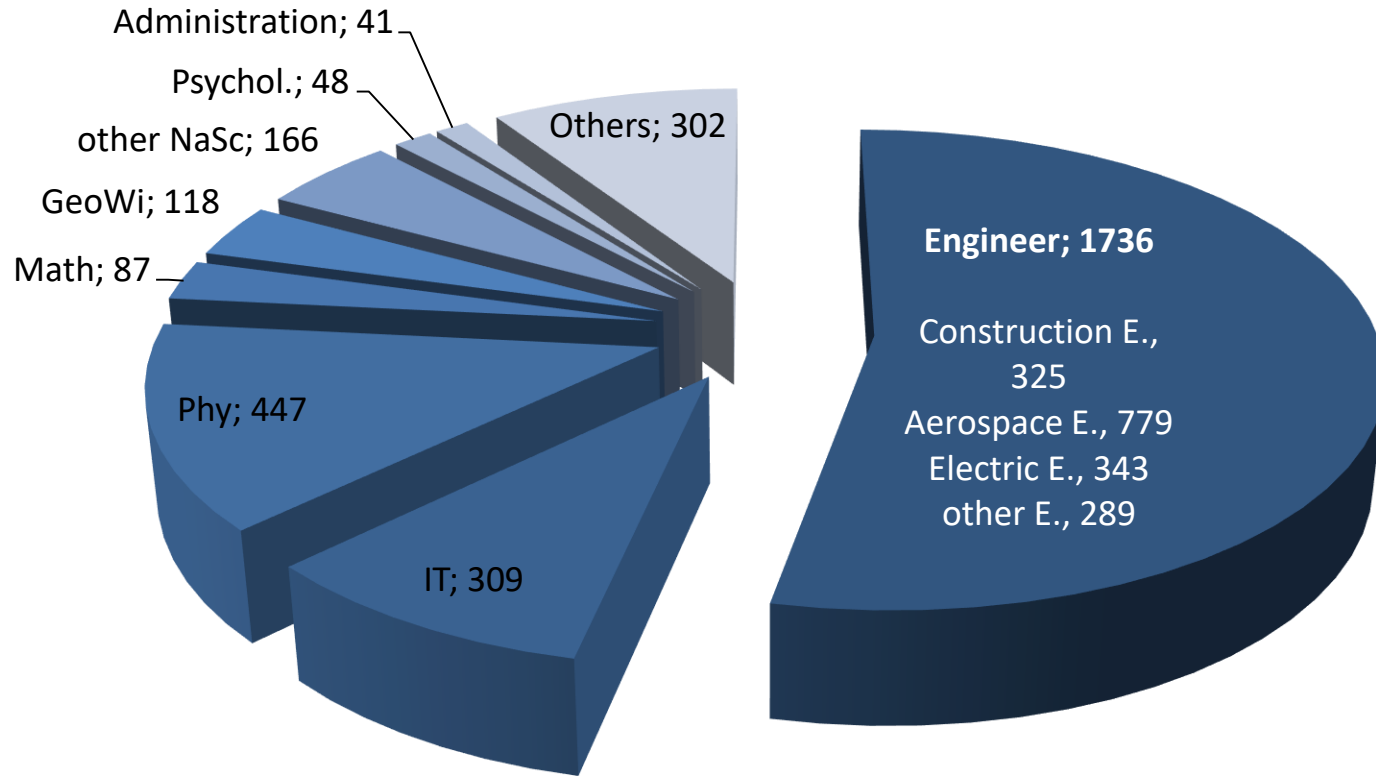


Our Mission:

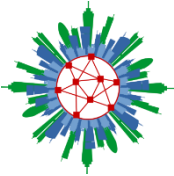
- Exploration of the Earth and the Solar System
- Research for the preservation of the environment
- Development of environmentally friendly technologies to increase mobility, communication and security



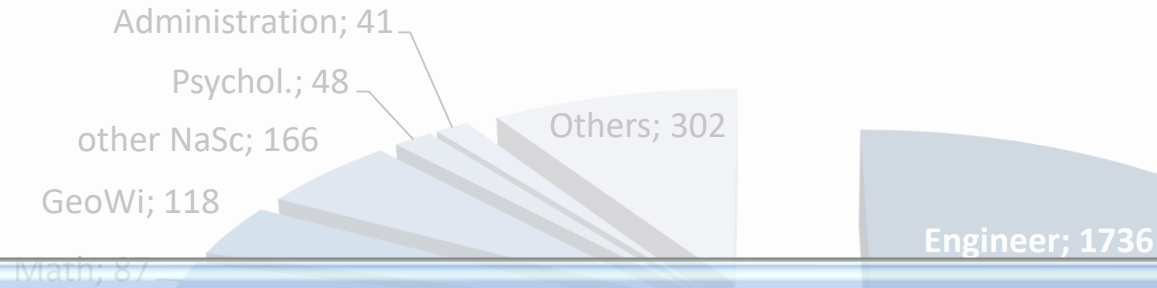
Interdisciplinary Research Teams @ DLR



*DLR employees at the Institutes (research)
State: December 31, 2017*



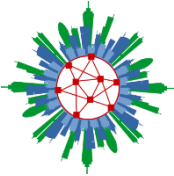
Interdisciplinary Research Teams @ DLR



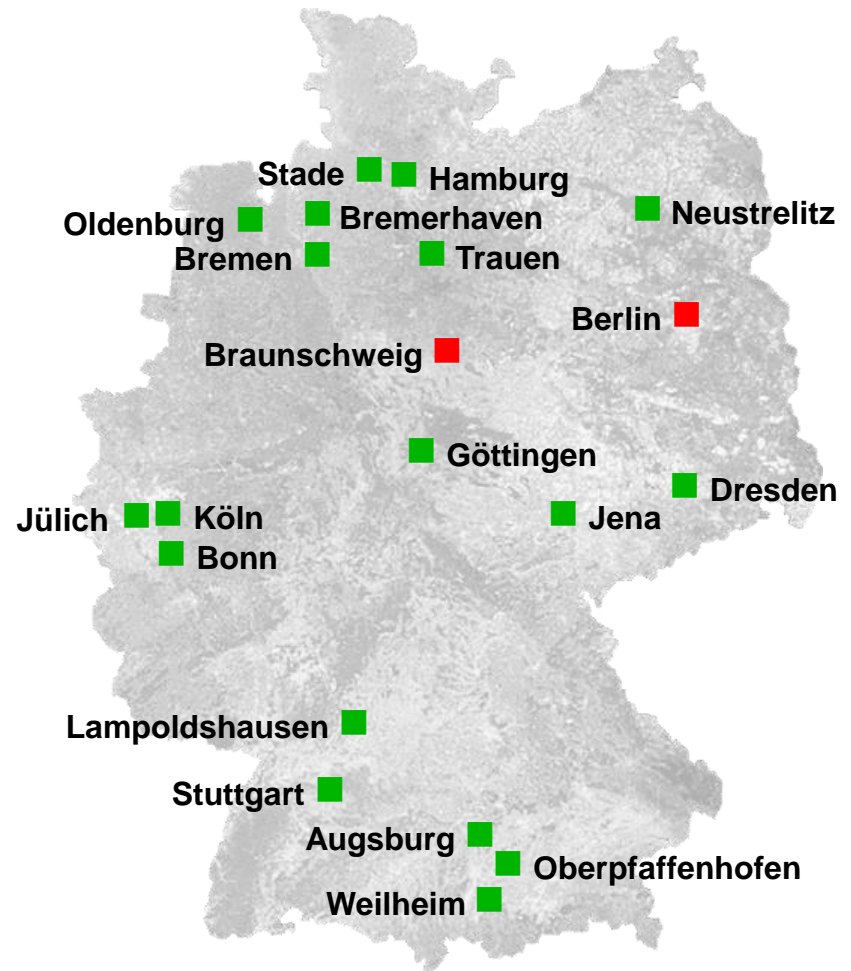
Approx. 8,200 Employees in total, with 31.8 % Women

- over 1000 ongoing dissertations
- over 850 final theses and student research projects per year
- approx. 520 internships / year
- 320 trainees
- 390 visiting scientists
- 16 % part-time

*DLR employees at the Institutes (research)
State: December 31, 2017*



- Research branches
 - **Aeronautics**
 - **Space**
 - **Energy**
 - **Transport**
 - **Safety**
- 40 research institutes and facilities at 20 sites in Germany
- Offices in Brussels, Paris, Washington, and Tokyo



Aeronautics

Giving wings to the future



Aeronautics

- Research for safe, environmentally friendly flying
- Focal points: Vehicle development, air traffic management, air traffic control and atmospheric research
- Operation of the largest civil fleet of research aircraft and helicopters in Europe

Im neuen Validierungszentrum Luftverkehr in Braunschweig testen DLR-Forscherinnen neue Konzepte auf ihre Praxistauglichkeit

Quelle: DLR (CC-BY 3.0)



Space

Crossing boundaries for Earth



Latitude	21.5317°
Longitude	89.457°W
Lighting	Sun
Speed	7.44 km/s
Height	730 km
Perigee	726 km
Apogee	791 km
Inclination	98.29°
Epoch	2011.285.20.47
Beta Angle	-73.32°
Azimuth	257.39°
Elevation	-56.08°



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NET 081/01:13:28



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NET 081/01:13:28

GSOC
German Space Operations Center



Space

- space exploration
- Observation of the Earth and its ecosystems
- Research under space conditions
- satellite communication and navigation
- Further development of space transport and space systems

Im P5-Prüfstand des DLR in Lampoldshausen wird eine neue Schubdüse des Hauptstufentriebwerkes der Ariane-5 getestet.

Quelle: DLR (CC-BY 3.0)



Energy

Use of the sun as a source of energy



Energy

- Clean, sustainable and affordable energy for people and the economy
- Further development of gas turbine technology and solar thermal power plants
- Optimization of combustion technology, alternative fuels and storage media

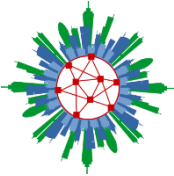


Transport

Visions for Mobility of Tomorrow



Mathias Höbner



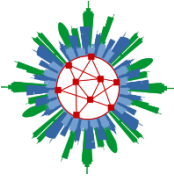
Shaping **sustainable mobility**
balancing interests from economy,
society and environment



by

- Reducing energy consumption of road and railway vehicles
- Avoidance of harmful emissions, in particular CO₂, NO_x, soot and noise
- Increased safety, reliability and comfort
- More efficient use of existing infrastructures
- Improvement of multimodal transport chains





DLR Transport Research - Portfolio

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DLR

66 M€ pa
Budget

25
Institutes

660
employees

Vehicles

**Develop systemic
vehicle concepts**



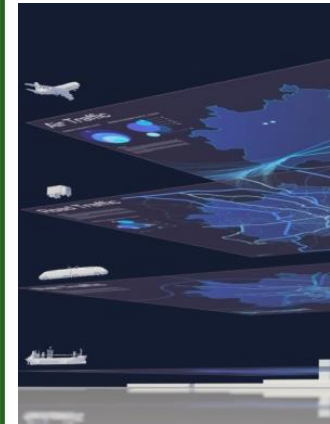
Traffic Management

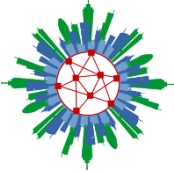
Realising seamless transport chains



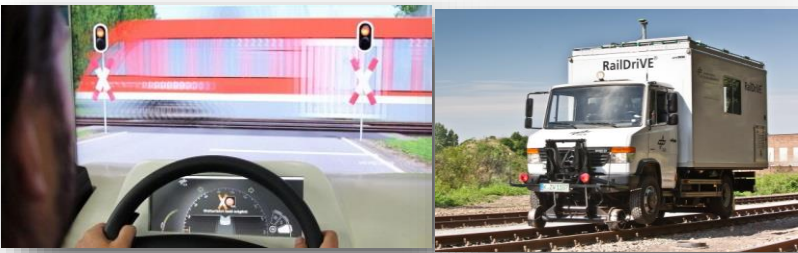
Transport System

**Understanding
and forecasting
traffic and its
effects**





Railway Systems



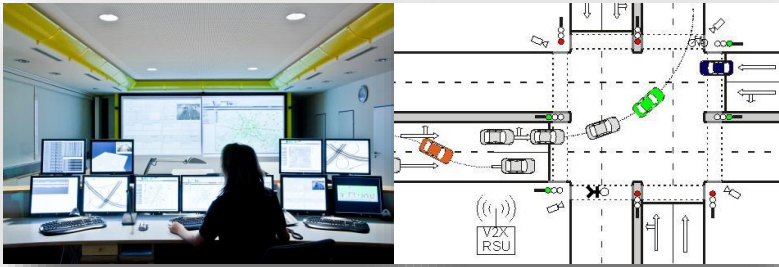
Automotive

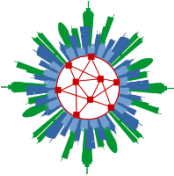


Intermodal Transport



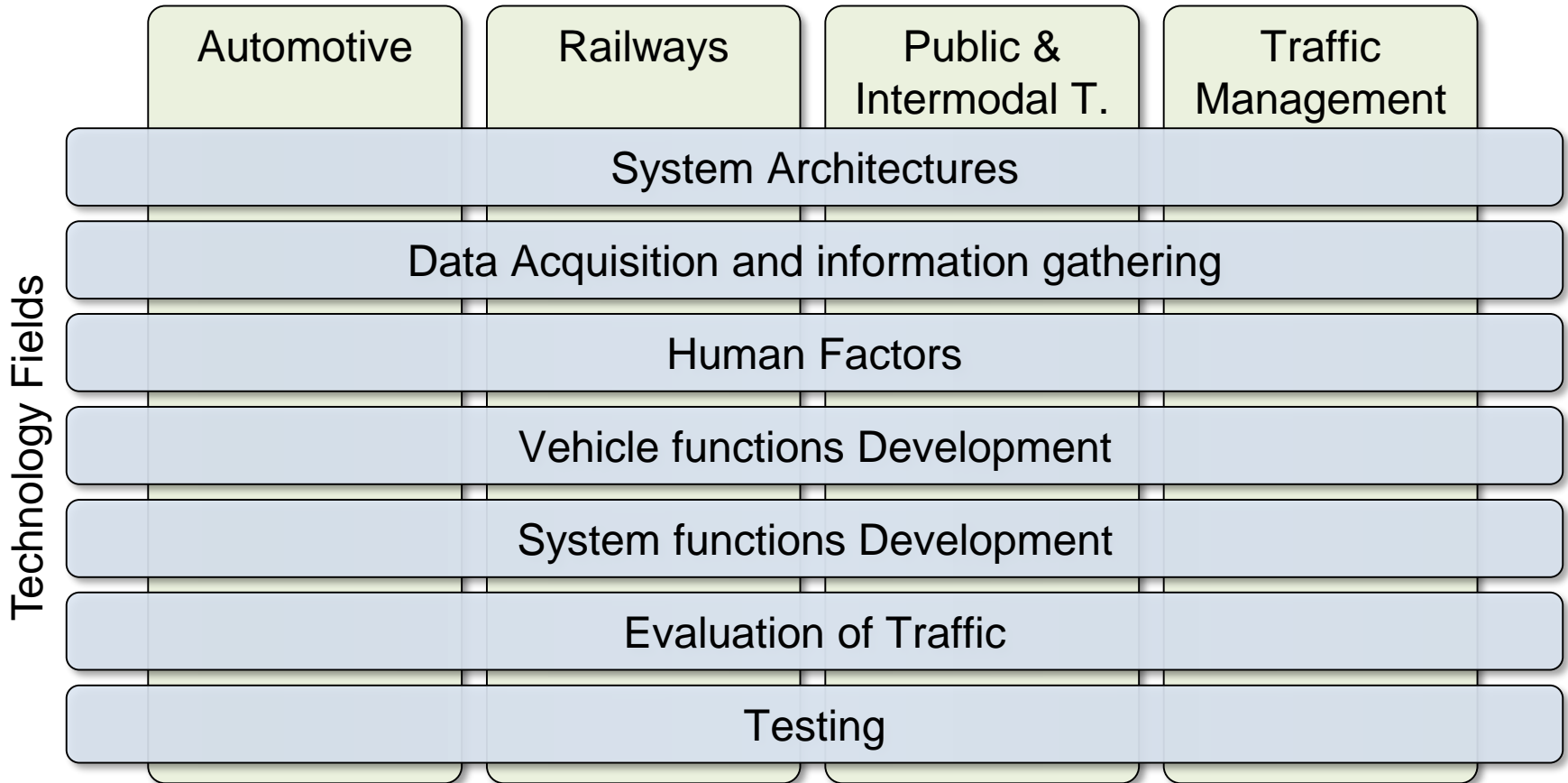
Traffic Management

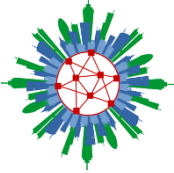




Technology Fields and Research Domains

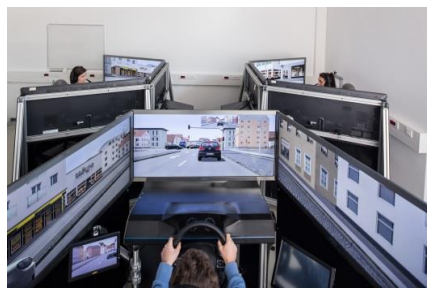
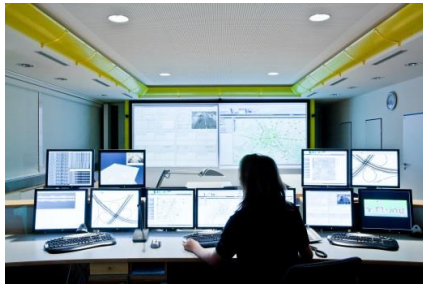
Research Domains

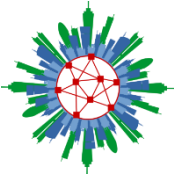




Research Facilities

- Application Test Bed Intelligent Mobility (AIM), Simulations, Test Vehicles, Measurement/Test Facilities





Partner

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▪ OECON Products and Services GmbH

▪ Mr. Dr. Fatih Özel

We are one of the world's leading providers of cutting-edge testing and location-based smart mobility solutions for manufacturers in the automotive industry and associated industries.

eCall & TPSP



eCall test systems for the automotive industry and eCall decoders for emergency response centers and TPSP

Connected & automated driving



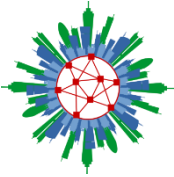
Test- and Simulation systems for V2X cars
Location-based smart mobility solutions

UAV Management



DaaS - "Drone as a Service"
Management software Platform for Drone flights beyond Line of sight (BVLOS)

OECON is the world market leader in this environment



Thank you for your attention!

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(Source: acatech, 2016)