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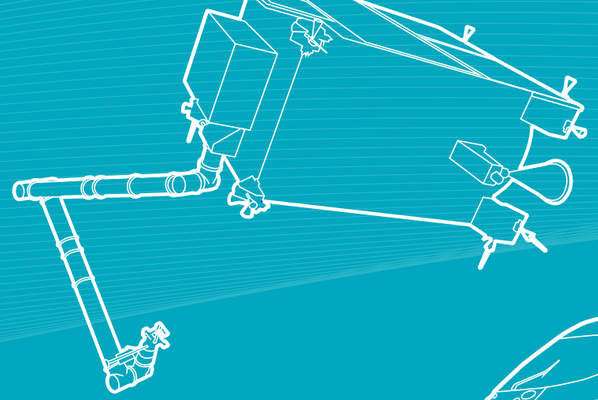
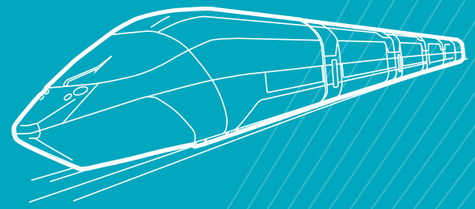
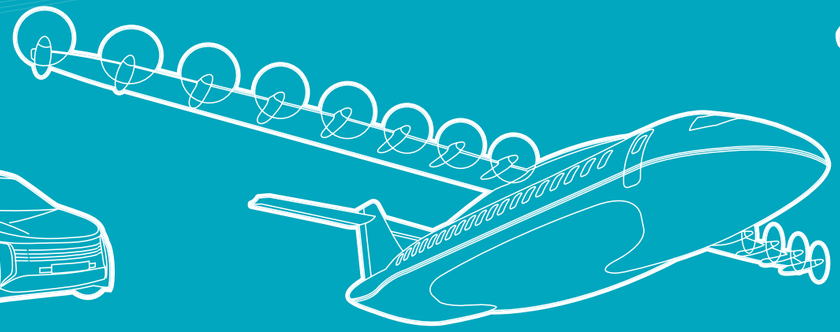
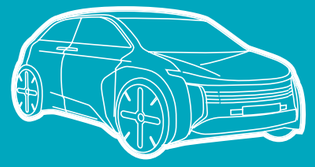
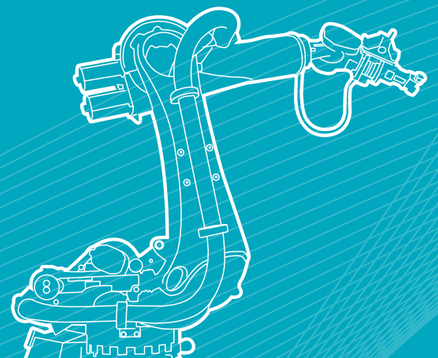








DLR in **facts and figures**



DLR at a glance

Research and technology

The German Aerospace Center (DLR) combines its research topics in a way that is unique in Germany and Europe. It makes pioneering contributions in the areas of aeronautics, space, energy, transport, security and digitalisation. With its scientific and technical expertise, DLR strengthens Germany's position as a scientific and economic location.

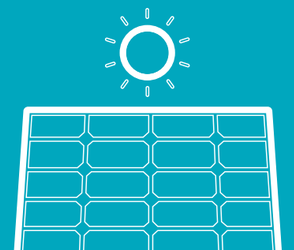
Space Administration

In addition to its own research activities, the DLR Space Administration is responsible for planning and implementing space activities on behalf of the German Federal Government.

Project Management Agencies

The DLR portfolio is complemented by the DLR Project Management Agency and the Project Management Agency for Aeronautics Research and Technology. These agencies support their clients with analyses and expertise, as well as in the planning, implementation and communication of funding programmes and other measures in research, education and innovation.

DLR



27 sites, 47 institutes and facilities, the Space Administration and Project Management Agencies

Augsburg
- Institute of Composite Structures and Adaptive Systems
- Institute of Test and Simulation for Gas Turbines

Berlin
- Institute of Optical Sensor Systems
- Institute of Propulsion Technology
- Institute of Vehicle Concepts
- Remote Sensing Technology Institute
- Institute of Optical Sensor Systems
- Institute of Planetary Research
- Institute for Software Technology
- Institute of Transport Research
- Institute of Transportation Systems
- DLR Project Management Agency

Bonn
- Space Administration
- DLR Project Management Agency
- Project Management Agency for Aeronautics Research and Technology

Braunschweig
- Institute of Aerodynamics and Flow Technology
- Institute of Composite Structures and Adaptive Systems
- Institute of Flight Guidance
- Institute of Air Transport and Airport Research
- Institute of Flight Systems
- Institute for Software Technology
- Institute of Transportation Systems
- Flight Experiments
- Wind Energy Experiments

Bremen
- Remote Sensing Technology Institute
- Institute of Space Systems
- Institute of Composite Structures and Adaptive Systems

Bremerhaven
- Institute for the Protection of Maritime Infrastructures

Cochstedt
- National Experimental Test Center for Unmanned Aircraft Systems

Cottbus
- Institute of Low-Carbon Industrial Processes

Cologne
- Institute of Aerodynamics and Flow Technology
- Institute of Propulsion Technology
- Institute of Air Transport and Airport Research
- Institute of Aerospace Medicine
- Institute of Materials Physics in Space
- Institute for Software Technology
- Institute of Solar Research
- Institute of Engineering Thermodynamics
- Institute of Materials Research
- Space Operations and Astronaut Training
- DLR Project Management Agency

Dresden
- Institute of Software Methods for Product Virtualization

Göttingen
- Institute of Aerodynamics and Flow Technology
- Institute of Aeroelasticity
- Institute of Propulsion Technology

Hamburg
- Institute of Aerospace Medicine
- Institute of Maintenance, Repair and Overhaul
- Institute of System Architectures in Aeronautics
- Institute of Air Transportation Systems

Hanover
- Institute for Satellite Geodesy and Inertial Sensing

Jena
- Institute of Data Science

Jülich
- Institute of Solar Research

Lampoldshausen
- Institute of Space Propulsion
- Institute of Technical Physics

Neustrelitz
- Institute of Communications and Navigation
- Remote Sensing Technology Institute
- Institute for Solar-Terrestrial Physics
- German Remote Sensing Data Center

Oberpfaffenhofen
- Microwaves and Radar Institute
- Institute of Communications and Navigation
- Remote Sensing Technology Institute
- Institute of Atmospheric Physics
- Institute of Robotics and Mechatronics
- Institute of System Dynamics and Control
- Institute for Software Technology
- German Remote Sensing Data Center
- Flight Experiments
- Galileo Competence Center
- Space Operations and Astronaut Training

Oldenburg
- Institute of Networked Energy Systems

Rheinbach
- Institute for the Protection of Terrestrial Infrastructures

Sankt Augustin
- Institute for the Protection of Terrestrial Infrastructures

Stade
- Institute of Composite Structures and Adaptive Systems

Stuttgart
- Institute of Structures and Design
- Institute of Vehicle Concepts
- Institute of Solar Research
- Institute of Technical Physics
- Institute of Engineering Thermodynamics
- Institute of Combustion Technology

Trauen
- Institute of Propulsion Technology

Ulm
- Institute of Quantum Technologies
- Institute of Engineering Thermodynamics

Weilheim
- Space Operations and Astronaut Training

Zittau
- Institute of Low-Carbon Industrial Processes

As of: September 2018

The designations used in the texts for groups of people apply to all genders.

SPACE

AERONAUTICS

TRANSPORT

ENERGY

SPACE ADMINISTRATION

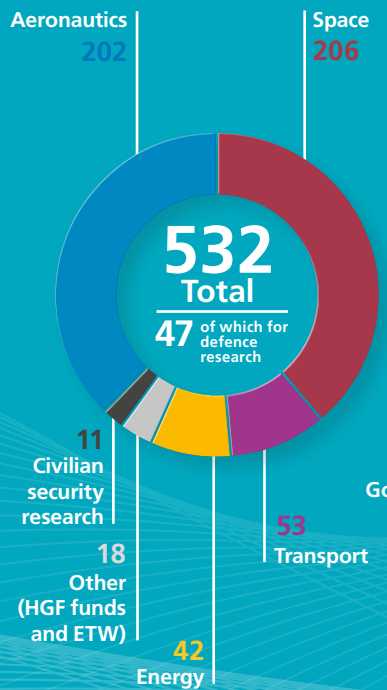
PROJECT MANAGEMENT AGENCY

SECURITY

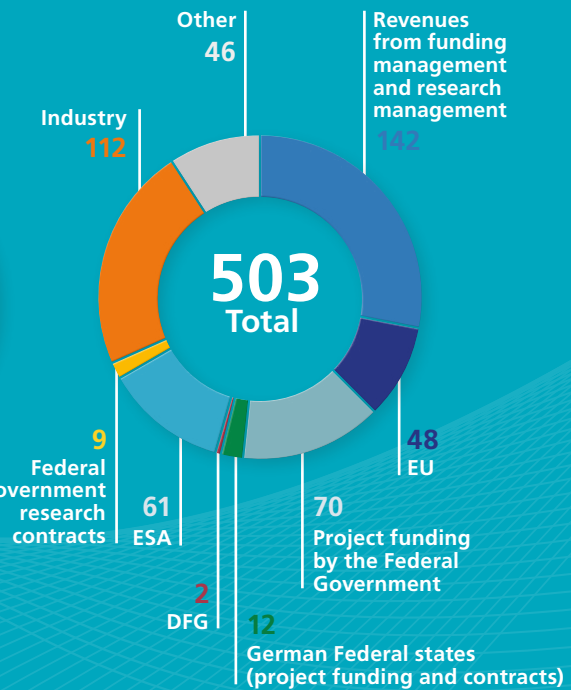
DIGITALISATION

Finances

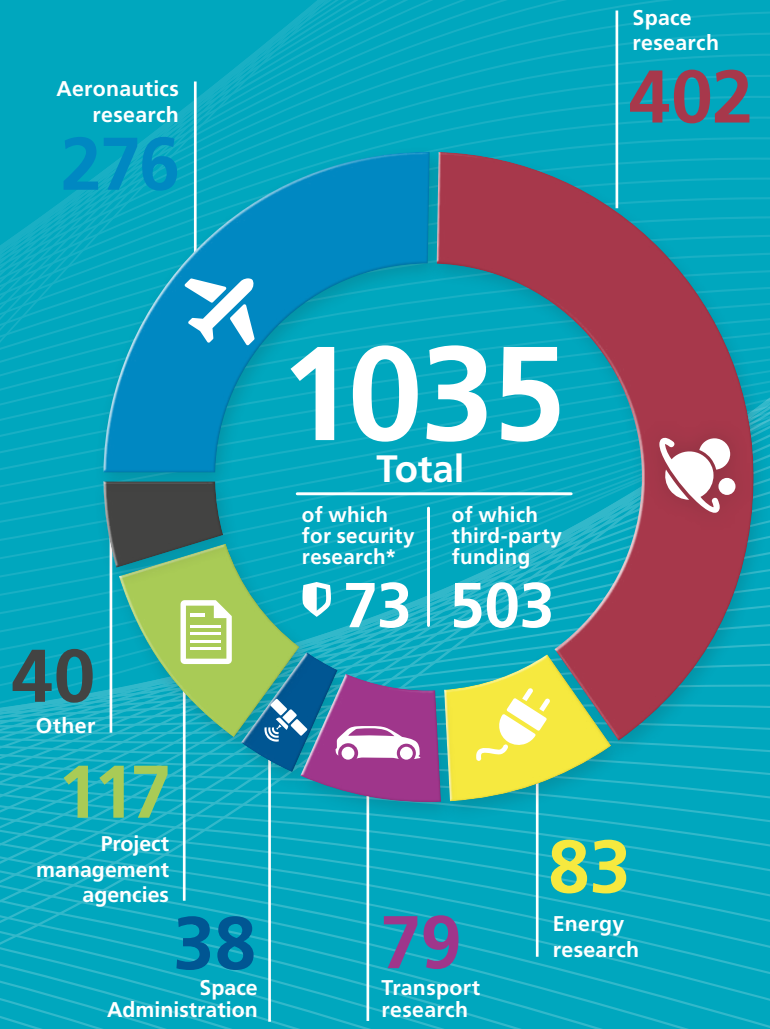
Institutional funding



Third-party funding by source

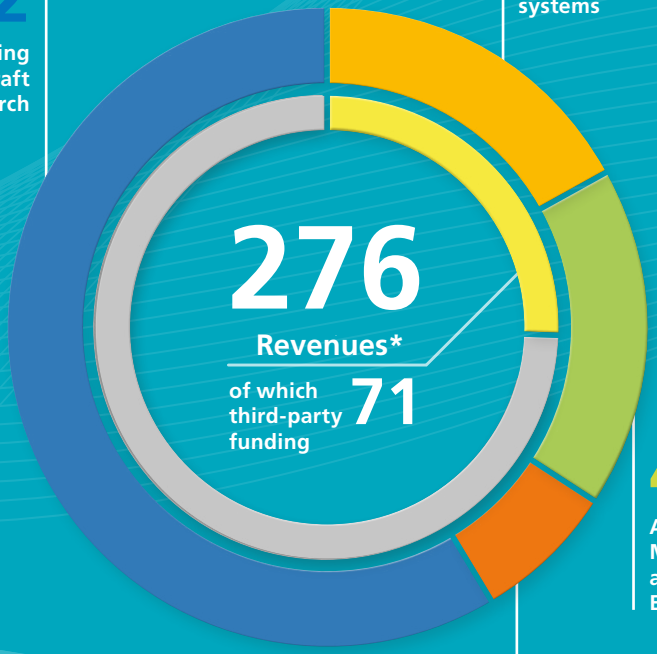


Total budget



DLR's own research is financed up to 90 percent by funds provided by the German Federal Government, with the remaining 10 percent provided by the Federal States. In addition, DLR acquires funds from a variety of sources for its transfer and contract research. For example, it receives approximately 122 million euro from industrial contracts – an amount that testifies to the high quality and relevance of DLR's research and development activities. DLR also applies for national and European project funding. In addition, DLR operates as a service provider through the Project Management Agencies and the Space Administration, and generated revenues of 130 million euro in 2017.

Aeronautics



162
Fixed-wing aircraft research

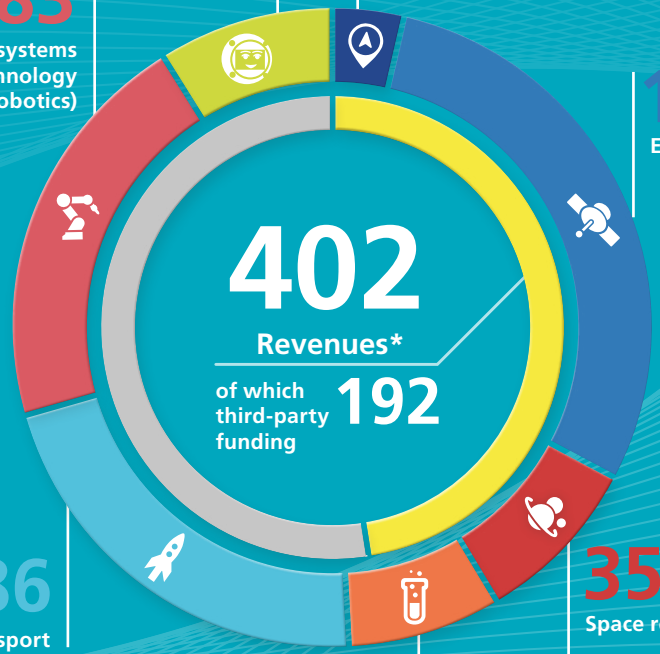
47
Propulsion systems

48
Air Traffic Management and Flight Experiments

20
Rotary-wing aircraft research

In the area of aeronautics research, DLR is facing the challenge of making the fast-growing air transport sector efficient, safe and environment friendly. Among other issues, DLR scientists are conducting research into the digitalisation of aviation, electric flight and unmanned air transport. Drawing on the scientific excellence of its institutes, its research infrastructure, and Europe's largest fleet of civilian research aircraft, DLR is in a position to consider air transport systems from a holistic perspective and hence to strengthen the competitiveness of the national and European aviation industry.

Space



35
Aerospace robotics

15
Communications and navigation

83
Space systems technology (incl. robotics)

117
Earth observation

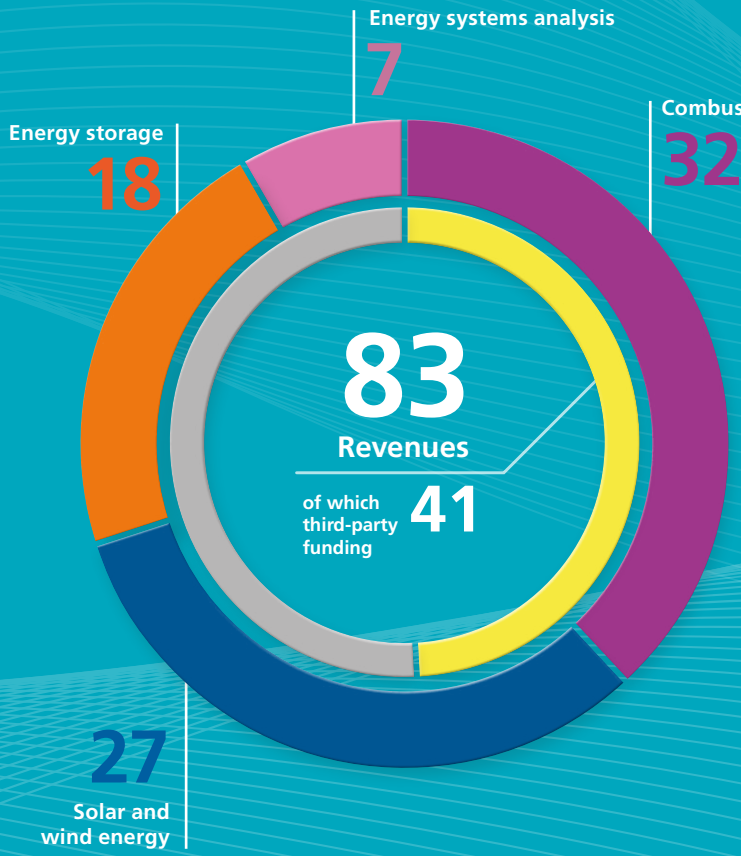
86
Space transport

35
Space research

31
Research under space conditions

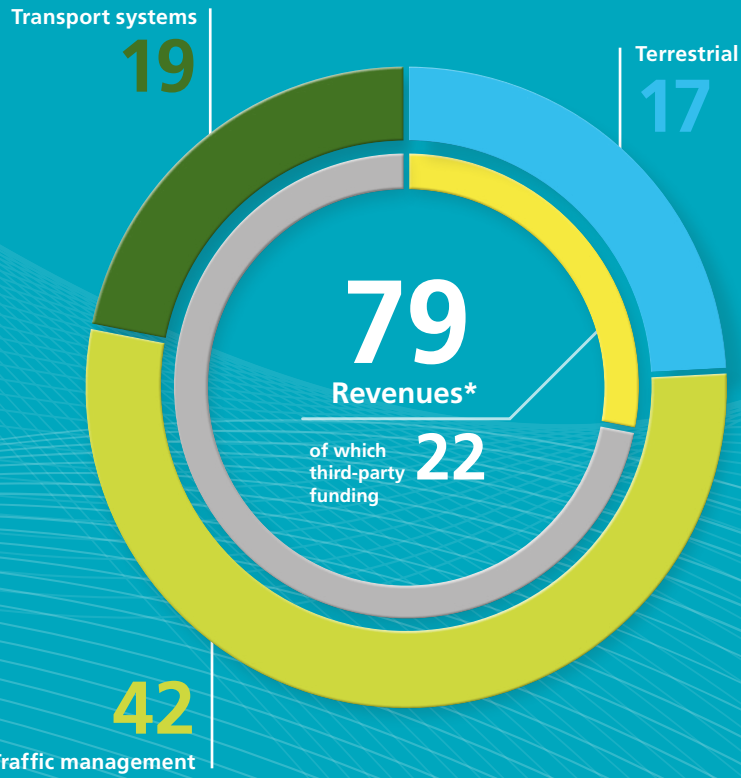
Space research has penetrated many areas of our daily lives. DLR space research activities focus on climate change, digitalisation, as well as new communications and navigation technologies. It covers the entire system chain – from launcher engines to payloads on Mars, and from the development of scientific and technological fundamentals through to their application in space and on Earth. Research is focused on addressing various societal challenges and aims to achieve the maximum benefits for society.

Energy



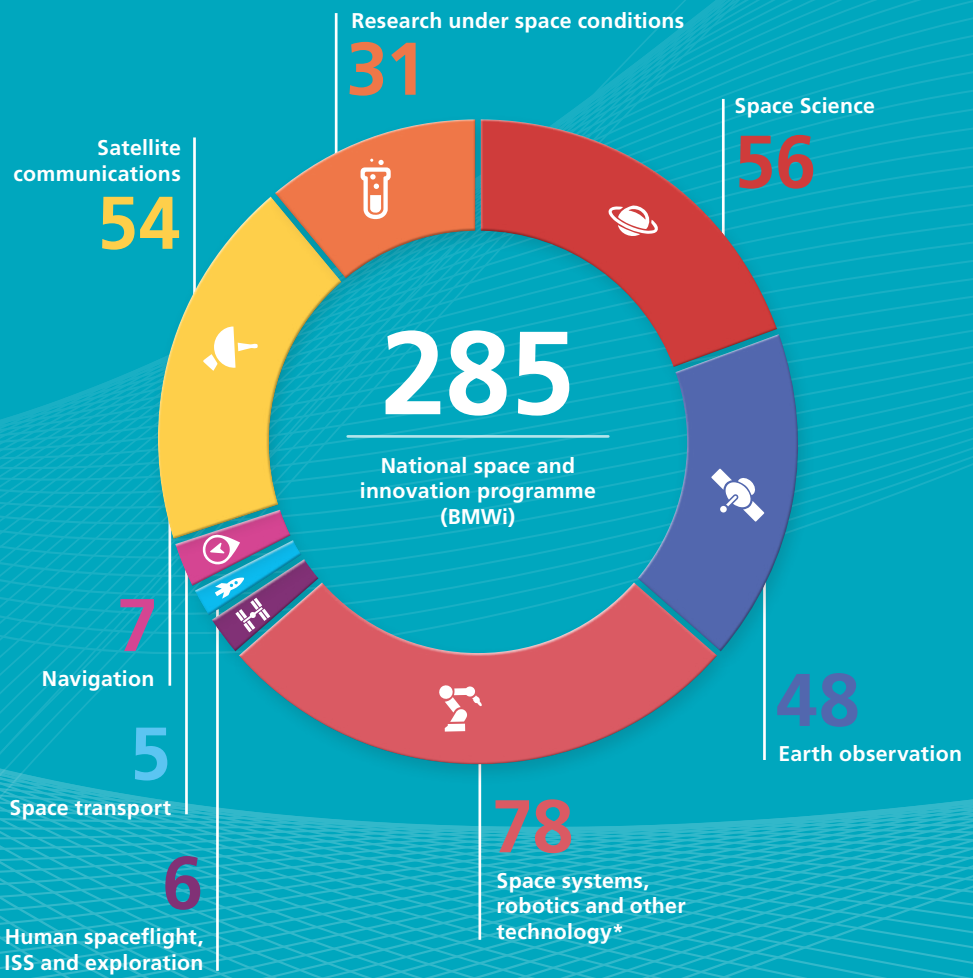
In Germany and the world over, work is being carried out on converting energy systems into climate-friendly, low-risk energy sources, alongside the development of highly efficient exploitation technologies. For this, DLR's energy research provides technological possibilities and contextual knowledge through systems analysis. The work mainly targets sustainable and controllable power generation along two paths. On the one hand, through the use of fluctuating renewable energy sources in conjunction with storage systems, and on the other hand, through the use of low-carbon-dioxide or carbon-dioxide-free fuels in efficient energy converters.

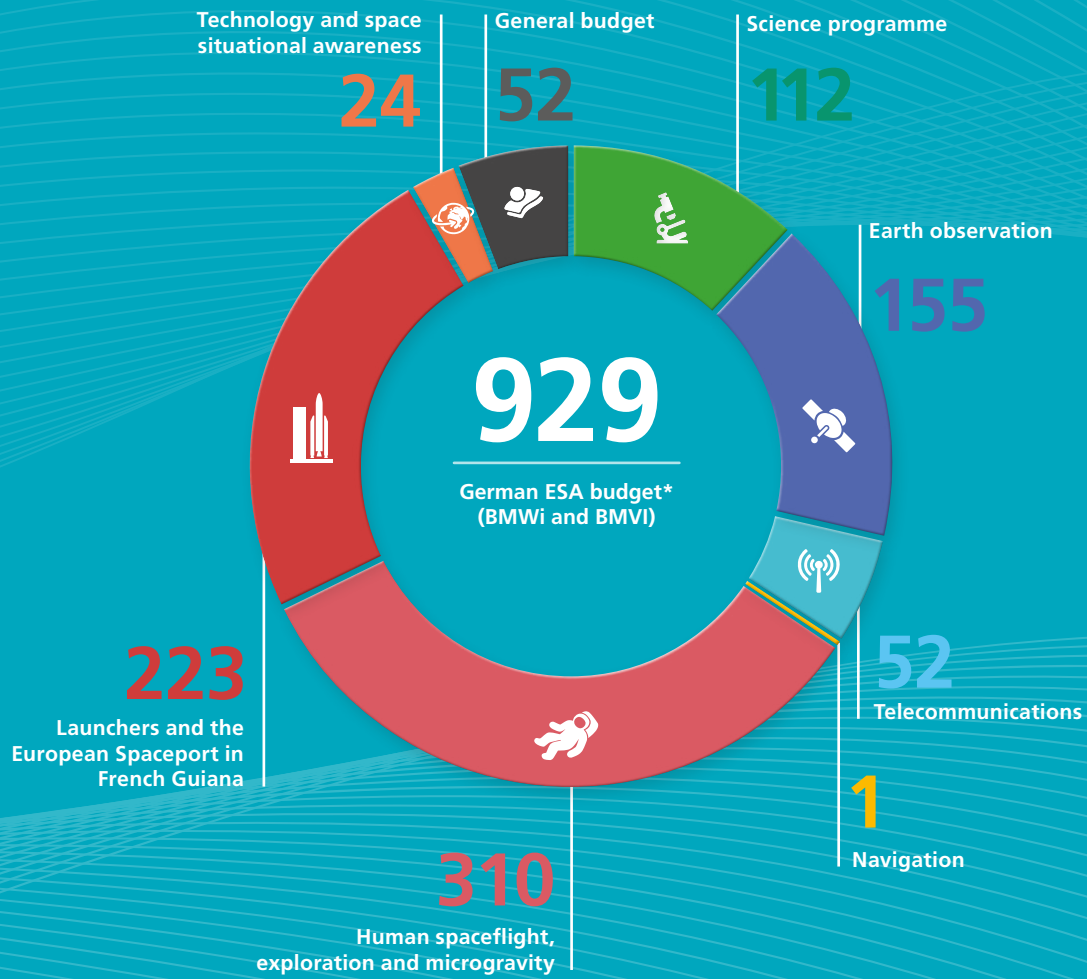
Transport



Realising sustainable mobility in a balance of interests between the economy, society and the environment is the driving force behind DLR's transport research. It addresses the key challenges facing future mobility on the ground: efficiency, emissions and safety. In particular, the possibilities afforded by digitalisation are being harnessed to devise solutions that will allow greater automation, the targeted development and use of new data sources, intensive networking of transport modes, and a comprehensive approach to transport interdependencies.

Space Administration





In addition to its own research activities, the DLR Space Administration is responsible for planning and implementing space activities on behalf of the German Federal Government. These include the national space programme, DLR's Space Research and Development Programme, and Germany's contributions to the European Space Agency (ESA) and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT). The principal client of the Space Administration is the German Federal Ministry for Economic Affairs and Energy (BMWi); other clients include the Federal Ministry of Transport and Digital Infrastructure (BMVI) and the Federal Ministry of Defence (BMVg).

Data in million euro Year of reference: 2018 *Including the cost agreement between the Space Administration and BMWi

Data in million euro Year of reference: 2018 *Including the cross-sectoral field of security research

Project management agencies

153

Project Management Agency For Aeronautics Research and Technology, funding volume

1434

DLR Project Management Agency, funding volume

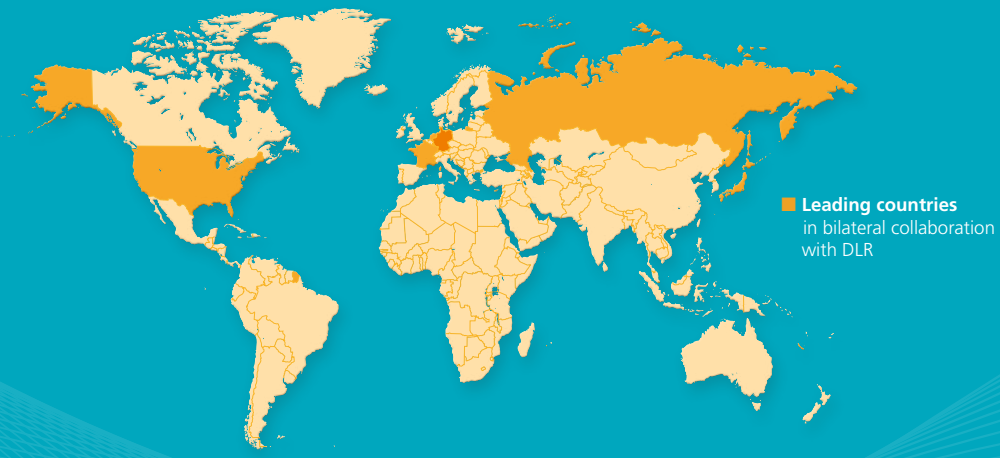
- Education, gender
- Society, innovation and technology
- Health
- Environment and sustainability
- European and international collaboration

Project management agencies provide vital services for German research, innovation and education. They support their clients with analyses and expertise, as well as in the planning, implementation and communication of funding programmes and other measures.

The DLR Project Management Agency offers a wide range of consulting and support services, including European and international cooperation. Its principal clients are the German Federal Government, together with federal state authorities, but it also services educational institutions, foundations and associations, as well as the European Commission. It is one of the largest project management agencies in Germany.

The Project Management Agency for Aeronautics Research and Technology assists the German Federal Ministry for Economic Affairs and Energy and the German states of Bavaria, Brandenburg, Hamburg and Lower Saxony in implementing their aeronautics research programmes. It also serves as the national point of contact for aeronautics research within the EU Research and Innovation framework programme.

International cooperation in research



DAAD – DLR Research Fellows
103

Visiting scientists from 67 countries
464

Assignments abroad (persons)
51

Partner organisations in over 60 countries
400

Selected international activities at DLR

3
Research stations

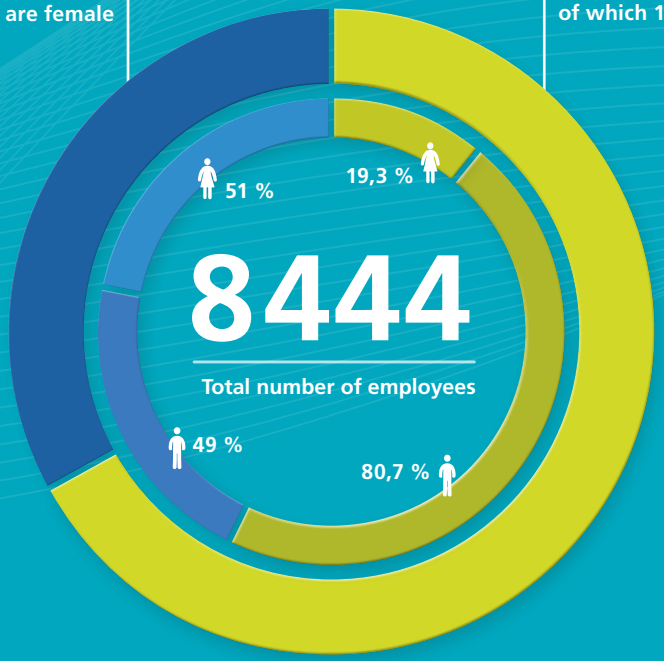
4
International offices

In order to overcome global challenges, solutions must be developed at an international level. DLR institutes work with universities, research institutions, public authorities, industry partners and stakeholders worldwide to address future-oriented topics and to develop adequate innovative solutions. In addition, DLR has been involved in research and exchange projects for many years.

Personnel

3599
Non-scientific staff,
of which 51% are female

4845
Scientific staff,
of which 19% are female



2783 **5661**

Average age: 40 years

DLR's outstanding performance is made possible by its extremely qualified and highly motivated employees, who are all given the opportunity to develop themselves further at DLR. Equal opportunities are a primary concern. By maintaining flexible working hours, part-time arrangements and special support measures, we ensure that our employees can achieve a positive work-life balance.

Promoting young scientists

DLR_School_Lab attendees
37,316

Number of DLR_School_Labs
13

PhD candidates
989

Participants in teacher workshops
1378

DLR_Summer_Schools
3

245
Trainees

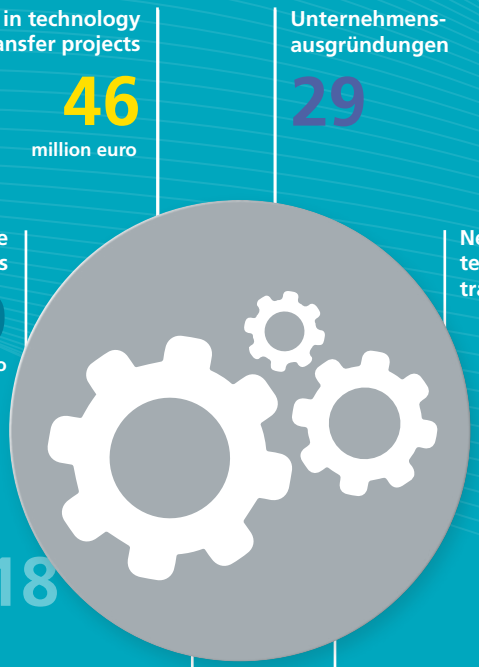
80–100
Participants in DLR_Summer_Schools

379
Student interns

6000
Schools that have received teaching material from DLR

DLR promotes young scientists through its integrated concept called DLR_Campus. It ranges from activities for schools to degree-related initiatives that go all the way to the doctorate level. For instance, sometimes in tandem with partner universities, DLR runs 12 student laboratories in which young people are invited to experience the 'fascination of research'. There are also school competitions, an online youth portal and much more. Students can take part in summer schools or flight campaigns, and complete internships at DLR. A first-class qualification programme is available to doctoral students.

Innovation and technology transfer



Investments in technology transfer projects
46
million euro

Unternehmens-ausgründungen
29

Revenue from licences
55.9
million euro

New in-house technology transfer projects
152

2008 – 2018

2425
Industrial property rights held by DLR in Germany

1307
Industrial property rights held by DLR abroad

DLR supports cross-industry and demand-oriented knowledge and technology transfer in order to promote the exploitation of research and development results in industrial applications. DLR Technology Marketing represents the interface between research and industry, between the product idea and the market. It is a point of contact for innovation-oriented companies and creates an uninterrupted innovation chain – from the idea through to the final product. Innovation ecosystems – in terms of successful innovation networks – foster the development of new products, services and processes in the economic market.

Scientific indicators

Habilitations
6

University appointments
10

Lectureships
598

Talks at scientific conferences
2500

Dissertations
135

691
Diploma, master's and bachelor's degree theses

1524
Publications in peer-reviewed journals

1606
Peer-reviewed publications in conference proceedings, books, etc.

The number of scientific results reported in publications, talks or lectures is an indicator of research performance. Over the last five years, DLR scientists have more than doubled their number of peer-reviewed publications. The number of university teaching positions also rose to a new record level in 2017.

Large-scale research facilities

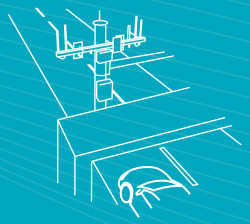
Research vehicles and platforms

Test facilities for energy storage

Aircraft

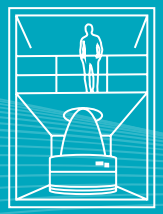
High-performance computing infrastructure

Wind tunnels



Test tracks

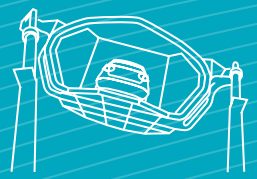
Facilities for materials science and design research



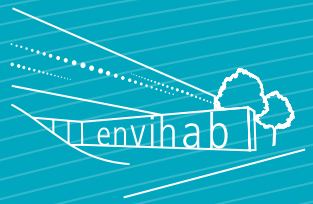
Test rigs

Research power plants

Receiving stations and control centres



Simulators and systems analysis laboratories



Medical infrastructure

Use of research facilities for in-house research

72 %

Use of research facilities for transfer and contract research

28 %

25

Number of institutes and facilities that operate research facilities (of 40) 11 Aeronautics, 9 Space, 2 Transport and 3 Energy

178

Research facilities

17

Number of locations with research facilities (including Antarctica and Canada)

DLR operates a large number of major research facilities in order to tackle the challenges faced by aeronautics, space, energy and transport, as well as the cross-sectoral fields of security and digitalisation. With this research infrastructure, DLR is able to address overlapping topics such as mobility, energy efficiency and storage, as well as materials science and noise reduction in a unique way, which can also be applied to industry. With its processing and data storage systems – and in future the facilities of the seven new institutes – DLR is taking into account the topics of the future, such as the virtual product, Big Data and simulation.

Year of reference: 2018

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