

Your reliable partner for research, education and innovation.

2021

Annual Report



We are
the **future**

Our goal: Progress

The services of DLR Projektträger (DLR-PT) advance Germany, Europe and the world. With analysis, consulting, funding management and communication, the project management agency paves the way for the future of research, education and innovation.

Progress begins in the mind – or rather in the minds. While it is designed by the wishes and **goals** of those shaping politics, business and society, it is nourished by the diversity of ideas coming from creative forces in research and development. As DLR-PT, we see our mission as that of bringing together the most important goals and the best ideas and letting progress emerge from them.

But how does an **idea** become a scientific finding and a service or product? How can politics push the transformation towards more value creation, resilience, sustainability or digitalisation? And how can the process be accelerated?

These are all questions that DLR-PT addresses. As a service provider, we are committed to strong **research, education and innovation**. We analyse social developments, develop strategies for action and provide strategic impetus.



Evaluation, analysis
and conception



Funding management



Business, information
and contact points



Communication



Dialogue and
agenda processes



Policy advice



IT services for DLR-PT divisions

From invention to innovation

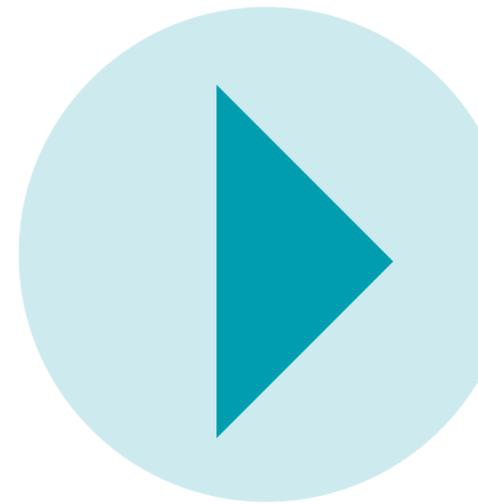
We are **mediators** between science, business, society and politics. We advise, shape and ensure the appropriate use of public **funding**. Our services go far beyond the administration of programmes and the distribution of money.

DLR-PT accompanies the **innovation process** from the very beginning: In an increasingly complex funding landscape, in which European, Federal and State ministries, foundations or associations want to set signs for the future, we provide an overview for all those involved. We point out funding gaps to our clients. We provide **answers** to interested parties and funding recipients who have questions about the application, the funding process or the evaluation.

And because it is not enough to have a good idea in order to receive funding and achieve groundbreaking research results, we also provide the **communication measures** that make them visible and realisable. As DLR-PT, we are concerned with research, education and innovation – in other words, the generation, transfer and utilisation of knowledge.

The fastest possible **transfer** of research findings is therefore one of DLR-PT's core concerns. In order to accelerate the widespread application of new knowledge, our employees think and advise in a manner clearly geared to transfer and exploitation.

This also applies to the way we work. In order to keep our services at top level, we are constantly adapting our instruments, methods, structures and content. This dynamic **modernisation process** helps to make DLR-PT one of the most sought-after innovation drivers in Germany.



Indispensable:
Knowledge transfer

Anticipating consequences with Strategic Foresight

Technological progress is important, but not an end in itself. As DLR-PT, we also want to recognise the consequences. That is why we never look at challenges for the economy and society in isolation. We provide our clients with interrelated strategies and concepts for action. We think **holistically**, because we know that sustainable action and economic activity only succeed where the consequences are part of the consideration.

For this reason, "Strategic Foresight" is an increasingly important instrument of DLR-PT. Strategic foresight does not claim to predict the future. Rather, it sketches out **possible future scenarios** and then – supported by methods and science-based – identifies measures with which these "futures" can be researched, anticipated and realised – or prevented, if necessary.

DLR-PT has been systematically expanding its foresight activities for several years. For example, it used these methods to conduct a study on the potential future development of the Western Balkans on behalf of the EU Commission. It was the only project management agency to take part in the Strategic Foresight conference of the European Economic and Social Committee (EESC), which discussed the global political role of the EU and its citizens. And together with the Space Agency at DLR, it drafted scenarios for life on the moon in 2050 in order to derive possible strategies from them. These are just three exciting examples showing how **Strategic Foresight opens the horizon**.



Fast Forward
with DLR-PT

Our services: From analysis to dialogue

5,071 analyses and expert reports

as well as position papers for our clients in 2021

306 boards and committees

benefited from the participation of our experts

1,046 online events

plus 66 face-to-face events organised by us in 2021

DLR-PT's range of services for the German and European innovation landscape is broad. It starts with analysis. Our other services build on this – from strategy consulting and funding management to communication and dialogue.

Strategy consulting

We support actors from politics, science, business and society with clear recommendations for their innovation strategies and their implementation. In doing so, we draw on our own well-founded analyses and evaluations, reliable background information, strategic foresight and our many years of practical experience. On your behalf, we develop tailor-made strategies and action plans, concepts for every goal and every target group.

Analysis and evaluation

Technological knowledge is important. But it is not enough for us. We also want to recognise the consequences of possible application scenarios. DLR-PT, the largest of all German project management agencies, benefits from its thematic breadth. Whether it is climate, digitalisation or health, we analyse and evaluate long-term developments at regional or global level, in specific sectors or markets. On the basis of these analyses, we will provide you with well-founded assessments of how you can competently and confidently handle challenges.

Funding management

Promoting research, education and innovation in a targeted manner – that is what DLR-PT is all about. Our clients provide funding on the basis of strategic decisions and goals. We develop tailor-made concepts for them and implement funding programmes efficiently. Whether it be small, short-term projects or multi-year programmes with complex structures, our funding management fits the bill. We adapt our funding to individual needs, always focusing on the efficient use of funding in accordance with the rules.

It's easy for us to think and act in a networked way. Because among Germany's project management agencies – with whom we cooperate closely in numerous areas – we cover by far the **broadest spectrum of topics**, stretching from education and gender equality through health, society, innovation and technology to environment and sustainability as well as European and international cooperation.

We benefit from the highly diversified expertise of our 1,500 employees to investigate **inter- and transdisciplinary** relationships. Together, our departments, competence centres and services seek answers to the questions of our time. Geographers and geologists, for example, form teams with biologists, social scientists and economists to develop funding guidelines for climate and environmental protection. Physicians work together with health economists, nutritionists, natural scientists and journalists to communicate health issues. And computer scientists join forces with physicists, social scientists, lawyers and political

scientists to assess the social consequences of artificial intelligence.

Many paths can lead to a goal

The result is well-balanced recommendations that provide our clients with **future-oriented** solutions and facilitate **action**. We develop solution-oriented strategies and concepts for them in order to plan measures precisely and implement them successfully – from knowledge generation and transfer to market-oriented and sustainable **utilisation**.

The transdisciplinary dialogue between stakeholders in the science and education system and society, business and politics is one of DLR-PT's areas of expertise. The **communication and dialogue processes** that we organise involve different interest groups and strengthen exchange across political and professional boundaries. Because knowledge transfer is only successful when everyone is involved in the public discourse and participates in the design process: politics, business, society as well as researchers and teachers from all fields.

The thematic fields of DLR-PT



Competence centres and services



European and international cooperation



Health



Society, Innovation, Technology



Education, Gender



Environment and sustainability

Your goal

Our principle: Interdisciplinarity

Our strength: Internationality

By **dovetailing** regional, national, European and international activities, we contribute to finding **common answers**

European and international cooperation – DLR-PT considers these factors in all the contracts it undertakes and has thus developed a distinctive profile. We know: Local measures can bring about small steps in the transformation process – but global challenges such as climate change or digitalisation can only be mastered globally.

The example of the **International Bureau (IB)** shows what Germany can do with project management assistance to promote progress globally. For more than 20 years, the IB has been based at DLR-PT on behalf of the Federal Ministry of Education and Research (BMBF).

In the IB, we develop **strategic approaches** based on analyses, evaluations and foresight processes (see page 3) in order to cooperate with partner countries and regions worldwide. This includes helping to shape political strategies and concepts of the Federal Government – above all the strategy on the internationalisation of education, science and research. In cooperation with **European and multinational organisations** such as the OECD and UNESCO, we advise and support the BMBF in committee meetings on education and research. And we offer recommendations to scientific institutions and companies that want to implement international cooperation projects.

Our services also include communication and dialogue measures. For the **International Future Labs for Artificial Intel-**

ligence, we have been commissioned by the BMBF to carry out public relations work – including a website, explanatory and information films and press activities. Under the brand "Research in Germany", we implemented international campaigns for the BMBF (social media, communication trainings, online talks, etc.), which followed the "BMBF Science Years" on topics such as Work 4.0 or Future City. Another example is the "Brussels: FutureTalks". This new series of political talks, launched by the DLR-PT Brussels Office in June 2021, takes up topics such as **Strategic Foresight and Science Diplomacy**.

Promoting sustainable development
A further example of our work is the BMBF's **Africa Strategy**, which we implement and further develop. The aim of the strategy is to promote sustainable development opportunities on the continent. Among other things, the focus is on promoting innovation and young scientists and scholars.

We are currently involved in setting up a research and education/training structure for the **Pan-African University**

(PAU). For its Algerian location, we have developed a research agenda in the thematic complex of climate change, energy and water which has already been successfully implemented. In order to achieve the transfer from the macro to the micro level, the large complex of topics is broken down into sub-topics. This results in a catalogue of concrete measures that are necessary to solve the regional and local challenges of the population. The Agenda thus provides local scientists with an orientation tailored to regional needs in order to identify relevant research topics and to work on them in projects.

At the request of the **African Union** and on behalf of the BMBF, we are now working with African and German experts to develop a research agenda (agricultural, earth and life sciences as well as health) for the PAU site in Nigeria, thereby promoting regional knowledge transfer and **resilient structures**.

The BMBF-funded **German-African Innovation Incentive Award (GAIIA)**, which we designed, also contributes to the promotion of young researchers.

Coordination and information centres

On behalf of various Federal ministries, the DLR Projektträger currently operates five international coordination and information offices as well as the EU Bureau of the BMBF.



German IPCC Coordination Office

The German IPCC Coordination Office is the contact for science, government, authorities, the public and the media on questions relating to the Intergovernmental Panel on Climate Change (IPCC). It advises the Federal Foreign Office and the BMBF and promotes the transfer of knowledge between climate research and climate policy.

www.de-ipcc.de/329.php



EUREKA Office

EUREKA is a network of currently 42 European countries, the European Commission and several non-European partner countries that promote cross-border, market-oriented research and innovation. The German EUREKA Office, located at DLR-PT, advises and supports the BMBF on strategic issues and in the implementation of funding measures. It also advises companies, universities and research institutions.

www.eureka.dlr.de/en



German COST Coordination Office

COST (European Cooperation in Science and Technology) is an intergovernmental initiative for European cooperation in the field of scientific and technological research. The German COST Coordination Office, located at DLR-PT, supports the BMBF, advises interested parties and applicants, and supports participants in COST projects in Germany.

www.cost.dlr.de



German IPBES Coordination Office

The German IPBES Coordination Office works on behalf of the German Environment Ministry and BMBF at the interface between politics and science. It promotes the integration of technical expertise in the work processes of the World Biodiversity Council IPBES, in German research, politics and the general public.

www.de-ipbes.de/en



International Bureau

DLR-PT advises and informs on cooperation potential worldwide on behalf of the BMBF's International Bureau (IB). The IB also implements measures for the international networking of German universities, research institutions and companies.

www.internationales-buero.de/en



EU BUREAU OF THE BMBF

The EU Bureau (EUB) of the BMBF supports the Ministry on issues such as the EU Framework Programmes for Research and Innovation, EU research and innovation policy, the "European Research Area" and education cooperation. The EUB also offers German institutions extensive advisory and support services, making it their first stop for "Horizon Europe". At the same time, it serves as the coordinating office of the Network of National Contact Points in Germany.

www.eubuero.de/en/

Our model for success: International partnership

128 global networks

are maintained by DLR-PT for its clients

130 countries

are home to projects managed by DLR-PT and its partners

14 National Contact Points

are hosted by DLR-PT and inform on EU programmes

No country can master global challenges alone. For Germany as an industrial nation, it is also important to be integrated into international knowledge flows and value chains. That is why we explore the potential of international cooperation in research, education and innovation for our clients.

In an increasingly complex world, **resilience** – the ability to adapt to change – is a competitive advantage. If, for example, it comes to failures in globally networked production and supply chains – here, computer chips come to mind – this has a direct impact on an industrial nation like Germany. As project managers, we therefore see it as our duty not only to plan strategically and for the long term, but also to respond quickly and flexibly to short-term needs – in coordination with our partners.

One example of rapid, targeted international action is the EUREKA project **NOVIRALRISK**. Together with colleagues from Finland, Canada and Sweden, German researchers are developing a measuring method to better assess the concentration of aerosols in different rooms and to reliably evaluate the performance of ventilation systems. As project executing agency, we have

been supporting NOVIRALRISK since the initial consultation throughout the entire project cycle. NOVIRALRISK emerged from a multilateral initiative that our EUREKA office prepared, designed and implemented on behalf of the BMBF in a very short time.

Under the impact of the Corona pandemic, we have worked together with eleven countries to achieve a common goal: cross-border cooperation, in order to launch projects quickly and flexibly that will make us more resilient to future health crises.

DLR-PT – a global player

As managers of the **International Bureau** we shape stable partnerships in education, science and research for the BMBF in all regions of the world. This ensures sustainable and resilient structures – on site with the partners and in cooperation.

An increasingly important role is played by **twinning** – an instrument used by the EU to promote political, scientific and cultural cooperation. Twinning projects support, for example, the development of public structures that correspond to European values and standards, and contribute to the strengthening of science and innovation systems.

However, **geopolitical considerations** and aspects play an important role in the design of partnerships, too – among other things, because international research cooperation also takes place with countries that do not share European values and follow other legal systems. The preservation of fundamental principles, such as the protection of academic freedom or eye-to-eye relations (e.g. mutual access to research infrastructures and data), deserves special attention in these cases.

A stable framework for AI research in Germany and India

The example of artificial intelligence (AI) shows what strategic planning can look like at international level. As DLR-PT, we are committed to creating a stable international cooperation framework for this rapidly developing topic and to contributing to "trust-based AI". For example, Germany and India are planning to expand their partnership in the field of AI with our help. In September 2021, on behalf of the BMBF, we brought experts from both countries into a dialogue process to identify and prioritise AI topics for research cooperation. In the framework we designed, the AI experts formulated concrete requirements for their future research – including reliability, security, fairness and value orientation.

Cooperation and dialogue overcome borders and **create trust**

Further examples of international cooperation

Canada

On behalf of the Federal Ministry for Economic Affairs and Climate Action (BMWK), DLR-PT designed, organised and carried out a trend scouting trip to Canada. As a result, a bilateral research cooperation was initiated to further develop and innovatively apply AI methods. The collaboration between BMWK, DLR-PT, the Canadian Embassy in Berlin and other Canadian and German partners enabled the launch of four research projects in 2021, which are funded by BMWK and supervised by DLR-PT.

USA

Commissioned by the Federal Ministry of Education and Research (BMBF), DLR-PT conducted an analysis of the innovation hotspots in the USA in 2021. In addition to the Silicon Valley, seven other hotspots were identified and presented. The focus of the analysis was on actors, thematic priorities, scientific and economic potentials as well as the transfer activities of the regions.

Colombia

As part of the BMBF programme "Research Structures in Latin America", DLR-PT is supporting a project on Alzheimer's research at the Universities of Hamburg and Medellín (Colombia). The cooperation scheme offers German researchers access to a cohort of patients with an above-average number of cases of Alzheimer's disease, which is unique worldwide. The aim is to research modifications of the disease.

Western Balkans

What might research and innovation policy in the Western Balkans look like in 2035? We explored this question on behalf of the European Commission. Our foresight analysis identified three possible scenarios that help local policy-makers set the course for a successful research and innovation policy and prioritise strategic investments.

Africa/Middle East

DLR-PT is implementing the "Arab German Young Academy AGYA", which is funded by the BMBF. The project supports excellent young Arab and German researchers in developing joint solutions in the areas of environmental protection, sustainable use of resources, transnational migration, nutrition, health and protection of cultural heritage.

Sri Lanka

On behalf of the EU Commission, DLR-PT supported a project to establish an innovation partnership with Sri Lanka. DLR-PT's task was to contribute to the commercialisation and internationalisation of university research. As a result, sustainable relationships with Sri Lanka's renowned research institutions were established in a very short time.

China

China's influence is growing. But what knowledge exists within the EU on China? And how can it be shared between Member States and the European Commission? As part of the International Service Facility contract, DLR-PT helped the Commission find answers to these questions by developing a regular format for producing joint studies and papers.

17 goals for sustainable development in all countries of the world – the United Nations 2030 Agenda points the way for the greatest transformation in human history. Only if politics, civil society, business and science join forces in global partnerships, these goals can be achieved. We at DLR-PT are making an important contribution to this.

„Leave no one behind“:
sustainable solutions through
international cooperation in
science and education

17 Sustainable Development Goals for Global Transition

Severe droughts and famines in Africa, hot summers and forest fires in Southeast Europe, flood disasters in the German Ahr Valley and other regions – the effects of climate change can be felt everywhere, both worldwide and on our doorstep. The only way to limit these effects is a global change towards climate-neutral and sustainable ways of living and working. But how can this tremendous and most urgent challenge of our time be mastered?

With the 2030 Agenda, the United Nations have set the course and adopted 17 Sustainable Development Goals (SDGs) for a sustainable development worldwide. The aim is an environmentally sound, socially just and economically viable future. International cooperation in research and development plays a decisive role in this context.

Implementing the SDGs – our commitment

At DLR-PT, we are committed to the SDGs and are actively contributing to the realization of these goals on three levels. Firstly, we place a clear focus on achieving the SDGs for our clients in European and international cooperation. Secondly, we analyse the effectiveness of interventions in relation to the SDGs using a monitoring procedure we have developed. This allows us to systematically and validly record and map the contributions of programmes, projects and other measures to the SDGs in order to better align future initiatives with the Sustainability Goals and achieve a higher impact. Last but not least, the SDGs are also part of our own sustainability strategy for our European and international activities. In this strategy, internal and external communication as well as consulting, monitoring and, if necessary, adjustment of our performance around the SDGs are a matter of our good practice. In short, the SDGs are the leitmotif of our daily work.

In 2021, one of our highlights was our participation in the Science Summit of the 76th UN General Assembly, for which we organised three workshops. As one of the keynote speakers at the opening session, Klaus Uckel, Head of DLR-PT, outlined his vision of global cooperation in science. "Leave no one behind – this is the central promise of the 2030 Agenda," said Uckel. "International cooperation in research and development can make a significant contribution to achieving this goal. We need to work together on equal footing with our global partners and learn from each other to tackle global challenges together!"

Supporting researchers in Africa and the training of young scientists

The example of Africa illustrates the range of activities with which DLR-PT contributes to sustainable development on behalf of the Federal Ministry of Education and Research (BMBF): By advising and managing the initiative "Research Networks for Health Innovations in Sub-Saharan Africa" (RHISSA) on behalf of the BMBF, our International Bureau is helping to shape German-African research for more resilience against climate-related, economic, social and ecological extreme events, for example. Health research projects within the RHISSA framework strengthen cooperation between Germany and Sub-Saharan countries as well as the development and networking of health research capacities on site. With the two competence centres for climate change and adaptive land management in West Africa and Southern Africa (WASCAL and SASSCAL), we are supporting the African countries as part of the BMBF's "Global Change" mandate. The aim of the project is to combine applied research, scientific training, policy advice and the development of infrastructures.

**SUSTAINABLE
DEVELOPMENT
GOALS**

The SDGs are **Leitmotif**
of our daily work.



The "Plastic Pirates" help to record and analyse plastic waste in the rivers – a flagship project of citizen science on sustainability

Broad spectrum from green hydrogen to science diplomacy

As its "International Bureau" (IB), we support the BMBF in its efforts to actively advance border-crossing cooperation in education, research and Innovation. In 2021, we set a thematic focus on green hydrogen. The aim of the dialogue and agenda processes, as well as the diverse funding measures that we are developing and implementing in this area, is to develop technologies and infrastructures within the framework of international cooperation as a contribution to achieving the Paris Agreement on climate change. Better coordinating science, international policy and diplomacy and thereby promoting cross-border cooperation to solve global challenges is one of the core ideas of science diplomacy. This makes

it a key instrument for strengthening global partnerships around the SDGs. Together with 15 partner organisations, DLR-PT has therefore launched the "European Union Science Diplomacy Alliance". The aim is to promote research, training and networking on science diplomacy. The Brussels office of DLR-PT took over the presidency in the second half of 2021 and invited young science diplomacy experts to exchange ideas with experienced actors from academia, politics and diplomacy as part of the new DLR-PT format "Brussels: FutureTalks" – our contribution to the "Conference on the Future of Europe".

Contributing to sustainability through education

With "Plastic Pirates – Go Europe!", we are taking a national flagship project of

citizen science in the field of education on sustainability, to the European level. Every year, rivers carry up to 2.4 million tonnes of plastic waste into the sea, but little is known about its sources. This is why school classes and youth groups are helping to collect and analyse plastic waste by uploading the data they collect. Originally a national project, it was expanded on our initiative under the German EU Presidency. More than 15,000 participants from Portugal, Slovenia and Germany have collected more than one thousand data sets by now. On behalf of the BMBF and with the support of the European Commission, DLR-PT is pushing ahead with its extension of the project to seven other EU Member States.

Links

Centres of Excellence for Climate Change and Adaptive Land Management in Africa:
www.fona.de/en/maasures/international-cooperation/regional-science-service-centres.php

EU Science Diplomacy Alliance:
www.science-diplomacy.eu

Plastic Pirates – Go Europe!:
www.plastic-pirates.eu/en



The SDGs

17 Sustainable Development Goals (SDGs) of the 2030 Agenda for environmentally sound, socially just and economically viable development worldwide.

Achieving the SDGs remains an important cross-cutting goal at DLR-PT.

The topic of sustainability is and will remain a central challenge for DLR-PT in the coming decades. We want to make our contribution to achieving the SDGs at national, European and international level – and do so in the spirit of "Leaving no one behind": together and on an equal footing with our partners worldwide.

Smart Cities: municipalities on the way towards the sustainable European city

With the new "Coordination and Transfer Office Smart Cities", DLR-PT accompanies cities and municipalities into the future and looks beyond the national horizon.

"Making cities and human settlements inclusive, safe, resilient and sustainable" is the 11th UN Sustainable Development Goal (SDG). It is fully in line with the European idea of sustainable urban development and the future-oriented concept of the "Smart City". As central shapers of social and ecological change, municipalities need and want to strategically use the opportunities of the digital transformation – and actively involve the local people in the process. With the support of DLR-PT and other partners, the German government is therefore promoting the "Model Projects Smart Cities": 73 cities and municipal associations that are trying out this transformation on the ground and making use of international experience.



The model projects we are supporting are taking very different approaches. For example, they are testing new mobility concepts like in Zwönitz in Saxony, where the digitally managed "ERZmobil" call bus is making public transport in rural areas more attractive and flexible. Digital city twins, which are being developed by Hamburg, Leipzig and Munich in the joint project "Connected Urban Twins", open up new approaches in urban planning and citizen participation. In addition, many projects deal with the challenges of climate change. The planned heavy rain early warning system in Eichenzell in Hesse, for example, uses sensors to detect the amount of rain falling, thus helping to prevent flooding.

The ERZmobil in Zwönitz, Saxony, will be called via app.

Gathering experience that benefits as many municipalities as possible

In order to better tap the opportunities of digitalisation for cities and rural areas, the model projects receive targeted support from the new Coordination and Transfer Office (KTS). In July 2021, the former Federal Ministry of the Interior, Building and Community (the responsible department is now the new Federal Ministry for Housing, Urban Development and Building) commissioned a consortium under the leadership of DLR-PT to set up and operate the KTS. Partners from the fields of research, urban development and consultancy are involved – including the DLR Institute of Transportation Systems, the Fraunhofer Institute for Industrial Engineering and the German Institute of Urban Affairs. The KTS advises the municipalities on site, organises networking and knowledge transfer between the municipalities and conducts its own research. The goal is to jointly create a learning and open innovation system – for example, through digital and analogue spaces of cooperation in which the municipalities jointly develop urban data platforms and open source solutions. The focus is also always on citizen participation as an important element of smart cities. Another central task of the KTS is to disseminate the knowledge and experience gained from the model projects. This is to ensure that all German municipalities can benefit from the results and use them on their way to becoming smart cities.

By looking beyond the national horizon, KTS will also broaden the perspective of the model projects. European and international practical examples are to be prepared with a view to inspiring cities and municipalities in this country. In addition, we are present at international trade fairs and events such as the Smart City Expo World Congress in Barcelona and connect with global networks like the ICLEI (Local Governments for Sustainability) initiative. In this manner, we create the conditions for a worldwide transfer of knowledge in order to promote solutions that have already proven themselves internationally to German municipalities.

As DLR-PT, we are contributing cross-divisional competences to this important new mandate, which runs until the end of 2030: our experience in setting up offices, our content-related and methodological expertise in the areas of regional, national and international innovation systems, information and communication technologies, European and international sustainable urban development, mobility and energy supply, as well as our know-how in press and public relations work. With the overall management of the KTS, DLR-PT is playing a key role in shaping another major transformation process – in addition to the "Green Hydrogen Agenda Process"



In Hamburg, digital city twins enable, more citizen participation.

Link

Smart City Dialogue:
www.smart-city-dialog.de/en



Strategic foresight: actively shaping the future

What will be important in the future? This is a question that governments and societies around the world are asking themselves. In view of the pressing global challenges and ever-increasing interconnectedness, it is important to think about and shape the future across borders. We at DLR-PT are laying the foundations for this with "Strategic Foresight".

Fifty-two years ago, the first man set foot on the moon and changed the boundaries of the imaginable overnight. Today we are pushing it a little further and asking: Can a human settlement be built on the moon by 2050? Is a permanent settlement of the Earth's satellite even possible? If so, what technical prerequisites are necessary for this? In order to answer these questions, DLR-PT has provided methodological support to the DLR Space Agency and the French space agency CNES in the "Together on the Moon" project to develop scientifically sound scenarios for the future.

Of course, there are even greater challenges on Earth for which strategic foresight can be helpful. In order to respond to future questions around issues such as climate change, artificial

intelligence or mobility, the expertise and creativity of numerous experts are needed. That is why we contribute our methodological expertise, our know-how about partner countries and regions, and the specialist knowledge of the entire DLR-PT on strategic foresight processes. Together with international partners from Australia, the USA and Europe, we have been commissioned by the "Association of Professional Futurist" to develop the world's first "toolbox" for the evaluation of foresight initiatives. We also have long-standing contacts with more than 400 partners in around 130 countries in order to involve the best minds worldwide in the development of future scenarios.

Identifying trends and recommending actions

We tailor our method mix to the respective needs of our clients. Within the framework of a study on the "Strategic Perspectives" for the European Commission, we have worked with 700 stakeholders from the Western Balkans to develop future scenarios for research and innovation in the region.

The topics included international research cooperation, digitalisation, implementation of the "European Green Deal" and privatisation of the higher education sector. A mix of different strategic foresight methods was used, such as Delphi surveys, scenarios, "horizon scanning" or "roadmapping". The scenarios support the Western Balkan states in their reforms for possible EU accession by identifying future trends on societal challenges in the region and possible recommendations for action in research and innovation policy.

With the Strategic Impact Navigation Assessment (SINAVI), we have developed a concept that links strategic foresight with evaluation methods. Retrospective evaluations are thus supplemented by a forward-looking component. In this way, we can derive recommendations for the future design of programmes and other initiatives, recognise the need for adaptation to changing conditions in good time, adapt intervention instruments and increase their impact.

For example, the SINAVI model is being used in an international funding programme of the Federal Minis-

try for Economic Affairs and Climate Action (BMWK) on the relevant topic of quantum computing, which is being implemented by the Society, Innovation, Technology department. With the help of our network of international and European evaluation and foresight experts, we were able to validate the strategic orientation of the SINAVI model for this funding programme of the BMWK.

We combine our strategic foresight experience not only with evaluations, but also with a wide range of other methods, for example in the field of regional potential analyses, such as the Western Balkans Foresight Study mentioned above. We also implement these for our clients in such a way that political strategies and measures have a greater impact.

Furthermore, DLR-PT offers a glimpse into the future with the "Brussels: FutureTalks": Experts from various European institutions and national governments can exchange views in high-level discussion groups on the application of strategic foresight. In these discussions, we actively use SINAVI to provide new methodological impetus for a modern

mission-oriented innovation policy in Germany and the EU.

With our diverse methods as well as our worldwide partners, we at DLR-PT will continue to analyse the pressing challenges of the future – on Earth and beyond.

Links

Strategic Foresight in the Western Balkans: https://ec.europa.eu/info/publications/strategic-foresight-western-balkans_en

DLR-PT „Brussels: FutureTalks“: <https://futureu.europa.eu/processes/OtherIdeas/f/8/proposals/38217?locale=en>

Strategische Vorausschau und Smart Specialisation: <https://errin.eu/events/ewrc-2021-s4-foresight>



Green hydrogen: international partnerships for effective climate protection

Hydrogen produced from renewable energies can make an important contribution to climate protection worldwide. However, production and transport are still too expensive. This should change – also with the help of initiatives that DLR-PT plans and implements for its clients.

Steel production and freight transport are two sectors that are responsible for a large part of global CO2 emissions and have so far been difficult to decarbonise. The solution could be the universally applicable energy carrier hydrogen – provided that it is produced and transported in a climate-neutral way using renewable energies. The buzzword here is "green hydrogen".

Hydrogen technologies are already being used in various areas and offer enormous opportunities for climate protection. However, they are still too expensive for widespread use. That is why good concepts and business models are needed. Where should and can hydrogen be produced most effectively? And how can it be transported to where it is needed? To develop solutions, DLR-PT is implementing a wide range of measures on behalf of the Federal Ministry of Education and Research (BMBF) – from strategy development to project funding.

Goal: a competitive European hydrogen economy

On the way to a strategic research and innovation agenda for the European hydrogen economy we coordinated a comprehensive, cross-national process for the BMBF. We designed and implemented a variety of formats for this – for example, a large online consultation in which around 170 experts from 22 countries participated. We also organised thematic strategy dialogues in which more than 100 international representatives from politics, research, industry and civil society developed virtual and face-to-face solutions for the most urgent research questions, for example at a workshop in Berlin on the topic of transport and infrastructures. The result is now available in the form of a joint agenda for the European Research and Innovation Area: It defines strategic priorities and provides orientation for the funding of research and innovation on green hydrogen at European and national level.

In order to make European and international energy partnerships on green hydrogen as efficient as possible, we have developed a simplified and accelerated funding procedure with the BMBF (so-called framework announcement) to create a flexible basis for tailor-made bilateral and multilateral cooperation with key coun-

tries and regions worldwide. We are already putting this funding procedure into practice with important partners from Asia and Oceania such as Australia, Japan, New Zealand and South Korea. Together with seven partners from the EUREKA network, we have launched a multilateral call for proposals for market-oriented research and development projects on transport infrastructures for green hydrogen. We also network researchers from leading institutions in Germany and around the world in an "International Future Lab".

From strategy to implementation – in Europe and beyond

Most EU Member States and five other European countries have participated in the process of developing the new Strategic Research and Innovation Agenda. In coordination with the European Commission, they are now putting it into practice. On behalf of the BMBF, as the secretariat of the Agenda process, we are supporting the initiation of concrete European, national, bilateral and multilateral measures to address the research needs described in the Agenda. We are already implementing transnational funding programmes together with funding institutions from other countries, for example

through the framework announcement on green hydrogen. In doing so, we use the interdisciplinary competences at DLR-PT, for example on fuel cells and electromobility or on the use of hydrogen in sector coupling. At international level, we are also advancing cooperation on green hydrogen, among other things by supporting the establishment of German research presences in institutions in the Asia-Pacific region. Only with international partners will we be able to effectively combat climate change globally.

Links

Agenda process: www.bmbf.de/bmbf/shareddocs/kurzmeldungen/en/green-hydrogen-for-a-sustainable-future.html

Further information: <https://projekttraeger.dlr.de/en/references/european-cooperation-education-research>

Innovations in the border triangle of Germany, Poland and the Czech Republic

The border triangle of Germany, Poland and the Czech Republic radiates great dynamism and high innovation potential. Cross-border cooperation is making a decisive contribution to future-proofing the region and exploiting the opportunities of the digital transformation. DLR-PT supports this development from its new Dresden office.

Challenges such as the sustainable and digital transformation of industry do not end at national borders, but require joint solutions. This is particularly true for regions that have to cope with structural change – such as the border triangle of Germany, Poland and the Czech Republic. Against this backdrop, we at DLR-PT have made a strategic choice of location and opened an office in Dresden in order to contribute to the dynamic development of the region from there.

International Science Conference on Cross-Border Innovations in Central Europe

As a contribution to even closer networking within the border triangle, we organised the "German-Polish-Czech Science Platform" on behalf of the Federal Ministry of Education and Research (BMBF). In cooperation with the Saxon State Chancellor, high-ranking politicians from the three countries and other stakeholders from politics, science and research came together on the 8th and 9th October 2021. Under the motto "Cross-border innovations for Central Europe", they discussed the opportunities and challenges of research and innovation

for sustainable economic development in Central Europe at the Transparent Factory in Dresden. Once again, this also showed how important it is to use education and research for a constructive exchange and thus to maintain and deepen existing relationships – even in politically difficult periods. Science diplomacy is and remains a central task for us at DLR-PT.

As part of an accompanying symposium, in cooperation with the Czech and Polish National Contact Points and the Central EU Service Facility Saxony (ZEUSS), the DLR-PT office of the National Contact Points offered an exchange platform for the development of sustainable research and innovation networks in the border triangle. More than 30 actors from the fields of research management and consulting had the opportunity to exchange practical experience on the EU research framework programme "Horizon Europe" (2021-2027), develop their cross-border cooperation and intensify their work. This gave rise to networking ideas such as "Brokerage Events" on the new content and funding approaches (for example on the "missions") in Horizon Europe, which will help to jointly address topics with high research and innovation potential and ultimately make even better use of the opportunities of the tri-border area in the competition for EU funding.

Links

German-Polish-Czech Science Platform:
<https://www.bmbf.de/bmbf/en/home/documents/211008-german-polish-czech-conference.html>

Thinking about gender differences to improve Europe's research

Differences between the sexes are often not sufficiently considered in research. The new research framework programme "Horizon Europe" therefore places a stronger focus on this. DLR-PT prepares applicants and project consortia so they are able to meet the new requirements and everyone can benefit equally from research.

They are on every smartphone and are supposed to make our lives easier: voice or face recognition systems. But the software behind these systems often still has problems with women's voices and faces because the programmes were largely developed by all-male teams and "fed" with too many data sets from men.

Making funding applications with a gender dimension successful

Speech and face recognition is just one example of many demonstrating that gender differences must be given more consideration in research. This is the only way to achieve results that benefit all genders equally. And it is why the EU's current research framework programme, Horizon Europe, obliges applicants to consider possible gender dimensions of their project from the very beginning. Every funding application must now explain where there are biological and/or socio-cultural differences in the research project and how the project will take these differences into account. But what does that exactly mean? Many researchers still find this difficult.

DLR-PT sees itself as having an overall social responsibility to contribute to gender equality – as it has already been doing for years with the development and implementation of women- and

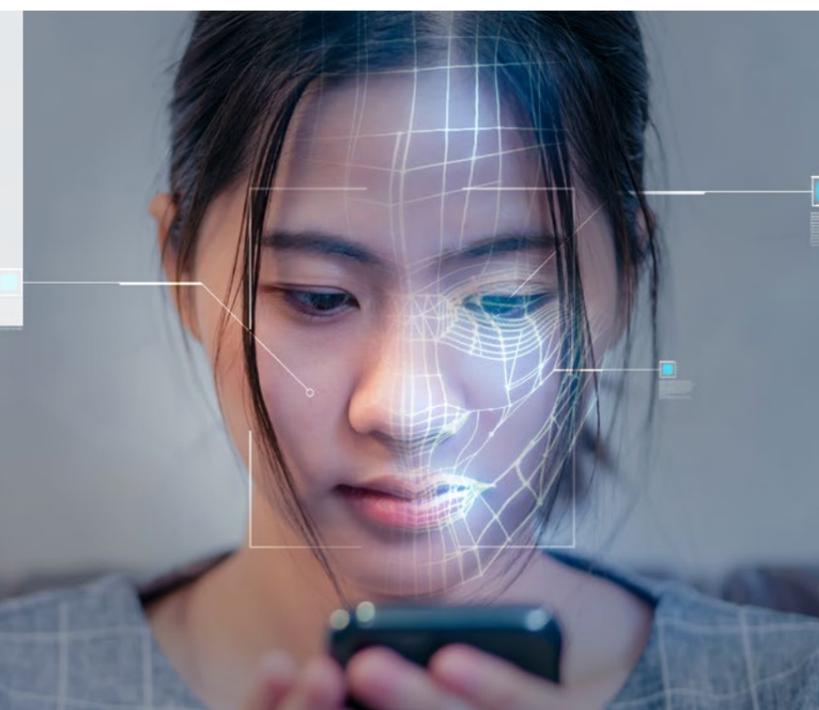


gender-specific research funding. That is why we have developed new tailor-made advisory tools to increase the applicants' chances of success in obtaining project funding. In this way, we help to promote research results for the benefit of society as a whole. The best example is the innovative online training provided by the Contact Point "Women into EU Research" (FiF) – the central advisory office in Germany for gender and equal opportunities in Horizon Europe, which DLR-PT operates on behalf of the BMBF. We have created these new online training courses, which are designed to best prepare researchers for a successful application. In 2021, one focus of the trainings was on the topic of health.

It is precisely there that the gender dimension has a very high relevance, which is reflected for example in gender-specific diagnoses and treatment methods. FiF also offers advice to research institutions in Germany – with tailor-made workshops and lectures on EU research funding in connection with equal opportunities and gender dimension, as well as on opportunities for female scientists to participate.

Links

Women into EU Research:
www.euburo.de/en/fif-2512.html



Contracting bodies 2021

Federal Ministry of Education and Research (BMBF)

International Bureau

EU Bureau of the BMBF

EUREKA Office / COST Coordination Office

Comprehensive measures of the federal government's strategy for the internationalisation of education, science and research

German Coordination Office for International Researcher Mobility

Green Talents Competition

ESFRI Support Office / large-scale equipment for basic research in the natural sciences

Organisation Office of the Sino-German Innovation Platform

Federal Ministry for Economic Affairs and Climate Action

National Contact Point for Small and Medium-sized Enterprises (SMEs)

Federal Ministry for Housing, Urban Development and Building

Coordination and Transfer Office Model Projects Smart Cities

German Agency for International Cooperation / EU Commission

European support mechanism for regional integration of the ASEAN union of states (E-READI)

Ministry of Science, Research and the Arts Baden-Württemberg

Evaluation of ECORDA data with respect to the research landscape in Baden-Wuerttemberg

Saxony Economic Development Corporation

Development of an overview of potential actors and fields of competence for quantum technology in Saxony

European Commission

Service Facility in Support of the Strategic Development of International Cooperation in Research and Innovation

COST Association – European Cooperation in Science and Technology

Science Diplomacy Training for COST Action participants

Expert Commission for Research and Innovation – EFI

Comparison of the innovation systems in China and Germany

German Association for Supply Chain Management, Procurement and Logistics

Integration of the contact point on Innovative Public Procurement into the NCP advisory system (KOINNO)

Friedrich Naumann Foundation for Freedom

Evaluation of the Zimbabwe Country Programme

Konrad Adenauer Foundation

Evaluation of the Brazil Country Programme

Evaluation of the Japan Country Programme

Prognos AG / Ministry of Economic Affairs, Innovation, Digitalisation and Energy of the State of NRW

Evaluation of the European Regional Development Fund (ERDF) programme in North Rhine-Westphalia

Zenit GmbH / Ministry of Culture and Science of the State of NRW

Synergies.NRW

Villa Vigoni

Coaching "Leading in strategic change processes"

Grants

European Commission

ERA.Net RUS plus	EU-CELAC ResInfra
NCP_WIDE.NET	MSCA DE 2020
RICH-2	LEAP-RE
SiS.net3	S4D4C
StR-ESFRI2	Net4MobilityPlus
LEAP AGRI	ERA Learn
CEBRABIC	LEAP4FNSSA
NearUS	NCP Academy
GENDERACTION	Access2EIC
INNOWWIDE	SINO-EU-PerMed
EULAC-PerMed	Bridge2HE
EURAXESS TOP IV	

National Contact Points (NCPs)

On behalf of the Federal Government, DLR-PT currently coordinates 14 of the 17 official Horizon Europe National Contact Points (NCPs), participates in two further NCPs and supports various advisory bodies at national level. This bundling makes DLR-PT the ideal contact partner for Horizon Europe, the 9th EU Framework Programme for Research and Innovation. The aim of the NCPs is to increase the chances of success for German applicants for European research funding. In addition, companies, universities, research institutions, transfer agencies, government agencies and advisory bodies can contact the NCPs.

Office of the National Contact Points

Located in the EU Bureau of the BMBF, the office of the National Contact Points coordinates their network and offers information and advice on overarching topics. It serves as the front office for Horizon Europe, maintains the German Horizon Europe Internet Portal and is responsible for regular information services such as the "EUB-Telegramm" and the NCP Twitter channel.

www.eubuero.de/en/front-office-2408.html

NCP Digital and Industrial Technologies

The NCP DIT, which is managed by DLR-PT and Project Management Jülich, advises research institutions, universities and companies on digital topics in the EU research and innovation programmes. These include key digital technologies (nanoelectronics, photonics, software technologies, quantum technology), artificial intelligence and robotics, next generation internet, advanced computing, big data and cyber security.

www.nks-dit.de/en/home

NCP EIC Accelerator

The National Contact Point advises and informs applicants with highly innovative project and product ideas who wish to apply for funding under the European Innovation Council (EIC). The EIC is part of the EU's Horizon Europe Framework Programme for Research and Innovation, and brings together the most important EU funding instruments under one roof. The aim is to get innovations to market faster and to create growth and jobs. The NCP EIC Accelerator primarily addresses small and medium-sized enterprises (SMEs).

www.eubuero.de/en/ncp-eic-2455.html

NCP EIC Pathfinder

The NCP EIC Pathfinder advises applicants on the funding mechanisms of the EIC Pathfinder. This aims to identify radically new technologies that have the potential to create entirely new markets. To this end, excellence-oriented, visionary and high-risk projects are funded at an early stage of development. The EIC Pathfinder is interdisciplinary and supports technologies that emerge from the convergence of different research and development areas.

www.eubuero.de/en/ncp-eic-2455.html

NCP ERC (European Research Council)

The NCP advises applicants on the funding lines of the European Research Council (ERC), the most important excellence-driven and bottom-up funding programme of Horizon 2020 and Horizon Europe. The ERC aims to fund groundbreaking ideas from individual researchers and their teams. The ERC NCP is jointly managed by the EU Bureau of the BMBF (in DLR-PT) and the EU Cooperation Office of the German Science Organisations (KoWi).

www.eubuero.de/en/ncp-erc-2410.html

NCP Research Infrastructures

The National Contact Point offers advice on the "Research Infrastructures" part of the Horizon Europe programme. It advises in particular on issues regarding the roadmap of the European Forum for Research Infrastructures (ESFRI)

www.nks-infrastrukturen.de

NCP Joint Research Centre (JRC)

The NCP serves as a point of contact for institutions and companies in Germany that wish to cooperate more closely with the EU's Joint Research Centre (JRC). The aim of the NCP is to identify opportunities for cooperation and to raise awareness of the JRC's work.

www.eubuero.de/en/ncp-jrc-2440.html

NCP Society

On behalf of the BMBF, the NCP Society provides advice on funding opportunities for the social sciences and humanities in the EU programme for research and innovation, Horizon Europe. The NCP Society is the National Contact Point authorised by the Federal Government for Horizon Europe's Cluster 2 "Culture, Creativity and Inclusive Societies". The cluster focuses on European democracies, cultural heritage and the cultural and creative industries, and socio-economic transformations in Europe. In addition, the NCP provides information on funding opportunities for the social sciences and humanities in other programme areas of Horizon Europe, for instance in the context of climate change or security or health issues.

www.nks-gesellschaft.de

NCP Health

The National Contact Point Health supports the BMBF by informing and advising German institutions on European funding opportunities in the field of health. Its focus is on the corresponding programme parts of the Framework Programmes for Research and Innovation, "Health, Demographic Change and Well-being" in Horizon 2020 and Cluster 1: Health in Horizon Europe.

www.nksgesundheits.de/

NCP Legal and Financial Aspects

The NCP Legal and Financial Aspects is located in the EU Bureau of the BMBF. Its range of tasks includes advising on the legal and financial issues of Horizon Europe grant and project management - from the application phase to negotiating the grant agreement to project implementation.

www.nks-ruf.de

NCP Marie-Sklódowska-Curie Actions

The National Contact Point advises German researchers and institutions on the Marie-Sklódowska-Curie Actions (MSCA), the EU's bottom-up mobility programme for excellent researchers. The MSCA supports young researchers and their projects as well as international networks and mobility programmes in conducting top-level research.

www.nks-msc.de

NCP Widening

This National Contact Point helps to establish closer links between institutions and researchers from Germany's leading institutions and the so-called widening countries. The aim is to effectively use the full potential of the European Research Area and to increase the participation of the widening countries with low research and innovation performance.

www.nks-widening.de

NCP ERA (Reforming and Strengthening the European Research and Innovation System)

The NCP ERA supports applicants in the programme area "Reforming and Enhancing the European R&I System". Funding is provided for measures that are intended to assist the research and innovation systems in Europe in various ways. The objectives and activities of the programme area are also meant to contribute to the further development of the European Research Area.

www.nks-era.de

NCP European Institute of Innovation and Technology (EIT)

The aim of the EIT is to increase the innovation capacity of the Member States and thus contribute to sustainable economic growth in Europe. To this end, areas of the "knowledge triangle" (education, research and innovation) are to be integrated at the highest level in the so-called "Knowledge and Innovation Communities" (KICs).

www.eubuero.de/en/ncp-eit-2476.html

Contact Point FiF – Women into EU Research

This contact point advises on all issues related to the cross-cutting topic of gender and equal opportunities: for example, the composition of the research team, the consideration of biological and social gender in the research content or tips on how to register as a reviewer. In addition, the contact point FiF – Women in EU Research organises special events for female scientists.

www.eubuero.de/en/fif-2512.html

European and International Cooperation



Head of Division

Dr Andre Schlochtermeyer
+49 228 3821-1631
andre.schlochtermeyer@dlr.de

Policy Issues

Roman Noetzel
+49 228 3821-1484
roman.noetzel@dlr.de

Third Countries and International Organisations

Dr Olaf Heilmayer
+49 228 3821-1443
olaf.heilmayer@dlr.de

International Strategies and Instruments

Dr Simone Weske
+49 228 3821-1822
simone.weske@dlr.de

Processes, Procedures

Dr Dietmar Wuppermann
+49 228 3821-1841
dietmar.wuppermann@dlr.de

European Research and Education Policy

Dr Claudia Ritter
+49 228 3821-1687
claudia.ritter@dlr.de

European Research Programmes

Dr Wilfried Diekmann
+49 228 3821-1657
wilfried.diekmann@dlr.de

European Countries: Bilateral and Regional Cooperation

Dr Birgit Ditgens
+49 228 3821-1418
birgit.ditgens@dlr.de

North, Central and South America

Dr Stephanie Splett-Rudolph
+49 228 3821-1430
stephanie.splett@dlr.de

Eastern Partnership, Russia, Central Asia

Dr Kirsten Maren Kienzler
+49 228 3821-1458
kirsten.kienzler@dlr.de

Africa, Middle East, Turkey

Dr Stefan Gerd Wagener
+49 228 3821-1825
stefan.wagener@dlr.de

Asia, Oceania

Dr Geroald Heinrichs
+49 228 3821-1402
geroald.heinrichs@dlr.de

International Close-to-Market Research and Innovation

Horst Jürgen Krämer
+49 228 3821-1125
horst.kraemer@dlr.de

Funding of Innovative SME

Stefanie Bartels-Schmies
+49 228 3821-1356
stefanie.bartels@dlr.de

European and International cooperation

Whether it be climate protection, energy transition or pandemic control, in the search for cross-border solutions at European and international level, research, education and innovation play a decisive role. With our services, we help to tap the potential of transnational cooperation and to integrate Germany as a high-tech location into knowledge flows and value chains – both in Europe and worldwide.

Our strengths lie in strategic consulting, research and funding management, and knowledge transfer, but also in communication and networking across national borders. We see ourselves as bridge-builders between politics and

the actors from research, education and innovation.

For our clients, we develop roadmaps and scenarios for international cooperation (for example, the Agenda Process of Green Hydrogen) and evaluate measures of European and international cooperation (for example, evaluation of EU regional policy).

As International Bureau, EUREKA Office and German COST Coordination Office, we implement targeted funding programmes and provide customised advice to those interested in funding from science and industry on the opportunities of global networking as well as on bilateral and multilateral funding offers. In addition, we operate the EU Bureau

of the BMBF as a central contact point for all aspects of Horizon Europe and as the office of the National Contact Points for European funding advice and information. With the National Coordination Office EURAXESS Germany, we also offer an information and advice centre for internationally mobile researchers, who want to come to Germany or go abroad.

Brussels office
DLR Projektträger
Rue du Trône 98
B-1050 Brussels

Angela Schindler-Daniels
+32 2 5000-853
angela.schindler-daniels@dlr.de

Credits

P. 10: Gerald Carter/Creative Flame – stock.adobe.com
P. 12/13: BMBF/Gesine Born
P. 14: monticelllo – stock.adobe.com
P. 15: Ralf Wendland
P. 15: BSW & LGV
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