The
Federal Government

National Action Plan for the European Research Area

(Courtesy Translation)

Foreword

Dear reader,

Research is the driver of Europe's future because it supplies the ideas and innovations needed for creative solutions. This capacity is becoming increasingly important in times of war, crises and conflicts around the globe. In the European Union, we are relying on our foundation of shared values in this context. It is how we secure freedom, peace and prosperity as well as our technological sovereignty in the global competition. I am convinced that a joint European approach is the only way to solve current challenges. This provides us with a special opportunity, which is why we, in the Federal Government, are actively promoting the European Research Area.

The National Action Plan presented below defines the Federal Government's own priorities. Three aspects are particularly important in my view:

First, we are strengthening the bridges that lead from research to innovation, from science to practice, from the idea to the product. We are supporting European cooperation in mission oriented research to enable this transfer. We assert our commitment to European partnerships, energy research and our first-rate research infrastructures. This commitment is essential for us to achieve Germany's and Europe's technological sovereignty.

Second, we are working to improve the conditions for research and to reduce bureaucracy in the European Union in order to facilitate cross-border research and enable breakthroughs by our researchers.

Third, we are seeking to cooperate closely with partners in Europe and around the world who share our values. At this turning point in history, we are standing up for value-driven, secure cooperation while advocating the maintenance of openness in the global science system. The protection of academic freedom is one of my key concerns. In the European Research Area, we pursue a shared goal: As Europeans, we want to join forces and take our future in our own hands. I am delighted to work with you in shouldering this responsibility.

Bettina Stark-Watzinger
Member of the German Bundestag
Federal Minister of Education and Research

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Summary

The National Action Plan for the European Research Area is the Federal Government's contribution to shaping European research and innovation policy. In this way, we are ensuring that Germany and Europe will remain global leaders in research and innovation, working jointly to increase our innovative strength, excellence and technological sovereignty. We are improving the conditions for European cooperation in research and innovation. Only by joining forces in Europe will we be able to respond to the grand challenges facing society.

With the National Action Plan for the European Research Area, the Federal Government provides support

... for an **innovative Europe**, where researchers shape the transformation processes for a digital and sustainable Europe and generate European added value through excellence in research and innovation.

... for an **excellent European research environment**, where our researchers benefit from open and seamless cooperation across borders.

... for a **free Europe**, as a basis for value-based and secure cooperation with partners worldwide.

The Action Plan translates these three guidelines into six fields of action, specifying measures for implementing the European Research Area in Germany. The measures are based on the results of a broad consultation on the European Research Area conducted from November 2022 to February 2023 in a modern and evidence-based policy-making approach.

1. Introduction

The European Research Area was created in 2000 with the aim of establishing a single market for research and innovation and ensuring the free movement of researchers throughout Europe. The Member States have been contributing to the achievement of commonly defined European objectives through their national commitment and in close co-operation with their European partners. In 2021, the EU Member States agreed on ambitious goals with the Pact for Research and Innovation in Europe, as part of the relaunch of the European Research Area.

In this Action Plan, the Federal Government presents its national guidelines and fields of action for the years 2024 to 2027. The Action Plan outlines how the Federal Government further advances and fulfils the objectives of the European Research Area by taking national action. In this context, it is important to join forces and pool our efforts with our European partners in order to ensure that Europe…

… maintains and boosts its competitiveness, including through the translation of research results into applications; contributes to overcoming the major challenges of our time with basic and applied research and innovation; and generates European added value;

… remains one of the most attractive locations for science in the world, and preserves and enhances its ability to attract talent from around the world;

… further facilitates mobility within the European Research Area;

… shapes and participates in global knowledge flows and innovation processes, through close European and international ties; and

… protects academic freedom and research security in European and international cooperation.

The Federal Government has laid the programmatic foundations with the Future Research and Innovation Strategy for Germany to play a decisive role in the major research and innovation policy issues of the coming years. This National Action Plan builds directly on this strategy, which defines the intensification of European and international cooperation as a key objective and states: *Against the backdrop of the current geopolitical watershed (Zeitenwende), the relevance of the European Research Area is also growing. We must strengthen it further and actively shape it in future to secure technological sovereignty, achieve the Sustainable Development Goals and further strengthen and actively shape Germany's and Europe's resilience to crises in the future.*[1]

In recognition of the scientific community's shared responsibility for the success of the European Research Area, this Action Plan was preceded by a comprehensive consultation. From November 2022 to February 2023, around 1,500 researchers participated in an online survey and shared their ideas and priorities with regard to the goals and initiatives currently agreed at European level.[2] The prioritisation of issues based on the survey was complemented by a more in-depth discussion in the course of several workshops. The Federal Ministry of Education and Research discussed the national implementation of the European goals with around 60 research and innovation organisations. The consultation's outcomes are the foundation of this Action Plan and inform the design of our national measures[3].

[1] Federal Ministry of Education and Research (BMBF) (2023): Zukunftsstrategie Forschung und Innovation (Future Research and Innovation Strategy), p. 23. Available online at: bmbf.de/bmbf/de/forschung/zukunftsstrategie/zukunftsstrategie_node. An English translation of the executive summary is available at: *bmbf.de/bmbf/en/research/future-research-and-innovation-strategy/future-research-and-innovation-strategy.html*

[2] At European level, the European Commission and the Member States of the European Union (EU) have agreed, with the adoption of the Pact for Research and Innovation in Europe *(CR 13701/21)* and the approval of the ERA Policy Agenda 2022-2024 *(CC 14308/21)*, on four overarching priorities and 20 specific actions to implement them.

[3] The results of the survey can be viewed (in German) at the following link: *https://www.eubuero.de/de/eu-forschungspolitik-deutschland-im-efr-3164.html.*

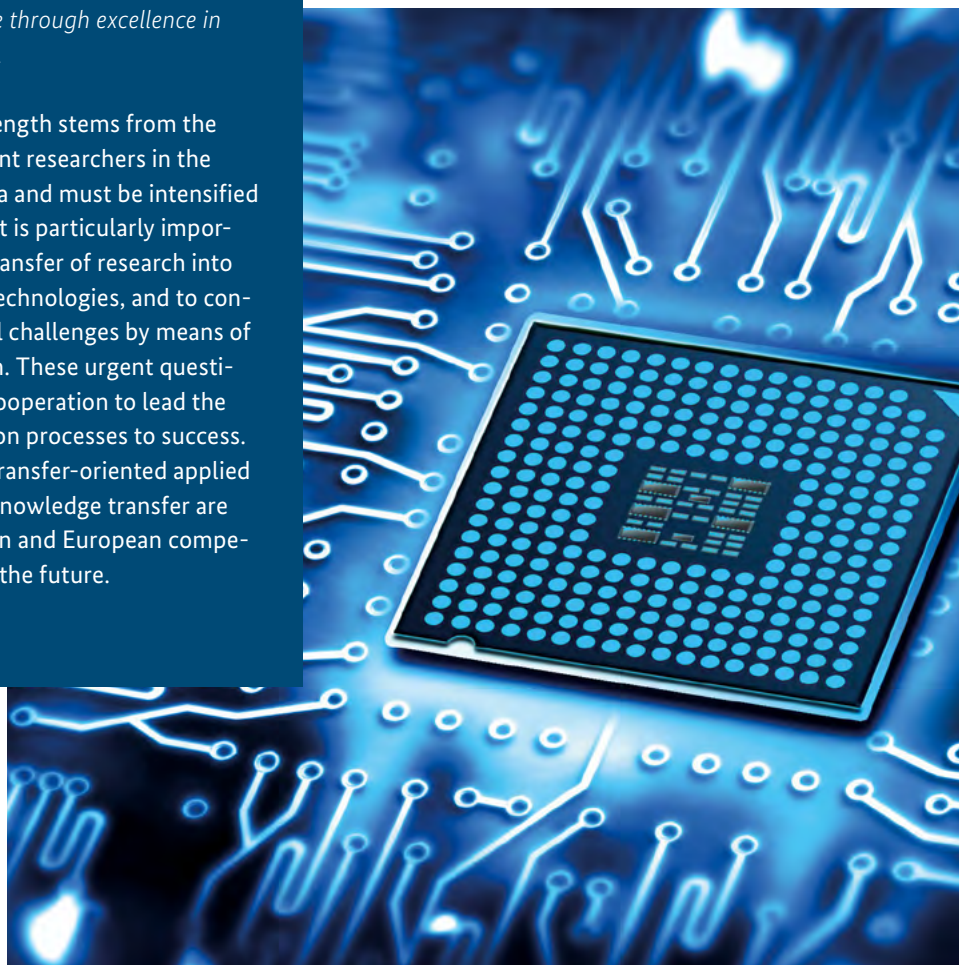
2. Strengthening innovative, excellent and free research in Europe – guidelines for the further development of the European Research Area

Three guidelines provide direction for Germany's contribution to the national development of the European Research Area. These guidelines link the European priorities established in the Pact for Research and Innovation in Europe with the national objectives and measures set out in the Future Research and Innovation Strategy.

Guideline 1

*Strengthening an **innovative Europe**, where researchers shape the transformation processes for a digital and sustainable Europe and generate European added value through excellence in research and innovation.*

Europe's innovative strength stems from the collaboration of excellent researchers in the European Research Area and must be intensified and expanded further. It is particularly important to accelerate the transfer of research into practice, to shape key technologies, and to contribute to solving global challenges by means of research and innovation. These urgent questions require European cooperation to lead the necessary transformation processes to success. Strong basic research, transfer-oriented applied research and targeted knowledge transfer are the backbone of German and European competitiveness, today and in the future.



Guideline 2

*Enabling **research excellence in Europe**, where our researchers benefit from open and seamless cooperation across borders.*

A "single market for knowledge" is and remains the core aim of the European Research Area. Mobility within the European Research Area must be facilitated further: researchers should find the best possible conditions for their excellent research and innovation in Europe. They achieve innovative breakthroughs together and generate European added value through cross-border collaboration, close European and international networks and personal exchange.

Guideline 3

*Promoting a **free Europe** as a basis for value-based and secure cooperation with partners worldwide.*

Global tensions and systemic rivalries are on the rise in the international context. We must defend and promote freedom of scientific research in Europe and in the European Research Area – by means of open, trusting, and at the same time protected collaboration with international partners. Our international cooperation in research and innovation beyond the borders of the EU is guided by the principle "as open as possible and as closed as necessary".

3. Mode of operation of the National Action Plan

In order to achieve the goals set out in the guidelines, the National Action Plan for the European Research Area follows a clear structure, from goal to instrument. Along similar lines to the Future Research and Innovation Strategy, we want to quantify the success of the Action Plan's implementation.

The guidelines point the way forward and provide orientation for the actions of the large number of actors in Germany who are responsible for the European Research Area. Each of the guidelines leads to one or more fields of action, which operationalise the goal established by the guideline. The fields of action are also closely based on the needs of the German research and innovation landscape. The Future Research and Innovation Strategy highlights potential which must be leveraged further so that Germany remains a driving force for innovation in the European Research Area in future. The National Action Plan is based on the analysis of strengths and weaknesses set out in the Future Research and Innovation Strategy, and specifies the goals for the European dimension[4].

Each field of action is underpinned by a range of measures. The measures specifically do not intend to provide an all-encompassing picture of the Federal Government's ongoing activities relating to the European Research Area. Instead, the selection of measures sets new priorities and focal points based on the consultation on the European Research Area conducted from November 2022 to February 2023.

The further development of a strong European Research Area can only be achieved through concerted action at national and European level. The key instrument for the implementation of the European Research Area is the EU Framework Programme for Research and Innovation. The European Research Area's goals and implementation should therefore be closely interlinked with the Framework Programme. The Action Plan thus establishes an advisory structure to promote the successful interlocking of these levels (see Chapter 5). The aim is also to ensure the optimal involvement of the Länder (federal states) and the scientific community[5] in Germany.

German engagement for the European Research Area is efficiently and transparently evaluated by means of the monitoring at EU level and indicators. Alongside the indicators already contained in the European

[4] Federal Ministry of Education and Research (BMBF) (2023): Future Research and Innovation Strategy. Executive Summary, available online at: bmbf.de/bmbf/en/research/future-research-and-innovation-strategy/executive_summary.pdf

[5] The term "scientific community" is used here in its broadest sense, and refers to stakeholders from research organisations, higher education institutions, and also research and innovation within the industry community.

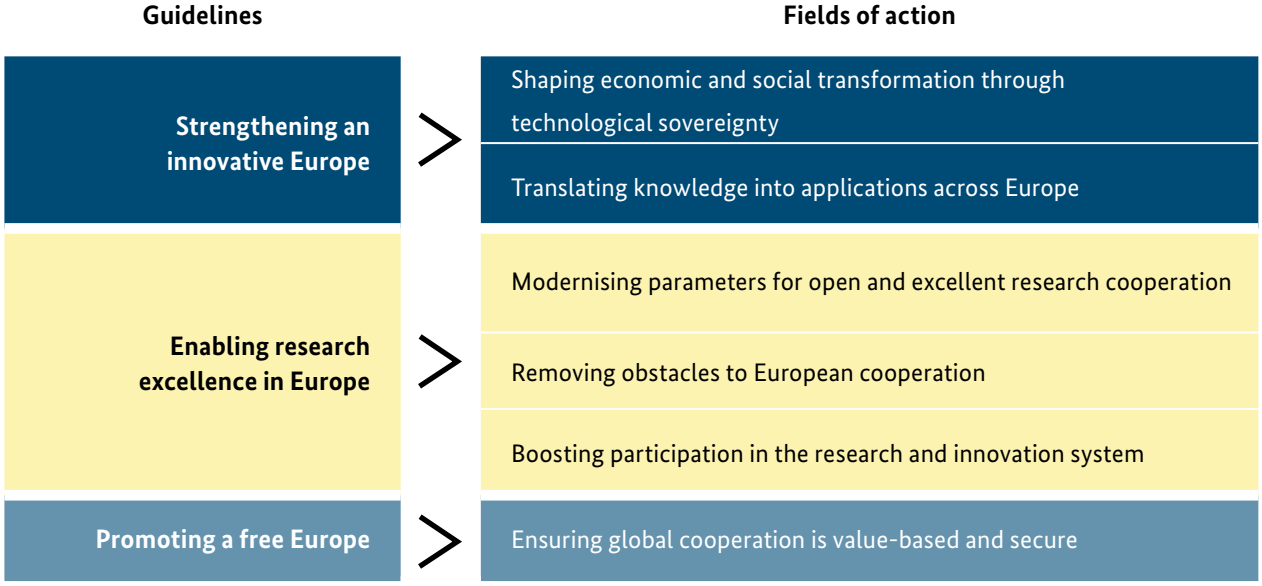


Figure 1: Guidelines and fields of action of the National Action Plan for the European Research Area

(1) Share of national public R&D expenditure committed to joint programmes and initiatives, research infrastructures and European Partnerships (establishment of baseline data)

(2) Environmentally related government R&D budget, percentage of total government R&D budget (latest available figure: 2.7% in 2020)

(3) roportion of innovating firms collaborating with Higher Education Institutions or Research Performing Organisations out of all innovating firms (latest available figure: n/a)

(4) Business start-up rate (new start-ups in relation to the total number of businesses) in the high-tech sector (latest available figure: 3.58% in 2019)

(5) Number of EU co-patents registered from within Germany (latest available figure: n/a)

(6) Germany's share of the grants received by the EU Member States in the current EU Framework Programme for Research and Innovation, Horizon Europe, by comparison with the previous programme, Horizon 2020 (latest available figure for Horizon 2020: 16.3%)

(7) Share of publications available in open access (green, gold and diamond) (latest available figure: 39.9% in 2019)

(8) Share of researchers receiving transferable skills training (latest available figure: 35.1% in 2019)

(9) Movement from an employee to a job from another, from one year to the next in the field of science and technology[8] (latest available figure: 8.8% in 2020)

(10) Absolute number of employees in research and development (latest available figure: 733,831 in 2020)

(11) Share of professorships held by women (latest available figure: 27% in 2021)

(12) Score for international co-publications in the European Innovation Scoreboard (latest score: 134.17 in 2023)

(13) Academic Freedom Index score for Germany (latest score: fifth place with a score of 0.96 in 2022)

Figure 2: Indicators of the National Action Plan for the European Research Area

Research Area monitoring at EU level[6], we also draw on selected indicators from the Future Research and Innovation Strategy[7]. When evaluating Germany's contribution to the implementation of the European Research Area, the following indicators are particularly relevant and we strive for an increase over the period from 2024 to 2027:

These overarching, quantitative indicators measure Germany's total engagement in support of the European Research Area, to which the measures set out in the Action Plan make an important contribution. They are exemplary for the extensive activities in Germany relating to the policy goals set at national and European level. At the same time, there is no direct causal link between the measures and the indicator results. The quantitative indicators are contextualised by qualitative reports and complemented by an advisory structure at national level (see Chapter 5).

[6] The Pact for Research and Innovation in Europe introduces a new monitoring mechanism for the implementation of the ERA priorities. The indicators are monitored via the ERA Scoreboard, which tracks progress on achieving the priorities at EU level, and the ERA Dashboard, which measures implementation of the ERA priorities at national level. This means it is possible to compare Germany to the EU average and to the EU Member States. This monitoring is accompanied by regular dialogues between the European Commission and the Member States.

[7] The indicators are mainly drawn from the European Research Area monitoring at EU level (the ERA Dashboard). The EU monitoring is supplemented with indicators 4, 6, 10 and 11 with measured values drawn from the Future Research and Innovation Strategy.

[8] This looks at the mobility of "Human Resources in Science and Technology" (HRST). The EU definition can be found at: https://ec.europa.eu/eurostat/cache/metadata/en/hrst_esms.htm

4. Fields of action and measures

The three guidelines set out at the start of this National Action Plan are to be implemented through six fields of action, which are defined below. They were identified during the consultation process as being key to an efficient European Research Area that generates European added value, and they are all underpinned by targeted measures. Each field of action can build on numerous ongoing measures and initiatives of the Federal Government, while simultaneously providing them with fresh impetus.

Field of action 1 in support of an innovative Europe: shaping economic and social transformation through technological sovereignty

Our society is facing far-reaching changes. The geopolitical watershed (Zeitenwende) and the social transformation towards digital and technological sovereignty and sustainability require pro-active shaping. Excellent, evidence-led basic and applied research is the only way for us to keep the innovation pipeline filled and ensure that science-driven innovations and technological breakthroughs reach commercial maturity. In this way, we are contributing to Germany's and Europe's competitiveness, as well as to overcoming these social challenges.

In the framework of the Action Plan for the European Research Area, we want to:

a) Ensure national and European research and innovation missions are mutually reinforcing
The EU missions bring together the activities in Horizon Europe to tackle major social challenges. In this context, we will further enhance the way in which they interact with the national missions and priorities that are being implemented in the framework of the Future Research and Innovation Strategy. We also wish to raise the profile of the EU missions at the national, regional and local level, increase their visibility to the general public, and boost the involvement of further stakeholders, especially from the research community. The Federal Ministry of Education and Research will launch suitable networking and coordination measures to achieve this.

b) Better align the focus of the application of new technologies through European coordination
With the aid of technological roadmaps on topics such as "circular industrial technologies" or "technologies in energy-intensive industries", we are setting joint goals in the European Research Area and thus strengthening the connection between stakeholders from research and industry. By doing so, we want to help to shape and accelerate the digital and ecological transformation of European industry. To this end, we will establish a continuous coordination process with industry, and better interlink national and European Research & Innovation support measures. We are also seeking to ensure closer European coordination on key issues for the future. For example, we wish to play a leading role in the further development of the European AI Strategy on the basis of the Ministry's AI Action Plan and beyond.

c) Implement joint research priorities in Europe via European Partnerships
In close coordination with our national, European and international partners in science, industry and politics, we want to use the European Partnerships to shape the research and innovation landscape in Europe, and thus effectively advance the development and use of new solutions and technologies in Europe. A national stakeholder forum for European Partnerships in Horizon Europe, which will provide a space for dialogue and cooperation between the partnership stakeholders, will enable Germany to leverage the full potential of the partnerships and continue to participate consistently in the European partnerships in line with political priorities.

Figure 3: Missions under Horizon Europe for the period to 2030

d) Ensure energy research is consistently focused on decarbonisation and well connected in Europe
Germany is pressing for the establishment of a European Hydrogen Union, and is actively contributing to this through the European Research Area pilot initiative on green hydrogen. Germany strives, including as part of the implementation of the Strategic Research and Innovation Agenda (SRIA) "Green Hydrogen", to expand and intensify bilateral and multilateral research cooperation on hydrogen within the EU. The new German Academic Exchange Service (DAAD) scholarship programme "ERA Fellowships – Green Hydrogen" is also contributing to this.

German fusion research activities are already providing important findings for the potential use of fusion energy in power plants in future. Germany and its partners benefit greatly from European and international cooperation when it comes to fusion research. Recent advances have also sparked a new dynamism that is increasingly attracting private capital. The Federal Ministry of Education and Research is examining the possibility of expanding its engagement to also look at novel conceptual and technological approaches, and thus further advance national and international fusion research.[9]

e) Make better use of the potential of European research and technology infrastructures
High-performance research and technology infrastructures, such as supercomputers, information infrastructures, particle accelerators, or wind tunnels and testing facilities, make a decisive contribution to solving issues of vital importance for our future. We are supporting the further development and strengthening of the European research infrastructures landscape through bilateral and multilateral formats, in the framework of the European Strategy Forum on Research Infrastructures (ESFRI) and in the context of Horizon Europe. We want to make them more impactful for industry and society, facilitate access to these infrastructures, and work with our European partners to pave the way for the next generation of research infrastructures. To this end, we want to set priorities at national level for the planning and implementation of major national and international research and technology infrastructures.

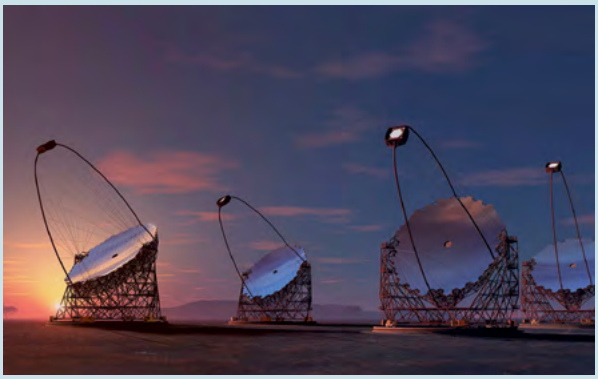
[9] Federal Ministry of Education and Research (BMBF) (2023): Position Paper Fusion Research: On the path towards the energy supply of tomorrow, p. 24. Available online at: bmbf.de/SharedDocs/Publikationen/de/bmbf/FS/815284_Positionspapier_Fusionsforschung_en.pdf

The Cherenkov Telescope Array - how joint investments in telescopes enable exploration of the universe

How do stars form? What is dark matter? How do physical processes take place in the vicinity of black holes?

The Cherenkov Telescope Array (CTA) is a globally unique construction project on three continents that seeks to answer these fundamental questions. The observatory for measuring high-energy gamma rays will consist of approximately 70 imaging photosensor telescopes. The initial construction costs amount to around € 320 million. Federal funds, contributions from the scientific organisations Max Planck Society and DESY (Deutsches Elektronen-Synchrotron) and various universities will be provided by Germany.

With two sites in the northern (La Palma, Spain) and southern hemisphere (Paranal/ ESO, Chile), the headquarters (Bologna, Italy) and the scientific data centre (Zeuthen, Brandenburg), CTA is an example of a state of the art research infrastructure that is only possible in close cooperation with European and international partners.



Cherenkov Telescope Array in Chile

Field of action 2 in support of an innovative Europe: translating knowledge into applications across Europe

The successful development of the coronavirus vaccines has made clear how essential excellent basic research is for rapid and effective solutions to unforeseen challenges. We want to ensure that research is successfully translated into applications even more frequently, and we want to make full use of our potential in Germany and Europe. The wealth of knowledge produced by our excellent basic research should reach practitioners and strengthen the options and expertise of industry and companies (including small and medium enterprises and start-ups) in relation to ground-breaking and market-creating innovations. We are seeking to ensure that national and European support for knowledge transfer is even better coordinated, interlinked and mutually reinforcing across all funding programmes and strategic approaches.

In the framework of the Action Plan for the European Research Area, we want to:

a) Intensify the translation of results into applications in all areas of research
By promoting better links between academic and industrial research, we want to ensure that knowledge and findings from across the entire spectrum of academic disciplines find their way into application and thus benefit society. We will develop a new concept for European knowledge transfer in order to better interlink and coordinate national and European measures in this area as well. This strategy should cover the entire development chain and provide targeted support for the individual development steps in order to successfully translate knowledge into applications.

b) Create a science-friendly legal framework in the EU
We are seeking to ensure a science-friendly and pro-innovation legal framework in the European Union. A tangible reduction in bureaucracy spurs creativity and progress and maintains the competitiveness of research and innovation in Germany and Europe. To this end, we want to achieve a more flexible, science-friendly interpretation of value-add-

ed tax (VAT) law, public benefit law and EU state aid rules. Within the EU legal framework, we want to create scope for living labs and take into consideration the specific conditions for start-ups. We are therefore seeking to ensure a regulatory framework which is limited to what is necessary and which is based on the latest scientific knowledge. To achieve this, we will build on a continuous and structured dialogue with the scientific community.

c) Shaping European guidelines on creating value from knowledge
We want to establish joint, Europe-wide standards to speed up the process of translating knowledge into applications. To boost value creation from knowledge, the European Commission and the Member States have drawn up guiding principles and two codes of practice on smart use of intellectual property and standardisation.[10] We are seeking to ensure that these codes of practice are applied and will make targeted and sustained efforts to raise their profile among the expert community.

d) Establish norms and regulatory standards in the interest of science
We are promoting greater involvement of the scientific community in standardisation processes and the definition of best available techniques so that research approaches are integrated more rapidly into the state of the art, into industrial processes and into the regulatory framework. Legal provisions containing measuring, testing and assessment requirements relating to safety and sustainability will be continuously adapted to reflect the latest scientific findings and the need for regulation. To this end, we will continue to develop a continuous and structured dialogue with the scientific community, industry and standardisation organisations at national and European level.

[10] Council Recommendation (EU) 2022/2415 of 2 December 2022 on the guiding principles for knowledge valorisation (*ST/14448/2022/INIT*).

Field of action 3 in support of research excellence in Europe: modernising parameters for open and excellent research cooperation

To ensure effective cross-border cooperation in the European Research Area, the Member States must coordinate with one another regarding the parameters of their national research systems. In light of the opportunities of digitalisation and changing requirements in science, it is important to continue to consistently modernise these parameters for excellent research and innovation, and to take the European dimension into consideration from the outset. In this way, we boost the interoperability of the European research systems. This relates, among other things, to questions of open science, aspects of research assessment, or scientific careers.[11]

In the framework of the Action Plan for the European Research Area, we want to:

a) Structurally strengthen open access
We want to make free access to publications resulting from publicly funded research the standard in the German research system. To this end, we are, among other things, closely following the further development of the Open Research Europe publication platform. We welcome the opening of the platform to publications outside of the EU Framework Programme for Research and Innovation, and we are examining the possibility of future involvement in opening up the platform to researchers in Germany. We welcome the development of academic infrastructures which support the aims of free access to research publications and data.

b) Optimise data from and for researchers
We are seeking to ensure science-friendly data legislation at European level, including with regard to the application of the Data Act, the General Data Protection Regulation (GDPR) and the Data Governance Act. We are proposing legal parameters which take into account the issues of access and making research data

[11] European Commission (2012): Communication: Towards better access to scientific information: Boosting the benefits of public investments in research. Available online at: *https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2012:0401:FIN:EN:PDF*.

usable both by the scientific community and by industry, and which facilitate the development of a data economy in Europe. We will develop a Research Data Act in Germany, with due regard for European open data efforts, the GDPR and the Data Act.

We are developing our National Research Data Infrastructure with the aim of systematically making existing scientific and research data accessible, connected and usable for the entire research system. In doing so, we are seeking to promote synergies and interoperability between the services developed by the National Research Data Infrastructure and those developed by the European Open Science Cloud (EOSC). The aim is to produce new knowledge, products, business models and innovations on the basis of high-quality and easily accessible research data, in order to secure economic prosperity and social progress in Germany and Europe over the long term.

We are seeking to ensure greater and more widespread data literacy across the entire research spectrum, i.e. across all academic disciplines and at all career levels (from early-career to experienced researchers). This requires a change of culture in the initial and continuing training of researchers and support staff at national and European level to foster greater data and digital literacy.

To achieve better and more effective use of data in health research and healthcare, we are working towards a decentralised Europe-wide interconnected data system with central access options and the harmonisation of health data governance. We are developing the legal framework at national and European level further, for example with the Health Data Use Act (Gesundheitsdatennutzungsgesetz) and the Commission's proposal for a regulation on the European Health Data Space. The aim of these measure is to optimise the data usage conditions and generate maximum benefit for society.

c) Support the reform of research assessment
With regard to the assessment of research performance, we are in support of a more qualitative approach in addition to quantitative measurement. In this regard, we support the Agreement on Reforming Research Assessment[12] as an approach leading to more qualitative research assessment, and welcome this process, which is organised at European level. We also welcome the commitment of the German research organisations in their voluntary support for this reform. We will engage in regular dialogue with the Länder and the research organisations on this topic and examine whether additional measures are necessary to support research assessment reform.

Field of action 4 in support of research excellence in Europe: removing obstacles to European cooperation

To ensure that Europe remains competitive on the global stage and an attractive location for science, it is important to further simplify European research and innovation cooperation and to dismantle the obstacles to transnational cooperation that still exist.

In the framework of the Action Plan for the European Research Area, we want to:

a) Facilitate researcher mobility in the European Research Area
Mobility is an important element of scientific work and enables researchers to access international networks and research organisations. We will further focus our measures to promote researcher mobility: Improvements must be made by dismantling bureaucratic obstacles to mobility and by simplifying the processes for recognition of academic achievements and relevant professional experience in research in other countries.

In this context, we are seeking to ensure a scence-friendly interpretation and further development of the EU legislation of the free movement of services in the single market, for example with regard to the coordination of social security systems (A1 certificate), the posting of workers, and the directive on equal pay and equal employment conditions. We support the rotation and exchange of research personnel under their original local employment contracts, with the aim of facilitating temporary stays and short-term mobility.

[12] Agreement on Reforming Research Assessment (2020). Available online at: https://coara.eu/agreement/the-agreement-full-text/.

Seamless recognition of academic achievements, qualifications and relevant professional experience abroad is essential for researcher mobility in the European Research Area. To this end, we want to simplify and accelerate the recognition process in scientific careers, for example by promoting a uniform definition of career stages for researchers across national borders.

b) Strengthen cross-border mobility and links
To promote mobility, we are working towards comparable definitions in Europe and standards for researchers in the scientific community that are interoperable with other sectors. We are proactively engaging with the development of the "ERA Talent Platform" at EU level and seeking to ensure compatibility with existing national services. The digital services at national and European level will interlock and complement one another.

The Federal Ministry of Education and Research supports, with a national coordination office, the COST[13] (European Cooperation in Science and Technology) initiative, which connects scientific and technological research activities in Europe. We will assume the presidency of the network on behalf of Germany from 2027 to 2029.

c) Establish good employment conditions as a competitive advantage
Researchers' employment conditions are an important factor in the international competition between locations for science. To ensure that Germany and Europe remain competitive in this context, attractive conditions must be provided for researchers in the European Research Area. To this end, we taking steps such as reforming the Academic Fixed-Term Contract Act (Wissenschaftszeitvertragsgesetz), in order to provide greater reliability, planning certainty and transparency for early-career researchers and to ensure a better work-life balance. By means of regular adjustments to the Future Contract for Strengthening Studying and Teaching in Higher Education, we are making additional funding available to ensure greater financial planning certainty and more permanent positions for studying and teaching at higher education institutions. In this way, we are also contributing to better employment conditions and greater planning certainty for career paths in the European Higher Education Area and the European Research Area.

Field of action 5 in support of research excellence in Europe: boosting participation in the research and innovation system

The idea of a European Research Area is brought to life by the scientific community, whose members forge cross-border connections and collaborate on projects that generate European added value. They form the backbone of the European knowledge society. We must leverage its full potential in all its diversity.

In the framework of the Action Plan for the European Research Area, we want to:

a) Implement equal opportunities as standard
In order to significantly increase the proportion of women in Germany's academic system towards parity, especially in leadership positions, and to strengthen diversity in the science landscape, there is a need for structural changes as well as a change of culture in science and research. To this end, we are pursuing a strategic approach to identify gaps in the system and develop tailored measures. The Programme for Women Professors 2030 of the Federal Government and the Länder is contributing to increase the number of female professors in Germany, and also to strengthen gender equality at higher education institutions through specific measures.

b) Strengthen the dialogue between science and society in the European context
To improve the dialogue between science and society in the European Research Area, we will set priorities: targeted skills development and networking opportunities for researchers to promote an enhanced dialogue with society, and support for the development of a European Science Media Centre. In addition, we want to cement and expand the public's involvement in research and in research policy.

[13] *COST* is an intergovernmental initiative for European cooperation in the field of scientific and technological research, which pools and coordinates national research activities at international level.

c) Boost access to excellence in the European Research Area
By supporting countries and regions which currently have lower-performing research and innovation ecosystems in developing their capacities for excellent research and innovation, we will close these gaps and thus strengthen cooperation and mobility in the entire European Research Area. The Bridge2ERA funding measure, for example, is intended to enable Central Eastern European and South-East European countries to access the European research and innovation networks.

Progress will also be made via national and European initiatives for better recognition of research management. Germany is sharing its experience with its national Excellence Strategy in the discussions on a planned European Excellence Initiative. We support European links in the field of educational research in order to increase the scientific knowledge gained through cross-border dialogue.

Field of action 6 in support of a free Europe: ensuring global cooperation is value-based and secure

Global cooperation in research and innovation is directly impacted by the geopolitical challenges of the current geopolitical watershed (Zeitenwende). The response must be to intensify cooperation with like-minded countries in Europe and around the world. In this context, it is important to work with other EU Member States and countries such as Switzerland and the United Kingdom to contribute to preserving the openness of and confidence in the global research system, and to advocate a rules-based order in line with our European values. At the same time, researchers must be supported so that they can engage in secure and value-based international collaboration. We are seeking to strengthen and expand our cooperation with partners around the world who share our values.

In the framework of the Action Plan for the European Research Area, we want to:

a) Advance freedom and security of research in Europe
In order to create transparency and the capacity for evidence-based action, we are working towards a monitoring report on freedom of research in the EU, based on the Bonn Declaration on Freedom of Scientific Research. In this way, we want to permanently establish a common understanding of this basic right and better protect freedom of research.

With its toolkit for tackling foreign interference, the European Commission has created a framework to support researchers in weighing up the opportunities and risks of international cooperation. Together with partners who share our values in the OECD and G7, we developed recommendations on protection from foreign interference in 2022. We want to actively bring this impetus at European and international level to the German scientific community.

b) Boost Europe's global attractiveness for research and innovation talent worldwide
The global competition for the best talent is growing. To attract the best minds to Europe, we want to work with our European partners to promote the European Research Area around the world as the best location for research and innovation – characterised by excellence, freedom of research, good funding of the location, unique research infrastructures and outstanding research partners.

At the same time, we want to offer protection in the European Research Area to foreign researchers from countries where these fundamental values are in danger. To this end, we are supporting the planned initiatives in the context of Horizon Europe for researchers seeking protection, and are continuing to refine corresponding national programmes and information platforms. We are supporting the reconstruction of the Ukrainian research landscape, including via German-Ukrainian cores of excellence, with the aim of consolidating Ukraine's future in Europe.

c) Further develop global cooperation in Europe and make "Team Europe" a reality
We are actively participating in the EU working groups to develop a joint approach which brings together purely national activities on scientific and technological cooperation (STC) with countries outside the EU to create a European approach. We believe that joint STC activities by "Team Europe" will be more effective than purely national approaches. In this context, we are seeking to ensure cooperation on an equal footing in our dialogue with countries from the Global South.

From July 2024 to 2025, Germany will, together with Canada, assume the chair of the EUREKA network, in which more than 45 countries promote research and innovation cooperation. In our term as chair, we will actively support research, innovation and transfer with the EU Member States and important partner countries in Europe and around the world.

d) Remain in dialogue with all countries of the world
Global challenges require global solutions. Germany will therefore continue to champion science diplomacy as a tool in future. At European level, we will actively help to shape the development of a European Science Diplomacy Agenda. We are contributing to better mutual understanding by participating in the European Commission's multilateral dialogues on values and principles in research and innovation cooperation with the countries associated to the EU Framework Programme and countries with STC agreements with the EU.

5. Implementing the National Action Plan

There are two main dimensions to the implementation of the Action Plan, which are set out below:

Establishment of the "Forum.EU"

In the German research and innovation system, a large number of actors are responsible for or at least involved in implementing the six fields of action set out in the National Action Plan for the European Research Area. This includes various Federal Ministries, the Länder, research organisations, higher education institutions, and stakeholders from industry, business and society. To ensure that these actors are closely involved on a continuous basis, we are establishing a new body to disseminate information and perform an advisory function. The new German Forum for European Research and Innovation Policy ("Forum.EU" for short) will be at the heart of the national advisory structure. The "Forum.EU" will promote coherence between regional, national and European research and innovation policy with regard to the measures set out in the Action Plan. The "Forum.EU" replaces the existing structure of the European Policy Discussion Group (Europapolitischer Gesprächskreis), and is coordinated by the Federal Ministry of Education and Research.

The key task of the "Forum.EU", besides providing advice on the implementation of the Action Plan, is preparing expert opinions on the further development of the European Research Area at European level. The forum's working methods will be agreed by the participants. In implementing the measures set out in Chapter 4, the forum will draw on existing national governance structures and their bodies (where they exist).

Monitoring and performance evaluation

The Action Plan is designed to be an agile, learning instrument, with the focus of the measures being regularly reviewed and refined on the basis of monitoring and expert opinions. The monitoring of this Action Plan has two goals: supporting the coordinated, efficient and agile implementation of the Action Plan, and promoting the further development of the European Research Area at the European level. One element of the national monitoring is regular reviews of whether the goals are being met based on the indicators (see Chapter 3).

The European Commission produces annual country reports on the national implementation of the European Research Area. These reports are based both on national data and information and on other European or international analyses, such as the innovation scoreboard or relevant OECD publications. We will adopt a position on the German country report and discuss this in the "Forum.EU". In the future, this will form the basis for a regular political dialogue with the European Commission. This dialogue provides an opportunity to further develop the European Research Area at national and European level in a continuous and coordinated manner.

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