

Work Programme 2022

DATE OF PUBLICATION 21 JULY 2021
Updated version 1.1a, 12 October 2021

This document was adopted on 2 July 2020 by the ANR Governing Board



Contents

A. Context, objectives and priorities of the 2022 Work Programme.....	5
A.1) General context of the 2022 Work Programme	5
A.2) Specific context of the 2022 Work Programme: post-Covid-19 context	6
A.3) Priorities of the 2022 Work Programme.....	7
A.4) Structure and objectives of the 2022 Work Programme	7
A.5) Other funding opportunities, partnerships and co-funding.....	11
A.6) ANR values and commitments within the 2022 Work Programme	12
B. Research themes related to the 2022 Generic Call for Proposals.....	15
"Environmental Sciences" field.....	15
"Materials Science and Engineering" field.....	16
"Life Sciences" field.....	16
"Humanities and Social Sciences" field	16
"Digital Sciences" field.....	16
"Mathematics and its interactions" field	17
"Sub-atomic physics, Earth and Universe Sciences" fields.....	17
Cross-cutting fields.....	17
C. Proposed funding instruments under the Generic Call for Proposals.....	18
C.1) Young Researchers Instrument (JCJC).....	18
C.2) Single-team research projects (PRME)	18
C.3) Funding instruments for collaborative research.....	19
D. Funding instruments subject to specific calls for proposals	21
D.1) Joint laboratories (LabCom)	22
D.2) Industrial Chairs.....	22
D.3) Public-private research projects (PRPP)	23
D.4) Carnot Institute	24
D.5) ASTRID and ASTRID Maturation	24
D.6) Building European or International Scientific Networks (MRSEI)	25
D.7) Springboard-ERC (T-ERC)	25
D.8) Access-ERC.....	26
D.9) Calls for specific proposals in European or international collaboration	26
E. Appendices (<i>updating available on the ANR website</i>).....	28
E.1) Table 1: Provisional bilateral collaborations under the Generic Call for Proposals - International Collaborative Research Projects (PRCI).....	28
E.2) Table 2: Specific bilateral collaborations outside the Generic Call for Proposals - International Collaborative Research Projects (outside PRCI).....	30

E.3) Table 3: Specific calls for proposals in European or international collaboration outside the Generic Call for Proposals and bilateral calls	31
E.4) Table 4: Partnerships and co-funding under the 2022 Work Programme	35

A. Context, objectives and priorities of the 2022 Work Programme

A.1) General context of the 2022 Work Programme

The ANR is the French funding agency for project-based research carried out by public operators cooperating with each other or with companies. Under the authority of the Ministry of Higher Education, Research and Innovation, it is the operational agency for funding research. In addition, the ANR was appointed in 2010 as the State operator in charge of managing major investment programmes in the field of higher education and research. The Agency can also provide easy access to various related calls for proposals through digital portals.

Its primary mission of funding public research involves ANR in implementing the national research strategy that has recently been redefined in the Research Programming Act¹ (LPR) for 2021-2030 and which covers a variety of provisions relating to higher education and research. Through the LPR, the agency's missions have been reinforced and its means of intervention strengthened. Thus, the ANR will keep a substantial proportion of funding granted in an *investigator-driven* logic, i.e. through non-targeted calls for proposals like its "Generic Call for Proposals (AAPG)", which has been designed to enable researchers from different scientific fields to gain access - in addition to the recurrent funding allocated to them - to co-funding opportunities based on a large number of research themes, whether finalised or not, within both a disciplinary and interdisciplinary framework. In this context, the objective of the 2022 Work Programme is to take better account of the diversity of needs of disciplines and projects (mainly in terms of resources and duration), whilst continuing to provide strong support to young researchers.

The LPR provides for an increase in funding for research projects allocated by the ANR. This increase in resources will make the objectives below possible by 2027:

- i) the calls for proposals managed by the ANR must achieve a 30% success rate (mainly in the Generic Call for Proposals);
- ii) the overheads rate (management and current preciput costs) must double (40% target) to boost the funding of establishments and laboratories.

In 2021 and 2022, the Recovery Plan introduced by the Government and, through it, the European Recovery Plan, will supplement the LPR means for these two objectives to be achieved more quickly.

The Research Programming Act also provides for the ANR to become a "central tool to contribute to the dialogue between science and society", with at least 1% of its intervention budget devoted to actions to support the dissemination of the scientific culture. Its report attached also plans for boosting funding of partner research, with twice the number of industrial chairs and Labcoms by 2027 and more than double the amount dedicated to the Carnot programme during the LPR application period.

The ANR is therefore confirmed and boosted in its role of central tool "*to help in increasing the contribution by research to all public policies promoted by the State and the regional authorities*".² Its action aims to support the excellence of French research, both academically and technologically, through a rigorous and competitive peer-reviewed selection process, in compliance with international standards.

¹ <https://www.enseignementsup-recherche.gouv.fr/pid39124/loi-de-programmation-de-la-recherche-2021-2030.html>.

² See especially the report annexed to the LPR.

In addition, the ANR strives to strengthen scientific cooperation at European and international levels, by linking its programmes with European and international initiatives and by following the guidelines of the international scientific strategy defined by its supervisory authority. Thus, it supports international consortia, in partnership with other funding agencies in Europe and around the world within bilateral or multilateral programmes (see appendices in [SE](#)). Its action also falls under the implementation of the "National Action Plan to improve French participation in the European research and innovation funding schemes" (PAPFE) (see [SD6-D8](#)).³

The Work Programme therefore reflects the research work carried out by France to help our society to address the major challenges it is facing, in connection with the European Commission's⁴ "Horizon Europe" and the United Nations "Sustainable Development Goals" (SDG).⁵ Mobilising science to implement the 2030 Agenda of the SDG presents a major challenge for research and innovation for the next decade, particularly in terms of driving coherent digital, energy, social and ecological transitions. This SDG approach is defining, both for Europe, which has made it the backdrop of its new "Horizon Europe" 2021-27 programme, and for France, which has been mobilised since 2019 through a 2020-2030 roadmap involving all public, private research stakeholders and citizens.

In summary, the ANR Work Programme is in this general context the roadmap that integrates our country's research priorities. It also takes into account the contributions of the five Alliances,⁶ the CNRS (French National Centre for Scientific Research) and the CPU (Conference of University Presidents) and implements the directions and priorities of MESRI, which coordinates inter-ministerial action among the ministries concerned.⁷ The ANR thus makes public research funding efforts clearer to citizens, promotes scientific, technical and industrial culture and allows quantified monitoring of State action.

A.2) Specific context of the 2022 Work Programme: post-Covid-19 context

Since late 2019, the world has been facing the COVID-19 pandemic and the health emergency has led to immediate and unprecedented action by governments, scientists and businesses. The ANR took action in March 2020 by launching a Covid-19 Flash Call, which was followed by two Covid-19 Research-Action (RA Covid-19) calls to fund short- and medium-term projects. These calls revealed the significant drive among scientific communities to help cope with an unprecedented situation not only in terms of health, but also in the social, industrial, economic and environmental aspects. The consequences of the Covid-19 pandemic will continue to make themselves felt for many years. This is why the 2022 Work Programme, just like in 2021, is incorporating a general Covid-19 priority that includes research in the long term for all work connected with the Covid-19 pandemic, or more generally pandemics of this nature. The aim is not only to continue controlling the Covid-19 pandemic, but also to understand better the

³ The goal of the "PAPFE", or Europe Action Plan, approved in mid-2018, is to call on French ESRI (higher education, research and innovation) communities to mobilise their potential, motivate researchers to invest and increase the involvement of French stakeholders, both public and private, in the PCRI (Framework Programme for Research and Innovation) and in all European research and innovation funding schemes. This means bringing knowledge, know-how and the values of France to the construction of the European Research Area.

⁴ Horizon Europe (European Union framework programme for research and innovation for the period 2021 to 2027): <https://www.horizon-europe.gouv.fr>

⁵ <https://www.agenda-2030.fr/>

⁶ Allenvi (Environmental Research Alliance), Allistene (Digital Science and Technology Alliance), Ancre (National Alliance for Coordination of Energy Research), Athena (National Alliance for Humanities and Social Sciences), Aviesan (National Alliance for Life and Health Sciences).

⁷ Supervisory Ministry: Ministry of Higher Education, Research and Innovation (MESRI). Ministries of Agriculture, Ecology, Health, Industry, Defence, Foreign Affairs, Culture and Education.

environmental, anthropogenic, socio-economic and behavioural health factors that may play a role in the emergence, spread and impact of pandemics, to develop means to assess and mitigate risk and to monitor all types of impact, as well as to analyse and support the potential social, economic, environmental and industrial changes that could arise as a result of navigating through the crisis. In particular, the lockdown policies, which have affected almost one in two of the planet's inhabitants, has led to a drastic decline of all aspects of economic activity (industry, transport, agriculture, fishing, culture, etc.), an increase in inequalities for the most vulnerable populations and, to a lesser extent, the human footprint on the environment. This situation serves as an exceptional opportunity to reshape human societies within the framework of economic recovery by better accounting for global changes to ensure greater resilience. It is thus clear that all scientific fields are involved and that the world of Research must rally to support this crucial effort at all levels, whether on mainland, overseas territories and internationally, particularly the most vulnerable regions with their specific features.

A.3) Priorities of the 2022 Work Programme

The 2022 Work Programme describes the actions and calls for proposals⁸ offered by the ANR under the 2022 financial year, thereby providing a general overview of its funding opportunities. **It is aimed at all scientific communities and all public or private stakeholders involved in French research**,⁹ including small and medium-sized enterprises (SME), very small enterprises (VSE) and associations or foundations that contribute to research issues.

Special attention is paid to the research continuum in terms of "disciplinarity" (mono-, multi-, inter- and trans-disciplinarity), mainly in cross-cutting research across several disciplinary fields and falling under the seven cross-cutting fields of the 2022 WP (see [SB - Cross-cutting field](#)). With a view to continuing to improve its assessment processes and serve the whole continuum, the ANR takes into account the inter-disciplinarity or trans-disciplinarity present in the projects through the composition of its committees and the expert assessment procedures.

The 2022 Work Programme also incorporates the strategic priorities¹⁰ defined by the State and implementation of government plans, such as artificial intelligence, humanities and social sciences, quantum technologies, autism in neurodevelopmental disorders, translational research on rare diseases, production of biopharmaceuticals, etc. These priorities are detailed in the scientific themes described in the Generic Call for Proposals. They will also be linked to the "Priority research programmes and equipment" (PEPR) which are part of the directed strand in the 4th Investments for the Future programme (PIA4).

Lastly, the 2022 Work Programme aims to strengthen France's participation in the forthcoming European Commission framework programme, as well as to step up strategic multilateral collaborations, especially in terms of consolidating the European Research Area (ERA), and strategic bilateral collaborations, especially between France and Germany.

A.4) Structure and objectives of the 2022 Work Programme

The 2022 Work Programme (2022 WP) is divided into four cross-cutting components, each with its own budget. Each component has funding instruments, calls for proposals and specific programmes. The main component, *Research and Innovation*, corresponds to the Generic Call for Proposals (AAPG).

⁸ Research, experimental development and innovation projects.

⁹ Any partner with an establishment or branch in France.

¹⁰ Each priority is broken down into one or more scientific themes of the Work Programme and its Generic Call for Proposals (see detailed description of the scientific themes in the Generic Call for Proposals).

The objectives of the funding instruments proposed by the ANR are briefly presented in Section [C](#) of this document. Each funding instrument has its own rationale, specific expectations and distinct characteristics in terms of eligibility, selection and monitoring. These may be collaborative research instruments, instruments dedicated to individuals or all other programmes and calls for proposals described below. Certain calls or programmes will be carried out in 2022 as pilot or experimental calls. These programmes could be continued in subsequent years depending on the feedback from these pilot or experimental calls.

The **four** 2022 Work Programme **components** are described briefly below and incorporate several strategic dimensions:

1. *Research and Innovation* component of the Generic Call for Proposals

The "*Research and Innovation*" component consists of both the acquisition of fundamental knowledge and targeted, frequently finalised research. It is the subject of the Generic Call for Proposals (AAPG) and uses all instruments (described in [SC](#)) that make it possible to fund:

- individual research projects coordinated by young researchers under the "*Young researchers*" instrument (JCJC);
- ambitious and innovative research projects coordinated by a team under the "*Single-team research project*" instrument (PRME);
- collaborative research projects:
 - between national public entities under the "*Collaborative research project*" instrument (PRC),
 - between public and private entities in a national context under the "*Collaborative research project - enterprise*" instrument (PRCE)¹¹ or
 - between public entities and foreign partners in a bilateral international context¹² under the "*International Collaborative Research Project*" instrument (PRCI).

The "*Research and Innovation*" component in the Generic Call for Proposals has been structured around on research themes, in a concerted manner, while accounting for the fundamentals of the French National Research Strategy (maintaining excellent disciplinary research, enhancing inter-disciplinary focus, supporting digital technology, humanities and social sciences), the contributions of the five Alliances, CNRS and CPU for potential updates, as well as the requests from MESRI, which implements State strategy by coordinating inter-ministerial action between the ministries involved within the Programme Planning Advisory Committees.¹³

The "*Research and Innovation*" component in the Generic Call for Proposals thus comprises 56 research themes:

- **37 research themes** are presented within **seven** disciplinary fields:
 - *Environmental Sciences*
 - *Materials and Engineering Sciences*
 - *Life sciences*
 - *Humanities and Social Sciences*

¹¹ See the ANR Financial Regulation: <https://anr.fr/fileadmin/documents/2018/ANR-RF-2018-1.pdf>

¹² ANR has entered into a certain number of bilateral agreements with foreign agencies (see Appendix; [SE](#)) to fund projects carried out between teams of two signatory companies. Certain collaborations on targeted themes are the subject of specific calls (Table 2 - Appendix E).

¹³ In 2018, the Programme Planning Advisory Committees (CPP) replaced the old Scientific Challenge Steering Committees, which were dissolved in November 2017. As part of the development of the 2022 Work Programme, CPP and inter-CPP meetings were held from September 2020 to May 2021.

- *Digital Sciences*
- *Mathematics and its interactions*
- *Physics of Matter, High Energy, Earth and Universe Sciences*
- **Nineteen research themes** correspond to **cross-cutting** (trans- or inter-disciplinary) issues located at the crossroads of several scientific sectors.
 - *Science of Sustainability*
 - *One Health*
 - *Ecological and Environmental Transition*
 - *Energy transition*
 - *Technological transitions*
 - *Digital transformation*
 - *Transformations of socio-technical systems*

Each theme has its own scientific evaluation committee set up within the Generic Call for Proposals (AAPG). The composition of committees dealing with cross-cutting or interdisciplinary themes makes it possible to cover all the disciplines involved.

When submitting a proposal called for by AAPG, researchers will have to choose the funding instrument that will best serve the scientific objectives and needs of their proposal, as well as the research theme that matches a scientific evaluation committee.

2. Specific actions beyond AAPG (Flash, Challenges, specific calls, etc.)

Some topics highly focused on precise objectives warrant an extremely rapid response or special arrangement. In order to support an urgent need for research whose scientific relevance is linked to an event or disaster of exceptional magnitude, the ANR has set up an emergency instrument: **the Flash call**. The most recent call of this kind was the Covid-19 Flash Call that ran between March and April 2020. Extensive advertising (website, social networks, mailshots) connected with the sudden event is disseminated when a Flash Call is opened.

Specific calls¹⁴ can also be set up beyond the usual Generic call timetable. They correspond to:

- new priorities decided by the State;
- introduction of scientific plans or problems proposed by external (co-)funders;
- pilot calls or experimental calls that respond best to the needs and expectations of scientific communities expressed with the Programme Planning Advisor Committees (CPP).

The most recent examples of these specific calls launched by ANR are:

- the "Covid-19 Research-Action (RA-Covid-19)" call launched in April 2020 or the "Covid-19 Resilience" call launch in December 2020;
- the "Innovative and operational solutions for controlling the industrial risk Research-Action (RA-SIOMRI-2021)" call launched in partnerships with the Normandie and Hauts de France regions;
- the "Lebanon Action 2021" call launched in April 2021 with the Lebanese CNRS and AFD. These specific calls for proposal are also advertised widely.

The specific, pilot or experimental calls set up under the 2022 Work Programme will be announced through statements by the supervisory authority, ANR or funding institutions and broadcast on

¹⁴ The specific calls are scheduled during the year and announced on the Agency's website. The "ANR Newsletter" provides regular news updates about the Agency.

the Agency's website or through social networks. Several specific calls are currently under development on such topics as Chrodecone or Sargassum.

Other topics require pitting teams developing competing approaches against each other to overcome major scientific or technological barriers. ANR has therefore devised a special scheme: the **Challenge**. The challenge is the subject of a specific call - usually co-funded - that defines its objectives and the type of tests considered. These calls are also announced on the Agency's website and are extensively advertised.

3. "Building the European Research Area (ERA) and France's International Attractiveness" component

This component provides French researchers and teams with funding instruments to enhance the profile and attractiveness of French national research and help to build the European Research Area (ERA). These actions clarify or supplement those implemented under the Horizon Europe programme. They aim to stimulate high-level research partnership dynamics and develop the leadership capacity of French teams in European and international programmes.

The "*Construction of the ERA and international attractiveness of France*" component proposes within the 2022 Work Programme several funding instruments that are part of the implementation of the "*National Action Plan to improve French participation in the European research and innovation funding schemes*" (PAPFE)³:

- "*Establishing European or International Scientific Networks*" (MRSEI) which aims to strengthen the position and outreach of French research on the European and international scene (see [§D.6](#)).
- "*Springboard-ERC*" (T-ERC) which aims to reinforce the success of French researchers for the "*Starting grants*" and "*Consolidator grants*" calls for proposals of the *European Research Council* (ERC). (see [§D.7](#)).
- "*Access-ERC*" for funding the hosting in a French laboratory of young post-doctoral researchers (French or foreign PhD who have defended their doctorate less than three years ago) who are seeking to boost their international visibility and submit a future application to an ERC programme, in particular Starting grants and Consolidator grants. (see [§D.8](#))

The first "Access-ERC" call for proposals will be opened in the first half of 2022 and will involve exclusively the field of Humanities and Social Sciences on an experimental basis (called pilot). The feedback acquired by ANR will then be used to extend this new "Access-ERC" instrument to other scientific sectors.

In addition to these individual-targeted instruments, ANR funds French teams through multilateral programmes such as Joint Programming Initiatives (JPI), European instruments (in particular the most recent "*Horizon 2020*" calls and the future European Commission calls under the new "*Horizon Europe*" plan) as well as part of other multinational actions on major global challenges (G8 research, Belmont Forum, etc.) (see [§D.9](#) and [Table 3 - Appendix F](#) for the provisional summary of these international calls. The updated list of open and forthcoming calls can be consulted on the ANR website.

Lastly, bilateral agreements between ANR and foreign agencies make it possible to set up strategic partnerships or facilitate certain international collaboration. This is firstly the "International collaborative research project" (PRCI) included in the "*Research and Innovation*" component and secondly specific bilateral themed calls run separately from the Generic Call for Proposals (see [§D.9](#) and [Table 2 - Appendix E](#)).

4. “Economic Impact of Research and Competitiveness (IERC)” component

The aim of this component is to stimulate partnerships with businesses and the transfer of public research results to the economic world. The proposed actions strengthen cooperation and partnerships and make it possible to exploit public research results. As a corollary, they aim to encourage companies' R&D efforts by encouraging them to invent and innovate. These actions hinge on increasing technological maturity (*Technology Readiness Level - TRL*), but also more or less enhanced integration of these inter-sectoral partnerships. In addition, based on the observation in France that relatively few SME and intermediate-sized enterprises (mid-caps) offer service or product innovations due to their difficulties in forging links with the public research sector, certain actions are specifically geared towards these SME and intermediate-sized enterprises.

The IERC component is thus based on specific supplementary programmes to the "Collaborative research projects - Enterprise" instrument of the "*Research and Innovation*" component (see [§C.3.3](#)):

- **LabCom (Joint Laboratory)**: to create and consolidate joint laboratories built jointly between a public research laboratory and a small or medium-sized enterprise (SME) or an intermediate-sized enterprise. The technological or social maturity of the projects is intermediate. (see [§D.1](#)).
- **Industrial Chairs**: by creating chairs that are co-built and co-funded between public laboratories and companies, this action aims to strengthen the potential for ground-breaking and strategic research in priority areas for French industry where TRL levels are still low. (see [§D.2](#)).
- **Carnot Institute**: to develop contractual research between public research organisations and the socio-economic world. (see [§D.4](#)).
- **Astrid and Astrid Maturation**: calls run by ANR and funded by the *Defence Innovation Agency* (AID) for the development of dual research (see [§D5](#)).

In addition to these various collaborative instruments, the 2022 Work Programme includes a new instrument for funding public-private partnerships:

- the **Public-private research project (PRPP)**. The purpose of this collaborative instrument is to encourage the development of new public-private partnership dynamics or enable the technological or social maturity of research projects (see [§D.3](#)).

All these actions focusing on public-private partnerships revolve around academic research transfer structures, mainly funded under the Investments for the Future programme (PIA) such as the SATT (Technology Transfer Accelerator Offices), but also with public structures closely linked with the socio-economic sector.

A.5) Other funding opportunities, partnerships and co-funding

Consistent with its mission as a funder of project-based research, the ANR establishes partnerships with other funders (see [Table 4](#) in the appendix, such as:

- *French Agency for Biodiversity (OFB)*,
- *French Development Agency (AFD)*,
- *Defence Innovation Agency (AID)*,
- *General Directorate for Healthcare Provision (DGOS) of the Ministry of Solidarity and Health*,
- *Médéric Alzheimer's Foundation (FMA)*,
- *Ministry of Agriculture and Food (MAA)*,
- *Ministry of Ecological Transition (MTE)*.

These particularly valuable partnerships represent opportunities for funding or co-funding projects that supplement ANR's own operating budget.¹⁵ Examples include the Astrid and Astrid Maturation programmes, dedicated to dual research and implemented by ANR with funding from AID (see [SD.5](#)). More recently, the ANR has partnered with the *Medical Research Foundation* (FRM), the *Fondation de France* (FdF) and *Régions de France* to co-fund the Flash Covid-19, RA-Covid-19 and Covid-19 Resilience calls. These collaborations will continue as much as necessary depending on how the health crisis pans out.

The ANR has also forged partnerships with very large research infrastructures (TGIR) that can provide support for research projects funded by the Agency. For example, resource requests may be made to GENCI (*Large National Intensive Computing Facility*) for access to computing and storage resources for needs in digital simulation, massive data processing or artificial intelligence. Under these partnerships, during 2022 ANR will propose a specific funding opportunity, in the form of one or two pilot calls, for projects intending to exploit data from these TGIR/IR.

All these calls and actions, whether or not involving partners, will be announced on the Agency website and the future national portal for calls for projects (opening planned in September 2021).

Labelling per competitive clusters

ANR also maintains close relations with the competitive clusters. A label can be requested before submitting projects (regardless of the call) to benefit from support and follow-up from the competitive clusters.¹⁶

Funding by other agencies or foundations

Public bodies other than ANR provide project-based funding and organise their own calls, including the *National Cancer Institute* ([INCa](#)), the *National Agency for Research on AIDS and Viral Hepatitis - Emerging Infectious Diseases* ([ANRS-MIE](#)) and the *Medical Research Foundation* ([FRM](#)). For the sake of efficiency, projects covered by these calls for proposals are not intended to be funded by ANR. Projects funded by other agencies or foundations under similar instruments and with identical expectations may not benefit from double funding.

The eligibility of projects submitted to the ANR, regardless of the 2022 Work Programme call for proposals, and relating to themes likely to be supported by INCa and ANRS-ME will be determined jointly by ANR and INCa or ANRS-ME. For the *Generic call*, PRC and PRME are concerned while JCJC, PRCE and PRCI are not concerned by this joint procedure.

A.6) ANR values and commitments within the 2022 Work Programme

Call calls for proposals or programmes of the 2022 Work Programme are involved. All participants in the proposals submitted to these calls and everyone involved in ANR-funded projects undertake to comply with these values and commitments.

1. Ethics and scientific integrity

The ANR, a signatory to the National Charter of Ethics for Research Professions and in accordance with the March 2017 circular¹⁷ on the scientific integrity policy, ensures that the principles of this charter are respected for all actions programmed in the 2022 Work Programme. As such, the ANR Charter of Ethics has been revised and extended to scientific integrity. The Agency ensures that its

¹⁵Co-funding means that part of the aid allocated to the project (on the basis of the initial application) comes from an ANR partner. This is not usually additional funding.

¹⁶ <https://www.economie.gouv.fr/entreprises/tout-savoir-sur-poles-competitivite>.

¹⁷ Decree 2020-256 of 13 March 2020 in application of Article 80 of the Public Function Transformation Act.

beneficiaries adhere to all the rules and values that must govern research activity to guarantee honesty and scientific rigour. Maintaining society's trust in the research ecosystem hinges on respecting these principles. This Charter is also backed by the appointment of an ethics and scientific integrity contact who ensures compliance with the fundamental principles, the prevention and proper management of conflicts of interest, and training of staff within and outside the Agency.

In this context, a project coordinator (regardless of the call for proposals) undertakes that all project participants (whether or not they are requesting funding) respect the principles set out in the [National Charter of Ethics of research professions](#)¹⁸ and the [ANR Charter of Ethics and Scientific Integrity](#)¹⁹.

Furthermore, each scientific coordinator applying for a grant undertakes formally that his or her superiors (in particular the unit director, the competent administrative and financial services and the persons authorised to represent legally the institution managing the grant, or its representatives) have consented to the application procedure in progress and that the information relating to the application has been communicated to them. ANR may send the list of submissions it has registered to the laboratory directors and administrators of the managing institutions for projects that concern them.

2. Gender equality

ANR, keen to contribute to the implementation of a policy²⁰ to reduce inequality between men and women higher education and research, has added the principle of equality to its Code of Ethics and Scientific Integrity and embarked on an equality work programme. Its aim is in particular to ensure that scientific communities systematically consider the sex and/or gender aspect in their research, regardless of the field, to produce quality knowledge and to train evaluators on potential gender bias in selection to guarantee projects are considered fairly, whether carried out by women or men.

Moreover, to address the over-representation of men in science and to encourage young women to pursue careers in fields where they are absent or in a minority, ANR is committed to showcasing women in science who have secured ANR funding or contributed to Scientific Evaluation Panels as chairpersons or committee members.

In this context, a coordinator of an ANR-funded project undertakes to give equal visibility to the research work produced, whether it is carried out by women or men.

Furthermore, a project coordinator undertakes, when this is relevant, to take into account the sex and/or gender aspect in his or her research, regardless of the field, to set aside gender bias in producing knowledge and to anticipate the potential consequences of its application.

3. Scientific publications and research data

As part of the ANR contribution to the promotion and implementation of open science and in connection with the French National plan for open science (PNSO) and the international Plan S, the ANR beneficiaries undertake to guarantee immediate open access to peer-reviewed scientific publications and to adopt, for research data, an approach known as FAIR (*Easy to find, Accessible, Interoperable, Reusable*) that complies with the principle "*as open as possible, as closed as necessary*".

¹⁸ https://www.cnrs.fr/comets/IMG/pdf/charte_nationale_deontologie_signe_e_janvier2015.pdf.

¹⁹ <https://anr.fr/fr/lanr-et-la-recherche/engagements-et-valeurs/lintegrite-scientifique/>

²⁰ Follow-up to the 9th European Conference on Gender Equality in Higher Education and Research - DGSIP - DGRI.

Thus, all scientific publications emerging from ANR projects funded under the 2022 Work Programme will be made available as open access under the licence *Creative Commons CC-BY* or equivalent, by using one of the following three channels:

- publication in a natively open access review;
- publication in a subscription review that is part of a so-called transformative agreement or transformative journal²¹;
- publication in a subscription review. The publisher version or the manuscript accepted for publication will be lodged in the HAL open archive by the authors under a *CC-BY* licence by implementing the Non-transfer of rights strategy (SNCD), as per the procedures indicated in the special conditions of the decision or funding agreement.

In addition, the project coordinator undertakes that the full text of these scientific publications (version accepted for publication or publisher version) will be lodged in the HAL national open archive, at the time of publication at the latest, and that the ANR research project reference (e.g. ANR-22-CE64-0001) from which they are taken will be mentioned.

ANR encourages lodging *pre-prints* in open platforms or open archives and favouring perennial or unique identifiers (OI or HAL Id, for example).

Lastly, the project coordinator undertakes to provide an initial versions of the Data Management Plan (PGD) within six months of project start-up and according to the procedures set out in the special terms and conditions.

4. Promoting scientific, technical and industrial knowledge

ANR encourages the beneficiaries of ANR grants to carry out and/or participate in actions to transfer knowledge to citizens and decision-makers: publication of articles in the press, carrying out media interviews, public decision-making support, participation in science festivals, arranging public debates, outreach actions, writing articles in a free online encyclopaedia, etc.

Following the call for expression of interest (AMI-SAPS) launched in March 2021, several calls for proposals will be scheduled end 2021 and during 2022 under the National plan "*Science with and for Society*" to:

- i) support research in science mediation and communication and
- ii) promote the development of scientific, technical and industrial culture within research and knowledge dissemination institutions and organisations.

The detail of this multi-annual programming will be developed during specific webinars during the 2022 ANR Tour (September 2021) and will be communicated on the Agency's site.

5. Access to genetic resources and traditional knowledge associated with genetic resources

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity was adopted on 29 October 2010. It contributes to the conservation of biological diversity and the sustainable use of its components and to enhancing the contribution of biological diversity to sustainable development and human well-being.

The Nagoya Protocol thus significantly advances the third objective of the Convention by

²¹ Definition of [co-called transformative agreement](https://www.coalition-s.org/faq-theme/publication-fees-costs-prices-business-models/) or [transformative journal](https://www.coalition-s.org/faq-theme/publication-fees-costs-prices-business-models/): <https://www.coalition-s.org/faq-theme/publication-fees-costs-prices-business-models/>

providing greater legal certainty and increased transparency for suppliers and users of genetic resources. European Regulation 511/2014 and French Act 2016-1087 determine the application modalities for the Protocol.²² Two check points are thus defined:

- i) at the stage of funding research work under the control of the Ministry of Higher Education, Research and Innovation (MESRI) and
- ii) at the stage of final product development under the control of the Ministry of Ecological Transition (MTE).

In this respect, the ANR must obtain "Due Diligence" Declaration (DDD) receipts for the research projects it has been funding since 2019. Applicants in the 2021 Generic Call for Proposals will be invited to declare any potential use of genetic resources during their projects.

DDD for research work can be submitted online using the special application on the website of the French Ministry of Higher Education, Research and Innovation. Credentials to access the application can be obtained from the director of the host institution.

All information is available at the following address: <http://www.enseignementsup-recherche.gouv.fr/pid37627/utilisation-ressources-genetiques-associees.html>.

6. Scheme to protect the nation's scientific and technical potential (PPST)

The goal of the Scheme to protect the nation's scientific and technical potential (PPST) is to protect, within public and private establishments, access to their strategic knowledge and know-how as well as their sensitive technologies. It provides more effective protection against attempts to capture strategic or sensitive information that could be misused for malicious purposes. The ANR encourages the beneficiaries of ANR funding to interact closely with their institution in order to implement the Scheme to protect the nation's scientific and technical potential (PPST) according to the recommendations of the General Secretariat for Defence and National Security (SGDSN).²³

Furthermore, under the 2022 Work Programme and Generic Call for Proposals, as recommended by the department of the Defence and Security High Official (SHFDS) of MESRI, AND implements the PPST for projects lodged that include in their consortium partners domiciled outside the European Union (EU). Scientific or technical international cooperation projects identified by ANR will be submitted to SHFDS/MESRI for its opinion taking into account of national guidelines established by SGDSN. A negative opinion from SHFDS/MESRI will not allow the selection of projects. SHFDS/MESRI will not give the applicant a reason for its opinion.

B. Research themes related to the 2022 Generic Call for Proposals

The scientific themes are described in the 2022 Generic Call for Proposals with the associated keywords, associated ERC codes and where applicable the associated SDG.

"Environmental Sciences" field

Theme A.1. Solid earth and fluid envelopes

Theme A.2. Living earth

²² Act on recovery of biodiversity, nature and landscapes (Act 2016-1087 of 8 August 2016) and its implementation decree pertaining to access to genetic resources and sharing of benefits arising from their utilisation (Implementation Decree No. 2017-848 of 9 May 2017).

²³ <http://www.sgdsn.gouv.fr/missions/protection-du-potentiel-scientifique-et-technique-de-la-nation/> (CIR no. 3415/SGDSN/AIST/PST of 7 November 2012).

Theme A.3. Animal, photosynthetic organism and micro-organism biology

Theme A.4. Food and food systems

“Materials Science and Engineering” field

Theme B.1. Physics of condensed matter and diluted matter

Theme B.2. Polymers, composites, chemical physics of soft matter

Theme B.3. Metallic and inorganic materials

Theme B.4. Engineering and process sciences

Theme B.5. Molecular chemistry

Theme B.6. Analytical chemistry, theoretical chemistry and modelling

"Life Sciences" field

Theme C.1. Biochemistry and chemistry of living organisms

Theme C.2. Characterisation of structures and structure-function relationships of biological macromolecules

Theme C.3. Genetics, genomics and RNA

Theme C.4. Cellular biology, developmental biology and evolution

Theme C.5. Physiology and physiopathology

Theme C.6. Immunology, infectiology and inflammation

Theme C.7. Molecular and cellular neuroscience - Developmental neurobiology

Theme C.8. Integrative and cognitive neuroscience

Theme C.9. Translational health research

Theme C.10. Biomedical innovation

Theme C.11. Regenerative medicine

“Humanities and Social Sciences” field

Theme D.1. Individuals, companies, markets, finance, management

Theme D.2. Institutions and organisations, legal frameworks and standards, governance, international relations

Theme D.3. Contemporary societies: stat of, dynamics and transformations

Theme D.4. Cognition, behaviour, language

Theme D.5. Arts, languages, literatures, philosophies

Theme D.6. Studies of the past, heritage, cultures

Theme D.7. Societies and territories in transition

"Digital Sciences" field

Theme E.1. Foundations of digital technology: information technology, automation, signal processing

Theme E.2. Artificial intelligence and data science

Theme E.3. Software science and engineering - Multi-purpose communication networks, high-performance infrastructures

Theme E.4. Interaction - Robotics

Theme E.5. Digital models, simulation, applications

Theme E.6. Quantum technologies

“Mathematics and its interactions” field

Theme F.1. Mathematics

"Sub-atomic physics, Earth and Universe Sciences" fields

Theme G.1. Planetary science, structure and history of the Earth

Theme G.2. Sub-atomic physics and astrophysics

Cross-cutting fields

Science of Sustainability

Theme H.1. Science of Sustainability

One Health

Theme H.2. Contaminants, ecosystems and health

Theme H.3. Infectious diseases and environment

Theme H.4. Public health, health and societies

Ecological and environmental transition

Theme H.5. Methodologies, instrumentations, sensors and solutions ecological transition

Theme H.6. Dynamics of socio-ecosystems and of their components

Theme H.7. Bio-economy, from biomass to uses: chemistry, materials, systematic approaches and processes

Energy transition

Theme H.8. Basic energy science

Theme H.9. Sustainable, clean, safe and efficient energy

Technological transitions

Theme H.10. Nano-objects and functional nanomaterials, interfaces

Theme H.11. Sensors, imagers and instrumentation

Theme H.12. Micro- and nanotechnologies for information and communication processing

Theme H.13. Health technologies

Digital transformation

Theme H.14. Interfaces: mathematics, digital sciences - biology, health

Theme H.15. Interfaces: digital sciences - humanities and social sciences

Theme H.16. Interfaces: mathematics, digital sciences - Earth system and environmental sciences

Transformations of socio-technical systems

Theme H.17. Global security, resilience and crisis management, cybersecurity

Theme H.18. Transport and mobility, constructions in urban and peri-urban areas

Theme H.19. Industry and factory of the future: people, organisations, technologies

C. Proposed funding instruments under the Generic Call for Proposals

The ANR 2022 Generic Call for Proposals mobilises several funding instruments to respond to both its assignment in connection with the French public research and innovation policy and the project-based funding needs of research communities. There are three categories of instruments within the Generic Call for Proposals, whose expectations and characteristics determine key points in the selection and monitoring of projects:

- The “**individual**” category solely involves the “Young Researchers” instrument (JCJC).
- The “**team**” category solely involves the “Single-team research project” (PRME).
- The “**collaborative research**” category proposes three instruments:
 - “Collaborative research project” (PRC),
 - “Collaborative Research Project involving Enterprises” (PRCE),
 - “International Collaborative Research Project” (PRCI).

All the eligibility and evaluation rules are described in the Call for Generic Proposals itself and in the 2022 AAPG Guide (available early September 2021). As certain rules or criteria have slightly changed between 2021 and 2022, it is essential to refer to these documents before submitting a proposal.

C.1) Young Researchers Instrument (JCJC)

The goal of the JCJC funding instrument is to prepare the new generation of talented young researchers destined to become the future leaders or directors of French scientific research. This involves encouraging young researchers to take responsibility by encouraging them to tackle scientific or technological barriers using novel approaches.

The instrument thus aims to enable the young researcher to acquire scientific autonomy, to develop his or her own research theme, to set up or consolidate his or her own team within or outside the laboratory, to acquire a project-based research culture and to express rapidly his or her capacity for innovation. It is also a springboard for young researchers who, thanks to initial support from the ANR, will find it easier to consider submitting a proposal in response to calls from the European Research Council (ERC), with a better chance of success.

Targeting the individual, this instrument provides funding for the young researcher's team only. This instrument is open solely to researchers from research and knowledge dissemination organisations or institutions eligible for ANR funding. It is not open to non-holders and cannot be used to fund the coordinator's salary.²⁴

C.2) Single-team research projects (PRME)

The “single-team research project” (PRME) funding instrument is intended specifically to fund a single team or a single laboratory from research and knowledge dissemination organisations or institutions eligible for ANR funding.²⁵ The applicant team or laboratory must justify its sustainability over the duration of the project in its application package.

²⁴ In the sense of holders of a current (or future) contract linking them to the supervisory authority. The contract may not have started before the agreement. See the new eligibility rules in the 2022 AAPG Guide.

²⁵ Applicants should make sure in particular not to lodge a project that could be considered a collaborative project. As such, a project lodged by several teams from the same laboratory must be considered as a collaborative research project (PRC) and not a PRME.

A PRME project corresponds to research targeting scientific objectives with outstanding ambition and ground-breaking dimensions. The PRME is coordinated by a leader of a team already formed or a laboratory (if the latter is not organised in teams) that offers all the skills and know-how necessary to achieve these ambitious and innovative objectives.²⁶ A PRME coordinator is expected to be extensively involved.²⁷

The PRME eligibility, evaluation and funding rules are explained in the 2022 Generic Call for Proposals (available in July 2021) and in the 2022 AAPG Guide (available in September 2022). Researchers seeking to commit to lodging a PRME are invited to read carefully the strict eligibility rules that apply to this funding instrument.²⁸

C.3) Funding instruments for collaborative research

Collaborative projects aim to achieve scientific or technological results by pooling expertise and resources from various national or international public or private research teams or groups.

The funding granted thus makes it possible to speed up the proposed research through collaborative efforts. These instruments encourage research teams to carry out work for which collaboration has scientific added value, either because it makes the work possible or because it makes it possible to contemplate results that are more ambitious or of superior quality. Interdisciplinary or multidisciplinary research is encouraged under these collaborative instruments.

A collaborative project is coordinated by a coordinator partner (also called coordinator) who acts on behalf of all partners (at least two) making up the consortium. A scientific manager is appointed for each partner.²⁹

Collaborative research projects (PRC)

The "Collaborative Research Project" (PRC) funding instrument is the main ANR funding instrument. This instrument includes all forms of multi-partner research projects other than those covered by the PRCI and PRCE instruments.

It involves at least two partners³⁰ from research and knowledge dissemination organisations and institutions eligible for ANR funding. Collaborations using own funds are possible, particularly in the case of foreign team(s) from countries not eligible for the PRCI (§C.3-2), in which case the consortium must contain at least one team from research and knowledge dissemination organisations or institutions eligible for ANR funding.

C.3-2) International Collaborative Research Projects PRCI

ANR works in collaboration with research funding agencies in other countries and proposes agreements to its supervisory ministry designed to facilitate collaboration between the teams in these different countries. These bilateral agreements, which may cover targeted themes or be open to all research themes funded by the ANR, are focused on priority objectives or geographical areas for limited periods of time, with the exception of the special case of Franco-German cooperation (Elysée Treaty, revised in 2019 in Aix-La-Chapelle).

²⁶ Only the coordinator's team or the laboratory is funded under a single-team research project.

²⁷ As such, funding under a PRME is incompatible with funding obtained from the ERC by the PRME coordinator.

²⁸ Applicants should make sure in particular not to propose a project that could be considered a collaborative project. As such, a project lodged by several teams from the same laboratory must be considered as a collaborative research project (PRC) and not a PRME. See the precise definition of the PRME and PRC in the 2022 AAPG Guide.

²⁹ See: Appendix 1 - Definitions (page 19 and 20) in the ANR Financial Regulation. <https://anr.fr/fr/rf/>

³⁰ A PRC can involve two teams from a same laboratory, with each one then considered to be a partner in the collaborative project. This is not a PRME in this case (§C.2).

Depending on circumstances, the objectives of these agreements are to:

- accelerate and develop the collaboration of French researchers with the best international teams on key themes;
- promote partnerships with emerging countries based on themes of mutual interest and shared benefit;
- foster the emergence of transnational teams of excellence by enabling research to be conducted and shared at the optimum global level.

For agreements targeted on specific themes, ANR and its partner agencies aim to renew the theme over two to three years in order to strengthen collaborations and encourage the emergence of quality projects.

The “International Collaborative Research Projects” (PRCI) funding instrument is specific to those bilateral collaborations that are established between at least one French partner (a laboratory of a research and knowledge dissemination organisation or institution eligible for ANR funding) and at least one foreign partner (eligible for funding from a foreign funding agency which has signed a bilateral agreement with ANR).

Strong synergy is expected between the two partners submitting their proposals and should result in complementarity of scientific contributions from each country and a precise identification of real scientific coordinators of projects in each country. For the 2022 Work Programme, the countries involved in these bilateral agreements will be (subject to confirmation):

- *Europe: Germany, Austria, Luxembourg and Switzerland.*
- *International: Brazil, Quebec, United States, Hong Kong, Russia, Singapore and Taiwan.*

[Table 1](#) (in Appendix [SE](#)) gives details of the research issues and themes covered by these collaborations.³¹ In addition to the agreements linked to the PRCI instrument of the Generic Call for Proposals, bilateral agreements that are strategic for the State are subject to specific calls for proposals. Arising from a desire in common with partner agencies, these calls are subject to a dedicated budget and, in most cases, specific evaluation and selection conditions ([Table 2](#) in Appendix [E](#)).

Information on these specific international collaborations is available on the ANR website and update regularly as negotiations progress.

C.3-3) Collaborative Research Projects involving Enterprises (PRCE)

The “Collaborative Research Projects involving Enterprises” (PRCE) funding instrument is specific to collaborations that are established between at least one laboratory of a research and knowledge dissemination organisation or institution eligible for ANR funding) and at least one business or commercial company involved in R&D.³² The project may be coordinated by the public partner or the private partner.

³¹ List drawn up on the date of publication of the 2022 WP and likely to be completed or amended: applicants are invited to consult the ANR website regularly. Country-specific appendices (available on the ANR web page on the Generic Call for Proposals) describe the eligible themes and the special procedures for submission and selection. They describe additional conditions for eligibility for the Generic Call for Proposals and must therefore be consulted before any submission to the ANR or to the foreign partner.

³² For the definition of a business or commercial company, see: Appendix 1 - Definitions (page 19 and 20) in the ANR Financial Regulation. <https://anr.fr/fr/rf/>

These projects aim to achieve jointly research results that will benefit both parties, by allowing public or private laboratories of research or knowledge dissemination institutions to address new research questions, or to approach them differently, and by giving companies access to better public research in order to improve their capacity for innovation in various ways.

D. Funding instruments subject to specific calls for proposals

The 2022 Work Programme proposes different **funding instruments**, each with specific expected impacts and distinct characteristics in terms of selection and monitoring.

This section is devoted to the presentation of funding instruments that can be used beyond the Generic Call for Proposals. They correspond to specific programmes or calls whose timetables should be consulted on the ANR website, on the Work Programme publication page.

1. Specific actions beyond AAPG (Flash, Challenges, etc.)

Challenges and Flash calls³³ are subject to specific calls that define their objectives or the research covered. Flash calls or Challenges are subject to specific communication when they are set up. To find out the scientific scope and timetables, it is advisable to consult regularly the 2022 agenda on the ANR website.

Since its creation, the **Flash** instrument has been used on numerous occasions (Haiti Flash, Fukushima Flash, Drones Flash, Ebola Flash, Asylum Flash, Genocides Flash, 2024OG Flash, Sargassum Flash, Covid-19 Flash, etc.).

The rapid intervention modalities make it possible to select and fund projects within a very short period of time (two to three months), while guaranteeing competitive selection by peers based on the highest standards.

Mostly led by a co-funding partner, the **Challenge** instrument aims to select and fund several teams that will have to compare their respective approaches during a series of tests, mostly organised in cooperation with the LNE (National Testing and Metrology Laboratory). For example, the most recent Challenges involved the DEtection of FALSifications in images (DEFALS), the Mastery of Indoor Localisation (MALIN), Robotics and Sensors at the Service of Ecophyto (ROSE Challenge).

Other specific calls could be implemented on the initiative of the supervisory ministry, other ministries, ANR, co-funders, regional partners and other French or foreign partners or under the implementation of the PEPR of the PIA4.

Information on these specific calls, that are not known at the date of publication of the 2022 Work Programme, will be posted on the Agency's website and will be widely promoted within communities, mainly through the future National call for proposals portal (scheduled to open in September 2021).

2. "Economic Impact of Research and Competitiveness" (IERC) component

ANR has the particular mission of encouraging the transfer of the results of public research to the economic world. In addition to collaborative projects with businesses (see "Collaborative Research Projects Involving Enterprises" in [§C.2-3](#)) which is the instrument of the generic call in the relationship with the socio-economic world, the ANR has a series of programmes aimed at revitalising the partnership between laboratories and businesses.

³³ These calls are referenced on the "open calls" page (<https://anr.fr/fr/appels/>) on the ANR website.

This cross-cutting component brings together four programmes that are subject to specific calls: *LabCom*, *Industrial Chairs*, *Public-private research projects (PRPP)* and *Carnot Institute*, as well as two programmes funded entirely by the Defence Innovation Agency (AID): *ASTRID* and *ASTRID Maturation*.

The IERC component instruments all involve the participation of research bodies and businesses.³⁴ The eligibility conditions and detailed characteristics of the expected proposals are explained in the corresponding calls for proposals available on the ANR website.

D.1) Joint laboratories (LabCom)

The programme to support the creation of joint laboratories (*LabCom*) between public research or knowledge dissemination organisations and institutions and small and medium-sized enterprises (SME) or intermediate-sized enterprises (mid-caps) aims to develop the industrial partnership and transfer potential with academic research players, particularly those operating under a non-partnership research activity. The challenge of this programme is to support these players in establishing lasting bilateral partnerships with businesses, especially SME and mid-caps, inasmuch as these links are crucial in the innovation chain. The transfer of results or know-how from public research to such companies can be an important factor in innovation, competitiveness and job creation.

For this programme, which has been open since 2013, ANR is offering €350,000 in funding from the laboratory of a public research or knowledge dissemination organisation or institution. It is simple to set up such funding, thereby allowing very quick implementation and greater flexibility in the use of the grant. This programme will continue in 2022 as per the same terms and conditions and criteria as in 2021, including an agreement period extended to five years. The programme is subject to a specific call for proposals on a continuous flow basis (two to three evaluation sessions per year). It is advisable to consult the specific page on the ANR website.³⁵

Thanks to these partnerships that are currently being finalised, the LabCom instrument could be subject to specific calls for proposals launched with national partners at end 2021 or in 2022. These specific calls for proposals will be posted on the specific LabCom instrument page on the Agency website and the co-funding partners websites.

D.2) Industrial Chairs

The “*Industrial Chairs*” programme aims to mobilise resources to consolidate and strengthen the competitiveness of French companies and has a threefold objective:

- Enable French or foreign lecturers-researchers, of international renown and possibly on the move, to work on an ambitious and innovative research programme of indisputable industrial scope.
- Build and structure collaborative scientific research actions in areas that are a priority and strategic for public and private operators involved in the industrial chair through a strong and sustainable partnership.
- Provide quality research training at the highest international level by including the long-term vision, methodologies and experience of players in the economic world when hosting doctoral or post-doctoral students in academic research laboratories.

³⁴ In the sense of a commercial company. For the definition of a business or commercial company, see: Appendix 1 - Definitions (page 19 and 20) in the ANR Financial Regulation. <https://anr.fr/fr/rf/>

³⁵ See the specific page on the ANR website: <https://anr.fr/fr/detail/call/laboratoires-communs-organismes-de-recherche-publics-tpepme-eti-labcom-appel-a-propositions-ed-1/>

This programme features a call for proposals open to all research themes, on topics defined jointly by the industrial chair's host institution³⁶ and one or more partner companies. The project is led by an eminent scientist, future incumbent of the industrial chair, and is funded equitably between the ANR and the partner companies. The selection process consists of a single application document containing the curriculum vitae of the candidate being considered for the industrial chair. The application is submitted by the institution hosting the chair, in close consultation with the partner company(ies) (which commit themselves in writing when submitting a proposal).

Funding is granted for a period of 48 months, with the ANR contribution (maximum €1.2M) matching that of the companies (cash contribution paid to the host institution). This measure is subject to a specific call for proposals once a year (publication of the call planned for last quarter of 2021). Researchers are invited to consult the 2022 call for proposals agenda on the ANR website.³⁷

D.3) Public-private research projects (PRPP)

In addition to the collaborative instruments offered by ANR for many years, the 2022 Work Programme incorporates a new instrument for funding public-private partnerships: the "*Public-private research project*" (**PRPP**). The PRPP involves at least one academic partner and one private partner. It is addressed at all disciplinary fields.³⁸

The purpose of this collaborative instrument is to encourage the development of new public-private partnership dynamics or enable technological or social maturity of research projects. The PRPP thus permits:

- either the development of groundbreaking scientific results from the academic world within companies;
- or scientific resourcing of private research as part of a collaboration with an academic laboratory.

Expectations are therefore for short projects (eighteen to 36 months maximum, with no extension option) run by the academic partner or the industrial partner, both highly involved in the project.

The call for PRPP proposals, separate from the Generic Call for Proposals and with different objectives from the PRCE, is open continuously (several evaluation sessions every year) to provide a rapid response to applicants and maintain a highly competitive aspect to the projects. The first call for PRPP proposals will be launched in the first half of 2022.

The projects will be evaluated by a mixed committee (public-private) and those financed will benefit from specific support during their execution. The objective of this follow-up in conjunction with such partners as [Bpi France](#) will be to perpetuate the collaboration, for example through additional funding linked to innovation.

Certain submission and financing sessions could lastly be run as part of collaborations or co-funding with other agencies like [Bpi France](#) or [Ademe](#) or with regional authorities. These calls will be announced on the Agency site.

³⁶The host institution must be a research partner: public or equivalent partner whose main purpose is to carry out research, such as public institutions for scientific and technical research, universities, public scientific, cultural or professional institutions, public industrial or commercial research institutions, university hospitals, etc.

³⁷ See the specific page on the ANR website: <https://anr.fr/fr/detail/call/chaieres-industrielles-edition-2021-1/>

³⁸ The call for PRPP proposals and its implementation timetable will be announced on the ANR site during the first quarter of 2022.

D.4) Carnot Institute

Since 2006, the *Carnot* label has been awarded by the Ministry of Higher Education, Research and Innovation to public research structures qualified as "*Carnot Institute*" which are committed to putting partnership-based research, particularly through bilateral contractual research, at the heart of their strategy.

In order to assist and support the convergence of the institutes with socio-economic players, an annual subscription, calculated according to the partnership revenues, is paid by the ANR to *Carnot institutes*. This subscription is dedicated to scientific resourcing, professionalising the partnership relationship and integration with the business world.

With more than ten years of existence and stability, the programme is sustainable over time and is increasingly viewed by companies as being highly credible. Its operation is based on a scheme involving subsequent regular evaluations and is unanimously recognised by the academic and socio-economic world for its effectiveness as a vector of technology transfer and innovation. The involvement of members of the *Carnot* Committee, who mostly come from the business world, reinforces this symbiosis and encourages the institutes in this approach.

Finally, in order to ensure that the *Carnot* programme is ramped up and to provide real leverage to the scheme, the "*Valorisation-Instituts Carnot*" (Enhancement of Carnot Institutes) programme benefits from an endowment within the framework of the "Investments for the Future" programme. Three calls for proposals^[2] have been launched in this context, the first on specific actions towards small and medium-sized enterprises (SME), the second on specific actions at international level and the third to allow a structuring of supply in response to the demand of economic sectors especially towards small and medium-sized enterprises or industries (SME/SMI) or intermediate-sized enterprises (mid-caps) and the establishment of the *Carnot Springboard* scheme to help potential new entrants to upgrade to the level necessary to become a Carnot Institute.

D.5) ASTRID and ASTRID Maturation

The [ASTRID](#) (Specific Support for Defence Research and Innovation) and [ASTRID Maturation](#) programmes, entirely funded by the [French Defence Innovation Agency](#) (AID), are subject to specific calls for proposals managed by ANR. The selection for both these programmes is carried out in a single step (detailed proposal upon submission).

The ASTRID programme aims to stimulate the opening up of new avenues of research on themes of dual interest (civil and military applications), covering a wide range of disciplines. The aim is to explore scientific or technical hard points and to foster potential technological breakthroughs that benefit Defence, civil research and industry. The importance of the Defence requirement is among the selection criteria (potential spin-offs to be described at the time of submission).

The ASTRID programme is subject to an annual call broadly covering all key areas of the dual research. The organisation and timetable are close to those of the previous year's call (see ANR site³⁹). The launch of one or more complementary themed calls is possible depending on the needs identified by the AID.

The ASTRID Maturation programme is intended to support the promotion of scientific work carried out in research support schemes financed by the AID (only eligible projects⁴⁰) of which the

³⁹ For further information: <https://anr.fr/fr/actualites-de-lanr/details/news/lessentiel-sur-les-programmes-astrid-et-astrid-maturation-en-3-questions/> and <https://www.defense.gouv.fr/aid/deposer-vos-projets/subventions/astrid>

⁴⁰ For further information on the precise conditions for eligibility, please refer to the call for proposal documents and

projects of the ASTRID programme are a part. The ASTRID Maturation call for proposals has changed its mode of operation. Since 2020, a calendar edition corresponds to several possible submission sessions (a triannual timetable is planned), in order to encourage rapid selection of innovative projects.

3. “Building the European Research Area (ERA) and International Attractiveness” component

In addition to the International Collaborative Research Projects (“PRCI” (see [§C-3.2](#)) which constitute the main ANR instrument of bilateral collaboration, other types of European and international actions are planned under this component:

- Building European or International Scientific Networks (*MRSEI*)
- Springboard-ERC (*T-ERC*)
- **Access-ERC**
- Calls for specific European and international proposals (ERA-NET, JPI, Belmont, etc.)
- Strategic bilateral calls aimed at strengthening Franco-German cooperation in particular.

The *MRSEI*, *T.ERC* and *Access-ERC* funding instruments fall more particularly under the implementation of the "National Action Plan to improve French participation in the European research and innovation funding schemes" ([PAPFE](#)).

D.6) Building European or International Scientific Networks (MRSEI)

The programme dedicated to "Building European or International Scientific Network" (**MRSEI**) aims to facilitate French researchers' access to European (Horizon Europe 2021-2027) and international funding programmes. The proposals submitted will therefore have to prefigure an application to a European or international call for proposals.

The objective of the instrument is to strengthen France's scientific position by coordinating a proposal submitted in response to a large-scale European or international call for proposals. Therefore, proposals expected under this call for proposals should demonstrate actions to be undertaken to build a scientific network of a recognised international level, on topics of all disciplines and which have a strategic, economic, technological, cultural or societal impact.

In order to be as consistent as possible with European timetables and provide a rapid response to project sponsors, the **MRSEI** programme has, since 2018, been subject to continuous submission with several evaluation and selection sessions a year.⁴¹

D.7) Springboard-ERC (T-ERC)

The Springboard-ERC funding instrument (T-ERC) is part of the national strategy to strengthen French research and technological innovation and to increase France's scientific outreach and attractiveness internationally.

The **T-ERC** programme thus aims to enable young French or foreign researchers attached⁴² to a French public research and knowledge dissemination organisation or institution to lodge a new application in response to a *European Research Council* (ERC) proposal for the “Starting grants” or “Consolidator grants” call, with the best chances of success.

<https://www.defense.gouv.fr/aid/deposer-vos-projets/subventions/astrid-maturation>.

⁴¹ Further information on the specific page of the ANR website: <http://www.agence-nationale-recherche.fr/suivi-bilan/construction-de-l-espace-europeen-de-la-recherche-et-attractivite-internationale-de-la-france/mrsei-montage-de-reseaux-scientifiques-europeens-ou-internationaux/>

⁴² Researchers currently attached are eligible for the T-ERC programme.

The T-ERC programme is subject to two specific calls in 2022 (dedicated respectively to “*Starting grants*” and “*Consolidator grants*”). All applicants who have received an “A” evaluation under these ERC calls are eligible for ANR funding without further evaluation of their application by ANR.

Changing from the *Starting grants* category to *Consolidator grants* is permitted in the “T-ERC *Starting grants*” call launched under the 2022 Work Programme.

D.8) Access-ERC

Under the deployment of the Plan to improve French participation in the European research and innovation funding scheme (PAPFE), the 2022 Work Programme also plans to set up an experimental “Access-ERC” call.

The objective of this **Access-ERC** instrument is to fund and host young post-doctoral researchers in a French research laboratory, regardless of their nationality, who undertake to apply to an ERC (*European Research Council*) programme.

The applications to ANR will under a two-stage evaluation and selection procedure:

- i) Selection on application and interviews with candidates (French or foreign PhD who have defended their doctorate less than three years ago);
- ii) Allocation of successful candidates to a research laboratory based on the laboratory's undertaking to provide conditions for hosting and preparing for the future application to ERC.

Under an experimental phase in 2022, the first call for “Access-ERC” proposals will cover Humanities and Social Sciences exclusively. The feedback acquired by ANR will then be used to extend this new “Access-ERC” instrument to other scientific sectors.

Information will shortly be available on the Agency's site.

D.9) Calls for specific proposals in European or international collaboration

In addition to the relations established with certain agencies at European and international levels in the Generic Call ([PRCI](#) instrument), ANR establishes strategic partnerships with foreign funding agencies which translate into specific international calls for proposals.

Mostly focusing on a specific theme, these actions can be carried out as part of a multilateral partnership (for example, CRCNS/NEUC calls, ORA, or Belmont Forum calls).

In connection with the “H2020” and now “*Horizon Europe*” programmes, ANR also develops multilateral partnerships with its counterparts in the framework of European actions such as ERA-NET, EJP, Article 185, Joint Programming Initiatives(JPI) and within new European partnerships.⁴³ These actions are complementary to the other sections and funding of EU framework programmes. With this in mind, emphasis is placed on a multi-annual reasoning for prioritising activities and linking national and European tools. The complementarity of these actions is considered sector by sector over time and can also lead to associations between initiatives (joint calls between ERA-NET Cofund and Belmont Forum, for example).

Lastly, ANR sets up dedicated calls for proposal as part of of strategic bilateral collaborations for the State. In this context, two Franco-German collaborations and two Franco-Japanese collaborations on the following themes are envisaged for 2022:

- Humanities and social sciences (ANR/DFG) (call confirmed)
- Artificial intelligence (ANR (BmBF) (subject to confirmation)

⁴³ <https://www.horizon2020.gouv.fr/cid154360/partenariats-dans-horizon-europe.html>

- On-board IA (ANR-JST) (subject to confirmation)
- Energies and materials/Digital Sciences and AI (ANR-JST-CREST) (subject to confirmation, *precise themes currently being finalised*)

All international actions are subject o different calls for proposals announced on the ANR website.

It is advisable to consult the ANR site regularly for the list of current calls (see [Tables 2 et 3](#)) and their specific appendices (submission and eligibility conditions).⁴⁴

⁴⁴ ANR calls for proposals: <https://anr.fr/fr/>

E. Appendices *(updating available on the ANR website)*

E.1) Table 1: Provisional bilateral collaborations under the Generic Call for Proposals - International Collaborative Research Projects (PRCI)

*The list of **confirmed** collaborations will appear on the specific ANR Generic Call for Proposals web page at a later date. Applicants are invited to consult the ANR website before submitting any proposal to the ANR or the foreign partner.*

Subscribing to the ANR newsletter makes it possible to be informed about new calls.⁴⁵

Countries (agencies)	Collaborative themes proposed in 2022 (to be confirmed after foreign agency consent)	Lead Agency	Relevant scientific fields
Brazil (FAPESP)	<ul style="list-style-type: none"> • Mathematics and digital sciences • Humanities and social sciences • Materials • Engineering, chemistry, physics • Environment and biological resources 	ANR	All relevant themes beyond Life Sciences
Brazil (FACEPE)	<ul style="list-style-type: none"> • Mathematics and digital sciences • Humanities and social sciences • Materials • Engineering, chemistry, physics • Environment and biological resources 	-	All relevant themes beyond Life Sciences
Canada Quebec (FRQSC)	<ul style="list-style-type: none"> • Innovation, work, cognition, education, training, and in particular : <p>- Education in the digital age: didactic and pedagogical challenges, practical issues and perspectives</p> <p>- The circular economy in partnership with cities: challenges and opportunities</p>	ANR	Relevant themes beyond Humanities and Social Sciences
United States of America (NSF)	<ul style="list-style-type: none"> • Physics of living things • Digital sciences • Mathematics and its interactions 	(NSF)	Physics Life sciences Digital sciences Mathematics and its interactions

⁴⁵ Register for the newsletter: <https://anr.fr/fr/newsletter/>

Countries (agencies)	Collaborative themes proposed in 2022 (to be confirmed after foreign agency consent)	Lead Agency	Relevant scientific fields
Hong Kong (RGC)	All disciplinary fields funded by ANR and RGC (except Safety)	-	All themes except Safety
Russia (RSF)	Solid earth and fluid envelopes Past studies, heritage, cultures Infectious diseases and the environment	-	-
Singapore (NRF)	Suspended in 2022	-	-
Taiwan (MOST)	All disciplinary fields funded by ANR and the Taiwanese agency (except Safety)	-	All themes except Safety
Germany (DFG)	All disciplinary fields funded by ANR and DFG except Humanities and Social Sciences*	DFG	All themes except Humanities and Social Sciences*
Austria (FWF)	All disciplinary fields funded by ANR and FWF	FWF	All themes
Luxembourg (FNR)	All disciplinary fields funded by ANR and FNR	ANR	All themes
Switzerland (FNS)	All disciplinary fields funded by ANR and FNS	FNS	All themes

* Humanities and Social Sciences are subject to a specific ANR-DFG call for proposals (see Table 2).

E.2) Table 2: Specific bilateral collaborations outside the Generic Call for Proposals - International Collaborative Research Projects (outside PRCI)

This is a provisional list of actions in which France, via the ANR, is likely to engage. Additional actions may be implemented during the second half of 2021 or during 2022.

Applicants are invited to consult the ANR website before submitting any proposal to the ANR or the foreign partner.

Subscribing to the ANR newsletter makes it possible to be informed about new calls.⁴⁶

Countries (agencies)	Collaborative themes proposed in 2021 to be agreed after consent of foreign agency	Relevant Scientific fields
Germany (DFG) Humanities and Social Sciences	Franco-Germany call for proposals in Humanities <u>and</u> Social Sciences	Humanities and Social Sciences
Germany (BmBF) Artificial intelligence	Artificial intelligence <i>(subject to confirmation)</i>	Digital sciences Cross-cutting fields
Japan (JST) and under the CREST programme	ANR is continuing to collaborate with the <i>Japan Science and Technology Agency (JST)</i> , especially as part of the Japanese CREST programme. <i>The themes are being defined and will announced at a later date</i>	<i>Provisional:</i> Energy and Materials Sciences Digital sciences AI

⁴⁶ Register for the newsletter: <https://anr.fr/fr/newsletter/>

E.3) Table 3: Specific calls for proposals in European or international collaboration outside the Generic Call for Proposals and bilateral calls

This is a provisional list of actions in which France is likely to engage. Additional actions may be implemented during the second half of 2021 or during 2022. Certain calls may also be modified or delayed over time. Applicants are invited to consult the ANR website before submitting any proposal to the ANR or foreign partners.

Subscribing to the ANR newsletter makes it possible to be informed about new calls.⁴⁷

Reference	Succinct description	Relevant scientific fields
JPI AMR/ Cofund JPI AMR-ACTION	Second call by ERA-NET Cofund JPIAMR-ACTION, under the JPI AMR The JPI AMR objective is to improve the understanding of the transmission mechanisms of antimicrobial resistance in humans, animals and the environment and to enable the implementation of surveillance measures and interventions to limit the transmission of resistance genes, antimicrobial residue and resistant organisms.	Life sciences
JPI AMR/ Cofund JPI AMR-ACTION	Call for "Action groups" by ERA-NET Cofund JPIAMR-ACTION, under the JPI AMR	Life sciences
NEURON	Second call under the ERA-NET NEURON Cofund2, which aims to coordinate international and European research in mental health in order to reduce the burden of psychiatric, neurological and sensory system diseases on patients and society.	Life sciences
NEURON	Call for "working groups" under the ERA-NET NEURON Cofund2,	Life sciences
CoEN	"Path finder" Maturation call - under the national neurodegenerative diseases plan	Life sciences
JPND/ JPcoFund 2	Fourth call of the ERA-NET Cofund JPcoFund 2 with the objective of coordinating research into understanding the causes of neurodegenerative diseases, develop treatments and identify the best ways of caring for patients afflicted by these diseases.	Life sciences
JPI JPND	Call for "working groups" Early detection and evaluation of the progression of neurodegenerative diseases within the JPI JPND	Life sciences

⁴⁷ Register for the newsletter: <https://anr.fr/fr/newsletter/>

Reference	Succinct description	Relevant scientific fields
	with the objective of coordinating research into understanding the causes of neurodegenerative diseases, develop treatments and identify the best ways of caring for patients afflicted by these diseases.	
ERA PerMed	Fifth call of the ERA-NET Cofund ERA PerMed The objective of the ERA-NET Cofund ERA PerMed is to support the international community conducting research in the field of Personalised Medicine. ERA-NET Co-fund ERA PerMed launches calls for proposals on the themes identified in the Work Programme of the International Consortium for Personalised Medicine (ICPerMed). Definitive theme and title of the call to be announced.	Life sciences
EJP RD	Call for projects under the EJP Rare Diseases	Life sciences
JPI HDHL	Call for projects under the JPI HDHL	Life sciences
CRCNS (NEUC)	Call for international projects in computational neurosciences	Life sciences Digital sciences
ICRAD	Second call of the ERA-NET Cofund ICRAD (<i>International Coordination of Research on Infectious Animal Diseases</i>)	Life sciences Environmental Sciences
PRIMA	PRIMA Section 2 "Call 2022" under the PRIMA Euro-Mediterranean research programme	Environmental Sciences
SARGASSUM	Call for SARGASSUM 2 proposals: Causes Of Sargassum Blooms	Environmental Sciences
EPARSEs	Call for EPARSEs proposals on conservation of the marine biodiversity <i>Call being developed Subject to confirmation</i>	Environmental Sciences
EJP Soil/JPI FACCE	Call for proposals "Towards Healthy, Resilient and Sustainable Agricultural Soils" under the EJP SOIL (first external call) and the JPI FACCE	Environmental Sciences
SUSFOOD2/	Call for proposals of ERA-NETs Susfood2 and FOOSC "Innovative solutions for resilient food, climate-	Environmental Sciences

Reference	Succinct description	Relevant scientific fields
FOSC	intelligent and sustainable food systems"	
Biodiversa+	First call for proposals by the Partnership <i>Rescuing Biodiversity to Safeguard Life on Earth: "Biodiversity and Ecosystem protection across land and sea"</i>	Environmental Sciences
BANOS CSA	Call for proposals by BANOS CSA " <i>Impact of multiple stressors on marine ecosystem functioning and their implications to management"</i> <i>Call being developed Subject to confirmation</i>	Environmental Sciences
Water4all	Call of the Partnership <i>Water Security for the Planet</i> <i>Call being developed Subject to confirmation</i>	Environmental Sciences
Rescuing Biodiversity to Safeguard Life on Earth Biodiversity and Ecosystem protection across land and sea Water4all	First call for proposals by the Partnership <i>Water Security for the Planet (Water4all)</i> <i>The themes are being defined and will announced at a later date</i>	Environmental Sciences
ERA-NET Cofund SusCrop/JPI FACCE	Third call by ERA-Net Cofund on sustainable crop production - SusCrop, under the JPI FACCE	Environmental Sciences
Belmont Forum CEH2	Climate-Environment-Health2 (CEH2) <i>Call being developed Subject to confirmation</i>	Environmental Sciences Life sciences
Belmont Forum Migrations	Migrations and mobilities in an objective of sustainability <i>The themes are being defined and will announced at a later date</i>	Environmental Sciences Humanities and Social Sciences
Belmont Forum SSCP	Systems of Sustainable Consumption and Production (SSCP) <i>Being prepared - will be confirmed later</i>	Environmental Sciences Humanities and Social Sciences
CHIST-ERA IV	"Call 2021": call under the ERA-NET Cofund Chist-ERA IV	Digital sciences

Reference	Succinct description	Relevant scientific fields
CHIST-ERA IV/Challenge 1	"Challenge" call under the ERA-NET Cofund CHIST-ERA IV	Digital sciences
CHIST-ERA IV/Appel SO	"Open science" call under the ERA-NET Cofund CHIST-ERA IV	All fields
IA ANR-DFG-JST 2	Second Franco-German-Japanese call in artificial intelligence <i>Call being developed - subject to confirmation</i>	Digital sciences
ORA	ORA 7 call - <i>Open research area for the social sciences</i>	Social Sciences
JPI CH	Call under the JPI <i>Cultural heritage "Heritage, Society and Ethics"</i>	Humanities
Solar-Chemistry	"Solar radiation chemistry" call	Energy and Materials Sciences
ERA-NET Cofund EN-UAC/JPI Urban Europe Second call	Second call for proposals by the ERA-NET Cofund EN-UAC (<i>Urban accessibility and connectivity</i>) under the JPI Urban Europe, in partnership with the NSCF (China)	Energy and Materials Sciences Humanities and Social Sciences
ERA-NET Cofund EN-UAC/JPI Urban Europe Knowledge hub	Call for "Knowledge hub" under the ERA-NET Cofund EN-UAC (<i>Urban accessibility and connectivity</i>) and the JPI Urban Europe	Energy and Materials Sciences Humanities and Social Sciences

E.4) Table 4: Partnerships and co-funding under the 2022 Work Programme

All partnerships and co-funding are likely to be amended or supplemented.

Applicants are invited to consult the ANR website before submitting any proposal.

Partner	Main themes potentially concerned by co-funding	Relevant scientific fields
AID Defence Innovation Agency	Themes of dual civilian and military interest (energy, global security, cybersecurity, RBCE, etc.)	Astrid and Astrid Maturation programmes
CNRS National Scientific Research Centre	Participation in the European GENDER-NET Plus programme for the promotion of gender equality	Humanities and Social Sciences
DGOS General Directorate of Health Care Provision	Translational health research (basic research/clinical research synergy)	Life sciences and associated cross-cutting aspects "One Health"
FMA Médéric Alzheimer's Foundation	Participation in JPI-JPND on the theme of neurodegenerative diseases	Life sciences
FSP Foundation for Heritage Science	Participation in JPI-CH via the "Conservation, Protection and Uses" call	Humanities and Social Sciences
JU/Euro HPC Joint undertaking European high-performance computing	Co-funding of the programme EuroHPC	Digital sciences
MAA Ministry of Agriculture and Food	Agroecological plan for France, including Ecophyto	Environmental Sciences ROSE challenge
MESRI Ministry of Higher Education, Research and Innovation	Participation in the European GENDER-NET Plus programme for the promotion of gender equality	Humanities and Social Sciences
MTE Ministry of Ecological	Innovative projects in support of public policies, to redefine climate change adaptation policies and	Environmental Sciences

Partner	Main themes potentially concerned by co-funding	Relevant scientific fields
Transition	determine the conditions for their implementation, in the context of the ecological transition.	
OFB French Office for Biodiversity	Part of the Ecophyto II+ national plan, including focus 2 "Improving knowledge and tools for tomorrow and encouraging research and innovation" or participation in the Ecophyto-Maturation plan Participation in ERA-Net SusCrop and JPI Waterworks	Environmental Sciences
Regions Normandie, Grand-Est, AURA, Occitanie Hauts de France Pays de la Loire Centre Val de Loire, Guadeloupe	Region-specific themes	All scientific fields
SGDSN General Secretariat for Defence and National Security	Themes related to the protection of citizens and the sovereignty of the nation (to be confirmed)	Global security and cyber security
SGPI General Secretariat for Investment	Funding the priority " <i>Production of biopharmaceuticals</i> " under the " <i>Bioproduction</i> " Grand Challenge	Life sciences Energy and Materials Sciences Environmental Sciences