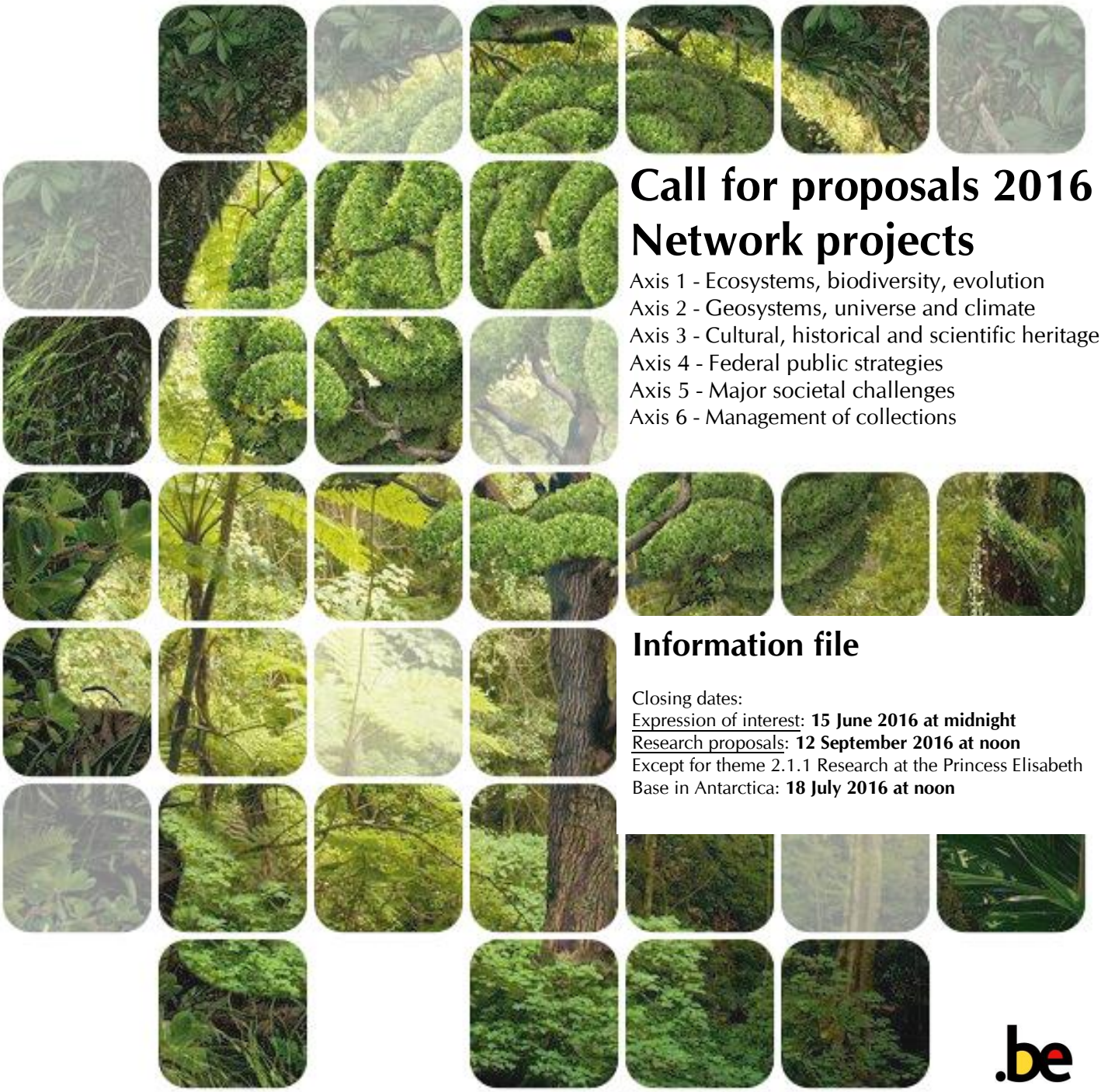
Belgian Science Policy Office

belspo

BRAIN-be

BELGIAN RESEARCH ACTION THROUGH INTERDISCIPLINARY NETWORKS



Call for proposals 2016
Network projects

Axis 1 - Ecosystems, biodiversity, evolution
Axis 2 - Geosystems, universe and climate
Axis 3 - Cultural, historical and scientific heritage
Axis 4 - Federal public strategies
Axis 5 - Major societal challenges
Axis 6 - Management of collections

Information file

Closing dates:
Expression of interest: **15 June 2016 at midnight**
Research proposals: **12 September 2016 at noon**
Except for theme 2.1.1 Research at the Princess Elisabeth Base in Antarctica: **18 July 2016 at noon**

.be

TABLE OF CONTENTS

1. MULTI-YEAR FRAMEWORK PROGRAMME FOR RESEARCH - BRAIN-BE

On 5th October 2012, the Council of Ministers approved the launch of the first phase (2012-2017) of the recurrent framework programme for research, BRAIN-be (Belgian Research Action through Interdisciplinary Networks).

Through the funding of research projects based on scientific excellence and European and international anchorage, this framework programme allows the federal departments' scientific knowledge needs to be met as well as supporting the scientific potential of the Federal Scientific Institutions[1] (FSI - see annex 1).

The strategic objectives, which have been set, based on the federal visions and priorities (both political and scientific) underlying the BRAIN-be programme, are as follows:

- to promote a coherent scientific policy within the FSI, and to thereby support and reinforce scientific excellence;
- to facilitate access to the scientific potential, infrastructure and collections available within the FSIs;
- to align the research potential with societal needs;
- to supply the scientific knowledge necessary for the preparation, implementation and evaluation of federal policies/strategies, particularly those related to topics involving multiple departments;
- to provide the scientific support necessary for the development of a Belgian position within various international forums for policy development;
- to develop and reach a critical mass for research on topics deemed priority areas in order to reinforce the impact of the federal research;
- to stimulate cooperation within the Belgian scientific community;
- to align with the European and international research agendas and to encourage Belgian participation in transnational and international research activities;
- to provide scientists with a framework allowing them to take up their role in scientific watch and to anticipate issues related to the priority areas of the programme;
- to promote systemic, multi/interdisciplinary and integrative approaches;
- to create added value by strengthening the complementarity and synergies between the activities of BELSPO (including contributions to the international infrastructure and organisations);
- to meet the obligations in terms of research stemming from international agreements;
- to develop interfaces with potential users of research achievements.

The framework programme is structured around six thematic axes:
Ecosystems, biodiversity, evolution

1. Geosystems, universe and climate
2. Cultural, historical and scientific heritage,
3. Federal public strategies
4. Major societal challenges
5. Management of collections

BRAIN-be is open to the whole Belgian scientific community: universities, university colleges, public scientific institutions and non-profit research centres.

Bearing in mind the priorities of the thematic axes, the framework programme enables participation in transnational programmes, such as the ERA-NETs and the Joint Programming Initiatives (JPI). The current programmes and actions concerned are:

[1] the acronym FSI covers the institutions as defined in the Royal Decree of 30 October 1996

- JPI Climate (http://www.jpi-climate.eu)
- JPI More Years, Better Lives - The Potential and Challenges of Demographic Change (http://www.jp-demographic.eu/)
- JPI Healthy and Productive Seas and Oceans (www.jpi-oceans.eu)
- JPI on Cultural Heritage and Global Change: a new challenge for Europe (http://www.jpi-culturalheritage.eu/)
- ERA-net BiodivERsA (www.biodiversa.org)
- ERA-net SEAS-ERA (www.seas-era.eu)
- ERA-net+ Heritage Plus (http://www.jpi-culturalheritage.eu/heritage-plus/)

The framework programme is based on the financing of two types of research project:
- 2 or 4-year network projects
- pioneer projects lasting a maximum of 2 years.

Each year, a call for proposals is launched for these two types of research project. This information file concerns the call related to network projects.

BRAIN-be is implemented under the responsibility of the Belgian Science Policy Office (BELSPO), assisted by an accompanying plenary committee made up of representatives of the federal departments and the FSIs. The plenary committee has appointed six thematic committees open to all of the federal departments and FSIs, whose primary role is to identify the priorities for research to be included in the calls for network projects.

For more information about the programme and the various thematic areas, please see www.belspo.be/BRAIN-be.

2. SCOPE OF THE CALL

The current call (which is at the same time the last call of this stage of BRAIN-be) concerns all the thematic axes. The research themes are grouped per pair of axes.

The total available budget for every axis is:

- 9,24 million euros for Axis 1 & 2 - Ecosystems, biodiversity, evolution and Geosystems, universe and climate
- 8,88 million euros for Axis 3 & 6 - Cultural, historical and scientific heritage and Management of collections
- 8,46 million euros for Axis 4 & 5 - Federal public strategies and Major societal changes

The research priorities for these thematic axes are described in this chapter.

2.1 THEMATIC AXIS 1&2: "ECOSYSTEMS, BIODIVERSITY, EVOLUTION" AND "GEOSYSTEMS, UNIVERSE AND CLIMATE"

The frameworks of these two thematic axes are described in the note approved by the Council of Ministers as follows

AXIS 1: ECOSYSTEMS, BIODIVERSITY, EVOLUTION

Thematic axis 1 is geared towards the description and comprehension of various biotic modules soil, plants, bodies of water, atmosphere - their processes and interactions (bio/geo/chemical cycles).
It is also geared towards the comprehension and prediction of the evolution of life, of the natural dynamics of ecosystems and of biodiversity as well as their reactions to the pressures of mankind and climate.
Finally, the research would provide the necessary scientific support for the management and sustainable utilization of biodiversity and ecosystems and associated policies.
This theme will allow the establishment of monitoring or surveillance if this should prove useful in the context of the research.

AXIS 2: GEOSYSTEMS, UNIVERSE AND CLIMATE

Axis 2 is geared towards the description and understanding of the various elements that make up planet Earth: the atmosphere, hydrosphere, cryosphere, solid earth - and their interactions.
It is also geared towards the understanding and prediction of its dynamics, and its evolution as well as that of its resources (mineral and hydrogeological) as well as its reactions to the pressures of mankind and climate. This includes the study of natural hazards and those stemming from the use of resources.
It includes the understanding of the climate system and its modelling, geodesy and spatio-temporal reference systems.
It allows the study of various components of the universe and their interactions, including the study of the sun-earth interaction, solar wind, the magnetosphere and atmosphere, as well as space weather effects.
Finally, the research will contribute to the scientific support necessary for national and international policy development related to the topics addressed (particularly international agreements and conventions such as the Climate Convention, the Montréal Protocols, etc.).
This theme may include monitoring or surveillance if this proves necessary to fulfil the needs of the research.

Call contents

The present call addresses several **priority research topics** of axis 1 and 2 and in the interface of both axis.

The topics of the call are:

- Research at the Princess Elisabeth Base in Antarctica
- Universe
- Biogeochemical cycles
- Biodiversity and ecosystem functioning
- Scientific support for developing climate services
- Dynamic Earth

Projects can address one or several of the above mentioned topics (with the exception of Antarctica).

The use of **specific research infrastructures** to address these topics is also a core element in this call.

Research infrastructures (RI) are defined as facilities, resources and services that are used by the research communities to conduct research and foster innovation in their fields. Where relevant, they may be used beyond research, e.g. for public services. As commonly defined, RI include: major scientific equipment (or sets of instruments); knowledge-based resources such as collections, archives or scientific data; e-infrastructures, such as data and computing systems and communication networks; and any other infrastructure of a unique nature essential to achieve excellence in research and innovation. Such infrastructures may be 'single-sited', 'virtual' or 'distributed'. The specific research infrastructures targeted in this call are the national or international research infrastructures that are fully or partially funded, managed and/or owned by the Belgian Federal State: a.i the research vessel *Belgica*, the Princess Elisabeth Base in Antarctica, the collections and facilities of the federal scientific institutions, GBIF, ESFRI-ICOS, ECMWF, ESFRI-LIFEWATCH, BCCM, etc.

Researchers should demonstrate the use of **at least one** of these specific research infrastructures in their work. The use of additional research infrastructures that are not Federal supported is allowed if it brings an added value.

Researchers should clearly present in their proposal how they plan to use these research infrastructures and demonstrate that the use of them is essential to carry out the research work of the project.

The call is open for projects of **2 or 4 years**.

2.1.1 RESEARCH AT THE PRINCESS ELISABETH BASE IN ANTARCTICA

The Belgian Science Policy Office supports scientific research in Antarctica since 1985. The internationally recognized expertise thus built up allows the researchers to enrol in international research initiatives and working groups and to contribute as such to today's research landscape.

This call is aimed at scientific research at and in the vicinity of the Belgian Princess Elisabeth research station in Antarctica (PEA). The station offers both the opportunity to conduct year-round monitoring at the station and fieldwork in a radius of 200 km around the station, giving access to the coast, the mountain range, the dry valleys, ... in Dronning Maud Land.

The general objective of this call is to stimulate high-level research in 6 areas, corresponding to some of the most important scientific questions that should be addressed by research in and from the Antarctic over the next two decades[2,3]:

The Antarctic ice sheet and sea level rise - understand how, where and why the Antarctic ice sheet loses mass

- what are the processes that control the dynamic ice discharge from the Antarctic ice sheet?
- what is the role of the interaction between the cryosphere and the lithosphere on ice flow and mass changes of east-Antarctic ice sheets?
- what is the rate of change of the Antarctic ice mass?
- how will these changes influence future sea level rise?

Antarctic ecosystem biodiversity - evolution, survival and conservation

- are the present changes attributable to environmental and/or climate change and what is the response of Antarctic organisms and ecosystems to these changes
- which species, processes and/or systems are suitable for tracking the impacts of environmental and/or climate change?
- how has Antarctic biodiversity changed in the past and how can this predict future changes?
- what is the impact of invasive alien species on the present biodiversity and ecosystem functioning?
- are there irreversible environmental thresholds/tipping points?

Dynamic earth - beneath the Antarctic ice

- how do the Antarctic crust and mantle structure affect surface motions due to present ice sheet loading and glacio-isostatic adjustment?
- how does volcanism affect the evolution of the Antarctic lithosphere, ice sheet dynamics and/or global climate?
- how do tectonics, dynamic topography, ice loading and isostatic adjustment affect the spatial pattern of sea level change on all time scales?

Link with the Earth's outer layers and the Solar System

- How can the Antarctic region contribute to our understanding of the formation of the Solar System?
- What are the characteristics and their origins of the Antarctic ionosphere and the overlying magnetosphere, and what is the influence of solar variability and space weather phenomena?

2 Polar research: six priorities for Antarctic science - Kennicutt, et al., Nature 512, 23-25 (06 August 2014)
3 A roadmap for Antarctic and Southern Ocean science for the next two decades and beyond - Kennicutt, et al., Antarctic Science, First View, 1-16 (September 2014)

Atmospheric processes - define the global reach of the Antarctic atmosphere

- What is the cause of the unusual 2015 ozone hole? Is there a link with El Nino?
- how can coupling and feedbacks between the atmosphere and the surface (land ice, sea ice and ocean) be better constrained?
- what are the patterns of variability and change at all levels? What are the processes which drive these changes and variability, and what are the feedbacks?
- how do Antarctic atmospheric processes affect mid-latitude weather and extreme events?
- how do the generation, propagation, variability and climatology of atmospheric waves affect atmospheric processes over Antarctica?

Antarctic paleoclimate - knowing past climate to predict future changes

- what do the climate records over Antarctica show?
- what changes have occurred on glacial-interglacial timescales and what are the responsible forcings and feedbacks?
- what are the processes that link hemispheric climate variations?

Project proposals must clearly state how they tie in strategically and contribute to the above research questions.

Proposals having an interaction with initiatives supported by other (inter)national partners or actors and/or generating new interactions, are encouraged.

The Antarctic continent provides a unique opportunity for scientific research that cannot be performed elsewhere on Earth. The researchers need to describe clearly in the proposal the reasons and added value of carrying out their research in Antarctica as well as the links with other on-going (inter)national research initiatives in Antarctica.

All project proposals should include a data management plan, specifying how the external access to the data during and/or after the project will be assured in accordance with the Antarctic Treaty (Art. III), and in which (inter)national open access data repository(ies) the data will be deposited after the project.

Metadata describing the datasets generated by the project should be provided to BELSPO, for use in discovery and search services. Content of the metadata and their format, in line with the most relevant standard(s) or best practices, will be commonly agreed by the promoter and BELSPO.

PEA provides for the necessary infrastructure and support (staff, logistics, field work support, ...).

The indicative budget for this theme is between **2,5 and 3M€**

2.1.2 UNIVERSE

The Belgian Science Policy Office has always been a strong player when it comes to the study of the universe, especially in terms of funding observational infrastructure on the ground and in space, and supporting scientific research based on the information obtained. Further expanding the scientific exploration of the universe remains an important priority, partly because it provides answers to the most fundamental questions that humans ask, and partly because it constantly challenges our research institutes, universities and industry to develop and refine innovative technologies. The new scientific and technological understandings in turn contribute to the search for solutions for all kinds of problems facing citizens and governments here on Earth.

The **general objective** of this call is, therefore, to stimulate high-level fundamental scientific research to further improve our understanding of the universe.

The **specific objective** of the current call is to strengthen research in two areas:

Magnetospheric physics:

- Coupling of the magnetosphere of planetary objects in our Solar System (including the Earth) with the solar wind, including the various magnetospheric boundaries and sub-regions;
- Coupling of these magnetospheres with the underlying ionospheres, including ions outflows and auroral physics.

Solar physics:

- Phenomena in the atmosphere of the Sun and the influence of these on the solar wind;
- The evolution of solar activity over all time-scales as a contribution to space climate.

Expected outcomes

Project proposals will tie in strategically and contribute to today's research landscape. The existence of synergies and/or complementarity with leading national and international research initiatives are important criteria for selection.

Below we give a non-exhaustive list of potential reference points:

- the present long-term strategy of the European Space Agency (ESA) as regards the Scientific Programme (*Cosmic Vision, Space Science for Europe 2015-2025*, ESA BR-247, 2005, http://www.esa.int/esapub/br/br247/br247.pdf), and specific recent ESA projects and missions; in particular ESA space missions for which Belgium contributed to the scientific instrumentation;
- the instruments available at the European Southern Observatory ESO, and specific recent ESO projects;
- priority themes of the European Commission's Horizon 2020 Programme, and specific projects funded by the FP7 and the Horizon 2020 Programme;
- other prominent science projects on the national and international scale, e.g. the Interuniversity Attraction Poles, international databases, unique ground infrastructure, etc.

Proposals are expected to represent an important step forward in the relevant area of research and to strengthen our country's position in international research. The opening of new perspectives to even more advanced research and/or future missions is seen as an added value.

The indicative budget for this theme is **1,4M€.**

2.1.3 BIOGEOCHEMICAL CYCLES

The abiotic and biotic fluxes between and within terrestrial, marine and fresh water ecosystems and the atmosphere strongly influence – and are strongly influenced by – the physical and chemical characteristics of these ecosystems, their dynamics, and the underlying processes. A better assessment of these fluxes and a deeper understanding of (changes in) biogeochemical cycles are required to quantify and model the impact of climate change and human pressure on the natural Earth system and the environmental feedbacks on the biogeochemical cycles. Key questions in this research area can and should be addressed with the help of large research infrastructures supported by BELSPO such as the research vessel Belgica (for marine ecosystems) and the ESFRI-ICOS (Integrated Carbon Observation System) network, Earth observation satellites either developed as part of the Copernicus programme (Sentinel-5 precursor), or supporting the Copernicus Atmosphere Monitoring Service (IASI), and the federal infrastructures which have been financed owing the federal Lotto subsidizations. The research themes should have a focus on Belgium, the North Sea, the Tropics and Southern Ocean except for research based on the use of satellite observations which could address global scale issues.

The **general objective** of this call is a better understanding of the gas, dissolved and particulate, inorganic and organic compounds exchanges between some of the major components of the Earth system: terrestrial and marine ecosystems, aquifers connected to the coastal ocean and the atmosphere.

Specific objectives of the present call are:

Exchanges between terrestrial and marine ecosystems and the atmosphere

- To identify and quantify key factors affecting the biosphere-atmosphere exchanges of greenhouse gases, near-term climate forcers (O3, aerosols, …) and their precursors (volatile organic compounds, NOx, NH3, …) and to assess the influence of global change on those exchanges.
-
- To reduce the large uncertainties on terrestrial and marine sources and sinks of atmospheric trace compounds (e.g. volatile organic compounds, greenhouse gases, sulfur compounds, halogens, …) affecting climate forcers, e.g. through their effects on the oxidation capacity of the atmosphere.

Groundwater, freshwater -ocean exchanges

Along the continental margins, submarine groundwater supply is up to 3 to 4 times greater than the freshwater river run-off into the oceans and these discharges might be the dominant pathway for dissolved terrestrial materials (including nutrients: C, N, P, Mg, Si) to the coastal ocean. Locally the flux could be reversed due to excess water evaporation or pumping out of the aquifer, with a risk of salinization of the coastal groundwater. The specific objectives of this part of the present call are:

- To better quantify the continent-ocean (or reversed) fluxes at the level of the surface unconfined aquifer (controlled by the surficial water-biosphere exchanges) and the deep confined aquifers and precise their respective biogeochemical signatures in order to predict their potential evolution under the influence of global and anthropogenic changes

- To reduce the large uncertainties on the hydrologically controlled fluxes of nutrients (C, N, P, Mg, Si) towards seawater in order to better assess the future of the organic productivity in the coastal zones.

Marine organic-inorganic fluxes, exchanges with hydrosphere and atmosphere

- To better quantify the interactions between the biotic and the abiotic compartments of the marine ecosystem and the exchange fluxes with the atmosphere and the hydrosphere, by improving and making use of tools (observations and models) for assessing the origin, the fate, the transport, and the deposition of abiotic and biotic dissolved and particulate matter.

Expected outcomes:

The projects should lead to a better characterization of exchange processes between Earth system components (atmosphere/biosphere/groundwater/oceans), and therefore to an improved representation of those processes in models for predicting future environment and climate. Application of new methodologies and/or measurement techniques is considered as an added value.

The indicative budget for this theme is **1,4M€.**

2.1.4 BIODIVERSITY AND ECOSYSTEM FUNCTIONING

All organisms are connected through a series of interactions and associations, both with each other and their environment. As such, they influence how an ecosystem operates or functions and how ecosystem provides services to humanity through their productivity, their regulatory and supportive actions and their cultural benefits. Conversely, human activities have direct and indirect impacts on the functioning of ecosystems. Degradation and fragmentation of habitats, climate change, pollution, unsustainable agricultural and forestry practices and overexploitation of resources are the major human threats to biodiversity, the ecosystems and their functioning.

The **overall objective** of this call is to retrieve, gather, combine and integrate a vast amount of existing information and data and, wherever applicable to generate new data or new information in order to

- better understand how human activities impact the functioning of ecosystems and their biological diversity and how ecosystems react to those pressures
- improve evidence-based policy to ensure proper functioning of ecosystems.

The **specific objective** of the call is to advance high level scientific research and to produce sound scientific support to decision making regarding the following priority areas making best use of biodiversity related research infrastructures (see definition in the introduction) such as -but not limited to- GBIF, ELIXIR, EMBL, JEMU, RV Belgica/ BMDC, BCCM, ...

Ecosystem functioning, climate change and potential emergent risks: [Belgium, Sub-Saharan Regions, North Sea]:

To develop ecological models and tools using different climate change scenarios combined with associated human practices; create range maps; prepare threat assessments and predict future shifts in diversity as well as distribution and potential ranges of individual species by addressing at least one of the following issues:

- Invasive Species (IS): develop scientific support to risk assessment of emergent IS to better understand and predict the potential spread of emergent IS; evaluate the impact of these emergent IS on the present biodiversity , on ecosystem functioning or on emerging infection diseases

- Human and animal health: modelling zoonoses and vectors of human and animal diseases taking also into account unsustainable land use and the genetic characterization of human/animal diseases and host organisms.

- Marine and terrestrial trophic chains: the energy transfer in the trophic chain.

Biodiversity and farming :

- To develop generic methodologies to assess and rank the impact on biodiversity of existing agricultural/forestry practices (or combination of one or several of them) including land use changes for the production of biological raw materials.

Project proposals must state how they tie in strategically and contribute to today's research landscape. The existence of synergies or complementarities with leading national and international research initiatives are critical criteria for selection. The opening of new perspectives to even more advanced research and/or better instrumentation is seen as an added value. Adaptation to specific socio-economic, technical and cultural context is required for a proper scientific support to policy making. Proposals are expected to signify an important step forward in the relevant area of research and to strengthen our country's position in European and international research and strategies. Moreover they should clearly show that they address known gaps in information relevant to society and policy makers. As such the research results should be to the benefit of the public in general and federal administrations in particular.

The indicative budget for this theme is **1,4M€.**

2.1.5 SCIENTIFIC SUPPORT FOR DEVELOPING CLIMATE SERVICES

The Paris agreement aims to keep global temperature rise well below 2 degrees Celsius and to drive efforts to limit the temperature increase to 1.5 degrees Celsius above pre-industrial levels. It implies taking rapid and effective measures to move towards a low carbon society while at the same time adapting to on-going and unavoidable changes that will happen due to global warming. This requires science based decision-making at all levels.

In this context, there is increasing demand for translating the existing wealth of climate data, information, and climate projections into customized tools, products such as forecasts, trends, economic analysis, assessments, counselling of best practices, development of solutions and any other service in relation to climate that may be of use for the society at large ("climate services"). The services must respond to users need and preferably co- designed with users.

Climate services target both adaptation and mitigation to climate change.

Multi-scales, sectorial and cross-sectorial as well as multidisciplinary approaches are essential to provide climate information enabling private and public actors not only to assess their vulnerability and to adapt to climate change but also to take sound and integrated decisions (public administrations and business) in order to initiate transition to a climate-resilient and low-carbon society and .to mainstream climate change (mitigation and adaptation) into sectorial policies.

The **general objective** of the call is therefore to strengthen the provision of demand-driven climate services for both climate change mitigation and adaptation needs

Specific objectives of the call is to develop case studies demonstrating the added value of climate services for end user communities belonging to the sectors listed below (taken separately or in combination.

Developing case studies implies:

1) a prior identification of 'users' demands in those sectors; an assessment of barriers / constraints associated with the provision and use of climate services for those specific sectors
2) a co-design and co-production of sectorial climate services; crossing climate intelligence with multiple actors, data sources; development of appropriate tools.
3) if needed, the generation of fit for use (by the below mentioned sectors) climate forecasts and projections using specific impact models:
   - that are validated using past periods.
   - supplemented with reliable uncertainty estimates. Therefore information from the entire downscaling chain and a coherent downscaling setup is required. The use of multiple impact models is a strong benefit.

The targeted sectors[4] are:

- Crisis management;
- Development Cooperation;
- Health;
- Energy;
- Economy;
- Transport and mobility

Expected outcomes :

The outcome of the projects should enable better informed decision-making and in particular to provide the scientific underpinning and policy relevant information for the development of climate change strategies (global, European, national), for the implementation of the UNFCCC Paris agreement, the EU adaptation strategy, the national adaptation strategy, EU climate energy package 2020/2030 and air quality policies impacting the climate. The projects should contribute to the implementation of the EU roadmap towards climate services and the global framework for climate services (WMO-GFCS). They should take into account or build on the CORDEX-BE developments and prepare Belgian teams for taking part in international initiatives such as ISIMIP-3, EURO-CORDEX and H2020 future calls related to climate services and regional modelling.

Note that the axis 3 and 6 addresses complementary topics, in the axis 1 and 2 the call focus is on climate services, while in axis 3 and 6 the focus is on the cause-effect relationship climate change and health.

The indicative budget for this theme is **0,7 M€.**

[4] With the aim of co-designing your application with primary stakeholders, please contact the persons at the relevant Federal Departments (see annex 3)

2.1.6 DYNAMIC EARTH

The mechanical, physical and transport properties of rocks and fluids are key parameters in addition to time, pressure, stress and temperature, in the control of the complex exchanges of matter, fluids and energy between the geospheres: core, mantle, lithosphere, hydrosphere, atmosphere and biosphere. They are therefore essential to address the processes that underpin all natural and anthropogenic (e.g. pollution, soil) hazards. In particular, a better assessment of these properties, their temporal and physical scaling, their rheology and their controlling vectors on various geological time scales close or far away from equilibrium conditions are essential to address pivotal issues in tectonics, volcanism, continental and oceanic underground fluid (water and gas) flows, soil-water-biosphere exchanges in the critical zone, etc.... This work should be pursued through experimental rock physics, thermo-chronometry measurements, geophysical experiments and measurements, field observation and measurement, space-based and ship-based investigations coupled with analytical and numerical modelling.

Key questions in this research area can and should be addressed with the help of BELSPO-sponsored large research infrastructures such as the research vessel Belgica, the Belgian seismic and geodetic networks, the ESFRI ICOS (Integrated Carbon Observation System) and the coming EPOS (European Plate Observatory System) networks, the space-based techniques of the Copernicus program and the federal infrastructures which have been financed owing the federal Lotto budgets for research.

The **general objectives** of this call include a better understanding of the fluid dynamics and transport phenomena to study the fluid (magma, water, gas) transport from the deep interior into the lithosphere and/or the pedosphere, and of the time and spatial relationships between all interfaces including core-mantle boundary, continental plate interiors stresses, strains, and earthquake and volcanic activities.

Specific objectives of the present call are:

Magma transport properties

- To understand the generation, ascent and eruption of magma including interactions between fluids and rocks.
- To quantify the connection between the structure, composition and properties of molten silicates and glasses of significance to petrologic processes, including the gas emission and the volcanic dust and aerosol productions.

Groundwater transport properties

- Constraint the reactive transport processes between surface water and both confined and non-confined aquifers in various physically based conditions and environmental change boundary conditions
- Better understand the physical, chemical, and biological processes that control contaminant transport in ground water in order to precise the reactive and non-reactive transport of contaminants in ground water with the ultimate goal of developing simulations to predict contaminant transport in ground water.
- Better constraint the physical, chemical, and biological processes that control CO2 transport in ground water in order to precise the reactive and non-reactive transport of CO2 in ground water with the ultimate goal of developing simulations to predict proper site selection for CO2 geologic storage.

Plate interiors lithosphere dynamical and mechanical properties

- Better understand the different stress components acting in continental lithosphere and the related space- and time-variable deformation patterns driving earthquake and volcanic activities.
- Better study mechanical and rheological properties of the continental crust influencing seismic wave propagation to improve the prediction of strong ground motion models.

Deep Earth interior dynamics

- Better understand the Earth's deep interior dynamics and the relation between all reservoirs at all timescales inside the Earth, which includes the mechanisms at the core-mantle boundary and their impact on observed phenomena at the Earth surface.

Strategic objectives of the call:
Proposals should show synergies or complementarities with leading international research initiatives, such as the European Commission's Horizon 2020 Program, in order to respond to the European Water Framework Directive and the two major priorities of the EU-AU Bridging actions for Copernicus and Africa (namely, water resources and risk management).

Expected outcomes:
The projects should lead to a better characterization of transport-exchange processes between Earth system components (magmas-atmosphere soil-groundwater) and mechanical interactions in the lithosphere, and therefore to an improved representation of those processes in models for predicting future environmental changes. Application of new methodologies and/or measurement techniques and cooperation between multidisciplinary teams are considered as an added value.

The indicative budget for this theme is **1,4M€.**

2.2 THEMATIC AXIS 3&6: "CULTURAL, HISTORICAL AND SCIENTIFIC HERITAGE" AND "MANAGEMENT OF COLLECTIONS"

The frame of these thematic axes is described as follows in the note approved by the Council of Ministers:

AXIS 3 "CULTURAL, HISTORICAL AND SCIENTIFIC HERITAGE"

The Federal State - and particularly the FSIs - acquires, conserves, restores, manages and valorises collections as well as archives that are composed of – or relate to – tangible and intangible cultural and scientific heritage, of an origin and scope that is either national or international. Through its expertise, it also contributes to the valorisation of non-federal heritage.
It is important to make the most of this heritage and the associated expertise through (inter)disciplinary research that involves putting it into context - social, artistic, historical, geographical, environmental, scientific, technical, political, archaeological, linguistic, literary, musical, economic or cultural – from a synchronic or diachronic point of view.
In particular, the research will include scientific inventories, monographic studies, work in the field, the examination of materials and techniques as well as the ongoing analyses involving methods specific to the various disciplines concerned.
It will lead to the production of work acknowledged on a national and international level in the form of publications, conferences, exhibitions, etc., designed to make the knowledge and heritage available in diverse contexts within our societies.

AXIS 6 "MANAGEMENT OF COLLECTIONS"

The Belgian State manages numerous collections, defined in the broadest sense as coherent gatherings of tangible or intangible elements. This concerns material or immaterial artistic and cultural, scientific and documentary data based on observation and monitoring and administrative records and other sources of information of the FSIs and the public Federal authorities.
Managing these collections is understood as entailing their acquisition, conservation, restoration, maintenance and valorisation.
This thematic area deals with the financing of scientific research aimed at improving this management with the aim of supporting its exploitation, particularly in a scientific way.
These activities cover the development and/or the test of best practices of techniques and methodologies of sampling, digitization, documentation or filing, identification and conservation and access to the information.
They take place upstream of the thematic research in and of itself, their scientific exploitation forms part of other thematic areas.

Call contents

- This call for proposals equally concerns the two thematic axes 3 "cultural, historical and scientific heritage," and 6 "management of collections" as described above: the research proposals must therefore demonstrate that they fulfil the **relevant objectives of axis 3 or axis 6 or a combination of the two axes** as well as at least one of the particular priorities of the current call for proposals.

  The nine thematic priorities for the call - described below - are not explicitly assigned to a specific axis; some of them may be clearly related to a certain axis or to two of them at once.

  Therefore, **no aspect of the allocation of the budget** for the research projects has been established in advance, nor is there any predetermined overall distribution between the two axes, or between the nine thematic priorities.

A particular limitation concerns the priority "Crowdsourcing for the federal heritage": given that this is a question of developing a standard tool that could be potentially made available to all of the federal institutions, a single project may be selected.

- The budget authorised for each proposal is set at a **maximum of 600,000 €**, in order to allow the selection of a significant number of projects.

  On the basis of this maximum budget, the proposals have full freedom to set up their project, particularly with regard to
  - duration: 2 or 4 years
  - extent of the partnership and degree of interdisciplinarity

  in whatever way that is most appropriate to the scientific objectives of the research projects being proposed. As in the case of previous calls for proposals, this suitability will be one of the criteria applied in evaluating the proposal, which will be on a more easily comparable basis this year.

  This freedom also concerns the choice of objectives that the project will pursue in terms of impact and the relative impact - scientific, policy support, societal - and therefore, the suitability of the proposed methodology, including for the task of valorisation and dissemination of the results.

- As for the previous calls for proposals, each proposal must clearly identify, present and justify the (sub)-collections of the **federal heritage** - cultural, historical and/or scientific - tangible and/or intangible - of national and/or international origin - in relation to which the project aims to make its scientific contribution, even if it potentially involves developing techniques, material and/or methodologies designed to improve their management.

  The use of collections which are not part of federal heritage in the project is possible to the extent that:
  - through their expertise, the federal institutions contribute to their valorisation or their management,
  - they are used in the project as ancillary support of the federal (sub) collections.

- If relevant, the provisions laid down by the law "Only once" (5 May 2014) and the federal open data strategy apply to the proposals.

- The **nine thematic priorities** of the current call for proposals are as follows:

  1. Crowdsourcing for federal heritage
  2. Management of digital data/collections: interface and interoperability
  3. Conservation and valorisation of 3D federal digital heritage
  4. Management and valorisation of the federal audio, photographic and audiovisual heritage
  5. Geolocation for the valorisation of the historical, cultural and scientific heritage
  6. Health
  7. Unexplored heritage
  8. Conflict and memories in Belgium
  9. The federal heritage of the Southern Netherlands (15th-18th century)

  They are described below.

2.2.1 CROWDSOURCING FOR FEDERAL HERITAGE

While crowdsourcing has been a hot topic for almost a decade, it is taken much longer for the concept to be embraced in the FSIs and the public Federal departments, where crowdsourcing is progressively explored and related research on this topic is increasing.

Two main trends emerge:
1. Crowdsourcing projects that require the "crowd" to integrate/enrich/reconfigure existing institutional resources
2. Crowdsourcing projects that ask the "crowd" to create/contribute novel resources

The expected result is an open source generic platform, which will allow including and covering, in a progressive way, the needs and demands of all federal institutes and departments within the above mentioned two trends. As a result, the Crowdsourcing Platform will enlarge the access to Federal heritage.

The concern for equal opportunities should be taken into account when creating the platform, in order to reach and implicate a "crowd" as large and diverse as possible.

Only one research project will be funded, that will develop a platform at the disposal of and useful to all the FSIs and the public Federal departments that would like to develop crowdsourcing initiatives.

2.2.2 MANAGEMENT OF DIGITAL DATA/COLLECTIONS: INTERFACE AND INTEROPERABILITY

The federal scientific institutions and departments are accumulating increasingly diverse digital data. These datasets are usually stored in isolation, in various types of servers and data storage systems, which may or may not be made separately accessible to the general public and/or specific target groups via websites, or in such a way that the issue of interface and interoperability is scarcely addressed.

The purpose of the research projects will be to develop effective tools and methods to enable the interface and interoperability of primarily existing digital data from diverse, heterogeneous databases, in order to make these digital data accessible in a suitable way.

These tools and methods will particularly relate to:
- the optimisation of metadata, ontologies and thesauri;
- the validation and homogenisation of digital information
- the development of standardised open formats for specific digital data with their metadata, in order to ensure long-term storage, and permanent, universal legibility;
- interoperability - both technically and in terms of content - of existing datasets preferably via "linked open data" (LOD) and with the use of open source tools

The aim of the research projects will be the development of standard tools that can be used by different federal institutions and which, with this purpose in mind, can be developed through the analysis and elaboration of case studies. The relevance of these case studies for potential application in other federal institutions must be sufficiently justified.

2.2.3 CONSERVATION AND VALORISATION OF 3D FEDERAL DIGITAL HERITAGE

The federal collections consist of numerous objects of all nature and sizes. This requires specific procedures in respect of the 3D digitising and valorisation of this heritage. Different projects have elaborated various 3D digitisation procedures, resulting in new virtual collections.

These 3D data offer a huge potential to improve conservation, restoration, scientific research and valorisation to the general public and other stakeholders of the federal heritage.

Research projects will focus on the methods and techniques that address the following issues of the 3D digitised heritage:
- enhanced conservation and restoration
- access for in depth scientific research of the federal heritage
- appropriate new display and exhibition techniques to the public
- differentiated access to the federal heritage on site and off site by virtual and or tangible media
- aspects of intellectual property and copyright

The research projects will focus on actual case studies and if necessary could involve the development of visualisation and analysis tools.

The expected results and outcomes are the following:
- virtual and/or tangible outputs adapted to target audiences to ensure a better access to federal heritage, taking into account the concern for equal opportunities.
- an integration of 3D state-of-the-art techniques for scientific research on and conservation treatments of 3D heritage collections.

2.2.4 MANAGEMENT AND VALORISATION OF THE FEDERAL AUDIO, PHOTOGRAPHIC AND AUDIOVISUAL HERITAGE

The federal scientific institutions and the federal departments store a large amount of audio, photographic and audiovisual material. This heritage, which is characterised by a multitude of supports, has been of increasing interest in recent years to diverse segments of the public (researchers, journalists, private citizens, etc.)

The storage and valorisation of these supports, both analogue and digital, is an area which is currently effectively managed only to a limited extent, despite the specific requirements that managing them entails. For this reason, they require an approach that is distinct from that of other types of heritage objects.

The aim of the research projects will be:
- the development of effective instruments and methods to improve the management and/or valorisation of the federal audio, photographic and audiovisual heritage. These instruments and methods relate to aspects such as
  - the acquisition and long-term conservation of these types of supports,
  - the analysis of the content, either automated or otherwise,
  - the specific valorisation methods,
  - the issue of copyrights, which will be part of the basis for their valorisation,

AND/OR

- the contribution to the valorisation of one or more collections of this type of heritage, specifically through
  - the production of descriptive metadata linked to their content,
  - the analysis of their production context.

2.2.5 GEOLOCATION FOR THE VALORISATION OF THE HISTORICAL, CULTURAL AND SCIENTIFIC HERITAGE

The study of land use as the totality of the measures, activities and interventions that mankind has undertaken in relation to land and soil is forming an increasingly important field of research that is not restricted to a single scientific discipline. The federal scientific institutions and the federal departments possess numerous historical, cultural and scientific collections that can play a meaningful role in the research in this field.

The aim of the projects is the valorisation of this federal heritage through the application of instruments and methods for geolocation (GIS, cartography, etc.). The use of these instruments and methods will enable the interpretations of the separate collections to be linked with one another. Cross-referencing the information through geolocation makes it possible for the spread of cultural and other phenomena linked to land use to be mapped, identified and studied.

The results obtained will not be limited to historical insights but will allow scientific interpretation in the broadest sense.

2.2.6 HEALTH

Existing scientific collections of strains of pathogens, medical databases, epidemiological, demographic or sociological inventories, observations of the climate, biosphere and the quality of the environment constitute a valuable tangible and intangible scientific heritage which can be studied, via an interdisciplinary approach and cross-referencing of the collected data, thus shedding light on factors with a decisive impact on health. The use of new or advanced analysis techniques will allow the valorisation of this heritage to be enhanced.

The research projects will concern:

- the connections between environmental factors in the broadest sense and health risks, in particular with regard to the quality of air indoors and outdoors, questionable chemical or biological substances and the effect of climate change;
- new analytical, diagnostic or typological methods for pathogens in humans or animals;
- analysis methods that can allow the valorisation of databases or which can allow these databanks to be used to reveal possible associations, new connections or causes of health problems.

- *Note that specifically with regard to climate change in axis 2, a complimentary priority is included. In axes 3 and 6, however, the focus of the call is on the cause and effect relationship between climate change and health, while in axis 2 the emphasis is on climate services.*

- *The studies will use the existing collections and observations in order to conduct a retrospective analysis, which may, as appropriate, complement the research activities within the sub theme 'climate services for the healthcare sector' of axis 2.*

The research results will demonstrate the potential value and relevance of this federal heritage for a scientifically supported policy in the areas of scientific research, public health, animal welfare and environment.

2.2.7 UNEXPLORED HERITAGE

The scientific institutions and the federal departments store collections which have never been the subject of scientific study according to contemporary scientific standards: they are therefore often difficult to access either physically or digitally and suffer from a lack of metadata, which significantly limits their relevance for current research.

The research projects will concern the updating, contextualisation and accessibility for research of a specific collection or a set of collections with these characteristics.

In order to justify the "in the scope" character of the projects, these characteristics must be explicitly and sufficiently demonstrated and contextualised, as well as the scientific importance - on the national and/or international level - of stimulating the scientific valorisation and accessibility of the collection or collections.

The research projects will be based on an appropriate multidisciplinary approach which enables a specific scientific need to be fulfilled and/or the heritage in question to be made more accessible for a wider audience. This type of approach will also enhance the potential of the heritage in question to function as the primary object of research or as a reference collection for a contemporary scientific issue.

2.2.8 CONFLICT AND MEMORIES IN BELGIUM

The research projects aim to assess the construction of memories as well as the creation of heritage and collections directly related to historical or ongoing conflicts in Belgium; conflicts that can be cultural, economic, ethnic, political, religious, or social in nature. The heritage, collections and/or memories need to be of a clear interest for Belgian history, help understand current Belgian cleavages or still impact the vision Belgian society has on itself today.

The research projects will be centered around one or more of the following topics:
- The assessment of the impact of conflict on the formation, mobility, destruction or disappearance of heritage and collections in a general sense
- The analysis of the relationship between heritage and collection management and historiography on the one hand, and the construction of (public) memories on the other
- The use of the Belgian case to better understand the way memories are constructed and contested over an extended period of time. This includes the tension between dominant (national) memories and popular or subaltern memories.
- The creation of a better understanding of the impact of conflict on the formation and/or disintegration of Belgium as a national community or state. How does the nature of a certain conflict explain the existence of enduring cleavages in Belgian society ? How did these events and their memories determine the way we think about Belgium as a national community ?

- The possibility to distinguish a Belgian model in the advancement of pacification of a certain conflict or some form of social reconciliation through the access to heritage, collections and/or the construction of memories.

The use of specific case studies to make some of these broader issues more concrete is encouraged.

2.2.9 THE FEDERAL HERITAGE OF THE SOUTHERN LOW COUNTRIES (15TH-18TH CENTURY)

The federal scientific institutions and the federal departments conserve a rich heritage related to the early modern age in the former Southern Low Countries. During this period, artworks were produced in the Low Countries which are now world famous. In political terms, this area at the heart of Europe formed an exceptionally original entity in light of its legal and political administration.

The research projects will be based on the study of significant and/or notable sets of federal heritage, regardless of their nature (artistic, archival, handwritten, printed).

The research will more specifically relate to one of the following domains:
- the history of the law and institutions of the Southern Low Countries, the originality of the political system, the balance of power between the governors and the subjects, the process of the creation of the modern state, the collective identities;
- the interaction between the artistic and intellectual movements, the socio-economic context of the artistic and intellectual production, their mutual influence whereby the masters from this period were inspired by external, innovative movements or which supported the influence and artistic and intellectual production of the Low Countries.

2.3 THEMATIC AXIS 4&5: "FEDERAL PUBLIC STRATEGIES" AND "MAJOR SOCIETAL CHALLENGES"

The frame of this thematic axis is described as follows in the note approved by the Council of Ministers:

AXIS 4: FEDERAL PUBLIC STRATEGIES

The federal government deploys it competencies by means of public policies that organise and/or regulate the life of its citizens and its own functioning. We have in mind public policies applied by the federal public services such as Foreign Affairs, the Interior, the Economy, Public Health & Environment, Social Security, Defence, Employment, and Justice... like in any modern state, the organization and monitoring of these policies relies on scientific results among other input. This thematic area aims to finance the activities and support of the competencies of the Federal Authorities, from a perspective that is historical, contemporary and prospective.
Priority will be given to issues that touch upon multiple areas of federal competency and which offer a coherent and complementary framework for the research conducted by the departments in order to minimize the fragmentation of the research.
The topics of research will be based on the strategic orientations of Belgian policy.

AXIS 5: MAJOR SOCIETAL CHALLENGES

Established to support the competences of the Federal Authorities, this thematic axis is based on major societal challenges and relates to an array of important concerns for individuals and society such as demographic changes, democracy, migration, safety, poverty, sustainable development, health and environment, globalisation, and multiculturalism.
In an increasingly globalised society, the analysis of these challenges must take the international context into account. These challenges not only concern the problems that arise and for which a response is needed, but also the opportunities that can be seized to ensure the well-being of individuals and of society in general.
The research financed within the context of axis 5, is based upon these societal challenges and takes the individual and/or society as the primary unit of analysis.

Call contents

The BRAIN programme's (2012-2017) latest call is a joint call. This means, on the one hand, that the indicative budgets for 2016 (axis 5) and 2017 (axis 4) have been grouped together (i.e. approximately € 8.4 M) and split into the following themes:

- Violence and discrimination (€ 2.8 M)
- Migration (€ 2.8 M)
- Security (€ 2.8 M)

On the other hand, by combining axis 4 (federal public strategies) and 5 (major societal challenges), researchers are offered the chance to make the most of the complementarity between the approaches particular to each axis concerning the three themes involved in this call. In the research proposals, this complementarity should involve the combination of at least two of the following approaches:

1) **Impact analysis**: the projects can examine the extent, the processes and the impact of the stakes of these three themes on society;
2) **Public policies**: the projects can examine their ability to meet and adapt to the three proposed challenges;
3) **Attitudes and perceptions**: an exhaustive study of the issues of security, migration and violence also means that it is necessary to understand the social representations of which they are currently the subject, since these representations influence how our society formulates and solves these issues. The third approach of this call involves understanding the processes behind the representations and attitudes, and their variability in time and space or between social groups, etc.

The researchers are invited to submit qualitative and/or quantitative scientific projects, open to input from several disciplines, including historical input if necessary, combining at least two of the three abovementioned approaches, and likely to offer useful contributions and recommendations to a wide range of stakeholders and levels of power, first and foremost, the federal state.

This call is open to **2-year research programmes**, when targeting certain groups, situations or particular federal policies, or **4-year research programmes**, when embracing a wider perspective. Regarding 4-year projects, researchers will present provisional findings in order to allow the authorities to reap the precious benefits of the funded projects before the end of this legislation.

Furthermore, as an experiment, BELSPO encourages researchers to include non-academic experts in their network, which are essential to fully understand the subject in question, such as NGOs, field associations, representatives from administrative institutions, etc. Such expertise will be funded as "subcontracting" in research proposals, according to the provisions relating to this category of expenditure.

2.3.1. VIOLENCE AND DISCRIMINATION

Violence and discrimination are societal challenges that threaten the cohesion of a diverse society. The federal public authorities offer **public responses** to this challenge in a variety of forms: dedicated institutions such as the Institute for the Equality of Women and Men or the Interfederal Centre for Equal Opportunities (UNIA) created in 2015, action plans, especially the Federal Implementation Plan for Gender Mainstreaming (2015 - 2019), the national Action Plan against all forms of violence based on gender (2015-2019), victim protection systems, awareness-raising actions and training to listen to victims aimed at all professionals concerned, etc.

These authorities collect and produce - or encourage the production of - reliable statistical data in order to capture the reality of these phenomena and to learn from them in order to be able to take decisions. However, this data hardly capture the underlying complexity of situations of violence, discrimination and, consequently, poverty and social exclusion. For reasons that need to be better understood, the victims of this physical and/or psychological violence, which is sometimes serious or repeated, and these discriminations, have difficulty speaking out or getting out of situations that "degenerate into violence", all the more so when they are confronted with social exclusion and exclusion from the employment market despite the systems in place.

Researchers are invited to examine (1) the phenomena of gender related violence (especially within families) as well as the discrimination and violence that affects the LGBT (*Lesbian, Gay, Bisexual and Transgender*) community and/or (2) violence (caused or suffered) inflicted upon vulnerable and dependent groups such as people with disabilities and the elderly, placed in institutions or kept at home.

Through multidisciplinary projects, a broad spectrum of scientific fields can help to shed light on 1) the prevalence of violence and discrimination in Belgium; 2) the complexity of the processes and the

forms they take as well as the way in which they are perceived/experienced/dealt with by the public concerned whether they are the victim or the perpetrator, on the frontline or a collateral "element", a helper or a participant, etc.; and 3) the reasons/obstacles preventing the use of the available public provisions and services (police, health, support, etc.).

During this legislature, the federal public authorities would like to gain a better understanding of violence and discrimination, as well as the attitudes (stigmatisation) that affect these populations in a wide range of situations where they occur (e.g. within the family, in the workplace, in the private or public sphere, in reception centres and asylum centres, etc.) both from a diachronic and synchronic point of view. Proposals for corrective measures and public initiatives to be taken (mainly federal, notwithstanding useful recommendations for other levels of power or various psychosocial organisations in the short and medium term) will be the subject of particular attention in the projects' output.

2.3.2. MIGRATION

Migration is at the top of the agenda in public debate. Although Europe has been marked by the movements of persons for decades, the theme of migration remains controversial. Within the context of this call, different views on migration can be discussed.

A first focus of scientific proposals aims to examine migration in the multiplicity of its expression – to/from or within Europe – and the triggers behind it, in a context where global changes (conflicts, global warming, the loss of biodiversity and ecosystems, etc.) create new risks for human security. These triggers cover both *objective* (biophysical, economic, financial, technical, institutional, etc.) and *socio-cognitive* (perception of the risks and sociocultural representations) drivers. The broad perspective that is promoted here must help to define the new drivers behind migrations associated with global changes, the multifactor aspect of the dynamics of migration and its drivers. The implications for both the countries of arrival and departure (for instance, through studies elaborating future scenarios, etc.) also fall within the framework of this research.

The **second focus of this topic** more specifically concerns the current wave of migration affecting Europe in general, and Belgium in particular. The aim is to have a better understanding (1) of the elements that distinguish it from previous waves (beginning with the First World War), both in terms of impact as in terms of perceptions and attitudes[5], and (2) of the way in which it is likely to affect social cohesion with a view to enable better public response (reception, social assistance, inclusion, employment, culture, security, etc.). For this theme, a comparative approach of the situations and their effects in the different countries of the European Union is recommended. The researchers are invited, within this broad framework, to submit research proposals for the four following approaches selected.

5 Of the general public and the migrants themselves.

- The first aspect consists in providing scientific evidence on **the impacts in the medium and long term of the current wave of migration** on Belgian society (such as population growth, the economy, social security, cohesion and social integration, etc.). This line of research, which is relatively well documented as regards the previous waves of migration, will be combined with an approach based on social representations, as described below;

- The second focus relates to **how the populations in Belgium and Europe perceive migrants and vice versa**. More than figures of inflow, current social representations regarding asylum seekers and refugees, and the way they have changed over time, notably with the current wave[6], might play a key role in current debates and political responses to migration.
  Within this framework, the following questions could usefully be integrated into the research projects: (1) how do Belgians perceive migrant populations, and asylum seekers and refugees in particular? (2) Is this perception different compared to other European countries and which factors play a role (rural or urban environment, education, proximity of migrants, etc.)? Inversely, questions to migrants could be raised too: (3) what are the factors for "choosing" Belgium? What image do they have of our country and how has public action affected this image? (4) What do they think, as users, of the reception services? Etc. Combining the reality of migration with the perception of it can provide essential information that can contribute to action on a federal level. The teams will focus on the understanding of the mechanisms that have led to the current situation but also to solutions. The results of the research projects should contain recommendations with concrete links to federal policies.

- The third approach focusing on the **federal policies aimed at meeting the challenges of the current wave of migration**. Special attention will be paid to policies linked to reception, inclusion, social welfare, the social security system, social assistance, employment, justice (legal status/protection) and the budgetary aspects of these policies. Beyond policies, researchers could also look at federal institutions as the way they that receive migrants impacts on subsequent aspects of integration (housing, employment, etc.);

- The fourth approach pays special attention to the **problem of the health and migration of unaccompanied minors**. It seems that compared with migrations in the past, the current wave concerns a larger proportion of young people fleeing war zones and whose state of (mental) health raises concerns. We are particularly interested in gaining a better understanding of their health (mental, sexual and reproductive health, in particular). Concerning MENA (unaccompanied foreign minors), the following subjects can be examined: (1) their profile and possible differences with previous waves, (2) the support measures in Belgium and their assessment, (3) questions relating to family reunification (modalities, waiting times, etc.), (4) their state of (mental) health, etc.

6 As a point of reference, there have been a number of public surveys organised in Europe and in Belgium, such as: UNIA's survey into the monitoring of diversity which assesses attitudes towards migrants; the Eurobarometer which also collects information on attitudes regarding a certain number of subjects, including migrants; the Flemish Government's annual survey (SCV-SRV Survey) conducted among the population of Flanders, or the European Social Survey, which Belgium contributes to and which also relates to the collection of information concerning social attitudes.

2.3.3. SECURITY

Security has been a key topic in public debate for more than 25 years. For this call, researchers will focus on the two following subjects:

1) Radicalisation

Beyond Islamist radicalisation in its most violent expression which is currently monopolising attention, the federal state will also benefit from scientific results relating to all forms of radicalisation (violent or not) that take place in Belgium, whether they are of a religious, political nature... with a view to understand them, prevent them and, if necessary, combat them through appropriate policies (including cultural policy in the frame of federal institutions).

Researchers could examine on-going processes, explanatory factors, social (equally radical) responses, social representations (both in society overall and in the targeted groups) – in particular, the penetration of radical Islamist ideology, born in the Middle East and whose hybridisation with certain groups (especially criminal) in Belgian society has yet to be properly understood. Researchers could also examine issues relating to the adaptation and resilience of civil societies and public authorities faced with episodes of radicalisation, either abroad or at other moments in time.

Researchers could also contribute - through the development of expertise - to the authorities' efforts to fight radicalisation through Radicalisation Plans (See framework Note on integral Security 2016-2021, currently being finalised) to be implemented in Belgian cities. These plans are supported at federal level (€ 1.5 M) but also by other levels of authority (regional social cohesion plans, etc.) and are overseen by an umbrella coordination structure. Supported by foreign experiences (for example, Montreal's prevention model) and offering a horizontal view, researchers can support these plans through evaluative, participative or action-oriented research, from the point of view of their governance, their appropriateness in relation to reality and their coherence. The aspects relating to the training of public players and associations at different levels of power regarding this problem is another subject of major interest. Within this framework, the research could also catalogue, describe and compare the training already achieved at a national and international level.

2) Citizens, security and fundamental rights

Over the past 20 years, security and justice services have undergone significant reforms. New reform packages are in the pipeline in which the fight against terrorism will be a key issue.

Researchers can shed light on the issue of public security and the public's fundamental rights by objectively questioning the feeling of (in)security, the encroachment on privacy as a result of security actions, and needs and expectations (security / citizens' services) in terms of security regarding the three themes below:

1) Exceptional security measures: emergency legislation and state of emergency in place in other countries;

2) Tensions between national law and domestic policies and international legal instruments (Schengen, Geneva Convention, etc.);

3) Specific constraints weighing on the security policies of democratic countries resulting from the fact that these systems are based on the protection of fundamental rights. More specifically, the relations between fundamental freedoms and the following will be studied:

a) the possibilities offered by new technologies (Big Data, monitoring, etc.);
b) demands for optimisation and the intensification of information flows between players covered by professional secrecy, and the police, justice and security services;
c) the use of force and constraint by state institutions.

3. GUIDELINES FOR COMPLETING THE EXPRESSION OF INTEREST

3.1 DESCRIPTION OF THE PROPOSAL

In order to allow BELSPO to search for experts before the end of the call, we invite you to briefly describe you project at this stage of your reflexions (max 2 p). It is important that the core of your final project cannot diverge from your initial description in such a way that that the expertise mobilised becomes irrelevant.

3.2 EXPERTS

The network may propose, via a specific form, in between 5 and 10 scientific experts capable of evaluating the proposal.

The experts must meet the following criteria:

- be outstanding and internationally well recognized in their research field
- be able to evaluate as much as possible all the aspects covered by the proposal
- be foreign (European) experts not working or living in Belgium
- not belong to the same institution as the foreign partner
- have no direct link with the network
- have no co-publications with any of the partners within the last 5 years

It is up to BELSPO's consideration to appeal to any of the proposed experts.

4. GUIDELINES FOR COMPLETING THE PROPOSAL FORM

The proposers can choose for a **research project of 2 or 4 years**.

The projects selected within the context of the current call will start end 2016 - beginning 2017.

Please read these instructions carefully before completing the proposal form.

4.1 COMPLIANCE OF THE PROPOSAL WITH THE SCOPE OF THE CALL

Explain/justify how the proposal:

1) answers and makes a scientific contribution to the research priorities of the call;
2) makes use of interdisciplinarity at the level of:
    - mobilised scientific disciplines,
    - and / or the integration of methodological approaches
    - and / or the various ways to apprehend the studied topics
    - ...

4.2 SUBJECT OF THE PROPOSAL

4.2.1 STATE OF THE ART AND OBJECTIVES

Define the objectives of the proposal and its complementarity and added value with respect to national activities and initiatives (existing or in preparation). The Antarctic continent provides a unique opportunity for scientific research that cannot be performed elsewhere on Earth. The researchers need to describe clearly in the proposal the reasons and added value of carrying out their research in Antarctica as well as the links with other on-going (inter)national research initiatives in Antarctica.

4.2.2 METHODS

Describe and motivate the used methods.

4.2.3 DATA

Describe the kind, the scope, the availability and cost of the data-sets needed for the project.
In case of gathering new data, describe and justify its necessity, added value and methodology.

Concerning the use of existing data or the collection of new data, proposal submitters should take the following guidelines into account:

- Whenever possible, the partners should make use of existing (administrative or non-administrative) databases to meet the needs of their research. For this, they must check beforehand whether the data are accessible, at what cost, and how much time it will take to acquire the data. If, after the start of the research, it appears that due to partner negligence or insufficient knowledge of the field, the data files will not be available in time, this may constitute a reason for BELSPO to cancel the contract.
- If the proposal requires collecting new data (e.g. via a survey), the team must justify with clear and convincing arguments its choice of methodology, referring to the objectives of the study and specifying why this particular form of data collection is required and preferable to other approaches. This means the proposers must provide sound and detailed argumentation in support of the chosen methodology (sampling, etc.) and highlight its added value in

comparison to existing databases. In addition, the partners must provide the budget required for this data collection.

- As the data collected within the framework of the proposed research must be available to other users for other purposes, the proposal must clearly indicate when and in what format the data are made accessible, specifying which categories of users are likely to benefit from access to the data. For research at the Princess Elisabeth Station, a clear data management plan should be included in the proposal.
- If the project needs earth observation data, BELSPO's the space research and applications service can provide them on the basis of a justified request (see http://eo.belspo.be)

4.2.4 WORK PLAN AND DETAILED DESCRIPTION OF THE TASKS

Describe and justify the work plan and the proposed approaches in relation to the state of the art, including:

- the tasks in detail, incl. numbering, name and responsible for the tasks in accordance with the timetable. The description of tasks covered by the international partner (also the tasks covered by the co-financing by a third party), the non-financed partners, the possible subcontractors should also be included.
- the means, tools, procedures ... for the integration of the partners' contributions, for the overall organisation, timing, coordination, ... of the project.
- the valorisation and dissemination activities. These must include **concrete proposals for valorisation and dissemination** of the research and the research results, and the required budgets must be foreseen. This might involve, for example, the organisation of thematic debates and meetings, proposals for disseminating and popularising the results, proposals to integrate data into computerised databases on national and international levels, the elaboration of targeted messages intended for experts, policy-makers or managers regarding the content of specific results, including its limitations, the related uncertainties, the hypotheses and methods used, etc. The target groups of these valorisation proposals must be explicitly described.

4.2.5 TIMETABLE

Elaborate and fill in in accordance with the work plan and the detailed description of the tasks. Include all tasks (incl. the meetings with the follow-up committee and valorisation and dissemination activities).
Include all involved research partners as well as the non-financed partners, the international partner and the possible subcontractors.

4.3 EXPECTED RESEARCH RESULTS AND THEIR IMPACT FOR SCIENCE, SOCIETY AND DECISION MAKING

4.3.1 EXPECTED RESEARCH RESULTS

Describe the expected research results.

4.3.2 EXPECTED IMPACTS OF THE RESEACH AND COMPLIANCE OF THE RESEARCH WITH THE EXPECTED IMPACTS

Specify and justify the expected impacts of the research at the level of::

- scientific / research community
- policy support / policy makers
- societal / society in general

Estimate the relative importance accorded by the proposal to the three types of impact (in percentage for a total of 100%).

Demonstrate the compliance of the proposal - methodology incl. the valorisation and dissemination tasks - with the addressed expected impacts.

4.3.3 FOLLOW-UP COMMITTEE

Each selected project is accompanied by a follow-up committee. The objective of this committee is to provide **active follow-up** of the project and to **valorisation of the research**. It will carry out this role through the exchange and provision of data and information, giving advice, suggesting possibilities to valorise the research, etc. The follow-up committee is composed of **potential users of the results**, such as representatives of public authorities at national, regional, European, or international level, social actors, scientists, industrial actors, etc. The members of the follow-up committee are non-funded.

It is up to the candidates to specify in their proposal the functioning and specific goals of the committee (number of meetings, method of information exchange, etc.), and the role and profiles of its members.

To the extent possible, members will be identified by name and, if applicable, will express their interest and possible contribution to the project. If relevant for the proposal, the applicants may contact the Federal departments via the contact list in annex 3.

The final composition of the follow-up committee will be defined in collaboration with BELSPO.

4.3.4 SUSTAINABILITY, GENDER DIMENSION, ETHICS

Describe how the project and its research takes into account or includes issues such as sustainability, animal welfare, environmental respect, informed consent of the studied population ...

Describe and specify how the gender dimension, if relevant, is taken into account in the research topics.

If for methodological, budgetary or other reasons those aspects are not taken into consideration a justification is required.

4.4 NETWORK

Each proposal is submitted by an **interdisciplinary network**, belonging to at least two separate Belgian scientific institutions.

The network partners must conduct complementary activities related to a common issue and the integration of achieved results.

All funded teams will jointly share all obligations and responsibilities during the implementation of the project. The contributions of the different network partners may differ according to the content. Accordingly, different partners may receive different shares of the total budget and devote different numbers of man-months to the research, provided they all bear in mind the principles of a network project.

The call is intended for Belgian university institutions, university colleges, public scientific institutions, non-profit research centres[7].

The project may require specific expertise, which can be delivered in the form of **subcontracting**.

The participation of **Federal Scientific Institutions** and the cooperation between partners from **different Communities** is encouraged. In case of equal scientific quality between the proposals submitted, preference will be given to consortiums in which one or more FSIs are involved.

If it offers an added value to the project and to the development of Belgian expertise, submitters may propose a cooperation with **non-Belgian universities or public research institutes** (except for international institutions such as the Joint Research Centre). This participation will take place on a **co-funding** basis. The non-Belgian partner is responsible for the co-funding, from other sources, for at least the same amount as that requested from BELSPO.

A **coordinator** (belonging to a Belgian research institute) must be designated in each proposal. In addition to his/her scientific and management qualifications, the project coordinator must be able to synthesise and integrate the research results in order to promote applications and support for decision-making. The specific role of the coordinator is:

- to coordinate all activities to be carried out in the framework of the project;
- to coordinate the internal meetings between the network members;
- to coordinate the meetings with the Follow-up Committee and write the reports of these meetings;
- to coordinate the production of the interim and final project reports intended for BELSPO;
- to inform BELSPO of any problems that might interfere with the correct implementation of the project;
- to coordinate the synthesis and translation of the research results, with a view to applications and support for decision-making;
- to coordinate the publication and dissemination of the research results;
- meetings related to the project's progress between the network and BELSPO.

The programme wants to promote equality between men and women in research, therefore, the projects should take this into account in the choice of the researchers.

[7] for a list of recognised non-profit research centres see http://www.belspo.be/belspo/fisc/wi_list_nl.stm (Dutch) or http://www.belspo.be/belspo/fisc/wi_list_fr.stm (French)

4.4.1 PARTNERS' EXPERTISE

Each financed project partner must provide the following, in a clear and precise manner:

- His/her background
- His/her top 5 best publications that concern the subjects covered in the proposal (indicate clearly the publications accepted by international peer reviewed journals).
- A list of the research projects carried out over the past five years in the field under consideration or related areas (specify the duration of the work and funding source).
- A list of their (inter)national contacts and the (inter)national networks to which he/she belongs within the context of the proposal.
- Describe also the management skills of the coordinator.

If possible, include weblinks.

4.4.2 NETWORK'S COMPOSITION

Justify the composition of the network (complementarity, interdisciplinarity) and if applicable the added value of the collaboration with the international partner for the project and for the development of Belgian expertise taking into account the existing knowledge/expertise in Belgium.

4.4.3 GENDER

Describe how the gender issue is taken up in the network (network composition,...) or justify why it could not been taken into account (budget, needed expertise, ...).

4.5 INTERNATIONAL DIMENSION OF THE PROJECT

Describe the complementarity and added value of the proposal with respect to international activities and initiatives (existing or in preparation) and opportunities for new international collaboration.

4.6 RESOURCES

Within a project, **the budget of each financed Belgian institution cannot be higher than 60% of the total budget**.

The project budget is reserved exclusively for the project activities.

The different categories of expenditure financed by BELSPO are:

Staff: Pre-tax wages associated with increases in the cost of living, employers' social security and statutory insurance contributions, as well as any other compensation or allowance due by law and secondary to the salary itself and tax-free scholarships. Tax-free scholarships refer to a grant subject to a tax exemption under the tax laws. BELSPO prefers staff to be hired under a labour contract.

The staff costs are limited to a maximum amount of:

- 66.000 €/year for a scientist with a Master's degree (regardless of years of experience)
- 90.000 €/year for a scientist with a PhD (regardless of years of experience)
- 50.000 €/year for a technician (regardless of years of experience)

Those amounts are not applicable to persons that are identified by name in the proposal.

At least 60% of the total proposal's budget has to be devoted to staff.

General operating costs: this includes all current expenditures related to the project's implementation such as usual supplies and products for the laboratory, workshop and office, documentation, travel and accommodation, use of IT facilities, software, organisation of meetings, workshops and events, etc. The total amount of these operational costs is set at a flat rate of 15% maximum of the staff budget for the coordinator and 10% maximum of the staff budget for the other partners.

Specific operating costs (invoices will be required): this includes specific operating costs not covered by the general operating costs such as costs for analysis, maintenance and repair of specific equipment purchased by the project, surveys, ...

Equipment (***only for the Belgian partners***): Purchase and installation of scientific and technical apparatus and instruments, including computer hardware. Equipment needs to be purchased in the first half of the project.

Overheads (***only for the Belgian partners***): Institutions' general overheads that cover, in one lump sum, administration, telephone, postal, maintenance, heating, lighting, electricity, rent, machine depreciation, and insurance costs. The total amount of this item may not exceed 5% of the total staff and operating costs.

Subcontracting (***only for the Belgian partners***): Expenses incurred by a third party to carry out tasks or provide services that require special scientific or technical competences outside the institution's normal area of activity. The amount may not exceed 25% of the total budget allocated to the Belgian partner concerned.

The total requested budget for **international partners** may **not exceed 20% of the total proposal's budget** and only covers staff and operating costs (general and specific).

4.7 BUDGET FOR CAMPAIGNS AT THE PRINCESS ELISABETH STATION ANTARCTICA (IF APPLICABLE)

In addition to the financing of the project, BELSPO will take care of the real expenses of the **researchers of Belgian Institutions employed by the project** for taking part in field work campaigns in PEA.

These campaigns costs must not be budgeted in the overall budget tables of the proposal.

Expenses which are reimbursed by the State within the context of these campaigns cover: (i) travelling costs and stay and (ii) transportation and insurance of their scientific equipment and field work material. All other costs should be included in the overall project budget.

The campaigns should be explained in the detailed description of the tasks and timetable. Detailed information regarding plans and needs should be included in the campaign form.

5. PROCEDURES

This paragraph describes the procedures for submitting a proposal, the project selection procedures, and the principal contractual obligations applying to selected projects.

5.1 HOW TO ANSWER TO THIS CALL FOR PROPOSALS?

The submission takes place in two steps, first by filing an expression of interest and then by filing a research proposal.

5.1.1 EXPRESSIONS OF INTEREST

Interested parties must submit an expression of interest, using the form intended for this purpose. These expressions of interest will be used by BELSPO **only** in order to seek **foreign experts for the evaluation of the research proposals**. The network has to propose 5 to 10 foreign experts; this list can still be updated when the proposal is submitted.

Expressions of interest are submitted in **English**.

Interested parties are asked to **only** use the form available on the BELSPO website:

http://www.belspo.be/BRAIN-be

The expression of interest must be sent **in electronic form** to the following address:

BRAIN_call@belspo.be

To facilitate the treatment of the expressions of interest it is asked to include in the "subject" of the email **"Axis [X] _ [Acronym proposal]"** and to rename the file of the expression of interest in the format: **"[acronym proposal] _ [name of coordinator] _ [institution coordinator]. docx/odt"**.

The expression of interest must reach BELSPO no later than:

15 June 2016 at midnight

A receipt will be sent by e-mail.

BELSPO will disregard expressions of interest submitted after the closing date.

5.1.2 PROPOSAL SUBMISSION

Only proposals for which an expression of interest has been submitted on time will be taken into account.

The submitter is asked to **only** use the form that is downloadable from the BRAIN-be's website (http://www.belspo.be/BRAIN-be). Only the research proposals that fulfil all the eligibility criteria will be considered (see annex 2).

No annexes to the submission file will be taken into consideration during the evaluation and selection procedure.

The proposal must be sent in English and only electronically (**Word/Open office and signed copy in pdf format**) to the following address:

BRAIN_call@belspo.be

The original signed documents must be kept and can be requested during the procedure.

To facilitate the treatment of the research proposals it is asked to include in the "subject" of the email **"Axis [X] _ [Acronym proposal]"** and to rename the file of proposal in the format: **"[acronym proposal] _ [name of coordinator] _ [institution coordinator]. docx/odt/pdf"**.

The proposal must reach BELSPO no later than:

For theme 2.1.1 Research at the Princess Elisabeth base in Antarctica: **18 July 2016 at noon** For the other themes: **12 September 2016 at noon**

BELSPO will disregard proposals submitted after the above-mentioned closing date and time.

A receipt will be sent by email within the three working days after reception of the proposal.

The forms can be obtained from the BELSPO website at the following address:

http://www.belspo.be/BRAIN-be

5.2 EVALUATION AND SELECTION

5.2.1 SELECTION PROCEDURE

The selection process of the research proposals is done in two steps: a scientific evaluation, followed by a strategic choice. The scientific evaluation is conducted by foreign experts who are specialized in the fields of the call for research proposals. The selection decision is made by the Minister of Science Policy among the highest ranked proposals on the basis of the strategic advice of the programme's plenary committee.

5.2.2 BASES FOR THE EVALUATION

The eligible proposals (see annex 2) will be evaluated externally by foreign scientific experts qualified in the research field involved.

The text of the call for proposals serves as the basis for evaluating and selecting the proposals.

5.2.3 EVALUATION CRITERIA

The general evaluation criteria to be taken into consideration by the experts are the following:

Compliance with the aims of the programme and content of the present call

Scientific quality

- clarity of the objectives and tasks; relevance of the methodology; coherence of the objectives, the tasks and the methodologies; alignment of the proposal with the state of the art in the proposed field;
- scientific originality of the proposed research, taking into account the innovative character of the potential results, value of the research in light of other research underway in the field in question.

Potential impact of the project on science, society in general and on decision-making in particular

- positioning/relevance of the research with regard to the orientations of the call;
- potential use or integration of the project results by the scientific community, society and decision-makers;
- relevance of the proposals for distributing the results and making them available;
- profile of the members, role and functioning of the follow-up committee;
- integration of relevant societal themes such as sustainability, the gender aspect, etc.

Quality of the network

- level of scientific excellence or expertise of the candidates;
- complementarity of the competences among the partners;
- interdisciplinary nature of the network;
- distribution of tasks between partners;
- gender dimension;
- added value of the foreign partner's contribution;
- scientific quality, management, synthesis and communication skills of the coordinator.

Compliance of project/resources

- balance of the distribution of resources between partners;
- realism of the means deployed (duration, budget, personnel);
- gathering, use and accessibility of the data necessary for the project;

International anchoring

- positioning of the project in relation to international activities (existing or in preparation)

5.3 CONTRACTUAL OBLIGATIONS

5.3.1 CONTRACTS

For the proposals selected, a contract is drawn up between BELSPO and the network of funded teams.

For this purpose, the submitters of the proposal will be asked at the end of the evaluation and selection procedure to concisely formulate the specifications on the basis of which the contract is to be drawn up. This **technical annex** to the contract will be drawn up in consultation with BELSPO and will take into account the recommendations formulated by the foreign experts and the Programme Committee. Adaptations to the original proposal may relate to the content of the research, the composition of the network or Follow-up Committee, the budget, the choice of the coordinator, the proposals for valorising the research, etc.

BELSPO grants the selected projects the **funds** required for their implementation. BELSPO shall reimburse at most, and up to the amount specified in the granted budget, the actual costs proven by the partners providing these costs are directly related to the implementation of the project.

5.3.2 EXTERNAL EVALUATION

All research projects are subject to one or more external evaluations. These evaluations, conducted by foreign experts, concern the project's scientific quality (methodology and interim results) and strategic impact, in the light of its initial objectives.

5.3.3 REPORTS AND PROGRESS MEETINGS

The contract will define the various reports to be submitted to BELSPO. These reports are to be included in the project work plan and the cost of preparing them (including translations) must be covered by the project budget.
As well as the reports, meetings on the project's progress will be organised between the network and BELSPO.

5.3.4 DATA, RESULTS, INTELLECTUAL OWNERSHIP AND OPEN ACCESS

Foreground shall be the property of the institution carrying out the work generating this foreground, as mentioned in article 11 of the general conditions of the contract (annex 2). As regards existing information and data, ownership remains the same.

Each institution shall ensure that the foreground of which it has ownership, is disseminated as fast as possible.

Furthermore, each institution undertakes to make the foreground available in a freely accessible institutional deposit (institutional open access repository), immediately and free of charge, in order to be able to read, download, copy, print, or distribute it or to carry out a search within it.

For research areas concerning the marine environment, biodiversity and the Antarctic, researchers must bear in mind that a copy of the analysis and measurement data and/or metadata will nevertheless be transferred to specific databases such as:

- IDOD/BMDC (http://www.mumm.ac.be/datacentre),
- AMD (Antarctic Master Directory) (http://gcmd.gsfc.nasa.gov/KeywordSearch/Home.do?Portal=amd&MetadataType=0),
- GBIF (Global Biodiversity Information Facility) (http://www.gbif.org/) with possibly the help of the biodiversity platform (http://www.biodiversity.be)

The promoters of projects that include tasks in which biological materials are used, must ensure the preservation of this biological material by depositing it in a culture collection (Biological Resource Centre), and preferably one in Belgium. This does not apply to material that promoters can prove has already been deposited in a culture collection or for which existing agreements (Material Transfer Agreement) do not allow it to be deposited. Biological material includes cultivable organisms such as microorganisms, viruses, plant, animal and human cells as well as the replicable parts of these organisms, such as non-modified and recombinant plasmids (including those with DNAc inserts).

5.3.5 RESEARCH ETHICS

The first code of ethics for scientific research in Belgium was drawn up in 2009 (see http://www.belspo.be/belspo/organisation/publ/pub_ostc/Eth_code/ethcode_en.pdf).

The "Code of Ethics for Scientific Research in Belgium" is a joint initiative of the Académie Royale des Sciences, des Lettres and des Beaux-Arts de Belgique, the Académie Royale de Médecine de Belgique, the Koninklijke Vlaamse Academie van België voor Wetenschappen en Kunsten and the Koninklijke Academie voor Geneeskunde van België, with the support of the Belgian Science Policy Office.

All projects must take this code of ethics into account in their research.

6. COMPLAINTS

BELSPO places great importance on the quality of its service and on improving the way it operates. A special form to handle complaints has been created.

The **complaint form** is available at the following address:
http://www.belspo.be/belspo/organisation/complaints_en.stm

Complaints submitted anonymously or which are offensive or not related to our organisation will not be processed.

A complaint is handled as follows:

- once your complaint has been filed, a notification of receipt will be sent.
- the complaint will be forwarded to the relevant departments and individuals and will be processed within one month.
- an answer will be sent by e-mail or letter;
- the complaint will be treated with strict confidentiality.

If you are dissatisfied by the initial response to a complaint, you can always contact the Médiateur Fédéral/Federal Ombudsman, rue Ducale 43, 1000 Brussels. (email contact@mediateurfederal.be).

7. CONTACTS

Further information can be obtained by contacting the **secretariat**:

BRAIN-BE@belspo.be

02/238 37 61 (FR)
02/238 34 65 (NL)

ANNEX 1: LIST OF FEDERAL SCIENTIFIC INSTITUTIONS (FSI)

1. National Archives and State Archives in the Provinces (ARA-AGR)
2. Royal Library of Belgium (KBR)
3. Belgian Institute for Space Aeronomy ((BIRA-IASB)
4. Royal Belgian Institute of Natural Sciences (RBINS)
5. Royal Institute for Cultural Heritage (KIK-IRPA)
6. Royal Meteorological Institute of Belgium (RMI)
7. Royal Museum for Central Africa (RMCA)
8. Royal Museums of Art and History (RMAH)
9. Royal Museums of Fine Arts of Belgium (RMFAB)
10. Royal Observatory of Belgium (ROB)
11. Scientific Institute of Public Health (IPH)
12. Veterinary and Agrochemical Research Centre (VAR)
13. National Institute of Criminalistics and Criminology (NCIC)
14. Royal Museum of the Armed Forces and Military History (MRA)

"BRAIN-be" Programme
Call 2016 - Network Projects
Eligibility of Proposals

The Belgian Science Policy Office (BELSPO) ensures that proposals meet all the eligibility criteria listed below. Proposals that do not meet one or more eligibility criteria will not be evaluated. Coordinators of ineligible proposals will be informed by BELSPO. The eligibility of each proposal is verified on the basis of information provided by the submitters in the submission file.

List of criteria

For all proposals submitted, the following criteria are examined. Only those that meet ALL these criteria are used for evaluation.

➢ The submission was preceded by an expression of interest for the same research topic	☐
➢ The submission file is complete (all required forms have been completed)	☐
➢ The submission file was submitted in electronic format (in Word/Open Office and pdf)	☐
➢ The submission file was submitted no later than 12 September 2016, at noon (or 18 July 2016, at noon, for theme 2.1.1)	☐
➢ The proposal duration is 2 or 4 years	☐
➢ The proposal concerns a network of at least two different Belgian institutions	☐
➢ The proposal coordinator is employed by a Belgian research institution	☐
➢ The network consists of participants from universities and/or public scientific institutions, and/or non-profit research centers	☐
➢ Budgetary aspects:	
• the budget of each financed Belgian institution cannot exceed 60% of the project budget	☐
• at least 60% of the project budget is spent on personnel	☐
• the budget for subcontracting does not exceed 25% of the total budget allocated to the concerned partner	☐
• the budget of the foreign partners does not exceed 20% of the total budget requested by the network	☐

ANNEX 3: LIST OF FEDERAL DEPARTMENT CONTACTS

The Federal departments can be directly contacted by the proposers for specific issues concerning their interest, competences and for possible participation in the Follow up committee.

Institution	Name	E-mail
FPS Economy, SMEs, Self-Employed and Energy	M. Bart Thys	bart.thys@economie.fgov.be
FPS Employment, Labour and Social Dialogue	Mr. Alain Piette	alain.piette@emploi.belgique.be
FPS Justice	Mr. Christophe Mincke	Christophe.MINCKE@just.fgov.be
FPS Mobility and Transport	Mrs. Ine Polling	ine.polling@mobilit.fgov.be
FPS Personnel and Organisation	Mr. Ben Smeets	ben.smeets@p-o.belgium.be
FPS Health, Food chain safety and Environment	Mrs. Marielle Smeets	marielle.smeets@environnement.belgique.be
PPS Social integration	Mr. Jo Locquet	jo.locquet@mi-is.be
FISD - Federal Institute for Sustainable Development	Mrs. Martine Vandervennet	Martine.Vandervennet@ifdd.fed.be
For theme 2.1.5: FPS Foreign Affairs - Development Cooperation	Mr. Koen Van Acoleyen	Koen.VanAcoleyen@diplobel.fed.be
For theme 2.1.5: FPS Internal Affairs - Federal Crisis Centre	Mrs. Monique Bernaerts	Monique.Bernaerts@ibz.fgov.be