PIPP - Partnerships for space Instruments & applications

Preparatory Programme

Kennisnetwerkenregeling

Science

2019

(Please note that the Dutch version of this call is the leading legal document. No rights can be derived from the English translation.)

Contents

1 Introduction 1
1.1 Background 1
1.2 Available budget 1
1.3 Validity of the call for proposals 1
2 Aim 2
2.1 PIPP Priorities 2
2.2 Definition Expertise Networks 3
2.3 PIPP Programmatics 3
3 Guidelines for applicants 5
3.1 Who can apply 5
3.2 What can be applied for 5
3.3 When can applications be submitted 7
3.4 Preparing an application 7
3.5 Conditions on granting 8
3.6 Submitting an application 9
4 Assessment procedure 10
4.1 Procedure 10
4.2 Criteria 11
5 Contact details and other information 14
5.1 Contact 14
6 Annexe(s) 15

1 Introduction

1.1 Background

The aim of the Partnerships for Space Instruments & Applications Preparatory Programme is to advance the international position of The Netherlands in the area of the development and use of space instruments, by supporting expertise networks. This document describes the programme and contains information on how to apply for a grant.

The Netherlands Space Office (NSO) is responsible for the realisation and day-to-day management of the programme. All organizational and administrative issues are dealt with via the NSO (see 5.1).

1.2 Available budget

The programme is financed by the Ministry of Education, Culture and Science. For this 2019 call a maximum budget of k€ 1320 is available. Only applications that qualify as excellent or very good are eligible for funding. This could mean that the available budget for this call is not completely used.

1.3 Validity of the call for proposals

This call for proposals is valid until the closing date December 12, 2019, 14:00 hours CE(S)T.

2 Aim

The aim of the Partnerships for Space Instruments & Applications Preparatory Programme (PIPP) is to strengthen and promote the cooperation between Dutch knowledge institutions and other (non-academic) organizations on technological topics that are or could be relevant for the development ('upstream') and usage ('downstream') of space instruments, in order to improve the utilization of Dutch technological expertise in the field of space instruments, and contribute to retaining and enlarging the international position of the Netherlands in this field.

Within the PIPP programme Expertise Networks are funded. Expertise Networks focus particularly on future space instruments (long-term perspective). Specifically, novel, breakthrough technologies, emerging from within and outside the space domain, are addressed. In this way, Expertise Networks will be able to trigger fundamental technological developments.

The direction in which these space instrument developments should go is determined, not only by the technological possibilities, but by the needs for data from such space instruments, as they are being used in scientific, societal and commercial applications, as well. As such, the results of the Expertise Networks serve not only science, but society and the economy at the same time.

2.1 PIPP Priorities

Over the past decades the Netherlands has attained a strong international position in the field of space instruments for astronomical and atmospheric research. In order to preserve this position and extend it to other themes, it is deemed necessary to bring together all relevant expertise and strengthen cooperation.

Cooperation

Cooperation, as understood here, specifically aims at synergy between scientific and fundamental technological strengths with knowledge in the field of the usage of space instruments in addressing scientific, societal and/or commercial challenges. Since it is the explicit aim of this PIPP programme to strengthen and promote such cooperation, it is mandatory for organizations who intend to apply for funding from this programme, to organize their cooperation in Expertise Networks (see section 2.2).

Demand-driven development

The usage (for science, society as well as economy) of space, and accordingly of space instruments, is a priority of the Dutch national space policy. The explicit need for data as derived from space instruments, more and more drive the development of – technologies for – space instruments. Such demand-driven developments are well-known in scientific astronomical space research, but are becoming essential in other fields as well. Therefore, Expertise Networks wishing to apply for funding from this PIPP programme should organize demand-driven developments within their own theme.

Space instruments

This PIPP programme focusses on space instruments, i.e. instruments (as compound or distributed systems) that are brought into space and are used to collect data that can be used to address scientific, societal and/or commercial challenges in the fields of astronomy/astrophysics, Earth observation and/or planetary research.

2.2 Definition Expertise Networks

An Expertise Network is established as a group of organizations coherently organized on a clearly defined theme (in the field of science, technology, applications and/or usage), that focusses on the development and/or the usage of space instruments.

In any case, Dutch knowledge institutions (universities, institutes, research schools) that have acknowledged expertise and are performing research activities relevant for the development and usage of space instruments for the applicable network theme, participate in the Expertise Network. Other, non-scientific organizations and enterprises may participate in a Expertise Network as well. On the specific theme, the Expertise Network merges all relevant expertise in the Netherlands without excluding relevant parties.

The tasks of the Expertise Network include a.o. drafting a research agenda on the own theme, organizing the cooperation and alignment between the network partners, aligning the network with organizations outside the network (knowledge/academic, government, or commercial parties), aligning research activities with other activities within the network, assessing promising technologies for and/or applications of future space instruments, performing research activities (PhD, postdoc, feasibility studies, etc.) on the own network theme. In addition, the network undertakes to organize a user/demand-driven approach, the valorization of knowledge for society and market, and the synergy with parties outside the space domain.

Space instruments

Instruments are defined as (hardware) systems to collect data/observations by transmitting and/or receiving radiation in specific parts of the electromagnetic spectrum. An instrument consists of a sensor/detector and accompanying front-end parts (e.g. optics, antennas) and back-end parts (for registration and data processing). A space instrument is defined as an instrument operating on a satellite or spacecraft.

The development of space instruments is meant to include the concept, the design, the technology and prototype of space instruments. The usage of space instruments is meant to include the processing of observations and the extraction from the observations of information that is used in applications in the fields of science, society and market.

2.3 PIPP Programmatics

2.3.1 Themes

Expertise Networks eligible for this call of the PIPP programme are in the field of the development of innovative (breakthrough) concepts, methods, models and (fundamental) knowledge on the following themes:

- the usage of – data from – space instruments, specifically in the microwave domain, for modelling/monitoring vegetation aiming at applications in the fields of agriculture and food security;
- the usage of – data from – space instruments for applications in the field of air quality in urban, rural and marine environments.

Expertise Networks focus on the future usage of space instruments on these themes. Network activities comprise the early development stages (low TRLs[1]). These themes are intentionally broadly defined. Within each theme, the network will select the specific subjects for the projects to be proposed in the application.

2.3.2 PIPP activities

PIPP funding may be used for both research and organizational activities in the network. Normally, PIPP funded activities are complementary and/or supportive to research and development activities for concrete instruments, missions and applications as funded from regular institute funds or other funding schemes. Activities to be funded from the PIPP programme are described below.

Research activities

The PIPP programme can be used to fund studies related to the development and usage of future space instruments. Due to budget constraints the PIPP programme cannot be used to fund the actual implementation of instruments and missions in the context of existing and/or approved programmes. Examples of PIPP fundable activities are: PhD or postdoc studies in the field of scientific and/or societal/operational user requirements, development and definition of instrument and mission concepts, technological trade-off studies, feasibility studies, low TRL hardware projects, breadboarding, simulation studies, end-to-end modelling. Such activities can be funded on the condition that they are performed under the guidance/supervision of the full Expertise Network.

Network support activities

The PIPP programme specifically aims at promoting the cooperation with partners within the network and with parties outside the network, in order to strengthen the Dutch position in the field of development and usage of space instruments. Therefore, apart from the research activities mentioned above, also network support activities that benefit this aim may be funded from this programme. Examples of such network support activities are: the organization of – national or international – workshops on the network theme, participation in proposal preparation activities, assessment studies of technologies and/or applications, market consultation studies, organization of cooperation with parties outside the network, like space agencies, industry, government bodies, etc.

[1] TRL: Technology Readiness Level, see https//www.esa.int/Our_Activities/Space_Engineering_Technology/Shaping_the_Future/Technology_Readiness_Levels_TRL

3 Guidelines for applicants

One of the members of the Expertise Network will act as the main applicant. The main applicant will also act as project leader of the research for which funding is requested. He/she will provide a copy of the application to all partners of the Expertise Network.

3.1 Who can apply

Full, associate and assistant professors and other researchers with a comparable appointment can submit an application if they:

- are employed (i.e. hold a salaried position) at one of the following organizations:
  - Dutch universities;
  - University medical centres;
  - NWO and KNAW institutes;
  - the Netherlands Cancer Institute;
  - the Max Planck Institute for Psycholinguistics in Nijmegen;
  - researchers from the DUBBLE Beamline at the ESRF in Grenoble;
  - NCB Naturalis;
  - Advanced Research Centre for NanoLithography (ARCNL);
  - Princess Máxima Center; and
  - Royal Netherlands Meteorological Institute; and
- also have an appointment period for at least the duration of the application procedure and the entire duration of the research for which the grant is being applied for. Personnel with a zero-hour appointment is excluded from applying.

Researchers from other organizations or enterprises may take part in the Expertise Network, but they cannot act as main applicant. The Expertise Network must demonstrate that it merges, on the own network theme, all relevant knowledge and expertise available in the Netherlands (and that it does not exclude any relevant parties). It must also prove that the necessary knowledge and expertise as well as the infrastructure for performing the intended activities is available. NSO and the NWO Domain Science Board reserve the right to reject applications that do not contain sufficient information about the applicants and the infrastructure.

3.2 What can be applied for

Within this call, applicants can request funding for all reasonable, non-infrastructural costs, directly related to expenses that are necessary for the activities of the Expertise Network, e.g. funding for a PhD student or a postdoc, direct material costs and travel expenses.

The maximum budget is k€ 660 per application. All costs need to be motivated briefly.

At least k€ 5 and at most k€ 50 of the requested budget will have to be spent on network support activities.

The maximum duration of the project is five years.

The budget is built up using the NWO-wide standardised building blocks, the so-called modules. These modules are described below. In the proposal budget, applicants choose which combination of modules are needed to answer the research question and how often each module will be deployed. The following modules are available for an application within this round:

Module Personnel: 1a) PhD

The guideline is that 1 fte PhD for 48 months or 0.8 fte for 60 months can be applied for. If a different duration of appointment is desired for the realisation of the proposed research, then the guidelines may be deviated from as long as this is well justified.
The salary costs will be remunerated according to the agreements in the 'Agreement for Funding Scientific Research' made with the Association of Universities in the Netherlands and are based on the collective labour agreement of the Dutch universities (for ZonMw, the costs are based on the collective labour agreement of the Netherlands Federation of University Medical Centres).
In addition to salary costs, the project employee funded by NWO will receive a one-off individual bench fee (€ 5000) to encourage his or her scientific career. The agreement and the maximum amounts for personnel costs can be found at https://www.nwo.nl/en/funding/funding+process+explained/salary+tables.
NB: Remunerations for PhD scholarship students at a Dutch university are not eligible for funding from NWO.

Module Personnel: 1b) Postdoc

The guideline is that for the appointment of a postdoc a duration between 12 and 48 months can be applied for, with a minimum of 0.5 fte during 12 months. The appointment may be spread out over a longer or shorter period, e.g. over the entire duration of the project. For shorter periods, expertise may be hired using the material credit.
The salary costs will be remunerated according to the agreements in the 'Agreement for Funding Scientific Research' made with the Association of Universities in the Netherlands and are based on the collective labour agreement of the Dutch universities (for ZonMw, the costs are based on the collective labour agreement of the Netherlands Federation of University Medical Centres).
In addition to salary costs, the project employee funded by NWO will receive a one-off individual bench fee (€ 5000) to encourage his or her scientific career. The agreement and the maximum amounts for personnel costs can be found at https://www.nwo.nl/en/funding/funding+process+explained/salary+tables.

Module 2: Material credit

A maximum of € 15,000 per year per full-time scientific position (modules 1a and/or 1b) can be applied for, specified according to the three categories stated below:

Project-related goods/services

— consumables (glassware, chemicals, cryogenic fluids, etc.);
— equipment and/or software (e.g. lasers, specialist computers or computer programs, etc.);
For these small items of equipment and/or software, the amount may not amount to more than € 160,000 per application.
— measurement and calculation time (e.g. supercomputer access, etc.);
— costs for acquiring or using data collections (e.g. from Statistics Netherlands);
— access to large national and international facilities (e.g. cleanrooms, synchrotrons, datasets, etc.);
— work by third parties (e.g. laboratory analyses, data collection, etc.);
— personnel costs smaller in size than those offered in module 1.

Travel and accommodation costs (for the employees for which a personnel grant was requested in modules 1a and 1b)

— travel and accommodation costs (national and international);
— congress visits (max. 2 per year);

— fieldwork;
— work visits.

Implementation costs

— national symposium/conference/workshop organized by the project;
— costs of open access publishing;
— data management costs;
— recruitment costs (incl. advertisement costs);
— costs involved in applying for licences (e.g. for animal experiments).

Costs that cannot be applied for are:
— basic facilities within the institution (e.g. laptops, desks, et cetera);
— maintenance and insurance costs.

If the maximum amount of € 15,000 per year per full-time scientific position is not sufficient for realising the research, then it may be deviated from if a clear justification is provided in the proposal.

Taking into account the nature of this programme, which is aimed at strengthening the cooperation between Dutch knowledge institutions with (non-scientific) organizations, an exception may be made for the item *work by third parties*. Up to a maximum of 30% of the requested total budget may be spent on this item, if a clear justification is provided in the proposal.

Module 5b) Money follows Cooperation (MfC)

The aim of this module is to encourage international collaboration via the principle of Money follows Cooperation, for which the national research budget is used for cross- border collaboration that offers the possibility to create added value for individual research projects by deploying expertise from abroad which is not available in the Netherlands at the desired level for the project. This concerns expertise from organizations outside of the Netherlands that have a public task and carry out research independently. In the proposal, the applicant must convincingly demonstrate that the expertise concerned is not available in the Netherlands. This will be assessed in the selection process. If the arguments are not sufficiently convincing, then the funds for this module cannot be made available.

Furthermore, the applicant needs to state the amount to be deployed for this module in the budget. In principle, there is no limit to the amount that can be requested.

3.3 When can applications be submitted

The deadline for the submission of preproposals is **September 3, 2019, 14:00 hours CE(S)T**.

The deadline for the submission of full proposals is **December 12, 2019, 14:00 hours CE(S)T**.

Applications submitted after the deadline will not be taken into consideration.

3.4 Preparing an application

3.4.1 Compulsory announcing of initiatives

Before submitting the full proposal, main applicants are obliged to announce the initiative to form a Expertise Network to NSO for publication on the NSO website. The announcing of initiatives has been introduced to ensure that the proposed Expertise Networks merges all relevant expertise in the Netherlands without excluding relevant parties (in accordance with 2.2). In addition, potential partners may register and possibly join the consortium. An initiative includes the name and contact details of the main applicant, the

theme and a complete description of the Expertise Network (involved parties and their roles). Announcing your initiative can be done by filling in and submitting the initiative form available on the NSO website. The completed form must be submitted by e-mail (knw@spaceoffice.nl) to NSO.

3.4.2 Preparing the full proposal

The application form is available on the website http://www.spaceoffice.nl.

- The application must be written in English.
- The maximum length of the application (including a description of the proposed research and the budget specification) is 20 pages (standard font at least 8.5 pt, line spacing at least 12 pt, margins at least 2 cm), excluding curriculum vitae.
- Annexes (e.g. letters of support, reprints, separate CV's, etc.) will not be sent to the reviewers.
- Incomplete applications or applications exceeding the maximum number of pages will not be taken into consideration.
- Applications for which no initiative has been announced before the deadline mentioned in 3.3, are inadmissable and will not be taken into consideration.

When you submit an application, NWO assumes that you have informed your institution and that your university of institution accepts the funding conditions of this programme.

The main applicant is expected to take full responsibility for the scientific, organizational and financial aspects of the research for which funding is requested. This includes taking care of progress reports and a scientific final report at the end of the project.

See Annex 1 for an explanation of the items on the application form.

3.5 Conditions on granting

The NWO Grant Rules 2017 and the Agreement on the Payment of Costs for Scientific Research apply to all applications.

Open Access

All scientific publications resulting from research that is funded by grants derived from this call for proposals are to be immediately (at the time of publication) freely accessible worldwide (Open Access). There are several ways for researchers to publish Open Access. A detailed explanation regarding Open Access can be found on www.nwo.nl/openscience-en.

Data management

Responsible data management is part of good research. NWO wants research data that emerge from publicly funded research to become freely and sustainably available, as much as possible, for reuse by other researchers. Furthermore NWO wants to raise awareness among researchers about the importance of responsible data management. Proposals should therefore satisfy the data management protocol of NWO. This protocol consists of two steps:

1. Data management section

The data management section is part of the research proposal. Researchers should answer four questions about data management within their intended research project. Therefore before the research starts the researcher will be asked to think about how the data collected must be ordered and categorised so that it can be made freely available. Measures will often need to be taken during the production and analysis of

the data to make their later storage and dissemination possible. Researchers can state which research data they consider to be relevant for storage and reuse.

2. Data management plan

After a proposal has been awarded funding the researcher should elaborate the data management section into a data management plan. The data management plan is a concrete elaboration of the data management section. In the plan the researcher describes whether use will be made of existing data or a new data collection and how the data collection will be made FAIR: Findable, Accessible, Interoperable, Reusable. The plan should be submitted to NWO via ISAAC within a maximum of 4 months after the proposal has been awarded funding. NWO will approve the plan as quickly as possible. Approval of the data management plan by NWO is a condition for disbursement of the funding. The plan can be adjusted during the research.

Further information about the data management protocol of NWO can be found at https://www.nwo.nl/en/policies/open+science/data+management.

Nagoya Protocol

The Nagoya Protocol became effective on 12 October 2014 and ensures an honest and reasonable distribution of benefits emerging from the use of genetic resources (Access and Benefit Sharing; ABS). Researchers who make use of genetic sources from the Netherlands or abroad for their research should familiarise themselves with the Nagoya Protocol (www.absfocalpoint.nl). NWO assumes that researchers will take all necessary actions with respect to the Nagoya Protocol.

3.6 Submitting an application

An application can only be submitted to NSO by e-mail (addressed to knw@spaceoffice.nl). Applications not submitted in this way will not be taken into consideration.

In accordance with the agreement between NWO and VSNU, applicants need to inform their institution about their application. When you submit an application, NWO assumes that you have informed your institution and that the necessary infrastructure, including related costs, will be available for your research.

Submitted applications may not be adjusted or changed during the assessment procedure.

4 Assessment procedure

4.1 Procedure

The NWO Code of Conduct on Conflicts of Interest applies to all persons and NWO staff involved in the assessment and/or decision-making process. See also: www.nwo.nl/en/documents/nwo/legal/nwo-code-of-conduct-on-conflicts-of-interest.

4.1.1 Initiatives

Check of announced initiatives

The submitted initiatives are tested by NSO on the basis of the policy criteria 3 and 4 (see 4.2), in order to ensure that the Expertise Networks contain all relevant expertise available in the Netherlands and do not exclude any relevant parties. NSO will draft an advice which will be confirmed by the NWO Domain Science Board. Only initiatives that meet these criteria will receive a positive advice to develop a full proposal.

4.1.2 Full proposals

Admissibility

The first step in the assessment procedure is to test whether an application is admissible. Only those proposals that satisfy the criteria stated in Chapter 3 are admissible and will be taken into consideration.

Policy check

NSO will test the submitted applications with respect to relevance for Dutch space policy, based on the criteria specified in Section 4.2. Applications that do not meet these criteria will not be taken into consideration.

Scientific peer review

Applications that meet the criteria of the policy check will be assessed on scientific quality by independent referees. For each application at least two independent, scientific referees on the relevant theme will be contacted by NSO. The referees issue an advice to NSO with respect to the scientific quality of the proposal, based on the applicable criteria (see Section 4.2).

Rebuttal

The applicants will be given the opportunity to respond to the anonymized advice from the referees, including the policy check, in writing.

Final qualification

The external scientific referees and NSO will discuss the applications per theme, taking into account the policy check, reviews and rebuttal; this will result in a final qualification.

Decision

NSO will issue an advice to the NWO Domain Science Board based on the final qualifications of the submitted applications. The NWO Domain Science Board will decide about the allocation of funding, based on this advice and the available budget.

The data management section in the application is not evaluated and therefore not included in the decision about whether to award funding. However, both the referees and the committee can issue advice with respect to the data management section. After a proposal has been awarded funding, the researcher should elaborate the data management section into a data management plan. Applicants can use the advice from

the referees and the committee when writing the data management plan. A project awarded funding can only start after NWO has approved the consortium agreement.

NSO will award a qualification to all full proposals and will make this known to the researcher with the decision about whether or not the application has been awarded funding.

Only applications that receive the qualification "excellent" or "very good" will be eligible for funding. For more information about the qualifications please see www.nwo.nl/en/funding/funding+process+explained/nwo+qualification+system.

Schedule:

27 June 2019	Publication of the call for proposals
3 September 2019	Deadline for announcing initiatives
Mid-September	Advice on announced initiatives
12 December 2019	Deadline for submitting full proposals
December 2019	Admissibility and policy check by NSO
January-February 2020	Referees are consulted
End of February 2020	Referee advice to NSO
Early March 2020	Applicants can issue a rebuttal
End of March 2020	Final qualification of experts and NSO to NWO Domain Science Board
April 2020	Decision of NWO Domain Science Board

4.2 Criteria

4.2.1 Policy check

The following criteria are used for the policy check:

1. The proposal concerns the development of technology for and/or the usage of future space instruments;
2. The proposal is in line with the key points and priorities of the national scientific and economical space policy;
3. The proposal contributes, through strengthened cooperation and synergy, to retaining and strengthening the Dutch position;
4. The proposed Expertise Network merges, on the own network theme, all relevant knowledge and expertise from participating knowledge organizations;
5. The proposed Expertise Network organizes the process of demand-driven developments from science, society and/or market;
6. The proposed Expertise Network organizes the cooperation with parties outside the network within and outside the space domain.

Explanation of the policy criteria:

Criterion 1. Development of technology for and/or the usage of future space instruments
The Expertise Network merges knowledge and expertise on the development and/or usage of space instruments (that means Earth-based observing instruments are not intended). Network participants have

substantial knowledge and expertise in the field. Expertise Network activities are considered as supplementary to this.

Criterion 2. Alignment with national space policy

The Expertise Network operates in line with the following priorities of the national space policy:
i. In the next years, the ***usage*** of space by science, society and market is a key element in the space policy.
ii. Decisions on employing and developing ***technological capabilities*** are more and more driven by needs and demands from users ('user pull'), in addition to (and in balance with) the optimal exploitation of technological possibilities ('technology push').
iii. When developing and using space instruments, ***synergy*** between academic and industry, between the space and non-space sector, between upstream and downstream (value chain approach), and between national and international developments is pursued.
iv. ***Cooperation*** is based on added value of all participating parties.
v. ***Prioritized themes*** of the Dutch space policy are astronomy/astrophysics, Earth observation and planetary research.
vi. The Netherlands has an outstanding position in the field of (scientific) knowledge in the field of development and usage of space instruments. The ***valorization*** of this knowledge for science, society and market is a policy priority for the upcoming years.
vii. When developing and using future space instruments Dutch parties should be able to optimally take advantage of ***breakthrough*** technologies and disruptive innovations from within and outside the space domain.

The PIPP priorities in section 2.1 are also based on the above priorities.

Criterion 3. Cooperation and strengthening Dutch position

The Expertise Network convincingly shows (e.g. by signed agreements) its cooperation, with partners deploying their input in synergy. Parties reinforce each other such that the Dutch position in the field of development and usage of space instruments is retained and possibly a stronger position is enabled.

Criterion 4. Dutch – fundamental – knowledge parties

Dutch scientific/knowledge organizations (universities, institutes, research schools) are part of the Expertise Network. All relevant knowledge and expertise on the own theme is merged in the network and no relevant parties are excluded.

Criterion 5. Organization of demand-driven development

The Expertise Network convincingly shows that the proposed activities for the purpose of the development and/or the usage of space instruments, is also driven by user needs/demands from science, society and/or market. Demand-driven development is clearly indicated (testified through personalized statements by user parties on their demands and needs). With respect to the (very) long term, demand-driven developments are possibly less concrete, however the usage of breakthrough technologies or disruptive innovations should be made plausible.

Criterion 6. Cooperation outside the network

The Expertise Network testifies how it cooperates with parties outside the network, whether these are knowledge parties, government bodies or businesses. Also partnerships with parties outside the space domain are indicated.

Criterion 5 and 6 are related to the Knowledge utilisation goal of NWO (see http://www.nwo.nl/en/policies/knowledge+utilisation).

4.2.2 Scientific peer review

All applications are assessed on the basis of the following criteria:

1. Originality/Innovative character
2. Scientific quality of the proposal
3. Scientific quality of the Expertise Network.

All criteria have an equal weighting.

Criterion 1. Originality/Innovative character

The potential innovation with respect to the broader field of the research theme must be elucidated. By definition, all research results shift the boundaries of knowledge. However, this point relates to research with a more innovative contribution to the discipline(s) in which it is intended to take place, as distinguished from more routine research based on traditional methods. Aspects which may be considered are the research question, the proposed research methods and the potential result of the research.

Criterion 2. Scientific quality

In general, the scientific quality must be apparent through:

i. Objectives

The research question and objectives must make it sufficiently clear where the focus of the research will be and whether there is a substantial objective that appeals to the imagination. The application should clearly show that the formulated objectives are of recognisable scientific importance.

ii. Scientific approach and methodology

With respect to this point the assessment will be whether the methods and techniques chosen are clearly defined and whether the working plan is of a sufficiently high standard in the light of the research question and the objective of the research. The assessors may also look at the extent to which the proposed research relates to research being carried out internationally in this field.

iii. Effect of the study

Which avenues are opened up both within and beyond the relevant specialist area, by solving the described problem? What is the relevance of the proposal to the development of the area in question?

Criterion 3. Scientific quality of the Expertise Network

Quality and competence of the Expertise Network. In general, the scientific quality of the Expertise Network must be apparent through:

i. Objectives

This relates to the value and impact of various forms of research output of the participants in the Expertise Network. Output may be (peer reviewed) papers, other publications (e.g. (project) reports, articles, documentation), data sets, software and hardware products, results of analyses, etc. Value and impact will be assessed qualitatively.

ii. Research position

This concerns a qualitative assessment of both the position and the status of the participants in the Expertise Network in their own domain, and the position and the status of the combined participants in the research area of the Expertise Network. Both the national and international position are considered. The value and impact of relations and contacts in (inter)national cooperations are taken into account as well as the extent to which the Expertise Network is prominent and leading.

5 Contact details and other information

5.1 Contact

For specific questions about the Partnerships for Space Instruments & Applications Preparatory Programme and this call for proposals please contact:

Radboud Koop
+31(0)88 042 45 28
E-mail: r.koop@spaceoffice.nl

Danielle Hollman
+31(0)88 042 45 44
E-mail: d.hollman@spaceoffice.nl

6 Annexe(s)

Explanation of the questions on the application form:

1. Project title
Provide a (descriptive) project title of no more than 100 characters.

2a. Main applicant
Details of the main applicant.

2b. Alternative contact
Please state the name and address of the person who can provide further information about the application in the applicant's absence.

2c. Support of local authority
Please indicate if the research institute of the main applicant has taken note of the application and agrees to make available all necessary infrastructure, including related consumables that are not part of the application.

3. Composition of the "Expertise Network" (project group/consortium)
Please indicate who will be verifiably involved in the proposed expertise network. Please also indicate which persons and institutions from your expertise network are involved in carrying out the proposed research. Please give their surnames with initials, titles and specialisation. You are requested to give a realistic indication of the number of hours per week that each person will dedicate to the project.

4. Summary of objectives of the project
Please give a short summary of your application (as described under 8.) for the general public. If your application is awarded, this summary will be used for publicity purposes.

5. Planning: duration of the project(s) & proposed starting date(s)
Indicate the intended duration of the project and the proposed starting date of the total project and of the subprojects.

6a. Main field of research
It is compulsory to fill out the main research field that corresponds to the subject of your research proposal. If applicable you can also select other relevant fields of research. You can only refer to the descriptions and codes from the NWO research field list: http://www.nwo.nl/financiering/nwo-disciplinecodes.

6b. Research area of the Expertise Network
Please indicate to which priorities of the national space policy the proposal corresponds: Astronomy/Astrophysics, Earth observation, Planetary research (multiple options possible).

7a. Indicate the instrument(s)/mission(s) to which the proposed project is related
Please give a short description of the (future) instrument(s)/mission(s) to which your project is related.

7b. Objectives of the intended instrument(s) or mission(s)
Please indicate the scientific, societal and/or commercial objectives of the instrument(s)/mission(s). Please clarify the role of the involved Dutch parties in the instrument(s)/mission(s) as well as the connection to Dutch scientific knowledge positions. Maximum length of this item is ½ page A4.

8. Description of the proposed study
Please describe the proposed research and address the aspects mentioned below. You are requested to limit the project to concrete research questions to which the solution is within reach. Avoid general or vague problem definitions. Applications

that are part of a greater (inter)national programme, must be written in such a way that they can be assessed independently. A general reference to the aims of the overall (inter)national initiative is not sufficient. One cannot expect referees to retrieve the missing information themselves.

a: Background:
Provide the previous history of and the position of the intended project activities in the development of the intended mission(s)/instrument(s). Indicate the relation of the proposed activities to work done elsewhere and explain how the project fits in the Expertise Network.

b: Proposed activities:
Please indicate which activities will be conducted, the proposed approach and which methods and equipment will be used.

c: User needs:
Substantiate the need for the proposed activities for the development of space instrumentation on the basis of a clearly identified demand-driven development for science, society or economy. Identify the demand-driven development as clearly as possible (name the users and include their problems and needs). In case of (very) long-term developments, please make a reasonable case for the usage of the proposed breakthrough technologies of disruptive innovations.

d: Relevance:
Clarify the proposed project activities with respect to their relevance for advancing the (international) position of the Netherlands in the area of the development of space instruments, strengthening the Dutch space sector and the strengthening of and perspective of your Expertise Network.

e: Cooperation:
Describe the collaboration with parties outside of the Expertise Network (national and international). This may concern both knowledge institutions and other (non-academic) organizations; both technological parties and users.

9. Data Management Section
For the completion of the section please contact the university library/intended repository/ICT Department of your institute or university. They can help you with the completion of the data section.
The data management section focuses on FAIR (findable, accessible, interoperable and reusable) data during and after the research (archiving). In this section, NWO understands 'data' to be both collected, unprocessed data as well as analysed, generated data. Under this all forms are conceivable; digital and non-digital (for example samples, completed questionnaires, sound recordings, etc.). NWO only requests storage of reusable relevant data. NWO assumes, in principle, that within different disciplines there is a widely held view about which data are relevant to store for re-use. See also: http://www.nwo.nl/en/policies/open+science/data+management+chapter.

10. Work packages and associated manpower
Please indicate the schedule of the entire project as well as the sub-projects. Specify which activities will be carried out as part of the project and by whom.

11. & 12. Breakdown and motivation of the funds requested
See 3.2 for conditions!
Specify the requested equipment and consumables. Only costs which are very specific to this research. The applicant should argue why this expenditure is necessary for the research and why it cannot be paid by the relevant institution as part of the 'standard facilities package'. Standard office or laboratory equipment is not funded. If there is no (clear) motivation of the funds requested, the budget will not be granted.

13a. Total project costs
Please indicate the total project costs and specify how the financial support is composed.

13b. Own contribution and contribution of other parties
Specify the contribution of your own institution to this project (consumables, equipment, other costs including personnel). A guarantee confirming this contribution may later be asked from your board, as a condition before funding may be granted.

In case you have applied for funding or if you are planning to apply for funding from other organizations (e.g. European programmes, ESA, other NWO programmes) for this or related work, please specify the amount and indicate when a decision is expected. A copy of the application and the funding decision must, upon request, be sent to the Netherlands Space Office (NSO).

14. Follow-up actions

Indicate the follow-up actions upon completion of the proposed project. Provide a rough outline of the next route in order to realize the development and /or usage of the mission/instrument. Also indicate how the follow-up activities should be funded and underpin the feasibility of this funding.

15. Research fields of the Expertise Network partners

Indicate how the project is embedded in or connected to the regular activities of the partners in the Expertise Network. Also explain how this Expertise Network merges all relevant knowledge and expertise on the chosen theme and clarify that no relevant parties are excluded.

16. Curriculum vitae

Give a brief CV of the main applicant and other members of the research group listed under item 3 (max. 1 page A4 per person, including a list of relevant publications). Separately added CV’s will not be accepted!

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