



**Infrastructure Funding Instrument:  
National Equipment Programme (NEP)**

**Framework and Funding Guide**

**Directorate: Human and Infrastructure Capacity  
Development**

**Date: May 2022**

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## List of acronyms

DHET	Department of Higher Education and Training
DA	Designated Authority
DSI	Department of Science and Innovation
DVC	Deputy Vice Chancellor
HCD	Human Capacity Development
HDIs	Historically Disadvantaged Institutions
HICD	Human and Infrastructure Capacity Development
GMSA	Grants Management and Systems Administration
MTEF	Medium Term Expenditure Framework
NDP	National Development Plan
NEP	National Equipment Programme
NNEP	National Nanotechnology Equipment Programme
NRF	National Research Foundation
R&D	Research and Development
RE	Reviews and Evaluations
RSA	Republic of South Africa
SARIR	South African Research Infrastructure Roadmap
SRE	Strategic Research Equipment
WP-STI	White Paper on Science, Technology and Innovation

## Part A: Strategic Framework

### 1. Contextual Background

The White Paper on Science, Technology and Innovation, 2019<sup>1</sup> (WP-STI) recognises research and innovation infrastructure as critical elements for encouraging both social and technological innovation, enhancing knowledge generation and providing advanced training for researchers. This infrastructure further provides an enabling environment for researchers to improve their knowledge, scientific performance and innovation outputs. Research and innovation is a key enabler to developing new products and technologies in order to achieve South Africa's mission of creating wealth through job creation and poverty eradication. This can only be achieved in a highly competitive world if the nation has at its disposal the required human capital capable of generating new knowledge and technologies through research in an environment with quality research infrastructure.

Infrastructure for world-class research and innovation involves major items of equipment for multi- and/or inter-disciplinary research that requires substantial financial investment for its acquisition and operational costs and is therefore usually too costly to be acquired by institutions individually or collectively. World class research equipment can also constitute large or specialised pieces of equipment that are needed to catapult research and student training to new levels of achievement.

The development and retention of high-end scientific and technological skills and competencies is essential for South Africa to transform into a knowledge-based economy. The WP-STI has identified the need to accelerate the transformation of the knowledge enterprise in order to achieve an inclusive system of science that is innovative and responsive. The knowledge enterprise contributes towards national development through impact (knowledge or societal impact) it carries out. The knowledge and research can be used to support broad social and economic development, encourage critical discourse and develop responsible and critically engaged citizens. The Department of Science and Innovation (DSI) through its decadal plan aims to build an STI system that can improve impact on South Africa's socio-economic and environmental priorities.

According to the National Development Plan<sup>2</sup> (NDP): Vision 2030, South Africa has set itself the goals of eradicating poverty, reducing inequality, growing the economy by an average of 5.4 percent, and cutting the unemployment rate to 6 percent by 2030. The

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<sup>1</sup> South African Department of Science and Innovation (2019) *White Paper on Science, Technology and Innovation*.

<sup>2</sup> *National Development Plan: Vision 2030*, [https://www.gov.za/sites/default/files/gcis\\_document/201409/ndp-2030-our-future-make-it-workr.pdf](https://www.gov.za/sites/default/files/gcis_document/201409/ndp-2030-our-future-make-it-workr.pdf)

generation of new knowledge as well as scientific and technological innovations is the much needed catalyst necessary to advance economic development, job creation and an improvement in the quality of life of its citizens. State-of-the-art research infrastructure, linked to the development of highly skilled knowledge-workers, is a pre-requisite for the generation of globally competitive new knowledge and technologies for the twenty first century.

It is for this reason that the DSI has allocated funds in its annual budget vote, through the National Key Research and Technology Infrastructure Strategy<sup>3</sup> in support of research equipment. The National Equipment Programme (NEP) and National Nanotechnology Equipment Programme (NNEP) were founded on the basis of equipping South African research institutions with state-of-the-art research equipment that are enablers for advancing the national Research and Development (R&D) agenda. The 2015/16 financial year marked the closure of the NNEP funding instrument, after a ten-year investment. Since 2015/16 all nanotechnology related applications have and will continue to be submitted to the NEP funding instrument. The NEP is complemented by other research equipment or infrastructure programmes such as the National Research Foundation (NRF) Strategic Research Equipment (SRE) and the South African Research Infrastructure Roadmap<sup>4</sup> (SARIR) which is a long-term research infrastructure plan.

The strategic context for the NEP arises from the National Key Research and Technology Infrastructure Strategy of the NRF, which is based on two pillars of intervention, namely the:

- **Well-founded Laboratory**

This involves minimum levels of basic and/or entry level analytical equipment and facilities that are required for postgraduate training and research. The concept of a well-founded laboratory embraces the equipment, infrastructure and utilities needed to operate a scientific laboratory. This is the base case and is expected to be funded by the Department of Higher Education and Training (DHET).

- **Infrastructure for world-class research and innovation**

This involves major items of equipment for multi- and/or inter-disciplinary research that requires substantial financial investment for its acquisition and operational costs and is therefore usually too costly to be acquired by institutions individually or collectively. World class research equipment can also constitute large or specialised pieces of equipment that are needed to catapult research and student training to

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<sup>3</sup> National Research Foundation (2004). *A National Key Research and Technology Infrastructure Strategy*. Pretoria, RSA.

<sup>4</sup> South African Department of Science and innovation, (2016), *South African Research Infrastructure Roadmap*.

new levels of achievement. This research infrastructure for world-class research is to be funded by the DSI, through the NRF, with co-investment from the applicant's institution.

Funding for the NEP funding instrument is made available by the DSI under the Research and Development Infrastructure Platforms contract. The opening of NEP calls for applications will be subject to the Medium Term Expenditure Framework (MTEF) budget allocations from the DSI.

## **2. Scope**

The NEP, through a competitive peer review process, makes funds available to support the acquisition, upgrade or development of state-of-the-art research equipment. This involves major items of equipment that support multi-disciplinary and inter-disciplinary research and usually requires significant capital investment. In addition, specialised operators and dedicated personnel are required to operate and maintain such instrumentation.

## **3. Areas of Support**

The NEP aims to support the acquisition, upgrade or development of state-of-the-art research infrastructure in the broad fields of Science, Engineering and Technology in order to improve research infrastructure to enable internationally competitive research to be conducted in South Africa.

## **4. Objectives**

The NEP, through a competitive peer review process, makes funds available to support the acquisition, upgrade or development of state-of-the-art research equipment. This involves major items of equipment that support multi-disciplinary and inter-disciplinary research and usually requires significant capital investment. In addition, specialised operators and dedicated personnel are required to operate and maintain such instrumentation. The primary objectives of the NEP are:

- Improving research infrastructure to enable internationally competitive research to be conducted in South Africa;
- Expanding institutional capacity for research, innovation and training at public universities and recognised research institutions;

- Developing human resource capacity mainly postgraduate student training and staff development that focuses on historically disadvantaged institutions, women and people with disabilities;
- Support the acquisition, upgrade or development of state-of-the-art instrumentation for South African public research institutions to undertake world class research;
- Promoting, through the placement of research equipment, the development of research collaborations; and
- Support and strengthening the objectives of the WP-STI, NDP: Vision 2030, SARIR, NRF Strategy 2025<sup>5</sup> and the DSI's *Ten-Year Innovation Plan*

## 5. Monitoring and Evaluation of Grantees

The NRF will continuously monitor and evaluate the progress of the grantees funded under NEP as follows:

- All grantees must submit Progress Reports (PRs) to the NRF, from the date of grant award to a period of five (5) years post the year of commissioning of the research equipment. The format for the report will be provided by the NRF and reporting will be against deliverables as outlined in the funding guide and the signed Conditions of Grant; and
- The NRF will undertake institutional visits on an ongoing basis, to ensure that the equipment is being properly maintained, well-utilised and that postgraduate students and staff members are being trained to utilise and operate the equipment.

### 5.1 Progress Reports Requirements for NEP

#### 5.1.1 Research Outputs:

The expected return on investment from the NEP grant awards, through the usage of the research equipment, is measured in terms of the publications produced. Publications are defined as:

- Books
- Book chapters
- Articles (peer-reviewed)
- Articles (non-peer-reviewed)
- Peer-reviewed conference outputs
- Technical reports
- Patents

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<sup>5</sup> National Research Foundation Strategy 2025, <https://www.nrf.ac.za/wp-content/uploads/2021/05/NRF-Strategic-Plan-2020-2025.pdf>

### **5.1.2 Human Capital Development:**

The NEP grant awarded must contribute towards the development of human capital in terms of staff trained to use the equipment and postgraduate students trained and/or obtain a postgraduate degree through the use of the equipment.

Users of the equipment are defined as:

- Postgraduate student
- Postdoctoral fellow
- Technician
- Private sector users
- Researcher
- Collaborator
- Grantholder
- Staff
- Other Users

For each user listed above, the following information must be provided depending on the type of user selected:

- Full name
- Race and gender
- ID number / Student number / Staff number
- Citizenship
- Institution and country
- Department

### **5.1.3 Use of Infrastructure:**

The expected return on investment from the NEP grant awards, through the usage of the equipment, is measured in terms of a financial model for the maintenance, upgrade and other related operational costs for the sustainable management of the equipment. In addition, the following indicators will be measured:

- Researchers and students that have used the equipment; and
- Collaborators and general users that accessed the equipment.

#### **5.1.4 Intellectual Property:**

The NEP funding instrument is expected to contribute to South Africa's knowledge base in fields of research related to the objectives of the WP-STI, NDP Vision 2030, SARIR and NRF Strategy 2025 amongst others. As such, all grantholders are required to publish their findings in peer reviewed journals. The research work published should not compromise the protection of intellectual property emanating from the research and should further not infringe the relevant intellectual property legislations in South Africa "*Intellectual Property Rights from Publicly Financed Research and Development Act No. 51 of 2008*".

#### **5.1.5 Research Impact:**

Research impact is the distinct contribution that outstanding research makes to the society and the economy. Societal/economic impact embraces all the diverse ways in which research related skills and knowledge benefit individuals, organisations and nations. The NRF aims to identify, support, promote and communicate the research impact within the research enterprise (Knowledge Impact being scientific advances in understanding, interpretation, methods, theory, application and related advances that bring about change within and/or across disciplines and fields) and in society (Societal Impact meaning the value that research adds to society across various spheres, whether social, economic or environmental).

The NEP applicants must demonstrate the expected impacts in terms of:

- Societal/economic impact of the proposed equipment towards improving the quality of life of South Africans;
- Advancement of the objectives of the national priorities as defined in the WP-STI, NDP: Vision 2030, SARIR, NRF Strategy 2025 as well as other South African R&D based policies;
- Expanding institutional capacity for research, innovation and training at public universities and research institutions to enable South African research to be nationally relevant and globally competitive; and
- Access to equipment for research and training by postgraduate students.

#### **5.1.6 Science Engagements:**

The NEP grantholders are expected to participate in science engagements and science communication programmes.

It is of essence to raise science awareness amongst all South Africans and engagements through media platforms or any other relevant platforms in order to stimulate public dialogue, research influence and impact.

## **6. Funding**

The funding decisions are made by taking into consideration the expert panel recommendations as well as the DSI/NRF strategic objectives and targets for South African designated groups. Once an NEP grant award has been made, the DSI/NRF will not be liable for any additional costs that may be incurred including those resulting from the devaluation of the ZAR.

The host institution must provide funding towards the purchase of each piece of equipment at a ratio of 2:1 for NRF: Applying Institution. That is, the NRF will contribute two-thirds ( $\frac{2}{3}$ ) of the total cost of acquisition (cost of equipment including VAT and a three-year maintenance service plan) to a minimum of R1 million and a maximum of R10 million. The institution must make a one-third ( $\frac{1}{3}$ ) contribution towards the cost of the equipment. In instances where the total cost of the equipment exceeds R15 million, the institution must in addition to the  $\frac{1}{3}$  contribution, provide a written commitment to cover the amount in excess of R15 million.

The institution must in addition ensure that:

- The appropriate building infrastructure to house the state-of-the-art equipment is/will be in place to ensure that the equipment will be fully commissioned within two (2) years of the award having been made;
- Resources are made available for the appropriate building infrastructure to house the state-of-the-art equipment in accordance with the supplier specifications; and
- Training programmes are regularly hosted on a regional and national basis for the optimal utilisation of the equipment.

## **7. Monitoring and Evaluation of Funding Instrument**

The NEP funding instrument will be periodically evaluated by independent reviewers as agreed to by the DSI and the NRF.

## Part B: Funding Guide

### 8. Scope of Application

Proposals submitted to the NRF may be for a single instrument or multiple complimentary instruments that collectively constitute a single analytical research system.

The NRF encourages local design and development of the next generation of research equipment in South Africa. Therefore, institutions are encouraged to apply for support for the design, procurement, construction, testing and certification of novel research equipment.

### 9. Funding Scope and Duration

The NRF grant awards will not exceed R10 million per application. The NRF will cover two thirds (2/3) of the total cost of acquisition. The cost of the equipment applied for (excluding service contract) must not be less than R1 million and, the **total cost** of acquisition must include a three-year maintenance plan.

The NRF **will not** cover the operational costs associated with the installation and functioning of the equipment. This funding may only be utilised for the purchase, upgrade or development of research equipment as set out in the application and according to the recommendations of the review panel. Funding decisions are made by the NRF taking into consideration the recommendations of the review panel, the availability of funds and the objectives of the funding instruments.

Following the institutional procurement process, the grantholder must submit a pro-forma invoice within the approved grant amount. Should there be a change of specifications for the approved instrument(s), the grantholder must formally communicate the reasons to the NRF, providing a clear motivation for the change. This submission must be endorsed by the Research Administration of the employing institution.

This is a once-off grant spanning a **maximum period of two (2) years** post receipt of the award letter. If the acquisition and commissioning of the equipment has not been completed within two (2) years of the grant award, the NRF reserves the right to recall the grant.

## **10. Eligibility**

### **10.1 Applicant-Specific Criteria**

All researchers who meet the following criteria may apply as primary applicants:

- Applicants must be employed at an NRF Recognised Research Institution such as:
  - South African Public Universities; and
  - South African Public Research Entities namely Science Councils, National Facilities, Museums, and other recognised research institutions as declared by the DSI.
- The primary applicant must have held a doctoral degree for at least five (5) years **prior** to the submission of an NEP application; and
- The primary applicant must be a full-time employee or on a full-time fixed term appointment, extending for at least five (5) years from the time of submission of the NEP application.

### **10.2 Co-applicants**

An application may be submitted by a single applicant or a primary applicant and a co-applicant.

- In instances where the primary applicant will be retiring from his/her position at the host institution within five (5) years of submitting the NEP application, a co-applicant must be included as a potential successor to take over the management of the equipment;
- Emerging researchers, that do not have proven experience with managing high-end research equipment, may apply as a co-applicant together with a primary applicant that meets the eligibility criteria;
- The primary and co-applicant will be required to be actively involved in the management of the equipment and, in the utilisation of the equipment for his/her research endeavours; and
- The track record of both the primary and co-applicant will be evaluated during the review process.

**Table 1: Eligibility and Grant Criteria Summary**

<b>Eligibility and Grant Criteria Summary for 2022 Applications for 2023 Funding</b>	
<b>Eligibility Criteria</b>	<p>All researchers who hold a doctoral degree (for at least five (5) years prior to the application to the infrastructure funding instruments) and are full-time employees or on a full-time fixed term-appointment (for at least five (5) years following the application to the infrastructure funding instruments) in any of the NRF recognised organisations are eligible to apply:</p> <ul style="list-style-type: none"> <li>• South African public universities; and</li> <li>• Public research entities such as Science Councils, National Research Facilities, research laboratories, including research hospitals and museums.</li> </ul> <p>In the case where the applicant is approaching retirement (within five (5) years to normal retirement), a successor must be identified and included as a co-applicant.</p> <p>Proposed research must fall directly into any of the national research priorities and those referred to in the DSI <i>10-Year Innovation Plan</i><sup>6</sup> and <i>South Africa's National R&amp;D Strategy</i><sup>7</sup>. Applications to the total value of acquisition of the equipment (excluding maintenance and other costs) should not be less than R1million. The NRF contribution will <b>not exceed</b> R10 million.</p> <p>The Institution at which the applicant is employed must be committed to a funding contribution with the NRF on a 2:1 (NRF: Institution) ratio.</p>
<b>Maximum period of support</b>	<p>This is a once-off grant spanning a <b>maximum period of two years</b> (year of award/remaining part thereof and one (1) additional year). If the acquisition of the equipment has not been completed by that time, unspent funds may be withdrawn and reallocated at the discretion of the NRF.</p>
<b>Type of support</b>	<p>For the purchase of research equipment as per application and based on review panel recommendation, the NRF reserves the right to make the final funding decisions depending on availability of funds and objectives of the funding instrument.</p>
<b>Expected outputs and reporting</b>	<ul style="list-style-type: none"> <li>• Progress Reports from date of award to a period of five (5) years post commissioning of the equipment. In cases where there is a delay in commissioning of the equipment, this would mean that the grantholder must report to the NRF for five years after the commissioning of the equipment.</li> <li>• A minimum of <b>10 postgraduate students</b> trained <b>per year</b> on research utilising the research equipment commissioned.</li> <li>• A minimum of <b>four (4) publications</b> in international refereed (peer-reviewed) journals <b>per year</b> from the research undertaken utilising the equipment for research purposes.</li> </ul>

## 11. Application Process

The NRF Call for Proposals for the NEP, is placed on the NRF website, and the application is accessible online at <https://nrfconnect.nrf.ac.za>. All applications must be duly authorised and approved by the designated authority (DA) of the research administration at the institution that submits the application.

<sup>6</sup> DSI, 2007, *Innovation towards a knowledge-based economy - Ten year plan for South Africa (2008-2018)*. Pretoria. Accessible at <http://www.dst.gov.za/index.php/resource-center/strategies-and-reports/143-the-ten-year-plan-for-science-and-technology>.

<sup>7</sup> DSI, 2002, *South Africa's national research and development strategy*. Pretoria, South Africa. Accessible at: <http://www.dst.gov.za/index.php/resource-center/strategies-and-reports/159-south-africas-national-research-and-development-strategy>.

**Plagiarism is viewed in a very serious light and evidence of plagiarism will result in an application being returned to the institution, without review, for further investigation and action. Applicants are required to follow standard referencing practices and texts of sections copied directly from suppliers websites and marketing brochures will not be accepted.**

The NRF allows only one application per applicant. An equipment application that was previously rejected by the NRF may be revised and resubmitted. In such cases, any revision or reworking of the application to respond to the reviewers' feedback on the original application should be explained and highlighted in the revised application.

### **11.1 How to Submit Applications**

Applications will be accessible online at <https://nrfconnect.nrf.ac.za> from **June 2022 to July 2022**. Applicants are advised to complete their applications as soon as possible to prevent an IT system overload nearer the closing date.

This is an electronic submission system and applicants need to be registered on the NRF Connect system. If already registered on <https://nrfconnect.nrf.ac.za>, it is essential that applicants, co-applicants and prospective co-users update their *Curriculum Vitae* (CV) on NRF Connect after syncing their outputs on NRF Online Submission with NRF Connect, as the CV will form part of the application for review purposes. The onus is on the applicant to ensure that the Online CV is kept fully up to date as this plays a vital role in ascertaining the track record and ability to manage the requested equipment. If not yet registered on this site, applicants should register on the NRF Connect System at <https://nrfsconnect.nrf.ac.za>. Applicants are urged to complete or update ALL sections of the CV, including the Research Profile and Research Outputs sections as it will be considered an integral part of the application. Applicants who fail to complete the CV sections and application timeously will not be considered for funding.

When the final version of the application form is submitted by the applicant, by selecting the *Final Submit button on the online application*, the application will be routed to the DA for internal institutional review and validation. The DA must submit the validated applications to the NRF electronically. Late applications, additional supporting documentation or information received after the closing date, as stipulated in the Call documents, will not be accepted or considered. Applicants must ensure that they adhere to their institution's internal closing date for submission of their application to allow for internal institutional screening and review. Applicants should consult their institution research office or equivalent, regarding the internal closing date.

The NRF will not process applications that are incomplete, contain insufficient or incorrect detail, or fail to follow instructions. In these instances such applications will be rejected. The application must contain sufficient scientific and technical detail to allow for a comprehensive review and evaluation by peer reviewers. In addition to the electronic application and required attachments, the NRF may request additional information or documentation to support an application. Failure to supply such information or documentation upon request may result in the rejection of the application.

It is important for all applications to be screened and approved by internal institutional processes before being submitted to the NRF. Institutional authorities should take particular care regarding the financial information included in applications.

In submitting an application to the NRF, the Deputy Vice Chancellor (DVC) Research or equivalent, through the respective DA confirms, (i) agreement with the standard of all proposals validated and submitted; (ii) that the institution approves and supports the proposed research; and (iii) that the institution has made financial provision for the stipulated one-third (1/3) funding contribution, any amounts in excess of R15 million if applicable and any infrastructure costs that will be required to house the equipment.

## **11.2 Institutional Responsibility: Research Office**

Institutions submitting applications for funding are required to:

- Limit the number of applications to a maximum of five (5) per institution;
- **In alignment with the NRF and DSI transformation strategy, of the five (5) applications submitted, at least three (3) applications must have a primary applicant that is from a South African designated group defined as black (African, Coloured or Indian) or female;**
- Ensure completeness of applications including commitment to ensure that:
  - the appropriate building infrastructure to house the state-of-the-art equipment is/will be in place;
  - the equipment will be fully commissioned within two (2) years of the NEP grant award having been made; and
  - training programmes will be regularly hosted on a regional and national basis for the optimal utilisation of the equipment;
- Approve and authorise all applications submitted, through the institutional management structure; and
- Ensure that applicants adhere to the institution's internal closing date for submission of their application to allow for internal processes.

## 12. Unacceptable Proposals

The following types of proposals **will not be** considered:

- Applications without an updated CV of the applicant and co-applicant, if applicable.
- Research equipment that cannot be used in postgraduate student training or where no plan for such training is provided.
- General laboratory research equipment i.e. well-founded laboratory equipment.
- Funding requested for renovation of buildings, utilities and facilities.
- Fixed equipment, that forms part of laboratory infrastructure, such as laminar flow cabinets, power systems, cold rooms and gas reticulation systems.
- Proposals that do not include three (3) written quotations or detailed explanations where less than three (3) suppliers are available.
- Proposals that are not endorsed by the DA.
- Proposals where a number of equipment is proposed that are not complimentary in capability and can be regarded as a general list to equip a laboratory.
- Proposals where there appears to be duplication of equipment within departments and/or between regional institutions. It is the responsibility of the applicant to ensure that the relevant background checks with regards to availability and/or access and capacity of existing equipment have been completed (*see requirements in section 4.3*). A point of departure for searching for such availability could be the National Research Equipment Database (<http://eqdb.nrf.ac.za>).

## 13. Online Application Documentation

The details below provide an overview of the sections, which must be completed through the online application process as explained in *Section 11.1* above. This overview details the information that must be submitted in order to provide the NRF with a complete proposal. The online documentation is divided into two main sections:

- The *Curriculum Vitae* Section
- The Application/Proposal Section

### 13.1 The CV Section

The CV section forms an integral part of the application as it provides information on the track record of the applicant with respect to student training and research outputs. The onus is on the applicant to ensure that this is complete and up to date as it forms a vital component of the review and assessment process.

**Table 2: CV Section of the Application**

Contact Details*
Qualifications *
Career Profile *
Research Expertise *
Personal Profile
Student Supervision Record
Absence from Research
Staff Development Record
Books
Chapters in Books
Articles in Refereed/Peer-reviewed Journals
Refereed/Peer-reviewed Conference Outputs
Patents
Keynote/Plenary Addresses
Articles in Non-refereed/Non-peer Reviewed Journals
Other Significant Conference Outputs
Technical/Policy Reports
Products
Artefacts
Prototypes
Other Recognised Research Outputs
Disability *
ORCID *

### 13.2 The Application/Proposal Section

This section should be completed in full and is designed to provide the applicant with an opportunity to present the information that is required and will be assessed as per sections **15.2** and **16** respectively.

**Table 3: Application/ Proposal Form**

Sections (as per online Application Form)	Information required (see <i>Online Application Process in this regard</i> )	Documents that would need to be uploaded (under the <i>Attachments section</i> )
<b>Applicant and Co-applicant details</b>	<ul style="list-style-type: none"> <li>Applicant's institution details</li> <li>Co-applicant details, if applicable. A co-applicant must be from the same institution.</li> </ul>	N/A
<b>Description of equipment</b>	<ul style="list-style-type: none"> <li>Description of the proposed research equipment.</li> <li>Justification for the proposed research equipment.</li> <li>Equipment capabilities.</li> <li>Describe the complimentary nature of multiple instruments, motivating how they collectively constitute a single analytical research system, where applicable.</li> </ul>	N/A
<b>Classification of equipment</b>	<ul style="list-style-type: none"> <li>Detail why equipment is considered to be state-of-the-art.</li> </ul>	N/A
<b>Impact of equipment</b>	<ul style="list-style-type: none"> <li>Alignment to the <i>National Research and Development Strategy</i> and to the <i>10-Year Innovation Plan</i>.</li> <li>Multidisciplinary applications of proposed equipment.</li> <li>Value-add of the proposed equipment and incorporation into the longer-term institutional research plan.</li> <li>Support by the Regional Equipment Committee, if applicable.</li> </ul>	<ul style="list-style-type: none"> <li>Upload a Letter of support from the Regional Equipment Committee, if applicable.</li> </ul>
<b>Motivation for supplier</b>	<ul style="list-style-type: none"> <li><b>Quotations</b> from a minimum of three (3) suppliers against a standard/set terms of reference of a specified equipment should be submitted.</li> <li>A motivation for a preferred supplier should be provided. In the event where three viable options are not available, the motivation should clearly indicate the reasons for preference and why three quotes were not available.</li> <li><b>Quotations must be valid for at least 12 months from date of submission.</b></li> </ul>	<ul style="list-style-type: none"> <li>Upload the relevant quotes</li> <li>Upload the picture of the equipment</li> </ul>
<b>Availability of similar equipment</b>	<ul style="list-style-type: none"> <li>Detail on whether similar equipment exists at own institution, regionally or elsewhere in South Africa. Refer to the National Equipment Database: <a href="http://eqdb.nrf.ac.za">http://eqdb.nrf.ac.za</a>. <u>It is the responsibility of the applicant to ascertain what type of equipment, the model, where it is currently situated and its accessibility and present this convincingly.</u></li> <li>Expand why similar equipment is not suitable to applicant's research needs.</li> <li>Upload Letters/Confirmation from host institution of the identified equipment explaining why applicant is unable to access the equipment.</li> </ul>	<ul style="list-style-type: none"> <li>Upload Letters / Confirmation on why similar equipment is not accessible.</li> </ul>
<b>Proposed research project</b>	<ul style="list-style-type: none"> <li>A description of the planned research activities which includes both the: <ul style="list-style-type: none"> <li>Scientific merit of the proposed research in terms of advancing knowledge which contributes to the national research agenda and improves global competitiveness; and</li> <li>Qualification and competence of the researcher(s) to conduct the proposed research.</li> </ul> </li> <li>Details on the feasibility of the proposed infrastructure and research work.</li> <li>Justify how the proposed equipment will support the planned research activities.</li> <li>A clearly defined research plan for current and new research projects to be undertaken.</li> </ul>	N/A

Sections (as per online Application Form)	Information required (see Online Application Process in this regard)	Documents that would need to be uploaded (under the Attachments section)
Societal/Economic impact of proposed research	<ul style="list-style-type: none"> <li>Describe how the proposed research contributes towards improving the quality of life of South Africans.</li> <li>Briefly describe the type of impact economic/societal impact (e.g. Healthcare, Environment (Ecology), Biotechnology and Energy). In cases where the nature of the proposed research precludes these types of benefits, state the reasons.</li> </ul>	N/A

The Equipment Management Plan is addressed in a separate subsection.

**Table 4: Proposal/Application Form: Management Plan Section**

Sections (as per online Application Form)	Information required (see Online Application Process in this regard). All sections are compulsory.	Documents that would need to be uploaded (under the Attachments section)
Equipment Management Plan	<p>This section in its entirety is compulsory and should be completed to result in a comprehensive management plan (the complexity of which is commensurable with the value of the proposed equipment), that includes discussion on the subsections provided.</p> <p>It is required that the applicant uploads a <b>Detailed Project Schedule/Gantt Chart</b> outlining the timeframe for the procurement and installation process. A template containing the headings for what the Project Schedule/Gantt Chart should outline is provided in the section 'Supporting Documentation' for completion. This forms an integral part of the application and thus no application will be considered without it. (see Annexure 1)</p>	<ul style="list-style-type: none"> <li>Upload the Project Schedule/Gantt Chart (<b>compulsory</b>)</li> </ul>
Equipment Management Plan: Building Infrastructure to house the equipment	<p>Detail specific organisational commitments regarding building infrastructure and costs associated with maintenance.</p> <ul style="list-style-type: none"> <li>Does the building require refurbishment,</li> <li>Feasibility of the refurbishment costs,</li> <li>Is there a building refurbishment plan in place?</li> </ul>	<ul style="list-style-type: none"> <li>Attach letter from the supplier/manufacturer</li> <li>Upload a letter from the DVC indicating commitment to refurbishment and the associated budget</li> </ul>
Equipment Management Plan: Required Services and Utilities	Provide details on service utilities required to operate the equipment.	
Equipment Management Plan: Safety and Security	Provide a Safety plan.	
Equipment Management Plan: Insurance Arrangements	Detail the insurance arrangements to be made for the proposed equipment.	

Sections (as per online Application Form)	Information required (see Online Application Process in this regard). All sections are compulsory.	Documents that would need to be uploaded (under the Attachments section)
<b>Equipment Management Plan: Alternate Power Supply</b>	Detail measures to be put in place to supply alternate power in the event of power outages.	
<b>Equipment Management Plan: Other supportive/feeder equipment available</b>	List and describe feeder equipment available to support the proposed equipment.  Alignment of the research infrastructure with other equipment placed at different departments at their respective research institutions with regard to availability, access and capacity of existing equipment.	
<b>Equipment Management Plan: Operational Responsibility</b>	Detail how technical staff and other users will be provided with the necessary training for diagnostic, maintenance and operational purposes by the selected supplier.	<ul style="list-style-type: none"> <li>• CVs of operator/s</li> </ul>
<b>Equipment Management Plan: Maintenance and Repairs</b>	Maintenance, operation and repair of the equipment, inclusive of the necessary technical expertise for these tasks.	
<b>Equipment Management Plan: Training and Accessibility</b>	<ul style="list-style-type: none"> <li>• Conducting user training workshops to train and acquaint other users with the applications of the proposed research equipment.</li> <li>• A comprehensive plan for human resource development, including students, staff, operators and technicians; including mentoring of emerging researchers.</li> <li>• In addition the plan must address the involvement of individuals from the designated groups, particularly young, black and female researchers as well as researchers with disabilities.</li> <li>• Provide number and demographic profile of postgraduate students that will be trained on the infrastructure.</li> <li>• Expand on plans to attract other users.</li> </ul>	
<b>Equipment Management Plan: Monitoring and Evaluation</b>	<ul style="list-style-type: none"> <li>• Details on the operating cost budget over the next five years, including all other sources of funding applied for and committed.</li> <li>• Total cost for the acquisition, housing, operation and maintenance of the equipment.</li> <li>• Upload a financially viable costing plan. This should be prepared by the applicant and uploaded under the 'Attachments' section. This costing plan should include an indication of the projected income from other sources to cover operational and maintenance costs including training. This viable costing model must also present charge-out rates that do not prohibit researchers from the public research institutions accessing the equipment.</li> <li>• Please note that this cost must be assumed by the institution and will not be covered by the NRF.</li> <li>• The contribution from the NRF is to cover the 2/3 cost of acquisition of the equipment and the maintenance service plan only.</li> </ul>	<ul style="list-style-type: none"> <li>• Upload a viable costing plan.</li> </ul>
<b>Equipment Management Plan: Envisaged students</b>	<ul style="list-style-type: none"> <li>• How will the equipment be utilised for postgraduate training; as well as research and innovation activities by academic staff and postgraduate students.</li> </ul>	

Sections (as per online Application Form)	Information required (see <i>Online Application Process in this regard</i> ). All sections are compulsory.	Documents that would need to be uploaded (under the Attachments section)
	<ul style="list-style-type: none"> <li>Plans for student training (Please name students where applicable, state degree level, as well as how they will use the equipment in their research).</li> </ul>	
<b>Equipment Management Plan: Envisaged Staff Development</b>	<ul style="list-style-type: none"> <li>List of staff members to use the equipment (name of staff member, research topic and how the equipment is to be used in research).</li> </ul>	
<b>Equipment Management Plan: Technical Skills Development</b>	<ul style="list-style-type: none"> <li>Plan for ensuring that technical staff, instrument specialist or other researchers receive adequate training to improve analytical skills/capabilities to operate and maintain the equipment most efficiently. (This can be in the form of introductory, intermediate and advanced training courses for more efficient operation and maintenance of the equipment of interpretation and data analysis).</li> </ul>	
<b>Equipment Management Plan: Mentoring Staff Members</b>	<ul style="list-style-type: none"> <li>How is the applicant and co-applicant (where applicable) driving the transformation agenda to meet equity targets?</li> </ul>	
<b>Equipment Management Plan: Proposed Number of Research Collaboration(s) to be Undertaken</b>	<ul style="list-style-type: none"> <li>List the collaborators and information on the nature of collaborations to be undertaken.</li> <li>Potential collaboration benefit and expected contributions from collaborator.</li> </ul>	
<b>Equipment Management Plan: Utilisation Details</b>	<ul style="list-style-type: none"> <li>Ensuring access to the equipment for intra- and inter-institution as well as emerging researchers at Historically Disadvantaged Institutions (HDIs).</li> <li>Details on access to the research equipment or plans for use by staff, students and users from other institutions.</li> <li>Publications from research involving similar equipment.</li> </ul>	
<b>Equipment Management Plan: Co-users/Collaborators</b>	<ul style="list-style-type: none"> <li>A co-user can be from the same research institution or an external research institution, including private sector. The co-user will be accessing time on the equipment in order to achieve his/her research and training objectives.</li> <li>Upon adding a co-user the system generates an 'Equipment co-user utilisation form' that is automatically e-mailed to the co-user for completion.</li> <li>This co-user utilisation form requests information on the co-users utilisation of the proposed equipment for research projects and expected student involvement.</li> </ul>	
<b>Equipment Management Plan: Past and Current grants held with the NRF</b>	<ul style="list-style-type: none"> <li>List all grants held with the NRF, currently and historically.</li> </ul>	
<b>Equipment Management Plan: Succession planning</b>	<ul style="list-style-type: none"> <li>In the event that the applicant leaves the institution, or retires within five years of receiving the grant award, provide information on a potential successor.</li> </ul>	<ul style="list-style-type: none"> <li>Upload a succession plan</li> <li>Upload CV of successor</li> </ul>

Sections (as per online Application Form)	Information required (see Online Application Process in this regard). All sections are compulsory.	Documents that would need to be uploaded (under the Attachments section)
<b>Equipment Management Plan: Current and Historical Research Collaborations</b>	<ul style="list-style-type: none"> <li>List all collaborators and provide information on the nature of current and envisaged collaborations.</li> <li>Include information of the collaboration start year and end year (if applicable) of the project Information.</li> </ul>	
<b>Equipment Management Plan: Alignment to National Imperatives</b>	<ul style="list-style-type: none"> <li>Outline how this will contribute or is aligned to one or more national priorities/strategies/imperatives.</li> </ul>	

The sub-sections indicated below form part of the main application.

**Table 5: Application/Proposal Section Continued**

Sections (as per online Application Form)	Information required (see Online Application Process in this regard)	Documents that would need to be uploaded (under the Attachments section)
<b>Science Engagement</b>	<ul style="list-style-type: none"> <li>For the purposes of this application/report, the use of the overarching term science engagement is inclusive of all aspects of public engagement with science, science communication, science literacy as well as science outreach and awareness.</li> <li>It includes all participation by targeted groups of society in a programme aimed at generating mutual understanding and responses to science, including but not limited to awareness, accumulation of knowledge, enjoyment, opinion formulation and scientific literacy.</li> <li>It also embraces a broad understanding of "science" and "the sciences", encompassing systematic knowledge spanning natural and physical sciences, engineering sciences, medical sciences, agricultural sciences, mathematics, social sciences and humanities, technology, all aspects of the innovation chain and indigenous knowledge.</li> <li>Broader impact considers the impact of the activities/project on the public and/or targeted participants in terms of knowledge and/or awareness, behavioural and/or attitudinal change, skills acquisition etc.</li> </ul>	
<b>Publications emanating from similar equipment</b>	<ul style="list-style-type: none"> <li>Select the relevant records from the Research Outputs in your CV that support or show your experience in the use of similar equipment.</li> </ul>	
<b>Financial Details</b> (The NRF does not cover Operational Costs inclusive of: <ol style="list-style-type: none"> <li>Salaries</li> <li>Wages</li> <li>Overheads)</li> </ol>	<p>Provide detailed financial information for the proposed equipment as follows:</p> <ul style="list-style-type: none"> <li>The preferred supplier cost of equipment (inclusive of VAT) will automatically be drawn into this section based on the quote information submitted under the <i>Motivation for Supplier section</i>. The cost for maintenance/service</li> </ul>	

Sections (as per online Application Form)	Information required (see <i>Online Application Process in this regard</i> )	Documents that would need to be uploaded (under the Attachments section)
	<p>contract should be included into this sections and will be automatically totalled.</p> <ul style="list-style-type: none"> <li>• With respect to the Development Equipment provide a breakdown of the total equipment costs submitted as follows: <ul style="list-style-type: none"> <li>○ Cost for Design</li> <li>○ Cost for Procurement</li> <li>○ Cost for Construction</li> <li>○ Cost for Testing</li> <li>○ Cost for Certification/Accreditation</li> <li>○ Other Costs (please specify)</li> </ul> </li> <li>• Compulsory one third contribution by own institution and/or other institutions. Therefore providing the Total contribution by other institutions/users</li> <li>• Total requested from the NRF</li> </ul> <p>If a tender process is required by the institution, this should be completed either <b>prior to submission</b> of the proposal <b>or as soon as possible after receiving the letter of award</b> in the case of a successful applicant, in order to expedite the subsequent steps for the release of funding.</p> <p><b>Note:</b> Funding from this funding instrument cannot be utilised for Human Capacity Development (HCD)</p>	
<b>Possible reviewers</b>	<p>At least six (6) suggested independent peers, <b>not involved in joint research projects or collaboration</b> that can objectively review the proposal. These should not be co-users or collaborators and should not be from the applicant's institution as this is a Conflict of Interest. The responsibility is on the applicant to ensure that the information provided is current and correct. A mix of local and international reviewers is recommended.</p>	
<b>Excluded reviewers</b>	<p>It is also optional to indicate, with justification, individuals that should preferably <b>not</b> be used as possible reviewers for the application.</p>	
<b>Attachments</b>	<p>Upload the <b>picture of the equipment</b>. Refer to the <i>Motivation for Supplier</i> section (Document type: JPEG)</p> <p>Upload the <b>Letter/Confirmation from the host institution</b> explaining why the applicant is unable to utilize the equipment available in the country. Refer to the <i>Availability of Similar Equipment</i> section (Document type: PDF).</p> <p>Upload a <b>Detailed Project Schedule/Gantt Chart</b> (Refer to the <i>Equipment Management Plan</i> section) outlining the timeframe for the procurement and installation process (see Annexure 1). <b>This forms an integral part of the application and thus no application will be considered without it.</b> (Document type: PDF/Ms Project).</p>	<ul style="list-style-type: none"> <li>• Picture of Equipment in JPEG format</li> </ul> <p>Confirmation Letter</p> <p>Project Schedule/Gantt Chart (compulsory)</p>

Sections (as per online Application Form)	Information required (see Online Application Process in this regard)	Documents that would need to be uploaded (under the Attachments section)
	Upload a <b>financially viable costing plan</b> including an indication of the projected income from other sources to cover operational and maintenance costs as well as training. This viable costing plan/including must also present charge-out rates that do not prohibit researchers from the public research institutions accessing the equipment. <i>Refer to subsection 'Monitoring and Evaluation' under the Equipment Management Plan section</i> (Document type: Ms Excel or PDF).	Costing Plan
	Where applicable, attach the <b>letter of support from the Regional Equipment Committee</b>	Letter of support from the Regional Equipment Committee (not compulsory. Only if applicable).
	<b>Other documents:</b> Besides the documents uploaded as requested by the NRF, please indicate what 'other' documents was added and why'. Other documents should not exceed more than 1 ½ A4 pages in length.	Provide a Descriptive Title for documents to be uploaded.

**Note:** Applicants are advised to complete their applications as soon as possible to prevent IT system overload near the closing date. Specifically, this will allow sufficient time for respondents (co-user/collaborator) to provide feedback once a respondent utilisation form is created and sent as part of the Online Application Process. It is recommended that individual sections be refined and completed off-line (e.g. as a MS Word document) before being finally uploaded.

## 14. Budget Breakdown

Provide detailed financial details for the proposed equipment through the following:

**Table 6: Application/Proposal Form: Budget/Financial Section**

Financial Details required for 2022 applications for 2023 funding			
Classification of Equipment	In the Classification of Equipment Section it is required that an applicant indicates whether the requested equipment is:		
	New Equipment	Upgrade Equipment	Development Equipment
Required information for each classification	For New Equipment it is required that the applicant provides the following financial information: <ul style="list-style-type: none"> <li>• Equipment Costs (inclusive of VAT)</li> <li>• Five (5) year Maintenance/Service Contract (<i>Note the NRF will only</i></li> </ul>	For Upgrade Equipment it is required that the applicant provides the following financial information: <ul style="list-style-type: none"> <li>• Equipment Costs (inclusive of VAT)</li> <li>• Five (5) year Maintenance/Service Contract (<i>Note the NRF will only</i></li> </ul>	For Equipment to be developed or constructed, it is required that the applicant provides the following financial information: <ul style="list-style-type: none"> <li>• Equipment Costs (inclusive of VAT). Provide a breakdown of the total equipment costs submitted as follows:               <ul style="list-style-type: none"> <li>○ Cost for Design</li> </ul> </li> </ul>

	<p><b>contribute towards three (3) years of the maintenance/service contract)</b></p> <ul style="list-style-type: none"> <li>• Contribution by own institution</li> <li>• Operational Expenditure <b>(cost to be assumed by Institution)</b></li> <li>• Total Requested from NRF</li> </ul>	<p><b>contribute towards three (3) years of the maintenance/service contract)</b></p> <ul style="list-style-type: none"> <li>• Contribution by own institution</li> <li>• Operational Expenditure <b>(cost to be assumed by Institution)</b></li> <li>• Total Requested from NRF</li> </ul>	<ul style="list-style-type: none"> <li>○ Cost for Procurement</li> <li>○ Cost for Construction</li> <li>○ Cost for Testing</li> <li>○ Cost for Certification/Accreditation</li> <li>○ Other Costs (please specify)</li> </ul> <ul style="list-style-type: none"> <li>• The NRF only contributes for Three (3) years Maintenance/Service Contract of the five (5) year Maintenance/Service contract</li> <li>• Contribution by own institution</li> <li>• Operational Expenditure <b>(cost to be assumed by Institution)</b></li> <li>• Total Requested from NRF</li> </ul> <p><b>Note:</b></p> <ul style="list-style-type: none"> <li>• No student bursaries will be considered as part of the cost of new equipment development.</li> </ul>
<b>Equipment Costs (incl. VAT)</b>	<p>The total value for acquisition (excluding operational and other costs) should <b>not be less than R1million</b>. The NRF contribution will <b>not exceed R10 million</b>.</p>		
	<p>The quoted cost of the requested equipment, including VAT, of the preferred supplier.</p>		
<b>Costs for a five (5)-year Maintenance/Service Contract</b>	<p>Cost for maintenance/service contract over a five (5)-year period. The NRF will, as part of its two-thirds (2/3) contribution, subsidises the cost of the maintenance contract for the first three (3) years. The institution thereafter needs to commit to covering the additional cost in order to ensure a full five (5) year maintenance contract with the preferred supplier.</p>		
<b>Contribution by own institution (compulsory 1/3 contribution)</b>	<p>Compulsory one third (1/3) contribution by own institution. The host institution is expected to provide funding towards the purchase of each piece of equipment at a ratio of 2:1 (NRF: Research Institution). That is, the NRF will contribute 2/3 of the total cost of acquisition to a maximum of R10 million. It is further required that the institution to make a 1/3 contribution towards the cost of the equipment.</p> <p><b>Applications and the letter of commitment must be endorsed by the DVC or equivalent to be considered for funding.</b></p>		
<b>Operational Expenditure</b>	<p>Applicants must clearly indicate how the total cost for the acquisition, housing, operation and maintenance of the equipment applied for will be raised. This should be complemented with a financially viable costing plan, including an indication of the projected income from other sources to cover operational and maintenance costs including training. In addition, the viable costing model must also present charge-out rates that do not prohibit researchers from the public research institutions accessing the equipment. This cost must be assumed by the institution.</p>		
<b>Total contribution by other institutions/users</b>	<p>Applicants should indicate whether any other source(s) of funding/financial contributions will be received for the equipment applied for in the infrastructure funding instrument.</p>		
<b>Total requested from NRF</b>	<p>This should amount to 2/3 of total capital cost plus three (3) year maintenance/service contract, and cannot exceed R10 million.</p>		

## 15. Evaluation Process

### 15.1 Screening Process

All applications will be screened by the NRF Grants Management and Systems Administration (GMSA) staff for completeness. If the criteria, described in detail, in this document, are not met, the application will be returned to the institution without review.

Pre-screening will be done on the following criteria:

- Does the applicant meet all other eligibility criteria as per the Funding Guide?
- Are the applicant and co-applicant's (if applicable) CVs updated?
- Is the application complete with all sections filled in and no missing information?
- Are there three (3) quotations from different suppliers? If not, is there a motivation included?
- For applicants within the five (5) year period to retirement, is a succession plan attached?
- Have co-users confirmed access to equipment?

### 15.2 Panel Peer-Review of Qualifying Proposals

The Reviews and Evaluation (RE) Directorate of the NRF identifies additional local and international panel members who are experts in the relevant scientific disciplines of the applications as well as in the use of the specific and/or similar equipment.

The peer review panel undertakes an evaluation process according to the criteria listed in section 10 and makes recommendations to the NRF regarding the funding of the applications. In the case of a re-submission, the previous panel comments will be made available to the review panel by RE so that these may be taken into consideration during the review process.

The panel peer-review process is described below:

- The scoring scale, with clear descriptors on each category, to be used for all components of the Application Form (**Table 7**);
- The scorecard (**Table 8**) that provides clear descriptors and weightings for each category; and
- The categories for the funding recommendations emanating from the panel peer-review process.

**Table 7: Scoring Scale for the NEP Funding Instrument**

Score	Descriptor	General guiding notes	Scientific Merit	Management Plan	HR Development	Collaboration and Accessibility
4	<b>Excellent/ Recommended for funding</b>	This is an <b>exceptionally strong</b> proposal that is <b>well conceptualised</b> and <b>strongly motivated</b> and exceeds all the requirements in this section.	The applicant has a <b>world-leading track record</b> and the proposed <b>scientific research represents internationally leading standards</b> in terms of quality, significance and scientific impact.	The proposed <b>management plan is considered outstanding. It represents world-leading standards</b> in terms of the sustainable management of state-of-the-art research equipment and/or facilities. There may be <b>some low probability risks that can be easily addressed.</b>	The PI (and co-PI) demonstrates an <b>outstanding track record and world-leading</b> in terms of: <ul style="list-style-type: none"> <li>• Training and graduating Masters and Doctoral students;</li> <li>• Mentoring young and/or emerging researchers including Postdoctoral Fellows;</li> <li>• Developing researchers from historically disadvantaged institutions and backgrounds; and</li> <li>• Training black and female Masters and Doctoral students and Postdoctoral Fellows.</li> </ul>	The PI (and co-PI) demonstrates an <b>outstanding track record in terms of establishing and sustaining collaborations:</b> <ul style="list-style-type: none"> <li>• At the intra-institutional and inter-institutional levels (regional and national collaborations);</li> <li>• With international partners; and</li> <li>• With private sector.</li> </ul>
3	<b>Good/ Recommended for funding</b>	This is a <b>strong</b> proposal that <b>fully addresses</b> all the requirements in this section. However, there are minor issues that the applicant is advised to bear in mind.	The applicant has an <b>internationally competitive track record</b> and the <b>proposed scientific research is at the forefront of South African research</b> in terms of quality, significance and scientific impact.	The proposed <b>management plan is considered to be very good. It represents internationally competitive standards</b> and is at the forefront of South African standards in terms of the sustainable management of state-of-the-art research equipment and/or facilities. There <b>may be several low probability risks that can be easily addressed and present moderate consequences</b> to the management of the equipment and/or facility.	The PI (and co-PI) have an <b>internationally competitive track record</b> that is at the forefront of South African standards in terms of: <ul style="list-style-type: none"> <li>• Training and graduating Masters and Doctoral students;</li> <li>• Mentoring young and/or emerging researchers including Postdoctoral Fellows;</li> <li>• Developing researchers from historically disadvantaged institutions and backgrounds; and</li> </ul>	The PI (and co-PI) have an <b>internationally competitive track record that is at the forefront of South African standards</b> in terms of establishing and sustaining collaborations: <ul style="list-style-type: none"> <li>• At the intra-institutional and inter-institutional levels (regional and national collaborations);</li> <li>• With international partners; and</li> <li>• With private sector.</li> </ul>

Score	Descriptor	General guiding notes	Scientific Merit	Management Plan	HR Development	Collaboration and Accessibility
					<ul style="list-style-type: none"> <li>• Training black and female Masters and Doctoral students and Postdoctoral Fellows.</li> </ul>	
2	<b>Satisfactory/ Conditionally recommended for funding / Revise and resubmit</b>	The proposal meets the <b>necessary requirements</b> in this section. However, there are some issues that should be addressed by the applicant and institution before an award is made.	The applicant has a <b>nationally average track record</b> and the <b>proposed scientific research is satisfactory</b> in terms of quality, significance and scientific impact.	The proposed <b>management plan is considered satisfactory and represents nationally average standards</b> in terms of the sustainable management of state-of-the-art research equipment and/or facilities. There may be <b>medium probability risks that may present moderate consequences</b> to the management of the equipment and/or facility.	The PI (and co-PI) have a <b>track record that is satisfactory and represents nationally average standards</b> in terms of: <ul style="list-style-type: none"> <li>• Training and graduating Masters and Doctoral students;</li> <li>• Mentoring young and/or emerging researchers including Postdoctoral Fellows;</li> <li>• Developing researchers from historically disadvantaged institutions and backgrounds; and</li> <li>• Training black and female Masters and Doctoral students and Postdoctoral Fellows.</li> </ul>	The PI (and co-PI) have a <b>track record that is satisfactory and represents nationally average standards</b> of establishing and sustaining collaborations: <ul style="list-style-type: none"> <li>• At the intra-institutional and inter-institutional levels (regional and national collaborations);</li> <li>• With international partners; and</li> <li>• With private sector.</li> </ul>

Score	Descriptor	General guiding notes	Scientific Merit	Management Plan	HR Development	Collaboration and Accessibility
1	<b>Unsatisfactory/ Not recommended for funding</b>	The proposal <b>partially addresses</b> the requirements in this section. However, some key issues have not been adequately addressed.	The applicant has an <b>unsatisfactory track record</b> and/or <b>the proposed scientific research is not convincing</b> in terms of quality, significance and scientific impact.	The proposed <b>management plan is unsatisfactory</b> in terms of the sustainable management of state-of-the-art research equipment and/or facilities. There may be <b>high probability risks that may present significant consequences</b> to the management of the equipment and/or facility.	The PI (and co-PI) have a <b>track record that is unsatisfactory and is nationally lacking</b> in terms of: <ul style="list-style-type: none"> <li>• Training and graduating Masters and Doctoral students;</li> <li>• Mentoring young and/or emerging researchers including Postdoctoral fellows;</li> <li>• Developing researchers from historically disadvantaged institutions and backgrounds; and</li> <li>• Training black and female Masters and Doctoral students and Postdoctoral Fellows.</li> </ul>	The PI (and co-PI) have a <b>track record that is unsatisfactory and is nationally lacking</b> in terms of establishing and sustaining collaborations: <ul style="list-style-type: none"> <li>• At the intra-institutional and inter-institutional levels (regional and national collaborations);</li> <li>• With international partners; and</li> <li>• With private sector.</li> </ul>
0	<b>Poor / Non-Compliant / Not recommended for funding</b>	The proposal provided <b>insufficient or missing information, and/or numerous inconsistencies</b> (e.g. quotes). Therefore a fair evaluation cannot be conducted. As such this is considered a high risk investment	The proposal provided <b>insufficient information, and/or numerous inconsistencies</b> . Therefore a fair evaluation cannot be conducted. As such this is considered a high risk investment.	The proposal provided <b>insufficient information, and/or numerous inconsistencies</b> . Therefore a fair evaluation cannot be conducted. As such this is considered a high risk investment.	The proposal provided <b>insufficient information, and/or numerous inconsistencies</b> . Therefore a fair evaluation cannot be conducted. As such this is considered a high risk investment.	The proposal provided <b>insufficient information, and/or numerous inconsistencies</b> . Therefore a fair evaluation cannot be conducted. As such this is considered a high risk investment.

**Table 8: Scorecard for the NEP Funding Instrument**

Criterion	Details	Weight	Poor / Non-Compliant	Unsatisfactory	Satisfactory	Good	Excellent	Source Document/ part of the application
			0	1	2	3	4	
<b>Scientific Merit 35 %</b>	Scientific/technical excellence of the current and proposed research activities.	10%						Online Application form: <ul style="list-style-type: none"> <li>• Description of Equipment</li> <li>• Impact of Equipment</li> <li>• Proposed Research Project</li> </ul>
	Alignment of scientific activities with the capabilities of the proposed equipment.	5%						Online Application form: <ul style="list-style-type: none"> <li>• Description &amp; Classification of Equipment</li> <li>• Impact of Equipment</li> <li>• Proposed Research Project</li> </ul>
	Impact on: <ul style="list-style-type: none"> <li>• National priorities</li> <li>• Societal/Economic impact</li> </ul>	10%						Online Application form: <ul style="list-style-type: none"> <li>• Proposed Research Project</li> <li>• Impact of Equipment and Societal/Economic impact</li> </ul>
	PI track record: research productivity of applicant and co-applicant if applicable (specific references: 5-10 years)	10%						Online Application form: CV Section – <ul style="list-style-type: none"> <li>• Books</li> <li>• Chapters in books</li> <li>• Journal articles</li> <li>• Conference proceedings</li> <li>• Patents</li> </ul>
<b>Management Plan 25%</b>	Appropriate building infrastructure to house equipment, required services and utilities, alternate power supply and safety and security are addressed.	5%						Online Application form: Equipment Management Plan – <ul style="list-style-type: none"> <li>• Building infrastructure to house the</li> </ul>

Criterion	Details	Weight	Poor / Non-Compliant	Unsatisfactory	Satisfactory	Good	Excellent	Source Document/ part of the application
								<ul style="list-style-type: none"> <li>equipment</li> <li>Required services and utilities</li> <li>Safety and Security and alternate Power Supply</li> </ul>
	Ability of applicant (and co-applicant if applicable) to manage the equipment based on their experience.	5%						Online Application form: <ul style="list-style-type: none"> <li>Equipment Management Plan</li> <li>Publications Emanating from Similar Equipment</li> </ul>
	Appropriate insurance arrangements, maintenance and repair	5%						Online Application form:           Equipment Management Plan – <ul style="list-style-type: none"> <li>Insurance Arrangement</li> <li>Maintenance and Repairs</li> </ul>
	Appropriate technical staff for operational responsibility, training and accessibility	5%						Online Application form:           Equipment Management Plan – <ul style="list-style-type: none"> <li>Operational Responsibility</li> <li>Training and Accessibility</li> <li>Technical Skills Development</li> <li>Mentoring Staff Members</li> </ul>
	Operational costs adequately addressed	5%						Online Application form:           Equipment Management Plan –           Operational Costs

Criterion	Details	Weight	Poor / Non-Compliant	Unsatisfactory	Satisfactory	Good	Excellent	Source Document/ part of the application
<b>Human Resource Development</b> 30%	<b>Applicant and co-applicant track record in HCD: in last 5 – 10 years</b>							Online Application form: Track record - CV: Student Supervision record and staff development record
	<i>Staff Development</i>	3%						CV: Staff development record
	<i>Masters, Doctoral and Postdocs</i>	10%						CV: Student supervision record
	<i>South African Black and Female students trained by the applicant (and co-applicant, if applicable)</i>	10%						CV: Student supervision record
	<b>Feasibility of HCD and training plan</b>							Online Application form: Track record
	<i>Staff Development</i>	3%						Online Application form: Management plan – <ul style="list-style-type: none"> <li>• Envisaged staff development</li> <li>• Skills development</li> <li>• Succession planning</li> <li>• Training and accessibility</li> </ul>
	<i>Mentoring emerging researchers from HDIs</i>	4%						Online Application form: Management plan - <ul style="list-style-type: none"> <li>• Succession planning</li> <li>• Training and accessibility</li> </ul>

Criterion	Details	Weight	Poor / Non-Compliant	Unsatisfactory	Satisfactory	Good	Excellent	Source Document/ part of the application
<b>Collaboration and Access to equipment 10 %</b>	<b>Feasibility of collaborations (collaborations and co-users (current and proposed))</b>							Online Application form: Management plan – <ul style="list-style-type: none"> <li>• Co-users/Collaborators</li> <li>• Proposed Research Collaborations</li> <li>• Current and Envisaged Collaborations</li> <li>• Succession planning</li> <li>• Training and accessibility</li> </ul>
	<i>Intra-institutional</i>	2%						
	<i>Regional and National</i>	3%						
	<i>Private sector</i>	2%						
	<i>International</i>	3%						

## 16. Funding Recommendations

The peer review panels, based on the afore-mentioned evaluation criteria, will review proposals submitted by the applicant and based on the discussions the peer reviewers will make overall recommendations that will be categorised as follows:

Recommended for funding	Conditionally recommended for funding	Revise and re-submit for re-review	Not recommended for funding
The proposal does not have any gaps or weaknesses apart from minor changes (e.g. to the management plan that may be addressed without requiring any further peer review).	The proposal meets all the necessary requirements however, there are some minor issues that should be addressed by the institution before an award is made.	The proposal contains some gaps and issues which must be addressed. The panel recommends that the application be revised and resubmitted to the NRF for re-review before an award may be made.	The proposal contains numerous inconsistencies and gaps which renders it non-fundable.

### Note:

A number of applications may be recommended in the first two categories but may not be funded for a variety of reasons, including but not limited to:

- The application is considered a high risk;
- The application does not comply with all, or some, of the Funding Instrument objectives;
- The funding instrument budget is insufficient to fund the short-listed applications; or
- The transformational objectives, with regard to institutional spread and grantholder demographics, need to be met in accordance with ministerial directives.

## 17. Grants Administration

Grants are paid to the organisation where the grantholder is employed. The release of NRF funds for payment will be made according to the normal granting rules used by the NRF. The grant will be awarded over a period of two (2) years, that is, 80% of the grant will be released within the first year upon receipt of the following documentation:

- (i) The signed Conditions of Grant (CoG), which declares the institutional commitment towards addressing the additional requirements for installing and maintaining the equipment, including but not limited to the requirements below:
- (ii) Management Plan, approved by the DVC: Research and the CFO, which describes the institution's commitment towards addressing the requirements for installing and maintaining the equipment. The management plan must include:
  - The physical infrastructure for housing the equipment;
  - Appointment of appropriately skilled staff to maintain and operate the equipment; training of operators and technicians by the supplier of the equipment, as well as ensuring that provision is made for them to access training abroad (the Equipment Related Travel and Training Grants Programme that is managed by HICD at the NRF is geared towards such needs);
  - Five (5) year service and maintenance contracts; and
  - Sustainability, **i.e. a non-profit financial model is in place to recover the costs of operating the equipment and that the fees for usage, do not prohibit researchers from the public research institutions from accessing the equipment.**
- (v) The outcome of the tender process, if applicable;
- (vi) Information for uploading onto the National Research Equipment Database at the following URL, <http://eqdb.nrf.ac.za>;
- (vii) A Project Schedule/Gantt Chart; and
- (viii) Pro Forma Invoice(s) from the supplier.

These documents are subject to approval by the NRF. The balance of the grant (20%) will be released for payment within the second year of funding **or** immediately upon receipt of the following documentation:

- (i) A final Tax Invoice;
- (ii) Updated information for uploading onto the National Equipment Database (where applicable); and
- (iii) An official written notification, signed by the grantholder and the DA, of the equipment having been installed and working satisfactorily.

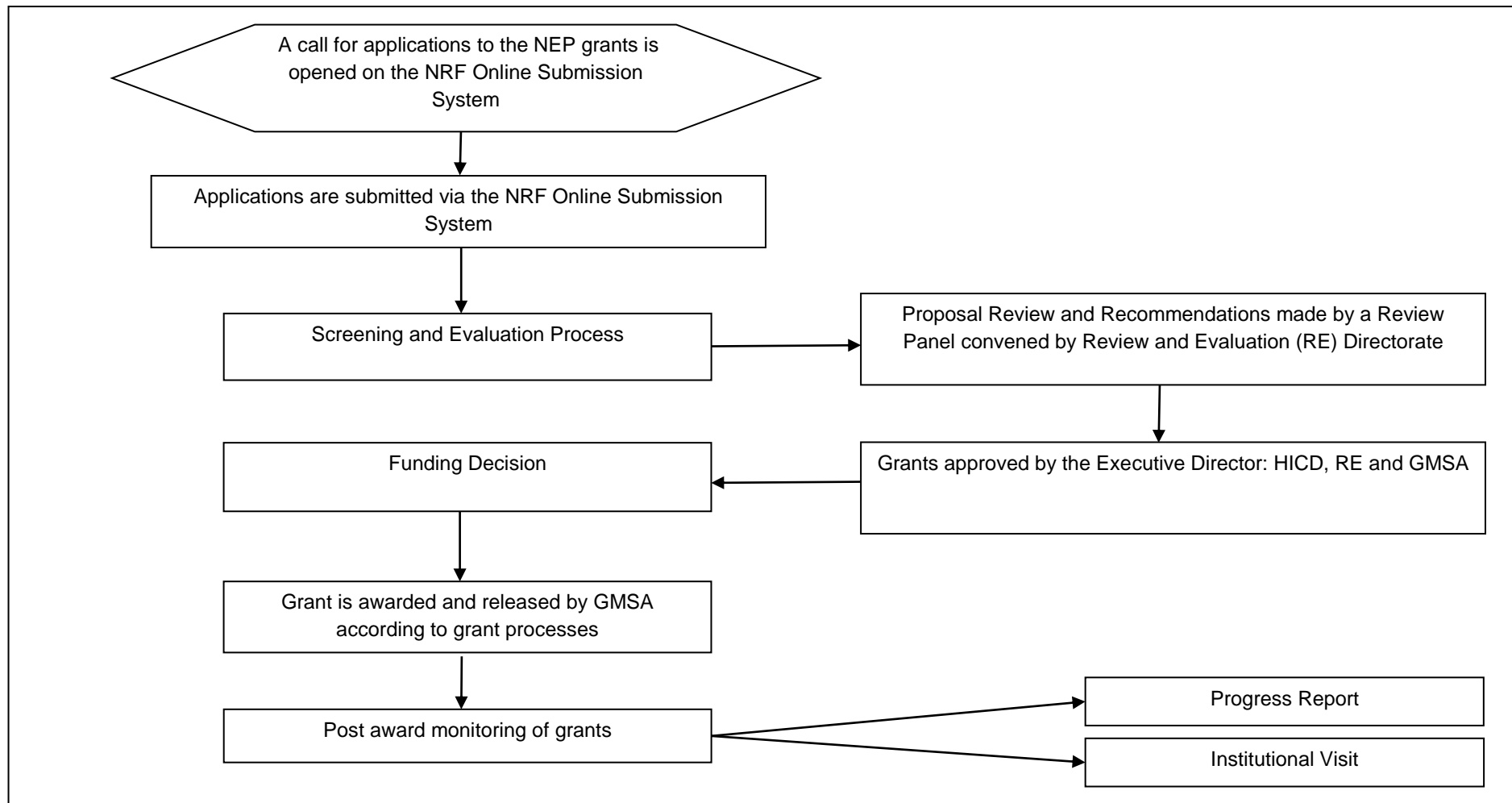
## 18. Grantholder Responsibilities

### 18.1 Reporting

All grantees must submit a PR **from the date of grant award to five (5) years post the commissioning** of the equipment. The PR will be based on an **electronic online template and a separate user and output tool**, the link for the tool will be embedded in the online template on Equipment Users section. The following information will be requested in the PR:

- Type, name of equipment, supplier and details pertaining the installation of the equipment and how the equipment was used for research by the user;
- Number of Users: This includes the number of Honours, Masters and Doctoral students; Postdoctoral Fellows; Technicians; Staff; Grantholder; Collaborators; and Researchers, from both the private and academic sectors (local and international), that utilised the equipment. Details to be provided include the names and demographics of the user, ID number / Student number / Staff number, Department, Citizenship, as well as Institution and Country;
- Total amount of funds leveraged for the duration of the project, from different types of sources including financials over the past year;
- Publications and outputs produced namely, Books, Book chapters, Articles (peer-reviewed and non-peer-reviewed), Peer-reviewed conference outputs and Technical reports;
- Training of technical staff on the operational, maintenance and diagnostic purposes;
- Training workshops undertaken;
- Collaborative initiatives with Historically Disadvantaged Institutions (HDIs), and other regional players in the same field of research;
- Number of active research collaborators who use equipment;
- Number of collaborative projects associated with the equipment;
- Research and knowledge and/or innovation outputs;
- A brief narrative describing how the equipment impacted the advancement of national priorities and describe the research highlights;
- Science communication or engagement that has taken place during the reporting period; and
- Co-users need to report on actual usage and research outputs achieved.

The NRF will also conduct annual institutional site visits to ensure that the research equipment is being properly maintained, well-utilised and that postgraduate students and staff members are being trained to understand and operate the state-of-the-art research equipment.



**Figure 1: Application Process Flow Diagram for the NEP funding instrument**

## **19. General**

### **19.1 Intellectual Property Rights**

The intellectual capital generated by NRF-funded research must be appropriately protected and exploited for the benefit of South Africa. This condition should not interfere with the Intellectual Property Rights arrangements already made on condition that the majority of the benefits arising from the intellectual capital accrue to South Africa and its citizens. This condition is aligned with the *Intellectual Property Rights Act*<sup>8</sup> which will override this condition of grant.

### **19.2 Ethical Clearance**

It is the responsibility of the grantholder, in conjunction with the institution, to ensure that all research activities carried out in or outside South Africa comply with the laws and regulations of South Africa and/or the foreign country in which the research activities are conducted. These include all human and animal subjects, copyright and intellectual property protection, and other regulations or laws, as appropriate. A research ethics committee must review and approve the ethical and academic rigor of all research prior to the commencement of the research and acceptance of the grant. The awarded amount will not be released for payment if a copy of the required ethical clearance certificate, as indicated in the application, is not attached to the Conditions of Grant.

Please also refer to the “Statement on Ethical Research and Scholarly Publishing Practices” on the NRF website at <https://www.nrf.ac.za/media-room/news/statement-ethical-research-and-scholarly-publishing-practices>.

### **19.3 Access to Data**

The data generated from the proposed research must become available to other researchers working in the same field. Therefore, it is important that the data is provided to domain specific databases or in their absence, to the South African Data Archive (SADA).

### **19.4 Data Storage, Usage and Dissemination**

Should the outputs of the research project not be protected, conscious plans need to be made to make the data available to the larger research community through existing databases, some of which can be specific to the research field and others to

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<sup>8</sup> Republic of South Africa, 2008, *Intellectual property rights from publicly financed research and development*. Act 51 of 2008. Government Gazette, 22 Dec 2008. Vol 522, no 31745, RSA.

generic research fields. Furthermore, measures need to be undertaken to ensure effective data management and integrity.

### **19.5 Change of Leadership**

In the event of the grantholder leaving the Institution for whatever reason, the NRF must be informed, where possible, within 30 days prior to the departure of the existing grantholder from the Institution. The institution must inform the NRF of alternate arrangements for the continued sustainable management of the research equipment, use of the equipment and alternate leadership.

A new grantholder must be nominated by the institution for approval by the NRF. Following NRF approval, the new grantholder will be required to sign a revised CoG document and submit a CV as well as a revised management plan. The awarded equipment will remain with the Institution and will not move with the current grantholder. Funding will only continue if the NRF is satisfied that the equipment will be managed at the same level under the proposed alternate leadership.

## **20. Contacts**

***Programme Related enquiries:*** Human and Infrastructure Capacity Development (HICD):

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***Grant related enquiries:*** Grant Management Systems and Administration (GMSA):

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**or Ms Vireshni Moonsamy**

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## Annexure 1: NEP Project Schedule/Gantt Chart Template

In accordance with good corporate governance to mitigate potential risks, it is required that each applicant submits a timeline schedule as part of the application form. The scheduling should specify the milestones and deliverables associated with the requisite infrastructure for housing the equipment and the commissioning<sup>9</sup> the equipment, that was detailed and explained in the Equipment Management Plan. The following key issues must be addressed:

- Cost Management (charge out rates for the different types of users)
- Timelines
- Training (technicians, operators, researchers and students);
- Human Resource requirements
- Infrastructure
- Equipment installation and sign-off

The **Table 9** below provides headings to information that should be provided and expanded on by the applicant, preferably using MS Project. Please note that one-line responses to the headings are unacceptable as this should be a comprehensive plan that addresses the aspects below in detail and this should be in support of the information provided in the Equipment Management Plan.

**Table 9 – Gantt chart template**

Criterion	Description/Explanation	Duration	
		Begin	End
<b>Administration</b>			
<ul style="list-style-type: none"> <li>• NRF grant award (management plan, claiming of funds, updating CV, submitting PRs promptly)</li> <li>• Access additional financial resources if needed</li> <li>• Finalise building architectural and project plans</li> <li>• Initiate and complete supply chain management processes, including tenders</li> <li>• Insurance</li> <li>• Required services and utilities (e.g. water and electricity supply) including mandatory safety requirements if needed</li> <li>• Plans to attract other users and encourage access</li> </ul>			
<b>Equipment</b>			
<ul style="list-style-type: none"> <li>• Testing of the capabilities of similar equipment, ideally from three different suppliers as per grant rules</li> </ul>			

<sup>9</sup> Commissioning refers to the point at which the equipment has been successfully installed, all pre-tests have been completed, and has been signed off by the supplier and grantholder in terms of technical capabilities and specifications.

Criterion	Description/Explanation	Duration	
		Begin	End
<ul style="list-style-type: none"> <li>• Identification of the preferred supplier</li> <li>• Final detail specification of the equipment to be procured, designed or upgraded</li> <li>• Manufacturing of the equipment by the supplier</li> <li>• Installation of the equipment</li> <li>• Pre-testing of the equipment</li> <li>• Commissioning and final sign off of the equipment</li> <li>• Acquiring software licences for the equipment at the stage of final sign off of the equipment</li> <li>• Other</li> </ul>			
<b>Infrastructure</b>			
<ul style="list-style-type: none"> <li>• Renovate an existing building or construct a new building to house the equipment according to manufacturer's specifications</li> <li>• Final check and approval of building specifications by supplier technician/engineer</li> <li>• Safety and security measures in place</li> <li>• Alternate energy supply</li> <li>• IT Infrastructure</li> <li>• Other</li> </ul>			
<b>Training</b>			
<ul style="list-style-type: none"> <li>• Appointment of operator/technician</li> <li>• Training for PI and staff members (operators and technicians)</li> <li>• Training workshops for students and other users</li> <li>• Other</li> </ul>			
<b>Maintenance</b>			
<ul style="list-style-type: none"> <li>• Preventative maintenance schedule defined with supplier of equipment.</li> <li>• On-going maintenance and support</li> <li>• Replacement and upgrade of equipment (or its components)</li> <li>• Other</li> </ul>			
<b>Access</b>			
<ul style="list-style-type: none"> <li>• Proposed usage by the following users: <ul style="list-style-type: none"> <li>○ Own research activities</li> <li>○ Researchers from the same institution</li> <li>○ Researchers from HDIs</li> <li>○ Academic Users from public research institutions</li> <li>○ Private Sector</li> </ul> </li> </ul>			
<ul style="list-style-type: none"> <li>• Costing model for accessing equipment <ul style="list-style-type: none"> <li>○ Researchers from the same institution</li> <li>○ Researchers from HDIs</li> <li>○ Academic Users from public research institutions</li> <li>○ Private Sector</li> </ul> </li> </ul>			
<b>Other</b>			