

# CALL FOR PROPOSALS

## New Earth Observation Frontiers Enterprise Innovation Support Fund (NEOFrontiersEISF) - 2<sup>nd</sup> Cohort

### 1. Introduction

The Department of Science, Technology and Innovation has been instrumental in promoting research capacity and knowledge production in the Earth Observation (EO) sector through its participation in initiatives such as the Group on Earth Observation (GEO), which led to the establishment of the South African Group on Earth Observation (SAGEO). Hence, the New Earth Observation Frontiers (NEOFrontiers) programme was developed by the South African Space Agency (SANSA) to support the research and innovation in the EO sector.

The NEOFrontiers funding opportunity is a collaborative yet competitive programme for developing capabilities around new products, services and value-added components. This programme seeks to stimulate collaboration, cooperation, and innovation in the EO community, both public and private. The NEOFrontiers has been managed by the National Research Foundation (NRF) since 2020 and is currently supporting innovative projects that are developing technologies at universities and Science Councils that will benefit the EO sector.

Despite the support for the innovation and technology that has been provided over the years, the uptake of EO solutions by the government and private sector in South Africa is limited to a few departments and companies with remote sensing or related data science expertise. In addition, the limited number of EO downstream companies may be significantly attributed to the slow or update of EO in government and private industry. Increasing the uptake of EO technologies in South Africa requires South African companies in this sector to improve their innovation and technology development capabilities.

This document outlines how startups and small medium and micro enterprises (SMMEs) will be supported through the NEOFrontiers Enterprise Innovation Support (NEOFrontiersEIS) initiative which is intended to stimulate coopetition (coordination, collaboration, cooperation, and competitiveness) between South African companies; and promote private sector, higher education, science council and government partnerships that will lead to the development of innovations, technologies, services and products in the EO sector.





## 2. Strategic Context

Through a statutory mandate embedded in the SANSA Act 36 of 2008, the SANSA coordinates and integrates space science and technology programmes, conducts long-term research and implementation of space-related innovations in South Africa. The agency ensures the supply of essential space-based EO data and products to support South Africa's policy, decision-making, economic growth and sustainable development. The NEOFrontiers, which is an initiative of the SANSA, is an instrument that enables capacity building and the development of innovative products and services through research and collaboration within the EO community. The SANSA national strategies and policy briefs can be found here: <https://www.sansa.org.za/annual-reports-documents/>.

The National Research Foundation (NRF) was established under the National Research Foundation Act [Act No.23 of 1998] to support, promote and advancing research and human capacity development, through funding and the provision of the necessary research infrastructure, to facilitate the creation of knowledge, innovation and development in all fields of science and technology, including humanities, social sciences and indigenous knowledge.

## 3. Description Of The NEOFrontiers Enterprise Innovation Support Initiative

The main objective of the NEOFrontiers Enterprise Innovation Support (NEOFrontiersEIS) initiative is to provide innovation support to startups, SMMEs and organisations that will transform Earth Observation based ideas to products and/or services to increase the competitiveness of the South African EO sector and benefit the South African society.

### 3.1 Types of support

The support that will be provided to startups and SMMEs will depend on their specific needs, this will include technology development support, business development, skills development and sourcing of expertise, and provision of equipment where necessary.

- i. **Technology development expertise:** expertise to undertake technology and product development may be sourced from researchers in the academic and/or consultants in private sector locally and internationally.
- ii. **Business skills development:** this will be done in partnership with the NEOFrontiersEIS implementation partner, TuksNovation, where training and support in business skills such as financial management and marketing will be provided to the enterprises that require those services. This will be in addition to links that will be established with other innovation players to support the development of technologies to products and services and commercialization of the developed innovative products.
- iii. **Equipment:** this initiative is also meant to contribute to infrastructure development for the EO, hence, a portion of the grant, not more than R50 000.00, may be allocated to fund equipment which will improve the technical capabilities and innovation capacity and strengthen the partnerships with the private sector.



### 3.2 Implementation

The projects will be implemented at the premises of the participating companies or at partnering institutions (where applicable). The lead company will be accountable for reporting on the activities undertaken at its premises. The approved projects will be supported for a period of 6 to 12 months. Thereafter, the developed technologies or products, if funded, would be supported through other innovation funding partners such as TIA and Innovation Hub.

### 3.3. Outputs

The expected outputs from the supported projects will include prototypes, in some cases products and may also include trained personnel on technical skills that are related to the developed technologies

### 3.4. Funding

The grant that will be awarded to the funded enterprises will be through the incubation partner. Each project will be funded up to a **R1 million** for the duration of the project and the awarded funding will be restricted to the EO research and innovation related activities indicated below.

- Development of a technology, prototype or product
- Skills development
- Business support and advisory
- Piloting and conducting of field studies

The following activities will not be funded:

- Salary contributions to team members of the funded enterprise
- Working capital and company related costs
- Basic research
- Any activities that are not related to the approved project

The funds will be paid upon acceptance and signing of the conditions of award or agreement by the applicant. Payments will be made upon achievement of each milestone.

The applicants must ensure that the budgeted items are aligned to the innovation and technology development activities. Recommendation to change or adjust the budget may be made by the proposal assessment committee where necessary.

### 3.5 Project partnerships

Even though applications from individual entities will be supported, a consortium approach where South African public university and/or Science Council partners with an SMME registered in South African, by South Africans, is encouraged. The roles of the different entities in the partnership are highlighted below **(NB: Not compulsory)**.





- i. SMMEs will drive product development and commercialization of technologies and products that are developed with various partners. These SMMEs should have some form of technical capacity related to the technology or product they want to develop.
- ii. Research institutions/Science Councils will provide technology training, access to equipment, facilities, and expertise in the development of prototypes.
- iii. Academic institutions will train personnel in various technologies and will work with other entities in formulating solutions required by enterprises.

A draft consortium agreement must form part of the documents that will be submitted with the proposal and should be congruent with the roles, responsibilities and budget indicated in the proposal. The agreement must be drafted in a spirit of equity and must have details regarding rights (such as copyright, publications, intellectual property etc. of products or other developments in the project), knowledge utilisation, as well as affairs such as payments, progress, final reports, and confidentiality. The agreement furthermore details conditions and arrangements for the governance of the consortium (to the extent that it gives sufficient guarantee for effective collaboration), finances, and if applicable, basic knowledge to be contributed, liability, disputes, and information sharing within the consortium. The project leader will be expected to submit a finalised consortia agreement within 3 months after the award has been allocated.

### 3.6 Reporting

A milestone report that will be submitted by the funded enterprises will be required after the achievement of each milestone on activities that will be performed by the funded enterprises. This report will be the requirement for the payment of subsequent milestones. A reporting template will be provided to the funded enterprises.

## 4. Specific Call Details

The section below provides more details on the thematic areas and call related information.

### 4.1 Sector Focus

The solution or proposals to be considered should focus on novel applications of EO, big data analytics and artificial intelligence (AI) including machine learning in the following areas but not limited to:

Applications and product development in banking, insurance, mining, health innovation, and community-based services. Cross cutting service areas/decision support tools to support the circular economy; blue economy; security and defence; food security/precision agriculture; disaster risk reduction; and early warning systems.

The focus of this initiative will be on funding projects that develop downstream EO products and services. The proposals should focus on developing new solutions, decision-support tools or new products and services using advanced machine learning techniques.



Proposals that do not have explicit earth observation-based applications or solutions with clear image processing components and specifications of images to be used will not be considered.

## 4.2 Eligibility criteria

### Type of applicants

The following entities are eligible to apply. Enterprises that prefer to partner with experts at academic institutions will be assisted by the NRF to find relevant partners.

- i. Earth Observation Startups
- ii. SMMEs in the EO sector in good standing which have been in existence for at least a year.
- iii. Non-profit companies/organizations that develop solutions related to technologies in the EO sector.
- iv. Must be a South African citizen with a Small Micro and Medium Enterprise registered with the Companies and Intellectual Property Commission (CIPC)
- v. Must have a valid Tax clearance certificate
- vi. Must have a valid BBBEE certificate

### Technical expertise

- Lead applicant should have at least master's degree in specializing in remote sensing or geospatial sciences and more than 5 years working experience in remote sensing field.
- At least 50% of the team should have relevant qualifications and experience in remote sensing and geospatial sciences.
- Lead applicants with Master's degree in remote sensing or geospatial sciences with less than 5 year's experience should partner with a university or science council with relevant expertise
- Lead applicant or partner should demonstrate proficiency image processing and analysis using advanced image processing techniques relevant to the proposed project. Links to related work or research should be included.

## 4.3 Proposal requirements

The application template that will be completed by the applicant will be accessible from the implementation partner TucsNovation website. The proposal must clearly present and address the following aspects.

- i. The application must be submitted with the CV of the lead applicant indicating the experience and expertise of the lead applicant related to the proposed project. Proposed rationale, approaches and methodology for technology development; Work plans must demonstrate logistical, technical and financial feasibility;
- ii. How the research and innovation outcomes will benefit the company;
- iii. The roles, deliverables and budget allocation for each partner (if applicable) and work package;

- iv. A draft partnership agreement with all the key partners that will be involved in the activities project, where applicable.

#### 4.4 Proposal assessment

A committee will be formed to assess the submitted proposals. This committee will comprise experts in the EO sector, and business managers.

- i. The proposals will first be screened by the project coordinator to assess if they meet the eligibility criteria.
- ii. The assessment committee will assess the proposals against the pre-determined criteria
- iii. The approval committee will take decisions on projects to be awarded funding using the recommendations that were made by the assessment committee.

### 5. Management Of The Neofrontiers Enterprise Innovation Support Initiative

The NRF will lead the management of this initiative in partnership with the implementing agent, Tuksnovation incubator. The involvement of the Tuksnovation will ensure accountability by the funded enterprises is also meant to reduce costs and complexities associated with small enterprises. The funded enterprise will also benefit from the business support provided by TuksNovation.

SANSA will provide funding and management oversight of this funding instrument in line with the governance outlined in the contract between SANSA and the NRF.

### 6. Funding Partners

SANSA and the NRF will partner with other organisations such as the TuksNovation incubators in supporting the funded enterprises.

- i. SANSA funding will be allocated to administrative support, salaries for technical personnel and sourcing of equipment and project materials.
- ii. The TIA's technology station may provide technical support to the research groups through the relevant expertise vested at some universities (where applicable).
- iii. Tuksnovation incubator will provide business skills training and project management support. An incubator with experience of supporting a similar sector will be piloted.
- iv. Innovation Hub will provide project oversight role that includes assessment of proposals and evaluation of performance for individual projects.



## 7. Contracting Implementing Partners

The NRF currently has a contract with SANSA to implement the activities of the NEOFrontiers. The implementation of this initiative will be aligned to the deliverables that are stipulated in this contractual agreement, including financial management obligations. Due to the nature of this initiative, a financial management partnership will be entered into by the NRF and a TuksNovation incubator that has experience in supporting enterprises with innovation and technology support. This entity will be required to report twice a year on the progress achieved by the funded enterprises. Funding to be allocated to enterprises will be transferred on a quarterly basis in-line with the deliverables that will be stipulated in the contractual agreement between the NRF and TuksNovation.

## 8. Intellectual Property

The intellectual property that will emanate from the projects that will be supported through the SMME innovation support initiative shall be governed in accordance with the Intellectual Property Rights from Publicly Financed Research and Development Act, 2008 (Act No. 51 of 2008).



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