technology innovation
AGENCY

Funding Application General Guidelines

an initiative of the Department of Science and Technology

www.tia.org.za

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1 Introduction

This document provides guidelines on applying for funding to the Technology Innovation Agency (TIA). It provides an overview of the TIA's objectives, funding criteria, activities excluded from funding, the application process, who may apply, and TIA's Funds. It furthermore provides detailed considerations, questions and prompts for Applicants in completing an application to the TIA, using the TIA Funding Application Template, and these guidelines must therefore be read and fully understood in completing such application.

2 TIA objectives

The TIA was established in terms of the TIA Act, 2008 (Act No. 26 of 2008), with the objective of "*Stimulating and intensifying technological innovation in order to improve economic growth and the quality of life of all South Africans by developing and exploiting technological innovations*". TIA's core business objective is to support the development and commercialisation of competitive technology-based services and products.

To achieve its objective TIA will provide and mobilise both financial and non-financial support across many technology areas in various sectors of the economy. Financial support is provided through the TIA Funds which form the products that TIA offers.

3 Funding Criteria

The TIA Funds will provide financial support to proposals based on merit. All promising applications will be evaluated according to:

- The current stage in the innovation chain and the planned path for innovation.
- The sustainable competitiveness of the product or service in the industry for targeted markets.
- Alignment with TIA focus sectors, national policy objectives, and national transformation objectives including geographical presence.
- The potential intensity of social and economic impact including GDP growth and increased taxation revenue, meaningful job creation, increased and value added exports, increased competitiveness of industrial sectors, increase in highly skilled capacity and knowledge base, lowered net intellectual property cost, increased capabilities for technology innovation, solutions to national needs and improvement in quality of life, and responsiveness to social and developmental needs including poverty alleviation.
- The technical and commercial viability of the plan.
- The ability of the team to implement the plan, including the commercial strength of management and the existence of sound management systems.
- The extent of partnership providing funding and other resources.
- The potential for BBBEE.
- Investment risk and expected outcomes relative to the TIA portfolio.
- Potential financial return.

In general, unless specifically stated in the TIA Fund mandates (see section 7 of these guidelines), all Applicants will be expected to make some level of financial contribution alongside the TIA.

Approval of applications is always subject to availability of funding.

4 Exclusions

The TIA reserves the right not to consider applications:

- That are incomplete.
- Where inadequate effort has been made to secure other funding for the application.
- Which seek to expand any of the following markets:
    - tobacco;
    - liquor;
    - recreational drugs;
    - gambling; or
    - sex trade.

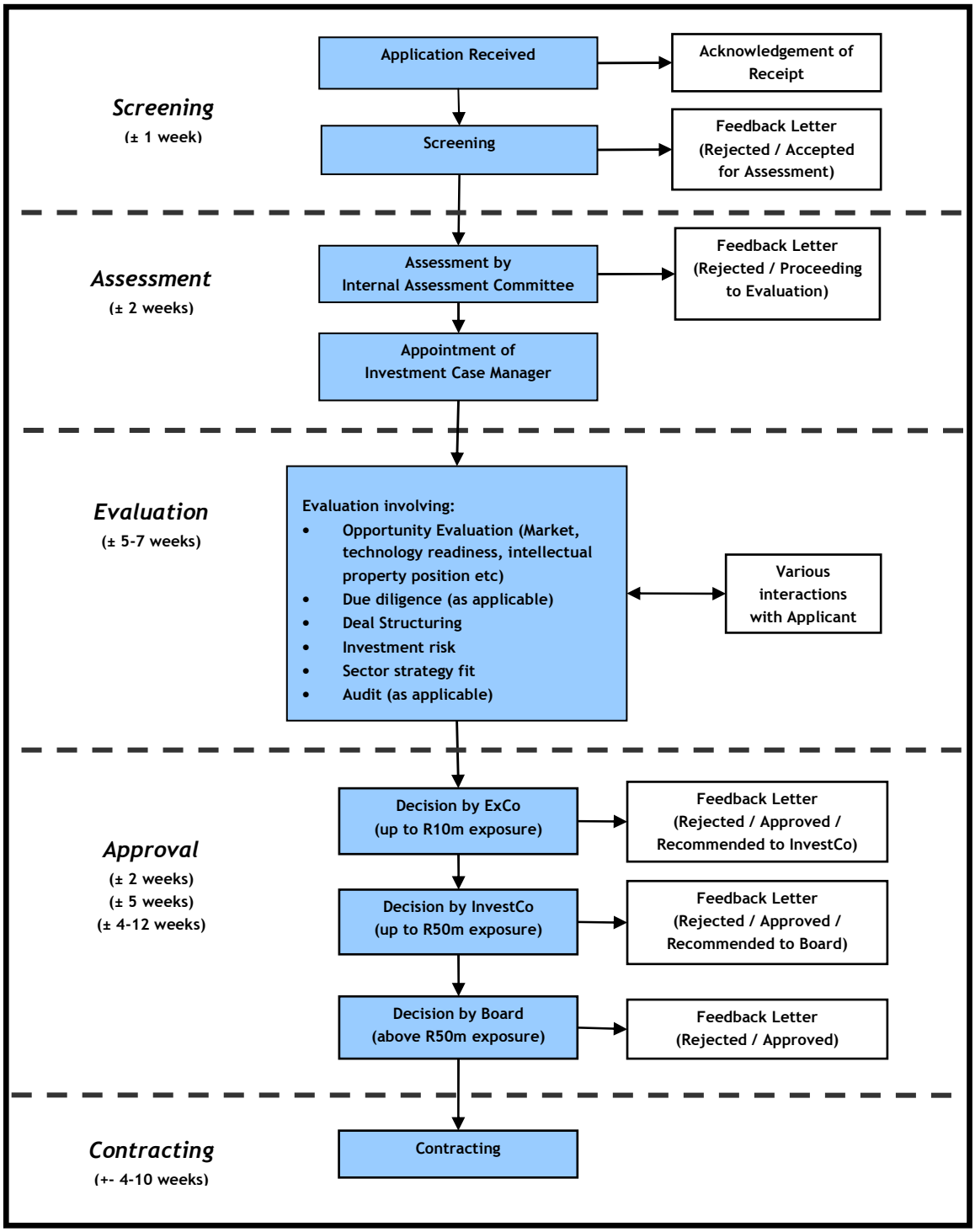
This list may be reviewed from time to time.

5 Application Process and Typical Timelines

Application to a TIA Fund involves the process depicted below, which provides indicative timelines for steps in the process.

The process is initiated on receipt of an application to a TIA Fund. Application screening involves checking the application in respect of the exclusion criteria (see section 4 of these guidelines), whereafter it is assessed by the Internal Assessment Committee against the funding criteria (see section 3 of these guidelines). For applications that progress to the evaluation stage, TIA will appoint an Investment Case Manager (ICM) who will be the primary contact point between the Applicant and the TIA, and who will assist in co-ordinating the evaluation activities and requests for information.

The TIA will always cite reasons for rejection, and where possible provide inputs on how an application may be improved.



The timelines indicated are what the TIA estimates and will endeavour to achieve, however these may vary depending on a number of factors, including:

- Complexity of the application, Consortium, deal structure etc.
- Availability of the Applicant/Consortium members during the evaluation process to engage with TIA at the site where funded activities will be undertaken, or as may be required
- Time it takes to obtain further information from the Applicant.

- Volumes of applications being processed at any one time, in relation to capacity within the TIA.

Applicants are urged to co-operate with the TIA during the application processing. Applications may be rejected if the information requested by the TIA is not supplied timeously.

6 Applicant type

The TIA will typically accept applications from one of the following:

- A South African registered company incorporated under the South African Companies Act.
- A publicly-funded research organisation (e.g. science council) or Higher Educational Institution (e.g. University).

Individuals/entrepreneurs may apply however funding will only be provided to a duly registered company, and in certain cases directly to the service provider. The TIA may consider applications from other types of Applicants under exceptional circumstances.

An Applicant is either a single party, or a Consortium. A Consortium is defined as a group of entities, which can include companies and publicly funded institutions. A distinction should be drawn between a Consortium member and a sub-contractor, as follows:

- A Consortium member is a partner in the technology innovation in that such member either contributes background intellectual property, and/or contributes to creation of intellectual property and in so doing contributes to the delivery of one or more milestones, and/or will share in some way in the economic or other benefits that may in due course be derived from successful commercialisation of the technology innovation.
- A sub-contractor is any party who is contracted by the Applicant/Consortium members, to perform a particular service and in so doing contributes to the delivery of one or more of the milestones, but apart from payment for direct services rendered, will not share in the benefits to be derived from the successful commercialisation of the technology innovation.

In the case of a Consortium, the application must be submitted by the lead Consortium member that will enter into the funding contract with the TIA, should the application be successful.

7 TIA Funds

The TIA's Funds comprise four Funds that span several stages of technology innovation, commencing with end stage research where there is already some evidence that the technology could work and ending with the need to capitalise the expansion of a successful venture. TIA will provide funding to a wide range of entities including public institutions such as Science Councils (SC) and Higher Education Institutions (HEI), Small, Medium and Microo sized Enterprises (SMMEs) and large private companies, as well as fledgling companies – all of whom are engaged in activities that fall within the technology innovation value chain.

TIA Funds are each tailored to enable meeting specific technology innovation investment funding needs. The mandates and broad investment parameters for each Fund are described in the following sections.

Industry Matching Fund

The Industry Matching Fund will invest in small, medium and large companies (where partnerships with small companies and HEI's and SC's will be incentivised) to drive technology innovations. Funding is typically provided as matched funding for a royalty or matching loans or preference shares. Key parameters of the Fund include:

- Matching requirements are 50%, with reductions to minimum 30% where companies partner in a Consortium with at least one HEI, and one SC and one SMME. Start-up companies (being companies that have traded for less than 3 years), that partner in a Consortium with publicly funded institutions and/or SMMEs will be required to provide at least 20% matching funding.
- In case of loan funding, repayment terms will be determined on a case-by-case basis taking into account cash flow projections. Interest will be charged at the prevailing prime rate, accrued monthly.
- In case of royalty investments, royalty levels will be determined on a case-by-case basis taking into account industry norms, returns to the TIA, need for further investment and cash flow projections.
- Preference share structures may be used for small companies.

Equity Fund

The Equity Fund will invest in fledgling companies driving technology innovations which do not have either the capital to match the TIA's investment or the track record and balance sheet to secure loan finance. Funding is typically provided for equity, or equity in combination with convertible preference shares.

Technology Development Fund

The Technology Development Fund will invest in a select number of high potential projects undertaken by institutions like SCs and HEIs for pre-competitive end stage research and technology development, where the TIA considers the merits of the projects to warrant support without necessarily partnering with industry, though preferable. At least 20% funding will be required to be contributed by the Applicant, and the financial instrument will typically be royalty.

Idea Development Fund

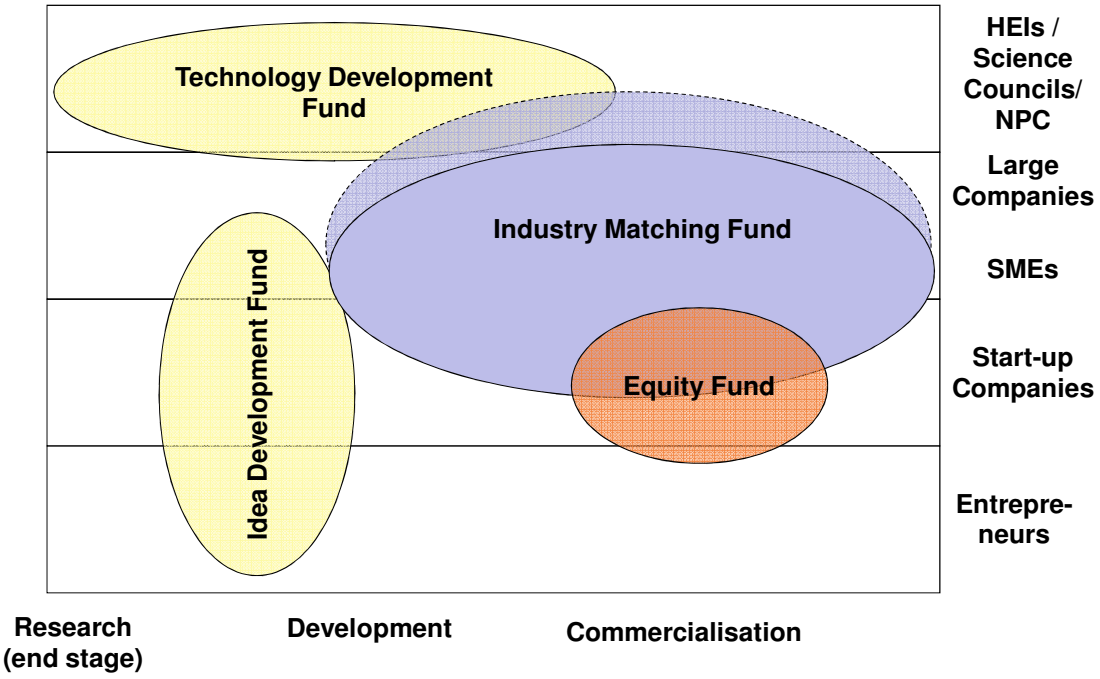
The Idea Development Fund will provide modest amounts of funding to entrepreneurs and small companies to assist with :

- patenting costs, technologies being incubated at any of the TIA's platforms or other infrastructure initiatives, to lower risk of starting companies, and/or
- enable development of a fundable proposal/business plan.

A maximum of R200,000 (two hundred thousand rands) will be provided per transaction, except for the funding of intellectual property registration and maintenance costs, where the allowable maximum is R500,000.00 (five hundred thousand rands) per transaction.

The diagram below depicts the TIA Funds in respect of stage in the innovation value chain, and type of applicant.

TIA INVESTMENT FUNDS



8 Fund Limits and Allowable Costs

The TIA will fund costs that it deems reasonable and required to move the technology forward towards successful innovation, determined on a case-by-case basis. Unless otherwise stated, the TIA Funds do not implement explicit minimum or maximum limits, however applications for high funding amounts will be subject scrutinised more closely in respect of the criteria for investment risk, possible co-investment and in respect of availability of funding.

9 Completing the Funding Application Template

Applications to the TIA for funding are to be submitted in accordance with the TIA Funding Applications Template ("template"), and detailed guidelines, questions and considerations for certain sections of the template provided as subsections herein. This must be read in conjunction with the template.

Completed applications are to be e-mailed to the address specified in a call for proposals, or if not in response to a specific call, then to investment@tia.org.za.

Each section in the template should be completed, unless otherwise indicated, either through direct response in the application, or by reference to another section or attachment.

Cover Page

For definition of Consortium and information on Applicant type, refer to section 6 of the guidelines, "Applicant Type" above.

Executive Summary

The executive summary must briefly and succinctly convey the essence of the proposed technology innovation and what the funding applied for will deliver, including:

- What is the Value Proposition:
  - The market need or customer problem addressed by the intended technology innovation?
  - The intended product/process/service and the underlying technology, how does it satisfy the market need, and to what extent is it new or innovative?
  - What is the competitive advantage of the product/process/service in relation to competitors/alternative approaches?
- What is the targeted market, and said market size?
- How will the innovation be taken to market?
- How will the business model to commercialise the technology be structured to allow for a profitable and sustainable business?
- What are the key objectives and activities for which funding is sought?
- What is the amount of funding requested, and when will all objectives be met?
- What are the most important national benefits to be derived from the technology innovation?
- What is the expected return on investment to the TIA?

Section 1.1 Description of Technology

Describe the technology that forms the basis of the proposed innovation, having regard to the following:

- Will the proposed technology lead to a new product, process and/or a service?
- What are the technological advantages (or improvements) that need to be highlighted?
- What evidence do you have to confirm the functionality and/or technical viability of your product/process/service?
- Whether the technology development is 'customer-driven' (specific customers request), 'market-driven' (identified gap in the market) or 'research/technology-driven' (technology developed then application chosen)?
- Is any required technology development to be out-sourced or to be undertaken in-house?

Section 1.2 Status of Development

Provide supporting information in respect of the selected stage of development of the technology, having regard to the following:

- Stage of product/process/service in its lifecycle (early, mature etc.)
- How close is the product/process/service to being market-ready? Provide a substantiated estimate of the projected time to market.
- Summarise the remaining high level steps that need to be taken before the product/process/service can enter the market? (Note, a detailed implementation plan is required in section 5 of the template).

Section 1.3.2 Existing Intellectual Property

Describe any existing intellectual property relevant to the proposed product/process/service to which the Applicant or Consortium have rights, including:

- Unregistered intellectual property such as copyright,

- Details of any registered intellectual property applied for or granted, to which the Applicant or members of the Consortium have rights, which relate to the proposed product/process/service offering, as an attachment or in the table provided.

Section 1.3.4 Freedom to Operate

Freedom to operate refers to the ability of the Applicant or Consortium to undertake the activities proposed without infringing the intellectual property rights of others. Outline the position of the proposed product/process/service having regard to the following:

- What is the likelihood that your product development would result in an infringement of other Intellectual Property?
- Attach any written legal opinion on freedom to operate, providing a summary below of who conducted the opinion, and the key outcomes/conclusions drawn.
- Where searches have been undertaken by the Applicant or Consortium, list the top five to ten (5-10) most relevant patents found that pertain to the proposed product/process/service offering, stating the source, in the table provided.

Section 2 Industry and Market Analysis

The sub-sections of the Industry and Market Analysis are intended to capture the analysis undertaken by the Applicant, which then informs the proposed strategy of taking the product/process/service to the market, which is captured in section 3 of the template.

Section 2.1 The Market

Describe the specific segment of the market and the environment in which the product/process/service will compete having regard to the following:

- Explain the customer need or the problem you have solved. (i.e. What is the gap in the market or what market demand your product, process or service satisfies).
- Explain the status and future expected dynamics of customer needs.
- Define the target market in detail, i.e. Who are the intended customers? Who will buy the product/process/service? Distinguish, if appropriate, between customers and actual end-users.
- Segment the target market into different groups with different market status (e.g. varying price-sensitivities) where appropriate.
- Estimate the size of your target market(s) - in volume terms (numbers of customers) and value terms (price x number of purchases per period).
- What are the international and local market trends (is this a growing/stagnant/declining market e.g. compound annual growth rate (CAGR) figures)?
- What are the market drivers and barriers to market growth? What other challenges does the market face? Which of these are particularly relevant to South Africa?
- What are the anticipated hurdles to market penetration locally and internationally? Can these be overcome?
- What percentage share of the target market does the company expect to achieve over time?

Section 2.2 Industry Analysis

Describe the industry value chain and positioning of the proposed product/process/service therein, having regard to the following:

- Outline the industry value chain applicable to your product/process/service: who is up-stream (raw materials/suppliers) and down-stream (distribution & sales)? Represent diagrammatically if possible. Provide names of existing companies along the industry value chain.
- Who are the most important other players (e.g. partners, competitors, regulatory bodies) in this market?
- What are current trends and important recent developments?
- Explain clearly where the entity commercialising the product/process/service will be positioned and operating within this value chain, especially with regards to:
  - Suppliers;
  - Manufacturers: Competing manufacturers or manufacturers you can outsource to, depending on the chosen business model;
  - Distributors: Are there distributors for the proposed product/process/service? Is it possible to establish a relationship with them? Will the proposed product/process/service be exported? How and with who?
- What are the potential barriers to entry in the industry, and/or barriers to growth?
- Are there any regulatory or accreditation or any other standards that you need to adhere to?

Section 2.3 Customer Analysis

Provide an analysis of customer needs having regard to the following:

- What are the customer needs, desires and drivers? (i.e. What factors drive purchase decisions?)
- Who are the likely immediate and/or major customers?
- Why will customers buy your product in preference to what they are buying or using already? (i.e. Any particular unmet customer needs that the product/process/service can address? What is the competitive advantage your offering holds or promises to customers? What is the additional value that the new product/process/service brings, from the customer's perspective?)
- Provide independently verifiable evidence of why customers want your product/process/service.

Section 2.4 Competitor Analysis

Provide an assessment of the competitive landscape, having regard to the following:

- Who is the market leader and why?
- What are the competitor products and what are their relative market shares?
- What are the most compelling strengths and weaknesses of competitors? Where are the competitors most vulnerable and how the product/process/service could take advantage?

Section 3 Proposed Route-to-Market/Commercial Strategy

The sub-sections of the Proposed Commercial Strategy are aimed at capturing the chosen route-to-market approach, basis the analysis provided in section 2 of the template. This includes the operational business model, immediately targeted market, and marketing mix that will support successful commercialisation. Where the stage of development of the technology is advanced, and the product/process/service is ready to be introduced into the market, a more comprehensive response is required.

Section 3.1 Business Model

Explain the operations of the business entity (be it new company or new business activity within an existing company) that will commercialise the product/process/service enabling a profitable and sustainable business. Please consider the following:

- Will the technology be licensed or directly commercialised?
- Revenue model: How will the business derive its revenues having regard to expected relationships with customers? Will it have multiple revenue stream options?
- What are the key activities of the business (i.e. what will it be doing; what won't it be doing) ? For example:
  - Manufacture: in-house or outsource this step?
  - Testing: in-house or outsourced?
  - Delivery: How will the product/process/service be physically delivered?
  - Ongoing Research and Development: in-house or outsourced?
- In light of the above:
  - What are the most important ('core') competencies?
  - What key resources are required (physical, intellectual, human, financial) ?
  - Describe any strategic alliances/partnerships that will support the business model, and indicate the role of each, as well as the status of discussions held, attaching any relevant letters of interest, memoranda of understanding or agreements.
- Cost structure: What are the most important costs inherent in the business model? Which resources and activities are the most expensive?
- What factors are critical to ensuring success of the new business venture?
- What are the strengths and weaknesses of the business model, and similarly what are the opportunities and threats? (SWOT analysis)

In relation to all/any of the aspects above: How difficult will it be for others to imitate the chosen business model, especially those aspects which provide competitive advantage? What impact would this have?

Section 3.2 Target Market

Explain the strategy for entering the target market having regard to the following:

- In light of the market, industry, customer and competitive advantage analyses, what is the envisaged market entry strategy?
- Identify the immediately addressable target market (i.e. Is there a specific market segment being prioritised as the first point of entry onto the market and if so justify why it is selected?),
- Who are the likely early adopters of the product/process/service and what features/performance parameters would they be prepared to pay for? Attach letters of interest from such early adopters.

Section 3.3 Sales Strategy

Detail your sales strategy, including the "marketing mix" :

- Price
  - Detailed cost analysis, together with evidence of how a viable price will be achieved?
  - What pricing strategy is intended, e.g. premium pricing, competing on price - if so what is the strategy to be price competitive?
  - Can you provide evidence that the target market will accept this price?

- Promotional strategy – including the nature of early efforts to raise awareness of the product/process/service features in order to make sales?
- Product – including how the product/process/service will be packaged to enable sales?
- Place – including how and where the product will be distributed?

Section 4 Implementation Plan

The sub-sections of the Implementation Plan are intended to capture the planned activities for which funding is sought including objectives of those activities, a detailed project plan identifying key milestones and detailed budget, as well as clarifying what funding or investment has been utilised to get the technology to its current stage of development and what funding may be available for co-investment with the TIA.

Section 4.1 Objectives

Provide an overview of the plan to take the product/process/service to the next stage by describing:

- What do you regard as the high level objectives of the activities for which funding is sought?
- What are the key challenges, problems and uncertainties to be resolved? (e.g. technical, commercial, regulatory etc.)

Section 4.2 Detailed Plan

Detail the activities planned to develop the product and/or commercialise it, in a detailed gantt chart representing the timelines and activity dependencies having regard to the following:

- Divide the scope of work into milestones. The milestones must be clearly identified so that “go” or “no-go” decisions can be made after each milestone is completed:
  - Each milestone is the culmination of a set of technical, regulatory, marketing and other tasks that lead to one or more objectives (”SMART”: Specific, Measurable, Achievable, Relevant, Time-based).
  - A milestone is successfully reached when deliverables are achieved, and therefore its objectives are met.

Provide the following supporting discussion:

- Explain all key assumptions underpinning the plan.
- Identify all potential “show stoppers” : occurrence of an event that indicates that “must-meet” criteria and/or project objectives can/will not be met and/or the technology, or proposed business case, is no longer viable. Note that any stage deliverables are potential “show-stoppers”.

Section 4.3 Budget

Provide a comprehensive, monthly budget in a spreadsheet as an attachment to this application, which must address the following;

- Budget cost/milestone/key task broken down into:
  - Costs for capital equipment
  - Materials
  - Running costs
  - Computer software
  - Regulatory (including testing, trials)
  - Certification standards
  - Overseas/local travel

  - Intellectual property related
    - protection through registration
    - licensing
  - Manpower costs
  - Conference/Workshop costs
  - Overhead costs
  - Other Commercialisation costs
- Provide a budget breakdown per Consortium member and/or sub-contractors. Align this breakdown to the Consortium member's activities per milestone and task.
- Provide a budget summary in separate tables/worksheets that give totals :
  - per year; and
  - per milestone.

Provide details of all assumptions underpinning the budget in the application document as indicated.

Section 4.4.1 Funding to date

Provide the following information on funding spent to date to develop and/or commercialise the product/process/service:

- Total spent to date.
- Detail the source of funding if other than government support (founders; venture capital, etc.) .
- Detail the use of the funds (e.g. salaries, contractors, assets/equipment/tooling, materials, prototypes, testing, certification, intellectual property, licensing fees, market research, travel, operational expenditure, other.).

If appropriate please provide a spreadsheet as an attachment in support of your response.

Section 4.4.2 Potential co-investment with the TIA

Explain if/how the Applicant can/will contribute to project costs, having regard to the following:

- What proportion of the budget outlined above will be covered by the Applicant(s) or other investors?
- What other investors are lined up who may co-invest with the TIA, what are their broad terms of investment and what is the status of such potential/secured investment? Attach term sheet or any other documentation if appropriate.
- In the case of a company, will other shareholders be contributing further financial resources to this set of activities for which funding is sought?

Section 5.1 Team Composition and Management Plan

Provide a summary of the required capabilities of the team to execute the implementation plan, and how the team is constructed, having regard to the following:

- Articulate the proposed management structure (via an organogram if appropriate), providing a list of individuals identified that will form part of the team and how they will contribute to these capabilities.
- Highlight the extent to which individuals will be dedicated to the implementation plan, and whether they form part of the Applicant(s)/Consortium organisation(s) or are subcontracted.
- Where individuals are not yet identified and committed to the project, indicate what the ideal individual will be, what plans are in place to source such individuals and from what types of organisations, and ensure to highlight this as a risk in section 8 of the application template.

Section 5.2 Summary Résumés of Key Management

Provide summary résumés of key team members already identified, having regard to the following:

- Relevant experience.
- Key/unique skills brought to the team, in relation to the requirements identified in the section above.

(Note qualifications are to be provided in section 6.4 of the template).

Section 6 National Benefit

Explain how the product/process/service will contribute to national benefit. Please consider the following, as appropriate to the proposed technology innovation:

- The potential intensity of economic impact that the opportunity is likely to achieve including GDP growth, increased taxation revenue, meaningful job creation, increased and value added exports, increased competitiveness of industrial sectors and lowered net intellectual property cost.
- The potential intensity of developmental impact that the opportunity is likely to achieve including increase in highly skilled capacity and knowledge base and increased capabilities for technology innovation.
- The potential intensity of social impact that the opportunity is likely to achieve including solutions to national needs, improvement in quality of life, and poverty alleviation.
- The potential impact that the proposed infrastructure and/or capacity can make in lowering barriers to entry for other South African technology innovations.

Section 7 Risk Assessment

An explanation of the terms used in table to be completed are as follows:

- **Potential Problem**: Short description of problem.
- **Probability of Occurrence**: Rate the probability of the problem occurring according to the following scale: 10 = Will definitely occur, 0= Will definitely not occur.
- **Impact of Problem**: Rate the impact of the problem according to the following scale: 10 = High Impact, 0 = Low Impact.
- **Risk**: Calculate the risk associated with the problem by multiplying the Probability score and the Impact score.
- **Cause**: What events will result in the problem occurring?
- **Planned Action**: How will the risk be mitigated?
- **Responsible Person**: Who will mitigate the risk?