

**NATIONAL RESEARCH FOUNDATION
PROOF-OF-CONCEPT (POC)
GRANT SCHEME
DETAILED GUIDELINES**

(Version 2.1 – dated 9 Mar 2009)

VERSIONING TABLE

Versions	Date
Version 1.0	2 Sep 08
Version 2.0	27 Feb 09
Version 2.1	9 Mar 09

PROOF-OF-CONCEPT (POC) GRANT SCHEME

1 Objectives

- 1.1. The NRF POC grant scheme will provide funding for proof-of-concept¹ development to researchers in the institutions of higher learning (IHLs)², so as to facilitate the commercialisation of technology developed in the IHLs.

2 Overview of NRF POC Grant Scheme

- 2.1. The NRF POC grant will be awarded through a competitive application process to support projects which are technically sound and commercially viable. The grant will go towards supporting the R&D costs related to the development of a proof-of-concept project. The development work must be conducted in the IHLs, and should yield results pertaining to viability for commercialisation.
- 2.2. Applicant awarded the grant will receive up to S\$250,000 for the project, which should span no more than 1 year. The actual amount awarded will depend on the extent of work to be carried out.

3. Eligibility

- 3.1. Only IHL-linked staff and researchers are eligible to apply for the NRF POC grant. For each research team, there should be a Lead Principal Investigator (Lead-PI) to head the team. Teams comprising multiple IHLs may also be formed. Full time students in the IHLs may be a Principal Investigator of the project, in which case the IHLs must ensure that the student will receive support in the hiring of research manpower and have access to facilities and resources needed for the completion of the project.
- 3.2. While project teams may include collaborators from private sector companies, NRF will only support the R&D conducted in the IHLs. In particular, only manpower expenditure incurred for the IHL-linked researchers may be charged to the POC grant.

4. Application and Call Processes

- 4.1. To apply for POC funding, applicants will first need to sign up for a free user account on the NRF's Research, Innovation and Technology Administration (RITA) system (<https://rita.nrf.gov.sg/default.aspx>), if they do not already have an existing RITA user account, in order to submit their proposals.

¹ In general, POC projects should seek to validate the use of a technology in the context of a specified commercial application.

² IHLs refer to the public funded universities, polytechnics and any other institutions of education registered with Ministry of Education and based in Singapore.

- 4.2. After NRF announces the POC grant calls, researchers may submit their applications through the RITA system by logging in with their accounts.
- 4.3. **Submission by applicants.** Applicants should take note of the instructions in the following table when filling in the RITA application form.

Note: As the RITA system was originally designed for R&D research grants, some of the section names may reflect this. Applicants should refer to this guide when filling in the information in the system for clarifications on the information to be provided.

Sections Required	Information to be Provided
1A. Objectives of the Project	<ul style="list-style-type: none"> This section should articulate clearly the expected outcome of the project and the application domain that is envisaged by the applicant.
1B. Scientific abstract	<ul style="list-style-type: none"> Applicants should provide a brief technical description of the problem to be addressed by this project, the practical approach to be taken to solve this problem, and the potential commercial viability of the project.
1D. Potential applications/ exploitation of the project	<ul style="list-style-type: none"> Potential applications of the outcomes of this project should be described briefly in this section.
1E. Project Duration	<ul style="list-style-type: none"> The duration of the project, in months, should be entered here. The maximum length of the project should not exceed 12 months. If the project length is projected to be longer than 12 months, justifications <u>must</u> be given in the detailed proposal.
2. Details of Research Proposal	<ul style="list-style-type: none"> Applicants should upload a file containing a detailed proposal of the project, using the template provided in the MS Word file "POC_Submission_Template.doc". CVs of each project team member should also be attached as an annex, in the format specified in <u>Annex A</u>. <p><i>[Note: All team members must sign up for a RITA UserID and be listed in the "Collaborators" section of the RITA application form.]</i></p>

Sections Required	Information to be Provided
	<ul style="list-style-type: none"> • Projects involving private sector participation or other external sources (i.e. NRF support is sought only for part of the project) should be declared as such. Details should be provided on the overall budget, with a breakdown on the portion to be funded by each party.
3. Declaration of other funding support	<ul style="list-style-type: none"> • Details of all grants currently held or being applied for by any of the team members <u>must</u> be declared in this section. Failure to do so will be considered a breach of the undertaking required by all team members in Section 7 of the RITA application form and may render the application invalid.
4. Proposed Budget	<ul style="list-style-type: none"> • The budget, with a breakdown by line items, should be provided in this section under the categories of <i>manpower</i>, <i>equipment</i> and <i>other operating expenditure</i>. Detailed guidelines on the budget may be found in <u>Annex B</u>. Justification for the proposed budget in each category should be clearly articulated here. PIs are asked to provide accurate and reasonable budgets in their submissions. Please note that <u>over-budgeting is strongly discouraged</u> and that NRF may ask PIs to revise the requested budget before award if this is found to be the case. • For projects involving private sector participants or other external funding sources (i.e. where NRF funding is sought for only part of the project), the summary of the overall budget should give a clear indication of the total budget required for the project, with a breakdown of the amount of NRF funding sought under POC and the amount of funding to be sourced/provided for externally.
5. Activities and Performance Indicators	<ul style="list-style-type: none"> • The milestones for the project should be listed under “Activities”. • Under capability indicators, applicants should fill in target figures for the following: <ul style="list-style-type: none"> ○ Under “Developing long term R&D capability” – Patents filed, patents granted, patents commercialised.

Sections Required	Information to be Provided
	<ul style="list-style-type: none"> ○ Under “Industry Relevance Indicators” –Spin-off companies registered, new products or processes commercialised. ○ Applicants should also enter indicative figures in the following fields: Sales from new products commercialised (S\$), Revenue from royalties and licensing agreements (S\$). ○ Applicants may fill in “NA” for the other indicators under this category. Applicants may also fill in additional KPIs relevant to their projects.
6. Suggested names of local and overseas reviewers	<ul style="list-style-type: none"> ● This section should be left blank. There is no peer review for the POC proposals.

- 4.4. Proposals submitted should contain all relevant information required for a proper and complete evaluation of their merits without the need to go back to applicants for additional information. Relevant privileged or confidential information should be disclosed if necessary to help convey a better understanding of the proposed project. However, such information should be clearly marked in the proposal.
- 4.5. All applicants must comply with the relevant ethics and other regulatory approval requirements needed to carry out their project, as per respective host institution’s policies and regulations.
- 4.6. **Evaluation and endorsement by host institution.** The host institution of the lead-PI must evaluate the proposal for technical soundness and commercial viability, in line with the guidelines in [Annex C](#). All host institutions must nominate a technology transfer office (TTO) or its equivalent, which will serve as the point of contact for NRF on all POC related communication. This office should lead the evaluation of the proposals.
- 4.7. Only those proposals which satisfy the guidelines should be endorsed by the host institutions. Please note that only endorsed proposals are considered to have been submitted to NRF. (The deadline for endorsement is 24 hrs after closing of the call.)
- 4.8. The evaluation outcome must be submitted to NRF together with the proposal following the template in the file “Proposal Evaluation.doc”. This should be uploaded in the RITA system during the endorsement process.
- 4.9. In addition, one original hard-copy of the proposal, signed by the Technology Transfer Office (or its equivalent) and all members of the project team (inclusive of the RITA application form and all attachments submitted online), must be forwarded to the NRF for certification and archival purposes. The

signed hard-copy should be sent to the following address and should reach the NRF within one calendar week from the endorsement deadline for the relevant call:-

**Proof of Concept Grant Scheme
c/o National Research Foundation
100 High Street, #03-02
The Treasury
Singapore 179434**

- 4.10. **Evaluation by POC Panel and award of grant.** The POC evaluation panel will convene to assess the proposals that have been endorsed by the IHLs and make recommendations on those to be awarded the POC grant, based on the criteria listed in Annex D. Following recommendation by the panel, NRF will inform the successful applicants.

5. Progress Reports, Reviews and Final Reports

- 5.1. All awarded project teams are required to submit progress reports through their host institutions' TTO to NRF once every 6 months. NRF reserves the right to request progress reports more frequently when necessary. Final reports on the overall achievements of completed projects must be submitted to the NRF by the project teams through their host institutions within 3 month of completion.

6. Intellectual Property Management

- 6.1. "Background IP" (or BIP) is defined as any existing IP brought by parties into a research collaboration funded under the POC Scheme. "Foreground IP" (or FIP) is defined as new IP developed as a result of the research collaboration funded under the POC Scheme.

(I) Background IP

- 6.2. All collaborators involved in projects or collaborations funded by NRF will grant each other free access to any BIP necessary for the purpose of carrying out the research collaboration to develop potential FIP. Exceptions to this may be made in cases where the BIP is already encumbered, e.g., where prior licensing or other arrangements prevent free access to parties other than the IP owner, even for research purposes only. However, in such instances the team should assess whether the encumbered BIP is critical for developing and exploiting any potential FIP and make an informed decision on how to proceed with the intended collaboration.
- 6.3. No party is allowed to use, disclose or license another party's BIP, outside of the scope allowed for in paragraph 6.2 above, without the relevant BIP owner's approval.

- 6.4. The FIP owner or its designated commercialisation entity will request in writing to the BIP owner to provide information on any licence rights that may be available with respect to the BIP that would be necessary for the subsequent commercialisation of the FIP. If the FIP owner or its designated commercialisation entity, so requests in writing, such BIP owner shall, to the extent not prevented by then-existing agreements or obligations to the contrary, for at least six (6) months following such request, refrain from granting any exclusive licence under such BIP that would prevent the grant of a non-exclusive license to the FIP owner or its designated commercialisation entity. If necessary for the subsequent commercialisation of FIP, the terms and conditions for the use of any BIP should be negotiated separately with the relevant BIP owner.

(II) Foreground IP

- 6.5. Disclosures of new FIP shall be formally evaluated by the host institution to determine who should be listed as their inventor(s)/creator(s) under the host institution's policies. Only those who are determined as inventor(s) or creator(s) may be listed as such.
- 6.6. FIP shall be owned by the host institution of the project team. In cases where the inventor(s)/creator(s) belong to multiple institutions, the FIP should be jointly owned, in equal and undivided shares, among all the parent institutions.
- 6.7. Due consideration shall be given to ensure that the host institution retains the right to use and exploit the FIP when negotiating IP ownership rights in collaborative projects with the relevant industry. The host institution must also be mindful of the potential problems caused by the fragmentation of IP ownership, which could cause impediments to effective exploitation, especially where there is a need to bundle IP that may be owned by different industry collaborators for effective commercialisation.
- 6.8. There should be provision to allow the inventor(s)/creator(s) to own, protect and commercialise the FIP at their own expense if the party or parties with the right to take up ownership of the FIP, as determined by the principles outlined in paragraphs 6.5 to 6.7 above, decide not to take up ownership of these FIP. The rules to do so may be determined by these parties. These should, however, be crafted to facilitate the speedy commercialisation of the FIP.
- 6.9. The Singapore Government and public sector agencies shall reserve a non-exclusive, non-transferable, perpetual, irrevocable, worldwide, royalty-free right and licence to use, modify, reproduce and distribute the FIP for non-commercial, R&D and/or educational purposes only.
- 6.10. IP management, use and/or commercialisation of the FIP should, to the extent possible, be based in Singapore. This is to encourage technology transfer activities to be anchored in Singapore, increasing the chances of exploitation in Singapore or by Singapore entities, thereby creating additional avenues for training of technology transfer and IP management professionals, hence accruing benefits to Singapore as a whole. To encourage the development of

high-tech companies in Singapore, the preferred commercialisation route should be the creation of spin-offs, or licensing to Singapore-based start-ups and SMEs.

- 6.11. All those who have made inventive/creative contributions to the development of the FIP shall receive a share of the benefits. A portion of the net IP revenue (i.e. the amount remaining after deducting administrative costs for IP commercialisation and patenting, and applicable taxes, if any) shall be shared with inventor(s)/creator(s) and host institution as well as the employer of the other inventor(s)/creator(s) if any, in a fair manner, based on a formula agreed upon upfront in writing. The balance of such revenue, after the respective portions have been distributed to reward those who have made inventive/creative contributions to the development of the FIP, shall be allocated to support further research/innovation.
- 6.12. Assignment of the FIP to third parties shall only be undertaken after due consideration of the facts and circumstances, and with the necessary approval from the host institution, and taking into consideration that assignment of such IP:-
- (i) Shall not be against the public interest of Singapore; and
 - (ii) Shall not restrain the freedom of the host institution to further use, develop or exploit the IP, either through further research and/or collaboration.
- 6.13. NRF shall be notified, in writing, in advance of the assignment of any FIP to third parties.

(III) Disclosure Management and Publications

- 6.14. NRF expects the project team to play a proactive role in working with their respective host institution's technology transfer offices or equivalents to effectively protect, commercialise and exploit intellectual assets or IP arising from the funded research. This includes ensuring that disclosures of new IP are promptly reported by their project teams.
- 6.15. All publications of any material (including web pages) based on or developed under NRF-supported programmes and projects must include an acknowledgement of NRF support as follows: "This material is based on research/work supported [for cases of multiple funding support, the phrase "in part" should be inserted here] by the Singapore National Research Foundation." NRF support should also be acknowledged orally during all news and media interviews.
- 6.16. Except for articles or papers published in scientific, technical or professional journals, the following disclaimer must also be included in all publications arising from the funded research: "Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the Singapore National Research Foundation."

- 6.17. The host institution's policies and requirements in terms of publication approval and submission processes would apply. Host institutions are expected to ensure that commercialisable research results are appropriately protected and suitable processes are in place to facilitate this.
- 6.18. Information on disclosures of new IP, patents and publications arising from the funded research should be provided to NRF as part of the regular annual and final progress reports submitted (see Section 5).

7. Funding Support

- 7.1. Under the POC scheme, the NRF offers funding support of up to S\$250,000 per project over one year. The total cost of the project includes only approved direct costs, which are defined as the incremental cost required in executing the project. This excludes contributions in-kind, existing equipment and the cost of existing manpower as well as building cost. All expenditures should be budgeted inclusive of any applicable Goods and Services Taxes (GST) at the prevailing rates.
- 7.2. Any direct cost charged to the POC grant must be reasonable and for the proposed R&D activities of the project. Supportable direct costs can be classified into the following four cost categories:-
- i. Expenditure on manpower (EOM);
 - ii. Expenditure on new equipment;
 - iii. Other operating expenses (OOE); and
 - iv. Exceptional costs.
- 7.3. NRF will support 100 percent of the approved direct cost for Singapore-based IHLs. Private sector participants (i.e., Singapore-based companies and company-affiliated research laboratories/institutions) should apply to SPRING Singapore under the TECS scheme if they wish to conduct POC activities. For projects involving private sector participants, NRF will only fund the portion of the R&D conducted in the IHLs (i.e. only manpower and equipment in the IHLs may be charged to the grant).
- 7.4. Please refer to Annex B for a detailed guide on supportable and non-supportable cost items. NRF's decision on the funding support to be awarded for each project is final.

8. Changes to Guidelines

- 8.1. NRF reserves the right to make changes to the above guidelines and the POC Funding Scheme Submission Templates & Forms document as and when it deems fit.

ANNEX A: FORMAT FOR CURRICULUM VITAE (CV)

All CVs submitted for POC applications must not exceed 2 pages and should use the following format (in terms of sections required and the order of the sections), to highlight key information relevant for the evaluation of proposal:-

A. EDUCATIONAL QUALIFICATIONS

B. PROFESSIONAL EXPERIENCES

C PREVIOUS AND CURRENT RESEARCH GRANTS IN RELATED AREAS

D. LIST OF RECENT COLLABORATORS

ANNEX B: GUIDE ON PROJECT COST ITEMS

Type of Expenses	Description	Support-able?
Expenditure on Manpower (EOM)-Related Expenses		
PIs' and co-PIs' salaries	EOM includes salaries, CPF and fringe benefits including medical, dental, contribution to welfare fund, bonuses, incentive payments etc.	No
Stipend for students who are PIs or co-PIs	Stipends for students who are PIs or co-PIs of the projects. The stipend will only be given to students who are not receiving any other salary or stipend from the IHL, and should be in line with the policies of the host institution. The stipend should not be used as a top-up on any existing stipend that the student is receiving.	Yes, if they are not receiving any other salary or stipend from the host institution
Salaries, CPF and fringe benefits including medical, dental, contribution to welfare fund, bonuses, incentive payments etc. for other research staff (excluding PIs and co-PIs)	As part of overall compensation to employees provided, such costs are reasonable and are incurred under formal established and consistently applied policies of the host institution. The salaries offered to staff should be reasonable, in line with local market benchmarks and comply with the formal established pay scale of the host institution that is consistently applied regardless of the source of funds. Overtime pay is not supportable. If the staff spend only part of his/her time working on the project, the salary to be drawn from the grant should be pro-rated accordingly.	Yes
Local & international students' fees or other stipends or awards to students	For postgraduate research students receiving research training in Singapore-based universities, the grant could pay for the portion of the student's time spent working on the project. This could include the stipends of part-time graduate research students employed specifically for the funded project.	Yes
Annual leave	The number of days of leave accorded to staff must be in accordance with the formal policies of the host institution that are consistently applied regardless of the source of funds. This should be pro-rated for the time spent on the project.	Yes

Type of Expenses	Description	Support-able?
Staff insurance	As part of overall compensation to employees provided such costs are incurred under formal established and consistently applied policies of the host institution. This should similarly be pro-rated for the time spent on the project.	Yes
Volunteers and research patients	Payment to volunteers and research subjects provided this is within the scope of the research project and has been provided for in the grant. Insurance expenses for research volunteers and subjects may also be included.	Yes, only if deemed necessary for the R&D work
Staff relocation cost	Staff relocation, settling-in allowances, etc.	No
Visiting experts	This refers to honoraria or salaries of overseas experts invited to participate in the project. Please note that claims for students brought in by visiting professors are not allowed as these should be paid for by their own host institutions.	Yes, only if deemed necessary for the R&D work.
Staff recruitment and related cost	Examples of such costs are advertisement and recruitment agency cost.	No
Training	Funding for training of research personnel should restrict to personnel employed under the project grant and for training that is of direct benefit and specific to the research project.	Yes, only if deemed necessary for the R&D work
Equipment-Related Expenses		
New equipment equal or less than S\$100,000	Each piece of equipment must be individually identified and its total cost inclusive of estimated bank charges, delivery and installation, customs and import duties, etc.	Yes
Repair/ refurbishment of equipment	Each piece of equipment must be individually identified and the cost of repair/refurbishment must be clearly listed. The repair cost should be \$100,000 or less	Yes, if this is necessary for the R&D work
General purpose IT and communication equipment	Examples are computers, office productivity software, PDAs, mobile phones, workstations and printers, etc.	Yes, only if deemed necessary for the R&D work
General furniture/ office equipment	Examples are fax machines, photocopier machines, etc.	No

Type of Expenses	Description	Support-able?
Other Operating Expenses (OOE)-Related Expenses		
Local and overseas conferences	Dissemination of research findings through oral or poster presentations.	No
Overseas working visits and meetings	For short-term visits/meetings made by PIs, co-PIs, collaborators, researchers and research students or visiting experts funded under the project grant for the purpose of carrying out R&D work necessary to accomplish the project objectives. Travel components that are allowed include round-trip airfare up to the class of travel normally entitled (by the home institution), moderate class hotel accommodation for the duration of the visit/meeting and daily subsistence and transport allowance.	Yes
Overseas research attachments	For graduate and postgraduate research students receiving research training in Singapore-based universities while working on the project, to be attached to overseas institutions for the purpose of carrying out R&D work necessary to accomplish the project objectives. Justification of the need for such attachments and for the proposed duration of the attachment is to be provided by the PI. Travel components that are allowed include round-trip airfare up to the class of travel normally entitled (by the home institution), reasonable accommodation allowance as per the host institution's internal guidelines for the duration of the visit/meeting and daily subsistence and transport allowance.	Yes, only if deemed necessary for the R&D work
Publication page charges	Charges for publication in journal and conference papers.	No
Purchase of lab supplies, consumables, materials, animals	The procurement of chemicals, solutions, laboratories disposables, raw materials, or animals for testing and other supplies that are directly used on the POC project.	Yes
Use of services or lab spaces within the host institution's	The cost for the use of the services and central facilities owned by the host institution such as animal holding units, central laboratory services, etc. are allowable but must be based on the host institution's fee schedules, which should be	Yes

Type of Expenses	Description	Support-able?
central facilities	consistently applied regardless of source of funds.	
Non EOM related insurance premiums	Examples are equipment, workmen compensation, professional indemnity of researchers funded under NRF grants.	No
Bank charges	Allowable as long as it is specifically related to the payments for consumables and equipment used in the project.	Yes
Customs and import duties	Allowable as long as it is specifically related to import of consumables and equipment used in the project.	Yes
Miscellaneous costs	Examples are postage and courier services specifically required for the project, local transport for meetings made by PIs, co-PIs, collaborators, researchers and research students or visiting experts funded under the project grant for the purpose of carrying out R&D work necessary to accomplish the project objectives etc. However, total miscellaneous costs should not exceed \$2,000 per year.	Yes
Exceptional Items (non-exhaustive)		
Major equipment costing more than S\$100,000	On a case-by-case basis. Justifications and 3 quotations should be provided if such major equipments are needed.	Yes
Intellectual property required to carry out the proposed R&D work	On a case-by-case basis.	Yes
Outsourcing of activities	Outsourcing of R&D is not supportable but subcontracting of non-research work (e.g., the development of tools for the research) is supportable if justified.	Yes
Cost of capital works / general infrastructure	This refers to general building and renovation costs not necessary for the purpose of carrying out the research, which are not allowed.	No

ANNEX C: POC EVALUATION GUIDELINES FOR IHLS

IHLs should evaluate the proposals for their technical soundness and their novelty based on the following guidelines

1. Project Scope
 - Does the project fit the scope and timeframe of a POC?
 - Can the team be reasonably expected to complete the project in the timeframe of the POC?
2. Technical Soundness
 - Is the project technically feasible?
 - Is there proof-of-principle?
3. Novelty and Technical Innovation
 - Is this a novel application of the technology?
 - How does this compare with other competing technologies?
4. Market Potential and Commercial Competition
 - Does the proposed application result in technologies that have potential for commercial impact?
 - Is strong competition to be expected for this technology in its intended market? If so, what would be the competitive advantage of this product?
5. Manufacturability/Scalability
 - How feasible is it to scale up the manufacturing of this product when it is commercialised?
6. IHL Support
 - Is the IHL infrastructure available to support the project?

ANNEX D: POC PANEL EVALUATION CRITERIA

The POC panel will evaluate the shortlisted proposals based on the following criteria:

1. Technical Innovation: How novel is the technology?
2. Market Potential: Does the proposed application result in technology that has potential for commercial impact?
3. Competition: Is strong competition to be expected (e.g. from incumbents), or would one expect little or no competition, particularly at the start?
4. Manufacturability/Scalability: How easy is it to scale up the project for mass production?
5. Technical Competency: Does the team/individual appear capable of carrying out the POC project?