



science & innovation

Department:
Science and Innovation
REPUBLIC OF SOUTH AFRICA

Call for Proposals (CFP) for the Collaborative Programme in Additive Manufacturing (CPAM) to Support the Development of the Additive Manufacturing (AM) Industry

CFP No. CFP 003/08/27/2024

Date of issue	Wednesday, 27 August 2024
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	Please use CFP No. and CFP Description as a subject reference
CFP submissions	bmooketsi1@csir.co.za (If submission exceeds 25MB, multiple emails can be sent)
CSIR business hours	08h00–16h30
Category	Additive Manufacturing
Closing date and time	2024/25 FY: Friday, 20 September 2024, at 16:30

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1 INTRODUCTION

The Collaborative Programme for Additive Manufacturing (CPAM) is a directed implementation programme to support the South African Additive Manufacturing Strategy. CPAM has as an objective to reduce the barriers to the adoption of additive manufacturing (AM) as an acceptable manufacturing technology and has a focus on supporting and developing an AM-based SMME industry.

The purpose of this Call for Proposals (CFP) is to enable new suppliers/SMMEs to enter the supply chain and develop AM technologies, and industries to enable market entry and global competitiveness through access to technology. This document outlines the framework and submission procedures for the CFP in the CPAM: SMME development and support priority area. It is a guide for applicants submitting proposals for review by the CPAM technical review committee.

2 BACKGROUND

The CPAM, an initiative of the Department of Science and Innovation, hosted and managed by the CSIR with a primary focus on industrial development. The CPAM is a government-funded mechanism to support the South African Additive Manufacturing Strategy. The initiative provides strategic direction for enabling capacity development on the following:

- Design, optimisation and preprocessing of data;
- Process development, monitoring, and control;
- Post-processing;
- Testing and analysis;
- Dimensional verification and reverse engineering; and
- Simulation and modelling.

The role of the CPAM in advancing the knowledge base in South Africa aligned to the AM strategy is to:

- Establish local design competency for AM-produced parts;
- Establish local competence to produce industrial parts in polymer materials with AM;

- Establish local competence to produce functional metal parts with AM;
- Establish support initiatives for industry development and public awareness;
- Ensure that AM technologies are taken up by industry through an active process of industrialisation; and
- Enable new suppliers to enter the supply chain and develop AM technologies, industries, and SMMEs to enable market entry and global competitiveness through access to technology.

Prospective beneficiaries are invited to submit proposals for feasibility studies, prototyping, and product development (printing) to enable market entry for AM products.

3 THEMATIC AREAS

The thematic areas selected for this CFP are at the discretion of the CPAM and are considered as the most relevant for technology advancement in South African AM. The scope of work will, among others, cover the following:

- Assistance for design of AM services:
 - Generation of CAD design for the proposed component or part. Optimising an existing design for 3D-printing purposes. This can include applying design optimisation algorithms, as well as finite element analysis and optimising routines if required for the functionality of the proposed component.
 - Generation of appropriate 3D-printing files compatible with the 3D-printing technology selected for the component.
- For 3D-printing services:
 - Preparation of the printing files required to produce the part or component on a 3D-printing machine.
 - Supply of parts feedstock.
 - Production of parts.
 - Quality checks of parts.
 - Post-processing of parts, including arrangement for removing support structures, surface machining, heat treatment, or any other post-processing required as part of the part production.

Only projects with a Technology Readiness Level / Manufacturing Readiness Level value greater than or equal to three, at the start of the project, will be considered for support. **(This implies that the projects should be in the prototype development stage).**

4 INVITATION FOR PROPOSAL

The CPAM realises the need to support the local industry; therefore, a CFP is issued to attract entry-level SMMEs that contribute towards the development of the South African AM industry.

4.1 PROPOSAL SPECIFICATION

All proposals must be submitted in the format specified in the CFP document (a template is provided).

4.2 PRICING PROPOSAL

The total project budget requested for the CPAM industrial support proposal may not exceed the amount specified below:

- Project budget \leq R100 000.00 (excl. VAT).
- Any project proposals received with requested budget amounts greater than the above value will be disqualified.

4.3 The support is limited to services required for AM-produced prototypes and products only.

4.4 Price should not include additional cost elements such as travel cost, freight, insurance, duty, where applicable, etc.

4.5 Payment will be made to service providers identified by the CPAM industry support technical team in accordance with the [CSIR Payment Terms and Conditions](#).

5 PROJECT TIMELINES

All proposed projects must have a maximum duration of six months; however, projects can also be completed earlier. All project deliverables must be completed within the specified timeframes; no extensions will be permitted.

6 THE EVALUATION PROCESS

The evaluation process for the CFP will follow a two-phase approach as shown in Figure 1. The phases are:

1. Evaluation of qualification, critical, and differentiation factors (functionality).
2. Evaluation of transformation-related factors.

Evaluation of qualification and differentiation factors (functionality)

- All proposals will be initially reviewed to ensure that they meet the criteria for qualification and critical evaluation. If not, the project proposal will be disqualified, and the applicant will be informed afterwards.
- All projects that fulfil the qualification and critical evaluation factors will then be categorised accordingly and the project proposals will be distributed to the members of a predetermined technical review committee.
- Each member of the technical review committee will review and score the projects using pre-approved differentiation evaluation factors.
- A technical review exercise will be performed to obtain a final score.
- All projects that have a weighted score greater than or equal to 65% on the differentiation factors (functionality) will qualify for the next round of evaluation on transformation-related factors.
- All organisations whose applications are eliminated at this stage will be notified.

Evaluation of transformation-related factors

Based on the evaluation in Phase 1, all proposals with a weighted differentiation or functionality score greater than or equal to 65% qualify for this phase of evaluation. The principle at this stage of evaluation is that all such projects have proven to be suitable for CPAM industrial support, and this stage will rank them based on the transformation-related characteristics of the applying organisations without taking into account the functionality scores again.

- The qualifying projects from the first phase of evaluation will be scored and the total weighted scores will be ranked from the highest performing in terms of the transformation factors.
- Depending on the available budget, the top performing applications in terms of the transformation factors will be awarded support first until the available budget is exhausted.

- If enough budget is available, all applications that make it to this stage will be awarded CPAM industrial support, but if not, only the top performing will be supported up to the point where the budget is exhausted.
- Successful and unsuccessful applicants at this stage will be informed of the outcome.
- The successful applicants will then be contacted for the contracting and implementation process.

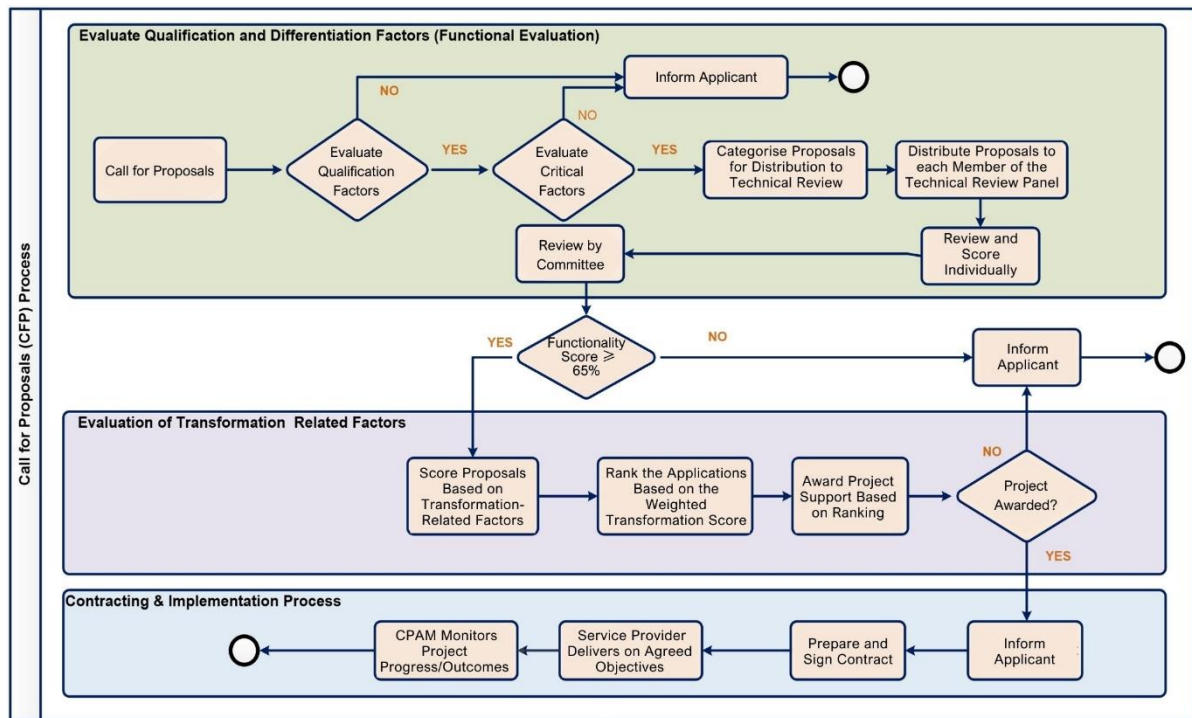


Figure 1: Call for proposal evaluation process

7 FUNCTIONAL EVALUATION CRITERIA

7.1 EVALUATION OF PROPOSALS

All proposals will be evaluated by a technical review committee for functionality and transformation-related factors. Based on the results of the evaluation process, the CSIR will award the contract to the successful beneficiaries.

7.1.1 Qualification and critical evaluation factors to assess project proposals

The assessment criteria for the evaluation of all applications are first divided into qualification evaluation factors (based on the beneficiary) and critical evaluation factors (based on the submission). These are shown in Table 1. For the qualification and critical factors, any 'NO'

answer immediately disqualifies the application. This evaluation will be done by the review committee.

Table 1: Qualification and critical evaluation factors to evaluate project proposals.

Qualification evaluation factors	Yes	No
South African registered company		
Valid tax clearance certificate		
Valid B-BBEE certificate		

Critical evaluation factors	Yes	No
Does the company have limited expertise in metal and/or polymer AM?		
Is the project within the thematic area of the CPAM industrial support project?		
Is the costing for the project correct? (All the line items adding up correctly)?		
Does the project fall within the predetermined budget category?		
Is the project AM related?		
Is the application complete?		
Submission of the CFP Terms of Reference (initialled on each page).		
The applicant is NOT on the list of restricted (blacklisted) suppliers by the National Treasury.		

7.1.2 Differentiation evaluation factors

The differentiation factors for the evaluation of all project applications are shown in Table 2. Each differentiation factor is assigned a score which is then weighted according to the importance of the factor. Please note:

- A minimum total weighted score of **65** must be achieved.

Table 2: Differentiation evaluation factors for assessing beneficiary applications

Factor	Scoring	Weight %	Weighted Score
SMME or non-SMME	<p>A manufacturing SMME is defined according to the Revised Schedule 1 of the National Definition of Small Enterprise in South Africa published on 15 March 2019 by the Department of Small Business Development. According to this schedule, a manufacturing SMME is defined as having less than 250 full-time employees and less than R170 million annual turnover.</p> <ul style="list-style-type: none"> • The company is an SMME (assigned score of 10) • Company is not an SMME (assigned score of 5) 	10	
B-BBEE Level	<p>Please attach B-BBEE certificate to the application:</p> <p>B-BBEE Level 1–2 (assigned score of 10)</p> <p>B-BBEE Level 3–4 (assigned score of 8)</p> <p>B-BBEE Level >4 (assigned score of 5)</p> <p>B-BBEE Level Non-Compliant – Disqualified</p>	10	
<p>Localisation: The proposed project has the potential to increase local market content</p>	<p>The proposed project intends to increase contribution of SMMEs, increase market access opportunities and export of goods, contribute to building of skills and employment, improve local industry competitiveness, ensure technologies are taken up by industry, enable new suppliers to enter the supply chain, and develop new technologies.</p> <ul style="list-style-type: none"> • Specifically addresses localisation for AM (assigned score: 20) • Has significant potential to increase local market content as it addresses a need in the market (assigned score: 20) • Has limited potential to increase local market content as it addresses the need in the market (assigned score: 10) • Will not increase the local AM market as it does not address the market need (assigned score: 0) 	50	

Quality and feasibility ¹	<p>Quality and overall direction of proposal.</p> <ul style="list-style-type: none"> • The proposal successfully addresses all applicable aspects, no limitations (assigned score: 30) • The proposal addresses the criterion thoroughly, but with a small number of limitations (assigned score: 20) • The proposal broadly addresses the criterion, but there are significant weaknesses (assigned score: 10) • The proposal fails to address the criterion and/or cannot be assessed due to missing or incomplete information (assigned score: 0) 	30	
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8 GUIDELINES AND KEY POINTS

All South African AM companies (SMME/non-SMME) are invited to submit CFP applications to support this call. Please note the following:

- Complete the CFP application template provided on the website.
- **Submit your applications by email to: bmooketsi1@csir.co.za.**
- All submissions' relevant documentation, data, and information will be treated as confidential.
- An organisation may submit more than one proposal, but a maximum of two projects can be supported per company.
- The evaluation process for all submissions will be conducted in a fair and confidential manner.
- All technical experts on the review committee are also bound by an obligation of confidentiality.

9 ELIMINATION CRITERIA

Proposals will be eliminated under the following conditions:

¹ Under Quality and Feasibility, the following aspects will be considered by the panel:

1. Product viability for the project
2. Material/components to be used
3. Market analysis.

- Submission after the deadline date and time.
- Incomplete submissions.
- Proposal template not completed, signed, and submitted.
- Declaration of Conflict of Interest not signed and submitted.
- Declaration of Conflict of Financial Interest not signed and submitted.
- No B-BBEE certificate.
- Listed in the database of restricted suppliers (blacklisted) by the National Treasury.
- No Valid Tax Clearance Certificate.
- No signed CFP Terms of Reference (this document); each page should be initialised and submitted with the proposal.

Successful applications may undergo further due diligence processes prior to contracting.

10 GENERAL TERMS

- a. The CSIR reserves the right not to engage further with participants should the CFP not meet or address the needs of CPAM.
- b. Enquiries must be sent to Boitumelo Mabilo – bmooketsi1@csir.co.za and/or Dr Washington Makoana – nmakoana@csir.co.za
- c. Failure to comply will render your submission nonresponsive and disqualified.
- d. Any form of canvassing by an applicant to any member of staff or supplier, for purposes of influencing the process, will automatically disqualify the applicant from the evaluation process.
- e. Applicants shall not offer or give any consideration of any kind to any employee or representative of the CPAM, industry support technical team, and inducement or reward for doing, or refraining from doing, any act in relation to the obtaining or execution of this or any other contract with the CPAM, SMME support committee.
- f. The committee will nominate the applicants whose CFP is determined to be the most advantageous to the programme, considering the technical suitability of the shortlisted participant.
- g. The CPAM committee reserves the right to cancel this CFP or not to appoint any participant should the business conditions warrant such a move.

- h. The terms 'participant', 'beneficiary', and 'applicant' will be used interchangeably and must be read in context with the sentence in which they are used.

11 MEDIUM OF COMMUNICATION

All documentation submitted in response to this CFP must be in English.

12 APPOINTMENT OF BENEFICIARY

- 12.1** The contract will be awarded to the applicants who score the highest total number of points during the evaluation process, except where the law permits otherwise.
- 12.2** Appointment as a successful beneficiary shall be subject to the parties agreeing to mutually acceptable contractual terms and conditions. In the event that the parties do not reach such an agreement, the CSIR reserves the right to appoint an alternative beneficiary.
- 12.3** Regret letters will be sent to unsuccessful bidders.

13 ENQUIRIES AND CONTACT WITH THE CSIR

Any enquiry regarding this CFP shall be submitted in writing to the CSIR in the email and format outlined in the table on the cover page of this document.

14 VERIFICATION OF DOCUMENTS

- a. Applicants should check the numbers of the pages to satisfy themselves that none are missing or duplicated. No liability will be accepted by the CPAM industry support programme in regard to anything arising from the fact that pages are missing or duplicated.
- b. Only submissions via email will be accepted.

15 CFP COMPLIANCE CHECKLIST

The following documents will be deemed to form, be read, and construed as part of this CFP:

- CFP Terms of Reference (this document)
- The Proposal Template to the CFP
- Valid Tax Clearance Certificate
- B-BBEE certificate

16 COMPLIANCE AND AUTHORIZATION FOR CFP RESPONSE

- I/We confirm that I/we have satisfied myself/ourselves as to the correctness and validity of my/our response to the CFP and that the proposal covers all the services specified in the documents.
- I/We declare that I/we have no participation in any collusive practices with any other applicant or third party regarding this or any other CFP.
- I/we confirm that I/we am/are duly authorised to sign this document.

NAME (PRINT):

CAPACITY:

SIGNATURE:

ORGANISATION:

DATE:

WITNESSES:

1

2

DATE:

17 DECLARATION OF CONFLICT-OF-INTEREST FORM (APPLICANT)

This declaration of interest must be completed and submitted with the CFP. Failure to do so may result in the elimination of the applicant's proposal.

17.1 Declaration of Interest – CPAM CFP 003/08/27/2024

Are any staff members of your company involved in this CFP process, connected, or have any relationship with anyone employed by the CPAM/CSIR?

Yes		No	
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If yes, please state details:

17.2 Declaration of Conflict of Financial Interest – CPAM CFP 003/08/27/2024

Is the SMME/company receiving support for similar interventions from any other South African Government department or international organisation?

Yes		No	
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If yes, please state details:

DECLARATION

I, _____ (THE UNDERSIGNED), DULY AUTHORISED, CERTIFY THAT THE INFORMATION FURNISHED IN THIS CFP IS CORRECT. I ACCEPT THAT THE CSIR MAY TAKE APPROPRIATE ACTIONS, DEEMED NECESSARY, SHOULD THIS DECLARATION PROVE TO BE FALSE.

Signature

Date

Position

Name of applicant

END OF CFP