



Request for Proposals (RFP)

Provision of technical research and development in building an optronics defence capability to the CSIR

RFP No. 3316/31/07/2019

Date of Issue	17 July 2019	
Compulsory briefing session	Date: 24 July 2019 Time: 9h00 Building 44	
Closing Date	31 July 2019 at 16h30	
Place	Tender Box, CSIR Main Reception, Gate 3 (North Gate)	
Enquiries	Strategic Procurement Unit	E-mail:tender@csir.co.za
CSIR business hours	08h00-16h30	
Category	Engineering	

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SECTION A – TECHNICAL INFORMATION

1 INTRODUCTION

The Council for Scientific and Industrial Research (CSIR) is one of the leading scientific research and technology development organisations in Africa. In partnership with national and international research and technology institutions, CSIR undertakes directed and multidisciplinary research and technology innovation that contributes to the improvement of the quality of life of South Africans. The CSIR's main site is in Pretoria while it is represented in other provinces of South Africa through regional offices.

2 BACKGROUND

The CSIR is developing intelligent visual surveillance systems. The increasing need for intelligent visual surveillance in commercial, law enforcement and military applications makes automated visual surveillance systems one of the main current application domains in computer vision. D&S has established strong Optronic Sensor Defence R&D capability over many years, and is in need of R&D expertise to support various technical projects in the above-mentioned fields and at the same time maintain and sustain already developed capabilities in the optronic defence environment.

3 INVITATION FOR PROPOSAL

Proposals are hereby invited from Exempt Micro Enterprises (EMEs) or Qualifying Small Enterprises (QSEs) as per criteria set out in this tender document for provision of technical R&D expertise in supporting the establishment of the Optronic Defence capability in Defence and Security Cluster. The proposals are for work that will be done over a period of 2 years.

4 PROPOSAL SPECIFICATION

All proposals are to be submitted in a format specified in this enquiry. However, tenderers are welcome to submit additional / alternative proposals over and above the originally specified format. Please note that additional/alternative proposals will only be measured against the criteria set-out in this RFP.

4.1 Required Experience

The Defence and Security Cluster is in need of the following technical R&D experience and expertise for building the Optronics Defence Capability:

- Software development and engineering experience in C/C++/C# and Python
- Application development in Unity
- 3D modelling of various environments including maritime, urban, humans and dynamic object movements
- Systems Integration: software, electronics and mechanical engineering

The skills are required to support the design, development and evaluation of various optronics defence capabilities being developed at the CSIR for the Department of Defence.

4.2 Required Support

A typical project will be the development of a Camera In the loop Simulator. The Camera In The Loop Simulator (CILS) is a two system test setup. A unit under test is used to capture images through a camera pointed at a screen. The screen is driven by the testbed simulator, displaying a view into a virtual environment.

Requirements

- Two computing platforms, a Unit Under Test and a Testbed Unit.
- The Testbed Unit provides a view into a virtual environment by displaying this view onto a monitor. The view can be changed through an Ethernet interface or a joystick connected to the Testbed.
- The Unit Under Test receives a camera feed into the GPU while through Ethernet controlling the view provided by the Testbed. This view can also be changed through a joystick connected to the Unit under Test.
- Different virtual environments can be loaded and explored by the unit under Test

Functional specifications

Camera:

- Colour, c-mount lens, Sony IMX253 12.3MP, 10GigE, camera equivalent to Oryx 10GigE.
- Two lenses, fixed focal length, 16mm and 75mm.

Computing Units:

- GPUs supporting DirectGMA for video.
- Cameras connected and powered through Ethernet, support 10GigE.
- Screen, 4K, 240Hz, 1ms response, equivalent to Acer Predator XB252Q.
- Interface equipment (Mouse, Keyboard, Joystick).

Virtual Environments:

- Unity based.
- Three different environments, marine, urban and mountainous area
- Development of a simulated area
 - Level 1.
 - Area size 1km x 1km,
 - Appropriate vegetation, topography, roads, buildings etc.
 - Dynamic vehicle assets x4
 - Dynamic boat assets x 2
 - Dynamic human assets x 4
 - Dynamic drone assets x2
 - Different density of smoke/mist possibility.
 - High quality textured assets, close to reality.
 - Utilise ray tracing
 - Level 2.
 - Calibration of distances within world.
 - Integration of GPS co-ordinates into world
 - Extend simulated area to 10km x 10km

Software:

- Unity Assets, environments and scripts.
- C API Library for UUT
 - Change viewport on Testbed.
 - Start/stop simulation on Testbed.
 - Get current position of dynamic assets.
- Support Linux 18.04 and Windows 10.

Deliverables

Expected Timeline

1. Level 1 Marine environment delivery and demonstration.
2. Demonstrate UUT and Testbed integration, hardware delivery.
3. Level 2 Marine environment delivery and demonstration.
4. Level 2 Urban and Mountainous environment delivery and demonstration.

Software

- Two Unity Pro licenses valid for two years.
- Source code for UUT and Testbed integration demonstration.
- Unity Assets, environments and scripts.
- Source code.

Software Demonstrations:

Application of CILS.

- Using UUT to capture camera feed and change viewport of Testbed through ethernet.
- Using CPU for PCIe data capture from cameras for displaying on computing platform.

Add/Remove and change dynamic assets paths.

- Training on how to add/remove dynamic assets and to set a specific path for the assets.

Demonstrate GPS integration and distance measures.

- Demonstrate how to receive dynamic asset GPS co-ordinates.
- Set current viewport GPS co-ordinates.

The proposal submission must include supporting documentation highlighting the experience and expertise of the qualifying enterprise (e.g. include complete business profile and portfolio) and names of personnel to be used in the projects. The proposal must also include **detailed CVs of currently employed staff (permanent or part-time) (at least 3)** from which relevant experience for the items listed in paragraph 4.1 can be ascertained and/or assessed.

5 FORMAL BRIEFING

A Compulsory Briefing Session will be held at CSIR Offices, Building 44, Simulator Boardroom, Meiring Naude, Brummeria, Pretoria on the **24th of July 2019 at 9h00.**

- The briefing session will start punctually at 09:00 and information will not be repeated for the benefit of respondents arriving late.
- Respondents failing to attend the compulsory briefing session will be automatically disqualified.

6 FUNCTIONAL EVALUATION CRITERIA

6.1 The evaluation of the technical capability of the proposal will be based on the following criteria:

Evaluation Criteria	Technical Evaluation Criteria	Weight	Score	Result
<p>Software Development Experience</p> <p>The bidder needs to demonstrate in CV /Business profile/Reference Letter a combination of the following experience and expertise:</p> <ul style="list-style-type: none"> • Application development with Unity • Software development with C# • Docker deployment 	<ul style="list-style-type: none"> • 10 = 3 years or more experience in software development expertise as required. • 5 = 2 years or more experience in software development expertise as required. • 2 = 1 years or more experience in software development expertise as required. • 0 = 0 years or more experience in software development expertise as required. 	40%.	Out of 10	
<p>Modelling and Simulation Experience</p> <p>The bidder needs to demonstrate in CV /Business profile/Reference Letter a combination of the following experience and expertise:</p> <ul style="list-style-type: none"> • Modelling of Marine environments, or • Modelling of urban environment, or • Modelling humans, or • Modelling dynamic object movements, or • Other relevant experience. 	<ul style="list-style-type: none"> • 10 = 3 years or more experience in modelling and simulation as required. • 5 = 2 years or more experience in modelling and simulation as required. • 2 = 1 year or more experience in modelling and simulation as required. • 0 = 0 years or more experience in s modelling and simulation as required. 	40%	Out of 10	

<p>Technical Research and Development Experience</p> <p>The bidder needs to indicate the R&D or related projects they have worked in over the past 2 years.</p>	<ul style="list-style-type: none"> • 5 = 2 years or more experience in technical R&D as required. • 2 = 1 years or more experience in technical R&D as required. • 0 = 0 years or more experience in technical R&D as required. 	5%	Out of 5	
<p>Project Management co-ordination experience</p> <p>The bidder needs to indicate their experience in managing or coordinating projects and methodologies they use to manage projects. Please include sample of project plans that have been developed and implemented in your recent projects.</p>	<ul style="list-style-type: none"> • 5 = 2 years or more experience in project management as required. • 2 = 1 years or more experience in project management as required. • 0 = 0 years or more experience in project management as required. 	5%	Out of 5	
<p>Resources</p> <p>The bidder needs to provide detailed CVs of at least 3 qualified and suitable resources in their employment that may be assigned to the project as per this RFP and at least 1 reference letter for similar work done on other projects.</p>	<ul style="list-style-type: none"> • 10 = 3 CVs provided with relevant experience and qualifications. 1 or more reference letters indicating similar work completed. • 5 = 2 CVs provided with relevant experience and qualifications. 1 or more reference letter indicating similar work completed. • 2 = 1 CVs provided with relevant experience and qualifications, or 1 or more reference letter indicating similar work completed. • 0 = 0 CVs provided with relevant experience and qualifications. 0 or more reference letter indicating similar work completed. 	10%	Out of 10	

6.2 Proposals with capability points of less than the pre-determined minimum overall percentage of 65% and less than 20% on any of the individual criteria can be eliminated from further evaluation.

6.3 Proposal not adhering 100% to all functional specifications can be eliminated from the evaluation.

7 ELIMINATION CRITERIA

Proposals will be eliminated under the following conditions:

- Submission after the deadline;
- Proposals submitted at incorrect location; and
- Submission after the deadline and/or incomplete submission (e.g. missing required documentation such as Business Profile, CVs of Personnel, Reference letters from clients, Evidence of experience or expertise, and other relevant documentation);
- Proposals that are out of scope or specifications presented in this document;
- Proposals without hourly labour rates for resources;
- Service providers not classified as Exempt Micro Enterprises (EMEs) or Qualifying Small Enterprises (QSEs); and
- Only service providers with a rating of B-BBEE Level 1 will be considered for this work

8 FINANCIAL EVALUATION CRITERIA

This RFP has budget restrictions for the period of the contract. Each proposal submitted and has passed the technical evaluation stage would be subjected to the following criteria with regards to the financial aspects:

- **Labour hourly rate (VAT Exclusive)** for different types of resources (e.g. Junior and Senior) including project management or other costs (if not included in the labour hourly rate) for 2019/2020 and 2020/2021 financial years. If the project progresses into multiple years.
- CSIR will negotiate the final terms and conditions of the contract with the successful bidders. This may include aspects such as the project requirements, statement of works, level of effort (based on labour hourly rate quoted) and delivery including project plans. Thereafter, the final contract will be awarded to the successful bidders(s).

9 NATIONAL TREASURY CENTRAL SUPPLIER DATABASE REGISTRATION

Before any negotiations will start with the winning bidder it will be required from the winning bidder to:

- be registered on National Treasury's Central Supplier Database (CSD). Registrations can be completed online at: www.csd.gov.za;
- provide the CSIR of their CSD registration number; and
- provide the CSIR with a certified copy of their B-BBEE certificate. If no certificate can be provided, no points will be scored during the evaluation process. (RSA suppliers only)

SECTION B – TERMS AND CONDITIONS

10 VENUE FOR PROPOSAL SUBMISSION

All proposals must be submitted at:

- **CSIR GATE 03 - Main Reception Area** (in the **Tender box**) at the following address
Council for Scientific and Industrial Research (CSIR)
Meiring Naudé Road
Brummeria
Pretoria

11 TENDER PROGRAMME

The tender program, as currently envisaged, incorporates the following key dates:

- Issue of tender documents: 17 July 2019
- Compulsory briefing session 24 July 2019 at 09:00
- Closing / submission Date: 31 July 2019 at 16h30

12 SUBMISSION OF PROPOSALS

12.1 All proposals are to be sealed. No open proposals will be accepted.

12.2 All proposals are to be clearly marked with the RFP number and the name of the tenderer on the outside of the main package. Proposals must consist of two parts, each of which is placed in a separate sealed package clearly marked:

PART 1: Technical Proposal:

PART 2: Pricing Proposal, B-BBEE and other Mandatory Documentation:

12.3 Proposals submitted by companies must be signed by a person or persons duly authorised.

12.4 The CSIR will award the contract to qualified tenderer(s) whose proposal is determined to be the most advantageous to the CSIR, taking into consideration the technical (functional) solution, price and B-BBEE.

13 DEADLINE FOR SUBMISSION

Proposals shall be submitted at the address mentioned above no later than the closing date of **31 July 2019** during CSIR's business hours. The CSIR business hours are between 08h00 and 16h30.

Where a proposal is not received by the CSIR by the due date and stipulated place, it will be regarded as a late tender. Late tenders will not be considered.

14 AWARDING OF TENDERS

14.1 Awarding of tenders will be published on the National Treasury e-tender portal or the CSIR's tender website. No regret letters will be sent out.

15 EVALUATION PROCESS

15.1 Evaluation of proposals

All proposals will be evaluated by an evaluation team according to technical points, price and B-BBEE as stated in Section 4 and 5 . Based on the results of the evaluation process and upon successful negotiations, the CSIR will approve the awarding of the contract to successful tenderers.

A two-phase evaluation process will be followed.

- The first phase includes evaluation of **elimination** and **functionality criteria**,
- The second phase includes the evaluation of **price** and **B-BBEE** status.

Pricing Proposals will only be considered after functionality phase has been adjudicated and accepted. Only proposals that achieved the specified minimum qualification scores for functionality will be evaluated further using the preference points system.

15.2 Preference points system

The 80/20 preference point system will be used where 80 points will be dedicated to price and 20 points to B-BBEE status.

16 PRICING PROPOSAL

16.1 Pricing proposal must be cross-referenced to the sections in the Technical Proposal. Any options offered must be clearly labelled. Separate pricing must be provided for each option offered to ensure that pricing comparisons are clear and unambiguous.

16.2 Price needs to be provided in South African Rand (excl. VAT), with details on price elements that are subject to escalation and exchange rate fluctuations clearly indicated.

16.3 Price should include additional cost elements such as freight, insurance until acceptance, duty where applicable.

16.4 Only firm prices* will be accepted during the tender validity period. Non-firm prices** (including prices subject to rates of exchange variations) will not be considered.

**Firm price is the price that is only subject to adjustments in accordance with the actual increase or decrease resulting from the change, imposition, or abolition of customs or excise duty and any other duty, levy, or tax which, in terms of a law or regulation is binding on the contractor and demonstrably has an influence on the price of any supplies, or the rendering costs of any service, for the execution of the contract;*

***Non-firm price is all prices other than "firm" prices.*

16.5 Payment will be according to the CSIR Payment Terms and Conditions.

17 VALIDITY PERIOD OF PROPOSAL

Each **proposal** shall be valid for a minimum period of three (3) months calculated from the closing date.

18 APPOINTMENT OF SERVICE PROVIDER

18.1 The contract will be awarded to the tenderer who scores the highest total number of points during the evaluation process, except where the law permits otherwise.

18.2 Appointment as a successful service provider shall be subject to the parties agreeing to mutually acceptable contractual terms and conditions. In the event of the parties failing to reach such agreement CSIR reserves the right to appoint an alternative supplier.

18.3 Awarding of contracts will be announced on the National Treasury website and no regret letters will be sent to unsuccessful bidders.

19 ENQUIRIES AND CONTACT WITH THE CSIR

Any enquiry regarding this RFP shall be submitted in writing to CSIR at tender@csir.co.za with **“RFP No 3316/31/07/2019 - The provision of technical research and development in building an optronics defence capability to the CSIR** as the subject.

Any other contact with CSIR personnel involved in this tender is not permitted during the RFP process other than as required through existing service arrangements or as requested by the CSIR as part of the RFP process.

20 MEDIUM OF COMMUNICATION

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

21 COST OF PROPOSAL

Tenderers are expected to fully acquaint themselves with the conditions, requirements and specifications of this RFP before submitting proposals. Each tenderer assumes all risks for resource commitment and expenses, direct or indirect, of proposal preparation and participation throughout the RFP process. The CSIR is not responsible directly or indirectly for any costs incurred by tenderers.

22 CORRECTNESS OF RESPONSES

22.1 The tenderer must confirm satisfaction regarding the correctness and validity of their proposal and that all prices and rates quoted cover all the work/items specified in the RFP. The prices and rates quoted must cover all obligations under any resulting contract.

22.2 The tenderer accepts that any mistakes regarding prices and calculations will be at their own risk.

23 VERIFICATION OF DOCUMENTS

- 23.1** Tenderers should check the numbers of the pages to satisfy themselves that none are missing or duplicated. No liability will be accepted by the CSIR in regard to anything arising from the fact that pages are missing or duplicated.
- 23.2** *One hard copy and one electronic copy (CD or USB memory key)* of each proposal must be submitted. In the event of a contradiction between the submitted copies, the hard copy shall take precedence.
- 23.3** Pricing schedule and B-BBEE credentials should be submitted with the proposal, but as a separate document and no such information should be available in the technical proposal.
- 23.4** If a courier service company is being used for delivery of the proposal document, the RFP description must be endorsed on the delivery note/courier packaging to ensure that documents are delivered to the tender box, by the stipulated due date.

24 SUB-CONTRACTING

- 24.1** A tenderer will not be awarded points for B-BBEE status level if it is indicated in the tender documents that such a tenderer intends sub-contracting more than **10%** of the value of the contract to any other enterprise that does not qualify for at least the points that such a tenderer qualifies for, unless the intended sub-contractor is an exempted micro enterprise that has the capability and ability to execute the sub-contract.
- 24.2** A tenderer awarded a contract may not sub-contract more than **25%** of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an exempted micro enterprise that has the capability and ability to execute the sub-contract.

25 ENGAGEMENT OF CONSULTANTS

The consultants will only be remunerated at the rates:

- 25.1** Determined in the "Guideline for fees", issued by the South African Institute of Chartered Accountants (SAICA); or

25.2 Set out in the "Guide on Hourly Fee Rates for Consultants", by the Department of Public Service and Administration (DPSA); or

25.3 Prescribed by the body - regulating the profession of the consultant.

26 TRAVEL EXPENSES

24.1 All travel expenses will be on the selected service providers' accounts and these need to be factored in the labour rate quoted by the service provider.

24.2 The CSIR will not be responsible for any travel arrangements or office space for the selected service provider(s).

27 ADDITIONAL TERMS AND CONDITIONS

27.1 A tenderer shall not assume that information and/or documents supplied to CSIR, at any time prior to this request, are still available to CSIR, and shall consequently not make any reference to such information document in its response to this request.

27.2 Copies of any affiliations, memberships and/or accreditations that support your submission must be included in the tender.

27.3 In case of proposal from a joint venture, the following must be submitted together with the proposal:

- Joint venture Agreement including split of work signed by both parties;
- The original or certified copy of the B-BBEE certificate of the joint venture;
- The Tax Clearance Certificate of each joint venture member;
- Proof of ownership/shareholder certificates/copies; and
- Company registration certificates.

27.4 An omission to disclose material information, a factual inaccuracy, and/or a misrepresentation of fact may result in the disqualification of a tender, or cancellation of any subsequent contract.

27.5 Failure to comply with any of the terms and conditions as set out in this document will invalidate the Proposal.

28 CSIR RESERVES THE RIGHT TO

28.1 Extend the closing date;

28.2 Verify any information contained in a proposal;

28.3 Request documentary proof regarding any tendering issue;

28.4 Give preference to locally manufactured goods;

28.5 Appoint one or more service providers, separately or jointly (whether or not they submitted a joint proposal);

28.6 Award this RFP as a whole or in part;

28.7 Cancel or withdraw this RFP as a whole or in part.

29 DISCLAIMER

This RFP is a request for proposals only and not an offer document. Answers to this RFP must not be construed as acceptance of an offer or imply the existence of a contract between the parties. By submission of its proposal, tenderers shall be deemed to have satisfied themselves with and to have accepted all Terms & Conditions of this RFP. The CSIR makes no representation, warranty, assurance, guarantee or endorsements to tenderer concerning the RFP, whether with regard to its accuracy, completeness or otherwise and the CSIR shall have no liability towards the tenderer or any other party in connection therewith.

DECLARATION BY TENDERER

Only tenderers who completed the declaration below will be considered for evaluation.

RFP No: 3316/31/07/2019

I hereby undertake to render services described in the attached tendering documents to CSIR in accordance with the requirements and task directives / proposal specifications stipulated in RFP No 3316/31/07/2019 at the price/s quoted. My offer/s remains binding upon me and open for acceptance by the CSIR during the validity period indicated and calculated from the closing date of the proposal.

I confirm that I am satisfied with regards to the correctness and validity of my proposal; that the price(s) and rate(s) quoted cover all the services specified in the proposal documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.

I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this proposal as the principal liable for the due fulfilment of this proposal.

I declare that I have no participation in any collusive practices with any tenderer or any other person regarding this or any other proposal.

I accept that the CSIR may take appropriate actions, deemed necessary, should there be a conflict of interest or if this declaration proves to be false.

I confirm that I am duly authorised to sign this proposal.

NAME (PRINT)

CAPACITY

SIGNATURE

NAME OF FIRM

DATE