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Request for Proposal (RFP)

Proposal To: Natural Resources Canada
We hereby offer to sell to Her Majesty the Queen in right of Canada, in accordance with the terms and conditions set out herein, referred to herein or attached hereto, the goods, services, and construction listed herein and on any attached sheets at the price(s) set out therefor.

Comments – Commentaires

Issuing Office – Bureau de distribution

Finance and Procurement Management
Branch
Natural Resources Canada
1055, PEPS street, CP 10380
Quebec, QC
G1V 4C7

Title – Sujet Entwine Point Tile integration for Point Cloud support in GeoTrellis.	
Solicitation No. – No de l'invitation NRCan- 5000050365	Date December 20, 2019
Requisition Reference No. - N° de la demande 156569	
Solicitation Closes – L'invitation prend fin at – 02:00 PM (Eastern Standard Time (EST)) on – January 29 2020	
Address Enquiries to: - Adresse toutes questions à: caroline.roberge@canada.ca	
Telephone No. – No de telephone 418 648-8304	
Destination – of Goods and Services: Destination – des biens et services: Natural Resources Canada 50 Place de la Cité, Suite 212 Sherbrooke, QC J1H 4G9	
Security – Sécurité There is no security requirements associated with this requirement.	
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur Telephone No.:- No. de téléphone:	
Name and Title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
_____ Signature	_____ Date



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The Articles contained in this document are mandatory in their entirety, unless otherwise indicated. Acceptance of these Articles, in their entirety, as they appear in this document, is a Mandatory requirement of this RFP. Suppliers submitting a proposal containing statements implying that their proposal is conditional on modification of these clauses or containing terms and conditions that purport to supersede these clauses or derogate from them will be considered non-responsive.

Bidders with concerns regarding the provisions of the Bid Solicitation document (including the Resulting Contract Clauses) should raise such concerns in accordance with the Enquiries provision of this RFP.



PART 1 - GENERAL INFORMATION

1.1 Introduction

The bid solicitation is divided into seven parts plus attachments and annexes, as follows:

- Part 1 General Information: provides a general description of the requirement;
- Part 2 Bidder Instructions: provides the instructions, clauses and conditions applicable to the bid solicitation;
- Part 3 Bid Preparation Instructions: provides bidders with instructions on how to prepare their bid;
- Part 4 Evaluation Procedures and Basis of Selection: indicates how the evaluation will be conducted, the evaluation criteria that must be addressed in the bid, and the basis of selection;
- Part 5 Certifications: includes the certifications to be provided;
- Part 6 Security Requirements: includes specific requirements that must be addressed by bidders; and
- Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

The Annexes include the Statement of Work and the Basis of Payment.

The Appendixes include the Evaluation Criteria and the Financial Proposal Form.

1.2 Summary

By means of the RFP, Natural Resources Canada (NRCan) is seeking proposals from bidders to implement support for Entwine Point Tile¹ (EPT) storage format inside the existing [GeoTrellis](#) open source project. Entwine Point Tile is a static octree-based storage format for point cloud that is intended for fast access of large volumes of point cloud data.

1.3 Debriefings

Bidders may request a debriefing on the results of the bid solicitation process. Bidders should make the request to the Contracting Authority within 15 working days from receipt of the results of the bid solicitation process. The debriefing may be in writing, by telephone or in person.

¹ <https://entwine.io/entwine-point-tile.html>



PART 2 - BIDDER INSTRUCTIONS

2.1 Standard Instructions, Clauses and Conditions

All instructions, clauses and conditions identified in the bid solicitation by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

Bidders who submit a bid agree to be bound by the instructions, clauses and conditions of the bid solicitation and accept the clauses and conditions of the resulting contract.

The 2003 (2019-03-04) Standard Instructions - Goods or Services - Competitive Requirements, are incorporated by reference into and form part of the bid solicitation with the modifications to the text below. If there is a conflict between the provisions of 2003 and this document, this document prevails.

- **In the complete text content (except Section 3) Delete:** Public Works and Government Services Canada” and **Insert:** “Natural Resources Canada.” **Delete:** “PWGSC” and **Insert:** “NRCan”
- **Section 2: Delete:** “Suppliers are required to” and **Insert:** “It is suggested that suppliers”
- **Subsection 1 of Section 8:**
- **Under Subsection 2 of Section 20:** Not applicable

2.2 Submission of Bids

It is the Bidders responsibility to ensure that proposals are sent to the following e-mail address, by the time and date indicated on page 1 of this RFP document

nrcan.quebecbid-soumissionquebec.nrcan@canada.ca

The address above is reserved for the submission of your proposal. No other communication should be sent to that address.

IMPORTANT

Please write in the “Subject” of the e-mail:

NRCan-5000050365 - Entwine Point Tile integration in GeoTrellis.

Due to the nature of the bid solicitation, bids transmitted by mail or facsimile to NRCan will not be accepted.

NRCan will not assume responsibility for proposals directed to any other location.

The onus is on the Bidder to ensure that the proposal is submitted correctly to the above address. Not complying with the above instructions may result in NRCan’s inability to ascertain reception date and/or to consider the bid prior to contract award. Therefore, NRCan reserves the right to reject any proposal not complying with these instructions.



2.3 Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority no later than five (5) calendar days before the bid closing date. Enquiries received after that time may not be answered.

Bidders should reference as accurately as possible the numbered item of the bid solicitation to which the enquiry relates. Care should be taken by Bidders to explain each question in sufficient detail in order to enable Canada to provide an accurate answer. Technical enquiries that are of a proprietary nature must be clearly marked "proprietary" at each relevant item. Items identified as "proprietary" will be treated as such except where Canada determines that the enquiry is not of a proprietary nature. Canada may edit the question(s) or may request that the Bidder do so, so that the proprietary nature of the question(s) is eliminated and the enquiry can be answered to all Bidders. Enquiries not submitted in a form that can be distributed to all Bidders may not be answered by Canada.

2.4 Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Quebec.

Bidders may, at their discretion, substitute the applicable laws of a Canadian province or territory of their choice without affecting the validity of their bid, by deleting the name of the Canadian province or territory specified and inserting the name of the Canadian province or territory of their choice. If no change is made, it acknowledges that the applicable laws specified are acceptable to the Bidders.

2.5 Improvement of Requirement During Solicitation Period

Should bidders consider that the specifications or Statement of Work contained in the bid solicitation could be improved technically or technologically, bidders are invited to make suggestions, in writing, to the Contracting Authority named in the bid solicitation. Bidders must clearly outline the suggested improvement as well as the reason for the suggestion. Suggestions that do not restrict the level of competition nor favour a particular bidder will be given consideration provided they are submitted to the Contracting Authority at least five (5) days before the bid closing date. Canada will have the right to accept or reject any or all suggestions.



PART 3 - BID PREPARATION INSTRUCTIONS

3.1 Bid Preparation Instructions

Canada requests that Bidders provide their bid in separately bound sections as follows:

Section I: Technical Bid (1 electronic copy)

Section II: Financial Bid (1 electronic copy) in a separate file and document

Section III: Certifications (1 electronic copy)

Prices should appear in the financial bid only. No prices should be indicated in any other section of the bid.

Canada requests that Bidders follow the format instructions described below in the preparation of their bid:

- (a) use 8.5 x 11 inch (216 mm x 279 mm) format;
- (b) use a numbering system that corresponds to the bid solicitation.

Section I: Technical Bid

In their technical bid, Bidders should demonstrate their understanding of the requirements contained in the bid solicitation and explain how they will meet these requirements. Bidders should demonstrate their capability and describe their approach in a thorough, concise and clear manner for carrying out the work.

The technical bid should address clearly and in sufficient depth the points that are subject to the evaluation criteria against which the bid will be evaluated. Simply repeating the statement contained in the bid solicitation is not sufficient. In order to facilitate the evaluation of the bid, Canada requests that Bidders address and present topics in the order of the evaluation criteria under the same headings. To avoid duplication, Bidders may refer to different sections of their bids by identifying the specific paragraph and page number where the subject topic has already been addressed.

Section II: Financial Bid

Bidders must submit their financial bid in accordance with the Financial Proposal Form in Appendix 2. The total amount of Applicable Taxes must be shown separately.

Section III: Certifications

Bidders must submit the certifications required under Part 5.



PART 4 - EVALUATION PROCEDURES AND BASIS OF SELECTION

4.1 Evaluation Procedures

- (a) Bids will be assessed in accordance with the entire requirement of the bid solicitation including the technical and financial evaluation criteria.
- (b) An evaluation team composed of representatives of Canada will evaluate the bids.

4.1.1 Technical Evaluation

Mandatory and point rated technical evaluation criteria are included in Appendix 1 – Evaluation Criteria.

4.1.2 Financial Evaluation

Mandatory financial evaluation criteria are included in Appendix 2 - Evaluation Criteria.

4.2 Basis of Selection

4.2.1 Highest Combined Rating of Technical Merit and Price

1. To be declared responsive, a bid must:
 - a. comply with all the requirements of the bid solicitation; and
 - b. meet all mandatory criteria; and
 - c. obtain the required minimum of 30 points overall for the technical evaluation criteria which are subject to point rating. The rating is performed on a scale of 50 points.
2. Bids not meeting (a) or (b) or (c) will be declared non-responsive.
3. The selection will be based on the highest responsive combined rating of technical merit and price. The ratio will be 60% for the technical merit and 40 % for the price.
4. To establish the technical merit score, the overall technical score for each responsive bid will be determined as follows: total number of points obtained / maximum number of points available multiplied by the ratio of 60 %.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 40%.
6. For each responsive bid, the technical merit score and the pricing score will be added to determine its combined rating.
7. Neither the responsive bid obtaining the highest technical score nor the one with the lowest evaluated price will necessarily be accepted. The responsive bid with the highest combined rating of technical merit and price will be recommended for award of a contract.



The table below illustrates an example where all three bids are responsive and the selection of the contractor is determined by a 60/40 ratio of technical merit and price, respectively. The total available points equal 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (70%) and Price (30%)				
		Bidder 1	Bidder 2	Bidder 3
Overall Technical Score		115/135	89/135	92/135
Bid Evaluated Price		\$55,000.00	\$50,000.00	\$45,000.00
Calculations	Technical Merit Score	$115/135 \times 60 = 51.11$	$89/135 \times 60 = 39.56$	$92/135 \times 60 = 40.89$
	Pricing Score	$45/55 \times 40 = 32.73$	$45/50 \times 40 = 36.00$	$45/45 \times 40 = 40.00$
Combined Rating		83.84	75.56	80.89
Overall Rating		1st	3rd	2nd



PART 5 – CERTIFICATIONS AND ADDITIONAL INFORMATION

Bidders must provide the required certifications and additional information to be awarded a contract.

The certifications provided by Bidders to Canada are subject to verification by Canada at all times. Canada will declare a bid non-responsive, or will declare a contractor in default if any certification made by the Bidder is found to be untrue, whether made knowingly or unknowingly, during the bid evaluation period or during the contract period.

The Contracting Authority will have the right to ask for additional information to verify the Bidder's certifications. Failure to comply and to cooperate with any request or requirement imposed by the Contracting Authority will render the bid non-responsive or constitute a default under the Contract.

5.1 Certifications Required with the Bid

Bidders must submit the following duly completed certifications as part of their bid.

5.1.1 Declaration of Convicted Offences

In accordance with the [Ineligibility and Suspension Policy \(http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html\)](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

5.2 Certifications Precedent to Contract Award and Additional Information

The certifications and additional information listed below should be submitted with the bid but may be submitted afterwards. If any of these required certifications or additional information is not completed and submitted as requested, the Contracting Authority will inform the Bidder of a time frame within which to provide the information. Failure to provide the certifications or the additional information listed below within the time frame specified will render the bid non-responsive.

5.2.1 Integrity Provisions – List of Names

In accordance with the [Ineligibility and Suspension Policy \(http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html\)](http://www.tpsgc-pwgsc.gc.ca/ci-if/politique-policy-eng.html), the Bidder must provide with its bid the required documentation, as applicable, to be given further consideration in the procurement process.

- Bidders who are incorporated, including those bidding as a joint venture, must provide a complete list of names of all individuals who are currently directors of the Bidder or, in the case of a private company, the owners of the company.
- Bidders bidding as sole proprietorship, as well as those bidding as a joint venture, must provide the name of the owner(s).
- Bidders bidding as partnerships do not need to provide lists of names.

Name of Bidder: _____

OR



Name of each member of the joint venture:

Member 1: _____
 Member 2: _____
 Member 3: _____
 Member 4: _____

Identification of the administrators/owners:

SURNAME	NAME	TITLE

5.2.2 Federal Contractors Program for Employment Equity - Bid Certification

By submitting a bid, the Bidder certifies that the Bidder, and any of the Bidder's members if the Bidder is a Joint Venture, is not named on the Federal Contractors Program (FCP) for employment equity "[FCP Limited Eligibility to Bid](http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml)" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from [Employment and Social Development Canada \(ESDC\) - Labour's](#) website.

Canada will have the right to declare a bid non-responsive if the Bidder, or any member of the Bidder if the Bidder is a Joint Venture, appears on the "[FCP Limited Eligibility to Bid](#)" list at the time of contract award.

5.2.3 Status and Availability of Resources

The Bidder certifies that, should it be awarded a contract as a result of the bid solicitation, every individual proposed in its bid will be available to perform the Work as required by Canada's representatives and at the time specified in the bid solicitation or agreed to with Canada's representatives. If for reasons beyond its control, the Bidder is unable to provide the services of an individual named in its bid, the Bidder may propose a substitute with similar qualifications and experience. The Bidder must advise the Contracting Authority of the reason for the substitution and provide the name, qualifications and experience of the proposed replacement. For the purposes of this clause, only the following reasons will be considered as beyond the control of the Bidder: death, sickness, maternity and parental leave, retirement, resignation, dismissal for cause or termination of an agreement for default.

If the Bidder has proposed any individual who is not an employee of the Bidder, the Bidder certifies that it has the permission from that individual to propose his/her services in relation to the Work to be performed and to submit his/her résumé to Canada. The Bidder must, upon request from the Contracting Authority, provide a written confirmation, signed by the individual, of the permission given to the Bidder and of his/her availability.



5.2.4 Education and Experience

The Bidder certifies that all the information provided in the résumés and supporting material submitted with its bid, particularly the information pertaining to education, achievements, experience and work history, has been verified by the Bidder to be true and accurate. Furthermore, the Bidder warrants that every individual proposed by the Bidder for the requirement is capable of performing the Work described in the resulting contract.

5.2.5 Former Public Servant

Contracts awarded to former public servants (FPS) in receipt of a pension or of a lump sum payment must bear the closest public scrutiny, and reflect fairness in the spending of public funds. In order to comply with Treasury Board policies and directives on contracts awarded to FPSs, bidders must provide the information required below before contract award. If the answer to the questions and, as applicable the information required have not been received by the time the evaluation of bids is completed, Canada will inform the Bidder of a time frame within which to provide the information. Failure to comply with Canada's request and meet the requirement within the prescribed time frame will render the bid non-responsive.

Definitions

For the purposes of this clause, "former public servant" is any former member of a department as defined in the [Financial Administration Act](#), R.S., 1985, c. F-11, a former member of the Canadian Armed Forces or a former member of the Royal Canadian Mounted Police. A former public servant may be:

- a. an individual;
- b. an individual who has incorporated;
- c. a partnership made of former public servants; or
- d. a sole proprietorship or entity where the affected individual has a controlling or major interest in the entity.

"lump sum payment period" means the period measured in weeks of salary, for which payment has been made to facilitate the transition to retirement or to other employment as a result of the implementation of various programs to reduce the size of the Public Service. The lump sum payment period does not include the period of severance pay, which is measured in a like manner.

"pension" means a pension or annual allowance paid under the [Public Service Superannuation Act](#) (PSSA), R.S., 1985, c. P-36, and any increases paid pursuant to the [Supplementary Retirement Benefits Act](#), R.S., 1985, c. S-24 as it affects the PSSA. It does not include pensions payable pursuant to the [Canadian Forces Superannuation Act](#), R.S., 1985, c. C-17, the [Defence Services Pension Continuation Act](#), 1970, c. D-3, the [Royal Canadian Mounted Police Pension Continuation Act](#), 1970, c. R-10, and the [Royal Canadian Mounted Police Superannuation Act](#), R.S., 1985, c. R-11, the [Members of Parliament Retiring Allowances Act](#), R.S. 1985, c. M-5, and that portion of pension payable to the [Canada Pension Plan Act](#), R.S., 1985, c. C-8.

Former Public Servant in Receipt of a Pension

As per the above definitions, is the Bidder a FPS in receipt of a pension? **Yes** () **No** ()

If so, the Bidder must provide the following information, for all FPSs in receipt of a pension, as applicable:



- a. name of former public servant; _____
- b. date of termination of employment or retirement from the Public Service. _____

By providing this information, Bidders agree that the successful Bidder's status, with respect to being a former public servant in receipt of a pension, will be reported on departmental websites as part of the published proactive disclosure reports in accordance with [Contracting Policy Notice: 2012-2](#) and the [Guidelines on the Proactive Disclosure of Contracts](#).

Work Force Adjustment Directive

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of the Work Force Adjustment Directive? **Yes** () **No** ()

If so, the Bidder must provide the following information:

- a. name of former public servant; _____
- b. conditions of the lump sum payment incentive; _____
- c. date of termination of employment; _____
- d. amount of lump sum payment; _____
- e. rate of pay on which lump sum payment is based; _____
- f. period of lump sum payment including:
 - start date _____
 - end date _____
 - and number of weeks _____
- g. number and amount (professional fees) of other contracts subject to the restrictions of a work force adjustment program.

Professional fees	Amount
_____	_____
_____	_____

For all contracts awarded during the lump sum payment period, the total amount of fees that may be paid to a FPS who received a lump sum payment is \$5,000, including Applicable Taxes.

5.2.6 Aboriginal Designation

Who is eligible?

- a) An Aboriginal business, which can be:
 - i. a band as defined by the Indian Act
 - ii. a sole proprietorship
 - iii. a limited company
 - iv. a co-operative
 - v. a partnership



vi. a not-for-profit organization

in which Aboriginal persons have at least 51 percent ownership and control,

OR

b. A joint venture consisting of two or more Aboriginal businesses or an Aboriginal business and a non-Aboriginal business(es), provided that the Aboriginal business(es) has at least 51 percent ownership and control of the joint venture.

When an Aboriginal business has six or more full-time employees at the date of submitting the bid, at least thirty-three percent of them must be Aboriginal persons, and this ratio must be maintained throughout the duration of the contract.

The bidder must certify in its submitted bid that it is an Aboriginal business or a joint venture constituted as described above.

- Our Company is NOT an Aboriginal Firm, as identified above.
- Our Company is an Aboriginal Firm, as identified above.



PART 6 - SECURITY REQUIREMENTS

6.1 Security Requirements

There is no security requirements associated with this requirement.



PART 7 - RESULTING CONTRACT CLAUSES

The following clauses and conditions apply to and form part of any contract resulting from the bid solicitation.

7.1 Statement of Work

The Contractor must perform the Work in accordance with the Statement of Work at Annex A and the Contractor's technical bid entitled _____, dated _____. (*to be completed at contract award*)

7.1.1 Optional Goods and/or Services

The Contractor grants to Canada the irrevocable option to acquire the goods, services or both described at Annex A section 4.1 of the Contract under the same conditions and at the prices and/or rates stated in the Contract. The option may only be exercised by the Contracting Authority and will be evidenced, for administrative purposes only, through a contract amendment.

The Contracting Authority may exercise the option at any time before the end of contract by sending a written notice to the Contractor.

7.2 Standard Clauses and Conditions

All clauses and conditions identified in the Contract by number, date and title are set out in the [Standard Acquisition Clauses and Conditions Manual](https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) (https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual) issued by Public Works and Government Services Canada.

7.2.1 General Conditions

[2010B](#) (2018-06-21), General Conditions – Professional Services - Medium Complexity, apply to and form part of the Contract.

- As applicable, replace references to Public Works and Government Services Canada (PWGSC) with Natural Resources Canada (NRCan).

7.2.2 Supplemental General Conditions

The following clauses apply to this contract:

[4002](#) (2010-08-16), Software Development or Modification Services

7.3 Dispute Resolution

Mediation

If a dispute arising from this contract cannot be settled amicably through negotiation, then the parties agree in good faith to submit the dispute to mediation as administered by the Arbitration and Mediation Institute of Canada Inc. (AMIC). The parties acknowledge receipt of the rules of AMIC. The cost of mediation shall be borne equally by the parties.

Arbitration

If the parties cannot resolve the dispute through mediation within sixty (60) days, the parties agree to submit the dispute to arbitration pursuant to the Commercial Arbitration Act (Canada). The party



requesting such arbitration shall do so by written notice to the other party/parties. The cost of the arbitration and fees of the arbitrator shall be borne equally by the parties. The arbitration shall take place in the city where the contractor carries on business before a single arbitrator to be chosen jointly by the parties. If the parties cannot agree on the choice of arbitrator within thirty (30) days of written notice to submit the dispute to arbitration, each party will choose a representative who will select the arbitrator. The parties may determine the procedure to be followed by the arbitrator in conducting the proceedings, or may ask the arbitrator to do so. The arbitrator shall issue a written award within thirty (30) days of hearing the parties. The award may be entered in any court having jurisdiction and enforced as a judgment of that court.

Meaning of "Dispute"

The parties agree that the word "dispute" in this clause refers to a dispute of fact or of law, other than a dispute of public law.

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will, on request or consent of the parties to participate in an alternative dispute resolution process to resolve any dispute between the parties respecting the interpretation or application of a term and condition of this contract and their consent to bear the cost of such process, provide to the parties a proposal for an alternative dispute resolution process to resolve their dispute. The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca.

7.4 Security Requirements

7.4.1 There is no security requirement applicable to this Contract.

7.5 Term of Contract

7.5.1 Period of the Contract

The period of the Contract is from date of Contract to March 31, 2020.

7.6 Authorities

7.6.1 Contracting Authority

The Contracting Authority for the Contract is:

Caroline Roberge
Procurement officer
Natural Resources Canada
1055, P.E.P.S. Street, C.P. 10380
Quebec, QC G1V 4C7
418 648-8304
caroline.roberge@canada.ca

The Contracting Authority is responsible for the management of the Contract and any changes to the Contract must be authorized in writing by the Contracting Authority. The Contractor must not perform work in excess of or outside the scope of the Contract based on verbal or written requests or instructions from anybody other than the Contracting Authority.



7.6.2 Project Authority (*to be provided at contract award*)

The Project Authority for the Contract is:

Name:
Title:
Organization:
Address:
Telephone:
Facsimile:
E-mail address:

The Project Authority is the representative of the department or agency for whom the Work is being carried out under the Contract and is responsible for all matters concerning the technical content of the Work under the Contract. Technical matters may be discussed with the Project Authority; however, the Project Authority has no authority to authorize changes to the scope of the Work. Changes to the scope of the Work can only be made through a contract amendment issued by the Contracting Authority.

7.6.3 Contractor's Representative (*to be provided at contract award*)

Name:
Title:
Organization:
Address:
Telephone:
Facsimile:
E-mail address

7.7 Proactive Disclosure of Contracts with Former Public Servants

By providing information on its status, with respect to being a former public servant in receipt of a [Public Service Superannuation Act](#) (PSSA) pension, the Contractor has agreed that this information will be reported on departmental websites as part of the published proactive disclosure reports, in accordance with [Contracting Policy Notice: 2012-2](#) of the Treasury Board Secretariat of Canada.

7.8 Payment

7.8.1 Basis of Payment – Firm Price, Firm Unit Price(S) or Firm Lot Price(s)

In consideration of the Contractor satisfactorily completing all of its obligations under the Contract, the Contractor will be paid a firm price as specified in Annex B for a cost of \$ _____ *insert the amount at contract award*). Customs duties are included and Applicable Taxes are extra.

Canada will not pay the Contractor for any design changes, modifications or interpretations of the Work, unless they have been approved, in writing, by the Contracting Authority before their incorporation into the Work.

7.8.2 Method of Payment

Milestone Payments

Canada will make milestone payments in accordance with the Schedule of Milestones detailed in the Contract and the payment provisions of the Contract if:



- a. an accurate and complete claim for payment, and any other document required by the Contract have been submitted in accordance with the invoicing instructions provided in the Contract;
- b. all work associated with the milestone and as applicable any deliverable required has been completed and accepted by Canada.

7.9 Invoicing Instructions

Invoices shall be submitted using one of the following methods:

<p><u>E-mail:</u></p> <p>rncan.invoiceimaging-servicedimageriedesfactures.rncan@canada.ca</p> <p>Note: Attach "PDF" file. No other formats will be accepted</p>
OR
<p><u>Fax:</u></p> <p>Local NCR region: 613-947-0987 Toll-free: 1-877-947-0987</p> <p>Note: Use highest quality settings available.</p>

Please do not submit invoices using more than one method as this will not expedite payment.

Invoices and all documents relating to a contract must be submitted on the Contractor's own form and shall bear the following reference numbers:

Contract number: _____ (to be provided at contract award)

Invoicing Instructions to suppliers: <http://www.nrcan.gc.ca/procurement/3485>

7.10 Certifications

7.10.1 Compliance

The continuous compliance with the certifications provided by the Contractor in its bid and the ongoing cooperation in providing additional information are conditions of the Contract. Certifications are subject to verification by Canada during the entire period of the Contract. If the Contractor does not comply with any certification, fails to provide the additional information, or if it is determined that any certification made by the Contractor in its bid is untrue, whether made knowingly or unknowingly, Canada has the right, pursuant to the default provision of the Contract, to terminate the Contract for default.



7.11 Applicable Laws

The Contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in Quebec.

7.12 Priority of Documents

If there is a discrepancy between the wording of any documents that appear on the list, the wording of the document that first appears on the list has priority over the wording of any document that subsequently appears on the list.

- (a) the Articles of Agreement;
- (b) the supplemental general conditions [4002](#) (2010-08-16) Software Development or Modification Services;
- (c) the general conditions [2010B](#) (2018-06-21) Professional services (medium complexity);
- (d) Annex A, Statement of Work;
- (e) Annex B, Basis of Payment;
- (f) the Contractor's bid dated _____, (*insert date of bid*)

7.13 Foreign Nationals (Canadian Contractor OR Foreign Contractor)

SACC Manual clause [A2000C](#) (2006-06-16) Foreign Nationals (Canadian Contractor)

OR

SACC Manual clause [A2001C](#) (2006-06-16) Foreign Nationals (Foreign Contractor)

7.14 Insurance

The Contractor is responsible for deciding if insurance coverage is necessary to fulfill its obligation under the Contract and to ensure compliance with any applicable law. Any insurance acquired or maintained by the Contractor is at its own expense and for its own benefit and protection. It does not release the Contractor from or reduce its liability under the Contract.

7.15 Contract Administration

The parties understand that the Procurement Ombudsman appointed pursuant to Subsection 22.1(1) of the *Department of Public Works and Government Services Act* will review a complaint filed by [*the supplier or the contractor or the name of the entity awarded this contract*] respecting administration of this contract if the requirements of Subsection 22.2(1) of the *Department of Public Works and Government Services Act* and Sections 15 and 16 of the *Procurement Ombudsman Regulations* have been met, and the interpretation and application of the terms and conditions and the scope of the work of this contract are not in dispute. The Office of the Procurement Ombudsman may be contacted by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca.



ANNEX A - STATEMENT OF WORK

SW.1.0 TITLE

Entwine Point Tile integration for Point Cloud support in GeoTrellis.

SW.2.0 BACKGROUND

Natural Resources Canada's Centre for Mapping and Earth Observation (CCMEO) is responsible for gathering, managing, processing, and delivering geospatial data or location-based information about the Canadian territory.

This information is used to produce Canada's base maps and is consumed in many GIS (Geographic Information System) applications and other systems using spatially referenced data. This information is distributed on the web via web services under the Open Government Licence (OGL)². Geospatial datasets are then accessible to the public via the Government of Canada's [Open Maps](https://open.canada.ca/en/open-maps)³ web site. The amount of geospatial data currently owned by CCMEO has increased substantially over the last decades forcing the organization to consider Big Data technologies to manage and disseminate its datasets.

The purpose of the project of using Big Data technologies – namely a geospatial data cube -- is to help NRCan and the Government of Canada in general increase understanding, for example, the cumulative environmental and socioeconomic effects of development activities by providing decision-makers, stakeholders and the public an access to a vast array of geospatial data.

The geospatial Data Cube implemented by NRCan is a scalable system deployed in a cloud IT environment. The platform is built upon open source technologies including [Apache Spark](https://spark.apache.org/)⁴, the GeoTrellis Framework⁵ and [GeoTrellis-Server](https://github.com/geotrellis/geotrellis-server)⁶. The Data Cube allows access, visualization and analytics of large raster datasets relevant for spatial information analysis. CCMEO currently manages its elevation data in the Data Cube.

This elevation data (namely Digital Elevation Models [DEMs] and its derived products) are mostly derived from airborne LiDAR point cloud data. CCMEO is looking for a way to dynamically manage and derive products from this point cloud data through the Data Cube, in order to reduce the effort put into the production of the elevation data.

SW.3.0 OBJECTIVES

This project aims to implement support for Entwine Point Tile⁷ (EPT) storage format inside the existing [GeoTrellis](https://github.com/geotrellis/geotrellis) open source project. Entwine Point Tile is a static octree-based storage format for point cloud that is intended for fast access of large volumes of point cloud data.

² <https://open.canada.ca/en/open-government-licence-canada>

³ <https://open.canada.ca/en/open-maps>

⁴ <https://spark.apache.org/>

⁵ <https://geotrellis.io/>

⁶ <https://github.com/geotrellis/geotrellis-server>

⁷ <https://entwine.io/entwine-point-tile.html>



SW.4.0 PROJECT REQUIREMENTS

This section describes the tasks that the Contractor must perform as enhancements to the existing GeoTrellis solution. Additional code to meet project requirements must be integrated in the current GeoTrellis open source project repository. Note: we think a logical repository for code to land in would be the GeoTrellis-pointcloud⁸ project. However, it is up to the contractor to find the optimal code location as long as it is open source like the rest of the GeoTrellis project code is.

Task 1: Entwine Point Tile (EPT) connector

The Contractor must implement support inside GeoTrellis for the Entwine Point Tile (EPT) format. The connector must allow reading as well as streaming data from EPT using the GeoTrellis Framework.

The GeoTrellis Framework must support on the fly digital elevation model (DEM) production from point cloud data accessible through an existing Entwine Point Tile catalog.

The provided solution must also allow the user to develop tools where GeoTrellis would stream data from the EPT. From the knowledge that we have of the geotrellis-pointcloud project, on-demand rasterization of PointCloud data requires storing the data in a GeoTrellis Layer object. The essence of this contract really is to avoid de-duplication of PointCloud data. Rather, PointCloud data should be accessed in their native data formats or “encodings” (e.g. LAS, LAZ) through an EPT and streamed to GeoTrellis for on-demand processing.

Task 2: Generating DEM from TIN

The Contractor must implement support inside GeoTrellis for the generation of Delaunay triangulation (namely TIN) from the streamed EPT data.

OPTIONAL SERVICE

Task 3 (optional): EPT writer

The contractor must implement support to write and update arbitrary EPT data structures from an input file containing point cloud data (e.g. .las or laz format).

SW.5.0 DELIVERABLES

This section describes deliverables that the Contractor must provide for all tasks (1 and 2) and optional task (3). [A request for a contract amendment will be granted if you decide to go ahead with the optional task.](#)

Deliverable 1: Kick-off meeting

The contractor must plan a kick-off meeting with the Project Authority within two weeks of contract signature. The kick-off meeting will be used to review the SOW and refine the deliverables as needed. The meeting will be held by telephone or videoconference.

Deliverable 2: Workplan

The Contractor must present a first draft of the proposed work plan within two weeks of the kick-off meeting. The workplan is subject to approval by the Project Authority. The Project Authority will provide the Contractor with comments or proposed adjustments to the work plan. The final workplan must be accepted within three weeks of the kick-off meeting and should include the list of selected options if any.

⁸ <https://github.com/geotrellis/geotrellis-pointcloud/>



Deliverable 3: GeoTrellis Code

The Contractor must implement the required functionalities in the geotrellis-pointcloud software repository on GitHub (or another openly accessible software repository that the Contractor sees fit) and additionally provide support for all the technical requirements described in the workplan. The solution must be compatible with the GeoTrellis Framework.

Deliverable 4: Documentation

The contractor must provide user documentation and developer documentation for all sections of the code produced during this project. The documentation must be published in the GitHub source code repository as Markdown or RestructuredText files.

Deliverable 5: Demonstration & Closing meeting

The Contractor must demonstrate to the Project Authority as agreed in the workplan that the implementation is compliant with technical requirements in this document (task 1). The Contractor will plan a closing meeting with the Project Authority before March 31, 2020. The meeting will be held by telephone or videoconference.

Schedule

Deliverable	Duration	Date approximative
Kick-off Meeting	2 weeks	Week of January 27, 2019
Workplan	2 weeks	Week of February 10, 2019
GeoTrellis Code and Documentation	5 weeks	Week of March 16, 2019
Demonstration and Closing Meeting	2 weeks	Before March 31, 2019

SW.6.0 METHOD AND SOURCE OF ACCEPTANCE

All deliverables and services rendered under any contract are subject to inspection by the Project Authority. The Project Authority shall have the right to reject any deliverables that are not considered satisfactory, or require their correction before payment will be authorized. If one or more deliverables are rejected, the Contractor will supply to the Project authority a plan for correcting the deliverables.



ANNEX B - BASIS OF PAYMENT

(to be completed at contract award)

A - Firm Price for Deliverables 1 thru 5- Tasks 1 and 2

Deliverable n°	Description	Firm Price (applicable taxes excluded)
1, 2, 3	Kick-off Meeting, Workplan and GeoTrellis Code	50%
4, 5	Documentation, demonstration and Closing meeting	50%

OPTIONAL SERVICES

B - Firm Price for the optional task 3

Task n°	Description	FIRM PRICE (applicable taxes excluded)
3	EPT writer	\$ _____

APPENDIX 1 - EVALUATION CRITERIA



Bidders are advised to address these criteria in the following order and in sufficient depth in their proposals to enable a thorough assessment. NRCan’s assessment will be based solely on the information contained within the proposal. NRCan may confirm information or seek clarification from bidders.

Bidders are advised that only listing experience without providing any supporting data to describe responsibilities, duties and relevance to the criteria will not be considered demonstrated for the purpose of this evaluation.

The Bidder should provide complete details as to where, when (month and year) and how (through which activities/ responsibilities) the stated qualifications/experience were obtained. Experience gained during formal education shall not be considered work experience. All criteria for work experience shall be obtained in a legitimate work environment as opposed to an educational setting. Co-op terms are considered work experience provided they are related to the required services.

Bidders are also advised that the month(s) of experience listed for a project whose time frame overlaps that of another referenced project will only be counted once. For example: project one time frame is July 2001 to December 2001; project two time frame is October 2001 to January 2002; the total months of experience for these two project references is seven (7) months.

1. TECHNICAL CRITERIA

1.1 MANDATORY EVALUATION CRITERIA

The Mandatory Criteria listed below will be evaluated on a simple met/not met basis. Proposals which fail to meet the mandatory criteria will be deemed non-responsive.

Item	Mandatory Requirements	MET / NOT MET	Reference to Bidder's proposal
M1	<p>The Bidder must demonstrate that at least one of its resources has at least two (2) years of experience within five (5) years from the bid closing date in solution development on GeoTrellis solution.</p> <p>The following information is requested for each of the proposed resources in order to evaluate their experience for this requirement :</p> <ul style="list-style-type: none"> - Name and title of the resource; - Description of projects related to this requirement in which the proposed resource were involved; - Participation and responsibility of the resource in projects related to this requirement. 		
M2	<p>The Bidder must demonstrate that at least one of its resources has at least two (2) years of experience within five (5) years from the bid closing date in solution development using the Scala programming language.</p>		



	<p>The following information is requested for each of the proposed resources in order to evaluate their experience for this requirement :</p> <ul style="list-style-type: none">- Name and title of the resource;- Description of projects related to this requirement in which the proposed resource were involved;- Participation and responsibility of the resource in projects related to this requirement.		
M3	<p>The Bidder must demonstrate that at least one of their development projects realized within two (2) years from the bid closing date included using Lidar point cloud data within GeoTrellis.</p> <p>The following information is requested for each of the projects in order to evaluate this requirement :</p> <ul style="list-style-type: none">- Project name;- Project description;- Execution date- A link to project code repository (if available publicly).		



1.2 Point rated requirements

The criteria contained herein will be used by NRCan to evaluate each proposal that has met all of the mandatory criteria.

The Bidder's Technical Bid will be scored out of a total of 50 points.

The Technical Bid will be assessed against the point rated technical evaluation criteria detailed in table below, each weighted according to the maximum points indicated.

Item	Point rated technical criteria	Points Breakdown		Maximum Points	Reference to Bidder's proposal
R1	<p>The Bidder should demonstrate level of experience in developing solution using the Scala programming language by providing reference to active projects or executed during the last five (5) years from the closing date where Scala was the primary development language.</p> <p>The following information is requested for each of the projects in order to validate this requirement :</p> <ul style="list-style-type: none"> - Project name; - Project description; - Execution date - A link to project code repository (if available publicly). 	<p>1 project</p> <p>2 projects</p> <p>3 or more projects</p>	<p>5</p> <p>10</p> <p>15</p>	15	
R2	<p>The Bidder should demonstrate level of experience in managing open source projects with Git by providing reference to active projects or executed during the last five (5) years where the source code management platform was GitHub, GitBucket or GitLab.</p> <p>The following information is requested for each of the projects in order to validate this requirement :</p> <ul style="list-style-type: none"> - Project name; - Project description; - Execution date - A link to project code repository (if available publicly). 	<p>1 project</p> <p>2 projects</p> <p>3 or more projects</p>	<p>5</p> <p>10</p> <p>15</p>	15	



R3	<p>The Bidder should demonstrate level of experience in implementing solutions using Apache Spark⁹ as distributed analytics engine by providing reference to active projects or executed during the last five (5) years where Apache Spark tools or libraries were used.</p> <p>The following information is requested for each of the projects in order to validate this requirement :</p> <ul style="list-style-type: none"> - Project name; - Project description; - Execution date - A link to project code repository (if available publicly). 	<p>1 or more project</p> <p>0 project</p>	<p>10</p> <p>0</p>	<p>10</p> <p>0</p>	
R4	<p>The Bidder should demonstrate level of experience in implementing solutions implementing the Entwine Point Tile specification by providing reference to active projects or executed during the last five (5) years where Entwine Point Tile was used or implemented.</p> <p>The following information is requested for each of the projects in order to validate this requirement :</p> <ul style="list-style-type: none"> - Project name; - Project description; - Execution date - A link to project code repository (if available publicly). 	<p>1 or more project</p> <p>0 project</p>	<p>10</p> <p>0</p>	<p>10</p> <p>0</p>	
Total Points available				50	
Total Points needed to be considered compliant				30	

⁹ <https://spark.apache.org/>



APPENDIX 2 – FINANCIAL PROPOSAL FORM

The Bidder hereby offers to NRCan, as requested by the Minister, to furnish all necessary expertise, supervision, materials, equipment and other items necessary to performing the work as described in the statement of work of this Request for Proposal and in accordance with the terms and conditions of the Request for Proposal, to the satisfaction of the Minister, or his or her authorized representative, for the following price(s).

1. FINANCIAL PROPOSAL FORM

The financial proposal will be evaluated on the basis of the sum of the deliverables 1 thru 5 identified in the Statement of Work in Annex A.

Bidder tendered all-inclusive firm price to perform the work is in Canadian funds, applicable taxes excluded. Any Travel and Living Expenses and other miscellaneous expenses must be included in the firm price and the hourly rate for the training and mentoring.

The bidder must complete the schedule below indicating the firm proposed amounts for each deliverable.

1.1 Firm Price

A - Firm Price for Deliverables 1 thru 5 – Tasks 1 and 2

Deliverable n°	Description	Firm Price (applicable taxes excluded)
A-Total Firm Price for deliverables 1 to 5 – Tasks 1 and 2:		\$ _____

OPTIONAL SERVICES

B - Firm Price for the optional task 3

Task n°	Description	FIRM PRICE (applicable taxes excluded)
3	EPT writer	\$ _____

A+B = Total Firm Price for Financial Proposal Evaluation (taxes extra)	\$ _____
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