

**ELECTROMAGNETIC DESIGN STUDY
for the David Florida Laboratory (DFL) in Ottawa**

REQUEST FOR PROPOSAL

**ELECTROMAGNETIC DESIGN STUDY FOR THE UPGRADE AND
REFURBISHMENT OF THE DAVID FLORIDA LABORATORY (DFL) IN
OTTAWA - LARGE ANECHOIC CHAMBER**

**Bid Submission Deadline:
August 14, 2014 at 14:00 PM (EDT)**

Submit Bids to:

Canadian Space Agency
TENDERS RECEPTION OFFICE
Receiving/Shipping
From Monday to Friday between 8:00 and 16:30 (closed between 12h00 and 13h00)
6767 route de l'Aéroport
Saint-Hubert(Québec) J3Y 8Y9
Canada

Attention to: Claudine Morin
Email: soumissionscontracts@asc-csa.gc.ca

Reference: CSA File No. **9F010 – 20140035**

Note: Please read this Request For Proposal carefully for further details on the requirements and bid submission instructions.



July 15, 2014

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PART 1 - GENERAL INFORMATION

1. Introduction

The bid solicitation and resulting contract document is divided into seven parts plus 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 and states that the Bidder agrees to be bound by the clauses and conditions contained in all parts of 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, if applicable, and the basis of selection;

Part 5 Certifications: includes the certifications to be provided;

Part 6 Security requirement; and

Part 7 Resulting Contract Clauses: includes the clauses and conditions that will apply to any resulting contract.

2. Submission of a bid

Submission of a bid constitutes acknowledgement that the Bidder has read and agrees to be bound by these documents.

General Instructions to Bidders is incorporated by reference and is set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works and Government Services Canada (PWGSC). The SACC Manual is available on the PWGSC Website: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>.

3. Summary

Description and requirement

The purpose of this Request for Proposal (RFP) is to solicit bids from interested Canadian organizations to provide electromagnetic design study for the David Florida Laboratory (DFL) in Ottawa.

Interested bidders are required to submit their proposals in accordance with the instructions provided in this RFP. A description of the work to be completed under this requirement is provided in appendices attached.

4. Communications Notification

As a courtesy, the Government of Canada requests that successful bidders notify the Contracting Authority in advance of their intention to make public an announcement related to the award of a contract.

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5. Debriefings

After contract award, bidders may request a debriefing on the results of the bid solicitation. Bidders should make the request to the Contracting Authority within 15 working days of receipt of notification that their bid was unsuccessful. The debriefing may be provided in writing, by telephone or in person.

PART 2 - BIDDER INSTRUCTIONS

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 issued by Public Works and Government Services Canada (PWGSC).

The Manual is available on the PWGSC Website: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>.

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 (2014-06-26) General Instructions to Bidders – Services – Competitive requirement are incorporated by reference into and form part of the bid solicitation.

- Remove paragraphs 4 and 5 of section IG01

2. Submission of Bids

THE BID SUBMISSION DEADLINE IS INDICATED AT THE FIRST PAGE OF THIS DOCUMENT. It is the CSA's policy to return, unopened, bids received after the stipulated bid solicitation closing date and time, unless they qualify as a delayed bid.

Bidders are required to provide their bid to the following address:

Canadian Space Agency
TENDERS RECEPTION OFFICE
Receiving/Shipping (between 8:00 and 16:30)
6767 route de l'Aéroport
Saint-Hubert(Québec) J3Y 8Y9
Canada

Attention: Claudine Morin

- You can also send your proposal by email at the following address: soumissionscontracts@asc-csa.gc.ca

3. Enquiries - Bid Solicitation

All enquiries must be submitted in writing to the Contracting Authority Claudine Morin (Claudine.morin@asc-csa.gc.ca) 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 government of Canada to provide an accurate answer. Technical enquiries that are of a "proprietary" nature must be clearly marked "proprietary" at each relevant

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item. Items identified as proprietary will be treated as such except where government of Canada determines that the enquiry is not of a proprietary nature. Government of Canada may edit the questions or may request that the Bidder do so, so that the proprietary nature of the question is eliminated, and the enquiry can be answered with copies to all bidders. Enquiries not submitted in a form that can be distributed to all bidders may not be answered by government of Canada.

4. Applicable Laws

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

5. Ombudsman clause

The Office of the Procurement Ombudsman (OPO) was established by the Government of Canada to provide an independent avenue for suppliers to raise complaints regarding the award of contracts under \$25,000 for goods and under \$100,000 for services. You have the option of raising issues or concerns regarding the solicitation, or the award resulting from it, with the OPO by contacting them by telephone at 1-866-734-5169 or by e-mail at boa.opo@boa.opo.gc.ca. You can also obtain more information on the OPO services available to you at their website at www.opo-boa.gc.ca.

PART 3 - BID PREPARATION INSTRUCTIONS

1. General

Bidders must send **the original** of the proposal, before the specified deadline (date and time), to the address shown on Page 1 of the RFP. Proposals may be submitted in English or French.

2. Price

The financial proposal must indicate a detailed breakdown of the total quoted price. The proposed Basis of Payment should be **as per indication in Appendix B**.

Provide the financial proposal in a separate document.

The price of bids will be evaluated in Canadian dollars, Goods and Services Tax (GST) excluded, FOB destination, Customs duties and Excise taxes included.

Government of 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) paper;
- (b) use a numbering system that corresponds to the bid solicitation;
- (c) include the certifications as a separate section of the bid;
- (d) the bidder must present their financial proposal in conformity with the basis of payment;
- (e) the total amount with goods and services tax (GST) or harmonized sales tax (HST), if applicable, must be indicated separately.

3. Business name and address of bidder

1) Name: _____

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- 2) Address: _____

- 3) Telephone: _____ Fax: _____
- 4) Email: _____
- 5) Procurement Business Number (PBN): _____

PART 4 – EVALUATION PROCEDURES AND BASIS OF SELECTION

1. Evaluation Procedures

- a) The propositions will be evaluated in regards to all the criteria of the present request for proposals, including technical evaluation criteria and financial.
- b) An evaluation team made up representatives of Government of Canada will evaluate the proposal.

2. Financial Evaluation

Clause of the manual of SACC A0220T (2007/05/25) Evaluation of price

3. Basis of selection

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 points overall for the technical evaluation criteria which are subject to point rating.
2. Bids not meeting (a), (b) and (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 70 % for the technical merit and 30 % 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 70 %.
5. To establish the pricing score, each responsive bid will be prorated against the lowest evaluated price and the ratio of 30 %.
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.

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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 point's equal 135 and the lowest evaluated price is \$45,000 (45).

Basis of Selection - Highest Combined Rating Technical Merit (60%) and Price (40%)				
		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

4. Mandatory and point-rated Evaluation Criteria (see Annex A)

The bid must meet the mandatory technical criteria specified in Appendix A. The Bidder must provide the necessary documentation to support compliance with this requirement.

Bids which fail to meet the mandatory technical criteria will be declared non-responsive. Each mandatory technical criterion should be addressed separately.

If documents are missing with the proposal, the proposal will be rejected.

PART 5 – CERTIFICATIONS

Bidders must provide the required certifications to be awarded a contract. Government of Canada will declare a bid non-responsive if the required certifications are not completed and submitted as requested.

Compliance with the certifications bidders provide to government of Canada is subject to verification by government of Canada during the bid evaluation period (before award of a contract) and after award of a contract. The Contracting Authority will have the right to ask for additional information to verify the bidders' compliance with the certifications before award of a contract. The bid will be declared non-responsive if any certification made by the Bidder is untrue, whether made knowingly or unknowingly. Failure to comply with the certifications or to comply with the request of the Contracting Authority for additional information will also render the bid non-responsive.

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1. Certifications Precedent to Contract Award

The certifications listed below should be completed and submitted with the bid but may be submitted afterwards. If any of these required certifications is not completed and submitted as requested, the Contracting Authority will so inform the Bidder and provide the Bidder with a 24 hours time frame to meet the requirement. Failure to comply with the request of the Contracting Authority and meet the requirement within that time period will render the bid non-responsive.

A. 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" list (http://www.labour.gc.ca/eng/standards_equity/eq/emp/fcp/list/inelig.shtml) available from Human Resources and Skills Development Canada (HRSDC) - 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.

B. LEGAL ENTITY AND CORPORATE NAME

1. The bidder hereby certifies that it is a (circle one);
 - a. sole proprietorship,
 - b. partnership, or
 - c. corporate entity.

2. It was registered or formed under the laws of

3. Controlling interest/ownership (name if applicable) of the organization is held in the country of

4. Any resulting Supply Arrangement or Contract may be executed under the following corporate full legal name and at the following place of business:

C. CODE OF CONDUCT FOR PROCUREMENT

- 1) The Bidder confirms that it has read the Code of Conduct for Procurement (<http://www.pwgsc.gc.ca/acquisitions/text/cndt-cndct/tcm-toc-e.html>) and agrees to be bound by its terms.

- 2) The bidder certifies that:
 - (a) no corruption and no collusion took place in the preparation of its bid; and

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(b) it has not committed an offence under section 121 ("Frauds on the government" & "Contractor subscribing to election fund"), 124 "Selling or purchasing office"), 380 (Fraud committed against Her Majesty) or 418 ("Selling defective stores to Her Majesty") of the Criminal Code of Canada, or under paragraph 80(1)(d) (False entry, certificate or return), subsection 80(2) (Fraud against Her Majesty) or Section 154.01 (Fraud against Her Majesty) of the Financial Administration Act.

D. ATTESTATION – FORMER PUBLIC SERVANT

Contracts with 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 with FPS, bidders must provide the information required below.

1.1 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.

1.2 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 FPS in receipt of a pension, as applicable:

- a. name of former public servant;

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- 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](#).

1.3 Work Force Reduction Program

Is the Bidder a FPS who received a lump sum payment pursuant to the terms of a work force reduction program? **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 reduction program.

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.

E. ATTESTATION

By submitting a bid, the Bidder certifies that the information submitted by the Bidder in response to the above requirements is accurate and complete.

ATTESTATION SIGNATURE

We hereby certify compliance with the above noted certification requirements for:

- A. FEDERAL CONTRACTORS PROGRAM FOR EMPLOYMENT EQUITY – BID CERTIFICATION;
- B. LEGAL ENTITY AND CORPORATE NAME;
- C. CODE OF CONDUCT FOR PROCUREMENT;
- D. ATTESTATION – FORMER PUBLIC SERVANT.

SIGNATURE

Name and title of person authorized to sign on behalf of Bidder (Type or print)

Signature

Date

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PART 6 – SECURITY REQUIREMENTS

Security Requirements

The work to be performed under this RFP does not require a security requirement.

PART 7 - RESULTING CONTRACT CLAUSES

1. Description of requirement

The Contractor shall perform and complete the Work as per the statement of work at appendix C.

2. Standard Clauses and Conditions

All conditions and clauses identified herein by title, number and date are set out in the Standard Acquisition Clauses and Conditions (SACC) Manual, issued by Public Works Government Services Canada (PWGSC). The SACC Manual is available on the website of PWGSC: <https://buyandsell.gc.ca/policy-and-guidelines/standard-acquisition-clauses-and-conditions-manual>.

3. General Conditions

2010B (2014-06-26) General Conditions – Professional services (medium complexity) applied to the contract and they are integral part of it.

- Remove paragraphs 4 and 5 of section 2010B 31

3.1 Supplemental general conditions

4007 (2010-08-16) Canada to own property rights in foreground information applied to the contract and they are integral part of it.

4. Contract Period

The period of the contract to be issued in response to this RFP will be for four (4) months after the date of the award of the contract.

5. Contracting Authority

The Contracting Authority for this contract is:

Claudine Morin
Canadian Space Agency
6767 route de l'Aéroport
Saint-Hubert (Quebec) J3Y 8Y9
Canada
Telephone: (450) 926-4427
Facsimile: (450) 926-4969
E-Mail: Claudine.morin@asc-csa.gc.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.

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6. Project Authority

To be insert at contract award

7. Contractor's Representative

To be insert at contract award

8. Basis of payment – Firm Price - Professional Fees

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

No increase in the total liability of Canada or in the price of Work resulting from any design changes, modifications or interpretations of specifications, made by the Contractor, will be authorized or paid to the Contractor unless such changes, modifications or interpretations, have been approved, in writing, by the Contracting Authority, prior to their incorporation into the Work. The Contractor shall not be obliged to perform any work or provide any service that would cause the total liability of Canada to be exceeded, unless the Contracting Authority authorizes an increase.

9. Certifications

Compliance with the certifications provided by the contractor in its bid is a condition of the contract and subject to verification by Government of Canada during the entire contract period. If the contractor does not comply with any certification or its determined that any certification made by the contractor in its bid is untrue, whether made knowingly or unknowingly, Government of Canada has the right, pursuant to the default provision of the contract, to terminate the contract for default.

10. Applicable Laws

Any resulting contract must be interpreted and governed, and the relations between the parties determined, by the laws in force in the Province of Ontario and the relations between parties will be determine by these laws.

11. Priority of documents

The documents listed below form part of and are incorporated into this Contract. If there is a discrepancy between the wording of one document and the wording of any other document, which appears on the list, the wording of the document, which first appears on the list shall prevail over the wording of any document which subsequently appears on the list:

- a) the Contract document including appendices;
- b) General Conditions 2010B (2014-06-26) and supplemental general conditions 4007 (2010-08-16);
- c) Statement of work;
- d) the supplier proposal dated _____ (insert the date of the proposal) (*if the proposal has been clarified or revised, insert when you issue the contract : « clarified on _____ » or « , modified on _____ » and insert dates of clarifications or amendments*).

12. Performance evaluation report

Bidders shall take note that the performance of the Contractor during and upon completion of the work shall be evaluated by the Government of Canada. Should the Contractor's performance be

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considered unsatisfactory more than once, the Contractor's bidding privileges on future work may be suspended for a period of 18 months or 36 months.

Contractor Performance Evaluation Report Form is used to record the performance.

13. Ombudsman clause

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 *name of the company* 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.

APPENDIX A

EVALUATION CRITERIA AND METHODS

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Technical Evaluation Criteria

I. Technical Proposal

The technical proposal must address all the requirements of the SOW and demonstrate the bidder is capable of meeting all obligations of the contractor specified in the same. The technical proposal must meet all of the relevant Mandatory Technical Criteria, as well as the minimum score identified for the Point Rated Requirements. The proposal should include a detailed description of the approach, methodology and the work plan describing how the Contractor would carry out the study to achieve the above objectives, including any proprietary information proposed for use. Any relevant information to enable DFL to adequately score the proposal based on the criteria listed below should be included. Furthermore, the technical proposal must include a brief statement that demonstrates the contractor understands the requirements of the SOW, including the objectives, scope of work and deliverables.

The bidder must identify a team that will be responsible for carrying out the work described in this SOW. The proposal should provide a description of the project manager and all team members including their contribution, experience, expertise, and qualification directly relevant to their role. The proposed team must include at a minimum, a project manager and an engineer. The bidder must certify in the technical proposal that the information provided in all the personnel resumes has been verified to be true and accurate. In addition, for every resource proposed by the bidder who is not an employee of the firm, the actual resource must certify that they are aware that they are being bid as part of the bid/proposal.

II. MANDATORY Technical Criteria

The bid must meet the mandatory technical criteria specified below. The Bidder must provide the necessary documentation to support compliance with this requirement. Any bid which fails to meet the mandatory technical criteria will be declared non-responsive. Each mandatory technical criterion should be addressed separately. The Mandatory Criteria listed below will be evaluated on a simple pass/fail basis. Proposals which fail to meet the mandatory criteria will be deemed non-responsive.

Bidders are advised to address each criterion in sufficient depth to permit a complete requisite analysis and assessment by the evaluation team. Proposals failing to adequately respond to the mandatory criteria may be excluded from further considerations. The technical proposal should address each of the criteria in the order in which they appear.

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 was 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.

Attention: Include below the relevant page number(s) from your proposal which addresses the requirement identified in the criteria.			
Number	Mandatory Technical Criteria	Cross reference to proposal	
		Page #	Mandatory (Met/not met)
Corporate Experience			
M1	The Bidding Company must have a minimum of 5 years experience working in the sector of anechoic antenna measurement chamber design. Experience must be clearly demonstrated in the proposal.		

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M2	The Bidding Company must have a minimum of 5 years experience with at least two of the following: design of Near-field/Far-field, PIM or EMC specific anechoic test chambers. Experience must be clearly demonstrated in the proposal.		
Proposed Team			
M3	The bidder must propose specific resources to perform the tasks and deliverables assigned in the SOW. The bidder must include within their proposal detailed Curriculum Vitae (CV) of each of the proposed resources in addition to the technical proposal. CV's should be up-to-date and shall be submitted as an Appendix. It is recommended that the bidder highlight or bold relevant areas within the CV.		
M4	The bidder must demonstrate that each proposed team member has at least 2 years of experience in the last 5 years in the design and implementation of anechoic chambers for radio frequency measurement. Definition: radio frequency measurement includes near-field and far-field antenna pattern measurement, passive intermodulation, and EMC/EMI testing		
M5	The proposed Project Manager must have a minimum of 5 years experience in project management of anechoic chamber implementation. Experience must be clearly demonstrated on the Project Manager's resume and include a large scale anechoic chamber implementation with items such as cranes, fire suppression and similar infrastructure necessary to support testing of large test articles.		
M6	At least one team member must have a university degree in Electrical Engineering, or a similar specialty (e.g. Engineering Physics, Physics). Proof of degree must be provided.		

III. POINT Rated Criteria

The criteria contained herein will be used by DFL to evaluate each proposal that has met all of the mandatory criteria. Bidders are advised to address these criteria in the following order and in sufficient depth in their proposals to enable a thorough assessment. DFL's assessment will be based solely on the information contained within the proposal. DFL may confirm information or seek clarification from bidders.

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<p>identified; and challenges are identified and addressed for all tasks</p> <ul style="list-style-type: none"> - The approach is logical and defined; steps are logical and identified; and challenges have been identified but not addressed. - The approach is identified; steps are identified with some information missing in their description; and challenges are identified but not addressed. - The approach is vague; steps are identified but not well defined; and challenges are either not identified or not addressed for all tasks. - The approach is vague; steps are missing; and challenges are not identified nor addressed for all tasks - The approach and methodology are not presented. 		<p style="text-align: center;">20</p> <p style="text-align: center;">15</p> <p style="text-align: center;">10</p> <p style="text-align: center;">5</p> <p style="text-align: center;">0</p>	
<p>R3. Workplan</p> <p>The bidder should provide a comprehensive work plan that includes the following:</p> <p>1) Task breakdown: shows a logical organization of tasks to be completed and scheduling for the project as per the statement of work, including resources to be consulted;</p> <p>2) Team responsibility: provides detail on team composition and responsibilities of team members</p> <p>3) Time commitment: demonstrate the total time commitment per team member and that the level of effort is appropriate for the tasks outlined in the statement of work</p>		<p style="text-align: center;">Max. 15 points</p> <p style="text-align: center;">5</p> <p style="text-align: center;">5</p> <p style="text-align: center;">5</p>	
<p>3. Project Team Experience</p>			
<p>R4. Project Team’s cumulative experience (excluding the Project Manager) make it well suited to complete the assignment?</p> <p>How many combined years of experience has the Project team (excluding the Project Manager) accumulated in the field of anechoic chamber design and/or testing for near-field, far-field, EMC/EMI, or passive intermodulation testing since January 2004. Experience must be clearly described in the proposal. (1 point per year to a maximum of 10 points.</p>		<p style="text-align: center;">Max. 10 points</p>	
<p>R5. Does the Project Manager have the appropriate experience and skill set to manage projects of this nature?</p> <p>How many years does the Project Manager have (since January 2004) in the capacity of Project Manager on projects related to anechoic chamber design and/or experience with near-field, far-field, EMC/EMI, passive intermodulation for terrestrial communication, aerospace, space applications and in developing design standards,</p>		<p style="text-align: center;">Max. 5 points</p>	

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guidelines or procedures for the design of facilities for these test purposes. Experience must be clearly described in the proposal. (1 point per year to a maximum of 5 points).			
Total possible points (minimum required = 50)		80	

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APPENDIX B

BID CHART

**ELECTROMAGNETIC DESIGN STUDY
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of the Canadian Space Agency (CSA) in St-Hubert**

Firm price to complete the work on or before four (4) months after award of the contract
(price excluding taxes)

\$ _____ *

*** Please provide the details of the cost with your financial proposal.**

APPENDIX C

STATEMENT OF WORK

ELECTROMAGNETIC DESIGN STUDY

for the David Florida Laboratory (DFL) in Ottawa

Electromagnetic Design Study for the Upgrade and Refurbishment of the David Florida Laboratory Large Anechoic Chamber

I. Background

The David Florida laboratory has a need for an electromagnetic design study related to the refurbishment of the existing large anechoic chamber facility known as Antenna Test Facility 2 (ATF2). The chamber is housed in the DFL test facility, a temperature and humidity controlled environment with class 100 000 clean rooms. Currently, the chamber infrastructure requires refurbishment with a desire to address the following areas:

- Fire detection, suppression, and retardancy
- Air flow
- Accumulation of absorber dust
- Lighting
- Electromagnetic shielding

The facility is presently used for a variety of radio frequency (RF) testing identified below. Current facility specifications include (as defined at <http://www.asc-csa.gc.ca/eng/dfi/radio.asp#2>):

- Capabilities: RF, near-field, far-field, EMC, and passive intermodulation (PIM) testing for satellite, system, subsystem, and component level
- Chamber size: 12 x 24 x 20 m high (40 x 80 x 65 ft)
- Bridge cranes (2): 9,000 kg (20,000 lb)
- Indoor range: 13 m (40 ft)
- Reflection coefficient: -30 to -55 dB from 0.25 to 20 GHz
- Seismic piers (2): 1 sq m (10 sq ft) and 3 sq m (30 sq ft)

Test articles include satellite, system, subsystem, and component level testing, in order of priority:

- Spacecraft level testing
- Flight antenna hardware and components
- INMARSAT Aeronautical antennas and components
- Wireless communication and radar and antennas
- Any other radio frequency component requiring an anechoic test environment

In case of fire and health and safety specifications, priorities are defined as follows, in order of importance:

- Personnel safety
- The high value object (i.e. flight hardware)
- The facility

II. Purpose

The purpose of this contract is to develop conceptual electromagnetic design options to address the above chamber infrastructure and electromagnetic test capabilities, as well as to obtain the associated estimated rough order of magnitude (ROM) cost budget for refurbishment. In order to ensure that the technical performance of the facility is respected, recommendations are required to properly address the desired infrastructure modifications with minimal degradation on the technical specifications and test capabilities observed in the existing facility. More than one design option is acceptable.

III. Objectives

Conceptual electromagnetic design options must comply with clean room class 100 000 environment (per ISO 14644) and relevant labour and building codes/standards, i.e. Canada Labour Code Part 2, ASHRAE, National Fire Code, NFPA 13 and FM, and respect the technical of the facility with regards to

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the objectives for testing and the associated test articles, as well as health and safety requirements identified in section I.

Proposed options for the chamber and their cost level must consider such items as, shielding, wall reflectivity, locations for HVAC and fire suppression penetration, waveguide air vents and filters at all penetrations, materials, optimization of/incorporating existing bldg infrastructure, etc. Improvements to ventilation and dust (particle count levels), fire suppression/flame retardancy and lighting options must meet near-field, EMC, and PIM test standards/specifications outlined in this document. The impact on test capabilities and cost must be clearly defined with respect to each design option or concept.

As part of this study, the refurbishment must maintain the above specifications and consider methods for achieving the following additional technical and physical specifications:

A. Technical specifications:

- Spherical near-field testing from 0.25 GHz to 30 GHz, ideally up to 50 GHz
- Electromagnetic Compatibility/Electromagnetic Interference Testing – typical test standards include MIL-STD 461/462 (in particular the limit for RE102 defined in MIL-STD 461F, Figure RE102-2: Fixed Wing External and Helicopters (2MHz to 18 GHz)), and RTCA/DO-160
- Passive Intermodulation Testing (0.24-20 GHz) – for PIM emissions as close to -140 dBm as possible.
- General RF testing in an anechoic environment with absorber reflectivity as close to 50 dB as possible up to 50 GHz

B. Physical specifications:

- Facility dimensions – must make maximum usage of the available volume. The facility has a rectangular footprint of 40x80' (12x24m) and maximum height of 65' (19.8m).
- Presently the existing antenna support tower and probe tower are removed to accommodate PIM, EMC or other testing necessitating an empty chamber. Any proposed change in the chamber setup should be flexible enough to accommodate a re-configuration as needed.
- Test article dimensions and size are presently restricted, in the case of near-field testing, by the antenna support tower (< 5m maximum radius). For PIM/EMC testing, size is dictated by the available floor area for test articles and associated equipment.
- A large door entryway to ensure access for large test items from the adjacent high bay integration area. Presently, large entry doors with a top flap system, 40x40' in height, allow entry of test articles from the neighbouring integration bay into the chamber. Ease of opening, access for both personnel and test articles, in addition to shielding technical requirements, should be considered.
- Must accommodate a control room for test instrumentation/cabling, hardware storage, and general workspace, and ease of access for personnel in and out from the chamber. The footprint of the existing adjacent control room is 19x48' (maximum length of 77' if including the entrance hallway/storage area at 7x29').
- Nitrogen pumping and venting system openings on the exterior wall for thermal PIM testing.
- Potential for implementation of a height adjustable absorber ceiling panel.
- Seismic isolation to minimize vibration during near-field testing.
- Multi-angle camera system are present and required for testing, and should be taken into account in the PIM specifications
- The facility includes a transparent window along an exterior wall previously used to facilitate testing with an outdoor 200' (62m) high tower for far-field testing over a 1300' (400m) range. As this tower has been rendered obsolete, preservation of the window is no longer a priority.

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IV. DELIVERABLES

The list of deliverables includes:

- 1) A kick-off meeting (in-person or via conference call), to include review of contract tasks, deliverables and requirements within 5 working days of the issuance of the contract.
- 2) Regular feedback (at least every two weeks) via email, phone calls and/or in person must be maintained between the Contractor and the Technical Authority
- 3) Draft Report – at least two weeks prior to the close-out meeting
- 4) A close-out meeting including a formal presentation by the contractor and a final package in electronic format containing both the final presentation (pdf or .ppt) and a comprehensive written final report (pdf or .doc) reflecting any revisions of the draft document requested by the client. The written report should be provided 5 days in advance of the scheduled meeting and must include the following:
 - a) A conceptual design that addresses the ideal electromagnetic specifications for the multi-purpose chamber defined in section III, the scope of the infrastructure refurbishment, and the associated ROM cost, i.e. what is desired and the associated ROM cost.
 - b) Second, third, or fourth alternative design configurations for a multi-purpose chamber that may be more feasible from a technical standpoint, i.e. what can be achieved and the associated ROM cost, should any specification be relaxed (to be discussed).
 - c) Discussion on all elements and improvements required in the proposed infrastructure refurbishment and the associated cost for each must be provided. Each of the components, i.e. fire detection, suppression, and retardant, lack of air flow, accumulation of absorber dust, lighting, and electromagnetic shielding must be addressed, in particular the recommendations for achieving these upgrades in line with the chamber performance goals, health and safety requirements following the order of importance of personnel, the high value test article, and the facility, as well as the labour and building code standards identified in section III. Details related to locations for openings, or materials proposed for the interior of the chamber such as absorber, waveguide air vents and filters at all penetrations or other means for optimization of/incorporating existing bldg infrastructure, etc must be clearly specified.
 - d) Comparison and evaluation of each design option or concept, including the associated impact of each on technical specifications, test capabilities, and overall ROM costs must be clearly defined.
 - e) Sufficient details that describe relevant observations of the current facility, recommendations and options for improvements, challenges to the proposed changes and possible unknowns.
 - f) Conceptual design drawings to facilitate explanation.

V. Work Location

Access to the DFL large anechoic chamber and technical drawings will be made available to the contractor for the purposes of this study. Scheduling of this access will be provided around test activities, with internal support provided by facility staff. Work related to the compilation of the final report will be performed at the contractor's own facilities.

VI. Change Management Procedures

Any changes to the scope of the analyses outlined in the contract will need to be presented in writing for consideration by DFL. In such a case, the contractor will need to clearly identify the proposed change and justify why the change is being recommended outside the current SOW. DFL will respond

**ELECTROMAGNETIC DESIGN STUDY
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within five (5) working days regarding the decision to approve or not approve the recommended change. If the change is approved, a formal proposal will be required from the contractor for the review and acceptance by DFL and a written contract amendment will be processed accordingly.

APPENDIX D

PERFORMANCE EVALUATION REPORT

**ELECTROMAGNETIC DESIGN STUDY
for the David Florida Laboratory (DFL) in Ottawa**

PERFORMANCE EVALUATION REPORT

Upon fulfillment of a contract, this questionnaire must be completed by the responsible project authority/ technical authority for all service contracts (excluding temporary help service contracts), construction contracts and engineering consulting contracts with CSA and sent to the contract agent responsible.

Name of contractor:	Contract completion date:
Name of project authority/technical authority:	Branch:
Contract no.:	Project name:

***Supplier**

Rating scale:	10 – 9: Excellent 8 – 7: Very Good	6 – 5: Satisfactory 4 – 3: Poor	2 – 1: Unsatisfactory
1. Did the supplier provide consultants with the education, accreditation and experience indicated in the contract?	10 9 8 7 6 5 4 3 2 1	Comments:	
2. Please rate the overall quality of the services provided by this supplier.	10 9 8 7 6 5 4 3 2 1	Comments:	
3. Please rate the responsiveness of the supplier with regard to information requests or problems that may have arisen in the course of the contract, and the supplier's ability to meet deadlines.	10 9 8 7 6 5 4 3 2 1	Comments:	
4. Was the work performed in accordance with the requirements specified in the statement of work?	10 9 8 7 6 5 4 3 2 1	Comments:	

5. Please rate the quality of communication between the department and the supplier.	10 9 8 7 6 5 4 3 2 1	Comments:	
6. Were all administrative documents	10 9 8 7 6 5 4 3 2 1		

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<p>received in accordance with the requirements of the contract?</p> <p>Administrative documents can include but are not limited to:</p> <ul style="list-style-type: none"> a. Invoices b. Progress reports c. Reports on use or business volume d. Meeting agendas and minutes e. Documentation and quality of work 	<p>Comments:</p>
TOTAL	/60

Overall Rating

Excellent: 54 and over
 Very Good: 42 to 53
 Satisfactory: 30 to 41
 Poor: 18 to 29
 Unsatisfactory: 18 or less