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PWGSC/ TPSGC
Place Bonaventure
800 de la Gauchetière Ouest
7^e étage/ 7th Floor
Montreal, Quebec,
Canada
H5A 1L6

**REQUEST FOR PROPOSAL
(RFP)**

**DEMANDE DE
PROPOSITIONS (DDP)**

Comments – Commentaires

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Space Programs Directorate /
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6767 route de l'Aéroport
Longueuil, Quebec, Canada
J3Y 8Y9



Titre – Sujet Replacement of Mobile Servicing System Cameras on the International Space Station (ISS) Remplacement des caméras du Système d'entretien mobile de la station spatiale internationale (SSI)	
Solicitation No. - N° de l'invitation 9F052-13-0905	Amendment No. - N° modif. 002
Client Reference No. - N° de référence du client 9F052-13-0905	Date 24-11-2014
GETS Ref. No. - N° de réf. de SEAG	
File No. - N° de dossier 9F052-13-0905	CCC No./N° CCC - FMS No/N° VME N/A
Solicitation Closes - L'invitation prend fin :	
at - à 2:00 pm	
On - le January 23rd, 2015	
F.O.B - F.A.B.	
Plant-Usine : <input type="checkbox"/> Destination : <input checked="" type="checkbox"/> Other-Autre : <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Jessie Jutras	Buyer Id - Id de l'acheteur -
Telephone No. - N° de téléphone 450-926-6670	FAX No. - N° de FAX N/A
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Canadian Space Agency 6767 route de l'Aéroport Longueuil, Quebec, Canada J3Y 8Y9	

Instructions : See Herein
Instructions : Voir aux présentes

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Solicitation No. - No de l'invitation
9F052-13-0905
Client Ref. No. - No de réf. Du client
9F052-13-0905

Amd. No - No de la modif.
002
File No. - No du dossier
9F052-13-0905

Buyer ID - Id de l'acheteur
-
CCC No./No CCC - FMS No/No VME
-

Please find attached the Minutes from the Bidders Conference that was held December 3rd, 2014 at 1:00 PM.

**Minutes / Questions and Answers following the
Bidder's Conference held on December 3rd, 2014**

**Replacement of Mobile Servicing System Cameras on the
International Space Station**

**Request for Proposal (RFP) number
9F054-130905 /A**

Closing: January 23rd, 2015

Prepared by:

Jessie Jutras
Supply Specialist

Space Programs Directorate
Acquisitions Branch
Public Works and Government Services Canada

6767 Route de l'Aéroport
Longueuil, Quebec, Canada
J3Y 8Y9

Telephone number: 450-926-6670
E-mail: jessie.jutras@tpsgc-pwgsc.gc.ca

A- Background

As stated under the Part 2 of our RFP document, it is recommended that all the parties having an intention to submit a bid attend the Bidder's Conference. This conference was presented as being a good opportunity for any interested respondent to seek clarifications with the Project team about the requirements.

The Bidder's Conference was held, as planned, on Wednesday December 3rd, 2014, in-person at the Canadian Space Agency in Longueuil, Quebec.

The speakers were Jessie Jutras, Glen Bilodeau, Dan Mullin and Shelley Sindelar. The meeting began at 1:15 pm and ended at about 2:30 pm (EDT).

B- Attendees

Thirteen people attended the conference. In the audience, we had five representatives of three different private companies, two representatives of Public Works and Government Services Canada (PWGSC) and six representatives from the Canadian Space Agency (CSA).

C- Minutes of the meeting

Introduction

Ms. Jessie Jutras was the first speaker and led the introduction period. She first welcomed the participants and told them about our appreciation that they took the time to attend this conference and for their interest towards this project. She then followed by introducing herself as the Public Works and Government Services Canada (PWGSC) *Contracting Authority* in charge of managing this procurement activity for the Canadian Space Agency (CSA).

She continued by introducing the larger project team. Representatives from PWGSC and the CSA were all introduced after which our guests were asked to introduce themselves.

Ms. Jutras informed the guests that the session was delivered in English but reminded that questions could be asked in French. Participants were free to use one of the two official languages of their choice.

Ms. Jutras carried on by advising all participants that we would write down all the Questions and Answers (Q&A's) that would arise from the session. Copies of those Q&A's will be posted on Buy&Sell, in both official languages, a few days after the event. Questions that could not be answered at the Conference would be answered as soon as possible. We would also ensure that the people asking the questions would not be identified.

Guests were reminded that Ms. Jutras is the sole point of contact for this procurement activity throughout the overall procurement process and that she would liaise with the CSA to provide the requested information that the Industry may need from time to time.

Presentation

Ms. Jutras presented the agenda for the meeting and carried on by asking everyone if all the documents published as part of the Request for Proposal (RFP) were accessible on the BuyandSell website.

MSS REPLACEMENT CAMERAS - Bidder's Conference Minutes

Everyone was then reminded that the RFP will close on January 23rd 2015, at 2pm. All bids must be sent to the Public Works and Government Services Canada (PWGSC) office located at Place Bonaventure in Montreal, not in Saint-Hubert.

Under current planning, the contract will not be awarded before the end of June 2015, beginning of July 2015.

Ms. Jutras mentioned that she would not go thru the RFP terms and conditions as they were standard but she reminded that the contract would be a firm fixed price contract for the phases B, C and D of the project and that bids must cover all three phases. She also reminded that Canada was to own the Intellectual Property (IP) and that this RFP was solely limited to Canadian content.

Ms. Jutras then outlined the fact that this RFP is a competitive process. Therefore, no conditional bids would be accepted. The terms and conditions listed in the RFP must be accepted without any conditions, otherwise the submission will be deemed as non-responsive. Ms. Jutras reminded attendees to communicate all questions, suggestions and concerns before the closing date.

Mr. Glen Bilodeau, *CSA MSS RCAM Project Manager*, provided the following background information: this camera replacement project is a good opportunity to show Canadian knowhow. The cameras and lights are critical to the International Space Station (ISS). Canada needs to honor its commitment to maintain the functionality of the Mobile Servicing System (MSS) for the ISS. The intent of this project is to replace the existing cameras with the same functionalities, without any enhancements.

He then talked about roles and responsibilities and mentioned that the replacement of the cameras is divided into two activities. The first activity is the build of the camera light units. The second activity consists of the integration support of the new cameras on the MSS. This second activity will be covered under the Logistics and Sustaining Engineering (L&SE) contract, currently supplied by MacDonald, Dettwiler and Associates Inc (MDA). The integration and interfacing of the new cameras in the existing system is an important part of the RCAM project.

It was mentioned by Mr. Bilodeau that the planning of this camera replacement project has not changed since the last Request for Information (RFI) in 2013. He proceeded to describe the phases of the project stated in the SOW. He specified that the CDRLs identified in the RFP are driven by CSA's project governance requirements and are in line with the ISS requirements. The deliverables are the Engineering Qualification Model (EQM), the flight models, the shipping containers, software (including source code) and documentation deliverables.

Following Mr. Bilodeau's presentation, Mr. Dan Mullin, *CSA Safety and Mission Assurance Lead*, carried on with the presentation by talking about the PA requirements. He reminded the following:

This program is the exact same type of program as a critical manned ISS space program. The PAR requirements were derived from and are in accordance with NASA Space Station Safety and Mission Assurance Requirements.

All requirements in the PAR must be flowed down to all subcontractors and suppliers. The PAR will be applicable to all subcontracts and suppliers. As such all subcontractors and suppliers must be ISO 9000 certified.

There will be a full reliability program per ISS reliability requirements including parts count reliability analyses, mechanical parts reliability and failure modes and effects analysis.

MSS REPLACEMENT CAMERAS - Bidder's Conference Minutes

There will be a full qualification program to qualification levels, for the environment that it will be flying in. Heritage will be rejected unless the heritage meets all aspects of the environment, thermal, radiation mission duration etc.

A full safety program must be implemented and the cameras will have to be analyzed for hazards. Hazard reports will have to be delivered in NASA format.

In regards to the EEE parts: pure tin will be prohibited. This requirement may add some difficulty for parts selection. If the commercial parts contain pure tin, you will have to speak with subcontractor and make arrangements.

Plastic parts are prohibited, unless they are qualified to level 2.

Radiation requirements: the parts will be tested for 2 times radiation dose. Parts will have to be fully qualified to radiation environment.

Test readiness reviews: Before conducting any hardware testing activity, a test readiness review board must be held with CSA representatives. Definition of class1 non conformance is clear in the PAR. Full compliance to those definitions is required.

Software quality assurance: The software quality assurance requirements are driven by CSSP software programs and ISS requirements. A software quality assurance representative will be assigned full time on the program.

After Mr. Mullin's presentation, Ms. Sindelar, *CSA Lead Systems Engineer*, was available to answer questions on the technical specifications. The questions received and the answers to these questions are provided in the next section with all other Q&A received at the conference.

Following the technical requirement topic, Ms. Jutras and Mr Bilodeau carried on by talking about the evaluation criteria. Ms. Jutras reminded that all criteria are mandatory (10). For the first set of 5, bidders must demonstrate their compliance. For the 5 point rated criteria, the bidders must earn the minimum score required for each individual criteria.

Mr. Bilodeau then followed by doing a quick review of each criterion. He specified the following:

Background: The evaluation criteria reflect the intent of this project to replace the cameras that are critical and operational for the MSS. The evaluation criteria were developed so that all compliant Bidders are ready to work on this project at contract start.

M1: Suppliers need to demonstrate through past experience the listed domains for the intended environment. This criteria is directly pertinent to the RCAM context.

M2: ISO 9001 compliance, standard quality management, requirement & certification.

M3 and M4: Two tables are provided on the ftp site. There is one for the Technical Specifications and one for the Product Assurance Requirements indicating the level of demonstration required for each requirement of the Spec and of the PAR. There are 3 types of ways outlined in the RFP that suppliers can demonstrate meeting those requirements: Detailed substantiation, reference to proposal and intent to comply. A bid will be deemed non-compliant if the bidder fails to demonstrate compliance with one of the requirements. It is important for the bidders to understand these documents. A reminder was given that all mandatory specs from Table 1 and 2 are mandatory to the contract. Bidders may not be required to provide detailed substantiation for evaluation purpose but once the contract is awarded, the contractor will have to meet them.

MSS REPLACEMENT CAMERAS - Bidder's Conference Minutes

M5: schedule needs to demonstrate delivery of the flight models within 28 to 30 months. The submitted schedule should be clear enough to evaluate its feasibility. The level of details must be adequate. Bidders must provide a project timetable that sets out tasks, milestones and deliverables.

Rationale: Canada has a commitment to support the MSS up to year 2020. The 28 to 30 month duration is based on the information received from the industry as part of the RFI.

R1: Bidders should submit a description of the proposed design, which should be in line with the objectives of this project which are replacing the cameras without enhancements, interface with existing MSS infrastructure, and operate under critical conditions of ISS.

R2: Covers the project management aspect of the contract.

For R2-R3 and R4, Bidders must provide a PMP and WBS according to the CDRL. We will be evaluating these documents. For example, not all aspects of the PMP will be evaluated, only 5 points, identified clearly in the evaluation criteria R2.

R3: Covers the Risk Management aspect of this project. There are 5 points to be evaluated as indicated in the criteria, which includes: Identification and quantification of risks, Risk Response Development and Control and finally, an overall project risk assessment needs to be provided.

All project management aspects in the evaluation criteria are drawn from industry standards and published project management principles.

R4: Covers the personnel and technical team for all technical fields identified in M1.

M1 is evaluating the bidder while R4 is evaluating the team that will be working on the project. R4 includes subcontractors as we will be evaluating subcontractors. Guests were reminded that if the resource is a subcontractor, it is important to identify them accordingly.

R5: Covers the technical methodology of this project. Bidders must submit the SEMP, the PAIP, the SDP and the TRRA with their bid. This criterion evaluates the technical management aspects, that is, the critical technical tasks, the system engineering management aspects of the project and technical risk assessment aspects, as outlined in the criterion.

Minimum score for each criterion is mandatory. It is not an average score, if you don't pass one criterion, you are deemed non-compliant.

Question Period

The following is a list of the Questions that were raised and answered throughout the conference.

D- Questions and Answers (Q&As) received at the Bidders Conference

Q1: Can you please clarify the duration of the project? In the RFP and the SOW it states 28 months but in the evaluation criterion M5 it states 28 to 30 months. Is the schedule supposed to be 28 or 30 continuous months?

A1: The duration of the project must be 28 to 30 months. This duration was determined based on the information received as part of the RFI. The contract award for phases B and C should be 15 months. Bidders can budget up to a 6 month period where Canada could exercise phase D. This 6 month period does not count in the 28 to 30 month period. The schedule needs to show that the work for all three phases can be done in 28 to 30 months of continuous work without any interruptions. Whether

MSS REPLACEMENT CAMERAS - Bidder's Conference Minutes

the final decision is to exercise 2 flight models or 5 flight models, the entirety of the work must be completed within 28 to 30 months. 6 months is not taken into account in the 28 to 30 months.

Q2: For example, could the CDR be held 17 months after the contract award?

A2: The bids will be evaluated on the overall duration of the project, not on the duration of each phase of the project. So, yes, the CDR following phases B and C could be held 17 months after the contract award. The 2 month buffer can be applied anywhere, and distributed as required, as long as the schedule shows an overall duration of the project of 28 to 30 months.

Q3: A price is required for each phase separately. Some EEE parts require 20 weeks to be procured and would normally be costed in Phase D. Can the bidders plan the procurement of these parts ahead/early in the schedule (Phase B/C)?

A3: These EEE parts are Long Lead Items (LLI). The price for LLI must be presented separately in the Annex B. The price for phases B and C must exclude the LLI. The price for phase D must also exclude the LLI. The Long Lead Items will be paid separately. Note that LLI are an option that could be exercised anytime during the contract. Bidders can plan the procurement of Long Lead Items prior to Phase D but the procurement of the Long Lead Items is subject to exercising Option Bloc A.

Q4: It was mentioned earlier that the project consists of 2 activities, the build and the integration. Can you please clarify the impact on this RFP?

A4: The integration activity is not part of this RFP. The integration activities will be covered under the L&SE contract, in a task order. This RFP covers the design and build of the cameras and lights.

Q5: There seems to be a contradiction in the specification requirements: specifying soft launch at one place but later requirements for shock and vibration have full launch loads.

A5: Yes, the RCAM only needs to be tested for workmanship for soft-stow environment. The specs will be amended.

Q6: Is it mandatory to have a physical mechanical zoom and iris or just the zoom and iris functionality?

A6: Clarification, the intent of the specification is not to drive a particular design. If a digital solution is provided, then the bidder must identify how the functionality will be represented to satisfy existing behavior, command/control and telemetry interfaces to the operator.

Q7: The specification states that technical bid must meet the resolution at all lengths, with the zoom capacity, which will drive a bigger lens. We will need clarification on what focal length means.

A7: The resolution at all lengths and zoom capacity can be considered as functions. The bidder must identify how the functionality will be represented to satisfy existing behavior, command/control and telemetry interfaces to the operator.

Q8: In evaluation criteria M3 and M4, can you please clarify "Intent to comply (IC)"? Do we only need to state it where required? Or do we need to provide more info?

A8: When IC is required, bidders must indicate intent to comply. They need to state that they will comply with the requirement when executing the contract. For those requirements requiring IC, bidders may provide a detailed substantiation for each of the requirements from the table, but it is not necessary.

Q9: Must the PMP, WBS, SDP, SEMP, TRRA and PAIP be submitted with the bid?

A9: Please refer to the framed text presented before criterion R2 and R5. Yes they need to be presented with the bid but only the elements required in each evaluation criterion are required at RFP closure. At contract award, the contractor will have to update these documents to fully comply with the CDRL.

E- Questions and Answers (Q&As) received prior to the Bidders Conference

All the following questions are regarding the technical specification CSA-SS-SG-0061A-System Specification for MSS RCAM:

Q10: An operational state called "Black Balance" is referenced in Requirement 3.3.1.3, but is not described anywhere.

A10: Black balance maintains the dark portions of the scene within +/- 2.5 IRE of the reference black level. The black setup level is 7.5 IRE above the blanking level. The requirement will be updated to say: "RCAM shall provide an auto-black balance function remotely selectable to the ON and OFF position.", and to describe Black Balance parameters (per this response).

Q11: Requirement 3.3.2.6 Spectral Response—the limiting spectral response of the sensor is referenced here. We assume this is referring to the long-wavelength limit.

A11: Yes, the limiting spectral response of the sensor refers to the long wavelength limit.

Q12: Requirement 3.3.2.9 Resolution—Note that the cycles/mm brackets in this requirement are potentially wrong and will depend on the size of detector used. Note Table 3-4 should replace Focal length with Field of View to be consistent with digital zoom.

A12: The intent of this requirement is to have a variation of field of view (whether digitally or optically) without imposing the need for an optical zoom solution. For digital implementation, commanding and telemetry for focal length must be emulated to satisfy same operational responses of existing MSS cameras. The number of cycles/mm is based on the existing MSS camera format, the hard requirement is on the TV Lines per Photo Height (TVL/PH). This applies to both 3.3.2.9 a) and b).
NOTE: Table 3-4 will not be amended.

Q13: Requirement 3.3.2.14 Colour Temperature—please expand on what the three settings are supposed to do. Are there verifiable performance implications for these settings?

A13: This command maintains a scene within a reference level based on the type of lighting in a scene. Metal (ETVCG lights), Day (sunlight) and Tungsten (MSS lights) as per accepted published standards. Validation is done through inspection of telemetry.

Q14: Requirement 3.3.2.15.4 Veiling Glare (Lens Flare) states that veiling glare shall be less than 1.5%. Please expand on the parameters for this measurement. Does this mean that <1.5% of the full dynamic range will be lost under all gain states to stray light, assuming the sun as the light source?

A14: As per the definition of veiling glare, the 1.5% is signal of stray light associated with a black object relative to the signal level of a uniform white background. This applies to all gain states with the spectral input of the sun.

Q15: Requirement 3.3.2.17 Zoom Control subsections b) & e) discuss changes in "focal length" and "zoom group" that are not applicable to digital zoom. These should be recast as changes in angular field of view to be consistent.

A15: Requirements stated in 3.3.2.17 must be emulated to satisfy the user interface for command, control and telemetry status. A correction to requirement 3.3.2.17 h) will be made as follow: (h) If a digital zoom is selected, the function specified in 3.3.2.17 a) through g) shall be emulated.

Q16: Requirement 3.3.2.21 Sharpness Control—please expand on what the three settings are supposed to do. Are there verifiable performance implications for these settings?

A16: Sharpness control provides enhancement of edges within an image. Three settings: zero (no enhancement), nominal (provides some level of enhancement), high (further improves image sharpness). There are no numerical values associated with the different levels of sharpness, validation is done through inspection and telemetry.

Q17: Requirement 3.3.2.22 Electronic Smear Rejection Control—please expand on what this setting is supposed to do. Are there verifiable performance implications for this setting? Requirement 3.3.2.15.2 Over illumination Resistance describes a verifiable requirement on Smear Rejection. Does this requirement need to be met in both On and Off states of the Control?

A17: Smear Rejection Control reduces the effect of smear (streaking), which is caused by a bright light source (saturation, bloom). Verification is done through inspection of telemetry. As a minimum, this requirement has to be met in the ON state.

F- Adjournment of the session

Following the Q&A period, Ms. Jutras thanked all the participants for their questions and invited them to send her, by e-mail, any other questions that they may have. She reminded them that the RFP is due on January 23, 2015 and that all questions could be received 10 days prior to the closing date. She adjourned the session at about 2:30 pm (EDT).

---End of the Information Session Minutes---