



**RETURN RESPONSES TO:
RETOURNER LES RÉPONSES À:**

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

**Vendor / Firm Name and Address
Raison sociale et adresse du
fournisseur / de l'entrepreneur**

Issuing Office - Bureau de distribution

Space Programs Directorate /
Direction des programmes spatiaux
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. 004
Client Reference No. - N° de référence du client 9F052-13-0905	Date 22-12-2014
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 30rd, 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

Delivery Required - Livraison exigée See herein	Delivery Offered - Livraison proposée
Vendor / Firm Name and Address Raison sociale et adresse du fournisseur / de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
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 above mentioned Request for proposal is amended as follow:

Sow, 2.1 Applicable documents

Delete:

AD #	Document Number	Title	Revision	Issue Date
AD-01	CSA-SS-SG-0061	System specification for Mobile Servicing System (MSS) Replacement Camera (RCAM)	IR	Mar 10, 2014
AD-02	CSA-RCAM-RD-0001	MSS Replacement Camera Product assurance Requirements (PAR)	IR	Feb 13, 2014

Insert:

AD #	Document Number	Title	Revision	Issue Date
AD-01	CSA-SS-SG-0061	System specification for Mobile Servicing System (MSS) Replacement Camera (RCAM)	A-Redlines	Dec 22, 2014
AD-02	CSA-RCAM-RD-0001	MSS Replacement Camera Product assurance Requirements (PAR)	A	Nov 7, 2014

Attachment 1 to part 4, M3, M4 & Table

Delete:

Table 1- RCAM Systems Requirements for Evaluation
Table 2 - MSS RCAM PAR Requirements for Evaluation

Insert:

Amended Table 1- RCAM Systems Requirements for Evaluation (2014-12-22)
Amended Table 2 - MSS RCAM PAR Requirements for Evaluation (2014-12-22)

Attachment 1 to part 4, Table

Delete:

Intent to comply: Bidders must confirm they will comply with the mandatory requirement. As the mandatory requirement will be a requirement of the Contract, any failure to comply with the requirement of the Contract will result in the Contractor being in Default.

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Insert:

Intent to comply: When intent to comply is required, Bidders must confirm they will comply with the mandatory requirement. For this category of level of details, compliance details such as a reference in proposal (REF PROP) and detailed substantiation (DET SUBST) are not required. Note that, as the mandatory requirement will be a requirement of the Contract, any failure to comply with the requirement of the Contract will result in the Contractor being in Default.

Please find hereunder a list of questions received and the answers to these questions.

Q18: Vib levels in requirements are inconsistent with test levels. Requirements state to design to workmanship vibe levels due to the soft-stowage launch of the RCAM, while the required test levels provided in section 4.2.1 are much higher (the same levels as original MSS cameras).

A18: The specs will be corrected. Workmanship vibration test levels shall be used as MSS spares will be launched internal pressurized soft stow.

Q19: Is the programming function of the camera while in boot mode a requirement or not? 3.3.1.3 a) 1. suggests that programming mode should be supported in boot mode while 3.4.1.3.1 b) states that reprogram mode is not supported.

A19: Reprogramming mode is not supported for MSS cameras. Boot mode shall be as specified to satisfy existing command/control and telemetry interfaces to the operator.

Q20: The required EMI testing for the FMs is inconsistent between Table 4-2 (which states RE02, CE01, CE03, and CE07 is to be performed on the FM) and the Verification Matrix Table A-1 (which indicates that there are no EMI/EMC testing on the FM...only on the EQM). Please clarify if EMI testing on the FMs is required.

A20: RE02, CE01, CE03 and CE07 testing is required on the FMs. For purposes of satisfying verification, EQM test results of these tests will be used. Table 4-2 will be amended.

Q21: The RCAM requirements invoke a significant amount of post-procurement testing on every Flight lot of active and passive EEE parts. Does the CSA require this for all procured Grade 1 and 2 EEE parts? For example, Class V microcircuits and Established Reliability Failure Rate S capacitors and resistors.

A21: The required procurement level for EEE parts is Level 2. If the requirements being referred to are from INST-002 for Level 2 parts then yes the post procurement testing is required. Post procurement testing is in place to ensure the reliability of the parts meet what is required for this program which is governed by International Space Station requirements.

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Q22: Per SSP 41172 (4.2.6.4), acoustic testing is normally only performed for items with large surface area to volume ratios that can't be properly subjected to random due to its size, such as large solar arrays and antennas. Also, it states that when acoustic testing is required, random vibrate shall be omitted. Historically, analysis has been sufficient to show that acoustic testing is not required for hardware elements of this size/volume. Therefore can acoustic testing on the EQM be omitted from the verification matrix Table A-1.

A22: An Acoustic level testing is not required and Table A-1 has been updated.

Q23: Section 3.5.2 Power Dissipation, Lights: Heater Power 10 Watts. This is a new requirement which is significantly less than the heater power required by the existing Light Assembly (which draws approximately 30 Watts at 127.5 V for its heaters). Can this requirement be updated to 30 Watts?

A23: Requirement 3.5.2 was modified to limit total power to 100W which includes heater power. The specific power consumption imposed on the heater was removed. In addition, requirement 3.4.2.3 (d) changed the 10W requirement from a shall to a should.

Q24: Section 3.7.2 provides operational, acceptance, and survival limits that are based on the existing MSS camera design/requirements and do not consider the light assembly which must operate at higher temperatures due to their power dissipation. Can the operational, acceptance, and survival temperature limits of the light assembly be established as part of the thermal design when the light source is selected?

A24: A requirement has been added (3.7.2 c)) in the event that the RCAM light functionality is implemented as a separate ORU.

Q25: Are there any requirements related to the alignment accuracy of the optical axis during a zoom operation and/or at its maximum and minimum fields of view?

A25: As per requirement 3.4.3.b), reference AD-11, ICD 842-0045-001 for tolerance on bore sight alignment. Requirement 3.4.3.g) has been added.

Q26: Requirement 3.5.3 j) and k) specify the heater resistance to use in the camera and light. Can these be deleted and allow the detailed thermal design to establish the necessary heater size to maintain the units above their respective operational temperature limits? Note that the existing MSS lights do not currently use heaters of this size.

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A26: Requirements j) and k) have been deleted as they are design specific.
Contractor to define.

All other terms and conditions remain the same