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Place Bonaventure, 1e étage
800 rue de la Gauchetière Ouest
Bureau 1110
Montréal
Québec
H5A 1L6
FAX pour soumissions: (514) 496-3822

SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise indicated, all other terms and conditions of the Solicitation remain the same.

Ce document est par la présente révisé; sauf indication contraire, les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
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Issuing Office - Bureau de distribution
Travaux publics et Services gouvernementaux Canada
Place Bonaventure,
800 rue de la Gauchetière Ouest
Voir aux présentes - See herein
Montréal
Québec
H5A 1L6

Title - Sujet Dev. of enabling space tech.	
Solicitation No. - N° de l'invitation 9F063-160953/A	Amendment No. - N° modif. 005
Client Reference No. - N° de référence du client 9F063-16-0953	Date 2017-05-31
GETS Reference No. - N° de référence de SEAG PW-\$MTB-575-14322	
File No. - N° de dossier MTB-6-39409 (575)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2017-06-12	Time Zone Fuseau horaire Heure Avancée de l'Est HAE
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: Jurca, Anca	Buyer Id - Id de l'acheteur mtb575
Telephone No. - N° de téléphone (514) 496-3378 ()	FAX No. - N° de FAX (514) 496-3822
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction:	

Instructions: See Herein

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

Solicitation No. - N° de l'invitation

9F063-160953/A

Client Ref. No. - N° de réf. du client

9F063-160953

Amd. No. - N° de la modif.

005

File No. - N° du dossier

MTB-6-39409

Buyer ID - Id de l'acheteur

mtb575

CCC No./N° CCC - FMS No/ N° VME

CHANGE OF ADDRESS – BIDS DELIVERY
For bids delivered starting Monday, May 8, 2017:

In person or by mail:
Place Bonaventure, 1st Floor
800 de la Gauchetière Street West
Suite 1110
Montreal (QC), H5A 1L6

PROJECT TITLE: Development of enabling space technologies

The above mentioned Request for Proposal (RFP) is hereby amended to answer questions received.

1. For Priority Technology 10 (PT- 10): Dexterous Interface and Tool For Planetary and Deep Space

- In the Request for Proposal (RFP):
 - Page A-190 (243): The targeted technology development is expected to fully reach TRL4 as a minimum upon the completion of the project.
 - Page A-191 (244): The contractor shall perform the work required to fully develop these elements (DEE, DGF, OMP and ORB) to TRL 4, where the technology shall have a credible path to flight
 - Page A-192 (245): Manufacturing, Assembly and Verification of the Engineering Development Unit (EDU) of all the elements (DEE,DGF, OMP and ORB).
 - Page A-194 (247): Ambient Testing: This phase shall also include testing in the presence of lunar simulant.
- Description of TRL 4:
 - Page A-15 (68): Basic technological components are integrated to establish that they will work together.

Question 1:

Based on the Government of Canada's description of TRL 4, the EDU and testing in lunar simulant dust environment are not explicitly required. Would CSA consider relaxing the requirements of a) manufacturing the EDU for all elements, and b) the testing in lunar simulant dust environment?

Answer 1:

- a) Fundamental fit and function EDUs of all 4 key elements of this work (ORB, OMP, DGF, DEE) must be built and tested in ambient conditions. Please note that some of the requirements are levied on the design and can be verified by analysis or review of design rather than test or demonstration. The EDU is not required to implement all of the design.
- b) The intent of the testing in the presence of lunar simulant is to gain insight as to the compatibility of the solution with respect to contamination and not surviving the environment. For example, can the presence of dust mechanically prevent the mating or the DEE/DGF pair, or OMB/ORB pair. This demonstration is not intended to test wear, durability or long term performance.

Also please note the following changes:

Section 6, Page A-192

Delete:

"9. Ambient verification and validation of the fully functional EDU using an appropriate robotic manipulator;"

Add:

"9. Ambient verification of the fully functional EDU. This should include validation testing using an appropriate robotic manipulator;"

Section 6, Page A-192 , 1. Brainstorming activity

Delete:

"One of each of the three listed classes of matching OMP & ORB shall to be built using rapid prototyping techniques and manually demonstrated, along with at least three other concepts to get a quick assessment of the strengths and weaknesses including dust tolerance."

Add:

"One of each of the three listed classes of matching OMP & ORB shall be built using rapid prototyping techniques and manually demonstrated, along with up to three other concepts to get a quick assessment of the strengths and weaknesses including dust tolerance."

Solicitation No. - N° de l'invitation
9F063-160953/A
Client Ref. No. - N° de réf. du client
9F063-160953

Amd. No. - N° de la modif.
005
File No. - N° du dossier
MTB-6-39409

Buyer ID - Id de l'acheteur
mtb575
CCC No./N° CCC - FMS No/ N° VME

Section 6, p. A-194, 9. Ambient Testing.

Delete:

"Key performance metrics identified in the test plan shall be verified in an ambient environment. The testing shall include a robotic manipulator to validate the concept of all the key EDU elements. Signal and power performance can be deferred provided they are included in the design. This phase shall also include testing in the presence of lunar simulant."

Add:

"Key performance metrics identified in the test plan shall be verified in an ambient environment. Signal and power performance can be deferred provided they are included in the design. This phase shall also include a series of basic functional demonstration in the presence of lunar simulant to gain insight into the validity of the concept. This demonstration is not intended to test wear, durability or long term performance."

Section 8: p. A-198

Delete:

REQ-DIaTPADS-DEE-007 DEE error sensing: The DEE shall provide information to the manipulator to compensate for alignment errors during grappling the DGF.

Rationale: Hence the dexterous part.

Add:

**Nothing to add* (duplicate requirement)*

Section 8, p. A-199

Delete:

REQ-DIaTPADS-DEE-009 Dexterous End Effector Mass: The Dexterous End Effector mass shall be less than 18 kg

Add:

REQ-DIaTPADS-DEE-009 Dexterous End Effector Mass: The Dexterous End Effector mass should be less than 18 kg

Section 8, p. A-200

Delete:

REQ-DITPADS-DGF-005 Dexterous Grapple Fixture mass: The Dexterous Grapple Fixture mass shall be less than 0.5 kg

Solicitation No. - N° de l'invitation
9F063-160953/A
Client Ref. No. - N° de réf. du client
9F063-160953

Amd. No. - N° de la modif.
005
File No. - N° du dossier
MTB-6-39409

Buyer ID - Id de l'acheteur
mtb575
CCC No./N° CCC - FMS No/ N° VME

Add:

REQ-DITPADS-DGF-005 Dexterous Grapple Fixture mass: The Dexterous Grapple Fixture mass should be less than 0.5 kg

Section 8, p. A-199, REQ-DIaTPADS-DEE-010, and

Delete:

B: Extend the following services to the ORU:

i: 2000 W of power

Note: This value is notional and included for sizing and may be refined by the IERIS. The EDU is NOT expected to transfer this amount of power.

ii: High speed data

Note: This is intentionally kept vague as the data requirements are not available at this time.

Add:

B: Extend the following services to the ORU:

i: power

Note: 2000W is the notional value and included for design sizing and may be refined by the IERIS. The EDU is NOT expected to transfer this amount of power.

ii: High speed data

Note: This is intentionally kept vague as the data requirements are not available at this time.

Section 8, p.A-200, REQ-DIaTPADS-DGF-006, and

Section 8, p.A-201 REQ-DIaTPADS-OMP-006, and

Section 8, p.A-203 REQ-DIaTPADS-ORB-006

Delete:

Solicitation No. - N° de l'invitation

9F063-160953/A

Client Ref. No. - N° de réf. du client

9F063-160953

Amd. No. - N° de la modif.

005

File No. - N° du dossier

MTB-6-39409

Buyer ID - Id de l'acheteur

mtb575

CCC No./N° CCC - FMS No/ N° VME

B: Receive the following services from the DEE and extended to the ORU:

i: 2000 W of power

Note: This value is notional and included for sizing and may be refined by the IERIS. The EDU is NOT expected to transfer this amount of power.

ii: High speed data

Note: This is intentionally kept vague as the data requirements are not available at this time.

Add:

B: Receive the following services from the DEE and extended to the ORU:

i: power

Note: 2000W is the notional value and included for design sizing and may be refined by the IERIS. The EDU is NOT expected to

transfer this amount of power.

ii: High speed data

Note: This is intentionally kept vague as the data requirements are not available at this time.

Section 8, p. A-202, REQ-DIaTPADS-OMP-006

Delete:

B: Receive the following services from the ORB and extended to the ORU:

i: 2000 W of power

Note: This value is notional and included for sizing and may be refined by the IERIS. The EDU is NOT expected to transfer this amount of power.

ii: High speed data

Note: This is intentionally kept vague as the data requirements are not available at this time.

Add:

Solicitation No. - N° de l'invitation
9F063-160953/A
Client Ref. No. - N° de réf. du client
9F063-160953

Amd. No. - N° de la modif.
005
File No. - N° du dossier
MTB-6-39409

Buyer ID - Id de l'acheteur
mtb575
CCC No./N° CCC - FMS No/ N° VME

B: Receive the following services from the ORB and extended to the ORU:

i: power

ii: High speed data

Note: This is intentionally kept vague as the data requirements are not available at this time.

Question 2:

A thoughtful examination of the requirements and the available budget indicates that the requirements should be prioritized. Can CSA provide a list of mandatory technical and SOW requirements that shall be met within the available budget in order to be considered a responsive bid?

Answer 2:

Priority of the requirements is established by the terminology defined in Annex A, Section A.5 of the RFP. This terminology is applicable for the interpretation of the "Mandatory" or "Goal" nature of the requirements. All mandatory requirements must be met within the available budget in order for a bid to be considered responsive.

It should be noted that some requirements have been revised through the answer to Question

ALL OTHER TERMS AND CONDITIONS OF THE RFP REMAIN UNCHANGED