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**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.

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Title - Sujet Development of enabling space technologies - Développement des technologies spatiales habitantes	
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Client Reference No. - N° de référence du client 9F063-190729	Date 2020-12-14
GETS Reference No. - N° de référence de SEAG PW-SMTB-575-15907	
File No. - N° de dossier MTB-0-43149 (575)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM Eastern Standard Time EST on - le 2021-01-05 Heure Normale de l'Est HNE	
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PROJECT TITLE: Development of enabling space technologies

The purpose of this amendment is to answer questions received.

Questions and answers:**For Priority Technology 5: SAR High Speed On-Board Processing****Question 1:**

The SOW requirements are:

- 1) *HSP-7A Mandatory; Number of looks in azimuth; 10 looks in azimuth/1 look in range; Applicable to medium final image resolution (25 m) only.*
- 2) *HSP-7B Goal; Number of looks in azimuth; Support variable number of looks (up to 10).*

We understand the importance of speckle reduction in SAR imagery when that imagery will be used in image processing tasks, such as scene classification and terrain type segmentation. However, it is not clear why the requirement is stated as a design choice (azimuth multi-looking) instead of an effective number of looks or the amount of speckle reduction, which can be achieved in several different ways. This mandatory preference of azimuth multi-looking over range multi-looking or other speckle reduction algorithms might not be an issue for a ground SAR image formation processor but it unnecessarily constrains an on-board processor implementation.

So, the question is: May we interpret these two requirements in terms of their end goal, i.e. speckle reduction equivalent to the number of required azimuth-looks? This will allow us the flexibility in applying range and/or azimuth-multi looks as well as speckle filtering while aiming to produce a square pixel, speckle reduced multi-look complex image suitable for post-processing algorithms.

Answer 1:

CSA understands that these two requirements might sound overly restrictive for the development of an on-board processing unit. However, this requirement aims to ensure that the OBP developed can be utilized with a range of SAR system which may be outside the control of the OBP developer. Because of this HSP-7A and HSP-7B cannot be interpreted in terms of their end goals relative to their performance for speckle reduction. Please also see the additional details provided in the amendment 007 published on December 8, 2020 on similar questions, which also led to a change to the original HSP-7A requirement.

For Priority Technology 6: Cloud-computing for Synthetic Aperture Radar (SAR) processing**Question 1:**

As providing a full replacement of the RCM ground segment level-0 processing would seem out of scope for the project, would it be acceptable to access level-1 RCM products via the EODMS API and provide a cloud solution to search, process and distribute RCM data according to the data policies and security for end users within Government of Canada organizations using public clouds?

Answer 1:

Part of RCM has a secret profile as per the guideline of GoC. Any solution based on RCM data must be based on a secured Private Cloud. The solution will be only for the production chain of RCM.

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File No. - N° du dossier

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mtb575

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Question 2:

Under Amendment 007, the following question and answer were posted:

Question 8: Data management - Does the ingested RCM data format require any additional processing before storage?

Answer 8: RCM raw data is retrieved in FRED format

In the context of Question 8, Answer 8 might imply that RCM data will be supplied to the contractor's prototype cloud in a raw format. If that was the case, then the contractor's cloud design would have to incorporate similar functions to an RCM Payload Data Ground Segment (PDGS), converting payload signal data to various Level 0-2 products. We have interpreted that this is not the intention of PT-6, but rather that the contractor's cloud design should be able to ingest the data flowing from the PDGS, or alternately EODMS, to facilitate the cloud generation of value added SAR products. A validation of this interpretation is sought, so here is a complementary question:

Does RCM data format require any additional processing within the prototype cloud developed under PT-6? What RCM formats will the prototype cloud have to ingest?

Answer 2:

In the scope of this research project and in case of using RCM as an implantation platform, the contractor has to implement the RCM GS production chain as a Cloud Computing system. The interpretation stated in the question is not what we are seeking in this project.

Question 3:

In the case of RCM data, will the cloud design require the inclusion of a SAR processor to convert raw SAR signal data to various Level 0-level 2 products or will the cloud design be ingesting data level 0-2 formats from either the PDGS or EODMS?

Answer 3:

The cloud design will require the inclusion of a SAR processor. In case that your bid will use RCM as an implementation platform, the RCM SAR processor (Restoration, archiving, production and advising the distribution service of RCM of the product availability) must be the main integrated component. This will be implemented in RCM private cloud. In case of using another mission data to simulate (or as a proxy) the SAR data coming from a space mission, we didn't request to ingest any data from other sources rather than the said mission. That is how we established the scope of this research project phase.

ALL OTHER TERMS AND CONDITIONS OF THE RFP REMAIN UNCHANGED