



**PROJECT IMPLEMENTATION UNIT (PIU)  
PUNJAB URBAN LAND SYSTEMS  
ENHANCEMENT (PULSE)  
Punjab Land Records Authority (PLRA)  
Government of the Punjab**



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**Subject: MINUTES OF THE PRE-BID MEETING FOR THE PROCUREMENT OF HIGH-RESOLUTION SATELLITE / AERIAL IMAGERY OF PUNJAB (INCLUDING URBAN, PERI-URBAN & RURAL AREAS) AND ITS PROCESSING ALONG WITH ORTHORECTIFICATION UNDER PIU-PLRA, PULSE PROJECT**

A pre-bid meeting was held on October 02, 2023 at 03:00 PM under the Chairmanship of Financial Management Specialist, PIU-PLRA, PULSE (In the absence of Convener GIS Specialist, PIU-PLRA, PULSE) in the committee room of PULSE for the subject activity. The meeting started with recitation of Holy Quran. The chair informed to participants that the meeting will be recorded for minutes and record purpose. The chair welcomed the participants and requested for round of introduction. Following participants attended the meeting:

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|-------------------------------------|--|
| 1. Mr. Muhammad Islam               | Financial Management Specialist, PIU-PLRA, PULSE   |
| 2. Mr. M Afzaal Amin Rana           | Procurement Specialist, PIU-PLRA, PULSE            |
| 3. Mr. Nasir Ashraf                 | GIS Specialist, PMU-BOR, PULSE                     |
| 4. Mr. Kamran Baig                  | Geodesy Specialist, PMU-PLRA, PULSE                |
| 5. Mr. Ali Usman                    | HR Manager, PMU-BOR, PULSE                         |
| 6. Mr. Nadir Ali                    | Procurement Associate, PIU-PLRA, PULSE             |
| 7. Mr. Tariq Masood<br>Commission   | GM, Pakistan Space & Upper Atmosphere Research     |
| 8. Mr. Faisal Karim<br>Commission   | GM, Pakistan Space & Upper Atmosphere Research     |
| 9. Mr. Najam Ahmad<br>Associates.   | GIS/RS Expert, Geospatial Planning and Engineering |
| 10. Mr. Shahbaz Baig<br>Associates. | RS Specialist, Geospatial Planning and Engineering |

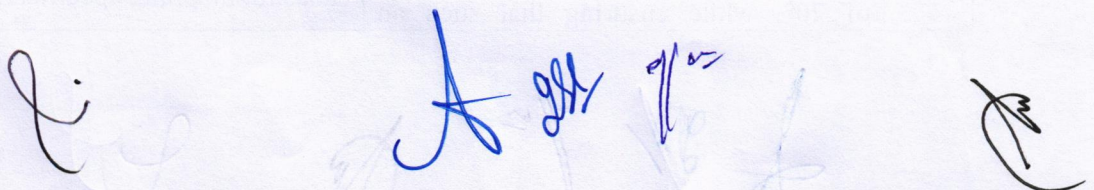
The following joined the meeting via zoom:

- |      |                    |   |
|------|--------------------|---|
| i.   | Mr. Wajahat Masood | Sandhu Engineering & Trading Co.        |
| ii.  | Mr. Hafiz Saeed    | Masoodia                                |
| iii. | Mr. Azhar Ali      | National Aerospace Science & Technology |
| iv.  | Abdul Basit        | National Aerospace Science & Technology |
| v.   | Mr. Shabbir        | Megaparsec Innovative Systems (Pvt) Ltd |
| vi.  | Mr. Fayyaz Hussain | Megaparsec Innovative Systems (Pvt) Ltd |
| vii. | Mr. Peter Kinne    | Sat Revolution - Australia              |

Procurement Specialist, PIU-PLRA, PULSE apprised the participants regarding the procurement process of subject activity. Following queries were responded during the meeting:

Sr. #	Query / Question	Response
1.	The mention of a 10° off-nadir angle for satellite acquisitions raises concerns regarding potential cost increases and acquisition delays. It was proposed that consideration be given to expanding the allowable off-nadir angle to a maximum of 20°, while ensuring that such an	In accordance with the Technical Specifications outlined in Section VII of the Request for Bids (RFB) document, it is imperative to adhere to a <10° off-nadir angle as a mandatory requirement to fulfill the cadastral mapping specifications.

	adjustment will not result in a degradation of resolution.	
2.	Certain irregularities in satellite imagery, such as flares and minor smudges, are inherently unpredictable and difficult to mitigate. Will they be amenable to accepting the imagery even in instances where these minor artifacts are present?	With reference to the Technical Specifications provided in Section VII of the Request for Bids (RFB) document, it is stipulated that the imagery must exhibit a noise-free quality. However, it is acknowledged that certain on-ground phenomena, such as brick kiln plumes and flares, may fall within the category of unavoidable situations.
3.	Is there a need for both 30cm imagery and high definition (HD) 15cm imagery, or is the requirement solely for 15cm imagery? If both are required, please specify whether the 15cm imagery should consist of RGB only or include all four bands. To confirm our understanding: Is it accurate that the understanding is for 30cm imagery comprising RGB and VNIR with four bands, in addition to 15cm RGB imagery with three bands?	In accordance with the Technical Specifications provided in Section VII of the Request for Bids (RFB) document, it is emphasized that the spatial resolution mandated for the final product is 15 centimeters post-processed, encompassing four bands. Consequently, the raw data is necessitated in the form of stacked layers, each maintaining its respective resolution (Pan+MS).
4.	It was requested that data in both UTM and Lat/Long WGS84 projections. Would it be considered accepting data solely in Lat/Long WGS84, considering that re-projection into UTM can be readily achieved using open-source or commercial software tools? Additionally, it is essential to clarify the delineation of Areas of Interest (AOIs) within each projection, particularly in instances where the AOIs span multiple UTM zones (a minimum of two zones). Kindly specify the method and criteria for defining AOIs in each respective projection.	As detailed in the Technical Specifications section, specifically Section VII of the Request for Bids (RFB) document, it is imperative that the respective Universal Transverse Mercator (UTM) projection is employed in conjunction with the WGS84 datum. It should be noted that in cases where a district spans two UTM zones, the relevant zones will be assigned individually, and the data will be provided accordingly.
5.	Regarding the file format requirement, they have specified the need for both GeoTIFF and JP2000 formats. Are they open to accepting compressed GeoTIFF files that incorporate an inner pyramid structure? It should be noted that such compressed GeoTIFF files offer a superior compression ratio compared to JP2000 while maintaining an equivalent level of precision as standard GeoTIFF files.	With reference to Section VII of the Technical Specifications outlined in the Request for Bids (RFB) document, it should be noted that the acceptance of compressed GeoTIFF format, including the inclusion of an inner pyramid, is deemed suitable and compliant.



6.	Regarding the schedule, it is outlined that districts will be organized into four phases spanning a total duration of 840 days. Does this imply that each phase will sequentially follow the preceding one?	Indeed, all activities will be conducted in a phased manner in accordance with the specifications delineated in Section VII of the Schedule of Requirements within the Request for Bids (RFB) document.
7.	Regarding the schedule, the stipulation is for imagery to be current, with a maximum age of 6 months from either the date of contract award or the expected commencement date of each district as indicated in the delivery schedule. Does this requirement imply that the data must not exceed 6 months in age from the initiation of each individual phase?	In adherence to the Technical Specifications provided in Section VII of the Schedule of Requirements within the Request for Bids (RFB) document, it is imperative that, upon submission, the data remains current and not older than 6 months.
8.	In the provided schedule, it is specified that the Ground Control Point (GCP) collection and orthorectification processes are concurrent. Is there flexibility to propose an alternative sequencing where GCP collection precedes orthorectification? It is worth noting that carrying out both tasks simultaneously may potentially lead to delays in the delivery timeline.	This constitutes the project management or work plan developed by the bidders for the successful completion of the assignment. Consequently, the scheduling of Ground Control Point (GCP) collection is at the discretion of the vendor.
9.	<p>Ground Control Points (GCPs): The stipulation for a 4 x 4 km mesh for GCP collection implies that at least one GCP must be collected within each mesh, potentially resulting in the collection of 12,500 GCPs. It's important to note that compared to drone or aerial imagery, satellite data typically necessitates a reduced number of GCPs. Would they consider an alternative strategy aimed at reducing the GCP count to a range of 2,000 to 3,000 GCPs?</p> <p>In light of the GCP requirements, we seek clarification on the following:</p> <p>a) The estimated number of GCPs to be observed and the time duration required for each point to meet the Client's specifications.</p> <p>b) The recommended number of GCPs to be observed, following international</p>	In accordance with the Technical Specifications outlined in Section VII of the Schedule of Requirements within the Request for Bids (RFB) document, it is stipulated that for Ground Control Points (GCPs), adherence to the PULSE standards is required, utilizing a mesh of 4x4 square kilometers.

*[Handwritten signatures and initials in blue ink]*

	<p>standards or best practices for Satellite Imagery.</p> <p>c) Requested Standard Operating Procedures (SoP) or recommended procedures, including any associated field forms, for observing GCPs, along with metadata requirements.</p> <p>d) Any other pertinent standards or requirements related to fieldwork.</p> <p>e) Is there a specific mandate for placing one GCP point within every 4 km<sup>2</sup> area (i.e., 12,500 points)?</p> <p>f) The duration of observations necessary to achieve a 25cm precision level (considering the use of differential GPS and the time required for each observation).</p>	
10.	<p>In order to achieve a precision level of approximately 1-meter CE90 for Ortho imagery, it is imperative that the precision of each Ground Control Point (GCP) is maintained at a level significantly less than 25 centimeters CE90. Is it mandatory to adhere to this specific precision requirement?</p>	<p>Indeed, it is mandatory as specified in Section VII of the Technical Specifications within the Schedule of Requirements in the Request for Bids (RFB) document.</p>
11.	<p>Subsequent to the inquiries regarding the schedule and Ground Control Points (GCPs) collection, would it be acceptable to submit a preliminary GCPs collection strategy and acquisition plan? The aim of this proposal is to maintain a high rate of production and delivery while simultaneously ensuring the quality of the delivered product.</p>	<p>Certainly, this affirmation is in accordance with the stipulations outlined in Section VII of the Technical Specifications within the Schedule of Requirements as stated in the Request for Bids (RFB) document.</p>
12.	<p>Given that the provision of the 200,000 square kilometer area will occur in phases rather than all at once, it is essential to seek clarification regarding the continued validity of the qualification criteria condition for the supply of the entire 200,000 square kilometer area.</p>	<p>In accordance with Section III - Evaluation &amp; Qualification Criteria of the Request for Bids (RFB) document, the criteria have been devised for the entirety of the assignment and will be applied consistently. Consequently, it should be clarified that the requirement of 200,000 square kilometers is not segmented into phases.</p>
13.	<p>Considering the phased nature of the project, could the financial requirement of having 100 million in cash on hand be reconsidered and potentially reduced to 50 million?</p>	<p>No, as indicated in Section III - Evaluation &amp; Qualification Criteria of the Request for Bids (RFB) document, the specified threshold is already set at a lower limit.</p>

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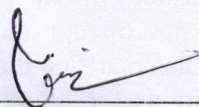
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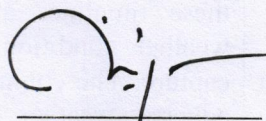
14.	Will the experience and financial credentials of Satellite Data providers/Operators such as Maxar, Airbus, etc., be taken into account whether they are engaged in a joint venture (JV) with a local firm or acting solely as data providers?	Section III - Evaluation & Qualification Criteria of the Request for Bids (RFB) document is referenced specifically for the Joint Venture (JV) criteria.
15.	Should the Joint Venture (JV) be required to have local registration, or would it suffice for the JV agreement to be signed by both local and international partners without a specific requirement for local registration?	The response to the query is guided by references to ITB 4, 11.2, 19.8, 20.4, and 20.3 of the Bid Data Sheet, as well as Section III - Evaluation & Qualification Criteria of the Request for Bids (RFB).
16.	Is it a requirement for the necessary human resources (HR) to be actively deployed as integral participants in the project?	The team's involvement is essential for project management purposes and in alignment with the criteria outlined in Section III - Evaluation & Qualification Criteria of the Request for Bids (RFB) document.
17.	Could you please specify the list of countries that are ineligible to participate in the bidding process?	India & Israil.
18.	Is the stipulated monetary volume (PKR 600 million or USD 2,000,000) for services and the specified area requirement (200,000) to be considered collectively or as separate criteria?	In accordance with clause 3.1 (b) of Section III - Evaluation & Qualification Criteria, it is mandated that the bidder must fulfill any of the specified criteria, which may include the monetary volume of services or the required area.
19.	Could you please provide the anticipated commencement date for the project?	Last week of December 2023.
20.	Kindly furnish the expected project commencement date, if available.	The committee has received feedback regarding the proposed delivery timeline from other participants, who have confirmed that these timelines are feasible provided that weather conditions do not disrupt imagery capture. The committee has clarified that any adverse weather conditions or unforeseen circumstances can be addressed in accordance with the contract clause pertaining to Force Majeure. Therefore, it is affirmed that the timelines are considered reasonable and achievable.
21.	In light of the sensitive nature of the required images and data, the procuring agency may contemplate the adoption of a Government-to-Government (G2G) approach.	The chosen procurement approach has been selected with consideration of the procurement nature and volume, and it has been designed to ensure that International Competitive Bidding (ICB) does not impose any restrictions on participation in the bidding process.

22.	As per national security imperatives, international bidders will be prohibited from engaging in the processing of imagery data.	The bidder or the local partner, in the case of a Joint Venture (JV), responsible for the collection and processing of imagery must possess proper registration along with adherence to Standard Operating Procedures (SoP) in order to comply with the Survey and Mapping rules of 2015.
23.	Are there any specific requirements or criteria for national or international experts?	The bidder retains the option to engage either National or International Experts in accordance with the provisions outlined in the Request for Bids (RFB). Further details on this matter can be found in Section III - Evaluation & Qualification Criteria of the RFB document.
24.	Will imbalanced color resulting from multiple image strips and changes in on-ground crops be considered acceptable?	It is imperative that all imagery mosaics undergo color balancing and meticulous processing to enhance the overall visual appeal and crispness of the images.
25.	Is it permissible to propose or provide higher-resolution imagery, specifically at a 10-centimeter resolution?	In accordance with the Technical Specifications provided in Section VII, it is specified that the spatial resolution mandated for the final product is 15 centimeters post-processed. Nonetheless, it should be noted that higher resolutions may also be considered and accepted.
26.	Will a horizontal error of 1.2 meters within the district be deemed acceptable in the context of satellite imagery?	In accordance with the technical specifications, it is imperative that the imagery maintains a level of accuracy commensurate with that of the Ground Control Points (GCPs).
27.	In the context of orthorectified RGB pan-sharpened imagery, what do the terms "3 band" and "4 band" signify or refer to?	This pertains to the number of spectral bands, specifically data with three bands and data with four bands.

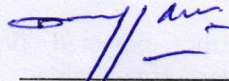
The meeting concluded with an expression of gratitude.



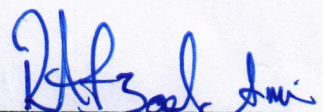
GIS Specialist  
PMU-PLRA, PULSE  
(In attendance)



HR Manager  
PMU-BOR, PULSE  
(Member)



Geodesy Specialist  
PMU-BOR, PULSE  
(Co-Opted Member)



Procurement Specialist  
PIU-PLRA, PULSE  
(Secretary)



Financial Mgt. Specialist  
PIU-PLRA, PULSE  
(Convener)