PHILIPPINE PORTS AUTHORITY

REQUEST FOR QUOTATION
(Small Value Procurement)
ASD-046-2023

Name of Project	:	**PROCUREMENT OF SERVICES FOR THE CALIBRATION OF SURVEY EQUIPMENT**
Approved Budget for the Contract	:	**P 213,000.00**
Deadline for Submission	:	**April 14 , 2023**

Please quote your best quotation in line with the attached specifications. Suppliers are required to submit their valid current Mayor's/Business Permit and PhilGeps Registration Number.

Quotations shall be submitted in person to the Manager, Administrative Services Department, PPA Corporate Bldg., Bonifacio Drive, South Harbor, Port Area, Manila. Quotations/documents sent to any other department/s or email address will not be considered.

For further information, please refer to:

The BAC Secretariat, Philippine Ports Authority
5th Floor, PPA Bldg., Bonifacio Drive
South Harbor, Port Area, Manila
Telephone/Fax No. 527-4735
954-88-00 loc. 539
PPA Website: www.ppa.com.ph

Very Truly Yours,

MARK JON S. PALOMAR
Chairperson, Bids and Awards Committee
Procurement of Goods and Consultancy Services

TERMS OF REFERENCE

PROCUREMENT OF SERVICES FOR THE CALIBRATION OF SURVEY EQUIPMENT

The Philippine Ports Authority is set to conduct bidding for the procurement of services for the calibration of Survey Equipment (Total Station and DGPS) adopting the provision of Revised CY 2016 IRR of RA 9184 also known as the "Government Procurement Reform Act" to ensure transparent transaction and that only the most responsive and qualified service provider is selected.

I. OBJECTIVE

This aims to enhance and strengthen the capability of DSD Surveyors in the efficient implementation of Topographic / Facility Surveys on data acquisition.

In essence, the enhancement of the DSD capabilities is geared towards improving the existing system of implementing survey works, specifically:

1) To efficiently and accurately implement horizontal angle, vertical angle, and distance measurement and analyze the slope between base point and specific/target point;

2) To establish accurate determination of geographical position (ie, latitude/ longitude);

3) To accurately establish the relationship between WGS84 latitude, longitude, and ellipsoidal height, with the needed local northing, easting, and elevation.

II. SCOPE OF WORKS

1) To inspect, clean (if possible) and make corresponding Adjustment / Calibration of the following survey equipment;

   a) **Five (5) Total Station**;

      Minimum Work Activities includes but not limited to:

      - Inspection and Cleaning of Horizontal and Vertical Circle;
      - Cleaning and greasing of Focusing System, Standing/tilting Axis, Endless Drives, Slip Ring;
      - Replacement of all gaskets;
      - Replacement / Renewal of:
        - Two (2) pcs. Snap Lock
        - One (1) pc. Focusing Grip
        - One (1) pc. Tribach w/o Optical Plummet

- Examine/Check, Evaluate and Calibrate the following:
  - Horizontal Collimation (Line of Sight);
  - Vertical Index;
  - Compensator Index (Longitudinal and Traversal) Error;
  - Tilt Sensor/Axis;
  - Theodolite;
  - Electronic Distance Measurement (EDM) Reflectorless (RL) / Infra-Red (IR);
  - Automatic Target Recognition (ATR);
  - and Motors/among others;
- Installation of latest firmware and applications (if valid software maintenance contract exists);
- Determining EDM additive constant;
- Cleaning of Instrument and Accessories (include casing);
- Issuance of CALIBRATION CERTIFICATE;
- Any other parts found to be replace other than specified above will be charged additionally or separately;

b) **Five (5) Global Positioning System;**

Minimum Work Activities includes but not limited to:

- Conduct localized or site calibration to relate local grid coordinates to the GPS earth centered, earth fixed ellipsoidal datum. The actual process involves collecting points with coordinates in each system and then allowing the software to calculate (usually 7) transformation parameters between the two systems.
- Perform a series of mathematical computations to determine the current accuracy of the equipment to transform WGS84 latitude, longitude, and ellipsoidal height coordinates into local northing, easting, and elevation; and adjust/calibrate accordingly;
- Site calibration and inspection also includes;
  - Horizontal Adjustment to make the GNSS derived grid coordinates fit, as closely as possible, to the local control grid coordinates. The parameters resulting from this calibration/adjustment are Rotation, Translation, and a Scale of the GNSS coordinates;
  - Vertical Adjustment to be done with and without a Geoid Model.
    - With the use of Geoid Model, an inclined correction plane is created based on the residuals between the geoid defined by the orthometric heights of the local control and the applied geoid model.
    - Without Geoid Model, a vertical shift as a single point be applied, and/or inclined plane be computed using the orthometric heights of the local control.
  - The Projection (Shift, Projection, and Datum Grids, and Azimuth Orientation (North or South), and;
  - Datum WGS84 latitude, longitude, and ellipsoidal height coordinates

2. Issuance of CALIBRATION CERTIFICATE;

IV. TECHNICAL SPECIFICATIONS OF UNIT FOR CALIBRATION

1) THREE (3) UNITS LEICA TS06 5" R500 TOTAL STATION

2) TWO (2) UNITS LEICA TS06 7" R1000 TOTAL STATION

MEASUREMENT – ANGLE
ACCURACY - COMPENSATOR SETTING : 0.5" / 0.5" / 1" / 1.5" / 2"

DISTANCE MEASUREMENT NO USING REFLECTOR
RANGE - PINPOINT R500 / R1000 : > 500METRES / > 1000METRES
ACCURACY : 2MM + 2PPM

GUIDE LIGHT
RANGE WORKING : 5METRES TO 150METRES
ACCURACY POSITIONING : 5 CENTIMETERS AT 100 METERS

TELESCOPE :
MAGNIFICATION : 30X
RESOLVING POWER : 3"
FIELD OF VIEW : 1° 30" 2.7 METERS AT 100 METERS
FOCUSING RANGE : 1.7METRES TO INFINITY

3) FIVE (5) DGPS

a) Three (3) HUACE CHC i80

- GNSS Characteristics
  - 220 channels with all in view simultaneously tracked satellite signals
- GNSS Accuracies
  - SBAS differential positioning accuracy: 0.5 m RMS
  - High precision static
    - Horizontal: 2.5 mm + 0.1 ppm RMS
    - Vertical: 3.5 mm + 0.4 ppm RMS
    - Baseline Length: ≤ 300 km
  - PostProcessed Kinematic (PPK)
    - Horizontal: 8 mm + 1 ppm RMS
    - Vertical: 15 mm + 1 ppm RMS
  - RTK
    - Horizontal: 8 mm + 1 ppm RMS
    - Vertical: 15 mm + 1 ppm RMS
    - Initialization time < 5 s
    - Initialization reliability > 99.9%
- Network RTK
  - Horizontal: 8 mm + 0.5 ppm RMS
  - Vertical: 15 mm + 0.5 ppm RMS
  - Initialization time < 10 s
  - Initialization reliability > 99.9%

b) Two (2) LEICA VIVA

- GNSS Characteristics
  - 220 channels with all in view simultaneously tracked satellite signals
- GNSS Accuracies
  - SBAS differential positioning accuracy: 0.5 m RMS
  - High precision static
    - Horizontal: 2.5 mm + 0.1 ppm RMS
    - Vertical: 3.5 mm + 0.4 ppm RMS
    - Baseline Length: ≤ 300 km

- Post Processed Kinematic (PPK)
  - Horizontal: 8 mm + 1 ppm RMS
  - Vertical: 15 mm + 1 ppm RMS
- RTK
  - Horizontal: 8 mm + 1 ppm RMS
  - Vertical: 15 mm + 1 ppm RMS
  - Initialization time < 5 s
  - Initialization reliability > 99.9%
- Network RTK
  - Horizontal: 8 mm + 0.5 ppm RMS
  - Vertical: 15 mm + 0.5 ppm RMS
  - Initialization time < 10 s
  - Initialization reliability > 99.9%

V. PAYMENT

1) Full payment shall be made after proper Delivery, Inspection, Testing and Acceptance of the calibrated items/deliverables and submission of sales invoice and other relevant documents;

VI. WARRANTY

1) All units are covered by One (1) year warranty from defects from the date of receipt;

2) Configuration, if any, is free assistance on equipment recalibration (onsite), if warranted, for the duration of the warranty period.

ROLANDO K. PEREZ
Manager
Dredging and Survey Department