



## **Technical Specifications for the Supply and Delivery of Multi-Purpose GNSS Receiver**

### **A. OVERVIEW**

PAGASA will conduct a flood modeling study for the Resilience and Preparedness towards Inclusive Development (RAPID) program under the Project Climate Twin Phoenix (PCTP) together with the Climate Change Commission – Climate Change Office (CCC-CCO). PAGASA will conduct the study through the Hydrometeorological Division. A part of the study will involve extensive data gathering through ground survey works, by this, the division shall procure one set of Multi-Purpose Global Navigation Satellite System (GNSS) Receiver.

### **B. APPROVED BUDGET FOR THE CONTRACT (ABC)**

The Approved Budget for the Contract inclusive of VAT and all applicable government taxes is Two Million pesos (**PhP2,000,000.00**).

### **C. QUALIFICATIONS OF THE BIDDER**

(Please refer to Section II. Instructions to Bidders, the Bid Data Sheet and Checklist of Eligibility and Technical Requirements of the Bidding Documents)

### **D. DELIVERY PERIOD AND PLACE OF DELIVERY**

The winning bidder shall supply and deliver one set of Multi-Purpose Global Navigation Satellite System (GNSS) Receiver for thirty (30 c.d.) calendar days from receipt of the Notice to Proceed (NTP) at the PAGASA Central Office Science Garden Compound, BIR Road, Diliman, Quezon City.

### **E. BID PROPOSAL CONTENTS**

The prospective bidder is expected to comply and respond in accordance with the specific instructions to bidders and submit all the documentary requirements under the Checklist of Eligibility, Technical and Financial Requirements. The submission of documentary requirements must be properly arranged in order and with label.

The prospective bidder shall respond paragraph by paragraph and shall clearly indicate compliance to all the required specifications (*Please see Section VII. Compliance Matrix*) and shall specify the number of days or schedules within which to complete the delivery of all the goods required (*Please see Section VI. Schedule of Requirements*).

The prospective bidder shall be required also to include in this proposal, original descriptive literatures and unamended brochures of all equipment/materials to be supplied.

These details will allow the **PAGASA-Bids and Awards Committee** to fully evaluate and determine compliance from the prospective bidders.

## **F. TECHNICAL SPECIFICATIONS**

The winning bidder shall supply and deliver one set of Multi-Purpose Global Navigation Satellite System (GNSS) Receiver for thirty (30 c.d.) calendar days with the following minimum specifications:

### **BASE UNIT & ACCESSORIES DETAILS:**

- ✚ 1 x GNSS Receiver
- ✚ 1 x Single Carrying Case
- ✚ 1 x ANTENNA (BNC)
- ✚ 2 x Removable Batteries
- ✚ 1 x Tribrach with adapter
- ✚ 1 x Tripod

### **ROVER UNIT & ACCESSORIES DETAILS:**

- ✚ 1 x GNSS Receiver
- ✚ 1 x Single Carrying Case
- ✚ 1 x ANTENNA (BNC)
- ✚ 2 x Removable Batteries
- ✚ 1 x Tribrach with adapter
- ✚ 1 x Range Pole
- ✚ 1 x Bipod
- ✚ 1 x Tripod

### **GNSS RECEIVER SPECIFICATIONS:**

- **GNSS Tracking**
  - 452 channels with patented universal tracking channel technology
  - GPS: L1 C/A, L1C, L1P(Y), L2P(Y), L2C, L5
  - GLONASS: L1 C/A, L1P, L2 C/A, L2P, L3C
  - Galileo: E1, E5a, E5b, E5AltBOC, E6
  - BeiDou: B1, B2, B3 with ICD availability
  - IRNSS: SPS-L5
  - SBAS: WAAS/EGNOS/MSAS
  - QZSS: L1 C/A, L1C, L2C, L5, LEX
  - L-band: 1525-1560 MHz

- Satellites Tracked: All in view

➤ **Accuracy**

- (L1 + L2):           H: 3.0mm + 0.3ppm  
                              V: 5.0mm + 0.5ppm
- Precision Static:   H: 3.0mm + 0.1ppm  
                              V: 3.5mm + 0.4ppm
- RTK:                 H: 5.0mm + 0.5ppm  
                              V: 10mm + 0.8ppm
- Data Update / Output Rate: Up to 20Hz

➤ **Communication**

- Optional Radio Type:   UHF (410-470 MHz)  
                                  SS (915 MHz)
- Additional Comms:     Internal cellular modem  
                                  Wi-Fi  
                                  Bluetooth  
                                  LongLink
- Cellular:                Integrated HSPA+/CDMA

➤ **Data and Memory**

- Real Time Data Output: TPS, RTCM SC104 v2.x,  
                                  3.x, CMR/CMR+, RINEX
- NMEA 0183 Output:     Version 2.x, 3.x and 4.x
- On-board Memory:      8GB Internal

➤ **Power**

- Power Source:         External Power (6 to 28 VDC)  
                                  internal battery (3.7 V, 5200mAh)  
                                  removable battery (7.2 V, 2900 mAh)
- Operating Time:        Up to 9 hrs. w/ included batteries

➤ **Environmental and Physical**

- Dimensions (w x h):    115 x 132 mm
- Operating Temp.:      -40°C to 80°C
- Water/Dust Rating:     IP67
- Drop and Topple:      2-meter pole-drop
- Weight:                 1.172g (including internal & hot  
                                  swappable external batteries)

## DATA COLLECTOR SPECIFICATIONS

### ➤ Hardware

- CPU: Intel Atom Z3745
- OS: Windows 10
- Memory: 4GB LPDDR3 RAM  
SD slot, user-accessible
- Display: 7in. Sharp screen  
Wide XGA at 1280 x 800
- GPS: Type:uBlox NEO MBM  
Accuracy: 2-5m  
Channels: 72  
Update Rate: 5Hz
- Camera: Rear: 8MP w/ LED illumination  
Front: 2MP

### ➤ Wireless Connectivity

- Bluetooth: Long-range Bluetooth  
Smart Ready wireless technology  
v4.0 +EDR, Class 1.5, BLE support
- Wi-Fi: 802.11 a/b/g/n  
2.4 GHz and 5 GHz
- Cellular: Internal GSM 4G LTE

### ➤ Environmental

- Water/Dust Rating: IP68 certified
- Operating Temp.: -20°C to 50°C
- Temperature Shock: MIL-STD 810G
- MIL-STD 810G: 1.2m Drop, vibration  
Humidity, tumble spec:  
1,000 0.5m tumbles  
(2,000 drops)
- Dimensions: 13.71 x 3.45 x 21.5 cm
- Operating Time: Up to 15 hrs  
(5hrs internal batteries,  
10hrs w/ hot swappable batteries)

## SOFTWARE

- 1 x licensed proprietary (same as GNSS brand) software for controller
- 1 x licensed proprietary (same as GNSS brand) software for post processing

## **G. MISCELLANEOUS**

### **1. TRAINING**

Prior to acceptance, the winning bidder shall provide three (3) day training for five (5) PAGASA/project personnel, all expenses including food and training materials shall be shouldered by the winning bidder. Training certificates shall be provided together with the end-user approval and shall form part of the acceptance and completion certificate.

### **2. WARRANTIES**

- a. The bidder warrants that it shall strictly conform to all the Terms and Conditions of this Terms of Reference.**
- b. All equipment are subject to one (1) year warranty.**