PHILIPPINE PORTS AUTHORITY

PROCUREMENT OF AERIAL LIDAR (Light Detection and Ranging)/ LASER SCANNER TECHNOLOGY INTEGRATED WITH UNMANNED AERIAL VEHICLE (UAV)

BID DOCS
ASD-144-2023

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Glossary of Acronyms, Terms, and Abbreviations

ABC – Approved Budget for the Contract.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

CDA - Cooperative Development Authority.

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

CIF – Cost Insurance and Freight.

CIP – Carriage and Insurance Paid.

CPI – Consumer Price Index.

DDP – Refers to the quoted price of the Goods, which means "delivered duty paid."

DTI – Department of Trade and Industry.

EXW – Ex works.

FCA – "Free Carrier" shipping point.

FOB – "Free on Board" shipping point.

Foreign-funded Procurement or Foreign-Assisted Project– Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

Framework Agreement – Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as "Call-Offs," are made for the duration of the agreement. It is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. (GPPB Resolution No. 27-2019)

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

GPPB – Government Procurement Policy Board.

INCOTERMS – International Commercial Terms.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

Supplier – refers to a citizen, or any corporate body or commercial company duly organized and registered under the laws where it is established, habitually established in business and engaged in the manufacture or sale of the merchandise or performance of the general services covered by his bid. (Item 3.8 of GPPB Resolution No. 13-2019, dated 23 May 2019). Supplier as used in these Bidding Documents may likewise refer to a distributor, manufacturer, contractor, or consultant.

UN – United Nations.

PHILIPPINE PORTS AUTHORITY

INVITATION TO BID

FOR THE PROCUREMENT OF AERIAL LIDAR (LIGHT DETECTION AND RANGING)/LASER SCANNER TECHNOLOGY INTEGRATED WITH UNMANNED AERIAL VEHICLE (UAV)

The Philippine Ports Authority, through the Corporate Budget of the Authority for CY 2023, intends to apply the sum of **P24,000,000.00** being the Approved Budget for the Contract (ABC) to payments under the contract for the Procurement of Aerial Lidar (Light Detection and Ranging)/Laser Scanner Technology Integrated with Unmanned Aerial Vehicle (UAV) **(ASD-144-2023).** Bids received in excess of the ABC shall be automatically rejected at bid opening.

The Philippine Ports Authority now invites bids for the above Procurement Project. Supply and delivery of the required item is required within Five (5) months from the receipt by the successful bidder of the Notice to Proceed. Bidders should have completed, within five (5) years from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

Bidding will be conducted through open competitive bidding procedures using a non-discretionary "pass/fail" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) 9184. Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines, and to citizens or organizations of a country the laws or regulations of which grant similar rights or privileges to Filipino citizens, pursuant to RA 5183.

Prospective Bidders may obtain further information from the Philippine Ports Authority Bids and Awards Committee (BAC) and inspect the Bidding Documents at the address given below during 8:00 a.m. to 5:00 p.m., Monday to Friday.

A complete set of Bidding Documents may be acquired by interested Bidders on **27 June 2023** from the given address and website(s) below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **Twenty Five Thousand (P25,000.00) Pesos.** The Procuring Entity shall allow the bidder to present its proof of payment for the fees in person.

The Philippine Ports Authority's Bids and Awards Committee will hold a Pre-Bid Conference on **04 July 2023 at 10:30 a.m.** at the PPA Function Room, 7th Floor, PPA Bldg., Bonifacio Drive, South Harbor, Port Area, Manila, and/or through video conferencing or webcasting via zoom, which shall be open to all prospective bidders.

A. Bonifacio Drive, South Harbor, Port Area, Manila 1018 Philippines
P.O. Box 436 Manila, Philippines
Tel. No. (+632) 527-8356 to 83 Fax No. (+632) 527-4855
website: www.ppa.com.ph

Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below on or before **19 July 2023 at 9:00 a.m.** Late bids shall not be accepted.

All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 14.

Bid opening shall be on **19 July 2023 at 10:00 a.m.** at the 7th Floor, PPA Building, A. Bonifacio Drive, South Harbor, Port Area, Manila. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

The Philippine Ports Authority reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

For further information, please refer to:

BAC Secretariat, Philippine Ports Authority
5th Floor, PPA Bldg., A. Bonifacio Drive,
South Harbor, Port Area, Manila
Telephone Nos. 8 527-47-35
8 527-83-56 to 83 loc. 539
PPA Website: www.ppa.com.ph
PhilGEPS Website: www.philgeps.gov.ph

MARK JON S. PALOMAR
Chairperson, PPA Head Office Bids and Awards
Committee for the Procurement of Goods and
Consultancy Services (HO-BAC-PGCS)

1. Scope of Bid

The Procuring Entity, PHILIPPINE PORTS AUTHORITY wishes to receive Bids for the **PROCUREMENT OF AERIAL LIDAR (Light Detection and Ranging) / LASER SCANNER TECHNOLOGY INTEGRATED WITH UNMANNED AERIAL VEHICLE (UAV)**, with identification number **ASD-144-2023.**

The Procurement Project (referred to herein as "Project") is composed of a single lot, the details of which are described in Section VII (Technical Specifications).

2. Funding Information

2.1. The Philippine Ports Authority through its corporate budget for the Calendar Year (CY) 2023 in the amount of **TWENTY FOUR MILLION PESOS (Php24,000,000.00)**.

2.2. The source of funding is the Corporate Budget of the PHILIPPINE PORTS AUTHORITY.

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manuals and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or IB by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have verified and accepted the general requirements of this Project, including other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2 Foreign ownership limited to those allowed under the rules may participate in this Project.

5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to at least fifty percent (50%) of the ABC.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

6. Origin of Goods

There is no restriction on the origin of goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN, subject to Domestic Preference requirements under **ITB** Clause 18.

7. Subcontracts

7.1 The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than twenty percent (20%) of the Project.

The Procuring Entity has prescribed that:

Subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a Pre-Bid conference for this Project on the specified date and time and either at its physical address at the PPA Function Room, 7th Floor, PPA Building, Bonifacio Drive, South Harbor, Port Area, Manila and/or through videoconferencing/webcasting as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents).**

10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within five (5) years prior to the deadline for the submission and receipt of bids.

10.3. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. Similar to the required authentication above, for Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

11. Documents comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents).**

11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.

11.3. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

11.4. For Foreign-funded Procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Bid Prices

12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:

a. For Goods offered from within the Procuring Entity's country:

i. The price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable);

ii. The cost of all customs duties and sales and other taxes already paid or payable;

iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and

iv. The price of other (incidental) services, if any, listed in e.

b. For Goods offered from abroad:

i. Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination

in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.

ii. The price of other (incidental) services, if any, as listed in **Section VII (Technical Specifications).**

13. Bid and Payment Currencies

13.1. For Goods that the Bidder will supply from outside the Philippines, the bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies, shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

13.2. Payment of the contract price shall be made in Philippine Pesos.

14. Bid Security

14.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

14.2. The Bid and bid security shall be valid for One Hundred Twenty (120) calendar days from the date of the opening of bids. Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

15. Sealing and Marking of Bids

Each bidder shall submit one copy of the first and second components of the Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

16. Deadline for Submission of Bids

16.1. The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB**.

17. Opening and Preliminary Examination of Bids

17.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

17.2. The preliminary examination of bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

18. Domestic Preference

18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring BAC shall immediately conduct a detailed evaluation of all Bids rated *"passed,"* using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of the 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by **ITB** Clause 15 shall be submitted for each lot or item separately.

19.3. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.

19.4. The Project shall be awarded as one Project having several items that shall be awarded as one contract.

19.5. Except for bidders submitting a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation, all Bids must include the NFCC computation pursuant to Section 23.4.1.4 of the 2016 revised IRR of RA No. 9184, which must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder. For bidders submitting the committed Line of Credit, it must be at least equal to ten percent (10%) of the ABCs for all the lots or items participated in by the prospective Bidder.

20. Post-Qualification

20.1. Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS) and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

21.1. The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Bid Data Sheet

ITB Clause	
5.3	For this purpose, contracts similar to the Project shall be: a. Contract for the supply and delivery of Aerial Light Detection and Ranging / Laser Scanner Technology Integrated with Unmanned Aerial Vehicle. b. completed within the last five (5) years prior to the deadline for the submission and receipt of bids.
7.1	Subcontracting is not allowed.
12	The price of the Goods shall be quoted DDP *[Manila]* or the applicable International Commercial Terms (INCOTERMS) for this Project.
14.1	The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts: a. The amount of not less than Four Hundred Eighty Thousand Pesos (Php480,000.00), if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or b. The amount of not less than One Million Two Hundred Thousand Pesos (Php1,200,000.00) if bid security is in Surety Bond.
15	Each Bidder shall submit **ONE (1) original and SIX (6) copies** of its Technical and Financial Components of its Bid in two (2) separate sealed bid envelopes, which should be submitted simultaneously. Each of the bid documents should be individually sealed. All bid documents shall be book-bound with hard cover and properly labelled with index tabs. Failure to comply with the said requirements is a ground for automatic disqualification of the bidder.
19.3	Partial bid is not allowed. The goods are grouped in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
20.1	No additional requirements.
21.1	No additional requirements.

Section IV. General Conditions of Contract

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract (SCC).**

2. Advance Payment and Terms of Payment

2.1. Advance payment of the contract amount is provided under Annex "D" of the revised 2016 IRR of RA No. 9184.

2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the SCC.

3. Performance Security

Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than prior to the signing of the Contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR of RA No. 9184.

4. Inspection and Tests

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the SCC, **Section IV (Technical Specifications)** shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

5. Warranty

6.1. In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.

6.2. The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

6. Liability of the Supplier

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Supplier is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
1	**Delivery and Documents –** For purposes of the Contract, "EXW," "FOB," "FCA," "CIF," "CIP," "DDP" and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of INCOTERMS published by the International Chamber of Commerce, Paris. The Delivery terms of this Contract shall be as follows: *[For Goods supplied from abroad, state:]* "The delivery terms applicable to the Contract are DDP delivered [*indicate place of destination*]. In accordance with INCOTERMS." *For Goods supplied from within the Philippines, state:*] "The delivery terms applicable to this Contract are delivered *[indicate place of destination].* Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination." Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI (Schedule of Requirements). For purposes of this Clause the Procuring Entity's Representative at the Project Site are: **Philippine Ports Authority-Head Office, Manila.** **Incidental Services –** The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements: a. performance or supervision of on-site assembly and/or start-up of the supplied Goods; b. furnishing of tools required for assembly and/or maintenance of the supplied Goods; c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods; and d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract. The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services. **Spare Parts –**

	The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier: a. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and b. in the event of termination of production of the spare parts: i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested. The spare parts and other components required are listed in **Section VI (Schedule of Requirements)** and the cost thereof are included in the contract price. The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for a period of ten (10) years after the last day of manufacturing of the specific model. Spare parts or components shall be supplied as promptly as possible, but in any case, within two (2) months of placing the order. **Packaging –** The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit. The packaging, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified below, and in any subsequent instructions ordered by the Procuring Entity. The outer packaging must be clearly marked on at least four (4) sides as follows: Name of the Procuring Entity Name of the Supplier Contract Description Final Destination

	Gross weight Any special lifting instructions Any special handling instructions Any relevant HAZCHEM classifications A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging. **Transportation –** Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price. Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, Goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, Goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure. The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Suppliers risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination. **Intellectual Property Rights –** The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof.

2.2	Full payment shall be made after proper delivery, inspection, training, and acceptance of the required items/deliverables and submission of sales invoice and other relevant documents.
4	The inspection and tests that will be conducted are: 1) To confirm the optimal capacity of the batteries, all devices running on portable power shall be successfully charged to full capacity; For the laptop and desktop computers: 2) To ensure continuity of workflow, the field laptop and desktop workstation shall be set-up completely, with all necessary hardware and software installed, especially the pre-processing and post-processing software used for LiDaR data, during the familiarization training as outlined in paragraph 3(c) of Item III (Scope of Works) above. As expected of a brand new computer, the laptop and the desktop computers should operate flawlessly; For the UAV: 3) To test the (a) maximum flight time without payload, (b) flight range of the UAV, and (c) the reliability of the controller accompanying it, the UAV shall be flown during good weather without the LiDaR attached on it, on an open field, as far as possible, in the vertical and horizontal directions, with due regard to flight limitations (height restrictions and no-fly boundary zones) set by the CAAP. To be acceptable as an aerial survey vehicle, the horizontal flight range shall be at least one (1) kilometer from the UAV controller while the vertical flight range shall be at least 500 meters of elevation or the CAAP height restriction, whichever is lower. The UAV should endure at least thirty (30) minutes in the air without need for emergency landing in between. Thereafter, upon landing the UAV, its batteries shall be recharged to full capacity in preparation for the testing of the LiDaR; The test for the maximum flight time of the UAV with payload (when the LiDar / Laser Scanner is mounted on the UAV) will be elaborated starting on paragraph 7 below. For the Base Station / GNSS Receiver: 4) To ensure that the Handheld Controller serves its purpose of setting up the RTK-GNSS Receiver (Base), the Handheld Controller, must, without the aid of other devices such as laptops, be able to initialize and program the Base to its proper settings, ready for survey use;

5) To determine whether or not the duration of continuous operation of the Base is acceptable for the actual aerial survey, the Base should continuously operate for at least two (2) hours without the aid of an external power source;

6) To guarantee the IP67 dust/water rating, the Base will be subjected to ten (10) minutes of actual or simulated rain without harm to the equipment.

In the following steps, a sample aerial survey will be conducted wherein the accuracy of the LiDaR set-up will be compared to that of the Real Time Kinematic – Global Navigation Satellite System (RTK-GNSS) receivers which is currently used by the DSD:

7) To prepare the data to be processed, at least three control points must be established on the ground. The RTK Base Station will be positioned on one of the control points whose coordinates and elevation were previously known. The coordinates and elevation of the other control points will be measured by the RTK Rover. These other control points will be used for comparing the accuracy of the LiDar set-up.

   The said other control points will be temporarily ornamented with solid objects or markers around them for easy identification when searched on the LiDar data.

   To test the maximum flight time of the UAV with payload, the flight path shall be arranged in such quantity that can never be finished by the UAV in one flight only. This pre-programmed flight path shall then be loaded onto the UAV controller. The LiDaR shall be prepared and mounted on the UAV. Thereafter, the UAV shall be flown with the LiDaR mounted, simulating the conduct of an actual aerial survey. To determine the maximum flight time, the UAV should only be brought to landing only when its power supply is low.

   The maximum flight time of the UAV with payload should last at least thirty (30) minutes to be considered acceptable for the various aerial survey requirements of the DSD.

   After the aerial survey, the data acquired by the LiDar shall then be pre-processed on the field laptop. If upon pre-processing, further data is still needed, the batteries shall be charged again in preparation for another round of aerial survey. Otherwise, the data shall be post-processed on the desktop workstation.

8) To be acceptable for the survey requirements of the DSD, the coordinates and elevation measured using the LiDar data of the other ground control points, as mentioned in paragraph 7 above, after post-processing should have an accuracy of ± 5 cm in both the horizontal and the vertical planes compared to the measurement taken using the RTK Rover.

	The aforementioned tests can be conducted simultaneous with the training, such that the devices to be used in the training are the ones delivered by the winning bidder / supplier. The winning bidder / supplier is highly advised to also bring their own demonstration equipment same with that of the newly bought ones under this ToR so that performance may be directly compared and to immediately address possible concerns during the simultaneous testing and training of equipment.

Section VI. Schedule of Requirements

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

Item Number	Description[1]	Quantity	Total	Delivered, Weeks/Months
	Light Detection and Ranging (LiDaR) Technology Integrated with Unmanned Aerial Vehicle (UAV), including Field Laptop and Workstation Desktop Computer	1	1	The required item shall be supplied and delivered at the PPA Head Office for proper inspection within five (5) months upon receipt of the Notice to Proceed

[1] Subject to the Technical Specifications under Items IV of the Terms of Reference.

Section VII. Technical Specifications

Technical Specifications

Item	Specification	Statement of Compliance
		[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A

		statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]
	PROCUREMENT OF AERIAL LIDAR (LIGHT DETECTION AND RANGING) / LASER SCANNER TECHNOLOGY INTEGRATED WITH UNMANNED AERIAL VEHICLE (UAV)	

SCOPE OF WORKS

1) To provide/supply the following platforms for Aerial Topographic Survey:

   a) One (1) unit LiDaR (Light Detection and Ranging) / Laser Scanner Technology;
   b) One (1) unit Unmanned Aerial Vehicle (UAV), including device registration from the Civil Aviation Authority of the Philippines (CAAP);
   c) One (1) unit D-RTK2 Base Station / GNSS Receiver;
   d) One (1) unit Hand Held Controller;
   e) One (1) unit Field Laptop, and;
   f) One (1) unit Workstation Computer.

   The required Item shall be supplied and delivered at the PPA Head Office for proper inspection within five (5) months upon receipt of the Notice to Proceed.

2) To conduct inspection and testing, as part of the implied warranty of quality, of delivered equipment mentioned in items (1a) to (1f) above, at no additional cost, preferably simultaneous with the conduct of training as outlined in the succeeding paragraph below.

3) To provide training and licensing, packaged with the purchase of the LiDaR and UAV units mentioned in (1a) and (1b) above, at no additional cost, in this order:

   For the UAV operation, and in preparation for the LiDaR technology training:
   a) five (5) days of Drone Training, specific to the efficient operation of the UAV, and;
   b) CAAP Licensing of ten (10) Drone Pilots of the DSD;

   For the LiDaR technology:
   c) seven (7) days of in-house (Head Office) training and familiarization, prior to field training, of:

      - software related to data acquisition (designed to run on LiDAR/Aerial Scanner devices used in remotely controlled systems);
      - project structure (prepares monitoring trajectory and scanner data for data transfer);
      - data transformation of laser data into the coordinate system of the trajectory, and;

   d) fifteen (15) days training, familiarization, including actual

field work (topographic survey) in the efficient and effective approach or technique to operate the UAV and LiDAR at Port of Matnog, Sorsogon or any suitable site the end-user deemed appropriate, and;

e) eight (8) days in-house (Head Office) training on post processing of LiDAR Data or Output.

TECHNICAL SPECIFICATIONS

1) LiDAR (Light Detection and Ranging) / Laser Scanner Technology

SYSTEM PARAMETERS	
System Accuracy	Plane 5cm, Elevation 5cm
Weight of Instrument	2.6kg / 2.1kg (with orthophoto camera)
Size	313.5 x 142.1 x 231.2mm
Supply Voltage	24V (15-28V)
Data Storage	512GB (supports 1TB)
Copy Speed	160M/s
Operating Temperature	-20°C TO 50°C
Power	60W
IP Rating	IP64
LASER SCANNER	
Laser Class	

			Class 1 (in accordance with IEC 60825-1:2014)	
		Maximum Range	1,500m (reflective > 80%)	
		Maximum Scan Rate	2,000,000 pts/sec	
		Scan Speed	Up to 100 scans/sec	
		Accuracy	15mm	
		Precision	5mm	
		Multiple Cycles	7 times	
		Echo	16 times	
		Field of View	0°~360°	
		POSITIONING AND ALTITUDE SYSTEM		
		GNSS	GPS: L1, L2, L5 GLONASS: L1 BEIDOU: B1, B2, B3 GALILEO: E1, E5a, E5b QZSS: L1 C/A, L5	
		Altitude Accuracy	Roll/Pitch: 0.005° ; Heading: 0.010°	
		Position Accuracy	Plane : 0.01m ; Elevation : 0.02m	
		IMU Rate Update	600Hz	
		CAMERA		
		Image Resolution	45MP	

Focal Length	21mm/35mm
COMS	36 x 24mm (8192 x 5460)
Size of Pixel	4.4μm
Field of View	81 x 59.5 / 54.3 x 37.8
Photo Interval	1s
PLATFORM	
Multi	Supports Drone, Car, Backpack
SOFTWARE	
Pre-processing Software	Support: Data copy, POS solution, correction and adjustment, point cloud generation
Post-Processing Software	Terrain Module, Road Design Module, Intelligent Extraction Module, Volume Module

PACKAGE INCLUDES the following:

a) Software for Data Acquisition designed to run on LiDAR/Arial Scanner devices used in remotely controlled systems; Project Structure that prepares monitoring trajectory and scanner data for data transfer; Data Transformation of laser data into the coordinate system of the trajectory; and Tools for first setup operation of LiDAR/Laser Scanners.

b) Software maintenance for 12 months;

c) User's Manual (soft and hard copies);

d) License for software/s packages/modules;

e) Complete Accessories for integration in the UAV;

f) Software Training for Data Acquisition, Project Structure, Data Transformation and Set-up Operation (up to 7 days);

g) Drone training, specific to doing Aerial LiDAR Data Acquisition (up to 15 days), and;

h) Training on Post-processing of LiDaR data or output (up to 8 days).

2) **ONE (1) UNIT UNMANNED AERIAL VEHICLE (UAV)**

GENERAL SYSTEM PERFORMANCE	
Type	Quadcopter drone
Structure	Carbon fiber, quickly release design
Assembly	Start 2 min / finish 2 min
Empty Weight	10.9kg
Max Payload	7.1kg
Max Takeoff Weight	28.0kg (with battery)
Dimension of aircraft	110.0 x 110.0 x 44.0cm (43.3" x 43.3" x 17.32")
Transport Container	Water, dust and quakeproof

Dimension of Transport Container	94.0 x 64.0 x 50.0cm (37.0" x 25.2" x 19.7")
Flight Control System	Compatible with Quadcopter Drone
Remote Control Software	Compatible with Quadcopter Drone
Operating Temperature	-10° C to +40° C
Control System	Dual-frequency GNSS navigation, dual redundancy sensor design, fully-automatic work mode
Hovering Accuracy	1 cm + 1 ppm Hz 2 cm + 1 ppm V
Auto-flight Mode	Pre-design air route, flight height change
FLIGHT PERFORMANCE	
Max. Flight Altitude (meters above mean sea level)	5000m
Flight time	55 mins with 1 kg payload 40 mins with 5 kg payload
Max Speed	14m/sec
Max Ascent Speed	5m/sec

Max Descent Speed	3m/sec
Max Wind Resistance	Level 6 – 13.9m/sec (50kph)
Takeoff type	Automated takeoff & landing
REMOTE CONTROLLER	
Operating Frequency	2.400GHz to 2.483GHz
Max Transmission Distance	Specialized UAV frequency, anti-disturb feature, radius 7 km
Video Output Port	HDMI, SDI, USB
Operating Temperature	-10° C to +40° C
Battery	6000mAh LiPo 2S
ELECTRICAL	
Standard Battery	4x Li-Polymer batteries, 22000 mAh
Voltage	22.2V
Energy	501.6Wh
Connectors	XT60 XT-60 XT60 female
SUPPORTED PAYLOAD	

RGB Camera	
LiDAR	7 kg weight

PACKAGE INCLUDES the following:

a) 3 sets (6 pcs li-Polymer Batteries);

b) 2 sets (8 pcs) propeller;

c) 2 sets Intelligent Battery Station;

d) 1 Remote Controller with charger;

e) 1 Remote Controller Module;

f) 1 Pre-processing Software;

g) 1 Post-processing Software;

h) One (1) year insurance on LiDAR and drone only;

i) Drone Training, specific to efficient operation of the UAV (**5 days**), and;

j) CAAP Licensing for Ten (10) Drone Pilots and CAAP UAV Registration.

3) **ONE (1) UNIT D-RTK2 BASE STATION / GNSS RECEIVER**

System Configu-ration	Motherboard	RTK Board for Global Navigation Satellite System (GNSS)
	Operating System	Compatible OS
	Start-up Time	3 Seconds
	Data Storage	RAM: 128MB; ROM: 16GB internal storage, support OTG.
GNSS	Signal Tracking	BDS : B1, B2, B3 GPS : L1, L2C/L2P, L5

	Specification		GLONASS: L1, L2 GALILEO: E1, E5a, E5b QZSS: L1, L2, L5 SBAS : L1		
		Number of Channels	800		
		Positioning Accuracy/ Precision	RTK Positioning Precision: Horizontal: ±(8mm + 1 x 10^{-6} D), Vertical: ±(15mm + 1 x 10^{-6} D) Static Precision: Horizontal: ±(2.5mm + 0.5 x 10^{-6} D), Vertical: ±(5mm + 0.5 x 10^{-6} D)		
		Time for Initialization	Typically, < 10 s		
		Initialization Reliability	> 99.99%		
		Updating Rate	Positioning Data: 20Hz(GNSS Board), Original Data:20Hz(GNSS Board)		
		Differential Message	RTCM3.2, RTCM3.0, CMR, RTCM2.X		
	Network Specification	Network standard	4G cellular mobile network (TDD-LTE, FDD-LTE, WCDMA, EDGE, GPRS, GSM) ; 3G (TD-SCDMA, WCDMA, CDMA2000; 2G (GSM, CDMA)		

		Support Band	FDD LTE: Band 1, Band 2, Band 3, Band 4, Band 5, Band 7, Band 8, Band 20, all bands with diversity WCDMA/HSDPA/HSUPA/HSPA+: Band 1, Band 2, Band 5, Band 8, all bands with diversity GSM/GPRS/EDGE: 850 MHz/900 MHz/1800 MHz/1900 MHz		
		Data Service	GPRS, EDGE, WCDMA CS, WCDMA PS, HSPA+, DC-HSPA+, LTE FDD		
	Radio Parameter	Modulation	4FSK, GMSK		
		Frequency Range	403-473MHz		
		Channel Spacing	25KHz		
		Receiving Sensitivity	-116 dBm		
		Number of Channels	100(Default)+16(Custom)		
		Transmit Power	4W/2W/1W(Optional)		
	Sensor	Gravity Sensor	Support		
		Electronic	Support		

		Compass			
	Data Communications	Bluetooth	2.4GHz, HSP/HFP/OPP/PBAP, V2.1(Transmission distance ≥ 15 meters under unobstructed conditions)		
		WIFI	2.4GHz, 802.11 b/g/n, Support WAPI, AP(Signal coverage radius ≥ 30 meters under unobstructed conditions)		
		NFC	ISO1443 protocols, NFC Electronic Tags, Support Bluetooth flash pairing		
		Serial Communication	1 RS232 serial port: 3 threads, 19200 bps, 8-bit, 1stop bit		
	User Interface	Screen	Dimensions: 1.54-inch, Resolution: 128*64		
		Button	2 buttons		
		Indicator	3 status LEDs (green): 1 for satellite, 1 for data, 1 for power		
	External Interface	1 battery slot; 1 TNC aerial interface/slot; 1 Lemo five-pin socket(contain 1 triple-line RS232, 1 external power input); 1 Mini USB interface; 1 Nano SIM card slot			
	Electrical	Total power consumption: 4.2W (Static mode) Internal battery: 6800mAh/7.4V; Duration: can be greater or equal to 11 hours under static mode, and be greater or equal to 9 hours under active mode. Charging time: single ≤			

	3.5h, double ≤ 6.5h Power supply: powered by five-pin socket or internal lithium-ion, DC 6- 28VDC / 2A.	
Protection	Shock and vibration: Designed to survive a 2m natural fall onto concreteWater/dustproof: IP67	
Environ mental	Operation temperature: -40 to 65°C Storage temperature: -40 to 80°C	

4) **ONE (1) UNIT HAND HELD CONTROLLER**

Software	Branded Hand Held Controller Compatible with UAV
GNSS Signal Tracking	GNSS antenna GPS, GLONASS BDS, AGPS
No. of Channels	20
Cellular Mobile	4G, Dual SIM
WiFi	IEEE 802.11 b/g/n, Wapi, AP
Bluetooth	Built-in Bluetooth (2.1+4.0) NFC
USB	USB, Type C interface, OTG
Operating System	Android 10 or higher
Processor	CPU: 8 core; 2.0 GHZ
Storage	2 GB RAM+16 GB ROM; T-Flash memory card, up to 128GB

Display	5.5'', bright Outdoor Color capacitive touch screen (with touch pen, can be operated with gloves)
Input Configuration	Physical full keyboard, number / letter separate, professional custom smart input method
Application	Camera: Built-in 13 million pixel camera Flash: Highlight Flash LED flash(support flashlight function) Sensor: gravity sensor, compass, light sensor, gyroscope
Environmental	MIL-STD-810H IP68 environmental protection Drop resistant 1.2m Temperature -20°C to 60°C Operating -30°C to 70°C Storage
Physical Properties	Size: 236mm x 85mm x 25mm Weight: 480g within battery Battery: 7500 mAh internal Operation Time: 14hours

5) **ONE (1) UNIT FIELD LAPTOP** for onsite pre-processing of data

Processor	CPU, 14 Total core = 14, 5GHz Max turbo frequency, 24 MB Cache, 2.5 GHz Performance-core up to 5.0 GHz
Operating System	Compatible Professional Operating System (OS) 64-bit

		Memory	32GB DDR 5
		Hard Drive	2 TB SSD, NVMe Gen 4
		Graphics Card	Graphic Card GDD6 VRAM
		Display	15.6" display with IPS, Ultra HD 3840 x 2160, LED-backlit TFT LCD
		Keyboard	103-/104-/107-key FineTip RGB Per-Key backlit keyboard
		Wireless	Wi-Fi 6E 2x2
		Bluetooth	Support Bluetooth 5.2 and later
		Interfaces/Ports	1x USB 3.2 Gen 1 Port, 1x USB 3.2 Gen 2 Port with Power-off charging, 1x USB 3.2 Gen 2 Port, 1x USB Type-C Thunderbolt-4, 1x HDMI 2.1 Port
		Battery Information	At least 90 Wh Lithium Ion (Li-Ion) 4-Cells
		Power Supply	3-pin 280 W 5.5 PHY AC adapter
		WARRANTY	ONE (1) YEAR Premium Support w/Accidental Onsite Service
	6) **ONE (1) UNIT DESKTOP WORKSTATION** for post-processing of data		
		Processor	CPU, 16 Total core = 14, 5GHz Max turbo frequency, 24 MB Cache, 2.5 GHz Performance-core up to 5.0 GHz
		Operating System	Professional O.S. 64 Bit

		Motherboard	Compatible with processor
		Memory	64GB RAM 3200 MHz 16X4 DDR 4, NVME M.2
		Display	27 inches Full HD Monitor 165Hz
		Hard Drive Software	1TB SSD Storage 2 X 1TB
		Graphics	24GB GDDR6X
		Power Supply	1300W True Rated
		CPU Cooling System	AIO Liquid Cooler with LCD Display
		Fan	1500 RPM, 4-pin PWM
		WARRANTY	1 year and service offering includes 1 year of parts, labor and on-site repair
	INSPECTION AND TESTING To ensure the survey-worthiness of the equipment delivered, the basic pre-survey tests to be conducted shall be as follows: 1) To confirm the optimal capacity of the batteries, all devices running on portable power shall be successfully charged to full capacity; For the laptop and desktop computers: 2) To ensure continuity of workflow, the field laptop and desktop workstation shall be set-up completely, with all necessary hardware and software installed, especially the pre-processing and post-processing software used for LiDaR data, during the familiarization training as outlined in paragraph 3(c) of Item III (Scope of Works) above. As		

	expected of a brand new computer, the laptop and the desktop computers should operate flawlessly; For the UAV: 3) To test the (a) maximum flight time without payload, (b) flight range of the UAV, and (c) the reliability of the controller accompanying it, the UAV shall be flown during good weather without the LiDaR attached on it, on an open field, as far as possible, in the vertical and horizontal directions, with due regard to flight limitations (height restrictions and no-fly boundary zones) set by the CAAP. To be acceptable as an aerial survey vehicle, the horizontal flight range shall be at least one (1) kilometer from the UAV controller while the vertical flight range shall be at least 500 meters of elevation or the CAAP height restriction, whichever is lower. The UAV should endure at least thirty (30) minutes in the air without need for emergency landing in between. Thereafter, upon landing the UAV, its batteries shall be recharged to full capacity in preparation for the testing of the LiDaR; The test for the maximum flight time of the UAV with payload (when the LiDar / Laser Scanner is mounted on the UAV) will be elaborated starting on paragraph 7 below. For the Base Station / GNSS Receiver: 4) To ensure that the Handheld Controller serves its purpose of setting up the RTK-GNSS Receiver (Base), the Handheld Controller, must, without the aid of other devices such as laptops, be able to initialize and program the Base to its proper settings, ready for survey use; 5) To determine whether or not the duration of continuous operation of the Base is acceptable for the actual aerial survey, the Base should continuously operate for at least two (2) hours without the aid of an external power source; 6) To guarantee the IP67 dust/water rating, the Base will be subjected to ten (10) minutes of actual or simulated rain without harm to the equipment. In the following steps, a sample aerial survey will be conducted wherein the accuracy of the LiDaR set-up will be compared to that of the Real Time Kinematic – Global Navigation Satellite	

	System (RTK-GNSS) receivers which is currently used by the DSD: 7) To prepare the data to be processed, at least three control points must be established on the ground. The RTK Base Station will be positioned on one of the control points whose coordinates and elevation were previously known. The coordinates and elevation of the other control points will be measured by the RTK Rover. These other control points will be used for comparing the accuracy of the LiDar set-up. The said other control points will be temporarily ornamented with solid objects or markers around them for easy identification when searched on the LiDar data. To test the maximum flight time of the UAV with payload, the flight path shall be arranged in such quantity that can never be finished by the UAV in one flight only. This pre-programmed flight path shall then be loaded onto the UAV controller. The LiDaR shall be prepared and mounted on the UAV. Thereafter, the UAV shall be flown with the LiDaR mounted, simulating the conduct of an actual aerial survey. To determine the maximum flight time, the UAV should only be brought to landing only when its power supply is low. The maximum flight time of the UAV with payload should last at least thirty (30) minutes to be considered acceptable for the various aerial survey requirements of the DSD. After the aerial survey, the data acquired by the LiDar shall then be pre-processed on the field laptop. If upon pre-processing, further data is still needed, the batteries shall be charged again in preparation for another round of aerial survey. Otherwise, the data shall be post-processed on the desktop workstation. 8) To be acceptable for the survey requirements of the DSD, the coordinates and elevation measured using the LiDar data of the other ground control points, as mentioned in paragraph 7 above, after post-processing should have an accuracy of ± 5 cm in both the horizontal and the vertical planes compared to the measurement taken using the RTK Rover. The aforementioned tests can be conducted simultaneous with the training, such that the devices to be used in the training are the ones delivered by the winning bidder / supplier. The winning bidder / supplier is highly advised to also bring their own demonstration equipment same with that of the newly	

	bought ones under this ToR so that performance may be directly compared and to immediately address possible concerns during the simultaneous testing and training of equipment.	
	WARRANTY 1) All units are covered by **ONE (1) YEAR WARRANTY** from defects reckoned from the date of receipt of the Certificate of Acceptance. 2) During the warranty period, whenever hardware and/or related problems occur, the supplier shall provide highly technical personnel for on-site servicing of the equipment and all its components / peripherals. An on-call support must be available eight (8) hours a day, seven (7) days a week. On-site support for major problems must have a response time within forty-eight (48) hours and the supplier must shoulder all the expenses of the personnel who will be providing technical services on-site. 3) Repairs and parts replacement shall be free for the duration of the warranty period. Equipment should be picked up from PPA by the seller within forty-eight (48) hours from receipt of notification from PPA. Freight and forwarding costs to be incurred shall be for the account of the seller. 4) Preventive maintenance / inspection shall be free and can be availed of at least twice a year for the duration of the warranty period. A phone-in support must be available eight (8) hours a day, seven (7) days a week. 5) Whenever applicable, initial configuration of the equipment as well as assistance on product reconfiguration (on-site), if still necessary, shall be free for the duration of the warranty period.	
	OTHER REQUIREMENTS The prospective bidder / supplier must submit as part of its technical proposal the following supporting documents: 1) PROOF OF TECHNICAL SPECIFICATIONS OF THE ITEM TO BE DELIVERED which may be in the form of brochure, pamphlets, or similar documents reflecting the Technical Specifications as required in Item IV of the Terms of Reference;	

	2) ACTUAL PHOTOS OF STOCKROOM, EQUIPMENT, AND COMPONENTS in order to verify the bid items; 3) AUTHORIZED DISTRIBUTOR CERTIFICATE reflecting the Dealership / Distributorship Agreement with the Manufacturer or the Manufacturer's Authorized Regional Distributor of the Aerial LiDaR / Laser Scanner Technology and the UAV; 4) A DULY NOTARIZED WARRANTY CERTIFICATE, which must be included in the technical proposal, detailing (a) the warranty conditions and recommended service intervals based on Item VII of the Terms of Reference, and (b) an affidavit / affirmation stating their adherence to the aforesaid warranty conditions; 5) As provided by the manufacturer, a LETTER OF AUTHORIZED MANUFACTURER'S SERVICE CENTER as well as a SERVICE CENTER CERTIFICATE, to manifest its capability for maintenance and after sales service, and; 6) SPARE PARTS CERTIFICATION from the manufacturer indicating that spare parts for the offered unit/equipment must be available in the Philippine for the next ten (10) years.	
	The winning bidder must deliver unused and brand new equipment and, upon such delivery, provide the following items necessary to ensure the proper operation by the DSD surveyors of the Aerial Topographic Survey set-up: 1. User and System Manuals; 2. Technical Materials of the bid items, including the complete set of software, utility and recovery CDs, and; 3. Complete documentation of the equipment with the inventory of components and their corresponding brand, model, and serial number. The winning bidder, during the training, must provide the services of: 4. A Drone Operator / Trainer possessing the appropriate CAAP License ID and CAAP Certificate for the UAV training, and; 5. A Primary Trainer, who, preferably, may also be the Drone Trainer mentioned above, has at least three (3) years'	

	experience in the operation of LiDaR Technology, including post-processing of LiDaR data or output.	
	All other provisions stated in the Terms of Reference not included herein.	

TERMS OF REFERENCE

PROCUREMENT OF AERIAL LIDAR (Light Detection and Ranging) / LASER SCANNER TECHNOLOGY INTEGRATED WITH UNMANNED AERIAL VEHICLE (UAV)

This Terms of Reference (TOR) describe the technical description and other terms and conditions for the procurement of the Aerial LiDaR (Light Detection and Ranging) / Laser Scanner Technology integrated with Unmanned Aerial Vehicle (UAV) for the use of the Dredging and Survey Department (DSD) Surveyors.

I. OBJECTIVE

This aims to upgrade and strengthen the capability of DSD Surveyors, at par with modern standards, in the conduct of Aerial Mapping and Topographic / Facility Surveys on vast tracks of land with the use of LiDaR / Laser Scanner in the acquisition of data. The use of LiDaR technology will help DSD:

1) To establish an accurate representation of building outlines, roof structures, roads and vegetation to create 3-dimensional models so as to improve upon currently established developments and develop plans for future port development projects;
2) To be able to collect data quickly with very high accuracy;
3) To create higher sample density of surface data which improves results for certain applications such as floodplain delineation, and;
4) To be able to collect elevation data in a dense forest, where photogrammetry fails to reveal the accurate terrain surface due to dense canopy cover.

II. APPROVED BUDGET OF THE CONTRACT (ABC)

The Approved Budget for the Contract (ABC) is TWENTY-FOUR MILLION PESOS (P24,000,000.00).

Lot No.	Description	Quantity	Unit Price	Total Price
1	Light Detection and Ranging (LiDaR) Technology Integrated on Unmanned Aerial Vehicle (UAV), including Field Laptop and Workstation Desktop Computer	1	P24,000,000.00	P24,000,000.00

III. SCOPE OF WORKS

1) To provide/supply the following platforms for Aerial Topographic Survey:

   a) One (1) unit LiDaR (Light Detection and Ranging) / Laser Scanner Technology;

   b) ~~One (1) unit Unmanned Aerial Vehicle (UAV), **including device registration**~~ from the Civil Aviation Authority of the Philippines (CAAP);

   c) One (1) unit D-RTK2 Base Station / GNSS Receiver;

   d) One (1) unit Hand Held Controller;

   e) One (1) unit Field Laptop, and;

   f) ~~One (1) unit Workstation Computer.~~

   The required item shall be supplied and delivered at the PPA Head Office for proper inspection within **five (5) months** upon receipt of the Notice to Proceed.

2) To conduct inspection and testing, as part of the implied warranty of quality, of delivered equipment mentioned in items (1a) to (1f) above, at no additional cost, preferably simultaneous with the conduct of training as outlined in the succeeding paragraph below.

3) To provide training and licensing, packaged with the purchase of the LiDaR and UAV units mentioned in (1a) and (1b) above, at no additional cost, in this order:

   For the UAV operation, and in preparation for the LiDaR technology training:

   a) ~~**five (5) days** of Drone Training, specific to the efficient operation of the UAV, and;~~

   b) CAAP Licensing of **ten (10) Drone Pilots** of the DSD;

   For the LiDaR technology:

   c) **seven (7) days** of in-house (Head Office) training and familiarization, prior to field training, of:

      - software related to data acquisition (designed to run on LiDAR/Aerial Scanner devices used in remotely controlled systems);
      - project structure (prepares monitoring trajectory and scanner data for data transfer);
      - data transformation of laser data into the coordinate system of the trajectory, and;
      - tools for first setup operation of LiDaR/Laser Scanners;

   d) **fifteen (15) days** training, familiarization, including actual field work (topographic survey) in the efficient and effective approach or technique to operate the UAV and LiDAR at Port of Matnog, Sorsogon or any suitable site the end-user deemed appropriate, and;

   e) **eight (8) days** in-house (Head Office) training on post processing of LiDAR Data or Output.

IV. TECHNICAL SPECIFICATIONS

1) LiDAR (Light Detection and Ranging) / Laser Scanner Technology

SYSTEM PARAMETERS	
System Accuracy	Plane 5cm, Elevation 5cm
Weight of Instrument	2.6kg / 2.1kg (with orthophoto camera)
Size	313.5 x 142.1 x 231.2mm
Supply Voltage	24V (15-28V)
Data Storage	512GB (supports 1TB)
Copy Speed	160M/s
Operating Temperature	-20°C TO 50°C
Power	60W
IP Rating	IP64
LASER SCANNER	
Laser Class	Class 1 (in accordance with IEC 60825-1:2014)
Maximum Range	1,500m (reflective > 80%)
Maximum Scan Rate	2,000,000 pts/sec
Scan Speed	Up to 100 scans/sec
Accuracy	15mm
Precision	5mm
Multiple Cycles	7 times
Echo	16 times
Field of View	0°~360°
POSITIONING AND ALTITUDE SYSTEM	
GNSS	GPS: L1, L2, L5 GLONASS: L1 BEIDOU: B1, B2, B3 GALILEO: E1, E5a, E5b QZSS: L1 C/A, L5
Altitude Accuracy	Roll/Pitch: 0.005° ; Heading: 0.010°

Altitude Accuracy	Roll/Pitch: 0.005° ; Heading: 0.010°
Position Accuracy	Plane : 0.01m ; Elevation : 0.02m
IMU Rate Update	600Hz
CAMERA	
Image Resolution	45MP
Focal Length	21mm/35mm
COMS	36 x 24mm (8192 x 5460)
Size of Pixel	4.4µm
Field of View	81 x 59.5 / 54.3 x 37.8
Photo Interval	1s
PLATFORM	
Multi	Supports Drone, Car, Backpack
SOFTWARE	
Pre-processing Software	Support: Data copy, POS solution, correction and adjustment, point cloud generation
Post-Processing Software	Terrain Module, Road Design Module, Intelligent Extraction Module, Volume Module

PACKAGE INCLUDES the following:

a) Software for Data Acquisition designed to run on LiDAR/Arial Scanner devices used in remotely controlled systems; Project Structure that prepares monitoring trajectory and scanner data for data transfer; Data Transformation of laser data into the coordinate system of the trajectory; and Tools for first setup operation of LiDAR/Laser Scanners.

b) Software maintenance for 12 months;

c) User's Manual (soft and hard copies);

d) License for software/s packages/modules;

e) Complete Accessories for integration in the UAV;

f) Software Training for Data Acquisition, Project Structure, Data Transformation and Set-up Operation (up to 7 days);

g) Drone training, specific to doing Aerial LiDAR Data Acquisition (up to 15 days), and;

h) Training on Post-processing of LiDaR data or output (up to 8 days).

2) ONE (1) UNIT UNMANNED AERIAL VEHICLE (UAV)

GENERAL SYSTEM PERFORMANCE	
Type	Quadcopter drone
Structure	Carbon fiber, quickly release design
Assembly	Start 2 min / finish 2 min
Empty Weight	10.9kg
Max Payload	7.1kg
Max Takeoff Weight	28.0kg (with battery)
Dimension of aircraft	110.0 x 110.0 x 44.0cm (43.3" x 43.3" x 17.32")
Transport Container	Water, dust and quakeproof
Dimension of Transport Container	94.0 x 64.0 x 50.0cm (37.0" x 25.2" x 19.7")
Flight Control System	Compatible with Quadcopter Drone
Remote Control Software	Compatible with Quadcopter Drone
Operating Temperature	-10° C to +40° C
Control System	Dual-frequency GNSS navigation, dual redundancy sensor design, fully-automatic work mode
Hovering Accuracy	1 cm + 1 ppm Hz 2 cm + 1 ppm V
Auto-flight Mode	Pre-design air route, flight height change
FLIGHT PERFORMANCE	
Max. Flight Altitude (meters above mean sea level)	5000m
Flight time	55 mins with 1 kg payload 40 mins with 5 kg payload
Max Speed	14m/sec
Max Ascent Speed	5m/sec
Max Descent Speed	3m/sec
Max Wind Resistance	Level 6 – 13.9m/sec (50kph)
Takeoff type	Automated takeoff & landing

REMOTE CONTROLLER	
Operating Frequency	2.400GHz to 2.483GHz
Max Transmission Distance	Specialized UAV frequency, anti-disturb feature, radius 7 km
Video Output Port	HDMI, SDI, USB
Operating Temperature	-10° C to +40° C
Battery	6000mAh LiPo 2S
ELECTRICAL	
Standard Battery	4x Li-Polymer batteries, 22000 mAh
Voltage	22.2V
Energy	501.6Wh
Connectors	XT60 XT-60 XT60 female
SUPPORTED PAYLOAD	
RGB Camera	
LiDAR	7 kg weight

PACKAGE INCLUDES the following:

a) 3 sets (6 pcs li-Polymer Batteries);

b) 2 sets (8 pcs) propeller;

c) 2 sets Intelligent Battery Station;

d) 1 Remote Controller with charger;

e) 1 Remote Controller Module;

f) 1 Pre-processing Software;

g) 1 Post-processing Software;

h) One (1) year insurance on LiDAR and drone only;

i) Drone Training, specific to efficient operation of the UAV (**5 days**), and;

j) CAAP Licensing for Ten (10) Drone Pilots and CAAP UAV Registration.

3) **ONE (1) UNIT D-RTK2 BASE STATION / GNSS RECEIVER**

System Configuration	Motherboard	RTK Board for Global Navigation Satellite System (GNSS)
	Operating System	Compatible OS
	Start-up Time	3 Seconds
	Data Storage	RAM: 128MB; ROM: 16GB internal storage, support OTG.
GNSS Specification	Signal Tracking	BDS : B1, B2, B3 GPS : L1, L2C/L2P, L5 GLONASS: L1, L2 GALILEO: E1, E5a, E5b QZSS: L1, L2, L5 SBAS : L1
	Number of Channels	800
	Positioning Accuracy/ Precision	RTK Positioning Precision: Horizontal: ±(8mm + 1 x 10^{-6} D), Vertical: ±(15mm + 1 x 10^{-6} D) Static Precision: Horizontal: ±(2.5mm + 0.5 x 10^{-6} D), Vertical: ±(5mm + 0.5 x 10^{-6} D)
	Time for Initialization	Typically, < 10 s
	Initialization Reliability	> 99.99%
	Updating Rate	Positioning Data: 20Hz(GNSS Board), Original Data:20Hz(GNSS Board)
	Differential Message	RTCM3.2, RTCM3.0, CMR, RTCM2.X
Network Specification	Network standard	4G cellular mobile network (TDD-LTE, FDD-LTE, WCDMA, EDGE, GPRS, GSM) ; 3G (TD-SCDMA, WCDMA, CDMA2000; 2G (GSM, CDMA)
	Support Band	FDD LTE: Band 1, Band 2, Band 3, Band 4, Band 5, Band 7, Band 8, Band 20, all bands with diversity WCDMA/HSDPA/HSUPA/HSPA+: Band 1,

		Band 2, Band 5, Band 8, all bands with diversity GSM/GPRS/EDGE: 850 MHz/900 MHz/1800 MHz/1900 MHz
	Data Service	GPRS, EDGE, WCDMA CS, WCDMA PS, HSPA+, DC- HSPA+, LTE FDD
Radio Parameter	Modulation	4FSK, GMSK
	Frequency Range	403-473MHz
	Channel Spacing	25KHz
	ReceivingSensitivity	-116 dBm
	Number of Channels	100(Default)+16(Custom)
	Transmit Power	4W/2W/1W(Optional)
Sensor	Gravity Sensor	Support
	Electronic Compass	Support
Data Communications	Bluetooth	2.4GHz, HSP/HFP/OPP/PBAP, V2.1(Transmission distance ≥ 15 meters under unobstructed conditions)
	WIFI	2.4GHz, 802.11 b/g/n, Support WAPI, AP(Signal coverage radius ≥ 30 meters under unobstructed conditions)
	NFC	ISO1443 protocols, NFC Electronic Tags, Support Bluetooth flash pairing
	Serial Communication	1 RS232 serial port: 3 threads, 19200 bps, 8-bit, 1stop bit
User Interface	Screen	Dimensions: 1.54-inch, Resolution: 128*64
	Button	2 buttons
	Indicator	3 status LEDs (green): 1 for satellite, 1 for data, 1 for power
ExternalInterface	1 battery slot; 1 TNC aerial interface/slot; 1 Lemo five-pin socket(contain 1 triple-line RS232, 1 external power input); 1	

	Mini USB interface; 1 Nano SIM card slot
Electrical	Total power consumption: 4.2W (Static mode) Internal battery: 6800mAh/7.4V; Duration: can be greater or equal to 11 hours under static mode, and be greater or equal to 9 hours under active mode. Charging time: single ≤ 3.5h, double ≤ 6.5h Power supply: powered by five-pin socket or internal lithium-ion, DC 6- 28VDC / 2A.
Protection	Shock and vibration: Designed to survive a 2m natural fall onto concreteWater/dustproof: IP67
Environmental	Operation temperature: -40 to 65°C Storage temperature: -40 to 80°C

4) ONE (1) UNIT HAND HELD CONTROLLER

Software	Branded Hand Held Controller Compatible with UAV
GNSS Signal Tracking	GNSS antenna GPS, GLONASS BDS, AGPS
No. of Channels	20
Cellular Mobile	4G, Dual SIM
WiFi	IEEE 802.11 b/g/n, Wapi, AP
Bluetooth	Built-in Bluetooth (2.1+4.0) NFC
USB	USB, Type C interface, OTG
Operating System	Android 10 or higher
Processor	CPU: 8 core; 2.0 GHZ
Storage	2 GB RAM+16 GB ROM; T-Flash memory card, up to 128GB
Display	5.5", bright Outdoor Color capacitive touch screen (with touch pen, can be operated with gloves)
Input Configuration	Physical full keyboard, number / letter separate, professional custom smart input method
Application	Camera: Built-in 13 million pixel camera Flash: Highlight Flash LED flash(support flashlight function) Sensor: gravity sensor, compass, light sensor, gyroscope

Environmental	MIL-STD-810H IP68 environmental protection Drop resistant 1.2m Temperature -20°C to 60°C Operating -30°C to 70°C Storage
Physical Properties	Size: 236mm x 85mm x 25mm Weight: 480g within battery Battery: 7500 mAh internal Operation Time: 14hours

5) **ONE (1) UNIT FIELD LAPTOP** for onsite pre-processing of data

Processor	CPU, 14 Total core = 14, 5GHz Max turbo frequency, 24 MB Cache, 2.5 GHz Performance-core up to 5.0 GHz
Operating System	Compatible Professional Operating System (OS) 64-bit
Memory	32GB DDR 5
Hard Drive	2 TB SSD, NVMe Gen 4
Graphics Card	Graphic Card GDD6 VRAM
Display	15.6" display with IPS, Ultra HD 3840 x 2160, LED-backlit TFT LCD
Keyboard	103-/104-/107-key FineTip RGB Per-Key backlit keyboard,
Wireless	Wi-Fi 6E 2x2
Bluetooth	Support Bluetooth 5.2 and later
Interfaces/Ports	1x USB 3.2 Gen 1 Port, 1x USB 3.2 Gen 2 Port with Power-off charging, 1x USB 3.2 Gen 2 Port, 1x USB Type-C Thunderbolt-4, 1x HDMI 2.1 Port
Battery Information	At least 90 Wh Lithium Ion (Li-Ion) 4-Cells
Power Supply	3-pin 280 W 5.5 PHY AC adapter
WARRANTY	ONE (1) YEAR Premium Support w/Accidental Onsite Service

6) **ONE (1) UNIT DESKTOP WORKSTATION** for post-processing of data

Processor	CPU, 16 Total core = 14, 5GHz Max turbo frequency, 24 MB Cache, 2.5 GHz Performance-core up to 5.0 GHz
Operating System	Professional O.S. 64 Bit

Motherboard	Compatible with processor
Memory	64GB RAM 3200 MHz 16X4 DDR 4, NVME M.2
Display	27 inches Full HD Monitor 165Hz
Hard Drive Software	1TB SSD Storage 2 X 1TB
Graphics	24GB GDDR6X
Power Supply	1300W True Rated
CPU Cooling System	AIO Liquid Cooler with LCD Display
Fan	1500 RPM, 4-pin PWM
WARRANTY	1 year and service offering includes 1 year of parts, labor and on-site repair

V. INSPECTION AND TESTING

To ensure the survey-worthiness of the equipment delivered, the basic pre-survey tests to be conducted shall be as follows:

1) To confirm the optimal capacity of the batteries, all devices running on portable power shall be successfully charged to full capacity;

For the laptop and desktop computers:

2) To ensure continuity of workflow, the field laptop and desktop workstation shall be set-up completely, with all necessary hardware and software installed, especially the pre-processing and post-processing software used for LiDaR data, during the familiarization training as outlined in paragraph 3(c) of Item III (Scope of Works) above. As expected of a brand new computer, the laptop and the desktop computers should operate flawlessly;

For the UAV:

3) To test the (a) maximum flight time without payload, (b) flight range of the UAV, and (c) the reliability of the controller accompanying it, the UAV shall be flown during good weather without the LiDaR attached on it, on an open field, as far as possible, in the vertical and horizontal directions, with due regard to flight limitations (height restrictions and no-fly boundary zones) set by the CAAP.

   To be acceptable as an aerial survey vehicle, the horizontal flight range shall be at least one (1) kilometer from the UAV controller while the vertical flight range shall be at least 500 meters of elevation or the CAAP height restriction, whichever is lower. The UAV should endure at least thirty (30) minutes in the air without need for emergency landing in between.

   Thereafter, upon landing the UAV, its batteries shall be recharged to full capacity in preparation for the testing of the LiDaR;

The test for the maximum flight time of the UAV with payload (when the LiDar / Laser Scanner is mounted on the UAV) will be elaborated starting on paragraph 7 below.

For the Base Station / GNSS Receiver:

4) To ensure that the Handheld Controller serves its purpose of setting up the RTK-GNSS Receiver (Base), the Handheld Controller, must, without the aid of other devices such as laptops, be able to initialize and program the Base to its proper settings, ready for survey use;

5) To determine whether or not the duration of continuous operation of the Base is acceptable for the actual aerial survey, the Base should **continuously operate for at least two (2) hours without the aid of an external power source**;

6) To guarantee the IP67 dust/water rating, the Base will be subjected to **ten (10) minutes of actual or simulated rain** without harm to the equipment.

In the following steps, a sample aerial survey will be conducted wherein the accuracy of the LiDaR set-up will be compared to that of the Real Time Kinematic – Global Navigation Satellite System (RTK-GNSS) receivers which is currently used by the DSD:

7) To prepare the data to be processed, at least three control points must be established on the ground. The RTK Base Station will be positioned on one of the control points whose coordinates and elevation were previously known. The coordinates and elevation of the other control points will be measured by the RTK Rover. **These other control points will be used for comparing the accuracy of the LiDar set-up.**

   The said other control points will be temporarily ornamented with solid objects or markers around them for easy identification when searched on the LiDar data.

   To test the maximum flight time of the UAV with payload, the flight path shall be arranged in such quantity that can never be finished by the UAV in one flight only. This pre-programmed flight path shall then be loaded onto the UAV controller. The LiDaR shall be prepared and mounted on the UAV. Thereafter, the UAV shall be flown with the LiDaR mounted, simulating the conduct of an actual aerial survey. To determine the maximum flight time, the UAV should only be brought to landing only when its power supply is low.

   The maximum flight time of the UAV with payload should last at least thirty (30) minutes to be considered acceptable for the various aerial survey requirements of the DSD.

   After the aerial survey, the data acquired by the LiDar shall then be pre-processed on the field laptop. If upon pre-processing, further data is still needed, the batteries shall be charged again in preparation for another round of aerial survey. Otherwise, the data shall be post-processed on the desktop workstation.

8) To be acceptable for the survey requirements of the DSD, **the coordinates and elevation measured using the LiDar data of the other ground control points**, as mentioned in paragraph 7 above, **after post-processing should have an accuracy of ± 5 cm in both the horizontal and the vertical planes compared to the measurement taken using the RTK Rover**.

The aforementioned tests can be conducted simultaneous with the training, such that the devices to be used in the training are the ones delivered by the winning bidder / supplier.

The winning bidder / supplier is highly advised to also bring their own demonstration equipment same with that of the newly bought ones under this ToR so that performance may be directly compared and to immediately address possible concerns during the simultaneous testing and training of equipment.

VI. PAYMENT

1) Full payment shall be made after proper delivery, inspection, training, and acceptance of the required items/deliverables and submission of sales invoice and other relevant documents.

VII. WARRANTY

1) All units are covered by **ONE (1) YEAR WARRANTY** from defects reckoned from the date of receipt of the Certificate of Acceptance.

2) During the warranty period, whenever hardware and/or related problems occur, the supplier shall provide highly technical personnel for on-site servicing of the equipment and all its components / peripherals.

   An on-call support must be available eight (8) hours a day, seven (7) days a week. On-site support for major problems must have a response time within forty-eight (48) hours and the supplier must shoulder all the expenses of the personnel who will be providing technical services on-site.

3) Repairs and parts replacement shall be free for the duration of the warranty period. Equipment should be picked up from PPA by the seller within forty-eight (48) hours from receipt of notification from PPA. Freight and forwarding costs to be incurred shall be for the account of the seller.

4) Preventive maintenance / inspection shall be free and can be availed of at least twice a year for the duration of the warranty period. A phone-in support must be available eight (8) hours a day, seven (7) days a week.

5) Whenever applicable, initial configuration of the equipment as well as assistance on product reconfiguration (on-site), if still necessary, shall be free for the duration of the warranty period.

VIII. OTHER REQUIREMENTS

The prospective bidder / supplier must submit the following supporting documents:

1) **PROOF OF TECHNICAL SPECIFICATIONS OF THE ITEM TO BE DELIVERED** which may be in the form of brochure, pamphlets, or similar documents reflecting the Technical Specifications as required in Item IV above;

2) **ACTUAL PHOTOS OF STOCKROOM, EQUIPMENT, AND COMPONENTS** in order to verify the bid items;

3) **AUTHORIZED DISTRIBUTOR CERTIFICATE** reflecting the Dealership / Distributorship Agreement with the Manufacturer or the Manufacturer's Authorized Regional Distributor of the Aerial LiDaR / Laser Scanner Technology and the UAV;

4) A DULY NOTARIZED WARRANTY CERTIFICATE, which must be included in the technical proposal, detailing (a) the warranty conditions and recommended service intervals based on Item VII above, and (b) an affidavit / affirmation stating their adherence to the aforesaid warranty conditions;

5) As provided by the manufacturer, a LETTER OF AUTHORIZED MANUFACTURER'S SERVICE CENTER as well as a SERVICE CENTER CERTIFICATE, to manifest its capability for maintenance and after sales service, and;

6) SPARE PARTS CERTIFICATION from the manufacturer indicating that spare parts for the offered unit/equipment must be available in the Philippine for the next ten (10) years.

The winning bidder must deliver unused and brand new equipment and, **upon such delivery**, provide the following items necessary to ensure the proper operation by the DSD surveyors of the Aerial Topographic Survey set-up:

7) User and System Manuals;

8) Technical Materials of the bid items, including the complete set of software, utility and recovery CDs, and;

9) Complete documentation of the equipment with the inventory of components and their corresponding brand, model, and serial number.

The winning bidder, **during the training**, must provide the services of:

10) A Drone Operator / Trainer possessing the appropriate CAAP License ID and CAAP Certificate for the UAV training, and;

11) A Primary Trainer, who, preferably, may also be the Drone Trainer mentioned above, has at least three (3) years' experience in the operation of LiDaR Technology, including post-processing of LiDaR data or output.

IX. CRITERIA IN THE SELECTION OF THE SUPPLIER/BIDDER

1) To determine the fitness of the prospective Supplier / Bidder in complying with the obligations expected of them as specified in this TOR, all documents required in paragraphs 1 to 6 of Item VIII (Other Requirements) above must be submitted **as part of its technical proposal.**

2) In addition, the prospective Supplier / Bidder must also provide a Statement of Single Largest Completed Contract (SLCC) indicating the details of a similar contract completed during the last five (5) years whose value must be at least 50% of the ABC, as indicated in their Eligibility Statements. Similar contract shall mean contract for the supply and delivery of **Aerial Light Detection and Ranging / Laser Scanner Technology Integrated with Unmanned Aerial Vehicle.**

ROLANDO K. PEREZ
Manager
Dredging and Survey Department

Section VIII. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;

Technical Documents

☐ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**

☐ (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents; **and**

☐ (d) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;
Or

Original copy of Notarized Bid Securing Declaration; **and**

☐ (e) Conformity with the Technical Specifications, which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable; **and**

☐ (f) Original duly signed Omnibus Sworn Statement (OSS); **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

☐ (g) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC);
or
A committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.

Class "B" Documents

☐ (h) If applicable, a duly signed joint venture agreement (JVA) in case the joint venture is already in existence;
or

duly notarized statements from all the potential joint venture partners stating the following:

a. that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful; and

b. failure to enter into JVA in the event of a contract award shall be a ground for bid disqualification and subsequent forfeiture of the bid security.

Other documentary requirements under RA No. 9184 (as applicable)

☐ (i) *[For foreign bidders claiming by reason of their country's extension of reciprocal rights to Filipinos]* Certification from the relevant government office of their country stating that Filipinos are allowed to participate in government procurement activities for the same item or product.

☐ (j) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.

II. FINANCIAL COMPONENT ENVELOPE

☐ (a) Original of duly signed and accomplished Financial Bid Form; **and**

☐ (b) Original of duly signed and accomplished Price Schedule(s).

Bid Form for the Procurement of Goods
[shall be submitted with the Bid]

BID FORM

Date : _____
Project Identification No. : _____

To: [name and address of Procuring Entity]

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers [insert numbers], the receipt of which is hereby duly acknowledged, we, the undersigned, offer to [supply/deliver/perform] [description of the Goods] in conformity with the said PBDs for the sum of [total Bid amount in words and figures] or the total calculated bid price, as evaluated and corrected for computational errors, and other bid modifications in accordance with the Price Schedules attached herewith and made part of this Bid. The total bid price includes the cost of all taxes, such as, but not limited to: [specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties], which are itemized herein or in the Price Schedules,

If our Bid is accepted, we undertake:

a. to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements of the Philippine Bidding Documents (PBDs);

b. to provide a performance security in the form, amounts, and within the times prescribed in the PBDs;

c. to abide by the Bid Validity Period specified in the PBDs and it shall remain binding upon us at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your Notice of Award, shall be binding upon us.

We understand that you are not bound to accept the Lowest Calculated Bid or any Bid you may receive.

We certify/confirm that we comply with the eligibility requirements pursuant to the PBDs.

The undersigned is authorized to submit the bid on behalf of [name of the bidder] as evidenced by the attached [state the written authority].

We acknowledge that failure to sign each and every page of this Bid Form, including the attached Schedule of Prices, shall be a ground for the rejection of our bid.

Name: _____
Legal capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Date: _____

Price Schedule for Goods Offered from Abroad
[shall be submitted with the Bid if bidder is offering goods from Abroad]

For Goods Offered from Abroad

Name of Bidder _____ Project ID No._____ Page ___ of ___

1	2	3	4	5	6	7	8	9
Item	Description	Country of origin	Quantity	Unit price CIF port of entry (specify port) or CIP named place (specify border point or place of destination)	Total CIF or CIP price per item (col. 4 x 5)	Unit Price Delivered Duty Unpaid (DDU)	Unit price Delivered Duty Paid (DDP)	Total Price delivered DDP (col 4 x 8)

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Price Schedule for Goods Offered from Within the Philippines
[shall be submitted with the Bid if bidder is offering goods from within the Philippines]

For Goods Offered from Within the Philippines

Name of Bidder _____ Project ID No._____ Page ___of___

1	2	3	4	5	6	7	8	9	10
Item	Description	Country of origin	Quantity	Unit price EXW per item	Transportation and all other costs incidental to delivery, per item	Sales and other taxes payable if Contract is awarded, per item	Cost of Incidental Services, if applicable, per item	Total Price, per unit (col 5+6+7+8)	Total Price delivered Final Destination (col 9) x (col 4)

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

Bid Securing Declaration Form
[shall be submitted with the Bid if bidder opts to provide this form of bid security]

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

BID SECURING DECLARATION
Project Identification No.: [Insert number]

To: [Insert name and address of the Procuring Entity]

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.

2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f),of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.

3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:

   a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
   b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and
   c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of [month] [year] at [place of execution].

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

Contract Agreement Form for the Procurement of Goods (Revised)
[Not required to be submitted with the Bid, but it shall be submitted within ten (10) days after receiving the Notice of Award]

CONTRACT AGREEMENT

THIS AGREEMENT made the _____ day of _____ 20_____ between [name of PROCURING ENTITY] of the Philippines (hereinafter called "the Entity") of the one part and [name of Supplier] of [city and country of Supplier] (hereinafter called "the Supplier") of the other part;

WHEREAS, the Entity invited Bids for certain goods and ancillary services, particularly [brief description of goods and services] and has accepted a Bid by the Supplier for the supply of those goods and services in the sum of [contract price in words and figures in specified currency] (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents as required by the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184 shall be deemed to form and be read and construed as integral part of this Agreement, viz.:

    i. Philippine Bidding Documents (PBDs);
        i. Schedule of Requirements;
        ii. Technical Specifications;
        iii. General and Special Conditions of Contract; and
        iv. Supplemental or Bid Bulletins, if any

    ii. Winning bidder's bid, including the Eligibility requirements, Technical and Financial Proposals, and all other documents or statements submitted;

        Bid form, including all the documents/statements contained in the Bidder's bidding envelopes, as annexes, and all other documents submitted (e.g., Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;

    iii. Performance Security;

    iv. Notice of Award of Contract; and the Bidder's conforme thereto; and

    v. Other contract documents that may be required by existing laws and/or the Procuring Entity concerned in the PBDs. Winning bidder agrees that additional contract documents or information prescribed by the GPPB that are subsequently required for submission after the contract execution, such

as the Notice to Proceed, Variation Orders, and Warranty Security, shall likewise form part of the Contract.

3. In consideration for the sum of [total contract price in words and figures] or such other sums as may be ascertained, [Named of the bidder] agrees to [state the object of the contract] in accordance with his/her/its Bid.

4. The [Name of the procuring entity] agrees to pay the above-mentioned sum in accordance with the terms of the Bidding.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of the Republic of the Philippines on the day and year first above written.

[Insert Name and Signature]	[Insert Name and Signature]
[Insert Signatory's Legal Capacity]	[Insert Signatory's Legal Capacity]
for:	for:
[Insert Procuring Entity]	[Insert Name of Supplier]

Acknowledgment
[Format shall be based on the latest Rules on Notarial Practice]

Omnibus Sworn Statement (Revised)
[shall be submitted with the Bid]

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. [Select one, delete the other:]

   [If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

   If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. [Select one, delete the other:]

   [If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

   [If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable;)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. [Select one, delete the rest:]

   [If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

   [If a partnership or cooperative:] None of the officers and members of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

   [If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of [Name of Bidder] is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. [Name of Bidder] complies with existing labor laws and standards; and

8. [Name of Bidder] is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:

   a. Carefully examining all of the Bidding Documents;

   b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;

   c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and

   d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the [Name of the Project].

9. [Name of Bidder] did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

10. In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to

deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 20__ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

Performance Securing Declaration (Revised)
[if used as an alternative performance security but it is not required to be submitted with the Bid, as it shall be submitted within ten (10) days after receiving the Notice of Award]

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

PERFORMANCE SECURING DECLARATION

Invitation to Bid: [Insert Reference Number indicated in the Bidding Documents]

To: [Insert name and address of the Procuring Entity]

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, to guarantee the faithful performance by the supplier/distributor/manufacturer/contractor/consultant of its obligations under the Contract, I/we shall submit a Performance Securing Declaration within a maximum period of ten (10) calendar days from the receipt of the Notice of Award prior to the signing of the Contract.

2. I/We accept that: I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of one (1) year for the first offense, or two (2) years for the second offense, upon receipt of your Blacklisting Order if I/We have violated my/our obligations under the Contract;

3. I/We understand that this Performance Securing Declaration shall cease to be valid upon:

    a. issuance by the Procuring Entity of the Certificate of Final Acceptance, subject to the following conditions:
        i. Procuring Entity has no claims filed against the contract awardee;
        ii. It has no claims for labor and materials filed against the contractor; and
        iii. Other terms of the contract; or

    b. replacement by the winning bidder of the submitted PSD with a performance security in any of the prescribed forms under Section 39.2 of the 2016 revised IRR of RA No. 9184 as required by the end-user.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of [month] [year] at [place of execution].

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]
[Insert signatory's legal capacity]
Affiant

[Jurat]
[Format shall be based on the latest Rules on Notarial Practice]

NET FINANCIAL CONTRACTING CAPACITY (NFFC) COMPUTATION

A. The values of the bidder's current assets and current liabilities shall be based on the data submitted to the BIR, through its Electronic Filing and Payment System (EFPS).

		Year 20
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2-4)	

B. The Net Financial Contracting Capacity (NFCC) based on the above data is computed as follows:

NFCC = [(Current asset minus current liabilities) (15)] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started, coinciding with the contract to be bid

NFCC = Php _____

K = 15

Herewith attached are certified true copies of the income tax return and audited financial statement: stamped "RECEIVED" by the BIR or BIR authorized collecting agent for the immediately preceding year.

Submitted by:

_____
Name of Supplier/Distributor/Manufacturer

_____
Signature of Authorized Representative

STATEMENT OF THE BIDDER'S ONGOING GOVERNMENT AND PRIVATE CONTRACTS, INCLUDING CONTRACTS AWARDED BUT NOT YET STARTED

This is to certify that _____ has the following ongoing government and private contracts, including contracts awarded but not yet started:

NAME OF THE CONTRACT	DATE OF THE CONTRACT	CONTRACT DURATION	OWNER'S NAME & ADDRESS	KINDS OF GOODS/SERVICES DELIVERED	AMOUNT OF CONTRACT	VALUE OF OUTSTANDING CONTRACT	DATE OF DELIVERY

*PROOF OF CONTRACT TO BE PRESENTED AT POST-QUALIFICATION.

_____ _____

Name and Signature of Authorized Representative Date

STATEMENT OF THE BIDDER'S SINGLE LARGEST COMPLETED CONTRACT (SLCC) SIMILAR TO THE CONTRACT TO BE BID

This is to certify that _____ has completed the following:

NAME OF THE CONTRACT	DATE OF THE CONTRACT	CONTRACT DURATION	OWNER'S NAME & ADDRESS	KINDS OF GOODS	AMOUNT OF COMPLETED CONTRACT/S	DATE OF DELIVERY	END USER'S ACCEPTANCE OR OFFICIAL RECEIPT(S) OR SALES INVOICE ISSUED FOR THE CONTRACT*

*TO BE ATTACHED TO THE STATEMENT

_____ _____

Name and Signature of Authorized Representative Date