

# PHILIPPINE BIDDING DOCUMENTS

# Procurement of GOODS

Government of the Republic of the Philippines

PR No. 25-0134 – Groundwater Source Development Scientific & Technical Equipment, Peripherals and Accessories

Sixth Edition July 2020

#### **Preface**

These Philippine Bidding Documents (PBDs) for the procurement of Goods through Competitive Bidding have been prepared by the Government of the Philippines for use by any branch, constitutional commission or office, agency, department, bureau, office, or instrumentality of the Government of the Philippines, National Government Agencies, including Government-Owned and/or Controlled Corporations, Government Financing Institutions, State Universities and Colleges, and Local Government Unit. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract or Framework Agreement, as the case may be; (ii) the eligibility requirements of Bidders; (iii) the expected contract or Framework Agreement duration, the estimated quantity in the case of procurement of goods, delivery schedule and/or time frame; and (iv) the obligations, duties, and/or functions of the winning bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Goods to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

- a. All the documents listed in the Table of Contents are normally required for the procurement of Goods. However, they should be adapted as necessary to the circumstances of the particular Procurement Project.
- b. Specific details, such as the "name of the Procuring Entity" and "address for bid submission," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

- d. The cover should be modified as required to identify the Bidding Documents as to the Procurement Project, Project Identification Number, and Procuring Entity, in addition to the date of issue.
- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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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.

## Section I. Invitation to Bid

#### **Notes on the Invitation to Bid**

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

- a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;
- b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;
- c. The deadline for the submission and receipt of bids; and
- d. Any important bid evaluation criteria (*e.g.*, the application of a margin of preference in bid evaluation).

The IB should be incorporated in the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.



#### Republic of the Philippines

#### ZAMBOANGA CITY WATER DISTRICT

Pilar Street, Zamboanga City



# INVITATION TO BID FOR

# Groundwater Source Development Scientific & Technical Equipment, Peripherals and Accessories

- 1. The Zamboanga City Water District, through the Corporate Budget for the Contract Approved by the Board for year 2025 intends to apply the sum of Eight Million Pesos (P 8,000,000.00) being the ABC to payments under the contract for Purchase Requisition No. 25-0134. Bids received in excess of the ABC shall be automatically rejected at bid opening.
- 2. The **Zamboanga City Water District** now invites bids for the above Procurement Project. Delivery of the Goods is required by **within 65 calendar days after issuance of Purchase Order**. 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).
- 3. 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) No. 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 No. 5183.
- 4. Prospective Bidders may obtain further information from **Zamboanga City Water District** and inspect the Bidding Documents at the address given below during **office hours from 8:00 am to 5:00 pm**.
- 5. A complete set of Bidding Documents may be acquired by interested Bidders on June 25, 2025 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 Ten Thousand Two Hundred Pesos (P 10,200.00) inclusive of Franchise/Withholding Tax of 2% of the bid document fee. The Procuring Entity shall allow the bidder to present its proof of payment for the fees and it will be presented in person, by facsimile, or through electronic means.

Payment for the applicable fee for the Bidding Documents may be deposited in our **ZCWD BID DOCUMENTS PAYMENT ACCOUNT**:

Bank: LANDBANK OF THE PHILIPPINES (LBP)

Account Name: ZAMBOANGA CITY WATER DISTRICT

Account Number: 0191-3826-84
Account Type: SAVINGS

Bank Branch: LBP Main Branch, LANDBANK Building F. Marcos cor.

Valderosa Sts., Pettit Barracks, Zamboanga City

Thereafter, send a screenshot or scanned copy of the DEPOSIT/CONFIRMATION SLIP to our email address, <u>bac@zcwd.gov.ph</u>, on or before the deadline for the submission of bids.

6. The Zamboanga City Water District will hold a Pre-Bid Conference<sup>1</sup> on July 3, 2025 at 2pm at the Office of the Bids and Awards Committee (BAC), 3<sup>rd</sup> floor, ZCWD Bldg., Pilar St., Zamboanga City and/or through video conferencing or webcasting via Google Meet, which shall be open to prospective bidders.

*Please refer to the link below for the scheduled Meeting:* 

Pre-Bid Conference for PR Nos. 25-0134 & 25-0143

**Thursday, July 3 · 2:00 – 4:00pm** 

Time zone: Asia/Manila

**Google Meet joining info** 

Video call link: https://meet.google.com/jbt-gryr-yyz

- 7. Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below, on or before 2:00 pm on July 15, 2025. Late bids shall not be accepted.
- 8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 14.
- 9. Bid opening shall be on *July 15, 2025* at 2pm at the given address below at the *Office of the Bids and Awards Committee (BAC), 3<sup>rd</sup> floor, ZCWD Bldg., Pilar St., Zamboanga City* and/or via *Google Meet*. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

*Please refer to the link below for the scheduled Meeting:* 

Public Bid Opening for PR Nos. 25-0134 & 25-0143

**Tuesday, July 15 · 2:00 – 4:30pm** 

Time zone: Asia/Manila

Google Meet joining info

Video call link: https://meet.google.com/zqt-ikhj-cgj

<sup>&</sup>lt;sup>1</sup> May be deleted in case the ABC is less than One Million Pesos (PhP1,000,000) where the Procuring Entity may not hold a Pre-Bid Conference.

- 10. [Insert such other necessary information deemed relevant by the Procuring Entity such as the use of a back-up data or cloud storage for large files uploaded for online bid submissions]
- 11. The **Zamboanga City Water District** 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.
- 12. For further information, please refer to:

Atty. Vincent F. Fernandez
Chairperson, Bids & Awards Committee
Zamboanga City Water District
ZCWD Bldg., Pilar St., Zamboanga City, 7000
bac@zcwd.gov.ph/
Telefax No. (062) 991-6185
www.zcwd.gov.ph

13. You may visit the following websites:

For downloading of Bidding Documents: <a href="https://www.philgeps.gov.ph">www.philgeps.gov.ph</a>

[If applicable] For online bid submission: [Indicate website]

**June 25, 2025** [Date of Issue]

Chairperson Bids & Awards Committee

## Section II. Instructions to Bidders

#### **Notes on the Instructions to Bidders**

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

#### 1. Scope of Bid

The Procuring Entity, Zamboanga City Water District wishes to receive Bids for the Groundwater Source Development Scientific & Technical Equipment, Peripherals and Accessories, with identification number Purchase Requisition No. 25-0134.

[Note: The Project Identification Number is assigned by the Procuring Entity based on its own coding scheme and is not the same as the PhilGEPS reference number, which is generated after the posting of the bid opportunity on the PhilGEPS website.]

The Procurement Project (referred to herein as "Project") is composed of *Four (4) items*, the details of which are described in Section VII (Technical Specifications).

#### 2. Funding Information

- 2.1. The GOP through the source of funding as indicated below for *Corporate* **Budget for the Contract Approved by the Board for year 2025** in the amount of **Eight Million Pesos (P 8,000,000.00)**.
- 2.2. The source of funding is:
  - a. GOCC and GFIs, the proposed Corporate Operating Budget.

#### 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.
- a. Foreign ownership exceeding those allowed under the rules may participate pursuant to:
  - i. When a Treaty or International or Executive Agreement as provided in Section 4 of the RA No. 9184 and its 2016 revised IRR allow foreign bidders to participate;
- b. 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:
  - a. For the procurement of Non-expendable Supplies and Services: The Bidder must have completed a single contract that is similar to this Project, 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:

- a. Subcontracting is not allowed.
- 7.2. Not applicable.
- 7.3. Not applicable.
- 7.4. Not applicable.

#### 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 on *July 3, 2025 at 2pm* at the *Office of the Bids and Awards Committee (BAC), 3<sup>rd</sup> floor, ZCWD Bldg., Pilar St., Zamboanga City* and/or through video conferencing or webcasting *via Google Meet* 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.
- 11.5. [Include if Framework Agreement will be used:] Financial proposals for single or multi-year Framework Agreement shall be submitted before the deadline of submission of bids as prescribed in the **IB**. For multi-year Framework Agreement, evaluation of the financial proposal during this stage is for purposes of determining eligibility and whether or not such financial proposal is within the ABC.

#### 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 the **BDS**.
  - 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 the **BDS**.
- 12.2. [Include if Framework Agreement will be used:] For Framework Agreement, the following should also apply in addition to Clause 12.1:
  - a. For a single year Framework Agreement, the prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation or escalation on any account. Price schedules required under Clause 12.1 shall be submitted with the bidding documents.
  - b. For a multi-year Framework Agreement, the prices quoted by the Bidder during submission of eligibility documents shall be the ceiling and the price quoted during mini-competition must not exceed the initial price offer. The

price quoted during call for mini-competition shall be fixed during the Bidder's performance of that Call-off and not subject to variation or escalation on any account. Price schedules required under Clause 12.1 shall be submitted with the bidding documents.

#### 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:
  - a. Philippine Pesos.

#### 14. Bid Security

- 14.1. The Bidder shall submit a Bid Securing Declaration<sup>2</sup> 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 until 120 calendar days from 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.
- 14.3. [Include if Framework Agreement will be used:] In the case of Framework Agreement, other than the grounds for forfeiture under the 2016 revised IRR, the bid security may also be forfeited if the successful bidder fails to sign the Framework Agreement, or fails to furnish the performance security or performance securing declaration. Without prejudice on its forfeiture, bid securities shall be returned only after the posting of performance security or performance securing declaration, as the case may be, by the winning Bidder or compliant Bidders and the signing of the Framework Agreement.

#### 15. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its 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

<sup>&</sup>lt;sup>2</sup> In the case of Framework Agreement, the undertaking shall refer to entering into contract with the Procuring Entity and furnishing of the performance security or the performance securing declaration within ten (10) calendar days from receipt of Notice to Execute Framework Agreement.

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**.
- 16.2. [Include if Framework Agreement will be used:] For multi-year Framework Agreement, the submission of bids shall be for the initial evaluation of their technical and financial eligibility. Thereafter, those declared eligible during the said initial eligibility evaluation and entered into a Framework Agreement with the Procuring Entity shall submit anew their best financial offer at the address and on or before the date and time indicated in the Call for each minicompetition.

#### 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.
- 18.2. [Include if Framework Agreement will be used:] For multi-year Framework Agreement, determination of margin of preference shall be conducted every call for Mini-Competition.

#### 19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's 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.

[Include the following options if Framework Agreement will be used:]

- a. In the case of single-year Framework Agreement, the Lowest Calculated Bid shall be determined outright after the detailed evaluation;
- b. For multi-year Framework Agreement, the determination of the eligibility and the compliance of bidders with the technical and financial aspects of the projects shall be initially made by the BAC, in accordance with Item 7.4.2 of the Guidelines on the Use of Framework Agreement.
- 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 14 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 follows:

#### 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. [Include if Framework Agreement will be used:] For multi-year Framework Agreement, all bidders initially determined to be eligible and financially compliant shall be subject to initial post-qualification. The BAC shall then recommend the execution of a Framework Agreement among all eligible, technically and financially compliant bidders and the Procuring Entity and shall be issued by HoPE a Notice to Execute Framework Agreement. The determination of the Lowest Calculated Bid (LCB) shall not be performed by the BAC until a Mini-Competition is conducted among the bidders who executed a Framework Agreement. When a Call for Mini-Competition is made, the BAC shall allow the bidders to submit their best financial proposals on such pre-scheduled date, time and place to determine the bidder with the LCB.
- 20.2. 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, {[Include if Framework Agreement will be used:] or in the case of multi-year Framework Agreement, that it is one of the eligible bidders who have submitted bids that are found to be technically and financially compliant,}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**. {[Include if Framework Agreement will be used:] For every mini-competition in Framework Agreement, the LCB shall likewise submit the required documents for final Post Qualification.}

#### 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**.

[Include the following clauses if Framework Agreement will be used:]

- 21.2. At the same time as the Procuring Entity notifies the successful Bidder that its bid has been accepted, the Procuring Entity shall send the Framework Agreement Form to the Bidder, which contract has been provided in the Bidding Documents, incorporating therein all agreements between the parties.
- 21.3. Within ten (10) calendar days from receipt of the Notice to Execute Framework Agreement with the Procuring Entity, the successful Bidder or its duly authorized representative shall formally enter into a Framework Agreement with the procuring entity for an amount of One Peso to be paid to the procuring entity as a consideration for the option granted by the procuring entity to procure the items in the Framework Agreement List when the need arises.
- 21.4. The Procuring Entity shall enter into a Framework Agreement with the successful Bidder within the same ten (10) calendar day period provided that all the documentary requirements are complied with.
- 21.5. The following documents shall form part of the Framework Agreement:
  - a. Framework Agreement Form;
  - b. Bidding Documents;
  - c. Call-offs;
  - d. Winning bidder's bid, including the Technical and Financial Proposals, and all other documents/statements 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;
  - e. Performance Security or Performance Securing Declaration, as the case may be;
  - f. Notice to Execute Framework Agreement; and
  - g. Other contract documents that may be required by existing laws and/or specified in the **BDS**.

### Section III. Bid Data Sheet

#### **Notes on the Bid Data Sheet**

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

- a. Information that specifies and complements provisions of the ITB must be incorporated.
- b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

# **Bid Data Sheet**

ITB				
Clause				
5.3	For this purpose, contracts similar to the Project shall be:			
	a. "Supply and delivery of Geo-resistivity Equipment"; and			
	b. completed within <i>five (5) years</i> prior to the deadline for the submission and receipt of bids.			
7.1	[Specify the portions of Goods to be subcontracted, which shall not be a significant or material component of the Project as determined by the Procuring Entity.] Not applicable.			
12	The price of the Goods shall be quoted DDP <b>Project Site</b> 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 2% of ABC [One Hundred Sixty Thousand Pesos (P 160,000.00)], 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 5% of ABC [Four Hundred Thousand Pesos (P 400,000.00)], if bid security is in Surety Bond.			
19.3	[In case the Project will be awarded by lot, list the grouping of lots by specifying the group title, items, and the quantity for every identified lot, and the corresponding ABC for each lot.]			
	[In case the project will be awarded by item, list each item indicating its quantity and ABC.] Not applicable.			
20.2	[List here any licenses and permits relevant to the Project and the corresponding law requiring it.] Not applicable.			
21.2	[List here any additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity.] Not applicable.			

# Section IV. General Conditions of Contract

#### **Notes on the General Conditions of Contract**

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Supplier, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special 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**.

[Include the following clauses if Framework Agreement will be used:]

- 2.3. For a single-year Framework Agreement, prices charged by the Supplier for Goods delivered and/or services performed under a Call-Off shall not vary from the prices quoted by the Supplier in its bid.
- 2.4. For multi-year Framework Agreement, prices charged by the Supplier for Goods delivered and/or services performed under a Call-Off shall not vary from the prices quoted by the Supplier during conduct of Mini-Competition.

#### 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 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. [Include if Framework Agreement will be used:] In the case of Framework Agreement, the Bidder may opt to furnish the performance security or a Performance Securing Declaration as defined under the Guidelines on the Use of Framework Agreement.}

#### 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 {[Include if Framework Agreement will be used:] or Framework Agreement] specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the SCC, Section VII (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

- 5.1 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.
- 5.2 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

#### **Notes on the Special Conditions of Contract**

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Goods purchased. In preparing this Section, the following aspects should be checked:

- a. Information that complements provisions of the GCC must be incorporated.
- b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

# **Special Conditions of Contract**

	Special Conditions of Contract			
GCC Clause				
1	[List here any additional requirements for the completion of this Contract. The following requirements and the corresponding provisions may be deleted, amended, or retained depending on its applicability to this Contract:]			
	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 to ZCWD Property Section, Motorpool Pasonanca, Zamboanga City. In accordance with INCOTERMS."			
	[For Goods supplied from within the Philippines, state:] "The delivery terms applicable to this Contract are delivered DDP to ZCWD Property Section, Motorpool, Pasonanca, Zamboanga City. 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 is <i>Engr. Edito M. Bautista Jr</i> .			
	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:  NOT APPLICABLE			
	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: NOT APPLICABLE			

The spare parts and other components required are listed in **Section VI** (**Schedule of Requirements**) and the costs 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 <u>3 years</u>.

Spare parts or components shall be supplied as promptly as possible, but in any case, within (NOT APPLICABLE) 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.

#### Regular and Recurring Services -

2.2

[In case of contracts for regular and recurring services, state:] "The contract for regular and recurring services shall be subject to a renewal whereby the performance evaluation of the service provider shall be conducted in accordance with Section VII. Technical specifications."

"Item 8 states: Subject to the conditions of this PO, the Certificate of Acceptance of goods/requirement/service shall be issued by ZCWD upon complete delivery/ performance. By then, the Performance Security shall also be released by ZCWD, provided, that there are no claims filed against the Supplier/Contractor or the surety company."

The obligation for the warranty shall be covered by either retention money in an amount equivalent to one percent (1%) of every progress payment, or a special bank guarantee equivalent to one percent (1%) of

the total contract price. The said amounts shall only be released after the lapse of the warranty period or, in the case of Expendable Supplies, after consumption thereof: Provided, however, That the supplies delivered are free from patent and latent defects and all the conditions imposed under the contract have been fully met.

#### The inspections and tests that will be conducted are:

- 1. Quality Inspection This involves a thorough examination of the equipment and accessories. Inspectors will assess materials for compliance with industry standards
- 2. Calibration Verification Verify that the devices are calibrated according to the manufacturer's specifications
- 3. Functionality Tests Test all operational modes and settings to confirm the device functions correctly under various conditions
- 4. Field Tests Conduct real-world tests in various geological settings to assess performance, including accuracy and reliability in data collection.
- 5. Data Logging and Transfer Verify the functionality of data storage, logging capabilities, and methods for transferring data to other systems
- 6. User Interface and Software Evaluation Assess the user interface for ease of use, and evaluate any accompanying software for data analysis and reporting capabilities

Note: Equipment will be accepted by the procuring entity only after successful completion of inspections and tests conducted by ZCWD, certified by the Inspection Committee, technical personnel, and the end-user.

# 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	Quantity	Total	Delivered, Weeks/Months
	GROUNDWATER SOURCE DEVELOPMENT SCIENTIFIC AND TECHNICAL EQUIPMENT, PERIPHERALS AND ACCESSORIES			
1	GEO-RESISTIVITY METER	1 unit		
	A. Technical Specifications: a. General • Resistivity Method: Transient Electromagnetic • Application: Android, iOS • Onboard Power for Transmitter and Receiver: Removeable Li-ion 14.4V, 6.8Ah, 99.4Wh • IP Rating: IP65 • Operating Temperature: - 20°C to +50°C • Positioning: Onboard GNSS • Upgrades & Diagnostics: Accessible through Internet b. Receiver • Number of Channels: 1 • Sample Rate: 4MHz • Coil Options: 3x3m (Flexible, 4 turns) 200 KHz bandwidth c. Transmitter • Output Current: Dualmoment 1A/10A • Switch-off: 7 μs (low moment), 13 μs (high moment) • Duty Cycle: Default 46% / 30% (LM/HM) • Loop Options: 20 x 20m (2.5mm2, 1 turn), 40 x 40m			
	(4.0mm2, 1 turn)  B. Inclusions a. Geo-Resistivity Meter Accessories • 4 units - Smart Battery 14.4V • Battery Charger • Shipping Case • Receiver Coil 3x3m • Transmitter Loop 20x20m • Receiver Lead-in			

	Τ .		ı	1
	(Transmitter Loop 20x20m)			
	• Transmitter Loop 40x40m			
	Receiver Lead-in			
	(Transmitter Loop 40x40m)			
	<ul> <li>Explorer Transmitter Coils</li> </ul>			
	3x3m			
	• Explorer Receiver Coils 3x3m			
	<ul> <li>Explorer Coil Shipping Case</li> </ul>			
	<b>b. Software:</b> Perpetual License			
	for IP inversion software with 1			
	year maintenance for update			
	and support			
	c. 5-Day Training: Training for			
	field data acquisition, processing			
	and interpretation (maximum of			
	10) including airfares, meals, and			
	travel allowances, if necessary.			
	The bidder is required to issue			
	certificates to all participants.			
	REAL TIME KINEMATICS			
2	EQUIPMENT	1 unit		
	A. Technical Specifications:			
	a. GNSS Base			
	Number of Channels: At			
	least 1500			
	• Satellite Systems:			
	o GPS: L1C, L2W, L2Q			
	o GLONASS: G1C, G2P			
	o BEIDOU: B11, B21, B31,			
	B1c, B2a			
	o GALILEO: EC1, E5a, E5b			
	o QZSS: L1C, L2S, L5Q			
	• Positioning Rate: at least			
	20Hz			
	• IMU Measurement			
	o Tilt Angle: 60° or better			
	<b>o Accuracy: 1</b> 0mm + 0.7			
	mm/°			
	• Data Storage:			
	o Type & Storage: SSD 8GB			
	or better			
	• GPS Output Format: CMR+,			
	RTCM 3.x, NMEA 0183, Binary			
	Code			
	• Operating Temperature: -45			
	to +75°C			
	• IP Rating: IP68 or better			
	b. GNSS Rover			
	• Number of Channels: At			
	least 1500			
	• Satellite Systems:			
	o GPS: L1C, L2W, L2Q			
	o GLONASS: G1C, G2P			
	3	1		

		T	1	<u> </u>
	o BEIDOU: B1, B2, B3			
	o GALILEO: E1, E5a, E5b			
	o QZSS: L1C, L2S			
	Positioning Rate: at least			
20	)Hz			
• !	IMU Measurement			
	o Tilt Angle: 60° or better			
	o Accuracy: 10mm + 0.7			
	mm/°			
• !	Data Storage:			
	o Type & Storage: SSD 4GB			
	or better			
• (	GPS Output Format: CMR+,			
RT	TCM 3.x, NMEA 0183, Binary			
Ca	ode			
• (	Operating Temperature: -45			
	+75°C			
	IP Rating: IP68 or better			
	Camera:			
	o Resolution: 2MP			
	o Field of View: 75° or better			
B. Inclu	usions			
	ccessories			
	Carrying Case			
	UHF Antenna			
	External Radio Antenna			
	Auxillary Plate			
	Tribach			
	Charger			
	Pole Extender 2cm			
	Pole Extender 30cm			
	Aluminum Tripod			
	Fiber Pole			
	Android Controller			
	-Day Training: Training for			
	data acquisition, processing			
	interpretation (maximum of			
	including airfares, meals, and			
1	el allowances, if necessary.			
	bidder is required to issue			
	ificates to all participants.			
	NNED AERIAL VEHICLE FOR			
1 3 1	YING AND AERIAL MAPPING	1 unit		
	nnical Specifications:			
	inical specifications: ircraft			
	Max Wind Speed Resistance:			
	2m/s <b>Max Take-off Altitude Above</b>			
	ea Level: At least 2000m			
	Max Flight Time (without			
	ind): At least 40 minutes			
• !	Max Hover Time (without	2		

wind): At least 35 minutes  • Max Flight Distance: 32 km  • GNSS: GPS + Galileo + BeiDou + GLONASS  • Light Sensor: Built-in Module b. RGB Camera  • Image Sensor: At least 20 MP  • Lens:  • FOV: 84°  • Format Equivalent: 24mm  • Aperture: f/2.8-f/11  • Focus: 1 m to ∞  • Image Format: JPEG/DNG  (RAW)  • ISO Range: 100-6400  • Max Image Size: 5280x3956  • Shutter Speed:  • Electronic: 8-1/8000 s  • Mechanical: 8-1/2000 s  • Video Format: MP4  • Max Video Bitrate:  • 4K: 130 Mbps  • FHD: 70 Mbps  • Video Resolution: H.264  • 4K: 3840x2160@30fps  • FHD: 1920x1080@30fps
• GNSS: GPS + Galileo + BeiDou + GLONASS • Light Sensor: Built-in Module b. RGB Camera • Image Sensor: At least 20 MP • Lens: • FOV: 84° • Format Equivalent: 24mm • Aperture: f/2.8-f/11 • Focus: 1 m to ∞ • Image Format: JPEG/DNG (RAW) • ISO Range: 100-6400 • Max Image Size: 5280x3956 • Shutter Speed: • Electronic: 8-1/8000 s • Mechanical: 8-1/2000 s • Video Format: MP4 • Max Video Bitrate: • 4K: 130 Mbps • FHD: 70 Mbps • Video Resolution: H.264 • 4K: 3840x2160@30fps
BeiDou + GLONASS  • Light Sensor: Built-in Module b. RGB Camera  • Image Sensor: At least 20 MP  • Lens:  • FOV: 84°  • Format Equivalent: 24mm  • Aperture: f/2.8-f/11  • Focus: 1 m to ∞  • Image Format: JPEG/DNG  (RAW)  • ISO Range: 100-6400  • Max Image Size: 5280x3956  • Shutter Speed:  • Electronic: 8-1/8000 s  • Mechanical: 8-1/2000 s  • Video Format: MP4  • Max Video Bitrate:  • 4K: 130 Mbps  • FHD: 70 Mbps  • Video Resolution: H.264  • 4K: 3840x2160@30fps
• Light Sensor: Built-in Module b. RGB Camera • Image Sensor: At least 20 MP • Lens: o FOV: 84° o Format Equivalent: 24mm o Aperture: f/2.8-f/11 o Focus: 1 m to ∞ • Image Format: JPEG/DNG (RAW) • ISO Range: 100-6400 • Max Image Size: 5280x3956 • Shutter Speed: o Electronic: 8-1/8000 s o Mechanical: 8-1/2000 s • Video Format: MP4 • Max Video Bitrate: o 4K: 130 Mbps o FHD: 70 Mbps • Video Resolution: H.264 o 4K: 3840x2160@30fps
b. RGB Camera  • Image Sensor: At least 20 MP  • Lens:  o FOV: 84°  o Format Equivalent: 24mm  o Aperture: f/2.8-f/11  o Focus: 1 m to ∞  • Image Format: JPEG/DNG  (RAW)  • ISO Range: 100-6400  • Max Image Size: 5280x3956  • Shutter Speed:  o Electronic: 8-1/8000 s  o Mechanical: 8-1/2000 s  • Video Format: MP4  • Max Video Bitrate:  o 4K: 130 Mbps  o FHD: 70 Mbps  • Video Resolution: H.264  o 4K: 3840x2160@30fps
• Image Sensor: At least 20 MP • Lens: o FOV: 84° o Format Equivalent: 24mm o Aperture: f/2.8-f/11 o Focus: 1 m to ∞ • Image Format: JPEG/DNG (RAW) • ISO Range: 100-6400 • Max Image Size: 5280x3956 • Shutter Speed: o Electronic: 8-1/8000 s o Mechanical: 8-1/2000 s • Video Format: MP4 • Max Video Bitrate: o 4K: 130 Mbps o FHD: 70 Mbps • Video Resolution: H.264 o 4K: 3840x2160@30fps
• Lens:     o FOV: 84°     o Format Equivalent: 24mm     o Aperture: f/2.8-f/11     o Focus: 1 m to ∞     • Image Format: JPEG/DNG     (RAW)     • ISO Range: 100-6400     • Max Image Size: 5280x3956     • Shutter Speed:     o Electronic: 8-1/8000 s     o Mechanical: 8-1/2000 s     • Video Format: MP4     • Max Video Bitrate:     o 4K: 130 Mbps     o FHD: 70 Mbps     • Video Resolution: H.264     o 4K: 3840x2160@30fps
o FOV: 84° o Format Equivalent: 24mm o Aperture: f/2.8-f/11 o Focus: 1 m to ∞ Image Format: JPEG/DNG (RAW) ISO Range: 100-6400 Max Image Size: 5280x3956 Shutter Speed: o Electronic: 8-1/8000 s o Mechanical: 8-1/2000 s Video Format: MP4 Max Video Bitrate: o 4K: 130 Mbps o FHD: 70 Mbps Video Resolution: H.264 o 4K: 3840x2160@30fps
o Format Equivalent: 24mm o Aperture: f/2.8-f/11 o Focus: 1 m to ∞ • Image Format: JPEG/DNG (RAW) • ISO Range: 100-6400 • Max Image Size: 5280x3956 • Shutter Speed: o Electronic: 8-1/8000 s o Mechanical: 8-1/2000 s • Video Format: MP4 • Max Video Bitrate: o 4K: 130 Mbps o FHD: 70 Mbps • Video Resolution: H.264 o 4K: 3840x2160@30fps
o Aperture: f/2.8-f/11 o Focus: 1 m to ∞  • Image Format: JPEG/DNG (RAW)  • ISO Range: 100-6400 • Max Image Size: 5280x3956 • Shutter Speed: o Electronic: 8-1/8000 s o Mechanical: 8-1/2000 s • Video Format: MP4 • Max Video Bitrate: o 4K: 130 Mbps o FHD: 70 Mbps • Video Resolution: H.264 o 4K: 3840x2160@30fps
o Focus: 1 m to ∞  • Image Format: JPEG/DNG  (RAW)  • ISO Range: 100-6400  • Max Image Size: 5280x3956  • Shutter Speed:  o Electronic: 8-1/8000 s  o Mechanical: 8-1/2000 s  • Video Format: MP4  • Max Video Bitrate:  o 4K: 130 Mbps  o FHD: 70 Mbps  • Video Resolution: H.264  o 4K: 3840x2160@30fps
<ul> <li>Image Format: JPEG/DNG (RAW)</li> <li>ISO Range: 100-6400</li> <li>Max Image Size: 5280x3956</li> <li>Shutter Speed: <ul> <li>Electronic: 8-1/8000 s</li> <li>Mechanical: 8-1/2000 s</li> </ul> </li> <li>Video Format: MP4</li> <li>Max Video Bitrate: <ul> <li>AK: 130 Mbps</li> <li>FHD: 70 Mbps</li> </ul> </li> <li>Video Resolution: H.264</li> <li>AK: 3840x2160@30fps</li> </ul>
(RAW)  • ISO Range: 100-6400  • Max Image Size: 5280x3956  • Shutter Speed:  • Electronic: 8-1/8000 s  • Mechanical: 8-1/2000 s  • Video Format: MP4  • Max Video Bitrate:  • 4K: 130 Mbps  • FHD: 70 Mbps  • Video Resolution: H.264  • 4K: 3840x2160@30fps
(RAW)  • ISO Range: 100-6400  • Max Image Size: 5280x3956  • Shutter Speed:  • Electronic: 8-1/8000 s  • Mechanical: 8-1/2000 s  • Video Format: MP4  • Max Video Bitrate:  • 4K: 130 Mbps  • FHD: 70 Mbps  • Video Resolution: H.264  • 4K: 3840x2160@30fps
<ul> <li>ISO Range: 100-6400</li> <li>Max Image Size: 5280x3956</li> <li>Shutter Speed: <ul> <li>Electronic: 8-1/8000 s</li> <li>Mechanical: 8-1/2000 s</li> </ul> </li> <li>Video Format: MP4</li> <li>Max Video Bitrate: <ul> <li>4K: 130 Mbps</li> <li>FHD: 70 Mbps</li> </ul> </li> <li>Video Resolution: H.264</li> <li>4K: 3840x2160@30fps</li> </ul>
<ul> <li>Max Image Size: 5280x3956</li> <li>Shutter Speed: <ul> <li>Electronic: 8-1/8000 s</li> <li>Mechanical: 8-1/2000 s</li> </ul> </li> <li>Video Format: MP4</li> <li>Max Video Bitrate: <ul> <li>4K: 130 Mbps</li> <li>FHD: 70 Mbps</li> </ul> </li> <li>Video Resolution: H.264</li> <li>4K: 3840x2160@30fps</li> </ul>
• Shutter Speed:     o Electronic: 8-1/8000 s     o Mechanical: 8-1/2000 s  • Video Format: MP4  • Max Video Bitrate:     o 4K: 130 Mbps     o FHD: 70 Mbps  • Video Resolution: H.264     o 4K: 3840x2160@30fps
o Electronic: 8-1/8000 s o Mechanical: 8-1/2000 s • Video Format: MP4 • Max Video Bitrate: o 4K: 130 Mbps o FHD: 70 Mbps • Video Resolution: H.264 o 4K: 3840x2160@30fps
o Mechanical: 8-1/2000 s  • Video Format: MP4  • Max Video Bitrate:  o 4K: 130 Mbps  o FHD: 70 Mbps  • Video Resolution: H.264  o 4K: 3840x2160@30fps
<ul> <li>Video Format: MP4</li> <li>Max Video Bitrate: <ul> <li>4K: 130 Mbps</li> <li>FHD: 70 Mbps</li> </ul> </li> <li>Video Resolution: H.264</li> <ul> <li>4K: 3840x2160@30fps</li> </ul> </ul>
Max Video Bitrate:         o 4K: 130 Mbps         o FHD: 70 Mbps          Video Resolution: H.264         o 4K: 3840x2160@30fps
o 4K: 130 Mbps o FHD: 70 Mbps • Video Resolution: H.264 o 4K: 3840x2160@30fps
o FHD: 70 Mbps • Video Resolution: H.264 o 4K: 3840x2160@30fps
• Video Resolution: H.264 o 4K: 3840x2160@30fps
<b>o 4K</b> : 3840x2160@30fps
c. Multispectral Camera
• Image Sensor: At least 5 MP
• Lens:
o FOV: 73.91° (61.2° x
48.10°)
o Format Equivalent: 25mm
o Aperture: f/2.0
o Focus: Fixed
• Multispectral Band:
o Green (G): 560 ± 16nm
o Red (R): 650 ± 16nm
o Red Edge (RE): 730 ± 16nm
o Near infrared (NIR): 860 ±
26nm
• Image Format: TIFF
• Max Image Size: 2592x1944
• Shutter Speed:
o Electronic: 1/30-1/128000
S
• Video Format: MP4
• Max Video Bitrate:
o Stream: 60 Mbps
• Video Resolution: H.264
o FHD: 1920x1080@30fps
o Video Content: NDVI /
GNDVI / NDRE
d. Gimbal

• Stabilization System: 3-axis	
mechanical (tilt, roll, pan)	
• Controllable Range:	
<b>o Tilt:</b> -90° to 35°	
o Pan: Uncontrollable	
<ul><li>Mechanical Range:</li></ul>	
<b>o Tilt:</b> -135° to 45°	
<b>o Roll:</b> -45° to 45°	
<b>o Pan:</b> -27° to 27°	
<ul><li>Max Control Speed (tilt):</li></ul>	
100°/s	
<ul><li>Angular Vibration Range:</li></ul>	
±0.007°	
e. Sensing System	
Type: Omnidirectional	
binocular vision system,	
supplemented with an infrared	
sensor at the bottom of the	
aircraft.	
Measurement Range: At	
least 0.5-10 m	
• Detection Range: At least	
0.5-200 m	
• Effective Sensing Speed:	
Flight Speed at least ≤6 m/s	
• Operating Environment:	
o Forward, Backward,	
Lateral, and Upward:	
· · · · · · · · · · · · · · · · · · ·	
Surface with a clear pattern	
and adequate lighting (lux	
>15)  o Downward: Diffuse	
reflective surface with	
diffuse reflectivity>20% (e.g.	
walls, trees, people) and	
adequate lighting (lux >15)	
f. Video Transmission	
• Live View Quality:	
o Remote Controller:	
1080p/30fps	
Operating Frequency: 2.400-	
2.4835 GHz, 5.725-5.850 GHz	
Max Transmission Distance:	
o Unobstructed / free of	
interference: At least 8 km	
o Obstructed: At least 1.5	
km for strong interference	
o Max Download Speed: 15	
MB/s	
o Latency: Approx. 200 ms	
o Antenna: 4 Antennas, 2	
Transmitting / 4 Receiving	
o Other: Supports Cellular	 

module g. Remote Control/Controller • Image Sensor: At least 48 MP • Lens: o Focal length: 21-75 mm (equivalent: 113-405 mm) o Aperture: f/2.8-f/4.2 o Focus: 5 m to ∞ • Max Transmission Distance (unobstructed): FCC: 15 km, CE/SRRC/MIC: 8 km • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz • Video Transmission Transmitter Power (EIRP): 2.4 GHz: 433 dBm (FCC), <20 dBm (CE/SRRC/MIC): 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC) • Antenna: 4 Antennas, 2T4R • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <25 dBm (FCC), <20 dBm (		
• Image Sensor: At least 48 MP • Lens:		
• Lens: • Focal length: 21-75 mm (equivalent: 113-405 mm) • Aperture: f/2.8-f/4.2 • Focus: 5 m to  • Max Transmission Distance (unobstructed): F.CC: 15 km, CE/SRRC/MIC: 8 km • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC) • Antenna: 4 Antennas, 2T4R • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (ECS/SRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (EE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC) = Bluetooth Protocol: Bluetooth Transmitter Power (EIRP): 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): 2.10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (500 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	_	
o Focal length: 21-75 mm (equivalent: 113-405 mm) o Aperture: f(2.8-f(4.2) o Focus: 5 m to ∞  • Max Transmission Distance (unobstructed): FCC: 15 km, CE/SRRC/MIC: 8 km • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC) • Antenna: A Antennas, 2T4R • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <24 dBm (CE) • Bluetooth Protocol: Bluetooth 5.1 • Bluetooth Protocol: Bluetooth Transmitter Power (EIRP): <1 d dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	_	
(equivalent: 113-405 mm)     o Aperture: f/2.8-f/4.2     o Focus: 5 m to ∞      • Max Transmission Distance (unobstructed): FCC: 15 km,     CE/SRRC/MIC: 8 km      • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz      • Video Transmission Transmitter Power (EIRP): 2.4     GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33     dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33     dBm (FCC), <23 dBm (KEC) = Antennas, 274R      • Wi-Fi Protocol: 802.11     a/b/g/n/ac/ax, Support 2×2     MIMO Wi-Fi      • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250     GHz, 5.725-5.850 GHz      • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26     dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <26     dBm (FCC), <32 dBm (E/SRRC/MIC), 5.1 GHz: <26     dBm (FCC), <43 dBm (EFC/SRRC/MIC), 5.1 GHz: <26     dBm (FCC), <40 dBm (CE)      Bluetooth Protocol: Bluetooth 5.1      • Bluetooth Operating Frequency: 2.400-2.4835 GHz      • Bluetooth Transmitter Power (EIRP): <10 dBm     • Screen Resolution: 1920×1080      • Image Sensor: At least 48 MP     • Screen: 50 fps     • Brightness: 1,000 nits     • Touchscreen Control: 10- point multi-touch     • Battery: Li-ion (5000 mAh @ 7.2 V)      • Rated Power: 12 W      • Charging Type: 100W USB-C		
o Aperture: f/2.8-f/4.2 o Focus: 5 m to ∞  • Max Transmission Distance (unobstructed): FCC: 15 km, CE/SRRC/MIC: 8 km  • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz  • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 274R • Wi-Fi Protocol: 802.11 a/b/g/n/a/ax, Support 2×2 MIMMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <24 dBm (CE)  • Bluetooth Protocol: Bluetooth Fransmitter Power (EIRP): <10 dBm  • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 4.5 5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
• Max Transmission Distance (unobstructed): FCC: 15 km, CE/SRRC/MIC: 8 km     • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz     • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <14 dBm (CE), <14 dBm (CE), <14 dBm (CE), <11 dBm (CE), <12 dBm (CE), <12 dBm (CE), <13 dBm (SRRC)      • Antenna: 4 Antennas, 2T4R      • Wi-Fi Portocol: 802.11     a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi      • Wi-Fi Diransmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (FCC), <20 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (FCC), <24 dBm (CE)      Bluetooth Protocol: Bluetooth Protocol: Bluetooth Protocol: Bluetooth Operating Frequency: 2.400-2.4835 GHz      Bluetooth Transmitter Power (EIRP): <1 dBm      Screen Resolution:     1920×1080      image Sensor: At least 48 MP      Screen Size: At least 5.5 inches      Screen: 60 fps      Brightness: 1,000 nits      Touchscreen Control: 10- point multi-touch     Battery: Li-ion (5000 mA) @     7.2 V)      Rated Power: 12 W      Charging Type: 100W USB-C	· · ·	
• Max Transmission Distance (unobstructed): FCC: 15 km, CE/SRRC/MIC: 8 km • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC) • Antenna: 4 Antennas, 274R • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <32 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <32 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <30 dBm (CE/SRRC/MIC), 5.1 GHz: <25 nBluetooth Protocol: Bluetooth Protocol: Bluetooth Protocol: Bluetooth Transmitter Power (EIRP): <10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
(unobstructed): FCC: 15 km, CE/SRRC/MIC: 8 km  • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz  • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 2T4R  • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <30 dBm (CE/SRRC/MIC), 5.8 GHz: <46 dBm (FCC), <32 dBm (CE/SRRC/MIC), 5.4 dBm (CE) • Bluetooth Protocol: Bluetooth Protocol: Bluetooth Protocol: Bluetooth Transmitter Power (EIRP): 1 0 dBm • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
CE/SRRC/MIC: 8 km  • Video Transmission Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz  • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 2T4R  • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC) <3 dBm (CE/SRRC) <3 dBm (CE/SRRC) <3 dBm (CE/SRRC) <4 dBm (FCC), <3 dBm (FCC), <3 dBm (FCC), <4 dBm (FCC), <4 dBm (FCC), <5 dBm (FCC), <5 dBm (FCC), <6 dBm (FCC), <6 dBm (FCC), <6 dBm (FCC), <7 dBm (FCC), <6 dBm (FCC), <7 dB		
• Video Transmission Operating Frequency: 2.400- 2.4835 GFL   5.725-5.850 GHz • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC) • Antenna: 4 Antennas, 2T4R • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <24 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <10 dBm (Sereen Resolution: Bluetooth 5.1 • Bluetooth Protocol: Bluetooth Transmitter Power (EIRP): 10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	(unobstructed): FCC: 15 km,	
Operating Frequency: 2.400- 2.4835 GHz   5.725-5.850 GHz  • Video Transmission Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 2T4R  • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.0 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 dBm: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 dBm: <50 dBm: Screen Size: At least 48 MP • Screen Size: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	CE/SRRC/MIC: 8 km	
2.4835 GHz   5.725-5.850 GHz  • Video Transmission  Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 2T4R  • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC), <3 dBm (CE/SRRC/MIC), 5.1 dBm: 1	<ul> <li>Video Transmission</li> </ul>	
• Video Transmission Transmitter Power (EIRP): 2.4 GHz:<33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, ZT4R  • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <3 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC), <3 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC) & Bluetooth Protocol: Bluetooth Protocol: Bluetooth 5.1  • Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): <10 dBm • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	Operating Frequency: 2.400-	
Transmitter Power (EIRP): 2.4 GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 274R  • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC), <32 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC) = Bluetooth Protocol: Bluetooth 5.1  • Bluetooth Protocol: Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): <10 dBm • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	2.4835 GHz   5.725-5.850 GHz	
GHz: <33 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 2T4R • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE) • Bluetooth Protocol: Bluetooth Derating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): <10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10-point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	<ul> <li>Video Transmission</li> </ul>	
(CE/SRRC/MIC), 5.8 GHz: <33 dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 2T4R  • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE)  • Bluetooth Protocol: Bluetooth Protocol: Bluetooth 7: 1 • Bluetooth Protocol: Bluetooth Transmitter Power (EIRP): <10 dBm • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	Transmitter Power (EIRP): 2.4	
dBm (FCC), <14 dBm (CE), <23 dBm (SRRC)  • Antenna: 4 Antennas, 2T4R • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC), <40 dBm (CE) • Bluetooth Protocol: Bluetooth 5.1 • Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): <10 dBm • Screen Resolution: 1920×180 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	GHz: <33 dBm (FCC), <20 dBm	
dBm (SRRC)  • Antenna: 4 Antennas, 2T4R  • Wi-Fi Protocol: 802.11  a/b/g/n/ac/ax, Support 2×2  MIMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250  GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26  dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26  dBm (FCC), <14 dBm (CE)  • Bluetooth Protocol: Bluetooth 5.1  • Bluetooth Operating Frequency: 2.400-2.4835 GHz  • Bluetooth Transmitter Power (EIRP): < 10 dBm  • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP  • Screen Size: At least 5.5 inches  • Screen: 60 fps  • Brightness: 1,000 nits  • Touchscreen Control: 10- point multi-touch  • Battery: Li-ion (5000 mAh @ 7.2 V)  • Rated Power: 12 W  • Charging Type: 100W USB-C	(CE/SRRC/MIC), 5.8 GHz: <33	
dBm (SRRC)  • Antenna: 4 Antennas, 2T4R  • Wi-Fi Protocol: 802.11  a/b/g/n/ac/ax, Support 2×2  MIMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250  GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26  dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26  dBm (FCC), <14 dBm (CE)  • Bluetooth Protocol: Bluetooth 5.1  • Bluetooth Operating Frequency: 2.400-2.4835 GHz  • Bluetooth Transmitter Power (EIRP): < 10 dBm  • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP  • Screen Size: At least 5.5 inches  • Screen: 60 fps  • Brightness: 1,000 nits  • Touchscreen Control: 10- point multi-touch  • Battery: Li-ion (5000 mAh @ 7.2 V)  • Rated Power: 12 W  • Charging Type: 100W USB-C	dBm (FCC), <14 dBm (CE), <23	
• Antenna: 4 Antennas, 2T4R • Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC)/SRRC), <14 dBm (CE) • Bluetooth Protocol: Bluetooth Protocol: Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): <10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	1 1	
• Wi-Fi Protocol: 802.11 a/b/g/n/ac/ax, Support 2×2 MIMO Wi-Fi • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRC), <14 dBm (CE) • Bluetooth Protocol: Bluetooth Protocol: Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): < 10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	· · ·	
MIMO Wi-Fi  • Wi-Fi Operating Frequency: 2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <33 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE)  • Bluetooth Protocol: Bluetooth 5.1  • Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): <10 dBm • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	•	
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2.400-2.4835 GHz, 5.150-5.250 GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE)  • Bluetooth Protocol: Bluetooth Protocol: Bluetooth Operating Frequency: 2.400-2.4835 GHz  • Bluetooth Transmitter Power (EIRP): < 10 dBm  • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
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GHz, 5.725-5.850 GHz  • Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE)  • Bluetooth Protocol: Bluetooth 5.1  • Bluetooth Operating Frequency: 2.400-2.4835 GHz  • Bluetooth Transmitter Power (EIRP): < 10 dBm  • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP  • Screen Size: At least 5.5 inches  • Screen: 60 fps  • Brightness: 1,000 nits  • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
• Wi-Fi Transmitter Power (EIRP): 2.4 GHz: <26 dBm (FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRC), <14 dBm (CE) • Bluetooth Protocol: Bluetooth 5.1 • Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): < 10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
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(FCC), <20 dBm (CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE) • Bluetooth Protocol: Bluetooth 5.1 • Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): < 10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
(CE/SRRC/MIC), 5.1 GHz: <26 dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE) • Bluetooth Protocol: Bluetooth 5.1 • Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): < 10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
dBm (FCC), <23 dBm (CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE)  • Bluetooth Protocol: Bluetooth 5.1  • Bluetooth Operating Frequency: 2.400-2.4835 GHz  • Bluetooth Transmitter Power (EIRP): < 10 dBm  • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP  • Screen Size: At least 5.5 inches  • Screen: 60 fps  • Brightness: 1,000 nits  • Touchscreen Control: 10- point multi-touch  • Battery: Li-ion (5000 mAh @ 7.2 V)  • Rated Power: 12 W  • Charging Type: 100W USB-C	• • •	
(CE/SRRC/MIC), 5.8 GHz: <26 dBm (FCC/SRRC), <14 dBm (CE)  • Bluetooth Protocol: Bluetooth 5.1  • Bluetooth Operating Frequency: 2.400-2.4835 GHz  • Bluetooth Transmitter Power (EIRP): < 10 dBm  • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP  • Screen Size: At least 5.5 inches  • Screen: 60 fps  • Brightness: 1,000 nits  • Touchscreen Control: 10- point multi-touch  • Battery: Li-ion (5000 mAh @ 7.2 V)  • Rated Power: 12 W  • Charging Type: 100W USB-C		
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• Bluetooth Protocol: Bluetooth 5.1 • Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): < 10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
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• Bluetooth Operating Frequency: 2.400-2.4835 GHz • Bluetooth Transmitter Power (EIRP): < 10 dBm • Screen Resolution: 1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
Frequency: 2.400-2.4835 GHz  • Bluetooth Transmitter  Power (EIRP): < 10 dBm  • Screen Resolution:  1920×1080  • Image Sensor: At least 48 MP  • Screen Size: At least 5.5  inches  • Screen: 60 fps  • Brightness: 1,000 nits  • Touchscreen Control: 10-  point multi-touch  • Battery: Li-ion (5000 mAh @  7.2 V)  • Rated Power: 12 W  • Charging Type: 100W USB-C		
<ul> <li>Bluetooth Transmitter</li> <li>Power (EIRP): &lt; 10 dBm</li> <li>Screen Resolution:</li> <li>1920×1080</li> <li>Image Sensor: At least 48 MP</li> <li>Screen Size: At least 5.5 inches</li> <li>Screen: 60 fps</li> <li>Brightness: 1,000 nits</li> <li>Touchscreen Control: 10-point multi-touch</li> <li>Battery: Li-ion (5000 mAh @ 7.2 V)</li> <li>Rated Power: 12 W</li> <li>Charging Type: 100W USB-C</li> </ul>		
Power (EIRP): < 10 dBm  • Screen Resolution: 1920×1080  • Image Sensor: At least 48 MP  • Screen Size: At least 5.5 inches  • Screen: 60 fps  • Brightness: 1,000 nits  • Touchscreen Control: 10- point multi-touch  • Battery: Li-ion (5000 mAh @ 7.2 V)  • Rated Power: 12 W  • Charging Type: 100W USB-C	• •	
• Screen Resolution:  1920×1080 • Image Sensor: At least 48 MP • Screen Size: At least 5.5 inches • Screen: 60 fps • Brightness: 1,000 nits • Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
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<ul> <li>Image Sensor: At least 48 MP</li> <li>Screen Size: At least 5.5 inches</li> <li>Screen: 60 fps</li> <li>Brightness: 1,000 nits</li> <li>Touchscreen Control: 10-point multi-touch</li> <li>Battery: Li-ion (5000 mAh @ 7.2 V)</li> <li>Rated Power: 12 W</li> <li>Charging Type: 100W USB-C</li> </ul>		
<ul> <li>Screen Size: At least 5.5 inches</li> <li>Screen: 60 fps</li> <li>Brightness: 1,000 nits</li> <li>Touchscreen Control: 10-point multi-touch</li> <li>Battery: Li-ion (5000 mAh @ 7.2 V)</li> <li>Rated Power: 12 W</li> <li>Charging Type: 100W USB-C</li> </ul>		
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• Touchscreen Control: 10- point multi-touch • Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C	•	
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• Battery: Li-ion (5000 mAh @ 7.2 V) • Rated Power: 12 W • Charging Type: 100W USB-C		
7.2 V)  • Rated Power: 12 W  • Charging Type: 100W USB-C	•	
• Rated Power: 12 W • Charging Type: 100W USB-C	•	
Charging Type: 100W USB-C	·	
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			<b>r</b>
	Power Adapter or 12V / 15 V		
	USB charger		
	<ul> <li>Storage Capacity: Internal</li> </ul>		
	Storage (ROM): 64 GB,		
	Supports a microSD card for		
	expanded capacity.		
	• Operating Time: Approx. 3		
	hours		
	• Video Output Port: Mini-		
	HDMI port		
	• GNSS: GPS + Galileo +		
	GLONASS		
	h. Storage		
	• Supported microSD Cards:		
	o Aircraft: U3/Class10/V30		
	or above		
	i. Battery		
	• Capacity: 5000 mAh		
	• Max Charging Voltage: 17.6V		
	• Chemical System: LiCoO2		
	• Standard Voltage: 15.4 V		
	• Type: LiPo 4S		
	• Energy: 77 Wh		
	• Charging Temp: 5° to 40° C		
	j. Charger		
	• Input: 100-240 V (AC Power),		
	50-60 Hz, 2.5 A		
	• Output: Max. 100 W (total)		
	• Output Power: 100 W		
	k. Charging Hub		
	• Input: USB-C: 5-20 V, 5.0 A		
	• Rated Power: 100 W		
	Charging Temperature		
	Range: 5° to 40° C		
	• Output: Battery Port: 12-		
	17.6 V, 8.0 A		
	I. RTK Module		
	• Interface: USB-C		
	• Power: Approx. 1.2 W		
	• RTK Positioning Accuracy:		
	RTK Fix		
	o Horizontal: 1 cm + 1 ppm		
	o Vertical: 1.5 cm + 1 ppm		
	B. Inclusions		
	a. Accessories		
	Carrying Case		
	• 3 units – Battery		
	Charging Hub		
	<b>b. Software:</b> Perpetual License		
	for 3D modeling and drone		
	mapping software		
	c. 3-Day Training: Training for		
	2	6	

	Basic Flight Principles and Actual		
	Flight Tutorial (maximum of 6)		
	including airfares, meals, and		
	travel allowances, if necessary.		
	The bidder is required to issue		
	certificates to all participants.		
_	FIELD DATA ACQUISITION		
4	INSTRUMENTS AND ACCESSORIES		
	A. 4 units – Two-way radios with		
	complete NTC Permits		
	B. 2 units – 100-meter measuring		
	tapes		
	C. 4 units – Heavy Duty Portable		
	Folding Outdoor Chair, 200KG		
	capacity		
	D. 1 unit – 2x4ft Heavy Duty		
	Portable Folding Outdoor Table,		
	Fold-in-Half		
	E. 1 unit – 2x2m Heavy Duty		
	Portable Folding Outdoor Canopy,		
	Waterproof and Anti-UV		
	F. 1 unit – Specialized Laptop		
	a. Technical Specifications:		
	• Processor (Cores): At least		
	10 Cores		
	• Memory Size: At least 32GB		
	• Storage Size & Type: At least		
	512GB SSD		
	• Video Graphics Card: At least		
	6GB Video RAM		
	• Display Monitor: At least 15"		
	• Features/Ports:		
	o At least USB Type A		
	o HDMI Port		
	o Audio Ports (Speaker &		
	Microphone)		
	o Web Camera		
	Operating System: Bundled		
	Windows 11 or latest		
	Other Accessories Included:		
	o USB Optical Mouse		
	o Laptop Bag		
	o Charger		
	G. 1 unit – Mobile Tablet		
	a. Technical Specifications:		
	Operating System: Android		
	OS OS		
	• Processor: At least 8 Cores		
	(Octa Core)		
	Memory Size:     Alpharnal Memory: At least		
	o Internal Memory: At least		
	8GB RAM		
	o Internal Storage: At least	<u> </u> 7	

1	T	1
256GB		
o External Memory Type:		
MicroSD		
o External Memory		
Supported Capacity: Up to		
512GB		
o Memory Card Included: At least 256GB		
• Display Size: At least 10" TFT		
• Features Needed:		
o WiFi		
o GPS		
o Camera		
o SIM Slot with at least LTE		
connection		
o Bluetooth		
o 3.5mm Audio Jack		
• Accessories Included: Power		
Adapter/Charger		
H. 1 unit – Portable Power Station with 220W Solar Panel		
a. Technical Specifications:		
<ul><li>Battery Type: LiFePO4</li><li>Battery Capacity: 768 Wh</li></ul>		
• Output USB: USB-A Output		
(x3): 5V, 2.4A (12W max), USB-		
C Output (x1): 5/9/12/15/20V,		
5A (100W max)		
• Output DC: 1x 12.6V, 10A		
(126w max) DC Car Port, 2x		
12.6 V, 3A (36w max) DC5521		
port		
• Output 230 V: 3x AC 230 V		
(EU Schuko)		
• Total Maximum Power:		
800W (Continuous), 1600W		
(Peak)		
• AC Charge Input: 940W Max		
• Solar Charge Input: 220W,		
11-50V 13A Max		
• Car Charge Input: 12V/24V,		
8A (100W max)		
• USB-C Input: 5/9/12/15/20V,		
5A (100W max)		
WARRANTY: Minimum of 1 year,		
include after sales services		
Delivery Period: Within 65 calendar		
days after issuance of P.O.		
Point of Delivery: ZCWD Property		
Section, Motorpool, Pasonanca,		
z.c.		
	<del></del>	·

### Framework Agreement List

Limited to repeatedly required goods and services that are identified to be necessary and desirable, but, by its nature, use or characteristic, the quantity and/ or exact time of need cannot be accurately pre-determined and are not advisable to be carried in stock.

Prepared by the End-User, attached to the APP and submitted to the BAC for the approval of the HOPE.

FRAMEWORK AGREEMENT LIST (AGENCY)				
Item / Service Type and nature of each item/service	Cost per item or service	Maxim	um Quantity	Total Cost per Item
TOTAL (Approved Budget for the Contract)				
Expected delivery timeframe after receipt of a Call-Off.	Within [no. of days] ca	ılendar days	upon issuance o	of Call-off .
Remarks	Indicate here any other necessary.	er appropri	ate information	as may be
SIGNATURE OVER PRINTED NAME	POSITION		DEPARTMENT	T/DIVISION

### Section VII. Technical Specifications

### **Notes for Preparing the Technical Specifications**

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (*e.g.* production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness, and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

#### Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "or at least equivalent." References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

In case of Renewal of Regular and Recurring Services, the Procuring Entity must indicate here the technical requirements for the service provider, which must include the set criteria in the conduct of its performance evaluation.

## **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.]
	GROUNDWATER SOURCE DEVELOPMENT SCIENTIFIC AND	
	TECHNICAL EQUIPMENT,	
	PERIPHERALS AND ACCESSORIES	
1	1 unit GEO-RESISTIVITY METER  A. Technical Specifications:	
	a. General	
	• Resistivity Method: Transient	
	Electromagnetic	
	• Application: Android, iOS	
	<ul> <li>Onboard Power for Transmitter and Receiver:</li> </ul>	
	Removeable Li-ion 14.4V, 6.8Ah,	
	99.4Wh	
	• IP Rating: IP65	
	• Operating Temperature: -20°C to +50°C	

	Positioning: Onboard GNSS	
	• Upgrades & Diagnostics:	
	Accessible through Internet	
	b. Receiver	
	Number of Channels: 1	
	• Sample Rate: 4MHz	
	• Coil Options: 3x3m (Flexible, 4	
	turns) 200 KHz bandwidth	
	c. Transmitter	
	Output Current: Dual-moment	
	1A/10A	
	• Switch-off: 7 μs (low moment),	
	13 μs (high moment)	
	• <b>Duty Cycle:</b> Default 46% / 30%	
	(LM/HM)	
	• Loop Options: 20 x 20m	
	(2.5mm2, 1 turn), 40 x 40m	
	(4.0mm2, 1 turn)	
	B. Inclusions	
	a. Geo-Resistivity Meter	
	Accessories	
	• 4 units - Smart Battery 14.4V	
	Battery Charger	
	Shipping Case	
	<ul> <li>Receiver Coil 3x3m</li> </ul>	
	<ul> <li>Transmitter Loop 20x20m</li> </ul>	
	<ul> <li>Receiver Lead-in (Transmitter</li> </ul>	
	Loop 20x20m)	
	<ul> <li>Transmitter Loop 40x40m</li> </ul>	
	• Receiver Lead-in (Transmitter	
	Loop 40x40m)	
	• Explorer Transmitter Coils	
	3x3m	
	• Explorer Receiver Coils 3x3m	
	Explorer Coil Shipping Case	
	<b>b. Software:</b> Perpetual License for	
	IP inversion software with 1 year	
	maintenance for update and	
	support	
	c. 5-Day Training: Training for field	
	data acquisition, processing and	
	interpretation (maximum of 10)	
	including airfares, meals, and travel	
	allowances, if necessary. The bidder is	
	required to issue certificates to all	
	participants.  1 unit REAL TIME KINEMATICS	
2	EQUIPMENT	
	A. Technical Specifications:	
	a. GNSS Base	
	Number of Channels: At least	
	1500	
	1300	

Satellite Systems:	
o GPS: L1C, L2W, L2Q	
o GLONASS: G1C, G2P	
<b>o BEIDOU:</b> B11, B21, B31, B1c,	
B2a	
o GALILEO: EC1, E5a, E5b	
o QZSS: L1C, L2S, L5Q	
<ul> <li>Positioning Rate: at least 20Hz</li> </ul>	
IMU Measurement	
o Tilt Angle: 60° or better	
o Accuracy: 10mm + 0.7 mm/°	
Data Storage:	
o Type & Storage: SSD 8GB or	
better	
• GPS Output Format: CMR+,	
RTCM 3.x, NMEA 0183, Binary	
Code	
• Operating Temperature: -45 to	
+75°C	
• IP Rating: IP68 or better	
b. GNSS Rover	
Number of Channels: At least	
1500	
Satellite Systems:	
o GPS: L1C, L2W, L2Q	
o GLONASS: G1C, G2P	
o BEIDOU: B1, B2, B3	
o GALILEO: E1, E5a, E5b	
o QZSS: L1C, L2S	
<ul> <li>Positioning Rate: at least 20Hz</li> </ul>	
IMU Measurement	
o Tilt Angle: 60° or better	
o Accuracy: 10mm + 0.7 mm/°	
Data Storage:	
o Type & Storage: SSD 4GB or	
better	
• GPS Output Format: CMR+,	
RTCM 3.x, NMEA 0183, Binary	
Code	
• Operating Temperature: -45 to	
+75°C	
• IP Rating: IP68 or better	
• Camera:	
o Resolution: 2MP	
o Field of View: 75° or better	
B. Inclusions	
a. Accessories	
Carrying Case	
UHF Antenna	
External Radio Antenna	
Auxillary Plate	
• Tribach	
	<del></del>

	a Chargar	
	Charger     Pole Extender 2cm	
	Pole Extender 2cm     Pole Extender 30cm	
	Aluminum Tripod     Fiber Pole	
	Android Controller	
	b. 2-Day Training: Training for field	
	data acquisition, processing and	
	interpretation (maximum of 10) including airfares, meals, and travel	
	allowances, if necessary. The bidder	
	is required to issue certificates to	
	all participants.	
	1 unit UNMANNED AERIAL VEHICLE	
3	FOR SURVEYING AND AERIAL	
3	MAPPING	
	A. Technical Specifications:	
	a. Aircraft	
	Max Wind Speed Resistance:	
	12m/s	
	Max Take-off Altitude Above	
	Sea Level: At least 2000m	
	Max Flight Time (without)	
	wind): At least 40 minutes	
	Max Hover Time (without)	
	wind): At least 35 minutes	
	• Max Flight Distance: 32 km	
	• GNSS: GPS + Galileo + BeiDou +	
	GLONASS	
	• Light Sensor: Built-in Module	
	b. RGB Camera	
	• Image Sensor: At least 20 MP	
	• Lens:	
	o FOV: 84°	
	o Format Equivalent: 24mm	
	o Aperture: f/2.8-f/11	
	o Focus: 1 m to ∞	
	<ul><li>Image Format: JPEG/DNG</li></ul>	
	(RAW)	
	• ISO Range: 100-6400	
	• Max Image Size: 5280x3956	
	• Shutter Speed:	
	o Electronic: 8-1/8000 s	
	o Mechanical: 8-1/2000 s	
	• Video Format: MP4	
	Max Video Bitrate:	
	o 4K: 130 Mbps	
	o FHD: 70 Mbps	
	• Video Resolution: H.264	
	o 4K: 3840x2160@30fps	
	o FHD: 1920x1080@30fps	
	c. Multispectral Camera	

• Image Sensor: At least 5 MP	
• Lens:	
o FOV: 73.91° (61.2° x 48.10°)	
o Format Equivalent: 25mm	
o Aperture: f/2.0	
o Focus: Fixed	
• Multispectral Band:	
o Green (G): 560 ± 16nm	
o Red (R): 650 ± 16nm	
o Red Edge (RE): 730 ± 16nm	
o Near infrared (NIR): 860 ±	
26nm	
• Image Format: TIFF	
• Max Image Size: 2592x1944	
• Shutter Speed:	
o Electronic: 1/30-1/128000 s	
Video Format: MP4     May Video Bitrate:	
Max Video Bitrate:     Stroom: 60 Mbps	
o Stream: 60 Mbps	
• Video Resolution: H.264	
o FHD: 1920x1080@30fps	
o Video Content: NDVI / GNDV	1
/ NDRE	
d. Gimbal	
• Stabilization System: 3-axis	
mechanical (tilt, roll, pan)	
• Controllable Range:	
o Tilt: -90° to 35°	
o Pan: Uncontrollable	
Mechanical Range:     Tilt: 135° to 45°	
o Tilt: -135° to 45° o Roll: -45° to 45°	
o Pan: -27° to 27°	
• Max Control Speed (tilt):	
100°/s  • Angular Vibration Range:	
±0.007°	
e. Sensing System	
• Type: Omnidirectional	
binocular vision system,	
supplemented with an infrared	
sensor at the bottom of the	
aircraft.	
• Measurement Range: At least	
0.5-10 m	
• <b>Detection Range:</b> At least 0.5-	
200 m	
• Effective Sensing Speed: Flight	
Speed at least ≤6 m/s	
Operating Environment:	
o Forward, Backward, Lateral,	
and Upward: Surface with a	

clear pattern and adequate	
lighting (lux >15)	
o Downward: Diffuse reflective	
surface with diffuse	
reflectivity>20% (e.g. walls,	
trees, people) and adequate	
lighting (lux >15)	
f. Video Transmission	
• Live View Quality:	
o Remote Controller:	
1080p/30fps	
Operating Frequency: 2.400-	
2.4835 GHz, 5.725-5.850 GHz	
Max Transmission Distance:	
o Unobstructed / free of	
interference: At least 8 km	
o Obstructed: At least 1.5 km	
for strong interference	
o Max Download Speed: 15	
MB/s	
o Latency: Approx. 200 ms	
o Antenna: 4 Antennas, 2	
Transmitting / 4 Receiving	
o Other: Supports Cellular	
module	
g. Remote Control/Controller	
• Image Sensor: At least 48 MP	
• Lens:  o Focal length: 21-75 mm	
(equivalent: 113-405 mm)	
o Aperture: f/2.8-f/4.2	
o Focus: 5 m to ∞	
Max Transmission Distance	
(unobstructed): FCC: 15 km,	
CE/SRRC/MIC: 8 km	
Video Transmission Operating	
Frequency: 2.400-2.4835 GHz	
5.725-5.850 GHz	
Video Transmission	
Transmitter Power (EIRP): 2.4	
GHz: <33 dBm (FCC), <20 dBm	
(CE/SRRC/MIC), 5.8 GHz: <33	
dBm (FCC), <14 dBm (CE), <23	
dBm (SRRC)	
• Antenna: 4 Antennas, 2T4R	
• Wi-Fi Protocol: 802.11	
a/b/g/n/ac/ax, Support 2×2	
MIMO Wi-Fi	
Wi-Fi Operating Frequency:	
2.400-2.4835 GHz, 5.150-5.250	
GHz, 5.725-5.850 GHz	
Wi-Fi Transmitter Power	

(EIRP): 2.4 GHz: <26 dBm (FCC),	
<20 dBm (CE/SRRC/MIC), 5.1	
GHz: <26 dBm (FCC), <23 dBm	
(CE/SRRC/MIC), 5.8 GHz: <26	
dBm (FCC/SRRC), <14 dBm (CE)	
Bluetooth Protocol: Bluetooth	
5.1	
Bluetooth Operating	
Frequency: 2.400-2.4835 GHz	
Bluetooth Transmitter Power	
(EIRP): < 10 dBm	
• Screen Resolution: 1920×1080	
• Image Sensor: At least 48 MP	
• Screen Size: At least 5.5 inches	
• Screen: 60 fps	
• Brightness: 1,000 nits	
• Touchscreen Control: 10-point	
multi-touch	
• Battery: Li-ion (5000 mAh @	
7.2 V)	
• Rated Power: 12 W	
Charging Type: 100W USB-C	
Power Adapter or 12V / 15 V USB	
charger	
Storage Capacity: Internal	
Storage (ROM): 64 GB, Supports a	
microSD card for expanded	
capacity.	
Operating Time: Approx. 3	
hours	
Video Output Port: Mini-HDMI	
port	
• GNSS: GPS + Galileo + GLONASS	
h. Storage	
Supported microSD Cards:	
o Aircraft: U3/Class10/V30 or	
above	
i. Battery	
• Capacity: 5000 mAh	
Max Charging Voltage: 17.6 V	
• Chemical System: LiCoO2	
• Standard Voltage: 15.4 V	
• Type: LiPo 4S	
• Energy: 77 Wh	
• Charging Temp: 5° to 40° C	
j. Charger	
• Input: 100-240 V (AC Power),	
50-60 Hz, 2.5 A	
Output: Max. 100 W (total)	
Output Power: 100 W	
k. Charging Hub	
• Input: USB-C: 5-20 V, 5.0 A	

	• Rated Power: 100 W	
	• Charging Temperature Range: 5° to 40° C	
	• Output: Battery Port: 12-17.6 V,	
	8.0 A	
	I. RTK Module	
	• Interface: USB-C	
	• Power: Approx. 1.2 W	
	• RTK Positioning Accuracy: RTK	
	Fix	
	o Horizontal: 1 cm + 1 ppm	
	o Vertical: 1.5 cm + 1 ppm	
	B. Inclusions	
	a. Accessories	
	Carrying Case	
	• 3 units – Battery	
	Charging Hub	
	<b>b. Software:</b> Perpetual License for	
	3D modeling and drone mapping	
	software	
	c. 3-Day Training: Training for Basic	
	Flight Principles and Actual Flight	
	Tutorial (maximum of 6) including	
	airfares, meals, and travel	
	allowances, if necessary. The bidder	
	is required to issue certificates to all	
	participants.	
4	FIELD DATA ACQUISITION	
4	INSTRUMENTS AND ACCESSORIES	
	A. 4 units – Two-way radios with	
	complete NTC Permits	
	B. 2 units – 100-meter measuring	
	tapes	
	C. 4 units – Heavy Duty Portable	
	Folding Outdoor Chair, 200KG	
	capacity	
	D. 1 unit – 2x4ft Heavy Duty Portable	
	Folding Outdoor Table, Fold-in-Half	
	E. 1 unit – 2x2m Heavy Duty Portable	
	Folding Outdoor Canopy, Waterproof	
	and Anti-UV	
	F. 1 unit – Specialized Laptop	
	a. Technical Specifications:	
	• Processor (Cores): At least 10	
	Cores	
	<ul> <li>Memory Size: At least 32GB</li> </ul>	
	• Storage Size & Type: At least	
	512GB SSD	
	<ul> <li>Video Graphics Card: At least</li> </ul>	
	6GB Video RAM	
	• Display Monitor: At least 15"	
	• Features/Ports:	

	1
o At least USB Type A	
o HDMI Port	
o Audio Ports (Speaker &	
Microphone)	
o Web Camera	
Operating System: Bundled	
Windows 11 or latest	
• Other Accessories Included:	
o USB Optical Mouse	
o Laptop Bag	
o Charger	
G. 1 unit – Mobile Tablet	
a. Technical Specifications:	
Operating System: Android OS	
• Processor: At least 8 Cores	
(Octa Core)	
• Memory Size:	
o Internal Memory: At least	
8GB RAM	
o Internal Storage: At least	
256GB	
o External Memory Type:	
MicroSD	
o External Memory Supported	
Capacity: Up to 512GB	
o Memory Card Included: At	
least 256GB	
Display Size: At least 10" TFT	
• Features Needed:	
o WiFi	
o GPS	
o Camera	
o SIM Slot with at least LTE	
connection	
o Bluetooth	
o 3.5mm Audio Jack	
Accessories Included: Power	
Adapter/Charger	
H. 1 unit – Portable Power Station	
with 220W Solar Panel	
a. Technical Specifications:	
• Battery Type: LiFePO4	
• Battery Capacity: 768 Wh	
Output USB: USB-A Output	
(x3): 5V, 2.4A (12W max), USB-C	
Output (x1): 5/9/12/15/20V, 5A	
(100W max)	
• Output DC: 1x 12.6V, 10A	
(126w max) DC Car Port, 2x 12.6	
V, 3A (36w max) DC5521 port	
• Output 230 V: 3x AC 230 V (EU	
Schuko)	

• Total Maximum Power: 800W	
(Continuous), 1600W (Peak)	
AC Charge Input: 940W Max	
• Solar Charge Input: 220W, 11-	
50V 13A Max	
• Car Charge Input: 12V/24V, 8A	
(100W max)	
• USB-C Input: 5/9/12/15/20V,	
5A (100W max)	
WARRANTY: Minimum of 1 year,	
include after sales services	

# Technical Specifications

	TECHNICAL SPECIFICATIONS		
Item / Service	Maximum Quantity	Technical Specifications / Scope of Work	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 crossreferenced 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.]

# Section VIII. Checklist of Technical and Financial Documents

#### **Notes on the Checklist of Technical and Financial Documents**

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

- a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or
- b. Any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary "pass/fail" criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

### **Checklist of Technical and Financial Documents**

#### I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents			
$\Box$	(a)	Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;	
Tec	chnice	al 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; <b>and</b>	
	(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 the statement shall include the following:	
		1. End-user's Acceptance; or	
		2. Official Receipt/s or	
		3. Sales Invoice/s	
		Note: Billing Statement or any other documents not stated herein shall not be accepted;	
	(d)	<ul> <li>and</li> <li>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</li> </ul>	
	(e)	Conformity with the Technical Specifications, which may include production/delivery schedule, manpower requirements, and/or aftersales/parts, if applicable; <b>and</b>	
	(f)	Original duly signed Omnibus Sworn Statement (OSS) <u>and</u> 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.	
Fin	Financial Documents		
	(g)	The prospective bidder's computation of Net Financial Contracting Capacity (NFCC) <u>or</u> 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 <u>or</u> duly notarized statements from all the

potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

II.	FIN	ANCIAL COMPONENT ENVELOPE
		(i) Original of duly signed and accomplished Financial Bid Form; and
		(j) Original of duly signed and accomplished Price Schedule(s).
	Oth	ver documentary requirements under RA No. 9184 (as applicable)
		(k) [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.
		(l) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.

