Purchase and Installation of Communications Equipment for Bicol (New Legaspi) International Airport

CY2024

Bid No. 24-099-11 BRAVO

Sixth Edition
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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

INVITATION TO BID FOR
Purchase and Installation of Communications Equipment for Bicol (New Legaspi) International Airport

Bid No. **24-099-11 BRAVO**

1. The **Civil Aviation Authority of the Philippines (CAAP)**, through the *DOTr-CAAP MOA–2018*- For the Site Acquisition, Procurement and Implementation of Various Airport Projects *(Provision of ANF Equipment)* intends to apply the sum of **Php 47,146,006.26** being the Approved Budget for the Contract (ABC) to payments under the contract for the ***Purchase and Installation of Communications Equipment for Bicol (New Legaspi) International Airport.*** Bids received in excess of the ABC shall be automatically rejected at bid opening.

Airport/Site	VHF AM Tx	VHF AM Rx	Antenna Systems & Other Accessories	VCS with ATC Console	ATIS Tx System	ATIS Rx	VLS	Training & FAT
Bicol (New Legaspi) Int'l Airport	10	10	3	4 positions	1	1	16-channel	1

Note: Based on ANS Design 2B

VHF AM Transmitter	*50 W IP-Based VHF-AM Aeronautical Transmitter*
VHF AM Receiver	*IP-Based VHF-AM Aeronautical Receiver*
Antenna System & Other Accessories	*High power RF circulator, Four (4)-Channel Receive Multicoupler, Four (4)-Channel Cavity Transmit Combiner, Surge Protectors and Omnidirectional Antenna complete with boom, balun, and galvanized steel mounting bracket*
Voice Communication Switch (VCS) with ATC Console	*Four (4) Positions & Four (4) Touch Input Device (TID) IP-Based Voice Communication Switch with Air Traffic Control Console*
ATIS Transmitter System	*50 W IP-Based VHF-AM Aeronautical Transmitter (complete with omnidirectional antenna, surge protectors, cavity filter, and mounting brackets), workstation (complete with licensed software, accessories) and Touch Input Device (TID)*
ATIS Receiver Radio	*IP-Based VHF-AM Aeronautical Receiver (complete with omnidirectional antenna, surge protectors, cavity filter, and mounting brackets)*
Voice Logging System (VLS)	*16-channel (redundant)*
Training and FAT	*Factory Acceptance Test and Factory Training (for VCS only)*

2. The **CAAP** now invites bids for the above Procurement Project. Delivery of the Goods is required *within 365 calendar days*. Bidders should have completed, within *ten (10) 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 CAAP and inspect the Bidding Documents at the address given below during **8:00am to 5:00pm at the BAC Office.**

5. A complete set of Bidding Documents may be acquired by interested Bidders on **07 November 2024 until the deadline of submission of** bid 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 **PhP25,000.00 (exclusive of any and all taxes imposed by relevant government agencies)**. The Procuring Entity shall allow the bidder to present its proof of payment for the fees to be presented in person.

   It may also be downloaded free of charge from the website of the Philippine Government Electronic Procurement System (PhilGEPS) and the website of the Procuring Entity, provided that Bidders shall pay the applicable fee for the Bidding Documents not later than the submission of their bids.

6. The **CAAP** will hold a Pre-Bid Conference[1] on **15 November 2024** @ **9:30 AM,** CAAP *BAC Office* and/or through video conferencing or webcasting via Google Meet, which shall be open to prospective bidders.

7. Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below, on or before **27 November 2024** @ **9:30 AM**. 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 **27 November 2024** @ **9:30 AM** at the given address below and/or via *online conference thru Google Meet.* Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

10. The **CAAP** 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.

11. Upon payment of the bid documents, bidders must provide their respective email addresses to the BAC Secretariat. All communications, including but not limited to Notices, Resolutions, and Replies, among others, will be sent to the email address provided by the bidder/s. The date when such email was sent shall be considered the date of receipt of the bidder/s for purposes of complying with the requirements under RA 9184.

12. Bidders must also check the PhilGEPS website, CAAP website, and BAC Secretariat for any bid bulletins and announcements related to the bidding.

13. For further information, please refer to:

LEANDRO VARQUEZ
Head, BAC Secretariat
3rd Floor Supply, Procurement Building
Civil Aviation Authority of the Philippines
MIA Road, Pasay City, Metro Manila 1300
Tel. Number: (02) 8246-4988 loc. 2236
Email: bac@caap.gov.ph
www.caap.gov.ph

14. You may visit the following websites:

For downloading of Bidding Documents: *PhilGEPS and CAAP websites*

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ATTY. DANJUN G. LUCAS
Chairperson, BAC-Bravo

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, CAAP wishes to receive Bids for the **Purchase and Installation of Communications Equipment for Bicol (New Legaspi) International Airport**, with identification number **BID NO. 24-099-11 BRAVO.**

The Procurement Project (referred to herein as "Project") is composed of 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 2018 in the amount of **Php 47,146,006.26** through the *DOTr-CAAP MOA–2018.*

2.2. The source of funding is:

a. NGA, the General Appropriations Act or Special Appropriations. *DOTr-CAAP MOA–2018.*

3. Bidding Requirements

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

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

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

4. Corrupt, Fraudulent, Collusive, and Coercive Practices

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

5. Eligible Bidders

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

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

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

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.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time through video conferencing/webcasting as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

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

10. Documents comprising the Bid: Eligibility and Technical Components

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

10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within Five (5) years *as provided in paragraph 2 of the **IB*** 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)** and in **BDS**.

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.

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 **Section VII (Technical Specifications)** and in **BDS**.

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[2] 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 *[indicate date].* Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

15. Sealing and Marking of Bids

Each Bidder shall submit one original 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 must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

16. Deadline for Submission of Bids

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

17. Opening and Preliminary Examination of Bids

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

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

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

18. Domestic Preference

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

19. Detailed Evaluation and Comparison of Bids

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

[2] 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.

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

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

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

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

20. Post-Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause	
5.3	For this purpose, contracts similar to the Project shall be: a. *Supply, Delivery, and Installation/Integration of Air Traffic Control Tower Communications Equipment.* b. completed within ten (10) years prior to the deadline for the submission and receipt of bids.
7.1	*No Sub-contracted portion*
10.1	Bidders are required to submit the following as part of the technical documents: a. Proof and other supporting documentary evidence of the bidder's statement of compliance with technical specifications required under Section VII. Technical Specifications, as applicable. b. Duly signed and notarized CERTIFICATION AND UNDERTAKING.
12	The price of the Goods shall be quoted DDP *at Bicol (New Legaspi) Airport* or the applicable International Commercial Terms (INCOTERMS) for this Project.
12.1(a)(iv)	Incidental Services (for Goods offered from within Philippines) include but are not limited to the following: 1. All expenses for the processing of permits and licenses shall be part of the price schedule of the equipment. 2. Provision and installation of cables, grounding, surge protection and other additional or auxiliary electronic/electrical adapter, signal converters, connectors, components, fixtures, interface, fittings/mounting kits, cable management etc. for the different equipment to meet operational and functional requirements. Prices for these incidentals shall be incorporated to the equipment listed in the BOQ of the Schedule of Requirements to which it is primarily related. 3. Importation Licenses / Permits 4. Civil/Electrical Engineering Services and Installation costs 5. Training 6. Project Management Services 7. As-Built Plans and Drawings
12.1(b)(ii)	Incidental Services (for Goods offered from abroad) include but are not limited to the following: 1. Provision and installation of cables, grounding, surge protection and other additional or auxiliary electronic/electrical adapter, signal converters, connectors, components, fixtures, interface, fittings, cable management, etc. for the different equipment to meet operational and functional requirements. Prices for these incidentals shall be incorporated to the equipment listed in the BOQ of the Schedule of Requirements to which it is primarily related. 2. Export Licenses / Permits 3. Engineering Services required for design & configurations.21

	4. Equipment Installation costs 5. FAT/Training & related documents 6. Related equipment tests 7. Site Technical Training to be conducted by certified/authorized technical personnel from the Original Equipment Manufacturer (OEM). 8. Installation, Operational, Maintenance and other forms of Manuals, System & Circuit Diagrams, Equipment As-Built Plans and Drawings.
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 *two percent (2%) of ABC or* **PhP942,920.13** , 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 *five percent (5%) of ABC* or **PhP2,357,300.31** if bid security is in Surety Bond.
15	Each page thereof is initialed by the duly authorized representative/s of the Bidder. Submitted Eligibility, Technical and Financial documents are properly marked with index tabs (ear tabs) and sequentially paginated in accurate order in the form i.e., "page 3 of 100". Pagination is sequential throughout the documents inside the envelope. Each bidder shall submit one copy of the first and second components of its Bid, and soft copy in PDF format of the same original copy of bid submission in print.
16.1	Bids must be duly received by the BAC Secretariat through manual submission. The address for submission of bids is THE BAC OFFICE CIVIL AVIATION AUTHORITY OF THE PHILIPPINES OLD MIA ROAD, PASAY CITY 1300 PHILIPPINES
19.3	Partial Bid is not allowed. The goods are grouped in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
20.1	**All designs/plans shall be signed by the Professional Electronics Engineer as mandated by RA9292 and the Bidder or its authorized representative.** The Contractor shall be responsible for securing all necessary permits (i.e. Electrical/Civil work Permits, Permit to Import, NTC, Security Pass, other local permits, etc.) from respective offices that may be necessary for the installation of the equipment at site. The cost of acquiring such permits including its processing shall be borne by the Contractor.
21.1	**Additional Contract documents** shall be the following: *Per CAAP Memorandum dated 17 September 2018 re: Disqualification of Prospective Bidders with Pending Case against the Government in the procurement activities of the CAAP, all prospective bidders shall be required to submit the following:*

	1. A Certification under oath attesting that their company have no pending case(s) against the Government, in addition to the eligibility requirements for bidders as prescribed under the 2016 Revised Implementing Rules and Regulations (revised IRR) of RA9184; and; *2. Legal Clearance to be issued by the CAAP Enforcement and Legal Service with respect to the non-pendency of any cases of prospective bidders against the Authority.*

Section IV. General Conditions of Contract

1. Scope of Contract

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

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

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

2. Advance Payment and Terms of Payment

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

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

3. Performance Security

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

4. Inspection and Tests

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

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

5. Warranty

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

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

6. Liability of the Supplier

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

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

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
1	**Delivery and Documents –** For purposes of the Contract, "EXW," "FOB," "FCA," "CIF," "CIP," "DDP" and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of INCOTERMS published by the International Chamber of Commerce, Paris. The Delivery terms of this Contract shall be as follows: *[For Goods supplied from abroad, state:]* "The delivery terms applicable to the Contract are DDP delivered at Bicol (New Legaspi) Airport. In accordance with INCOTERMS." *[For Goods supplied from within the Philippines, state:*] "The delivery terms applicable to this Contract are delivered *at Bicol (New Legaspi) Airport.* 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 **ANS AFOC: Ervin B. Tino** **Contact No.: 09089424847** **09683519807** **or** **any authorized representative at Legazpi Airport** **Incidental Services –** The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements: a. performance or supervision of on-site assembly and/or start-up of the supplied Goods; b. furnishing of tools required for assembly and/or maintenance of the supplied Goods; c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods; d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
	e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods. f. The Contractor/Supplier shall warrant the entire equipment, assemblies, software and related integration/site works for one (1) year Defect Liability Period (DLP) (parts and service) plus (1) year Warranty Period (parts and service).

For IP-Based VHF Radios, High-Power RF Circulators, Four (4) Channel Cavity Receive Multicouplers, Four (4) Channel Cavity Transmit Combiners, Omnidirectional Antenna with boom & balun, etc., ancillaries (e.g. Antenna Change-over Unit or equivalent, Transient Voltage Surge Suppressor, Surge Protectors (for lightning protection), DC Power Supply, UPS, Galvanized steel mounting bracket for antenna, RG214 Coaxial Cable, etc.), IP-Based Voice Communications Switch (VCS) with ATC Console, ATIS System, VLS, etc. with defects that occur within the Warranty Period and requiring the equipment to be shut down for repair/service, the Contractor/Supplier shall provide and install a service equipment with equivalent performance as temporary replacement of a defective equipment (stated above)/part in order to maintain the communication capability of the Air Navigation Facility (ANF).

The Contractor/Supplier shall describe the proposed support provisions within the DLP and Warranty period.

The Contractor/Supplier shall submit an OEM issued guarantee that the availability of spare parts for the equipment supplied shall be at least 10 years after the Project acceptance.

The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

Spare Parts –

The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

a. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and

b. in the event of termination of production of the spare parts:

   i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and

   ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested.

The spare parts *(or spare unit/s)* and other components required are listed in **Section VI (Schedule of Requirements)** and the cost thereof are included in the contract price.

The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for a period of 10 years

The Contractor/Supplier shall submit an OEM issued guarantee that the availability of spare parts for the equipment supplied shall be at least 10 years after the Project acceptance.

Spare parts or components shall be supplied as promptly as possible, but in any case, within 1 year of placing the order.

	The period for correction of defects in the warranty period is **within fifteen (15) days.**
	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 Civil Aviation Authority of the Philippines Name of the Supplier Contract Description Final Destination Gross weight Any special lifting instructions Any special handling instructions Any relevant HAZCHEM classifications A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging.
	Transportation – Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price. Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.

	Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, Goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, Goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure. The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Suppliers risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination.
	Intellectual Property Rights – The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof.
2.2	This is a Turn-Key Project Payment will be after issuance of project completion Certification of CAAP
4	The inspections and tests that will be conducted are: *Factory Acceptance Test, Periodic inspections at site, and Site Acceptance Test.* *The Procuring Entity or its representative shall have the right to inspect and/or test the Goods to confirm their conformity to the Contract Specifications.* *Inspections to be conducted will cover but not limited to the following:* *A. Verification/Inspection of designed radio coverage test and conformity to Contract Specifications for Communication Systems;* *B. Verification/Inspection of available channels, design, and conformity to Contract Specifications for VLS;* *C. Verification/Inspection of available Channels, design and conformity to Contract Specifications for IP-Based VCS and Consoles;* *D. Configuration requirements for continuous operation.*

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	Unit	Delivered, Weeks/Months
I	**VHF Transmitter System**			**365 calendar days *(Project Site: Bicol (New Legaspi) International Airport)* upon receipt of NTP.**
	50 Watts IP-Based VHF - AM Aeronautical Transmitter complete with:	10	sets	
	Standard cabinet rack			
	Antenna Change-Over Unit or equivalent			
	RG-214 Coaxial Cable			
	Transient Voltage Surge Suppressor (for line protection) and grounding			
	Connectors, Mountings, Accessories and Ancillaries			
	Rack mounted UPS			
	Operation and Maintenance Manual			
	Testing & Personnel Training			
II	**VHF Receiver System**			
	IP-Based VHF - AM Aeronautical Receiver complete with:	10	sets	
	Standard cabinet rack			
	Antenna Change-Over Unit or equivalent			
	RG-214 Coaxial Cable			
	Transient Voltage Surge Suppressor (for line protection) and grounding			
	Connectors, Mountings, Accessories and Ancillaries			
	Rack mounted UPS			
	Operation and Maintenance Manual			
	Testing & Personnel Training			
III	**Antenna System & Other Accessories**			
	VHF Airband Antenna Systems complete with:			
	Standard cabinet rack			
	High Power RF Circulator	3	sets	
	Four (4)-Channel Cavity Receive Multicoupler	2	sets	
	Four (4)-Channel Cavity Transmit Combiner	2	sets	
	Omnidirectional Antenna with boom & balun	3	sets	
	Galvanized Steel Mounting Bracket for antenna	3	sets	
	Surge Protection *(for RF)* and grounding	3	sets	
	Change-Over Unit			
	Connectors, Mountings, Accessories and Ancillaries			
	Rack-mounted UPS			
	Installation and Integration to tower communication equipment			
	Operation and Maintenance Manual			
	Accessories			
	Testing & Personnel Training			
IV	**Voice Communications Switch with ATC console**			
	IP-Based Voice Communication Switch complete with:	1	lot	
	Four (4) positions ATC Console, Four (4) Touch Input Device (TID), equipment rack, GPS clock, headsets, microphones			
	Rack-mounted UPS			
	Installation and Integration to tower communication equipment			
	Operation and Maintenance Manual			
	Cables & Accessories			
	Testing & Personnel Training (Site and Factory)			
V	**Automatic Terminal Information Service (ATIS) System**			
	50 Watts IP-Based VHF - AM Aeronautical Transmitter complete with:	1	lot	
	Standard cabinet rack			

	Omnidirectional Antenna with boom & balun			
	Galvanized Steel Mounting Bracket for antenna			
	Surge protection (for RF) and grounding			
	RG-214 cable			
	19" rack-mounted cavity filter			
	Transient voltage surge suppressors (for line protection) and grounding			
	Connectors, Mountings, Accessories and Ancillaries			
	Installation kits, Interfaces			
	Handheld Microphone			
	Rack-mounted UPS			
	Operation and Maintenance Manual			
	ATIS System complete with:			
	ATIS Workstation with licensed ATIS software package			
	Installation/User Manual			
	Accessories and Ancillaries			
	UPS			
	Touch Input Device (TID)			
	Installation and Integration to tower communications and AWOS equipment			
	Testing & Personnel Training			
	Automatic Terminal Information Service (ATIS) Receiver Radio			
	IP-Based VHF - AM Aeronautical Receiver complete with:			
	Standard cabinet rack			
	Omnidirectional Antenna with boom & balun			
	Galvanized Steel Mounting Bracket for antenna			
	Surge protection (for RF) and grounding			
	RG-214 cable	1	lot	
	19" rack-mounted cavity filter			
	Transient voltage surge suppressors (for line protection) and grounding			
	Connectors, Mountings, Accessories and Ancillaries			
	Rack-mounted UPS			
	Operation and Maintenance Manual			
	Installation and Integration to tower communications and AWOS equipment			
	Testing & Personnel Training			
VI	**Voice Logging System (VLS)**			
	Voice Logging System complete with:			
	Sixteen (16) Digital channels (IP-based) Redundant System *Note: the four (4) channels shall be capable for analog channel conversion*			
	Standard cabinet rack			
	Separate playback unit			
	Recording/Playback and software Licenses			
	HDD Archiving/Storage Media	1	lot	
	UPS (at least 30 minutes backup time), Surge Protectors, and grounding			
	Operation and Maintenance Manual			
	Installation and Integration to tower communication equipment			
	Accessories			
	Operation and Maintenance Manual			
	Testing & Personnel Training			
VII	**Training and FAT**			
	Training and Factory Acceptance Test detailed as:			
	Factory Acceptance Test *(for IP-Based VCS)*	3	pax	
	Factory Training *(for IP-Based VCS)*	5	pax	

NOTE:

1. *Refer to Technical Specifications for details requirement.*

2. *For applicable items, the Bidder shall indicate in the Technical Proposal* **(on a separate sheet use REVISED ANNEX A – ITB 10.1 Form)** *the* ***Brand, Type*** *and /or* ***Model/Version*** *and* ***Quantities*** *of each of the proposed equipment/subsystems (IP-Based VHF Radios, High-Power RF Circulators, Four (4) Channel Cavity Receive Multicouplers, Four (4) Channel Cavity Transmit Combiners, Omnidirectional Antenna with boom & balun, etc., ancillaries (e.g. Antenna Change-over Unit or equivalent, Transient Voltage Surge Suppressor, Surge Protectors (for lightning protection), DC Power Supply, UPS, Galvanized steel mounting bracket for antenna, RG214 Coaxial Cable, etc.), , IP-Based Voice Communications Switch (VCS) with ATC Console, ATIS System, VLS, etc.).* ***This document shall be signed by the Bidder's authorized representative.***

Accomplished Revised Annex A –ITB 10.1. For applicable items, the Bidder shall indicate in the **Technical Component** (on a separate sheet using Revised Annex A –ITB 10.1 Form) the Brand, Type and /or Model/Version and Quantities/Unit of each of the proposed equipment/subsystems and ancillaries. This document shall be signed by the Bidder's authorized representative. The bill of quantities with corresponding price schedules in the accomplished financial form shall be consistent with and referenced to all plans, designs and layouts submitted in the technical bid proposal.

Section VII. Technical Specifications

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 Bidders 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.

The Bidder shall also indicate the appropriate reference section including its page number in documents submitted to support the compliance statement indicated in the table of Technical Specifications. The Bidder shall indicate "Will Supply" if items required are to be supplied by the Bidder with corresponding prices indicated in the Financial Proposal.

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
A	**GENERAL REQUIREMENT**		
A.1.	The Civil Aviation Authority of the Philippines (CAAP) intends to procure a brand-new IP-Based VHF AM Radios, VCS with ATC Console, ATIS System, Voice Logging System, and other ancillaries that will meet the communication system requirement within the airspace responsibility of respective ATC service in terms of coverage, clarity of signal/transmit & receive audio, reliability/redundancy, equipment integration compatibility and other benefits in terms of performance and cost. The project intends to provide new communications equipment, as detailed in this document, for the new control tower of Bicol (New Legaspi) International Airport, 4501 Daraga, Albay within the published budget (ABC).		
A.2.	The Contractor shall include in their technical proposal preliminary design drawings, installation plans, to include but shall not be limited to in the order of the following (see also A.6):		
	a) System Interconnection Design Diagram;		
	b) Equipment Room and Antenna Layout Plan;		
	c) Power/Electrical/Grounding and Cabling System Design Plan;		
	d) Original unedited latest versions of OEM Equipment Technical Characteristics/ Specification, manuals and brochures of proposed products.		
A.3.	Final design drawings and installation plans shall be submitted after the award of Contract for approval of CAAP prior to its installation/implementation. As-built drawings shall be submitted after its installation/implementation.		
A.4.	For non-OEM bidders (whether sole or JV partner), the CAAP requires that the bidder is an exclusive or authorized distributor of the VHF Radios, IP-Based VCS, ATIS System and Voice Logging Equipment.		
A.5.	The Contractor shall secure a ***certificate of site inspection*** from the ANS Area Field Office Chief and/or Facility In-Charge (or any authorized representative) of Legazpi Airport as proof of the conduct of survey/inspection of the site. ***(use the Certificate of Site Inspection Form provided by ANS)*** ***ANS AFOC/ FIC: Ervin B. Tino*** ***Contact No.: 09089424847*** ***09683519807*** **or** **any authorized representative**		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	at Bicol (New Legaspi) International Airport ANS will coordinate for schedule of visit, Certificate of Site Inspection Form and any update. Bidder shall propose the schedule and send the details of their visiting personnel (e.g. name, photocopy of ID).		
A.6.	*The following documents shall be **submitted together with the Technical Proposal**:* 1. ***System Interconnection Design Diagram signed** and **sealed** by a Professional ECE (PECE).* 2. ***Radio Coverage Map signed** and **sealed** by a Professional ECE (PECE).* 3. ***Equipment Room and Antenna Layout Plan** for the supplied equipment **signed** and **sealed** by a Professional ECE (PECE).* 4. ***Certificate of Exclusive or Authorized Distributorship** issued by the Original Equipment Manufacturer (OEM) of supplied equipment.* 5. ***ISO Certificates** (or its internationally recognized equivalent) of Company (ISO 9001 and 14001) and Product.* 6. *Latest official **OEM Equipment Technical Characteristics, Specification and/or Sales Materials** reflecting all performance and functional specifications of proposed equipment.* 7. ***Copy of the PRC Certificate** or clear photocopy of **PECE License**.* 8. *Copy of **PTR*** 9. ***Certificate of Good Standing** from **Accredited Professional Organization** shall be submitted by the signing PECE.*		
A.7.	**Accomplished Revised Annex A –ITB 10.1**. For applicable items, the Bidder shall indicate in the **Technical Component** (on a separate sheet using Revised Annex A –ITB 10.1 Form) the Brand, Type and /or Model/Version and Quantities/Unit of each of the proposed equipment/subsystems and ancillaries. This document shall be signed by the Bidder's authorized representative. The bill of quantities with corresponding price schedules in the accomplished financial form shall be consistent with and referenced to all plans, designs and layouts submitted in the technical bid proposal.		
B	**DESIGN CONDITIONS**		
B.1.	The Communications equipment shall meet the standards and recommendations of the ICAO Annex 10, Volume III, ICAO Document 9896 and EUROCAE Document ED-137B related to the IP-based communication system (VHF Radios).		
B.2.	All 50W IP-Based VHF Transmitters and IP-Based VHF Receivers supplied shall be applicable for Aeronautical application.		
B.3.	The IP-Based VHF Radios shall be configured as main and standby (by default) with the following frequencies to be used at Bicol (New Legaspi) International Airport's Control Tower Facility:		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	123.3MHz *– for Aerodrome Control (Primary)* ***118.1MHz –*** *for Aerodrome Control (Secondary)* ***120.2MHz –*** *for Approach Control* ***121.5MHz*** *– for Emergency.*		
B.4.	All equipment shall be configured in such a way that no commercial power and UPS failure disrupt the operation of the communication (e.g. main and standby radios) system.		
B.5.	All equipment shall be supplied with a rack-mountable Uninterruptible Power Supply to ensure continuous operation during commercial power failure. The UPS rating shall be in accordance with the power supply requirements of the supplied equipment. As a minimum, it shall provide at least thirty (30) minutes backup time. *(See also Section VI. Schedule of Requirements)*		
B.6.	All Radio System including connectors and interface requirements to integrate the radio equipment to the IP-Based Voice Communication Switch, ATIS, and Voice Logging System, and other ancillaries shall be supplied and provided.		
B.7.	VHF Radio antenna systems shall be installed on top of the control tower building. The contractor shall carefully determine the appropriate antenna location/separation such that the required coverage has the optimum transmit/receive signal achieved and that no interference signal shall affect the operation/performance of other transmitters/receivers.		
B.8.	The contractor shall observe/assure maximum power transfer by observing impedance matching between the supplied antenna, surge protector, RF high-power circulators, receive multicoupler, transmit combiner and the supplied coaxial cable. Minimum loss between the said equipment and coaxial cables shall take into account.		
B.9.	The VLS shall have the ability to connect/operate to the VCS, Radios, ATIS, including interconnection to Telephone/hotlines.		
B.10.	The IP-Based Voice Communication Switch (VCS) shall accommodate at least four (4) positions (Approach, Aerodrome, Flight Data, and Supervisor) and each shall be provided with Touch Input Device (TID).		
B.11.	The IP-Based VCS system shall have the ability to connect/operate to the supplied IP-Based Radios, including interconnection to Telephone, PABX, ATIS System, Voice Communications & VLS.		
B.12.	The ATC console shall be fabricated to fit into the intended tower cab room without compromising working space for on duty ATC personnel. *(Refer to ATC Console Design)*		
B.13.	The ATC console shall be designed such that Air Traffic Controller will have a clear view of aerodrome from tower cabroom point of view.		
B.14.	The CAAP requires a minimum of five (5) communications rack to contain the VHF Tx/Rx Radios, Antenna Accessories and Ancillaries, ATIS, VLS, VCS, etc. to be installed in the ANS Equipment Room.		
B.15.	The contractor shall assure that all the supplied equipment shall be fully operational and functional.		
B.16.	All equipment supplied shall be brand new and of latest version/model.		
B.17.	**All equipment supplied shall be provided with two (2) sets of operation, maintenance/technical manual written in English language.**		
B.18.	As-built drawings and other documentation must be submitted by the contractor to the end-user. Failure to do so will result to **non-acceptance** of the project.		
B.19.	No single failure of equipment that caters a particular service shall paralyze or tend other equipment out of service.		
B.20.	The bidder shall explain any deviation from the design/configuration or specification giving the rationale/benefit of offering such. The		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	explanation shall be supported by references and shall not be of lesser or of lower quality to meet the objective of the project.		
B.21.	Maintenance personnel shall have an easy access to all the ports of the receive multicouplers (primary/secondary), transmit combiners (primary/secondary), high-power RF circulators (primary/secondary).		
C.	**EQUIPMENT REQUIREMENTS**		
C.1.	**50 Watts IP - Based VHF - AM Transmitter**		
C.1.1.	**General Requirements**		
C.1.1.1.	The Transmitter shall be installed in a compatible full height 19-inch communications rack.		
C.1.1.2.	The IP-Based Transmitter shall be designed to be operated either by remote or local control.		
C.1.1.3.	The IP-Based Transmitter shall be designed in a redundant system integrated with antenna change-over unit or equivalent for IP Transmitter radio selection of main, standby, for local or remote operation.		
C.1.1.4.	The contractor shall assure that the supplied change-over unit or equivalent can be controlled via voice communications switch.		
C.1.1.5.	Automatic Level Compensation (ALC) circuit shall be provided for increasing average modulation degree without causing overmodulation.		
C.1.1.6.	Operating frequency shall be preset by switch-programmable synthesizer controlled oscillator.		
C.1.1.7.	Built-in meter or LCD display shall be provided in the front panel for routine checking, RF output power, power supply, modulation depth and VSWR.		
C.1.1.8.	Front panel of IP transmitter shall include a suitable jack for a handset, principal switches for: ON / OFF Power switch and PTT / Tone Switch.		
C.1.1.9.	The IP Transmitter shall be delivered with standard accessories (ex. Microphone, power supply, cable, etc.)		
C.1.1.10.	All IP radio equipment supplied shall be provided with PTT handheld microphones equal to the number of supplied VHF IP Transmitters plus ten (10) spare microphones. The PTT handheld microphones shall be OEM-approved and compatible with the supplied radio & IP-Based VCS.		
C.1.2.	**Performance Requirements**		
C.1.2.1.	Frequency Range : 117.975 to 137 MHz		
C.1.2.2.	Number of Preset Channel : programmable to at least ten (10) channels		
C.1.2.3.	Operational Frequency : Tunable within frequency range		
C.1.2.4.	Channel Spacing : 25 kHz, 8.33kHz		
C.1.2.5.	Emission Type : A3E		
C.1.2.6.	Frequency Setting : Synthesized controlled		
C.1.2.7.	Frequency Accuracy : ±1.0 ppm, from -20°C to +55°C		
C.1.2.8.	Spurious Emission : ≤-93 dB_c full output power		
C.1.2.9.	RF Output Power : 50 W configurable in steps (output power can be lowered to at least 10W) Monitoring Output : 600 Ω; 0 dBm at 90% modulation		
C.1.2.10.	Frequency Response : within 3 dB from 300 Hz to 3 kHz		
C.1.2.11.	Transmitter Noise : -145 dBc at 300 kHz from carrier		
C.1.2.12.	ALC levels : ± 15dB		
C.1.2.13.	VSWR : ≤ 2.0 automatic resume after return to nominal condition		
C.1.2.14.	MTBF : at least 25,000 hours		
C.1.2.15.	Power Supply Voltage : 220V AC, single-phase, 60Hz		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.1.2.16.	Operation method: Press-to-talk		
C.1.2.17.	PTT terminal : Dry contact for remote indicator		
C.1.2.18.	Modulation depth : configurable up to 95% with ≤5% distortion		
C.1.2.19.	Lighting/Surge Protection : RF/Coaxial protection, maintenance free, multi-strike capable, weatherized construction, appropriate for the frequency range and power output		
C.1.2.20.	Antenna Impedance : 50 Ω		
C.1.2.21.	Antenna MTBF : 250,000 hours		
C.1.2.22.	Operating Temperature : up to 50°C		
C.1.2.23.	Humidity : ≤95% at 40°C		
C.1.2.24.	Connection/Network : Internet Protocol		
C.1.3.	**RG-214 Coaxial Cable**		
C.1.3.1.	The contractor shall supply a coaxial cable with a mean characteristic impedance of 50Ω ± 2Ω.		
C.1.3.2.	The inner conductor shall be made from stranded silver plated copper with a minimum diameter of 0.75mm.		
C.1.3.3.	The dielectric of the supplied shall be solid polyethylene with a diameter of 7.2mm ± 0.15mm.		
C.1.3.4.	The braid of the coaxial cable shall be silver plated copper with a minimum diameter of 7.2mm ± 0.15mm.		
C.1.3.5.	The outer jacket of coaxial cable shall be 10.8mm ± 0.2 mm.		
C.1.3.6.	The supplied coaxial cable shall be able to operate at a maximum frequency of 11GHz.		
C.1.4.	**Transient Voltage Surge Suppressor (TVSS)**		
C.1.4.1.	The contractor shall supply a Transient Voltage Surge Suppressor (TVSS) device that shall divert the excess voltage and current from transient or surge into grounding wire and prevents it from flowing through the electrical and electronic equipment while at the same time allowing the normal voltage to continue along its path.		
C.1.4.2.	The surge protection device shall have minimum current handling capacity of 30KA.		
C.1.4.3.	The contractor shall supply transient surge protection device **per radio** that will serve as power line protection of the communications equipment.		
C.1.4.4.	The surge protector shall have minimum warranty of two (2) years from the date the project was accepted.		
C.1.5.	**Compliance Standards**		
C.1.5.1.	ED-137B ICAO Annex 10 Volume 3 European Standard HD 624 (Electromagnetic Compatibility) : EN 300676-1 : EN 301489 : E N 55022 *or its internationally recognized equivalent* (Electrical Safety) : in line with EN 60950 : in line with UL Std No 60950-1 *or its internationally recognized equivalent* (Protection Against Electrical Shock) : EN 60950-1 (FCC Certificates): FCC title 47, parts 87 and 15 (Telecom: RF Devices, Aviation services-aircraft band radios) *or its internationally recognized equivalent*		
C.2.	**IP-Based VHF - AM Aeronautical Receiver**		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.2.1.	**General Requirements**		
C.2.1.1.	The IP-Based Receiver shall be installed in a compatible full height 19-inch communications rack.		
C.2.1.2.	The IP-Based Receiver shall be provided with a squelch On-Off switch and squelch level control including squelch terminal.		
C.2.1.3.	The IP-Based Receiver shall be designed to be operated either by remote or local control.		
C.2.1.4.	The IP-Based Receiver shall be designed in a redundant system integrated with antenna change-over unit or equivalent for Receiver radio selection of main, standby, for local or remote operation.		
C.2.1.5.	The contractor shall assure that the supplied change-over unit or equivalent can be controlled via voice communications switch.		
C.2.1.6.	Side tone output circuit shall be provided for monitoring and connection to the Voice Logging System.		
C.2.1.7.	Operating frequency shall be preset by switch-programmable synthesizer controlled oscillator.		
C.2.2.	**Performance Requirements**		
C.2.2.1.	Frequency Range : 117.975 to 137 MHz		
C.2.2.2.	Number of preset channel : programmable to at least ten (10) channels		
C.2.2.3.	Channel Spacing : 25 kHz, 8.33kHz		
C.2.2.4.	Operating Frequency : Tunable within the frequency range		
C.2.2.5.	Frequency setting : Synthesizer controlled		
C.2.2.6.	RF input impedance : 50 Ω (nominal)		
C.2.2.7.	Sensitivity : ≤ -107 dBm @ 12dB SINAD		
C.2.2.8.	Image Freq Rejection : ≥ 100 dB		
C.2.2.9.	Max. input level without damage : +30dBm (1watt, 7.5 V_{rms})		
C.2.2.10.	Spurious Response : ≥ 80 dB		
C.2.2.11.	Cross modulation : ≥ 95 dB		
C.2.2.12.	Intermediate Frequency Rejection : ≥ 90 dB/		
C.2.2.13.	Adjacent Channel Rejection : ≥ 75 dB @25Khz spacing and ≥ 65 dB @ 8.33KHz spacing		
C.2.2.14.	AGC Characteristics : -120 dBm to +10 dBm		
C.2.2.15.	Line Output Impedance : 600 Ω balanced		
C.2.2.16.	Frequency Response : within 3 dB from 300 Hz to 3 kHz		
C.2.2.17.	Audio Distortion : ≤ 2%		
C.2.2.18.	Squelch Control : -107 dBm to –73 dBm		
C.2.2.19.	MTBF :40,000 hours		
C.2.2.20.	Power Supply Voltage : 220V AC, single-phase, 60 Hz		
C.2.2.21.	Lightning/Surge Protection : RF/Coaxial protection, maintenance free, multi-strike capable, weatherized construction, appropriate for the frequency range and power output		
C.2.2.22.	Antenna Impedance : 50 Ω		
C.2.2.23.	Antenna VSWR capability : ≤2		
C.2.2.24.	Antenna MTBF :250,000h		
C.2.2.25.	Operating Temperature : up to 50°C		
C.2.2.26.	Humidity : ≤95% at 40°C		
C.2.2.27.	Connection/Network : Internet Protocol		
C.2.3.	**RG-214 Coaxial Cable**		
C.2.3.1.	The contractor shall supply a coaxial cable with a mean characteristic impedance of 50Ω ± 2Ω.		
C.2.3.2.	The inner conductor shall be made from stranded silver plated copper with a minimum diameter of 0.75mm.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.2.3.3.	The dielectric of the supplied shall be solid polyethylene with a diameter of 7.2mm ± 0.15mm.		
C.2.3.4.	The braid of the coaxial cable shall be silver plated copper with a minimum diameter of 7.2mm ± 0.15mm.		
C.2.3.5.	The outer jacket of coaxial cable shall be 10.8mm ± 0.2 mm.		
C.2.3.6.	The supplied coaxial cable shall be able to operate at a maximum frequency of 11GHz.		
C.2.4.	**Transient Voltage Surge Suppressor (TVSS)**		
C.2.4.1.	The contractor shall supply a Transient Voltage Surge Suppressor (TVSS) device that shall divert the excess voltage and current from transient or surge into grounding wire and prevents it from flowing through the electrical and electronic equipment while at the same time allowing the normal voltage to continue along its path.		
C.2.4.2.	The surge protection device shall have minimum current handling capacity of 30KA.		
C.2.4.3.	The contractor shall supply transient surge protection device **per radio** that will serve as power line protection of the communications equipment.		
C.2.4.4.	The surge protector shall have minimum warranty of two (2) years from the date the project was accepted.		
C.2.5.	**Compliance Standards**		
C.2.5.1.	ED-137B ICAO Annex 10 Volume 3 European Standard HD 624 (Electromagnetic Compatibility) : EN 300676-1 : EN 301489 : EN 55022 *or its internationally recognized equivalent* (Electrical Safety) : in line with EN 60950 : in line with UL Std No 60950-1 *or its internationally recognized equivalent* (Protection Against Electrical Shock) : EN 60950-1 (FCC Certificates): FCC title 47, parts 87 and 15 (Telecom: RF Devices, Aviation services-aircraft band radios) *or its internationally recognized equivalent*		
C.3.	**Antenna System & Other Accessories**		
C.3.1.	**General Requirements**		
C.3.1.1.	The contractor shall install the antenna system on the top of the cabroom together with its boom, balun (balance to unbalanced) and surge protection *(for lightning protection).*		
C.3.1.2.	The contractor shall observe proper antenna separation on the top of the cabroom or within the control tower building.		
C.3.1.3.	The antenna system ancillaries (i.e. High Power RF Circulator, Four (4)-Channel Cavity Receive Multicoupler, Four (4)-Channel Cavity Transmit Combiner, etc.) shall be installed altogether in a compatible full height 19-inch communications rack.		
C.3.1.4.	The antenna system ancillaries shall be connected to a rack-mountable Uninterruptible Power Supply (UPS) that will serve as backup power in case of a commercial power failure. The UPS rating shall be in accordance with the power supply requirements of the supplied antenna ancillaries. As a minimum, it shall provide at least thirty (30) minutes backup time.		
C.3.1.5.	The contractor shall provide all the necessary connectors, mounting accessories and other ancillaries for the entire system and assuring that the supplied system shall be fully operational and functional.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.3.2.	**Performance Requirements**		
C.3.2.1.	**High Power RF Circulator**		
C.3.2.1.1.	The contractor shall supply RF circulators that can operate on airband frequencies (117.975 MHz – 137MHz).		
C.3.2.1.2.	The contractor shall supply an airband distributed element circulator.		
C.3.2.1.3.	The contractor shall supply RF circulators that has minimum power handling capacity of 300 Watts.		
C.3.2.1.4.	The contractor shall supply RF circulator with a maximum insertion loss of 0.6dB and a minimum reverse isolation of ≥ 18dB.		
C.3.2.1.5.	The supplied RF circulators shall have a maximum Voltage Standing Wave Ratio (VSWR) of ≤1.25.		
C.3.2.1.6.	The contractor shall observe proper cooling system for the circulators especially during its full power operation.		
C.3.2.1.7.	The high-power RF circulator shall be placed inside the 19" cabinet rack to prevent any unauthorized access.		
C.3.2.1.8.	Transfer of primary antenna/circulator to standby antenna/circulator may be done manually using a transfer switch. Maintenance personnel shall not be required to disconnect or manually transfer cables (especially RF cables) in order to transfer from primary to the standby antenna/circulator or vice-versa. Maintenance personnel shall have an easy access to the ports of the transfer switch.		
C.3.2.2.	**Four (4)-Channel Cavity Receive Multicoupler**		
C.3.2.2.1.	The contractor shall supply a four (4)-channel cavity receive multicoupler that has the capability to allow multiple numbers of receivers to share the same antenna without interaction and loss of signal.		
C.3.2.2.2.	The contractor shall supply a receiver multicoupler that operates on airband frequency.		
C.3.2.2.3.	The contractor shall supply a rack mountable VHF cavity receive multicoupler.		
C.3.2.2.4.	The contractor shall supply a receiver multicoupler with a minimum isolation of >20dB between four (4) receivers and a nominal impedance of 50Ω.		
C.3.2.2.5.	The supplied multicoupler shall have a minimum input/output SWR of <1.5 with a gain from input to all output of 2dB.		
C.3.2.2.6.	The contractor shall supply receive multicoupler with a minimum channel separation of 200KHz.		
C.3.2.2.7.	The contractor shall supply a receiver multicoupler with the capability to automatically switch to 12V power supply when $220V_{ac}$ mains supply fails.		
C.3.2.2.8.	The contractor shall supply band pass filter which shall allow wanted frequency band to pass and simultaneously attenuate/reject all signal outside this band.		
C.3.2.2.9.	The supplied band pass filter shall be **compatible** or same brand with the supplied multicoupler.		
C.3.2.2.10.	The contractor shall supply a minimum of two (2) cavity receive multicoupler.		
C.3.2.2.11.	The contractor shall install a manual or automatic transfer switch to transfer from primary receive multicoupler to standby receive multicoupler or vice-versa. The contractor may implement other technologies to provide the same similar transfer function.		
C.3.2.2.12.	For manual transfers, maintenance personnel shall not be required to disconnect or manually transfer cables (especially RF cables) in order to transfer from main to the standby receive multicoupler or vice-versa.		
C.3.2.3.	**Four (4)-Channel Cavity Transmit Combiner**		
C.3.2.3.1.	The contractor shall supply a four (4)-channel cavity transmit combiner that has the capability to combine several transmitters into one antenna.		
C.3.2.3.2.	The contractor shall supply a rack mountable four (4)-channel		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	transmit combiner.		
C.3.2.3.3.	The contractor shall supply a transmit combiner with a minimum power handling capacity of 150 Watts and a minimum insertion loss of ≤2dB.		
C.3.2.3.4.	The contractor shall supply a transmit combiner with a minimum channel frequency separation of 200KHz and has a minimum isolation of 35dB between transmitter/channel to transmitter/channel.		
C.3.2.3.5.	The contractor shall assure that the supplied transmit combiner has a minimum standing wave ratio (SWR) of ≤1.5.		
C.3.2.3.6.	The contractor shall assure that the supplied transmit combiner has a minimum frequency stability of 0.8ppm/°C.		
C.3.2.3.7.	The supplied transmit combiner shall have a nominal impedance of 50Ω.		
C.3.2.3.8.	The contractor shall supply a minimum of two (2) cavity transmit combiner.		
C.3.2.3.9.	The contractor shall install a manual or automatic transfer switch to transfer from primary transmit combiner to standby transmit combiner or vice-versa. The contractor may implement other technologies to provide the same similar transfer function.		
C.3.2.3.10.	For manual transfers, maintenance personnel shall not be required to disconnect or manually transfer cables (especially RF cables) in order to transfer from main to the standby transmit combiner or vice-versa.		
C.3.2.4.	**Omnidirectional Broad-band Dipole Antenna**		
C.3.2.4.1.	The antenna system that shall be provided must be a heavy duty, high power, omnidirectional broad-band antenna that has a capability to operate at airband frequencies (117.975-137MHz) and can withstand a minimum radiating power capacity of 300 Watts.		
C.3.2.4.2.	The antenna systems shall be supplied together with mounting brackets, booms/antenna mast, balun (balance to unbalance signal transformer), connectors and other ancillaries.		
C.3.2.4.3.	The omnidirectional broad-band antenna shall have a voltage standing wave ratio (VSWR) of ≤1.6 and minimum antenna gain of 0dBd.		
C.3.2.4.4.	The contractor shall supply an omnidirectional broad-band antenna with nominal impedance of 50Ω. The polarization shall be in vertical and has the ability to radiate/broadcast in an omnidirectional way.		
C.3.2.4.5.	The contractor shall supply a balun (balance to unbalance signal transformer) made from epoxy potted polyester enclosure.		
C.3.2.4.6.	The contractor shall supply a hot-dipped galvanized steel or equivalent noncorrosive mounting brackets for antenna.		
C.3.2.4.7.	The supplied omnidirectional broad-band antenna shall be able to withstand windspeed of up to 200kph at minimum wind load of 152N.		
C.3.2.4.8.	The radio antenna system shall propagate omnidirectionally in the horizontal plane with 5x5 audible coverage within 50NM and the indicated flight levels stated below requirement of coverage map. The bidder shall provide radio coverage map at 2000 feet, 5000 feet, 9000 feet, 11000 feet, 13000 feet, 15000 feet, and 20000 feet of the proposed design considering terrain around respective airports.		
C.3.2.5.	**Surge Protection *(for Lightning protection)***		
C.3.2.5.1.	The contractor shall supply a lightning EMP surge protector that can give protection against dangerous surge signals on coaxial lines including all kinds of interference (resistive, magnetic field & electric field coupling, lightning strikes and etc.).		
C.3.2.5.2.	The contractor shall supply a lightning EMP surge protector complete with gas discharge tube.		
C.3.2.5.3.	The surge protector to be supplied shall have a nominal impedance of 50Ω with a minimum current handling capacity of 20KA.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.3.2.5.4.	The EMP surge protector shall able to operate at airband frequencies (117.975MHz – 137MHz) with a minimum insertion loss of ≤ 0.1dB and a return loss of ≥ 26.44dB.		
C.3.2.5.5.	The contractor shall supply lightning EMP surge protection device **per antenna**.		
C.3.2.5.6.	The contractor shall supply an additional/spare gas discharge tubes **per antenna**.		
C.3.2.5.7.	The surge protection to be supplied shall be installed on the top of the cabroom together with balun transformer and folded dipole antenna.		
C.3.2.5.8.	The supplied EMP surge protector shall be rated with ingress protection (IP) 65 that will serve as protection against extreme weather conditions.		
C.4.	**Voice Communication Switch (VCS) with ATC Console**		
C.4.1.	**General Requirements**		
C.4.1.1.	The voice communication system **shall** be IP-based technology and shall accommodate at least four (4) positions (Approach, Aerodrome, Flight Data, and Supervisor).		
C.4.1.2.	The system **shall** be able to operate minimum of individual radio channels in the workspace of one operator position.		
C.4.1.3.	The system **shall** provide telephone and intercom services capable of at least six (6) lines. *(see also C.4.2.4.6)*		
C.4.1.4.	All four (4) operator positions **shall** be installed each with a Touch Input Device (TID).		
C.4.1.5.	The system design **shall** have no single point of failure. A single failure **shall** not result in the loss of large system parts or even the entire system and this **shall** be achieved by extensive duplication of all critical components and communications links.		
C.4.1.6.	The system hardware **shall** be fully decentralized and **shall** consist of modular units each controlling only a limited part of the system. In this way, even failures in the duplicated components will only affect limited parts of the system.		
C.4.1.7.	The system application software **shall** be fully decentralized and **shall** be extremely robust against software failures.		
C.4.1.8.	The system **shall** utilize the parallel operating switching architecture with two switching parts operating in parallel with equal priority and independent of the other.		
C.4.1.9.	The IP-Based VCS shall have the ability to connect/operate to all the radios including ATIS system, telephone/intercom system & VLS.		
C.4.2.	**Performance Requirements**		
C.4.2.1.	**OPERATOR POSITION REQUIREMENTS**		
C.4.2.1.1.	**Touch Input Device (TID)**		
C.4.2.1.1.1.	The operator interface to the system **shall** be through a touch input device.		
C.4.2.1.1.2.	The touch input device **shall** be a simple, easy-to-use voice communications control panel.		
C.4.2.1.1.3.	The keys and the panel **shall** be context-sensitive, only those keys that are currently valid are active.		
C.4.2.1.1.4.	The panel **shall** respond to one key at a time. Should the operator press the panel with a flat of his hand, only one key is activated and then only if that operation is currently valid.		
C.4.2.1.1.5.	The panel **shall** display both radio and telephone indicators at the same time. If an operator is busy on a telephone call he can instantly respond to a radio call from an aircraft without the need to select another screen page.		
C.4.2.1.1.6.	From the touch input panel, the following keys and controls **shall** be available for the operator to configure:		
(a)	**Operator/Coach Volume Slider for Headset and Handset** For the adjustment of the respective volume on the headset and handset.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
(b)	**Operator/Coach Sidetone for Headset and Handset** For the adjustment of the respective sidetone on the headset and handset.		
(c)	**Click Volume Slider** In using this slider, the volume of the audible feedback of the “key pressed” state can be adjusted. The key click tone **shall** be audible during adjustment.		
(d)	**Chime Volume Slider** For the adjustment of the incoming call chime volume.		
(e)	**Brightness Slider** For panel brightness adjustment.		
(f)	**Clean Key** A combination of keys **shall** be pressed for panel cleaning. The panel keys **shall** not respond to pressure during cleaning routines.		
(g)	**Position Status** The position status window **shall** show different states of various connections, hardware and software components.		
(h)	**Close Key** This key **shall** be used to close the Settings window on the touch panel. The CLOSE key **shall** show the sum status of all Direct Access (DA) and Common Answer (CA) keys.		
C.4.2.1.2.	**Plug-in Panel**		
C.4.2.1.2.1.	The plug-in panel **shall** be provided to connect two (2) audio devices for connection of headsets, handsets, and microphones.		
C.4.2.1.2.2.	The plug-in panel shall support two (2) lemo connectors.		
C.4.2.1.2.3.	The plug-in panel shall support monaural as well as binaural headsets, handsets, and microphones.		
C.4.2.1.2.4.	The plug-in panel shall have a status indicator to identify that the headsets, handsets, and microphones are in use.		
C.4.2.1.2.5.	Each position shall support footswitches to be used for activation of PTT.		
C.4.2.1.3.	**Radio Services**		
C.4.2.1.3.1.	The system **shall** support switchover between Main and Standby radio equipment separately for transmitters and receivers. Each radio channel can be configured for Main/Standby over a single radio interface or via separated radio interfaces for the main and standby paths.		
C.4.2.1.3.2.	Automatic Main/Standby switchover both for transmitters and receivers in case of radio loop check errors shall be configurable.		
C.4.2.1.3.3.	The system shall support TX/RX-selection link. If the transmitter is set to standby, then the receiver is also set to standby mode.		
C.4.2.1.3.4.	The radio system **shall** have a fail-safe PTT whereby a stuck PTT switch **shall** be detected and **shall** set off a warning on the touch panel indicating the socket input which the stuck PTT has been detected. This **shall** also apply to blocked footswitches, cable defects, etc.		
C.4.2.1.3.5.	If radio channels become unavailable, an “Out of Service” indication shall be displayed at the appropriate radio for the RX or TX at the operator position.		
C.4.2.1.3.6.	Certain radio channels shall be configured as emergency frequencies, wherein these frequencies are permanently in monitor mode at all operator positions that have this frequency assigned. Voice shall be transmitted on air when the non–latching TX key is activated.		
C.4.2.1.3.7.	The radio system shall support transmission via PTT key on the touch panel aside from the handset PTT switches and footswitches.		
C.4.2.1.3.8.	The radio system implement PTT lockout whereby only one operator **shall** be allowed to transmit on a certain frequency at any given time. All additional PTT selections on this radio channel **shall** be inhibited for the duration of the active PTT.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.4.2.1.3.9.	The radio system shall implement Coach/Operator Override. PTT of the coach shall always override a PTT action of the operator.		
C.4.2.1.3.10.	The radio system shall support PTT pre-emption whereby each operator position shall be assigned pre-emption rights on certain radio channels.		
C.4.2.1.3.11.	Active PTT transmissions on a certain radio channel shall be indicated at all operator positions.		
C.4.2.1.3.12.	The radio system **shall** indicate that a PTT transmission is selected on a different operator position.		
C.4.2.1.4.	**Telephone/Intercom Services**		
C.4.2.1.4.1.	The telephone system **shall** have a minimum of twenty (20) Direct Access keys displayed on the layout of the touch panel.		
C.4.2.1.4.2.	Recent calls **shall** be indicated in a Call List which **shall** show the last 20 calls which are either outgoing or incoming call numbers. Latest calls are listed on top, older entries move to the bottom.		
C.4.2.1.5.	**Loudspeaker**		
C.4.2.1.5.1.	The loudspeaker at the operator console shall have a volume control in front, with visual indicator of voice activity and device status.		
C.4.2.1.5.2.	The volume level of the loudspeaker shall be controlled both via the sliders on the touch panel and from the loudspeaker volume control panel knobs.		
C.4.2.2.	**TECHNICAL MONITORING AND CONTROL**		
C.4.2.2.1.	The system **shall** provide a separate computer terminal for maintenance personnel to access and maintain the whole voice communications system.		
C.4.2.2.2.	The system **shall** provide management of configuration data through multilevel access restrictions and privileges.		
C.4.2.2.3.	Software and Configuration data **shall** be downloaded.		
C.4.2.2.4.	Authorized maintenance personnel **shall** be allowed collection and display of system fault data system activity logs.		
C.4.2.2.5.	All activity logs **shall** be available for viewing within a minimum span of thirty (30) days upon date of occurrence configurable to a maximum of ninety (90) days.		
C.4.2.2.6.	All alarm indications **shall** be highlighted and indicated on the maintenance computer screen and with an audible alarm on the IP-Based VCS cabinet.		
C.4.2.2.7.	Alarm reports **shall** be organized and presented in easy to read formatted windows.		
C.4.2.2.8.	The computer terminal **shall** be password-protected against unauthorized access.		
C.4.2.2.9.	The system status **shall** be displayed in a detailed overview of each hardware component with status indications (alarm, unknown status, in maintenance, status OK etc.).		
C.4.2.2.10.	The system status **shall** be displayed in cabinet view with corresponding color codes for each system state (red being executive alarm, etc.).		
C.4.2.3.	**SYSTEM ARCHITECTURE**		
C.4.2.3.1.	A robust IP infrastructure that supports ATM requirements at ATM facilities: • Availability • Performance • Quality of Service (QoS) • Security		
C.4.2.3.2.	The IP infrastructure in compatible with the legacy end systems (e.g., voice switches, circuits, signaling protocols).		
C.4.2.3.3.	Provisions are available for fixed wireless link (e.g satellite).		
C.4.2.3.4.	Network performance management shall have bandwidth on demand – dynamic allocation of the network capacity based on utilization and traffic class.		

<table>
<tr><th>Section</th><th>Specification</th><th>Compliance Statement</th><th>Reference to support statement (also INDICATE PAGE No.)</th></tr>
<tr><td>C.4.2.3.5.</td><td>The system shall be scalable to allow upgrades, network expansion and addition of new equipment.</td><td></td><td></td></tr>
<tr><td>C.4.2.3.6.</td><td>The system shall feature resiliency against failures wherein cable breaks will be limited to the affected peripheral only and the medium shall not be shared with other elements.</td><td></td><td></td></tr>
<tr><td>C.4.2.3.7.</td><td>The system shall feature structured cabling for ease of maintenance and repairs.</td><td></td><td></td></tr>
<tr><td>C.4.2.3.8.</td><td>Duplication of these vital system elements shall be implemented:</td><td></td><td></td></tr>
<tr><td>(a)</td><td>Ethernet Switches</td><td></td><td></td></tr>
<tr><td>(b)</td><td>Power Supply units</td><td></td><td></td></tr>
<tr><td>C.4.2.4.</td><td>SYSTEM INTERFACES</td><td></td><td></td></tr>
<tr><td>C.4.2.4.1.</td><td>The system shall allow extensive range of IP radio and telephone interfacing capability.</td><td></td><td></td></tr>
<tr><td>C.4.2.4.2.</td><td>The system shall provide simple configuration for multiple site-specific interface types and can be directly connected to a wide range of communication equipment (IP, analog, and digital) wherein special signaling protocols shall be available.</td><td></td><td></td></tr>
<tr><td>C.4.2.4.3.</td><td>The system shall allow control of critical interface parameters through software and shall be altered from a terminal monitoring and control system.</td><td></td><td></td></tr>
<tr><td>C.4.2.4.4.</td><td>The system shall allow changes in the transmission levels or other interface characteristics without interruption of the switch operation.</td><td></td><td></td></tr>
<tr><td>C.4.2.4.5.</td><td>The system shall provide recording interfaces for the recording of operator position’s audio and radio channel/telephone line audio through an external recorder/VLS.</td><td></td><td></td></tr>
<tr><td>C.4.2.4.6.</td><td>For this site, the type of analog/IP lines to be interfaced are as follows:
<table><tr><th>Lines To Be Interfaced</th><th>Number of Lines (minimum)</th></tr><tr><td>Telephone/Intercom (Analog)</td><td>2 (FXS)</td></tr><tr><td>VHF Transmitter (IP)</td><td>4</td></tr><tr><td>VHF Receiver (IP)</td><td>4</td></tr><tr><td>VHF AM Transceivers</td><td>2</td></tr><tr><td>Spare (IP)</td><td>2</td></tr><tr><td>Spare</td><td>2 (FXO)</td></tr></table></td><td></td><td></td></tr>
<tr><td>C.4.2.5.</td><td>CONSOLE SPECIFICATIONS</td><td></td><td></td></tr>
<tr><td>C.4.2.5.1.</td><td>The air traffic control console shall accommodate four (4) operator positions (Approach, Aerodrome, Flight Data, and Supervisor). See reference drawing.</td><td></td><td></td></tr>
<tr><td>C.4.2.5.2.</td><td>The console shall be made up of steel material and modular in design to allow installation via tower entrances and easy console reconfiguration (in terms of ATC positions). See reference drawing.</td><td></td><td></td></tr>
<tr><td>C.4.2.5.3.</td><td>The console shall be free standing and enclosed while console frames shall be made up of welded steel with built-in exhaust fans including provision of front access door for maintenance purposes.</td><td></td><td></td></tr>
<tr><td>C.4.2.5.4.</td><td>The console shall be provided with illuminated writing areas, footrests, empty panel space plates, AC/DC distribution, and internal wiring.</td><td></td><td></td></tr>
</table>

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.4.2.5.5.	The console shall accommodate the following auxiliary communications equipment which shall include but is not limited to footswitches, headsets, microphones, handsets, and speakers.		
C.4.2.5.6.	Dual flight strip trays (minimum 30-strip holder capacity for Approach and Flight Data positions), flight strip storage device, and flight strip holders shall be incorporated in the console. *See reference drawing.*		
C.4.2.5.7.	Provision for installation of Meteorological display units (Wind Speed/Wind Direction, Barometric Pressure), siren switches, and "Runway In-Use" indicator shall be incorporated in both Approach and Aerodrome positions.		
C.4.2.5.9.	Provision for installation of Navaids Monitor shall be incorporated in the Flight Data position. Airfield Lighting System (ALS) control switch shall also be incorporated in the Aerodrome position.		
C.4.2.5.10.	The Flight Data (B) position shall be able to accommodate the AMHS workstation and its ancillaries.		
C.4.2.5.11.	Digital clocks (hours/minutes/seconds, military 24hour format) for UTC time, and synchronized to GPS based Time Source shall be provided in each operator position. The Contractor shall be responsible for the supply and installation of the GPS-based Time Source.		
C.4.2.5.12.	Dimmable console lights with flexible metal lamp holders shall be provided for each working position/bay.		
C.4.2.5.13.	Air Traffic Controller chairs shall be provided for each controller working position.		
C.4.2.5.14.	The console shall be fabricated to fit into the intended tower cab room without compromising working space for on duty ATC personnel.		
C.4.2.5.15.	The console shall be designed such that Air Traffic Controller will have clear view of aerodrome from tower cabroom.		
C.4.2.6.	**ENVIRONMENTAL REQUIREMENTS**		
C.4.2.6.1.	**Operating Conditions**		
C.4.2.6.1.1.	The system shall not suffer from any form of performance degradation when operating under the following conditions:		
C.4.2.6.1.2.	Ambient temperature range: +10°C to 40°C.		
C.4.2.6.1.3.	Humidity of 20 to 90% non-condensing.		
C.4.2.6.1.4.	The system shall be able to operate correctly in rooms where the air is comparable to the environment in normal offices or equipment rooms of diverse quality of air conditioning systems.		
C.4.2.6.1.5.	The noise emission generated by the IP-Based VCS cooling fans shall not exceed 60dB with open cabinet doors.		
C.4.2.6.2.	**Storage Conditions**		
C.4.2.6.2.1.	The system shall not suffer from any form of damage when stored, transported, or left idle without power under the following conditions:		
C.4.2.6.2.2.	Temperature range: 40°C to +60°C.		
C.4.2.6.2.3.	Humidity of +40°C, 90% non-condensing.		
C.4.2.6.3.	**Power Requirements**		
C.4.2.6.3.1.	The system **shall** be operated/connected to two separated power supply lines and **shall** operate with either 110-230 VAC/48-62Hz or 24-36VDC or 36-60VDC.		
C.4.2.6.3.2.	The system shall have maximum fault tolerance regarding power supply failures by implementing duplicated and redundant power supply configuration.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.4.2.6.3.3.	A rack-mountable Uninterruptible Power Supply (UPS) with the capability to provide at least 30 minutes backup power shall be provided to ensure continuous equipment operation during commercial power failures.		
C.4.2.6.4.	**Compliance to Standards**		
C.4.2.6.4.1.	EUROCAE ED-137B *or its internationally recognized equivalent*		
C.4.2.6.4.2.	EUROCAE ED 138 *or its internationally recognized equivalent*		
C.4.2.7.	**WORK SCHEDULE**		
C.4.2.7.1.	The winning bidder shall be issued a Notice of Award (NOA) upon completion of the procurement.		
C.4.2.7.2.	The Bidder shall include in their proposal a project activity schedule for the project starting from the Notice To Proceed.		
C.4.2.7.3.	CAAP specifies that the project be **completed within 365 calendar days**.		
C.4.2.7.4.	The preliminary Project Management Schedule shall be as detailed as possible highlighting the following project component activities:		
(a)	Equipment Manufacturing;		
	VCS		
(b)	Shipment and Delivery;		
	VCS		
(c)	Installation;		
	VCS		
(d)	Testing;		
	Factory Acceptance Test		
	Site Acceptance Test		
	Reliability Test		
(e)	Training;		
	Factory		
	Local (On-site)		
(f)	Final Configuration;		
(g)	Submission of As-Built Drawings /Plans;		
(h)	Project Completion;		
(i)	Defect Liability Period (1 year);		
(j)	Warranty Period (1 year).		
C.4.2.8.	**SYSTEMS SUPPORT**		
C.4.2.8.1.	**Quality Plan**		
C.4.2.8.1.1.	The Contractor shall be responsible for the quality assurance, configuration management, and acceptance testing being in accordance with known standards and procedures.		
C.4.2.8.2.	**Maintenance Plan**		
C.4.2.8.2.1.	The Contractor shall submit **together with the Technical Proposal** a plan on how the Contractor/OEM will conduct maintenance services during the warranty period and during the life cycle of the system. The plan shall detail the procedures:		
(a)	of repair/replacement of defective hardware components;		
(b)	of software maintenance and repair;		
(c)	of help desk support;		
(d)	management of components obsolescence.		
C.4.2.8.3.	**Training Plan**		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.4.2.8.3.1.	The Contractor shall submit together with the Technical Proposal a plan for each of the identified training courses that include a description of the following elements:		
(a)	Type of training;		
(b)	Course Title;		
(c)	Course Objectives;		
(d)	Course Contents;		
(e)	Duration in Days;		
(f)	Location;		
(g)	Maximum number of Trainees per course;		
(h)	Training Materials and Training Aids.		
C.4.2.8.3.2.	Training courses and materials shall enable the trainees to later instruct other technical staff according to the obtained knowledge.		
C.4.2.8.3.3.	Training courses shall be of a high standard and apply the latest teaching techniques.		
C.4.2.8.3.4.	Trainings shall be conducted for the maintenance (hardware/software) and operation (software) of the IP-Based VCS system as well as console and TID operations.		
C.4.2.8.3.5.	All training materials and training aids utilized shall be provided by the supplier in softcopy and hardcopy.		
C.4.2.8.3.6.	The CAAP requires Factory and Local (On-site) training of ANS personnel for IP-Based VCS systems.		
(a)	The Factory Training (FT) shall be attended by 5 personnel (5-VCS) for a minimum of **10** training days (weekends excluded).		
(b)	Local (On-Site) Training (ST) shall be attended by a minimum of 10 personnel.		
C.4.2.8.3.7.	The OEM shall issue a Training Certificate to ANS personnel who attended the trainings. The Certificate shall indicate the following: (a) name of the trainee, (b) course title, (c) course content (theory, practical exercises), (d) place of training, (e) date and duration of the training with the OEM company logo.		
C.4.2.8.3.8.	All travel expenses including its processing (VISA, airfare, hotel accommodations, meals, daily allowances, and health/accident insurance for the duration of the stay) shall be borne by the Contractor. As a minimum, allowances shall be in accordance with the UNDP Daily Subsistence Allowance (DSA) rates. Cost of the travel expenses shall be included/reflected in the Contractor's Financial Bid Proposal.		
C.4.2.8.3.9.	UNDP rates include hotel accommodation and daily allowance of the participant. Latest UNDP rates approved for the month of travel for the specific country shall be used as minimum allowance. Other travel expenses such as VISA, airfare, health/accident insurance shall be borne by the Bidder/Contractor.		
C.4.2.8.4.	**Documentations**		
C.4.2.8.4.1.	Aside from training materials, the following documents **shall** be delivered:		
(a)	2 sets of operations manual;		
(b)	2 sets of maintenance (hardware/software) manual;		
(c)	2 sets of software manual;		
(d)	2 sets of inventory list of equipment to include spare part;		
(e)	softcopy of all delivered documents **shall** be provided in a CD or USB media.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.4.2.9.	**INSTALLATION AND TESTING**		
C.4.2.9.1.	**Factory Acceptance Testing**		
C.4.2.9.1.1.	Prior to delivery, the Contractor shall conduct a Factory Acceptance Test of IP-Based VCS in order to ensure that the equipment will operate as intended and that it meets all the contractual requirements.		
C.4.2.9.1.2.	The CAAP requires that the VCS equipment and subsystems have passed all tests in the factory (OEM) prior to shipment to the site.		
C.4.2.9.1.3.	The Factory Acceptance Test for IP-Based VCS shall be attended by three (3) ANS personnel for a minimum of 5 days.		
C.4.2.9.1.4.	The Bidder shall provide in their proposal information on:		
(a)	the place;		
(b)	the schedule;		
(c)	activities for the equipment testing.		
C.4.2.9.1.5.	All travel expenses including its processing (visa, airfare, hotel accommodations, meals, daily allowances, and health/accident insurance for the duration of the stay) shall be borne by the Contractor. As a minimum, allowances shall be in accordance with the UNDP Daily Subsistence Allowance (DSA) rates. Cost of the travel expenses shall be included/reflected in the Contractor's Financial Bid Proposal.		
C.4.2.9.1.6.	UNDP rates include hotel accommodation and daily allowance of the participant. Latest UNDP rates approved for the month of travel for the specific country shall be used as minimum allowance. Other travel expenses such as VISA, airfare, health/accident insurance shall be borne by the Bidder/Contractor.		
C.4.2.9.1.7.	The CAAP requires submission of a proposed Site Test plan for the VCS and ancillary equipment prior to commissioning. The Site Test plan may be revised by CAAP as necessary.		
C.4.2.9.2.	**Delivery, Storage and Handling**		
C.4.2.9.2.1.	The Equipment shall be protected against extreme temperature and humidity, and shall be stored in a conditioned place to prevent corrosion and/or contamination.		
C.4.2.9.2.2.	The Equipment shall be wrapped up in dust-tight covers and kept away from construction activities in order to be protected against dust and debris.		
C.4.2.9.2.3.	Contractor shall be responsible for correct storage of the equipment under the conditions as specified.		
C.4.2.9.2.4.	Contractor shall deliver, store, and handle the equipment and materials in accordance with the manufacturer's recommendations.		
C.4.2.9.2.5.	Contractor shall be responsible for the delivery/shipment of equipment from the Contractor's premise up to the installation site.		
C.4.2.9.3.	**Engineering Personnel**		
C.4.2.9.3.1.	The CAAP requires that only OEM qualified personnel will do the installations/commissioning of the equipment. CAAP requires submission of Certificate of Authorization from the OEM of the equipment.		
C.4.2.9.3.2.	The Bidder shall submit together with its Technical bid resumés of qualified installers/personnel who will be involved in the Project. The Bidder shall specify/describe the responsibilities of these personnel with regards to the implementation of the project.		
C.4.2.9.4.	**Installation and Site Acceptance Testing**		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.4.2.9.4.1.	A Site Acceptance Test shall be conducted after the completion of the installation. The Contractor shall be responsible for notifying the CAAP that the installation is complete and that a Site Acceptance Test is to be conducted.		
C.4.2.9.4.2.	The supplier **shall** submit for approval a detailed Site Acceptance Test (SAT) plan (1 set) four weeks before the beginning of the SAT.		
C.4.2.9.4.3.	The SAT plan **shall** consist of a subset of functional tests, plus specific tests taking into account the site environment.		
C.4.2.9.4.4.	The SAT plan **shall** consist of a set of functional and performance tests aiming at validating the compliance of the system with this specification.		
C.4.2.9.4.5.	SAT **shall** be performed for all hardware and software deliverables.		
C.4.2.9.4.6.	At the beginning of the SAT, the contractor **shall** provide introduction/briefing and the baseline for the installed system.		
C.4.2.9.4.7.	During the SAT, four (4) sets of Site Acceptance Test (SAT) plan shall be given to the CAAP.		
C.4.2.9.4.8.	Each test executed at the SAT **shall** be described on one single page including at least the following information:		
(a)	test identifier and title;		
(b)	the procedure to follow for performing the test		
(c)	the system configuration required for the test;		
(d)	the expected result(s) of the test;		
(e)	the way to control whether the test has succeeded or not;		
(f)	comments where appropriate.		
C.4.2.9.4.9.	A **Reliability Test** shall be conducted for a period of **2 days** by the Contractor after a successful Site Acceptance Testing.		
C.4.2.9.4.10.	After the conduct of a successful Reliability Test (no alarms of any type observed for 2 continuous days), the Contractor shall immediately inform CAAP of its completion and schedule/conduct a Commissioning of the new Communications Equipment (IP-Based VHF Radio Transmitters/Receivers, VHF AM/FM Transceivers, IP-Based VCS and other vital ancillaries (High-power RF circulators, four (4) channels cavity receive multicoupler, four (4) channels cavity transmit combiner, antenna change-over unit, Omnidirectional dipole), ATIS System, and VLS).		
C.4.2.9.5.	**Project Completion**		
C.4.2.9.5.1.	A Certificate of Project Completion shall be issued by CAAP to the Contractor upon successful completion of the Project.		
C.4.2.9.5.2.	The following documents (submitted in a binder with corresponding tabs) shall be the attachment for the approval of the Certificate of Project Completion:		
(a)	Copy of approved Contract including the Terms of Reference;		
(b)	Factory Acceptance Test Report;		
(c)	Project Progress Report;		
(d)	Training Report including photocopy of the training certificates issued;		
(e)	Site Acceptance Test Report;		
(f)	Operation/User and Service Manuals;		
(g)	As-Built Drawings;		
(h)	Inventory of decommissioned/dismantled equipment;		
(i)	Inventory of newly installed equipment;		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
(j)	Reliability Test Result.		
C.4.2.9.6.	**Defect Liability Period and Warranty**		
C.4.2.9.6.1.	The CAAP Requires one (1) year Defect Liability Period and after which a one (1) year Warranty Period for both software and hardware components.		
C.4.2.9.6.2.	The Defect Liability Period (DLP) shall start after the date of issuance of the Certificate of Project Completion by CAAP, wherein all of the works were executed, completed by the Contractor as per contract.		
C.4.2.9.6.3.	The Contractor shall be responsible for the shipment of defective parts to the Manufacture and vice-versa. Cost of which shall be borne by the Contractor for the duration of the DLP and Warranty periods.		
C.4.2.10.	**OTHER REQUIREMENTS**		
C.4.2.10.1.	**Permits**		
C.4.2.10.1.1.	The Contractor shall be responsible for securing all necessary permits (i.e. Electrical work Permits, Permit to Import, NTC, Security Pass, other local permits, etc.) from respective offices that may be necessary for the installation of the IP-Based VCS with ATC Console at site. The cost of acquiring such permits including its processing shall be borne by the Contractor.		
C.4.2.10.2.	**Manual of Standards (MOS) for Aerodromes/Method of Working Plan (MOWP)**		
C.4.2.10.2.1.	The Contractor shall comply with the latest provisions of the Civil Aviation Authority of the Philippines (CAAP) Manual of Standards (MOS) for Aerodromes. A Method of Working Plan (MOWP) shall be submitted to CAAP prior to project implementation. The MOWP shall be in accordance with Section 10.11 of the CAAP MOS.		
C.4.2.10.3.	**EUROCAE ED 137 Compliance**		
C.4.2.10.3.1.	The supplied equipment IP-Based VCS shall be compliant to EUROCAE. The Bidder shall include in their Technical Proposal a compliance statement relative to the EUROCAE ED 137 Part 1 & Part 2.		
C.4.2.10.4.	**Airport Safety and Security**		
C.4.2.10.4.1.	The Contractor including its authorized personnel shall strictly comply/adhere with the Safety and Security requirements of the airport specially when entering the airport premises.		
C.4.2.10.4.2.	The Contractor shall be liable for the safety and security of its personnel during the installation/construction period.		
C.4.2.10.5.	**Site Inspection Certificate**		
C.4.2.10.5.1.	The Contractor shall secure a Certificate of Site Inspection from the ANS Facility-In-Charge of Legazpi Airport and submit it as part of the Technical Documents of the bid.		
C.5.	**Automatic Terminal Information Service (ATIS) System**		
C.5.1.	**General Requirements**		
C.5.1.1.	The CAAP intends to procure a fully-integrated Automatic Terminal Information Service (ATIS) System that shall be able to generate a voice message-based information of the actual METAR and runway status and broadcast this message via an audio channel continuously and repetitively.		
C.5.2.	**Controller Information and Control Systems**		
C.5.2.1.	**General Requirements**		
C.5.2.1.1.	The controller shall be able to view at his console vital information from different sources on a single and compact Touch Input Device		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	(TID) of at least 12 inches.		
C.5.2.2.2.	In order to support the controller in his tasks, all information shall be displayed in a user-friendly way.		
C.5.2.2.	**General Display Requirements**		
C.5.2.2.1.	For a controller (via TID) the system shall offer a function to change the brightness of the display.		
C.5.2.2.2.	For a controller (via TID) the system shall offer predefined brightness setting for day and night use, which can be set directly by the user.		
C.5.2.2.3.	For a controller (via TID) the system shall offer a function to change the key click volume.		
C.5.2.2.4.	For a controller (via TID) the system shall offer a function to deactivate the key click sound.		
C.5.2.2.5.	For a controller (via TID) the system shall offer a cleaning mode for the display, which allows touching the display without activating functions.		
C.5.2.2.6.	For a controller (via TID) the system shall offer a calibration function for the display.		
C.5.2.2.7.	The system shall offer a fixed text function to display a predefined text at the main screen.		
C.5.2.2.8.	The system shall provide a function to choose from a number of predefined fixed text messages.		
C.5.2.2.9.	The system shall support a function to switch between two display modes for the fixed text function:		
(a)	Standard		
(b)	Warn (displayed text should be highlighted)		
C.5.2.2.10.	The system shall be able to display up to 9 fixed text messages at the same time on the main screen.		
C.5.2.2.11.	The system shall support fixed text messages up to a length of 26 characters.		
C.5.2.2.12.	The system management shall offer a function to define fixed text messages.		
C.5.2.2.13.	The system shall offer a free text function to display a user definable text at a predefined place on the main screen. This text shall appear also on all other working positions.		
C.5.2.2.14.	For a TID client, the system shall provide a virtual keyboard for text input.		
C.5.2.2.15.	The system shall allow defining up to 3 free text messages.		
C.5.2.2.16.	The system shall support free text messages up to a length of 3lines/12 characters.		
C.5.2.2.17.	The system shall store the defined free text permanently and it shall be available after restart of the system.		
C.5.2.2.18.	The system shall offer a function to display info pages. The user can activate one of four pages on the main page. The selected info pages display a predefined text over the complete screen (scrolling shall be supported).		
C.5.2.2.19.	The system management shall provide a function to edit the text of the info pages.		
C.5.2.2.20.	All communication between components/application shall be logged and shall be stored for a configurable time period.		
C.5.2.2.21.	The system management shall provide a function to configure the time period for storing the log data (30 days-120 days, default 30days). This setting shall be valid after a new start-up.		
C.5.2.2.22.	Each component/application shall log important internal information (e.g. critical state changes, errors or special situations, invalid data, user inputs, start-up and shutdown, etc).		
C.5.2.2.23.	The system shall automatically compress log files that are older than 1 day.		
C.5.2.2.24.	The system shall provide a hierarchical structure of different Log Levels (Debug, Info, Warning, and Errors). The system shall only log the messages which fit to the configured log level or the any level		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	above (e.g. Info Mode also logs Warnings and Error messages).		
C.5.2.2.25.	The system management shall provide a function to configure the log level (debug, warning, info, error) for the complete system, which shall be applied without a restart.		
C.5.2.2.26.	The system management shall provide a function to configure the log level (debug, warning, info, error) for each single component, which shall be applied without a restart.		
C.5.2.2.27.	The system management shall offer a log file reader which provides access to the log data per component.		
C.5.2.2.28.	The system management shall provide a filter mechanism for log messages based on a free text input for the filter text.		
C.5.2.2.29.	The system management shall offer a function to poll the lifecycle state of all components (OK, problem, timeout) in a configurable time interval (e.g. 30 seconds).		
C.5.2.2.30.	The system management shall display the lifecycle state of all components (OK, problem, timeout).		
C.5.2.2.31.	The system management shall offer a function access the lifecycle state of all components (OK, problem, timeout) via a SNMP 3.0 Interface.		
C.5.2.2.32.	The system management shall provide more detailed information about the problem situation for the lifecycle state “problem”.		
C.5.2.2.33.	The system management shall monitor CPU load, disk and memory usage and present this information on a GUI and via a SNMP 3.0 interface.		
C.5.2.2.34.	The system management shall provide a function to restart or stop a one or all components/processes.		
C.5.2.2.35.	The system shall provide a function to check access rights for each working position. Following access rights shall be considered:		
(a)	Access to Application		
(b)	Configure display of Fixed Text		
(c)	Configure display of Free Text		
(d)	Block Runway		
(e)	Configuration Runway Direction		
C.5.2.2.36.	The system management shall provide a function to define individual access rights for each working position. Settings shall be valid after restart of working position.		
C.5.2.2.37.	The system shall be upgradable to a reliability concept without a single point of failure (besides interfaces and working position).		
C.5.2.2.38.	The system shall support up to 20 working positions.		
C.5.2.2.39.	Warning messages shall be indicated by a color-coded message text on the main screen of all working positions, and shall be visible at all times.		
C.5.2.2.40.	Error messages shall be indicated by a color-coded message text on the main screen of all working positions, and shall be visible at all times and accompanied by an acoustic alarm.		
C.5.2.2.41.	The system shall be based on a layered architecture to guarantee that a change in a lower layer (e.g. communication protocol to a sensor) does not affect all other layers.		
C.5.2.2.42.	The system shall consist of modular applications which are loosely coupled and which can be deployed independently from each other.		
C.5.2.2.43.	The system time shall be synchronized all over the system (including all types of clients), via NTP Protocol by a GPS clock (if present).		
C.5.2.2.44.	The system shall offer the ability to be connected to an external AWOS system for automatic data exchange.		
C.5.2.3.	**ATIS System**		
C.5.2.3.1.	The system shall be able to generate an ATIS Voice Message-based information of the actual METAR and runway status and broadcast this message via an audio channel periodically.		
C.5.2.3.2.	The ATIS message shall include but not limited to:		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
(a)	ATIS Code;		
(b)	Observation Time;		
(c)	Main Runway;		
(d)	Secondary Runway (optional);		
(e)	Visibility;		
(f)	Transition Level;		
(g)	Wind Speed (optional secondary);		
(h)	Wind Direction (optional secondary);		
(i)	RVR TDZ;		
(j)	Weather;		
(k)	Clouds;		
(l)	Temp/Dewpoint;		
(m)	QNH;		
(n)	Wind share;		
(o)	Trend;		
(p)	Comment.		
C.5.2.3.3.	The system shall provide a function to switch between manual and automatic operation modes.		
C.5.2.3.4.	In automatic mode the system shall automatically update the message elements and create a new ATIS Code of the ATIS message and generate and release a new ATIS message when a new METAR is received or the runway direction changes.		
C.5.2.3.5.	In manual mode the system shall update the message elements and create an ATIS Code of the ATIS message. Further on the system shall offer a function where the controller can edit the updated information and release the ATIS message manually.		
C.5.2.3.6.	The system shall provide an input validation function for the edit mode. The system shall validate each controller input and the data taken from the METAR. If an error is detected the system shall indicate this error to the controller.		
C.5.2.3.7.	The system shall only allow a message broadcast, if there are no errors in the message fields.		
C.5.2.3.8.	The system shall highlight ATIS message fields which are modified by the user.		
C.5.2.3.9.	The system shall offer a configuration option “Overwrite” for ATIS message broadcast. If the overwrite option is set, the system shall interrupt the current broadcasted message immediately in case of an ATIS message update. This option shall only be available in manual mode.		
C.5.2.3.10.	The system shall offer a configuration option “Wait” for ATIS message broadcast. If the wait option is set, the system shall delay the ATIS message update until the current broadcasted message is finished.		
C.5.2.3.11.	The system shall indicate a warning if the ATIS Message is not updated within a certain time span (30+5 minutes).		
C.5.2.3.12.	The system shall offer a function to prelisten to an ATIS voice message before the message is released.		
C.5.2.3.13.	The system shall display the actual and the next broadcasted messages in text format.		
C.5.2.3.14.	The system shall support a function to select one of 3 predefined alternate messages, which is broadcasted on the ATIS channel instead of the regular ATIS message.		
C.5.2.3.15.	The system shall support a function to deselect an alternate message, in this case the last ATIS message – if still valid- shall be broadcasted on the ATIS channel.		
C.5.2.3.16.	In case that there is no valid ATIS message for broadcast available, the system shall broadcast an error message on the ATIS channel (by default: The ATIS system is not available).		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.5.2.3.17.	The system shall indicate an error message if the generation of the ATIS speech messages fails.		
C.5.2.3.18.	The system shall monitor the audio broadcast channel, and indicate an error if no signal is detected on the channel.		
C.5.2.3.19.	The system shall provide an audio interface for the voice message output.		
C.5.2.4.	**Architecture**		
C.5.2.4.1.	The system shall offer single server architecture, but shall allow upgrading to double server architecture with a "parallel running" software concept.		
C.5.2.4.2.	The response time on user actions shall be less than two (2) seconds for 95% of all actions taken.		
C.5.2.5	**Environmental Requirements**		
C.5.2.5.1.	**Technical Conditions**		
C.5.2.5.1.1.	The system shall consist of hardware and software operated within the following conditions:		
(a)	Windows 10 Operating System or its equivalent		
(b)	Recording media: Random Access Memory (RAM)		
(c)	Recording message length: at least 180 seconds		
(d)	Voice system data encoding algorithm: minimum of 8kbit/sec sampling rate		
(e)	Voice bandwidth: 300-3000Hz		
(f)	Transmitter interface balance line: 600Ω		
(g)	Local speaker with digital volume control to monitor voice		
(h)	Output port for Radio transmitter and TX PTT control		
(i)	Broadcast message in ICAO standard format		
C.5.2.5.2.	**Operating Conditions**		
C.5.2.5.2.1.	The system shall suffer no degradation in performance when operated within the following conditions:		
C.5.2.5.2.2.	Ambient temperature range: +10°C to +40°C		
C.5.2.5.2.3.	Humidity: 20%-90% noncondensing		
C.5.2.5.3.	**Storage Conditions**		
C.5.2.5.3.1.	The system shall suffer no damage when stored, transported, or left idle (without power) under the following conditions:		
C.5.2.5.3.2.	Temperature range: 40°C to +60°C		
C.5.2.5.3.3.	Humidity: +40°C, 90% noncondensing		
C.5.2.5.4.	**Power Requirements**		
C.5.2.5.4.1.	The system shall be designed to operate with 230VAC ±15%, 48-62Hz		
C.5.3.	**50 Watts IP - Based VHF - AM Transmitter**		
C.5.3.1.	**General Requirements**		
C.5.3.1.1.	The Transmitter shall be installed in a compatible full height 19-inch communications rack.		
C.5.3.1.2.	The IP-Based Transmitter shall be designed to be operated either by remote or local control.		
C.5.3.1.3.	The IP-Based Transmitter for ATIS shall be designed in a single system.		
C.5.3.1.4.	The contractor shall integrate the ATIS Transmitter system with the VCS and VLS systems and assure that it is fully operational.		
C.5.3.1.5.	Automatic Level Compensation (ALC) circuit shall be provided for increasing average modulation degree without causing overmodulation.		
C.5.3.1.6.	Operating frequency shall be preset by switch-programmable synthesizer controlled oscillator.		
C.5.3.1.7.	Built-in meter or LCD display shall be provided in the front panel for routine checking, RF output power, power supply, modulation depth and VSWR.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.5.3.1.8.	Front panel of IP transmitter shall include a suitable jack for a handset, principal switches for: ON / OFF Power switch and PTT / Tone Switch.		
C.5.3.1.9.	The IP Transmitter shall be delivered with standard accessories (ex. Microphone, power supply, cable, etc.)		
C.5.3.1.10.	The IP radio equipment supplied shall be provided with PTT handheld microphone plus one (1) spare microphone. The PTT handheld microphones shall be OEM-approved and compatible with the supplied radio & IP-Based VCS.		
C.5.3.2.	**Performance Requirements**		
C.5.3.2.1.	Frequency Range : 117.975 to 137 MHz		
C.5.3.2.2.	Number of Preset Channel : programmable to at least ten (10) channels		
C.5.3.2.3.	Operational Frequency : Tunable within frequency range		
C.5.3.2.4.	Channel Spacing : 25 kHz, 8.33kHz		
C.5.3.2.5.	Emission Type : A3E		
C.5.3.2.6.	Frequency Setting : Synthesized controlled		
C.5.3.2.7.	Frequency Accuracy : ±1.0 ppm, from -20°C to +55°C		
C.5.3.2.8.	Spurious Emission : ≤-93 dB_c full output power		
C.5.3.2.9.	RF Output Power : 50 W configurable in steps (output power can be lowered to at least 10W) Monitoring Output: 600 Ω; 0 dBm at 90% modulation		
C.5.3.2.10.	Frequency Response : within 3 dB from 300 Hz to 3 kHz		
C.5.3.2.11.	Transmitter Noise : -145 dBc at 300 kHz from carrier		
C.5.3.2.12.	ALC levels : ± 15dB		
C.5.3.2.13.	VSWR : ≤ 2.0 automatic resume after return to nominal condition		
C.5.3.2.14.	MTBF : at least 25,000 hours		
C.5.3.2.15.	Power Supply Voltage : 220V AC, single-phase, 60Hz		
C.5.3.2.16.	Operation method: Press-to-talk		
C.5.3.2.17.	PTT terminal : Dry contact for remote indicator		
C.5.3.2.18.	Modulation depth : configurable up to 95% with ≤5% distortion		
C.5.3.2.19.	Lighting/Surge Protection : RF/Coaxial protection, maintenance free, multi-strike capable, weatherized construction, appropriate for the frequency range and power output		
C.5.3.2.20.	Antenna Impedance : 50 Ω		
C.5.3.2.21.	Antenna MTBF : 250,000 hours		
C.5.3.2.22.	Operating Temperature : up to 50°C		
C.5.3.2.23.	Humidity : ≤95% at 40°C		
C.5.3.2.24.	Connection/Network : Internet Protocol		
C.5.3.3.	**Omnidirectional Broad-band Dipole Antenna**		
C.5.3.3.1.	The antenna system that shall be provided must be a heavy duty, high power, omnidirectional broad-band antenna that has a capability to operate at airband frequencies (117.975-137MHz) and can withstand a minimum radiating power capacity of 300 Watts.		
C.5.3.3.2.	The antenna systems shall be supplied together with mounting brackets, booms/antenna mast, balun (balance to unbalance signal transformer), connectors and other ancillaries.		
C.5.3.3.3.	The omnidirectional broad-band antenna shall have a voltage standing wave ratio (VSWR) of ≤1.6 and minimum antenna gain of 0dBd.		
C.5.3.3.4.	The contractor shall supply an omnidirectional broad-band antenna with nominal impedance of 50Ω. The polarization shall be in vertical and has the ability to radiate/broadcast in an omnidirectional way.		
C.5.3.3.5.	The contractor shall supply a balun (balance to unbalance signal transformer) made from epoxy potted polyester enclosure.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.5.3.3.6.	The contractor shall supply a hot-dipped galvanized steel or equivalent noncorrosive mounting brackets for antenna.		
C.5.3.3.7.	The supplied omnidirectional broad-band antenna shall be able to withstand windspeed of up to 200kph at minimum wind load of 152N.		
C.5.3.3.8.	The radio antenna system shall propagate omnidirectionally in the horizontal plane with 5x5 audible coverage within 50NM and the indicated flight levels stated below requirement of coverage map. The bidder shall provide radio coverage map at 2000 feet, 5000 feet, 9000 feet, 11000 feet, 13000 feet, 15000 feet, and 20000 feet of the proposed design considering terrain around respective airports.		
C.5.3.4.	**RG-214 Coaxial Cable**		
C.5.3.4.1.	The contractor shall supply a coaxial cable with a mean characteristic impedance of 50Ω ± 2Ω.		
C.5.3.4.2.	The inner conductor shall be made from stranded silver plated copper with a minimum diameter of 0.75mm.		
C.5.3.4.3.	The dielectric of the supplied shall be solid polyethylene with a diameter of 7.2mm ± 0.15mm.		
C.5.3.4.4.	The braid of the coaxial cable shall be silver plated copper with a minimum diameter of 7.2mm ± 0.15mm.		
C.5.3.4.5.	The outer jacket of coaxial cable shall be 10.8mm ± 0.2 mm.		
C.5.3.4.6.	The supplied coaxial cable shall be able to operate at a maximum frequency of 11GHz.		
C.5.3.5.	**Transient Voltage Surge Suppressor (TVSS)**		
C.5.3.5.1.	The contractor shall supply a Transient Voltage Surge Suppressor (TVSS) device that shall divert the excess voltage and current from transient or surge into grounding wire and prevents it from flowing through the electrical and electronic equipment while at the same time allowing the normal voltage to continue along its path.		
C.5.3.5.2.	The surge protection device shall have minimum current handling capacity of 30KA.		
C.5.3.5.3.	The contractor shall supply transient surge protection device **per radio** that will serve as power line protection of the communications equipment.		
C.5.3.5.4.	The surge protector shall have minimum warranty of two (2) years from the date the project was accepted.		
C.5.3.5.5.	**Compliance Standards**		
C.5.3.5.5.1.	ED-137B ICAO Annex 10 Volume 3 European Standard HD 624 (Electromagnetic Compatibility) : EN 300676-1 : EN 301489 : E N 55022 *or its internationally recognized equivalent* (Electrical Safety) : in line with EN 60950 : in line with UL Std No 60950-1 *or its internationally recognized equivalent* (Protection Against Electrical Shock) : EN 60950-1 (FCC Certificates): FCC title 47, parts 87 and 15 (Telecom: RF Devices, Aviation services-aircraft band radios) *or its internationally recognized equivalent*		
C.5.3.6.	**Cavity Filter**		
C.5.3.6.1.	**General Requirements**		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.5.3.6.1.1.	The contractor shall supply a rack-mountable cavity filter for airband frequency (117.975-137MHz) for the radio supplied.		
C.5.3.6.1.2.	The contractor shall install the cavity filter in a rack ensuring for secure and only authorized access to the device.		
C.5.3.6.1.3.	The contractor shall provide the mounting kits (i.e. racks, connectors, accessories, and ancillaries and ensure that the radio system shall be fully functional.		
C.5.3.6.2.	**Performance Requirements**		
C.5.3.6.2.1.	Frequency Range : 117.975-137MHz		
C.5.3.6.2.2.	Maximum Input Power : 300W @ 1.0dB IL		
C.5.3.6.2.3.	Insertion Loss : Adjustable 0.4-2.0dB		
C.5.3.6.2.4.	Impedance : 50 Ω		
C.5.3.6.2.5.	VSWR (@ resonance) : <1.5		
C.5.3.6.2.6.	Connectors : N-female		
C.5.3.6.2.7.	Frequency Stability : Approx. 1.5 ppm/°C		
C.5.3.6.2.8.	Temperature Range : -30°C to +50°C RH-90% non-condensing		
C.5.4.	**IP-Based VHF - AM Aeronautical Receiver**		
C.5.4.1.	**General Requirements**		
C.5.4.1.1.	The IP-Based Receiver shall be installed in a compatible full height 19-inch communications rack.		
C.5.4.1.2.	The IP-Based Receiver shall be provided with a squelch On-Off switch and squelch level control including squelch terminal.		
C.5.4.1.3.	The IP-Based Receiver shall be designed to be operated either by remote or local control.		
C.5.4.1.4.	The IP-Based Receiver for ATIS shall be designed in a single system.		
C.5.4.1.5.	The contractor shall integrate the ATIS Receiver system with the VCS and VLS systems and assure that it is fully operational.		
C.5.4.1.6.	Side tone output circuit shall be provided for monitoring and connection to the Voice Logging System.		
C.5.4.1.7.	Operating frequency shall be preset by switch-programmable synthesizer controlled oscillator.		
C.5.4.2.	**Performance Requirements**		
C.5.4.2.1.	Frequency Range : 117.975 to 137 MHz		
C.5.4.2.2.	Number of preset channel : programmable to at least ten (10) channels		
C.5.4.2.3.	Channel Spacing : 25 kHz, 8.33kHz		
C.5.4.2.4.	Operating Frequency : Tunable within the frequency range		
C.5.4.2.5.	Frequency setting : Synthesizer controlled		
C.5.4.2.6.	RF input impedance : 50 Ω (nominal)		
C.5.4.2.7.	Sensitivity : ≤ -107 dBm @ 12dB SINAD		
C.5.4.2.8.	Image Freq Rejection : ≥ 100 dB		
C.5.4.2.9.	Max. input level without damage : +30dBm (1watt, 7.5 V_{rms})		
C.5.4.2.10.	Spurious Response : ≥ 80 dB		
C.5.4.2.11.	Cross modulation : ≥ 95 dB		
C.5.4.2.12.	Intermediate Frequency Rejection : ≥ 90 dB/		
C.5.4.2.13.	Adjacent Channel Rejection : ≥ 75 dB @25Khz spacing and ≥ 65 dB @ 8.33KHz spacing		
C.5.4.2.14.	AGC Characteristics : -120 dBm to +10 dBm		
C.5.4.2.15.	Line Output Impedance : 600 Ω balanced		
C.5.4.2.16.	Frequency Response : within 3 dB from 300 Hz to 3 kHz		
C.5.4.2.17.	Audio Distortion : ≤ 2%		
C.5.4.2.18.	Squelch Control : -107 dBm to –73 dBm		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.5.4.2.19.	MTBF :40,000 hours		
C.5.4.2.20.	Power Supply Voltage : 220V AC, single-phase, 60 Hz		
C.5.4.2.21.	Lightning/Surge Protection : RF/Coaxial protection, maintenance free, multi-strike capable, weatherized construction, appropriate for the frequency range and power output		
C.5.4.2.22.	Antenna Impedance : 50 Ω		
C.5.4.2.23.	Antenna VSWR capability : ≤2		
C.5.4.2.24.	Antenna MTBF :250,000h		
C.5.4.2.25.	Operating Temperature : up to 50°C		
C.5.4.2.26.	Humidity : ≤95% at 40°C		
C.5.4.2.27.	Connection/Network : Internet Protocol		
C.5.4.3.	**Omnidirectional Broad-band Dipole Antenna**		
C.5.4.3.1.	The antenna system shall be a heavy duty omnidirectional broadband antenna that operates at airband frequency (117.975-137MHz) and shall be able to meet/deliver the required performance, or better.		
C.5.4.3.2.	The antenna system shall be supplied together with mounting brackets, booms/antenna mast, balun (balance to unbalance signal transformer), connectors and other ancillaries.		
C.5.4.3.3.	The omnidirectional broad-band antenna shall have a voltage standing wave ratio (VSWR) of ≤1.6 and minimum antenna gain of 0dBd.		
C.5.5.3.4.	The contractor shall supply an omnidirectional broad-band antenna with nominal impedance of 50Ω. The polarization shall be vertical.		
C.5.5.3.5.	The contractor shall supply a balun (balance to unbalance signal transformer) made from epoxy potted polyester enclosure.		
C.5.5.3.6.	The contractor shall supply a hot-dipped galvanized steel or equivalent noncorrosive mounting brackets for antenna.		
C.5.5.3.7.	The supplied omnidirectional broad-band antenna shall be able to withstand windspeed of up to 200kph at minimum wind load of 152N.		
C.5.5.4.	**RG-214 Coaxial Cable**		
C.5.5.4.1.	The contractor shall supply a coaxial cable with a mean characteristic impedance of 50Ω ± 2Ω.		
C.5.5.4.2.	The inner conductor shall be made from stranded silver plated copper with a minimum diameter of 0.75mm.		
C.5.5.4.3.	The dielectric of the supplied shall be solid polyethylene with a diameter of 7.2mm ± 0.15mm.		
C.5.5.4.4.	The braid of the coaxial cable shall be silver plated copper with a minimum diameter of 7.2mm ± 0.15mm.		
C.5.5.4.5.	The outer jacket of coaxial cable shall be 10.8mm ± 0.2 mm.		
C.5.5.4.6.	The supplied coaxial cable shall be able to operate at a maximum frequency of 11GHz.		
C.5.5.5.	**Transient Voltage Surge Suppressor (TVSS)**		
C.5.5.5.1.	The contractor shall supply a Transient Voltage Surge Suppressor (TVSS) device that shall divert the excess voltage and current from transient or surge into grounding wire and prevents it from flowing through the electrical and electronic equipment while at the same time allowing the normal voltage to continue along its path.		
C.5.5.5.2.	The surge protection device shall have minimum current handling capacity of 30KA.		
C.5.5.5.3.	The contractor shall supply transient surge protection device **per radio** that will serve as power line protection of the communications equipment.		
C.5.5.5.4.	The surge protector shall have minimum warranty of two (2) years from the date the project was accepted.		
C.5.5.5.5.	**Compliance Standards**		
C.5.5.5.5.1.	ED-137B ICAO Annex 10 Volume 3 European Standard HD 624		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	(Electromagnetic Compatibility) : EN 300676-1 : EN 301489 : EN 55022 *or its internationally recognized equivalent* (Electrical Safety) : in line with EN 60950 : in line with UL Std No 60950-1 *or its internationally recognized equivalent* (Protection Against Electrical Shock) : EN 60950-1 (FCC Certificates): FCC title 47, parts 87 and 15 (Telecom: RF Devices, Aviation services-aircraft band radios) *or its internationally recognized equivalent*		
C.5.5.6.	**Cavity Filter**		
C.5.5.6.1.	**General Requirements**		
C.5.5.6.1.1.	The contractor shall supply a rack-mountable cavity filter for airband frequency (117.975-137MHz) for the radio supplied.		
C.5.5.6.1.2.	The contractor shall install the cavity filter in a rack ensuring for secure and only authorized access to the device.		
C.5.5.6.1.3.	The contractor shall provide the mounting kits (i.e. racks, connectors, accessories, and ancillaries and ensure that the radio system shall be fully functional.		
C.5.5.6.2.	**Performance Requirements**		
C.5.5.6.2.1.	Frequency Range : 117.975-137MHz		
C.5.5.6.2.2.	Maximum Input Power : 300W @ 1.0dB IL		
C.5.5.6.2.3.	Insertion Loss : Adjustable 0.4-2.0dB		
C.5.5.6.2.4.	Impedance : 50 Ω		
C.5.5.6.2.5.	VSWR (@ resonance) : <1.5		
C.5.5.6.2.6.	Connectors : N-female		
C.5.5.6.2.7.	Frequency Stability : Approx. 1.5 ppm/°C		
C.5.5.6.2.8.	Temperature Range : -30°C to +50°C RH-90% non-condensing		
C.6.	**Voice Logging System (VLS)**		
C.6.1.	**General Requirements**		
C.6.1.1.	The CAAP intends to procure a Voice Logging System (VLS) for Bicol (New Legaspi) International Airport ANF Facility to meet ICAO recording requirements for air-ground and ground-ground communication in aeronautical telecommunication and radiotelephony service.		
C.6.1.2.	The Project envisions a standardized automatic recording and logging capability for Bicol (New Legaspi) International Airport ATS Facility to serve as legal evidence in incident/accident evaluation and investigation.		
C.6.1.3.	The VLS that CAAP intends to procure shall be a brand new and complete recording and logging system.		
C.6.1.4.	The VLS shall be capable of recording and storing information from its IP, analog inputs, and logs user activities on the system itself.		
C.6.1.5.	The system shall be capable of recording all operational voice communications.		
C.6.1.6.	The recorder shall be delivered complete with recording media and manuals/handbooks as part of the standard package.		
C.6.1.7.	Recording shall be made closest to the source as much as possible to avoid loss of information.		
C.6.1.8.	The VLS shall be sixteen (16) channels in a redundant configuration.		
C.6.1.9.	The VLS shall be installed together in a compatible full height 19-		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	inch communications rack.		
C.6.1.10.	All connectors and interface requirements to integrate the VLS to the Voice Communication Switch, Radios, Telephones, shall be supplied and provided.		
C.6.2.	**Performance Requirements**		
C.6.2.1.	**Configuration and Capacity**		
C.6.2.1.1	The Voice Recording and Replay System to be delivered shall consist of the following:		
(a)	A duplicated Voice Recording System - vital components (processing units, storage units, power supply system etc.) of the Voice Recording System shall be duplicated and shall operate in parallel mode.		
(b)	All components of the Recording System shall be monitored and administered by a single Supervision Monitoring and Control workstation. The monitoring and control workstation shall be scalable to handle expansion of the recording system.		
(c)	A Replay (Play Back) Unit shall be scalable. Playback shall be possible from both the parallel Recording Systems.		
(d)	The System to be delivered shall be able to handle simultaneous recording of sixteen (16) channels.		
(e)	A hardware exchange, upgrade and configuration shall be possible during full operation.		
C.6.2.2.	**Storage Media**		
C.6.2.2.1.	The recorder shall consist of recording and playback module and Network Access Storage (NAS) Device with at least 1TB Storage Capacity for archiving.		
C.6.2.2.2.	The system shall consist of two storage media types: VLS storage media and archive storage media. The VLS storage media shall allow replays of recent events to be made. The archive storage media shall be produced autonomously and shall record latest events before the VLS storage media recording is erased and/or overwritten.		
C.6.2.2.3.	The time period per archive media shall be configurable.		
C.6.2.2.4.	The VLS storage media shall allow simultaneous recording and replay, and is intended to provide rapid access. The access shall be either for direct instant replay or immediately when the recording is finished.		
C.6.2.2.5.	RAID configured HDD shall be used as standard digital VLS storage media.		
C.6.2.2.6.	It shall be possible to perform replays of recordings held on the VLS storage media to a number of positions in the operational and technical rooms and to a dedicated replay station.		
C.6.2.2.7.	The simultaneous replay of (5) channels shall be the minimum.		
C.6.2.2.8.	Export of specific recordings to another storage media for offline post processing shall be supported.		
C.6.2.2.9.	The long term or archive media is intended for long term retention of at least 30 days according to the ICAO regulations in anticipation of possible incident investigation.		
C.6.2.2.10.	It shall be possible to synchronize the voice recordings with other recordings, to allow simultaneous replay on the foreseen Controller Working Positions (CWPs). It shall also be possible to replay archive material at the dedicated replay station.		
C.6.2.2.11.	The voice recordings shall contain the necessary time codes or information. The archive media shall have a capacity of at least 1000 channel-hours. There shall be no break in recording while storage media modules are exchanged and during archiving and replay activities.		
C.6.2.2.12.	A means shall be provided to uniquely identify each recording produced by listing the input source(s) recorded along with details		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	of the time and location on which particular equipment the source of recording originated from for the purpose of media management.		
C.6.2.2.13.	Network Access Storage (NAS) Device with at least 1TB Storage Capacity for archiving media shall be provided which can be used vendor-independent on any common system.		
C.6.2.2.14.	Total Recorder HDD size shall not be less than two (2) Terabyte.		
C.6.2.3.	**Voice and Noise Activity Recording and Silence Replay**		
C.6.2.3.1.	Recording during silent periods is not required.		
C.6.2.3.2.	The system shall be able to reconstruct the actual silent period during playback.		
C.6.2.3.3.	Each audio channel shall be equipped with a voice-activated switch (VOX) or voice detection circuit.		
C.6.2.3.4.	The system shall only record voice and noise activity, but shall guarantee the actual duration of silence between periods of activity to be recovered during replay, without any loss of information.		
C.6.2.3.5.	Proper time stamping shall be provided for all recordings.		
C.6.2.3.6.	VOX switch-on time shall not be more than 10 msec. VOX switch-off time shall be adjustable between 1 and 3 seconds.		
C.6.2.3.7.	The Bidder shall make sure that no voice information will be lost at actual start of recording as at the beginning of most radio transmissions the aircraft's call sign is contacted.		
C.6.2.3.8	To ensure complete recording of any audio signal the system shall provide a configurable time span of pre-recorded audio signal before the signal detection to be added to the recording.		
C.6.2.3.9.	Additional data like timestamp of call setup, called and calling party number and other available information in the signaling protocol shall be stored in addition to the recorded conversation. This data shall also be stored if the call is not answered and no associated audio file is available. This provides the possibility of identifying un-answered calls or determining the ring time before a call is answered.		
C.6.2.3.10.	Organization of the recorded files by time of the beginning of the conversation, time of the end of the conversation, number of the channel and assigned name of the channel shall be possible.		
C.6.2.4.	**Integrity of Recording**		
C.6.2.4.1.	Integrity of recording shall be guaranteed in all cases, both for voice digitizing as well as for the digital storage of voice data.		
C.6.2.4.2.	Voice digitizing shall be done according to G.711 algorithm. Long time storage shall be possible on a high-quality compression algorithm. Preference is given to True Speech Codec. Any other algorithm must be properly documented and references should be provided on distortion free application.		
C.6.2.4.3.	All data shall be stored distortion-free and can be easily reproduced without any possibility of outside manipulation or illegal intrusion by system operators.		
C.6.2.4.4.	All operations shall be carried out by means of passwords with different levels of classifications.		
C.6.2.4.5.	Storage access shall only be possible at the highest level, by a system supervisor and in accordance with organizational procedures.		
C.6.2.4.6.	The system shall have the capability to "lock" recorded data files thereby preventing them from being overwritten.		
C.6.2.4.7.	It shall be possible to configure Automatic Gain Control (AGC) on per channel basis. Via AGC it shall be possible to set calls to a uniform volume, call portions that exceed the set reference level shall be attenuated, those who do not reach the threshold level shall be amplified.		
C.6.2.4.8.	Aside from Automatic Gain Control, there shall be the possibility of amplifying weak incoming signals by a configurable linear value. This function shall be configurable on channel level.		
C.6.2.5.	**Time Code System**		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.6.2.5.1.	Each unit should have its own time code system consisting of a time stamping to allow the recording and display of time reference signals on the recorders.		
C.6.2.5.2.	Each unit shall be provided with NTP synchronization capability.		
C.6.2.5.3.	Recording time code shall be in UTC format.		
C.6.2.5.4.	A time code shall exist on the recorded voice message for synchronization with other equipment (Monitoring and Control Terminals, console UTC clock) and for the purpose of complete identification of recorded data.		
C.6.2.6.	**Replay (Play Back) Unit**		
C.6.2.6.1.	For replay purposes, a separate play-back unit shall be provided.		
C.6.2.6.2.	It shall be verified and displayed that the recorded audio is free of manipulation.		
C.6.2.6.3.	Fast selection of a record by specified time, specified channel, duration of the conversation or the combination of the three shall be possible. List of conversations open to replay shall be provided.		
C.6.2.6.4.	It shall be possible to replay selected conversation within a specified time frame with/without silent periods.		
C.6.2.6.5.	Replay of current conversations shall be supported.		
C.6.2.6.6.	The Replay (play-back) system shall have the facility for simultaneous play-back of at least five (5) channels either from short or long time storage media. Selection and deselecting of any individual channel shall be possible.		
C.6.2.6.7.	The Replay (play-back) system shall be provided with a time code reader with automatic-search feature. Search of a location shall be with an accuracy of 1 second related to the pre-recorded time information. Time needed to synchronize on a selected pre-set time shall not be more than 20 seconds.		
C.6.2.6.8.	It shall be possible to position the start of the playback within a graphical view of the recording on a time line.		
C.6.2.6.9.	Loop replay of a specified period shall be possible.		
C.6.2.6.10.	Export of specific recordings to another storage media for offline post processing shall be supported.		
C.6.2.6.11.	The system shall provide Menu-driven search and sorting of stored information according to various criteria:		
(a)	Date, Time		
(b)	Channel number/name or Position-name		
(c)	Calling and called party numbers		
C.6.2.6.12.	It shall be possible to skip during play-back with adjustable interval going forward or reverse.		
C.6.2.6.13.	It shall be possible to skip to the beginning of the next/previous recording.		
C.6.2.6.14.	It shall be possible to place markers at dedicated time position and time frames including notes in graphical Wave-File View in Playback Application. Those markers including search and sorting information shall be possible to store as specific view that can be reloaded later in another session of the replay application.		
C.6.2.6.15.	The Playback Application shall provide a visual indication per channel of the periods with audio.		
C.6.2.6.16.	It shall be possible to regulate the playback volume.		
C.6.2.6.17.	It shall be possible to start replay of multi channels on an exact time.		
C.6.2.6.18.	The execution of playback for any number of files shall not affect or interrupt the ongoing recording process of the system.		
C.6.2.7.	**Operational Supervision and Control System**		
C.6.2.7.1.	It shall be possible to supervise and operate the recording system from a centrally placed supervisor workstation (PC) connected to the system through a network interface.		
C.6.2.7.2.	The recording system shall be protected with the System Administrator's password. System Administrator shall be able to		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
	make all kind of changes in system configuration, to maintain the system, to control all functional elements and to playback recorded material. The system administrator shall have the full control of the recording system. The recording system shall not have any parts restricted for the system administrator.		
C.6.2.7.3.	The system configuration application shall be supported by wizard based menus for fast and easy configuration.		
C.6.2.7.4.	The Supervision Monitoring and Control System shall provide a web-based Graphical User Interface representing a whole picture of the Voice Logging System. A failure of one component or sub-component shall indicate a change of color representation for the particular component. All system management facilities shall include active and appropriate indications of alarm conditions.		
C.6.2.7.5.	All configuration changes shall be traced in a log file including action, time and user.		
C.6.2.7.6.	A Human Machine Interface (HMI) shall be provided by the software running on supervision terminal. The operating functions of the recording system shall be performed with the use of computer driven menus using commercial off the shelf (COTS) parts.		
C.6.2.7.7.	The System Monitoring shall be available via Web Technology to enable access to the system status from any workstation that has a Web-browser installed.		
C.6.2.7.8.	The configuration (esp. the initial configuration) shall be stored in a database like SQL or other common tables. It shall be possible to backup/restore configurations by authorized personnel.		
C.6.2.7.9.	Playback operations and parameter settings shall be possible from the Operational Monitoring and Control workstation.		
C.6.2.8.	**System Status and Monitoring**		
C.6.2.8.1.	In any case, it shall be demonstrated that the recorded information is secured against any tampering.		
C.6.2.8.2.	Authorized personnel shall only erase recorded data after confirmation. Separate password protected authorization level shall be introduced for different system functions that control the use of whole applications and even detailed functions from viewing, changing, and deleting.		
C.6.2.8.3.	Authentication to the system shall be user-based to identify activities on a personal level.		
C.6.2.8.4.	Security of recording shall be given by continuous checking of the recording process.		
C.6.2.9.	**Compliance to Standards**		
C.6.2.9.1.	Eurocae ED 137B or its internationally recognized equivalent		
C.6.3.	**WORK SCHEDULE**		
C.6.3.1.	The winning bidder shall be issued a Notice of Award (NOA) upon completion of the procurement.		
C.6.3.2.	The Bidder shall include in their proposal a project activity schedule for the project starting from the Notice to Proceed (NTP).		
C.6.3.3.	CAAP specifies that the project be **completed within 365 calendar days**.		
C.6.3.4.	The preliminary Project Management Schedule shall be as detailed as possible highlighting the following project component activities:		
(a)	Equipment Manufacturing;		
	VLS		
(b)	Shipment and Delivery;		
	VLS		
(c)	Installation;		
	VLS		
(d)	Testing;		
	Site Acceptance Test		
	Reliability Test		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
(e)	Training;		
	Local (On-site)		
(f)	Final Configuration;		
(g)	Reliability Test;		
(h)	Submission of As-Built Drawings /Plans;		
(i)	Project Completion;		
(j)	Defect Liability Period (1 year);		
(k)	Warranty Period (1 year).		
C.6.4.	**SYSTEMS SUPPORT**		
C.6.4.1.	**Quality Plan**		
C.6.4.1.1.	The Contractor shall be responsible for the quality assurance, configuration management, and acceptance testing being in accordance with known standards and procedures.		
C.6.4.2.	**Maintenance Plan**		
C.6.4.2.1.	The Contractor shall submit **together with the Technical Proposal** a plan on how the Contractor/OEM will conduct maintenance services during the warranty period and during the life cycle of the system. The plan shall detail the procedures:		
(a)	of repair/replacement of defective hardware components;		
(b)	of software maintenance and repair;		
(c)	of help desk support;		
(d)	management of components obsolescence.		
C.6.4.3.	**Training Plan**		
C.6.4.3.1.	The Contractor shall submit together with the Technical Proposal a plan for each of the identified training courses that include a description of the following elements:		
(a)	Type of training;		
(b)	Course Title;		
(c)	Course Objectives;		
(d)	Course Contents;		
(e)	Duration in Days;		
(f)	Location;		
(g)	Maximum number of Trainees per course;		
(h)	Training Materials and Training Aids.		
C.6.4.3.2.	Training courses and materials shall enable the trainees to later instruct other technical staff according to the obtained knowledge.		
C.6.4.3.3.	Training courses shall be of a high standard and apply the latest teaching techniques.		
C.6.4.3.4.	Trainings shall be conducted for the maintenance (hardware/software) and operation (software) of the VLS.		
C.6.4.3.5.	All training materials and training aids utilized shall be provided by the supplier in softcopy and hardcopy.		
C.6.4.3.6.	The CAAP requires VLS local (on-site) training for ANS personnel.		
C.6.4.3.7.	The OEM shall issue a Training Certificate to ANS personnel who attended the training. The Certificate shall indicate the following: (a) name of the trainee, (b) course title including sub-topics, (c) place of training, (d) date and duration of the training with the OEM company logo.		
C.6.4.4.	**Documentations**		
C.6.4.4.1.	Aside from training materials, the following documents **shall** be delivered:		
(a)	2 sets of operations manual;		
(b)	2 sets of maintenance (hardware/software) manual;		
(c)	2 sets of software manual;		
(d)	2 sets of inventory list of equipment to include spare parts:		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
(e)	Softcopy of all delivered documents **shall** be provided in a CD or USB media.		
C.6.5.	**INSTALLATION AND TESTING**		
C.6.5.1.	**Delivery, Storage and Handling**		
C.6.5.1.1.	The Equipment shall be protected against extreme temperature and humidity, and shall be stored in a conditioned place to prevent corrosion and/or contamination.		
C.6.5.1.2.	The Equipment shall be wrapped up in dust-tight covers and kept away from construction activities in order to be protected against dust and debris.		
C.6.5.1.3.	Contractor shall be responsible for correct storage of the equipment under the conditions as specified.		
C.6.5.1.4.	Contractor shall deliver, store, and handle the equipment and materials in accordance with the manufacturer's recommendations.		
C.6.5.1.5.	Contractor shall be responsible for the delivery/shipment of equipment from the Contractor's premise up to the installation site.		
C.6.5.2.	**Engineering Personnel**		
C.6.5.2.1.	The CAAP requires that only OEM qualified personnel will do the installations/commissioning of the equipment. CAAP requires submission of Certificate of Authorization from the OEM of the equipment.		
C.6.5.2.2.	The Bidder shall submit together with its Technical bid resumés of qualified installers/personnel who will be involved in the Project. The Bidder shall specify/describe the responsibilities of these personnel with regard to the implementation of the project.		
C.6.5.3.	**Installation and Site Acceptance Testing**		
C.6.5.3.1.	A Site Acceptance Test shall be conducted after the completion of the installation. The Contractor shall be responsible for notifying the CAAP that the installation is complete and that a Site Acceptance Test is to be conducted.		
C.6.5.3.2.	The environmental (room) condition required and the power consumption of the whole system **shall** be defined by the supplier.		
C.6.5.3.3.	The supplier **shall** submit for approval a detailed Site Acceptance Test (SAT) plan (1 set) four weeks before the beginning of the SAT.		
C.6.5.3.4.	The SAT plan **shall** consist of a subset of functional tests, plus specific tests taking into account the site environment.		
C.6.5.3.5.	The SAT plan **shall** consist of a set of functional and performance tests aiming at validating the compliance of the system with this specification.		
C.6.5.3.6.	SAT **shall** be performed for all hardware and software deliverables.		
C.6.5.3.7.	At the beginning of the SAT, the contractor **shall** provide introduction/briefing and the baseline for the installed system.		
C.6.5.3.8.	During the SAT, four (4) sets of Site Acceptance Test (SAT) plan shall be given to the CAAP.		
C.6.5.3.9.	Each test executed at the SAT **shall** be described on one single page including at least the following information:		
(a)	test identifier and title;		
(b)	the procedure to follow for performing the test;		
(c)	the system configuration required for the test;		
(d)	the expected result(s) of the test;		
(e)	the way to control whether the test has succeeded or not;		
(f)	comments, where appropriate.		
C.6.5.3.10.	A **Reliability Test** shall be conducted for a period of **2 days** (no alarms of any type observed for 2 continuous days) by the Contractor after a successful Site Acceptance Testing.		
C.6.5.3.11.	After the conduct of a successful Reliability Test (no alarms of any type observed for 2 continuous days), the Contractor shall immediately inform CAAP of its completion and to schedule/conduct a Commissioning of the new VLS.		

Section	Specification	Compliance Statement	Reference to support statement (also INDICATE PAGE No.)
C.6.5.4.	**Project Completion**		
C.6.5.4.1.	A Certificate of Project Completion shall be issued by CAAP to the Contractor upon successful completion of the Project.		
C.6.5.4.2.	The following documents (submitted in a binder with corresponding tabs) shall be the attachment for the approval of the Certificate of Project Completion:		
(a)	Copy of approved Contract including the Terms of Reference;		
(b)	Project Progress Report;		
(c)	Training Report including photocopy of the training certificates issued;		
(d)	Site Acceptance Test Report;		
(e)	Operation/User and Service Manuals;		
(f)	As-Built Drawings;		
(g)	Inventory of newly installed equipment;		
(h)	Reliability Test Result.		
C.6.5.5.	**Defect Liability Period and Warranty**		
C.6.5.5.1.	The CAAP Requires one (1) year Defect Liability Period and after which a one (1) year Warranty Period for both software and hardware components.		
C.6.5.5.2.	The Defect Liability Period (DLP) shall start after the date of issuance of the Certificate of Project Completion by CAAP, wherein all of the works were executed, completed by the Contractor as per contract.		
C.6.5.5.3.	The Contractor shall be responsible for the shipment of defective parts to the Manufacture and vice-versa. Cost of which shall be borne by the Contractor for the duration of the DLP and Warranty periods.		
C.6.6.	**OTHER REQUIREMENTS**		
C.6.6.1.	**Permits**		
C.6.6.1.1.	The Contractor shall be responsible for securing all necessary permits (i.e. Electrical Permits, Permit to Import, NTC, Security Pass, other local permits, etc.) from respective offices that may be necessary for the installation of the equipment at site. The cost of acquiring such permits including its processing shall be borne by the Contractor.		
C.6.7.1.	**MOS for Aerodromes/Method of Working Plan (MOWP)**		
C.6.7.1.1.	The Contractor shall comply with the latest provisions of the Civil Aviation Authority of the Philippines (CAAP) Manual of Standards (MOS) for Aerodromes. A Method of Working Plan (MOWP) shall be submitted to CAAP prior to project implementation. The MOWP shall be in accordance with Section 10.11 of the CAAP MOS.		
C.6.8.1.	**Airport Safety and Security**		
C.6.8.1.1.	The Contractor including its authorized personnel shall strictly comply/adhere with the Safety and Security requirements of the airport specially when entering the airport premises.		
C.6.8.1.1.	The Contractor shall be liable for the safety and security of its personnel during the installation/construction period.		
C.6.9.1.	**Site Inspection Certificate**		
C.6.9.1.1.	The Contractor shall secure a Certificate of Site Inspection from the ANS Facility-In-Charge of Legazpi Airport and submit it as part of the Technical Documents of the bid.		
	END OF TECHNICAL SPECIFICATION		

Section VIII. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

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

Technical Documents

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

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

☐ (d) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;
or
Original copy of Notarized Bid Securing Declaration; **and**

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

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

Financial Documents

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

Class "B" Documents

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

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

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

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

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

II. FINANCIAL COMPONENT ENVELOPE

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

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

REVISED ANNEX A – ITB 10.1 Form

Name of the Project:_____

Name of Bidder:_____

Calendar Year: _____

(1)	(2)	(3)	(3.1)	(3.2)	(4)	(4.1)
Item	Country of origin	Description	Brand	Type / Model / Version	Quantity	Unit

_____ _____

[signature] *[in the capacity of]*

Duly authorized to sign Bid for and on behalf of_____

Date _____.

NOTE: All equipment/items offered must be reflected in this form.
Columns 3.1 & 3.2 for applicable items.

CERTIFICATE OF SITE INSPECTION

This is to CERTIFY that *(Bidder's Name/Bidder's Representative)*, *(Position)* of *(Company Name)*, has conducted the required Site Inspection for the bidding of the project ***"(Name of Project)"*** at *(Airport/Address)*.

Issued this *(date)*.

_____-
_____-
_____

Facility Representative **In-Charge/Authorized**

CERTIFICATION AND UNDERTAKING

I, [Name of Authorized Representative], of legal age, Filipino, with residence at [Address], in my capacity as the duly authorized representative of [Name of Bidder] (the "Bidder"), after having been duly sworn in accordance with law, do hereby depose and state:

1. That I am the authorized representative of the Bidder for the project [Name of Project] (the “Project”) and as such, I am fully authorized to make this Certification and Undertaking for and on behalf of the Bidder;

2. That I hereby certify and confirm that I have either attended the Pre-Bid Conference conducted for the Project or have duly watched the recorded video thereof, and that I have been given the opportunity to raise and clarify any concerns, issues, or inquiries regarding the bidding documents, instructions, and project requirements during the said Pre-Bid Conference or within the period allowed before the submission and opening of bids;

3. That I further certify and confirm that I have thoroughly reviewed and understood the bidding documents, including all the terms, conditions, and requirements stated therein, and that the Bidder, through its undersigned representative, has no further comments, objections, or reservations regarding the said project requirements;

4. That I undertake and affirm that the Bidder acknowledges the completeness and sufficiency of the bidding documents, and accepts all the terms, conditions, and requirements thereof as binding upon the Bidder;

5. That I execute this Certification and Undertaking freely and voluntarily, with full knowledge and understanding of the legal consequences thereof, for the purpose of complying with the requirements of the procuring entity for the submission of bids in accordance with the provisions of Republic Act No. 9184, otherwise known as the “Government Procurement Reform Act,” and its Implementing Rules and Regulations.

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of _____, 2024, at _____, Philippines.

[Name of Authorized Representative]
[Position]
[Name of Bidder]

SUBSCRIBED AND SWORN to before me this ___ day of _____, 2024, at _____, Philippines, affiant exhibiting to me his/her [ID Details of Authorized Representative].

NOTARY PUBLIC
Doc. No. ____
Page No. ____
Book No. ____
Series of 2024.

Republic of the Philippines

gppb

Government Procurement Policy Board

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