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INVITATION TO BID

Supply and Installation of AM Broadcast System

ITB No.: ITB/FJI/JPN/003/20

Project: Enhancing Disaster and Climate Resilience in the Republic of Palau through improved Disaster Preparedness and Infrastructure

Country: Fiji

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Section 1. Letter of Invitation

The United Nations Development Programme (UNDP) hereby invites you to submit a Bid to this Invitation to Bid (ITB) for the above-referenced subject.

This ITB includes the following documents and the General Terms and Conditions of Contract which is inserted in the Bid Data Sheet:

- Section 1: This Letter of Invitation
- Section 2: Instruction to Bidders
- Section 3: Bid Data Sheet (BDS)
- Section 4: Evaluation Criteria
- Section 5: Schedule of Requirements and Technical Specifications
- Section 6: Returnable Bidding Forms
 - Form A: Bid Submission Form
 - Form B: Bidder Information Form
 - Form C: Joint Venture/Consortium/Association Information Form
 - Form D: Qualification Form
 - Form E: Format of Technical Bid
 - Form F: Price Schedule

If you are interested in submitting a Bid in response to this ITB, please prepare your Bid in accordance with the requirements and procedure as set out in this ITB and submit it by the Deadline for Submission of Bids set out in Bid Data Sheet.

Please acknowledge receipt of this ITB by sending an email to procurement.fj@undp.org, indicating whether you intend to submit a Bid or otherwise. This will enable you to receive amendments or updates to the ITB. Should you require further clarifications, kindly communicate with the contact person/s identified in the attached Data Sheet as the focal point for queries on this ITB.

UNDP looks forward to receiving your Bid and thank you in advance for your interest in UNDP procurement opportunities.

Sincerely,

UNDP Pacific Office in Fiji

Procurement Unit

Section 2. Instruction to Bidders

GENERAL PROVISIONS

1. Introduction	<p>1.1 Bidders shall adhere to all the requirements of this ITB, including any amendments made in writing by UNDP. This ITB is conducted in accordance with the UNDP Programme and Operations Policies and Procedures (POPP) on Contracts and Procurement which can be accessed at https://popp.undp.org/SitePages/POPPBSUnit.aspx?TermID=254a9f96-b883-476a-8ef8-e81f93a2b38d</p> <p>1.2 Any Bid submitted will be regarded as an offer by the Bidder and does not constitute or imply the acceptance of the Bid by UNDP. UNDP is under no obligation to award a contract to any Bidder as a result of this ITB.</p> <p>1.3 UNDP reserves the right to cancel the procurement process at any stage without any liability of any kind for UNDP, upon notice to the bidders or publication of cancellation notice on UNDP website.</p> <p>1.4 As part of the bid, it is desired that the Bidder registers at the United Nations Global Marketplace (UNGM) website (www.ungm.org). The Bidder may still submit a bid even if not registered with the UNGM. However, if the Bidder is selected for contract award, the Bidder must register on the UNGM prior to contract signature.</p>
2. Fraud & Corruption, Gifts and Hospitality	<p>2.1 UNDP strictly enforces a policy of zero tolerance on proscribed practices, including fraud, corruption, collusion, unethical or unprofessional practices, and obstruction of UNDP vendors and requires all bidders/vendors observe the highest standard of ethics during the procurement process and contract implementation. UNDP's Anti-Fraud Policy can be found at http://www.undp.org/content/undp/en/home/operations/accountability/audit/office_of_audit_andinvestigation.html#anti</p> <p>2.2 Bidders/vendors shall not offer gifts or hospitality of any kind to UNDP staff members including recreational trips to sporting or cultural events, theme parks or offers of holidays, transportation, or invitations to extravagant lunches or dinners.</p> <p>2.3 In pursuance of this policy, UNDP:</p> <p>(a) Shall reject a bid if it determines that the selected bidder has engaged in any corrupt or fraudulent practices in competing for the contract in question;</p> <p>(b) Shall declare a vendor ineligible, either indefinitely or for a stated period, to be awarded a contract if at any time it determines that the vendor has engaged in any corrupt or fraudulent practices in competing for, or in executing a UNDP contract.</p> <p>2.4 All Bidders must adhere to the UN Supplier Code of Conduct, which may be found at http://www.un.org/depts/ptd/pdf/conduct_english.pdf</p>
3. Eligibility	<p>3.1 A vendor should not be suspended, debarred, or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization. Vendors are therefore required to disclose to UNDP whether they are subject to any sanction or temporary suspension imposed by these organizations.</p> <p>3.2 It is the Bidder's responsibility to ensure that its employees, joint venture members, sub-contractors, service providers, suppliers and/or their employees meet the eligibility requirements as established by UNDP.</p>
4. Conflict of Interests	<p>4.1 Bidders must strictly avoid conflicts with other assignments or their own interests, and act without consideration for future work. Bidders found to have a conflict of interest shall be disqualified. Without limitation on the generality of the above, Bidders, and any of their affiliates, shall be considered to have a conflict of interest with one or more parties in this solicitation process, if they:</p> <p>a) Are or have been associated in the past, with a firm or any of its affiliates which have been engaged by UNDP to provide services for the preparation of the design, specifications, Terms of Reference, cost analysis/estimation, and other</p>

	<p>documents to be used for the procurement of the goods and services in this selection process;</p> <p>b) Were involved in the preparation and/or design of the programme/project related to the goods and/or services requested under this ITB; or</p> <p>c) Are found to be in conflict for any other reason, as may be established by, or at the discretion of UNDP.</p> <p>4.2 In the event of any uncertainty in the interpretation of a potential conflict of interest, Bidders must disclose to UNDP, and seek UNDP's confirmation on whether or not such conflict exists.</p> <p>4.3 Similarly, the Bidders must disclose in their Bid their knowledge of the following:</p> <p>a) If the owners, part-owners, officers, directors, controlling shareholders, of the bidding entity or key personnel who are family members of UNDP staff involved in the procurement functions and/or the Government of the country or any Implementing Partner receiving goods and/or services under this ITB; and</p> <p>b) All other circumstances that could potentially lead to actual or perceived conflict of interest, collusion or unfair competition practices.</p> <p>Failure to disclose such an information may result in the rejection of the Bid or Bids affected by the non-disclosure.</p> <p>4.4 The eligibility of Bidders that are wholly or partly owned by the Government shall be subject to UNDP's further evaluation and review of various factors such as being registered, operated and managed as an independent business entity, the extent of Government ownership/share, receipt of subsidies, mandate and access to information in relation to this ITB, among others. Conditions that may lead to undue advantage against other Bidders may result in the eventual rejection of the Bid.</p>
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B. PREPARATION OF BIDS

5. General Considerations	<p>5.1 In preparing the Bid, the Bidder is expected to examine the ITB in detail. Material deficiencies in providing the information requested in the ITB may result in rejection of the Bid.</p> <p>5.2 The Bidder will not be permitted to take advantage of any errors or omissions in the ITB. Should such errors or omissions be discovered, the Bidder must notify the UNDP accordingly.</p>
6. Cost of Preparation of Bid	<p>6.1 The Bidder shall bear all costs related to the preparation and/or submission of the Bid, regardless of whether its Bid is selected or not. UNDP shall not be responsible or liable for those costs, regardless of the conduct or outcome of the procurement process.</p>
7. Language	<p>7.1 The Bid, as well as any and all related correspondence exchanged by the Bidder and UNDP, shall be written in the language (s) specified in the BDS.</p>
8. Documents Comprising the Bid	<p>8.1 The Bid shall comprise of the following documents and related forms which details are provided in the BDS:</p> <p>a) Documents Establishing the Eligibility and Qualifications of the Bidder;</p> <p>b) Technical Bid;</p> <p>c) Price Schedule;</p> <p>d) Bid Security, if required by BDS;</p> <p>e) Any attachments and/or appendices to the Bid.</p>
9. Documents Establishing the Eligibility and Qualifications of the Bidder	<p>9.1 The Bidder shall furnish documentary evidence of its status as an eligible and qualified vendor, using the Forms provided under Section 6 and providing documents required in those forms. In order to award a contract to a Bidder, its qualifications must be documented to UNDP's satisfaction.</p>
10. Technical Bid Format and Content	<p>10.1 The Bidder is required to submit a Technical Bid using the Standard Forms and templates provided in Section 6 of the ITB.</p> <p>10.2 Samples of items, when required as per Section 5, shall be provided within the time</p>

	<p>specified and unless otherwise specified by the Purchaser, at no expense to the UNDP. If not destroyed by testing, samples will be returned at Bidder's request and expense, unless otherwise specified.</p> <p>10.3 When applicable and required as per Section 5, the Bidder shall describe the necessary training programme available for the maintenance and operation of the equipment offered as well as the cost to the UNDP. Unless otherwise specified, such training as well as training materials shall be provided in the language of the Bid as specified in the BDS.</p> <p>10.4 When applicable and required as per Section 5, the Bidder shall certify the availability of spare parts for a period of at least five (5) years from date of delivery, or as otherwise specified in this ITB.</p>
11. Price Schedule	<p>11.1 The Price Schedule shall be prepared using the Form provided in Section 6 of the ITB and taking into consideration the requirements in the ITB.</p> <p>11.2 Any requirement described in the Technical Bid but not priced in the Price Schedule, shall be assumed to be included in the prices of other activities or items, as well as in the final total price.</p>
12. Bid Security	<p>12.1 A Bid Security, if required by BDS, shall be provided in the amount and form indicated in the BDS. The Bid Security shall be valid for a minimum of thirty (30) days after the final date of validity of the Bid.</p> <p>12.2 The Bid Security shall be included along with the Bid. If Bid Security is required by the ITB but is not found in the Bid, the offer shall be rejected.</p> <p>12.3 If the Bid Security amount or its validity period is found to be less than what is required by UNDP, UNDP shall reject the Bid.</p> <p>12.4 In the event an electronic submission is allowed in the BDS, Bidders shall include a copy of the Bid Security in their bid and the original of the Bid Security must be sent via courier or hand delivery as per the instructions in BDS.</p> <p>12.5 The Bid Security may be forfeited by UNDP, and the Bid rejected, in the event of any, or combination, of the following conditions:</p> <ol style="list-style-type: none"> If the Bidder withdraws its offer during the period of the Bid Validity specified in the BDS, or; In the event the successful Bidder fails: <ol style="list-style-type: none"> to sign the Contract after UNDP has issued an award; or to furnish the Performance Security, insurances, or other documents that UNDP may require as a condition precedent to the effectivity of the contract that may be awarded to the Bidder.
13. Currencies	<p>13.1 All prices shall be quoted in the currency or currencies indicated in the BDS. Where Bids are quoted in different currencies, for the purposes of comparison of all Bids:</p> <ol style="list-style-type: none"> UNDP will convert the currency quoted in the Bid into the UNDP preferred currency, in accordance with the prevailing UN operational rate of exchange on the last day of submission of Bids; and In the event that UNDP selects a Bid for award that is quoted in a currency different from the preferred currency in the BDS, UNDP shall reserve the right to award the contract in the currency of UNDP's preference, using the conversion method specified above.
14. Joint Venture, Consortium or Association	<p>14.1 If the Bidder is a group of legal entities that will form or have formed a Joint Venture (JV), Consortium or Association for the Bid, they shall confirm in their Bid that : (i) they have designated one party to act as a lead entity, duly vested with authority to legally bind the members of the JV, Consortium or Association jointly and severally, which shall be evidenced by a duly notarized Agreement among the legal entities, and submitted with the Bid; and (ii) if they are awarded the contract, the contract shall be entered into, by and between UNDP and the designated lead entity, who shall be acting for and on behalf of all the member entities comprising the joint venture.</p> <p>14.2 After the Deadline for Submission of Bid, the lead entity identified to represent the</p>

	<p>JV, Consortium or Association shall not be altered without the prior written consent of UNDP.</p> <p>14.3 The lead entity and the member entities of the JV, Consortium or Association shall abide by the provisions of Clause 9 herein in respect of submitting only one Bid.</p> <p>14.4 The description of the organization of the JV, Consortium or Association must clearly define the expected role of each of the entities in the joint venture in delivering the requirements of the ITB, both in the Bid and the JV, Consortium or Association Agreement. All entities that comprise the JV, Consortium or Association shall be subject to the eligibility and qualification assessment by UNDP.</p> <p>14.5 A JV, Consortium or Association in presenting its track record and experience should clearly differentiate between:</p> <ul style="list-style-type: none"> a) Those that were undertaken together by the JV, Consortium or Association; and b) Those that were undertaken by the individual entities of the JV, Consortium or Association. <p>14.6 Previous contracts completed by individual experts working privately but who are permanently or were temporarily associated with any of the member firms cannot be claimed as the experience of the JV, Consortium or Association or those of its members, but should only be claimed by the individual experts themselves in their presentation of their individual credentials</p> <p>14.7 JV, Consortium or Associations are encouraged for high value, multi-sectoral requirements when the spectrum of expertise and resources required may not be available within one firm.</p>
15. Only One Bid	<p>15.1 The Bidder (including the individual members of any Joint Venture) shall submit only one Bid, either in its own name or as part of a Joint Venture.</p> <p>15.2 Bids submitted by two (2) or more Bidders shall all be rejected if they are found to have any of the following:</p> <ul style="list-style-type: none"> a) they have at least one controlling partner, director or shareholder in common; or b) any one of them receive or have received any direct or indirect subsidy from the other/s; or c) they have the same legal representative for purposes of this ITB; or d) they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about, or influence on the Bid of another Bidder regarding this ITB process; e) they are subcontractors to each other's Bid, or a subcontractor to one Bid also submits another Bid under its name as lead Bidder; or some key personnel proposed to be in the team of one Bidder participates in more than one Bid received for this ITB process. This condition relating to the personnel, does not apply to subcontractors being included in more than one Bid.
16. Bid Validity Period	<p>16.1 Bids shall remain valid for the period specified in the BDS, commencing on the Deadline for Submission of Bids. A Bid valid for a shorter period may be rejected by UNDP and rendered non-responsive.</p> <p>16.2 During the Bid validity period, the Bidder shall maintain its original Bid without any change, including the availability of the Key Personnel, the proposed rates and the total price.</p>
17. Extension of Bid Validity Period	<p>17.1 In exceptional circumstances, prior to the expiration of the Bid validity period, UNDP may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing, and shall be considered integral to the Bid.</p> <p>17.2 If the Bidder agrees to extend the validity of its Bid, it shall be done without any change to the original Bid.</p> <p>17.3 The Bidder has the right to refuse to extend the validity of its Bid, in which case, the Bid shall not be further evaluated.</p>

18. Clarification of Bid (from the Bidders)	<p>18.1 Bidders may request clarifications on any of the ITB documents no later than the date indicated in the BDS. Any request for clarification must be sent in writing in the manner indicated in the BDS. If inquiries are sent other than specified channel, even if they are sent to a UNDP staff member, UNDP shall have no obligation to respond or confirm that the query was officially received.</p> <p>18.2 UNDP will provide the responses to clarifications through the method specified in the BDS.</p> <p>18.3 UNDP shall endeavour to provide responses to clarifications in an expeditious manner, but any delay in such response shall not cause an obligation on the part of UNDP to extend the submission date of the Bids, unless UNDP deems that such an extension is justified and necessary.</p>
19. Amendment of Bids	<p>19.1 At any time prior to the deadline of Bid submission, UNDP may for any reason, such as in response to a clarification requested by a Bidder, modify the ITB in the form of an amendment to the ITB. Amendments will be made available to all prospective bidders.</p> <p>19.2 If the amendment is substantial, UNDP may extend the Deadline for submission of Bid to give the Bidders reasonable time to incorporate the amendment into their Bids.</p>
20. Alternative Bids	<p>20.1 Unless otherwise specified in the BDS, alternative Bids shall not be considered. If submission of alternative Bid is allowed by BDS, a Bidder may submit an alternative Bid, but only if it also submits a Bid conforming to the ITB requirements. Where the conditions for its acceptance are met, or justifications are clearly established, UNDP reserves the right to award a contract based on an alternative Bid.</p> <p>20.2 If multiple/alternative bids are being submitted, they must be clearly marked as "Main Bid" and "Alternative Bid"</p>
21. Pre-Bid Conference	<p>21.1 When appropriate, a pre-bid conference will be conducted at the date, time and location specified in the BDS. All Bidders are encouraged to attend. Non-attendance, however, shall not result in disqualification of an interested Bidder. Minutes of the Bidder's conference will be disseminated on the procurement website and shared by email or on the e-Tendering platform as specified in the BDS. No verbal statement made during the conference shall modify the terms and conditions of the ITB, unless specifically incorporated in the Minutes of the Bidder's Conference or issued/posted as an amendment to ITB.</p>
C. SUBMISSION AND OPENING OF BIDS	
22. Submission	<p>22.1 The Bidder shall submit a duly signed and complete Bid comprising the documents and forms in accordance with requirements in the BDS. The Price Schedule shall be submitted together with the Technical Bid. Bid can be delivered either personally, by courier, or by electronic method of transmission as specified in the BDS.</p> <p>22.2 The Bid shall be signed by the Bidder or person(s) duly authorized to commit the Bidder. The authorization shall be communicated through a document evidencing such authorization issued by the legal representative of the bidding entity, or a Power of Attorney, accompanying the Bid.</p> <p>22.3 Bidders must be aware that the mere act of submission of a Bid, in and of itself, implies that the Bidder fully accepts the UNDP General Contract Terms and Conditions.</p>
Hard copy (manual) submission	<p>22.4 Hard copy (manual) submission by courier or hand delivery allowed or specified in the BDS shall be governed as follows:</p> <p>a) The signed Bid shall be marked "Original", and its copies marked "Copy" as appropriate. The number of copies is indicated in the BDS. All copies shall be made from the signed original only. If there are discrepancies between the original and the copies, the original shall prevail.</p> <p>(b) The Technical Bid and Price Schedule must be sealed and submitted together in</p>

	<p>an envelope, which shall:</p> <ul style="list-style-type: none"> i. Bear the name of the Bidder; ii. Be addressed to UNDP as specified in the BDS; and iii. Bear a warning not to open before the time and date for Bid opening as specified in the BDS. <p>If the envelope with the Bid is not sealed and marked as required, UNDP shall assume no responsibility for the misplacement, loss, or premature opening of the Bid.</p>
Email and eTendering submissions	<p>22.5 Electronic submission through email or eTendering, if allowed as specified in the BDS, shall be governed as follows:</p> <ul style="list-style-type: none"> a) Electronic files that form part of the Bid must be in accordance with the format and requirements indicated in BDS; b) Documents which are required to be in original form (e.g. Bid Security, etc.) must be sent via courier or hand delivered as per the instructions in BDS. <p>22.6 Detailed instructions on how to submit, modify or cancel a bid in the eTendering system are provided in the eTendering system Bidder User Guide and Instructional videos available on this link: http://www.undp.org/content/undp/en/home/operations/procurement/business/procurement-notices/resources/</p>
23. Deadline for Submission of Bids and Late Bids	<p>23.1 Complete Bids must be received by UNDP in the manner, and no later than the date and time, specified in the BDS. UNDP shall only recognise the actual date and time that the bid was received by UNDP</p> <p>23.2 UNDP shall not consider any Bid that is received after the deadline for the submission of Bids.</p>
24. Withdrawal, Substitution, and Modification of Bids	<p>24.1 A Bidder may withdraw, substitute or modify its Bid after it has been submitted at any time prior to the deadline for submission.</p> <p>24.2 Manual and Email submissions: A bidder may withdraw, substitute or modify its Bid by sending a written notice to UNDP, duly signed by an authorized representative, and shall include a copy of the authorization (or a Power of Attorney). The corresponding substitution or modification of the Bid, if any, must accompany the respective written notice. All notices must be submitted in the same manner as specified for submission of Bids, by clearly marking them as "WITHDRAWAL" "SUBSTITUTION," or "MODIFICATION"</p> <p>24.3 eTendering: A Bidder may withdraw, substitute or modify its Bid by Cancelling, Editing, and re-submitting the Bid directly in the system. It is the responsibility of the Bidder to properly follow the system instructions, duly edit and submit a substitution or modification of the Bid as needed. Detailed instructions on how to cancel or modify a Bid directly in the system are provided in the Bidder User Guide and Instructional videos.</p> <p>24.4 Bids requested to be withdrawn shall be returned unopened to the Bidders (only for manual submissions), except if the bid is withdrawn after the bid has been opened.</p>
25. Bid Opening	<p>25.1 UNDP will open the Bid in the presence of an ad-hoc committee formed by UNDP of at least two (2) members.</p> <p>25.2 The Bidders' names, modifications, withdrawals, the condition of the envelope labels/seals, the number of folders/files and all other such other details as UNDP may consider appropriate, will be announced at the opening. No Bid shall be rejected at the opening stage, except for late submissions, in which case, the Bid shall be returned unopened to the Bidders.</p> <p>25.3 In the case of e-Tendering submission, bidders will receive an automatic notification once the Bid is opened.</p>

D. EVALUATION OF BIDS

26. Confidentiality	<p>26.1 Information relating to the examination, evaluation, and comparison of Bids, and the recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process, even after publication of the contract award.</p> <p>26.2 Any effort by a Bidder or anyone on behalf of the Bidder to influence UNDP in the examination, evaluation and comparison of the Bids or contract award decisions may, at UNDP's decision, result in the rejection of its Bid and may subsequently be subject to the application of prevailing UNDP's vendor sanctions procedures.</p>
27. Evaluation of Bids	<p>27.1 UNDP will conduct the evaluation solely on the basis of the Bids received.</p> <p>27.2 Evaluation of Bids shall be undertaken in the following steps:</p> <ul style="list-style-type: none"> a) Preliminary Examination including Eligibility b) Arithmetical check and ranking of bidders who passed preliminary examination by price. c) Qualification assessment (if pre-qualification was not done) a) Evaluation of Technical Bids b) Evaluation of prices <p>Detailed evaluation will be focussed on the 3 - 5 lowest priced bids. Further higher priced bids shall be added for evaluation if necessary</p>
28. Preliminary Examination	<p>28.1 UNDP shall examine the Bids to determine whether they are complete with respect to minimum documentary requirements, whether the documents have been properly signed, and whether the Bids are generally in order, among other indicators that may be used at this stage. UNDP reserves the right to reject any Bid at this stage.</p>
29. Evaluation of Eligibility and Qualification	<p>29.1 Eligibility and Qualification of the Bidder will be evaluated against the Minimum Eligibility/Qualification requirements specified in the Section 4 (Evaluation Criteria).</p> <p>29.2 In general terms, vendors that meet the following criteria may be considered qualified:</p> <ul style="list-style-type: none"> a) They are not included in the UN Security Council 1267/1989 Committee's list of terrorists and terrorist financiers, and in UNDP's ineligible vendors' list; b) They have a good financial standing and have access to adequate financial resources to perform the contract and all existing commercial commitments, c) They have the necessary similar experience, technical expertise, production capacity, quality certifications, quality assurance procedures and other resources applicable to the supply of goods and/or services required; d) They are able to comply fully with the UNDP General Terms and Conditions of Contract; e) They do not have a consistent history of court/arbitral award decisions against the Bidder; and f) They have a record of timely and satisfactory performance with their clients.
30. Evaluation of Technical Bid and prices	<p>30.1 The evaluation team shall review and evaluate the Technical Bids on the basis of their responsiveness to the Schedule of Requirements and Technical Specifications and other documentation provided, applying the procedure indicated in the BDS and other ITB documents. When necessary, and if stated in the BDS, UNDP may invite technically responsive bidders for a presentation related to their technical Bids. The conditions for the presentation shall be provided in the bid document where required.</p>
31. Due diligence	<p>31.1 UNDP reserves the right to undertake a due diligence exercise, aimed at determining to its satisfaction, the validity of the information provided by the Bidder. Such exercise shall be fully documented and may include, but need not be limited to, all or any combination of the following:</p> <ul style="list-style-type: none"> a) Verification of accuracy, correctness and authenticity of information provided by the Bidder;

	<ul style="list-style-type: none"> b) Validation of extent of compliance to the ITB requirements and evaluation criteria based on what has so far been found by the evaluation team; c) Inquiry and reference checking with Government entities with jurisdiction on the Bidder, or with previous clients, or any other entity that may have done business with the Bidder; d) Inquiry and reference checking with previous clients on the performance on on-going or completed contracts, including physical inspections of previous works, as deemed necessary; e) Physical inspection of the Bidder's offices, branches or other places where business transpires, with or without notice to the Bidder; f) Other means that UNDP may deem appropriate, at any stage within the selection process, prior to awarding the contract.
32. Clarification of Bids	<p>32.1 To assist in the examination, evaluation and comparison of Bids, UNDP may, at its discretion, request any Bidder for a clarification of its Bid.</p> <p>32.2 UNDP's request for clarification and the response shall be in writing and no change in the prices or substance of the Bid shall be sought, offered, or permitted, except to provide clarification, and confirm the correction of any arithmetic errors discovered by UNDP in the evaluation of the Bids, in accordance with the ITB.</p> <p>32.3 Any unsolicited clarification submitted by a Bidder in respect to its Bid, which is not a response to a request by UNDP, shall not be considered during the review and evaluation of the Bids.</p>
33. Responsiveness of Bid	<p>33.1 UNDP's determination of a Bid's responsiveness will be based on the contents of the bid itself. A substantially responsive Bid is one that conforms to all the terms, conditions, specifications and other requirements of the ITB without material deviation, reservation, or omission.</p> <p>33.2 If a bid is not substantially responsive, it shall be rejected by UNDP and may not subsequently be made responsive by the Bidder by correction of the material deviation, reservation, or omission.</p>
34. Nonconformities, Reparable Errors and Omissions	<p>34.1 Provided that a Bid is substantially responsive, UNDP may waive any non-conformities or omissions in the Bid that, in the opinion of UNDP, do not constitute a material deviation.</p> <p>34.2 UNDP may request the Bidder to submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial nonconformities or omissions in the Bid related to documentation requirements. Such omission shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.</p> <p>34.3 For the bids that have passed the preliminary examination, UNDP shall check and correct arithmetical errors as follows:</p> <ul style="list-style-type: none"> a) if there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of UNDP there is an obvious misplacement of the decimal point in the unit price; in which case, the line item total as quoted shall govern and the unit price shall be corrected; b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and c) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail. <p>34.4 If the Bidder does not accept the correction of errors made by UNDP, its Bid shall be rejected.</p>

E. AWARD OF CONTRACT

35. Right to Accept, Reject, Any or All Bids	35.1 UNDP reserves the right to accept or reject any bid, to render any or all of the bids as non-responsive, and to reject all Bids at any time prior to award of contract, without incurring any liability, or obligation to inform the affected Bidder(s) of the grounds for UNDP's action. UNDP shall not be obliged to award the contract to the lowest priced offer.
36. Award Criteria	36.1 Prior to expiration of the period of Bid validity, UNDP shall award the contract to the qualified and eligible Bidder that is found to be responsive to the requirements of the Schedule of Requirements and Technical Specification, and has offered the lowest price.
37. Debriefing	37.1 In the event that a Bidder is unsuccessful, the Bidder may request for a debriefing from UNDP. The purpose of the debriefing is to discuss the strengths and weaknesses of the Bidder's submission, in order to assist the Bidder in improving its future Bids for UNDP procurement opportunities. The content of other Bids and how they compare to the Bidder's submission shall not be discussed.
38. Right to Vary Requirements at the Time of Award	38.1 At the time of award of Contract, UNDP reserves the right to vary the quantity of goods and/or services, by up to a maximum twenty-five per cent (25%) of the total offer, without any change in the unit price or other terms and conditions.
39. Contract Signature	39.1 Within fifteen (15) days from the date of receipt of the Contract, the successful Bidder shall sign and date the Contract and return it to UNDP. Failure to do so may constitute sufficient grounds for the annulment of the award, and forfeiture of the Bid Security, if any, and on which event, UNDP may award the Contract to the Second highest rated or call for new Bids.
40. Contract Type and General Terms and Conditions	40.1 The types of Contract to be signed and the applicable UNDP Contract General Terms and Conditions, as specified in BDS, can be accessed at http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
41. Performance Security	41.1 A performance security, if required in the BDS, shall be provided in the amount specified in BDS and form available at https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_Document_Library/Public/PSU_Solicitation_Performance%20Guarantee%20Form.docx&action=default within a maximum of fifteen (15) days of the contract signature by both parties. Where a performance security is required, the receipt of the performance security by UNDP shall be a condition for rendering the contract effective.
42. Bank Guarantee for Advanced Payment	42.1 Except when the interests of UNDP so require, it is UNDP's standard practice to not make advance payment(s) (i.e., payments without having received any outputs). If an advance payment is allowed as per the BDS, and exceeds 20% of the total contract price, or USD 30,000, whichever is less, the Bidder shall submit a Bank Guarantee in the full amount of the advance payment in the form available at https://popp.undp.org/_layouts/15/WopiFrame.aspx?sourcedoc=/UNDP_POPP_Document_Library/Public/PSU_Contract%20Management%20Payment%20and%20Taxes_Advanced%20Payment%20Guarantee%20Form.docx&action=default
43. Liquidated Damages	43.1 If specified in the BDS, UNDP shall apply Liquidated Damages for the damages and/or risks caused to UNDP resulting from the Contractor's delays or breach of its obligations as per Contract.
44. Payment Provisions	44.1 Payment will be made only upon UNDP's acceptance of the goods and/or services performed. The terms of payment shall be within thirty (30) days, after receipt of invoice and certification of acceptance of goods and/or services issued by the proper authority in UNDP with direct supervision of the Contractor. Payment will be

	effected by bank transfer in the currency of the contract.
45. Vendor Protest	<p>45.1 UNDP's vendor protest procedure provides an opportunity for appeal to those persons or firms not awarded a contract through a competitive procurement process. In the event that a Bidder believes that it was not treated fairly, the following link provides further details regarding UNDP vendor protest procedures: http://www.undp.org/content/undp/en/home/procurement/business/protest-and-sanctions.html</p>
46. Other Provisions	<p>46.1 In the event that the Bidder offers a lower price to the host Government (e.g. General Services Administration (GSA) of the federal government of the United States of America) for similar goods and/or services, UNDP shall be entitled to the same lower price. The UNDP General Terms and Conditions shall have precedence.</p> <p>46.2 UNDP is entitled to receive the same pricing offered by the same Contractor in contracts with the United Nations and/or its Agencies. The UNDP General Terms and Conditions shall have precedence.</p> <p>46.3 The United Nations has established restrictions on employment of (former) UN staff who have been involved in the procurement process as per bulletin ST/SGB/2006/15 http://www.un.org/en/ga/search/view_doc.asp?symbol=ST/SGB/2006/15&referer</p>

Section 3. Bid Data Sheet

The following data for the goods and/or services to be procured shall complement, supplement, or amend the provisions in the Invitation to Bid in the case of a conflict between the Instructions to Bidders, the Bid Data Sheet, and other annexes or references attached to the Bid Data Sheet, the provisions in the Bid Data Sheet shall prevail.

BDS No.	Ref. to Section.2	Data	Specific Instructions / Requirements
1	7	Language of the Bid	English
2		Submitting Bids for Parts or sub-parts of the Schedule of Requirements (partial bids)	Not Allowed
3	20	Alternative Bids	Shall not be considered
4	21	Pre-Bid conference	<p>Will be Conducted Time: 12.00 Fiji Time Date: 24 February 2020 Venue: UNDP Pacific Office The UNDP focal point for the arrangement is: Murod Ruziev E-mail: murod.ruziev@undp.org Dale Kacivi E-mail: dale.kacivi@undp.org Interested companies should provide contact details of their representative, including email, so we can send invitation to online tool for conference call.</p>
5	16	Bid Validity Period	90 days
6	13	Bid Security	Not Required
7	42	Advanced Payment upon signing of contract	<p>Not Allowed. For advance payment please refer to Clause 42.1 Bank Guarantee for Advanced Payment of Section 2. Instruction to Bidders</p>
8	43	Liquidated Damages	<p>Will be imposed as follows: Percentage of contract price per day of delay: 0.1% Max. number of days of delay 30, after which UNDP may terminate the contract.</p>
9	40	Performance Security	Required in the amount of 10% of contract amount. Please refer to Clause 41 of Section 2. Instruction to Bidders on performance security requirements.
10	13	Currency of Bid	<p>United States Dollar Reference date for determining UN Operational Exchange Rate: March, 2020</p>

11	31	Deadline for submitting requests for clarifications/ questions	5 days before the submission deadline
12	31	Contact Details for submitting clarifications/questions	Focal Person in UNDP: Murod Ruziev Address: Level 8, Kadavu House, 414 Victoria Parade, Privat Mail Bag Suva, Fiji E-mail address: procurement.fj@undp.org
13	18, 19 and 21	Manner of Disseminating Supplemental Information to the ITB and responses/clarifications to queries	Posted directly to eTendering
14	23	Deadline for Submission	As indicated in eTendering system. System time zone is in EST/EDT (New York (time zone)). PLEASE NOTE: <ul style="list-style-type: none"> ✓ Date and time visible on the main screen of event (on eTendering portal) will be final and prevail over any other closing time indicated elsewhere, in case they are different. The correct bid closing time is as indicated in the eTendering portal and system will not accept any bid after that time. It is the responsibility of the bidder to make sure bids are submitted within this deadline. UNDP will not accept any bid that is not submitted directly in the system. ✓ Try to submit your bid a day prior or well before the closing time. Do not wait until last minute. If you face any issue submitting your bid at the last minute, UNDP may not be able to assist.
14	22	Allowable Manner of Submitting Bids	<input type="checkbox"/> Courier/Hand Delivery <input type="checkbox"/> Submission by email <input checked="" type="checkbox"/> e-Tendering Username: event.guest Password: why2change
15	22	Bid Submission Address	https://etendering.partneragencies.org Business Unit Code: FJI10 Event ID: 0000005342
16	22	Electronic submission requirements	<ul style="list-style-type: none"> ▪ Format: PDF files only ▪ File names must be maximum 60 characters long and must not contain any letter or special character other than from Latin alphabet/keyboard. ▪ All files must be free of viruses and not corrupted. ▪ Max. File Size per transmission: 15 MB
17	25	Date, time and venue for the opening of bid	Date and Time: next day after bid submission closing day Venue: UNDP Pacific Office in Fiji (Level 8, Kadavu House, 414 Victoria Parade, Private Mail Bag, Suva, Fiji)
18	27, 36	Evaluation Method for the Award of Contract	Lowest priced technically responsive, eligible and qualified bid

19		Expected date for commencement of Contract	<i>April, 2020</i>
20		Maximum expected duration of contract	6 months
21	35	UNDP will award the contract to:	One Proposer Only
22	39	Type of Contract	Contract for Goods and/or Services to UNDP http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
23	39	UNDP Contract Terms and Conditions that will apply	UNDP General Terms and Conditions for Contracts http://www.undp.org/content/undp/en/home/procurement/business/how-we-buy.html
24		Other Information Related to the ITB	N/A

Section 4. Evaluation Criteria

Preliminary Examination Criteria

Bids will be examined to determine whether they are complete and submitted in accordance with ITB requirements as per below criteria on a Yes/No basis:

- Appropriate signatures
- Power of Attorney
- Minimum Bid documents provided
- Bid Validity

Minimum Eligibility and Qualification Criteria

Eligibility and Qualification will be evaluated on a Pass/Fail basis.

If the Bid is submitted as a Joint Venture/Consortium/Association, each member should meet the minimum criteria, unless otherwise specified.

Subject	Criteria	Document Submission requirement
ELIGIBILITY		
Legal Status	Vendor is a legally registered entity.	Form B: Bidder Information Form
Eligibility	Vendor is not suspended, nor debarred, nor otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization in accordance with ITB clause 3.	Form A: Bid Submission Form
Conflict of Interest	No conflicts of interest in accordance with ITB clause 4.	Form A: Bid Submission Form
Bankruptcy	Has not declared bankruptcy, is not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against the vendor that could impair its operations in the foreseeable future.	Form A: Bid Submission Form
Certificates and Licenses	<ul style="list-style-type: none"> ▪ Duly authorized to act as Agent on behalf of the Manufacturer, or Power of Attorney, if bidder is not a manufacturer ▪ Official appointment as local representative, if Bidder is submitting a Bid on behalf of an entity located outside the country ▪ Patent Registration Certificates, if any of technologies submitted in the Bid is patented by the Bidder ▪ Export/Import Licenses, if applicable ▪ Certificate of Registration of the business ▪ Certificates and other documents outlined in Section 5a: Schedule of Requirements and Technical Specifications/Bill of Quantities 	Form B: Bidder Information Form
Additional eligibility documents	<ul style="list-style-type: none"> ▪ List and value of major contracts of similar nature and size successfully completed in the past three years, including contact details of clients, who could be contacted for reference purposes 	
QUALIFICATION		
History of Non-Performing	Non-performance of a contract did not occur as a result of contractor default for the last 3 years	Form D: Qualification Form

Contracts¹		
Litigation History	No consistent history of court/arbitral award decisions against the Bidder for the last 5 years	Form D: Qualification Form
Previous Experience	Minimum 3 years of relevant experience in supply of similar goods <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form
Financial Standing	Minimum average annual turnover of USD 750,000 for the last 3 years <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form
	Bidder must demonstrate the current soundness of its financial standing and indicate its prospective long-term profitability <i>(For JV/Consortium/Association, all Parties cumulatively should meet requirement).</i>	Form D: Qualification Form
Technical Evaluation	The technical bids shall be evaluated on a pass/fail basis for compliance or non-compliance with the technical specifications identified in the bid document	Form E: Technical Bid Form
	<ul style="list-style-type: none"> ▪ Full compliance of Bid to the Technical Requirements ▪ Full compliance of offered goods to the Technical Specifications and required quality standards ▪ Availability of certificates of quality and origin for the offered equipment ▪ Acceptability of after-sales service capacity and appropriateness of service network in areas of delivery ▪ Compliance with pricing conditions described in the Schedule of Requirements 	
Financial Evaluation	Detailed analysis of the price schedule based on requirements listed in Section 5 and quoted for by the bidders in Form F. Price comparison shall be based on the landed price, including transportation, insurance and the total cost of ownership (including spare parts, consumption, training, special packaging, etc., where applicable) Comparison with budget/internal estimates.	Form F: Price Schedule Form
Post-qualification Actions	Verification of accuracy, correctness and authenticity of the information provided by the bidder on the legal, technical and financial documents submitted. Inquiry and reference checking with Government entities with jurisdiction on the bidder, or any other entity that may have done business with the bidder. Inquiry and reference checking with other previous clients on the quality of performance on ongoing or previous contracts completed.	

¹ Non-performance, as decided by UNDP, shall include all contracts where (a) non-performance was not challenged by the contractor, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the contractor. Non-performance shall not include contracts where Employers decision was overruled by the dispute resolution mechanism. Non-performance must be based on all information on fully settled disputes or litigation, i.e. dispute or litigation that has been resolved in accordance with the dispute resolution mechanism under the respective contract and where all appeal instances available to the Bidder have been exhausted.

	Physical inspection of the bidder's plant, factory, branches or other places where business transpires, with or without notice to the bidder.	
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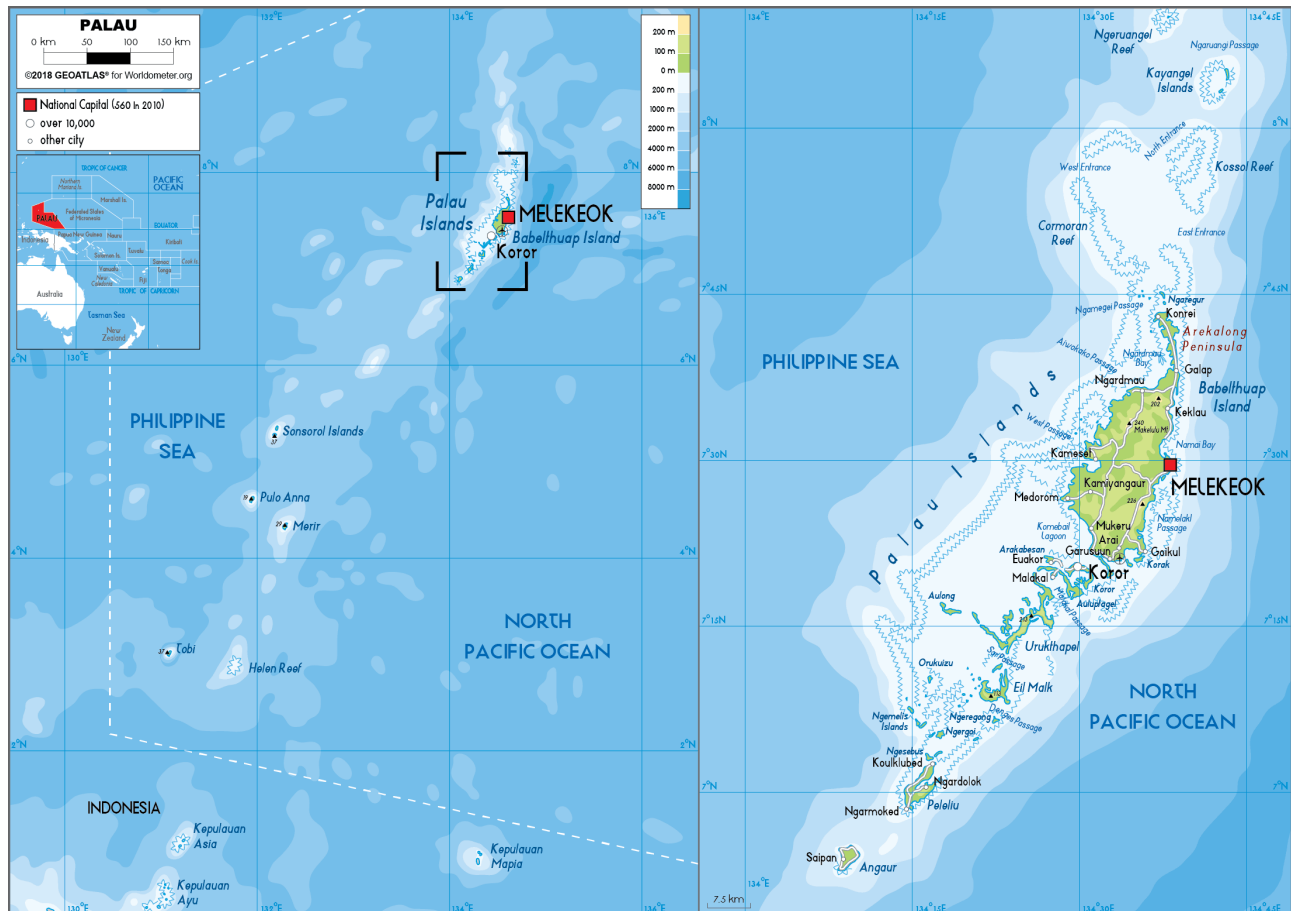
Section 5a: Schedule of Requirements and Technical Specifications/Bill of Quantities

Rehabilitation of AM Broadcast System Koror, Palau

REPUBLIC OF PALAU

Any manufacturer's names, trade names, brand names or catalogue numbers used in the specifications are for the purpose of describing and establishing general performance and quality levels. Such references are not intended to be restrictive. Bids are invited on these and comparable brands or products provided the quality of the proposed products meet or exceed the quality of the specifications listed for any item.

It is geographically part of the larger island group of Micronesia. The country's population of around 21,500 is spread across 250 islands forming the western chain of the Caroline Islands.



Map of Republic of PALAU

The Republic of Palau is located to the east of the Philippines and forms a chain of islands about 600 km long in a roughly north – south direction. Most of the population is in the northern islands but there are small populations in the South Western islands. The southernmost islands in the Republic are Tobi and Helens Reef which are both inhabited.

The main centre commercial is Koror and the main Government offices are at Melekeok.

Broadcasting in Palau

The Government Radio started in AM broadcasting when they took over US army radio WSZB in the 1970 era. After the independence of Palau, T8AA started broadcasting on 1584KHz with a 5kW transmitter which covered the whole nation.

The transmitter site is about 5 Km south of Koror centre at Malakal.

There are a number of FM stations broadcasting locally in the Koror area but the T8AA Government AM radio was the only nationwide broadcast service in Palau

T8AA AM RADIO OFF AIR SINCE 2012

The AM radio tower at Malakal collapsed during typhoon Bopha late 2012 and was not replaced because of budget constraints.

Many listeners live in northern state of Kayangel, the southern state of Hatohobei and the SW Islands cannot receive any radio broadcast service at present.

They are suffering from lack of real time information during Typhoon, Earthquake, Tsunami and other emergencies, caused by the AM station being off air.

Overview of work required

In 2012 the AM Broadcasting system in Palau was discontinued due to extensive damage to equipment during a severe typhoon.

The Palau Government desires to re-establish this service and the following document sets out the work required to restore the service to full operation.

Necessary steps required include:

- Provide new 40 foot containerized accommodation with sun roof for the new transmitter and existing FM transmitter.

- Provide, install and commission a new 150 foot high AM Broadcast antenna including mast, mast foundations, guy anchors, guy wires. Earthing system, lightning protection and obstruction lighting. A security fence will be provided around the tower base.

- Provide, install and commission a new antenna coupler to match the antenna to the transmission line, power isolation filters for obstruction lighting feeds and associated equipment.

- Provide, install and connect a new antenna feeder cable between the transmitter and the antenna coupler.

- Provide, install and commission a new 5 KW AM transmitter.

- Provide, install and commission a UHF Studio – transmitter link system between the existing studio and the transmitter site.

- Provide, install and commission appropriate program input equipment at the transmitter site including a minimal emergency studio for use in emergencies. A security fence will be provided around the tower base.

- Shift the existing FM transmitter to the new transmitter accommodation and move the FM antenna to the Marine VHF tower.

- Provide power supply surge protection, overload protection, cabling and isolation switching and connect existing power supply to the new transmitter.

- Upgrade program input equipment at the existing studio where required.

- Provide training to staff involved in the operation and maintenance of all equipment commissioned.

- Provide adequate spares needed for an estimated 3 - 5 years of operation.

- Other work as may be required to fully re-instate the AM broadcast system.

All equipment supplied will be built to withstand the severe tropical maritime climate prevailing in Palau.

General Transmitter Site Information

The old AM broadcast transmitter was located on Malakal Hill some 5 km or so south of the Koror town centre. It is desired to use the same locality for the new equipment.

Because of new structures being constructed in the vicinity of the original broadcast antenna it is proposed that the new tower will be located a little to the north east of the old antenna site where there is a clear area.

There is good road access to the site and grid power is available.

Because of the poor condition of the existing transmitter building it is proposed that an aluminium or stainless steel 40 foot container be used to house the new transmission equipment.

The Government FM transmitter is also located at this site and because of the poor condition of the existing building it is desired to move the FM transmitter into the new AM transmitter accommodation.

The overall condition of the building housing the standby generator is likewise in poor condition and a new container should be provided for the generator. A security fence will be provided around the tower base.

Earth Resistivity Measurements

Ground conductivity is an extremely important factor in determining the field strength and propagation of ground wave AM radio transmissions.

AM radio transmissions are particularly reliant on good ground conductivity as their primary propagation is by surface wave.

Some years ago, a ground conductivity survey was conducted in the area proposed for the new AM Broadcast tower.

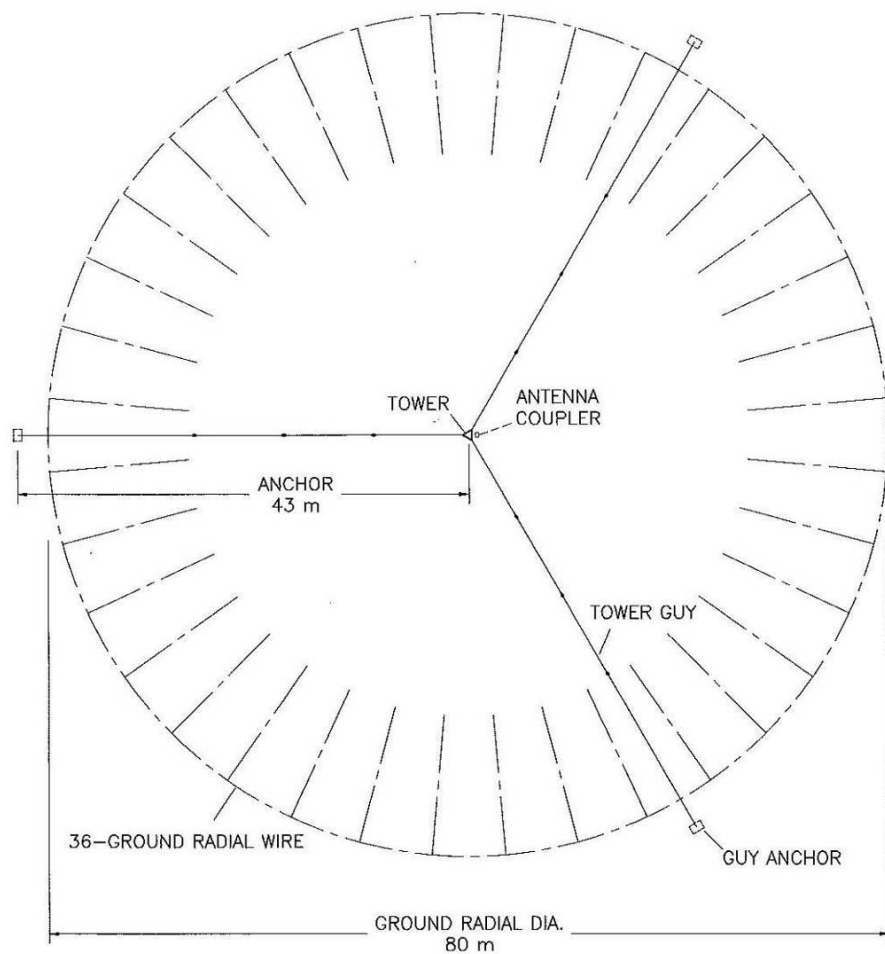
Measured results of ground conductive at four points around the proposed antenna tower location the measured gave ρ values of 37 to 157 Ωm . which should be sufficient to provide protective grounding for the AM antenna tower.

It is recommended to install ground plane radials to provide a good RF earth plane.

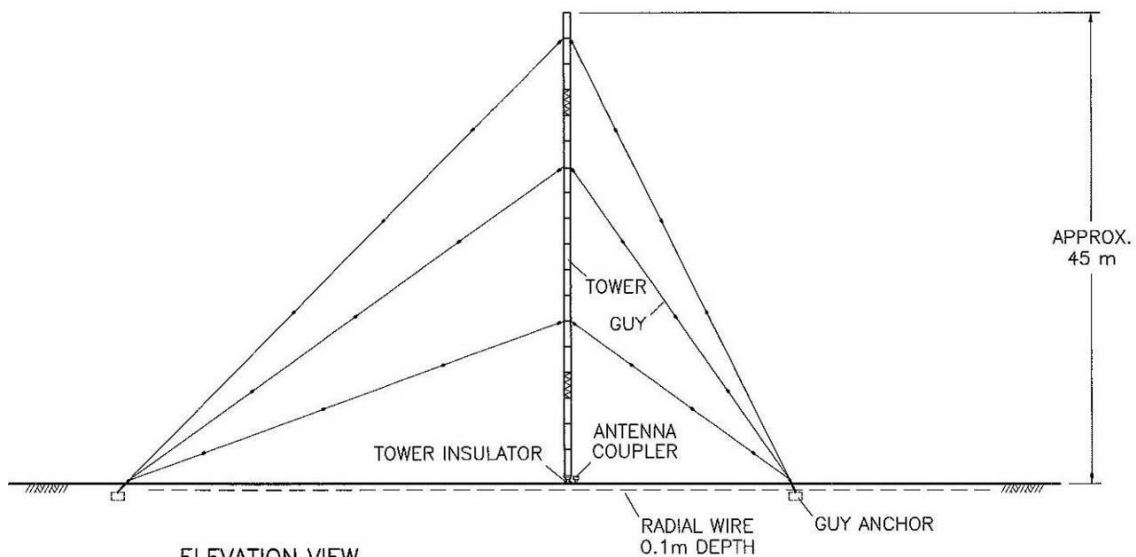
These should extend at least 40 metres from the tower base and consist of 36 or 60 radials.

The final number will depend on theoretical radiation efficiency calculations to be carried out by the successful bidder.

The aim is to provide good coverage throughout the islands that comprise the Republic of Palau, with a ground wave field strength of at least 0.5 mv / m at the most distant islands.



PLAN VIEW



ELEVATION VIEW

Mast

The antenna will be a base insulated guyed mast of approx 150 feet height supported by three layers of guy wires. The mast will be constructed of high quality galvanised steel section and be rated to withstand at least 70 m/s (160

mph) sustained winds and will comply with all relevant specifications contained in Annex 01 at the end of this document.

The successful bidder will provide details of the concrete base dimensions required to adequately support the mast.

Also, the successful bidder will give full details of wind loading calculations used to design the tower to withstand the expected wind loadings.

All fixings and fittings will be either stainless steel or hot dipped galvanised to provide a long life in the severe maritime climate prevailing in Palau.

Guy Wires

The successful bidder will provide full details of guy anchor blocks needed to withstand the wind loading required.

The guy wires will be broken up suitable intervals with heavy duty compression type insulators, to provide isolation, having regard to the operating frequency.

The guy wires will be of heavy duty galvanised steel wire having regard to the strength required to withstand the likely wind loading and tower weight.

Radio Earth Mat

An earth mat will be constructed around the antenna mast using at least 10AWG diameter copper wire buried at least 300 mm into the soil. The earth mat will extend 40 metres out from the tower base, and consist of 36 radials (or as determined by the bidder to provide an adequate ground plane) equally spaced in a circle around the tower base.

A 1 inch diameter copper tube may be arranged as a ring around the base of the tower and all earth mat wires will be silver soldered to this ring. A 2 inch wide copper strap will be silver soldered to the ring to provide the ground connection to the antenna coupler.

The radio earth mat should be physically connected to the lightning protection earth system.

The metalwork for the lower section of the guy wires and guy anchors will be bonded to the earth mat.

Lightning Protection *(These specifications are given as general recommendations. The recommendations of the transmitter manufacturer should be followed where available and will supersede the general specifications given here.)*

An independent lightning earthing system will be provided at the base of the tower, together with suitable ball type spark gaps. The spark gap should be separated horizontally to prevent debris and water causing spark over.

The earth system will consist of a number of copper clad earth rods driven into the ground and bonded to the base of the tower with heavy gauge stranded copper wire and will terminate on the earth side of the lightning spark gap at the base of the antenna.

It is desirable that the earth rods are at least 10 to 15 feet long if possible to keep the ground resistance as low as possible.

The earth rods will be spaced such that the distance between each rod is at least two times their length. They should be connected to the radial earth mat.

Aircraft Obstruction Lighting

Redundant obstruction lighting will be provided on the tower at the 75 and 150 foot levels.

All wiring shall be suitably protected in weatherproof metal conduit and all fittings will be weatherproof.

The lighting fittings provided will conform to FAA and FCC specifications for aircraft obstruction lighting on guyed towers.

The power feed to the lighting will be via suitable isolation chokes located in the antenna coupling enclosure.

The tower will be painted with approved paint and in approved way, to provide aircraft obstruction markings.

Antenna Tuner / Coupler

A stand alone antenna coupler located in an enclosure adjacent to the base of the tower will be provided to match the

50 ohm coaxial transmission line to the complex impedance at the base of the tower.

The coupler will contain adjustable tuning elements to accommodate any small changes in tower impedance over time.

The coupling assembly will incorporate a static drain choke to conduct any static charges on the tower to ground.

Metering will be provided to measure the antenna current and the reflected power in the transmission line. The meters will be fitted with bypass switches or links to protect against lightning surges induced into the tower.

A power feed system to feed power to the tower lighting is required which will provide the necessary isolation between the tower and the mains power supply. All power wiring will be installed in accordance with Palau electrical installation rules and best practices and be fully weatherproof.

The coupler enclosure will be weather and insect proof and be constructed of materials that will not deteriorate in the severe maritime climate. Powder coated steel is not acceptable due to severe corrosion problems in tropical climates.

A copper earth strap will be provided between the antenna tuner and the transmitter building ground reference point.

The installation team will be responsible for correct tuning of the coupler unit.

Antenna Feeder Cable

The successful bidder will supply and install a high grade coaxial cable between the transmitter and the antenna coupler. The cable supplied will be suitably rated to handle 5 kilowatts of RF power at 150 % modulation without excessive heating or risk of insulation breakdown.

The feeder cable will have ferrite chokes installed at each end to limit longitudinal currents due to induced lightning surges.

The feeder cable outer conductor will be securely bonded to the transmitter building reference ground point with a copper strap.

The feeder cable should be buried below the level of the radial mat to reduce induced currents into the feeder.

Antenna Security Fence.

As the base of the tower operates at a high RF voltage a security fence is required surrounding the base of the tower and the antenna coupler. This fence should be located 5 metres from the base of the tower and be at least 2 metres high, to keep personnel at a safe distance as recommended in the ANSI specifications.

The fence may be constructed of treated hardwood or chain-link mesh supported by pipe posts.

If the fence is of metal construction, it should be bonded to the tower earthing system to reduce the risk of RF burns.

Suitable weather resistant easily recognizable..... DANGER, High Voltage ... signs will be securely on the four sides of the fence as an additional safety measure.

5KW AM Transmitter

Overview

A new AM Medium Wave transmitter is to be supplied.

The new transmitter will be transmitting on a frequency of 1584 KHz with an unmodulated carrier power of 5 kilowatts nominal.

The transmitter will be designed to operate unattended at the remote transmitter site on Malendob Island and will be remotely controlled from the existing studio in Koror.

The overall design of the transmitter will ensure that it will operate reliably in a tropical maritime climate such as prevails in Palau.

The transmitter will operate from a nominal 208 Volt three phase; 60 Hz power supply, and have a high efficiency to keep power consumption at a minimum.

Overall Transmitter Characteristics

General

The transmitter will be solid state construction and be of modular design so as to be easily repaired in the event of a failure by replacement of modules.

The transmitter will be supplied pretuned to operate at 1584 KHz.

The PA modules will be replaceable without the need for tuning and be hot replaceable while the transmitter is still operational. Each PA module will be fully protected against short circuits and other faults.

The output power will be adjustable from 1 KW to 5 KW in 1 KW steps. The output power will be stabilized against mains power voltage fluctuations.

The power supply will be from three phase grid power at a nominal 208 volts phase to phase and 60 Hz frequency.

The transmitter will have the capability of 140 percent positive modulation at five kilowatts carrier.

Written documentation proving satisfactory operation in severe tropical environments similar to that prevailing in Palau. Evidence of similar equipment being supplied in the region is required.

Safety Provisions

The transmitter will meet all safety requirements specified in publication EN60215: 1996 Safety Requirements for Radio Transmitting Equipment.

The transmitter will instantly shut down in the case of a severe antenna or feeder fault where the VSWR exceeds 1.5: 1.

In the case of antenna degradation of less than 1.5 : 1 VSWR the transmitter will continue to operate but at reduced power.

The transmitter output will incorporate matching networks, harmonic filters, surge /transient protection in the form of fast acting spark gaps and a static drain network.

The transmitter will have interlocks where applicable to protect personnel from accidental exposure to high voltages.

The transmitter earthing point will be firmly bonded to the transmitter building common reference grounding point with a copper strap.

The transmitter will be sealed against insect intrusion as much as possible.

The transmitter should be installed on an insulating plinth to reduce the likelihood of arccovers to the floor in the event of a close in lightning strike.

Frequency Stability

The transmitter will be supplied pretuned to operate at 1584 KHz.

The carrier frequency will be held to +- 2 ppm / year over the normal temperature range and is readily adjustable to restore it to specs.

Modulation Capability

The transmitter will be capable of 140 percent positive modulation at 5 KW carrier power.

The audio input to the transmitter will be 600 ohms balanced analogue audio input at +10 dBm.

Nominal for 100% modulation, adjustable from -10 to +12 dBm.

The transmitter will incorporate Modulation Dependent Carrier level Control to ensure maximum efficiency.

Frequency Response

+0.2 dB/-0.8 dB, 30 Hz to 10,000 Hz.

Noise and Distortion

Better than 0.8% (THD), 30 Hz to 10,000 Hz at 95% modulation (typical)

Intermodulation

SMPTE 1:1 Ratio, 60Hz/7kHz, 95% Mod Peak - 0.5%

@ 5 kW (typical)

DIM-B, 2.96kHz/9kHz, 80% Mod Peak - 0.5% @ 5 kW

Carrier Shift

0.5% or less at 100% modulation.

Monitoring and Metering

Metering

Cabinet

DC Voltages (B+, PA and 15V)

DC Current

Sample Levels (PDM and RF Drive)

Fan Speeds

Heat Sink Temperature

Exciter

Output Current (RMS, Peak, Carrier)

Output Voltage (RMS, Peak, Carrier)

Forward Power (RMS, Peak, Carrier)

Reflected Power (RMS, Peak, Carrier)

RF Output

The RF output of the transmitter will be 50 ohms unbalanced impedance and terminate on an EIA connector to match the feeder cable used.

Output RF Monitor

A directional coupler will be in the RF output line to enable audio performance measurements to be made with appropriate instruments.

Cooling

The transmitter will be air cooled with replaceable air filters.

Each PA module will have at least 2 readily replaceable fans to ensure a reliable cooling air supply to the module. All air input will be filtered with replaceable paper filters.

Suitable ducting will be provided to take hot exhaust air outside the transmitter building.

This ducting will be provided with insect screens to prevent ingress of insects.

Status Monitor

A logging status monitor will be provided to enable quick status checks particularly in the event of a fault.

Local Control and Monitoring.

Local control and monitoring of the transmitter shall be available via a front panel display.

Built in instrumentation will provide details of modulation characteristics, spectrum and antenna impedance.

The transmitter will have a scheduler where preset operating times and conditions can be preset for up to 100 days.

Remote Control and Monitoring

Direct wired optically isolated inputs and open collector outputs required.

Web interface - All locally available control to be available over TCP/IP web interface.

Documentation and Handbooks

The transmitter will be supplied with at least two printed copies of all installation and maintenance handbooks, written in the English language.

Copies of all manuals will be also provided on digital media.

Spares and Maintenance

The supplier will provide a list of recommended spares, including spare modules, covering an estimated 5 year period.

The output transistors in the PA modules will be easily field replaceable.

Warranties

The supplied equipment will carry a 3 year warranty against faulty manufacture and module failures.

Program Input equipment

Program Compressor and Limiter for the AM transmitter

A program compressor and limiter is required at the transmitter location to control the audio levels into the transmitter to prevent over modulation and also provide best reception possible at remote locations.

The unit supplied will have the following characteristics.

Rides Gain

The unit will ride gain over an adjustable range of up to 25dB, compressing dynamic range and compensating for operator gain-riding errors and for gain inconsistencies in automated systems.

Increases the Density and Loudness of the Program Material

Will increase the density and loudness of the program material by multiband limiting and multiband distortion-cancelling clipping, improving the consistency of the station's sound and increasing loudness and definition without producing audible side effects.

Precisely Controls Peak Levels

Will precisely controls peak levels to prevent over-modulation.

Compensates for the High and Low-Frequency Roll offs

Will compensate for the high- and low-frequency roll offs of typical AM receivers with a fully adjustable program equalizer providing up to 20dB of high-frequency boost (at 5 kHz) without producing the side effects encountered in conventional processors. This equalizer can thus produce extreme pre emphasis that is appropriate for very narrow-band radios.

Controllable and Adjustable

Wide Variety of Factory Presets

The unit will be provided with factory presets to accommodate user requirements. The user will be able to further customize the presets, and these can be stored and recalled on command.

An LCD and full-time LED meters will be provided to make setup, adjustment and programming of the unit easy. The LEDs show all metering functions of the processing structure (Two-Band or Five-Band) in use.

Test and Alignment

A Bypass Test Mode can be invoked locally to permit broadcast system test and alignment or "proof of performance" tests.

Line-Up Tone Generator

it will contain a built-in line-up tone generator that offers sine, square, and triangle waves, facilitating quick and accurate level setting in any system.

Upgradeable

The unit's software will be upgradable by running factory -supplied downloadable upgrade software.

Will control Transmitter Bandwidth as Necessary to Meet Government Regulations

The unit will control the transmitter bandwidth as necessary to meet government regulations, regardless of program material or equalization.

Two Mono Analogue Outputs and AES3 Digital Inputs and Outputs

Unit will include analogue and AES3 digital inputs and outputs. Both the digital input and the two digital outputs will be equipped with sample-rate converters and will operate at 32 kHz, 44.1 kHz, 48, 88.2, and 96 kHz sample rates as required. The pre-emphasis status and output levels will be separately adjustable for the analogue and digital outputs.

Rigorously RFI-Suppressed

All input, output, and power connections will be rigorously RFI-suppressed to exacting standards, ensuring trouble-free installation and prevent feedback from the AM transmitter.

Program Input Rack

The program input rack will provide the following facilities:

- Patch panel for audio patching.
- Space for the AM Program limiter and compressor
- Space for the STL Receiver.
- Space for FM transmitter limiter.

The program input rack will be securely bonded to the common earth bus.

Transmitter Accommodation

The original survey called for a container as accommodation for the new transmitter and the existing FM transmitter.

The container will be made of non corrosive materials, preferably aluminium or stainless steel, and be mounted off the ground on a concrete foundation.

The container will have a well constructed roof over it to shade it from direct sunlight to keep the internal temperature reasonable, and to reduce the air conditioning load.

A suitable air conditioning system will be incorporated into the building to keep internal temperatures below 30 degrees C. The successful vendor will calculate the size of the air conditioner taking into account the heat load in the building. It is desired that the hot exhaust air from the transmitter will be ducted outside the building with suitable ductwork.

The building will have a main access door and two windows, one on each side to allow for natural lighting. These windows will be protected from possible flying debris by hurricane resistant mesh.

The transmitter building will have a well designed earthing system comprising a ground ring connected to copper clad grounding rods spaced around the building and interconnected with a heavy gauge stranded earth wire. Approved clamps will be used to attach this wire to each earth rod.

This earth ring will be connected by a short heavy stranded copper earth wire to the building common earthing point. The spacing between the earth rods will be at least two to three times the rod length.

All incoming lines from outside sources including power lines, audio lines etc. should be provided with suitable surge arrestors and ferrite isolation chokes.

A common ground reference point busbar will be established inside the building close to where the antenna feeder cable enters the building. All building equipment earths will be connected to this common earthing point. This is to provide for lightning protection to equipment.

Power Supply and Accessories

3 phase Voltage Stabilizer

A 208 volt 60 Hz three phase grid power supply will be available at the transmitter site.

It is understood that this supply will have a supply rating of 30 kva.

It is recommended that the supply to the transmitter be from a 4 wire star connection to avoid unwanted transients and harmonic distortion in the power feed that could damage the transmitter.

The grid power supply can be somewhat unstable at times and it is essential that a mains stabilizer is installed between the mains feed and the transmitter.

The stabilizer will be rated to supply the full load power required by the transmitter + 40 %.

Surge protection will be built into the stabilizer to guard against voltage surges introduced into the power lines by lightning strikes or other disturbances.

All incoming lines from outside sources including power lines, audio lines etc should be provided with suitable surge arrestors and ferrite isolation chokes.

The stabilizer will be suited for use in tropical environments similar to that prevailing in Palau.

A standby generator is also on site. This genset has a rating of 25 kva.

As the existing accommodation for the generator is in poor condition, bidder will need to provide a new container for the 25KVA stand-by generator. The STBY-GEN should be installed in a separate containerized building for noise filtering.

It will be the responsibility of the installer to supply and install the power wiring and switching / overload protective devices between the existing power supply and the new transmitter installation.

All wiring will be installed in accordance with the relevant wiring codes in force in Palau.

Studio to transmitter VHF Link equipment

A complete STL system comprising Transmitter and receiver and antennas will be required to replace an existing aged unit.

Preferred band is 940 to 960 MHz the approximate distance to be covered is about 5.5 Km and is line of sight.

The STL will be able to accommodate a composite stereo audio feed from the studio to the transmitter site. The stereo generator will be at the studio.

Shift existing FM Transmitter to new Tx accommodation

It is required to move the existing FM transmitter from the old building to the new transmitter building and move the FM antenna to the Marine VHF mast.

Sufficient space will be needed to accommodate the FM transmitter and its associated program input limiter.

The existing FM transmitter is a 1 kw unit comprising three units, the FM exciter, the 50 volt 50 amp power supply and the 1 KW power amplifier.

Care will need to be taken to ensure that agreement is obtained from the operators of the VHF Marine system to allow the FM antenna to be relocated to their tower.

Care will also be needed to ensure that there are no interference problems caused by either overload or inter-modulation products from the FM transmissions to the marine receivers.

The antenna feeder for the FM transmitter will need to be re-arranged and to be properly earthed at the entry point to the TX building.

The marine VHF tower will need to be bonded to the earth ring around the transmitter building.

Downtown Studio Upgrade

The following equipment is required to update the studio.

The supplied equipment will need to provide a stereo audio feed to the STL link to the transmitter site.

Equipment proposed.

Name of equipment	Mfr / suggested type.	Remarks
Console	RE55E-12	6 MIC+4STEREO+ 2 TEL INPUT
Auto coupler	STA-3	PEAS system Controller
PGM Switcher	SS2.1	PEAS system Swer
DJ Microphone	AKG C1000	
FU box	SIGMA Monicaf-XLR	
CD Player	American audio UCD 100	
Telephone HYB	COMREX DH22	2ch Telco HYBRID
DAW	DELL VOSTRO380	Windows7Pro 2TB HDD
UPS	SAU-A302	AC120V 3KVA Single phase
STEREO ENCODER	ORBAN 8600	
ON AIR MONITOR	DENON UTU-F88	AM/FM ON AIR MONITOR
Netkrom IP terminal	Netkrom 5G	IP remote access to AM transmitter
Monitor PC	DELL Inspiron17	AM TX monitor & control terminal

Note: Any manufacturer's names, trade names, brand names or catalogue numbers used in the above specifications are for the purpose of describing and establishing general performance and quality levels. Such references are not intended to be restrictive. Bids are invited on these and comparable brands or products provided the quality of the proposed products meet or exceed the quality of the specifications listed for any item.

Emergency Studio equipment at the Transmitter site

A set of suitable equipment necessary to provide an emergency operating position at the transmitter site will be required as part of the overall upgrade. Bidders are asked to provide a list of equipment that they would recommend to provide this facility, bearing in mind that it is only for emergency use when the main studio audio feed is unavailable. This emergency studio will feed both the AM and FM transmitters with the same program content.

Training

It is important that the Palau staff understand and know how to operate and maintain the equipment supplied for this refurbishment.

To ensure that they have a good working knowledge of the equipment they will be given detailed instructions by the installation team on the general principles of operation and maintenance of the installed equipment. This will be partly classroom type instruction and on the job instruction.

It will be the responsibility of the installation team to make sure that this happens to the satisfaction of the project supervisors.

Spares

A recommended list of maintenance spares will be provided for each piece of equipment supplied where applicable together with pricing. For items that need regular replacement like air filters and other consumable spares a 3 year supply will be required.

ARCHITECTURE & ENGINEERING – AM TOWER, Malakal Hill Tower Performance Specification

Structure Type	Guyed Tower or Self-Supporting Tower.
Structure Height	Estimated height of 45 meters above ground level.
Lighting and Painting	As per local civil aviation authority requirements and/or the more stringent of US Federal Aviation Authority Standard or ICAO
Antennas	AM, FM, Studio Transmitter link. Include in the structural design the potential installation of cellular antennas, VHF, emergency sirens, wind power, and solar power (recommended positions should be indicated in drawings). Antennae, its mountings and connections shall be design for the wind and seismic loads and shall remain operational during and after an event. <i>Note: AM, FM, and Studio Transmitter link antennas shall be new. Do not use old.</i>
Access	Anti-falling systems (cable or rail), ladder, and working platforms shall be designed and provided; noting that qualified climbers in Palau may not be present. Climbing and working facilities: Class A.
Other civil works	Radio Transmission Building / Radio Studio, Toilet Facility, Water Storage, Electrical meter housing and panels, generator building & fuel storage; drainage structures; site civil works; and site fencing.
Building Code & Standards	<p><u>CODES & STANDARDS</u></p> <p>The more stringent of the following laws, regulations, codes, and standards shall apply for the design, construction, installation, and maintenance of the AM Tower & associated civil works:</p> <ol style="list-style-type: none"> 1. Palau and Koror State laws & regulations 2. IBC 2018 3. ASCE 7-16 4. ANSI/TIA-222-H, 2017, Structural Standard for Antenna Supporting Structures, Antennas 5. ANSI/TIA-322, 2016, Loading, Analysis, and Design Criteria Related to the Installation, Alteration and Maintenance of Communication Structures 6. ANSI/ASSE A10.48, 2016, Criteria for Safety Practices with the Construction, Demolition, Modification and Maintenance of Communication Structures American National Standard for Construction and Demolition Operations 7. Latest edition of ICC codes including but not limited to: International Fire Code, International Energy Conservation Code, International Mechanical Code, International Plumbing Code, International Wild land Urban Interface Code 8. NFPA 9. ACI 318 (latest edition) 10. AISC (latest editions) 11. ASTM and ISO associated standards for corrosion 12. OSHA standards 13. FAA 14. ICAO <p><u>Other standards & Guides to be consulted</u></p> <ol style="list-style-type: none"> 15. ASCE 10 "Design of Latticed Steel Transmission Structures" and ASCE Manual 52 Guide for Design of Steel Transmission Structures should also be consulted.
Building Category	Per ANSI/TIA-222-H the AM Tower could be considered Risk Category IV.
Design Life	<p>The AM Tower shall have a design life not less than 50 years.</p> <p>The AM Tower should have a design life of 50 years or more with an ISO 9223 Corrosivity Category of C4 "High" with a coating life to first maintenance of 50 years. For material and durability requirements utilize the more stringent coating thickness and weights and material standards of ANSI/TIA-222-H, 2017, ISO 1461, ISO 14713, and ISO 9223 standards. Stainless steel shall be ANSI 316 anodized or better.</p> <p>Annex H "Additional Corrosion Control" shall be part of the durability requirements.</p>

	A titanium oxide UV activated nano technology service treatment that is self-cleaning and hydrophilic shall coat the exterior of the AM Tower and structures. Verify compatibility with coatings and electronic equipment.
Siting	<p>The AM Tower foundations (tower and anchors) should be sited</p> <ol style="list-style-type: none"> 1. Minimize wind acceleration due to topographic effects 2. In an area that will not be impacted geotechnical hazards such as landslide and/or land mass movement, 3. At a sufficient distance from cliff edges and areas prone to erosion, 4. At a sufficient distance from neighbouring towers/buildings to prevent collapse of these structures impacting, damaging, or destroying the AM Tower and any of its components, 5. Placed to avoid interference from other antennas, metal structures, and electrical power transmission lines. 6. Placed in an area that is easily accessible and safe for cranes and other vehicles to install and maintain. <p>Refer to "Building codes and standards" and best practices for additional information</p>
Dead Load	Refer to "Building codes and standards"
Live Load	Refer to "Building codes and standards"
Wind Load	<p>Refer to "Building codes and standards" above, utilizing the following wind load parameters. The exposure and topographic category shall be determined from "Building codes and standards".</p> <p>Utilize a 160 mph (70 m/s) ultimate design wind speed, basic wind speed, V, (3-sec gust speed at 33 ft above ground in Exposure C) corresponding to a 1.6% probability of exceedance in 50 years, Mean Recurrence Interval of 3000 years, Annual Exceedance Probability = 0.00033. This is equivalent to the highest wind speed of a Category 4 hurricane on the Saffir-Simpson Scale and accounts for climate change increases in typhoon wind speeds.</p> <p>Tower structure shall be designed for wind induced dynamic oscillations.</p> <p>The site is considered to be within a Wind-Borne Debris region.</p> <p>Resistance/penetration/impact requirements for windows and walls are required. ASTM E695 for testing and evaluation of products for cyclone prone regions and impact resistance should be specified for window, door, and wall products and meet an "enhanced protection" level. All walls and windows shall incorporate impact-protective systems and impact resistant glazing. Glazing and impact resistant systems shall comply with the "enhanced protection" requirements of ASTM E1996.</p>
Earthquake Load	<p>Refer to "Building codes and standards" above, utilizing the following earthquake load parameters.</p> <p>Utilize the following Uniform Collapse (1% probability of collapse in 50yr), Site Class B earthquake design parameters for design as follows.</p> <ol style="list-style-type: none"> 1. PGA = 28%g (Peak Ground Acceleration) 2. S_s = 73%g (5% damped spectral response acceleration parameter at short periods) 3. S₁ = 35%g (5% damped spectral response acceleration parameter at 1 second) 4. T_L = 12 seconds (Long period transition period) <p><i>Note: Perform geotechnical testing to determine site soil class from geotechnical report.</i></p> <p>Tower structure shall be designed for seismic induced dynamic oscillations.</p>
Wildfire	The site fencing, landscaping, and structures shall comply with the 2018 International Wild land-Urban Interface Code and incorporate wildfire resistant materials, strategies, and fire fighting equipment.
Geotechnical	Refer to "Building codes and standards." Performing geotechnical investigation and testing and prepare a geotechnical report that includes all design parameters and recommendations for the civil works in alignment with Annex G of ANSI/TIA-222-H,

	<p>2017, including requirements listed in IBC and ASCE 7.</p> <p>The geotechnical report shall be provided for review and approval.</p> <p><i>Note: Soil electrical resistivity, pH values, soluble salt content and corrosive nature of soil shall be determined (for transmission requirements; appropriate selection of concrete, reinforcement, and cement type for foundations - See ACI 318; and for material requirements of embedded pipes and wires).</i></p> <p><i>Note 2: The Seismic Site Soil Class shall be determined</i></p> <p><i>Note 3: A rapid evaluation of the potential for landslide of Malakal hill shall be performed to ensure that the tower is not located in a landslide hazard zone.</i></p>
Temperature Effects & Extreme Heat	<p>Utilize Per ANSI/TIA-222-H, IBC, and ASCE 7 for the AM Tower for design tension of guys.</p> <p>Other supporting structures shall consider temperature and extreme heat in the cooling of the structures to ensure proper functioning of equipment and comfort of occupants to maintain operationality. Shading structures over the main structures housing equipment and radio rooms should be provided. Natural ventilation should be included should there be a power failure.</p>
Water Scarcity / Drought	<p>Roofs structures shall be used for rain water collection. Storage tanks shall be provided. Water will be used to wash hands and for flushing toilets.</p> <p>Toilet facilities and leach fields shall comply with EQPB regulations.</p>
Steel	<p>Refer to "Building codes and standards."</p> <p>Shop drawings shall be provided as a submittal for review and approval.</p> <p>Welding HDG shall be avoided. Should welding be required on hot dipped galvanized structures, AWS Specification D-19.0, Welding Zinc Coated Steel shall be used.</p> <p>All steel, anchors, and bolts shall have an appropriate material, galvanizing thickness/weight, coatings, and detailing that is appropriate for the corrosive environment (atmospheric and soil) listed in "Design Life."</p>
Concrete	<p>Refer to "Building codes and standards."</p> <p>Shop drawings shall be provided as a submittal for review and approval.</p> <p>All concrete mixes shall comply with the latest edition of ACI 318. Concrete mixes shall have a 28-day compressive strength of 5000 psi with a maximum water cementations ratio of 0.4, utilizing a Type V cement complying with ASTM C150. A corrosion inhibiting admixture shall be used. All aggregate and sand shall be washed. Testing certificates for sand, aggregate, and reinforcing steel shall be provided as a submittal. Concrete mix designs and testing results shall be provided for review and approval as a submittal prior to use.</p>
Guyed Structures	<p>Refer to "Building codes and standards."</p> <p>All guyed towers shall be designed for Guy rupture. See ANSI/TIA-222-H and Annex E.</p>
Construction Means & Methods	<p>Refer to "Building codes and standards." The contractor is responsible for ensuring that all loads that will be experienced during construction of the AM Tower will be taken into account in design. A crane lifting plan and crane manufacturer data sheets shall be provided as a submittal for review and approval. Erosion and control plans shall be provided.</p>
Environmental Impact Statement	<p>The Contractor is responsible for producing an environmental impact statement in accordance with EQPB regulations and requirements. The contractor shall submit this for review and approval.</p>
Permitting	<p>The Contractor is responsible for all permitting applications, documents, and fees.</p>
Drawings & Specifications & Licensing	<p>The Contractor shall submit all design criteria (Architectural, Civil, Structural, Mechanical, Electrical, and Plumbing) prior to proceeding with design for review and approval by the client. Design Drawings, Engineering Calculations, and Construction Specifications shall be provided for review and approval at the Schematic, Design Development, and Construction Documentation stages. The Contractor shall allow for client feedback and a design / peer review process at each stage.</p> <p>All design criteria, drawings, calculations, and construction specifications shall be</p>

	stamped and signed by a registered and licensed engineer in the US, Guam, Commonwealth of the Northern Mariana Islands. Company information, designer, quality controller, and date shall be included on documents.
FAT, SAT, Commissioning	Factory Acceptance Testing, Site Acceptance testing, and Commissioning shall be performed by the client. The Contractor shall include a cost for travel and per diem in the contract to attend FAT at the manufacturer's facility to inspect the AM Tower, prefabricated structures, and equipment.
Health and Safety	<p>The Contractor shall have a Health and Safety Plan, provide employees and sub - contractors with all necessary personal protective equipment, and shall comply with OSHA standards. Hard hats, steel toe boots, eyewear, Hi-Vis clothing, and gloves shall meet the standards and are required. Penalties and/or stop-work orders for non-compliance will be imposed.</p> <p>All workers shall have the appropriate OSHA and NFPA certifications for the work being performed. Certificates shall be provided as a submittal.</p> <p>All workers shall have First Aid and CPR certificates from the Palau Red Cross Society or other internationally recognized authority. Certificates shall be provided as a submittal.</p> <p>The Contractor shall organize with the Division of Fire and Rescue a 1-hour session on fire safety awareness and the appropriate use of fire extinguishers for all workers. The Contractor will also organize with the Bureau of Public Works Safety Officer.</p> <p>The contractor shall submit a worker attendance sheet and photos to the client.</p>
Safeguards	<p>As this is an area with historic and cultural significance & is also a conservation area, the Contractor shall organize for all workers to attend a 1-hour session with the Ministry of Community and Cultural Affairs, Bureau of Cultural and Historical Preservation on best practices and procedures when finding historical or cultural items & a 1-hour session with Koror State Government on best practices when working in conservation areas.</p> <p>The contractor shall submit a worker attendance sheet and photos to the client.</p>

Section 5b: Other Related Requirements

Further to the Schedule of Requirements in the preceding Table, Bidders are requested to take note of the following additional requirements, conditions, and related services pertaining to the fulfillment of the requirements:

Delivery Term [INCOTERMS 2010] (Pls. link this to price schedule)	Other: delivery to the final point of destination and installation
Exact Address of Delivery/Installation Location	Koror, Palau
Mode of Transport Preferred	Sea
UNDP Preferred Freight Forwarder, if any ²	n/a
Distribution of shipping documents (if using freight forwarder)	n/a
Customs, if required, clearing shall be done by:	UNDP
Ex-factory / Pre-shipment inspection	No
Inspection upon delivery	Yes, inspection will be conducted at the final point of destination
Installation Requirements	Yes, installation and commissioning of all equipment supplied
Testing Requirements	Yes, all installed equipment will be tested to ensure that it confirms with manufacturers specifications
Scope of Training on Operation and Maintenance	Training in Koror on installation and maintenance is required. All costs associated with training in Koror must be included into bid price. UNDP will provide Visa support if needed.
Commissioning	Yes, required
Warranty Period	Minimum 3 years warranty is required.
Local Service Support	Details of after-sales capacity in the points of destination will be required
Technical Support Requirements	All technical supporting services and replacement of faulty parts must be provided at vendor's expense during the warranty period. Vendor is required to specify point of contact for all technical queries and for return of faulty components.
After-sale services Requirements	<input checked="" type="checkbox"/> Warranty and other requirements outlined in Section 5a: Schedule of Requirements and Technical Specifications/Bill of Quantities <input checked="" type="checkbox"/> Technical Support <input checked="" type="checkbox"/> Provision of Service Unit when pulled out for maintenance /repair <input type="checkbox"/> Others <i>[pls. specify]</i>
Payment Terms	100% within 30 days upon UNDP's acceptance of the goods delivered as specified and receipt of invoice.
Conditions for Release of Payment	<input type="checkbox"/> Pre-shipment inspection <input checked="" type="checkbox"/> Inspection upon arrival at destination <input checked="" type="checkbox"/> Installation

² A factor of the Incoterms stipulated in the ITB. The use of a UNDP preferred freight forwarder may be considered for purposes of ensuring forwarder's familiarity with procedures and processing of documentary requirements applicable to UNDP when clearing with customs authority of the country of destination.

	<input checked="" type="checkbox"/> Testing <input checked="" type="checkbox"/> Training on Operation and Maintenance <input type="checkbox"/> Others <i>[pls. specify]</i> <input checked="" type="checkbox"/> Written Acceptance of Goods based on full compliance with ITB requirements
All documentations, including catalogues, instructions and operating manuals, shall be in this language	For evaluation purposes documentations, including catalogues, instructions and operating manuals, shall be in English. All technical documentation, instructions and operating manuals in English language will be required with delivered vehicle.

Section 6: Returnable Bidding Forms / Checklist

This form serves as a checklist for preparation of your Bid. Please complete the Returnable Bidding Forms in accordance with the instructions in the forms and return them as part of your Bid submission. No alteration to format of forms shall be permitted and no substitution shall be accepted.

Before submitting your Bid, please ensure compliance with the Bid Submission instructions of the BDS 22.

Technical Bid:

Have you duly completed all the Returnable Bidding Forms?	
▪ Form A: Bid Submission Form	<input type="checkbox"/>
▪ Form B: Bidder Information Form	<input type="checkbox"/>
▪ Form C: Joint Venture/Consortium/ Association Information Form	<input type="checkbox"/>
▪ Form D: Qualification Form	<input type="checkbox"/>
▪ Form E: Format of Technical Bid/Bill of Quantities	<input type="checkbox"/>
▪ Form G: Form of Bid Security	
▪ [Add other forms as necessary]	<input type="checkbox"/>
Have you provided the required documents to establish compliance with the evaluation criteria in Section 4?	<input type="checkbox"/>

Price Schedule:

▪ Form F: Price Schedule Form	<input type="checkbox"/>
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Form A: Bid Submission Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	ITB/FJI/JPN/003/20		

We, the undersigned, offer to supply the goods and related services required for [Insert Title of goods and services] in accordance with your Invitation to Bid No. [Insert ITB Reference Number] and our Bid. We hereby submit our Bid, which includes this Technical Bid and Price Schedule.

Our attached Price Schedule is for the sum of [Insert amount in words and figures and indicate currency].

We hereby declare that our firm, its affiliates or subsidiaries or employees, including any JV/Consortium /Association members or subcontractors or suppliers for any part of the contract:

- a) is not under procurement prohibition by the United Nations, including but not limited to prohibitions derived from the Compendium of United Nations Security Council Sanctions Lists;
- b) have not been suspended, debarred, sanctioned or otherwise identified as ineligible by any UN Organization or the World Bank Group or any other international Organization;
- c) have no conflict of interest in accordance with Instruction to Bidders Clause 4;
- d) do not employ, or anticipate employing, any person(s) who is, or has been a UN staff member within the last year, if said UN staff member has or had prior professional dealings with our firm in his/her capacity as UN staff member within the last three years of service with the UN (in accordance with UN post-employment restrictions published in ST/SGB/2006/15);
- e) have not declared bankruptcy, are not involved in bankruptcy or receivership proceedings, and there is no judgment or pending legal action against them that could impair their operations in the foreseeable future;
- f) undertake not to engage in proscribed practices, including but not limited to corruption, fraud, coercion, collusion, obstruction, or any other unethical practice, with the UN or any other party, and to conduct business in a manner that averts any financial, operational, reputational or other undue risk to the UN and we embrace the principles of the United Nations Supplier Code of Conduct and adhere to the principles of the United Nations Global Compact.

We declare that all the information and statements made in this Bid are true and we accept that any misinterpretation or misrepresentation contained in this Bid may lead to our disqualification and/or sanctioning by the UNDP.

We offer to supply the goods and related services in conformity with the Bidding documents, including the UNDP General Conditions of Contract and in accordance with the Schedule of Requirements and Technical Specifications.

Our Bid shall be valid and remain binding upon us for the period specified in the Bid Data Sheet.

We understand and recognize that you are not bound to accept any Bid you receive.

I, the undersigned, certify that I am duly authorized by [Insert Name of Bidder] to sign this Bid and bind it should UNDP accept this Bid.

Name: _____

Title: _____

Date: _____

Signature: _____

[Stamp with official stamp of the Bidder]

Form B: Bidder Information Form

Legal name of Bidder	[Complete]
Legal address	[Complete]
Year of registration	[Complete]
Bidder's Authorized Representative Information	Name and Title: [Complete] Telephone numbers: [Complete] Email: [Complete]
Are you a UNGM registered vendor?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, [insert UGNM vendor number]
Are you a UNDP vendor?	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, [insert UNDP vendor number]
Countries of operation	[Complete]
No. of full-time employees	[Complete]
Quality Assurance Certification (e.g. ISO 9000 or Equivalent) <i>(If yes, provide a Copy of the valid Certificate):</i>	[Complete]
Does your Company hold any accreditation such as ISO 14001 or ISO 14064 or equivalent related to the environment? <i>(If yes, provide a Copy of the valid Certificate):</i>	[Complete]
Does your Company have a written Statement of its Environmental Policy? <i>(If yes, provide a Copy)</i>	[Complete]
Does your organization demonstrate significant commitment to sustainability through some other means, for example internal company policy documents on women empowerment, renewable energies or membership of trade institutions promoting such issues	[Complete]
Is your company a member of the UN Global Compact	[Complete]
Contact person that UNDP may contact for requests for clarifications during Bid evaluation	Name and Title: [Complete] Telephone numbers: [Complete]

	Email: [Complete]
<p>Please attach the following documents:</p>	<ul style="list-style-type: none"> ▪ Company Profile, which should <u>not</u> exceed fifteen (15) pages, including printed brochures and product catalogues relevant to the goods and/or services being procured. The technical literature/brochure must demonstrate the compliance with technical specifications claimed by the bidder in Form E: Format of Technical Bid. ▪ Certificate of Incorporation/ Business Registration ▪ Tax Registration/Payment Certificate issued by the Internal Revenue Authority evidencing that the Bidder is updated with its tax payment obligations, or Certificate of Tax exemption, if any such privilege is enjoyed by the Bidder ▪ Trade name registration papers, if applicable ▪ Quality Certificate (e.g., ISO, etc.) and/or other similar certificates, accreditations, awards and citations received by the Bidder, if any ▪ Certificates and other documents outlined in Section 5a: Schedule of Requirements and Technical Specifications/Bill of Quantities ▪ Environmental Compliance Certificates, Accreditations, Markings/Labels, and other evidences of the Bidder's practices which contributes to the ecological sustainability and reduction of adverse environmental impact (e.g., use of non-toxic substances, recycled raw materials, energy-efficient equipment, reduced carbon emission, etc.), either in its business practices or in the goods it manufactures ▪ Patent Registration Certificates, if any of technologies submitted in the Bid is patented by the Bidder ▪ Certification or authorization to act as Agent on behalf of the Manufacturer, or Power of Attorney. ▪ Export Licenses, if applicable ▪ Official Letter of Appointment as local representative, if Bidder is submitting a Bid on behalf of an entity located outside the country ▪ List and value of major contracts of similar nature and size successfully completed in the past three years, including contact details of clients, who could be contacted for reference purposes

Form C: Joint Venture/Consortium/Association Information Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	ITB/FJI/JPN/003/20		

To be completed and returned with your Bid if the Bid is submitted as a Joint Venture/Consortium/Association.

No	Name of Partner and contact information <i>(address, telephone numbers, fax numbers, e-mail address)</i>	Proposed proportion of responsibilities (in %) and type of goods and/or services to be performed
1	[Complete]	[Complete]
2	[Complete]	[Complete]
3	[Complete]	[Complete]

Name of leading partner (with authority to bind the JV, Consortium, Association during the ITB process and, in the event a Contract is awarded, during contract execution)	[Complete]
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We have attached a copy of the below referenced document signed by every partner, which details the likely legal structure of and the confirmation of joint and severable liability of the members of the said joint venture:

☐ Letter of intent to form a joint venture **OR** ☐ JV/Consortium/Association agreement

We hereby confirm that if the contract is awarded, all parties of the Joint Venture/Consortium/Association shall be jointly and severally liable to UNDP for the fulfillment of the provisions of the Contract.

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Name of partner: _____ Name of partner: _____

Signature: _____ Signature: _____

Date: _____ Date: _____

Form D: Eligibility and Qualification Form

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	ITB/FJI/JPN/003/20		

If JV/Consortium/Association, to be completed by each partner.

History of Non- Performing Contracts

<input type="checkbox"/> Non-performing contracts did not occur during the last 3 years			
<input type="checkbox"/> Contract(s) not performed in the last 3 years			
Year	Non- performed portion of contract	Contract Identification	Total Contract Amount (current value in US\$)
		Name of Client: Address of Client: Reason(s) for non-performance:	

Litigation History (including pending litigation)

<input type="checkbox"/> No litigation history for the last 5 years			
<input type="checkbox"/> Litigation History as indicated below			
Year of dispute	Amount in dispute (in US\$)	Contract Identification	Total Contract Amount (current value in US\$)
		Name of Client: Address of Client: Matter in dispute: Party who initiated the dispute: Status of dispute: Party awarded if resolved:	

Previous Relevant Experience

Please list only previous similar assignments successfully completed in the last 3 years.

List only those assignments for which the Bidder was legally contracted or sub-contracted by the Client as a company or was one of the Consortium/JV partners. Assignments completed by the Bidder's individual experts working privately or through other firms cannot be claimed as the relevant experience of the Bidder, or that of the Bidder's partners or sub-consultants, but can be claimed by the Experts themselves in their CVs. The Bidder should be prepared to substantiate the claimed experience by presenting copies of relevant documents and references if so requested by UNDP.

Project name & Country of Assignment	Client & Reference Contact Details	Contract Value	Period of activity and status	Types of activities undertaken

Bidders may also attach their own Project Data Sheets with more details for assignments above.

☐ Attached are the Statements of Satisfactory Performance from the Top 3 (three) Clients or more.

Financial Standing

Annual Turnover for the last 3 years	Year	USD
	Year	USD
	Year	USD
Latest Credit Rating (if any), indicate the source		

Financial information (in US\$ equivalent)	Historic information for the last 3 years		
	Year 1	Year 2	Year 3
	<i>Information from Balance Sheet</i>		
Total Assets (TA)			
Total Liabilities (TL)			
Current Assets (CA)			
Current Liabilities (CL)			
	<i>Information from Income Statement</i>		
Total / Gross Revenue (TR)			
Profits Before Taxes (PBT)			
Net Profit			
Current Ratio			

☐ Attached are copies of the audited financial statements (balance sheets, including all related notes, and income statements) for the years required above complying with the following condition:

- Must reflect the financial situation of the Bidder or party to a JV, and not sister or parent companies;
- Historic financial statements must be audited by a certified public accountant;
- Historic financial statements must correspond to accounting periods already completed and audited. No statements for partial periods shall be accepted.

Form E: Format of Technical Bid

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	ITB/FJI/JPN/003/20		

The Bidder's Bid should be organized to follow this format of the Technical Bid. Where the bidder is presented with a requirement or asked to use a specific approach, the bidder must not only state its acceptance, but also describe how it intends to comply with the requirements. Where a descriptive response is requested, failure to provide the same will be viewed as non-responsive.

SECTION 1: Bidder's qualification, capacity and expertise

- 1.1 General organizational capability which is likely to affect implementation: management structure, financial stability and project financing capacity, project management controls, extent to which any work would be subcontracted (if so, provide details).
- 1.2 Relevance of specialized knowledge and experience on similar engagements done in the region/country.
- 1.3 Quality assurance procedures and risk mitigation measures.
- 1.4 Organization's commitment to sustainability.

SECTION 2: Scope of Supply, Technical Specifications, and Related Services

This section should demonstrate the Bidder's responsiveness to the specification by identifying the specific components proposed, addressing the requirements, as specified, point by point; providing a detailed description of the essential performance characteristics proposed; and demonstrating how the proposed bid meets or exceeds the requirements/specifications. All important aspects should be addressed in sufficient detail.

- 2.1 A detailed description of how the Bidder will deliver the required goods and services, keeping in mind the appropriateness to local conditions and project environment. Details how the different service elements shall be organized, controlled and delivered.
- 2.2 Explain whether any work would be subcontracted, to whom, how much percentage of the requirements, the rationale for such, and the roles of the proposed sub-contractors and how everyone will function as a team.
- 2.3 The bid shall also include details of the Bidder's internal technical and quality assurance review mechanisms.
- 2.4 Implementation plan including a Gantt Chart or Project Schedule indicating the detailed sequence of activities that will be undertaken and their corresponding timing.
- 2.5 Demonstrate how you plan to integrate sustainability measures in the execution of the contract.

UNDP Minimum Requirements <i>(Models to be offered by bidders should meet below minimum requirements. Bidders can offer options that exceed below specifications.)</i>	Specifications of Proposed by the Bidder Goods	Compliance with Technical Specifications	
		Yes, We Comply	No, we can't comply (indicate discrepancy)
Rehabilitation of AM Broadcast System Koror, Palau			

<p><u>Earth Resistivity Measurements</u></p> <p>Ground conductivity is an extremely important factor in determining the field strength and propagation of ground wave AM radio transmissions.</p> <p>AM radio transmissions are particularly reliant on good ground conductivity as their primary propagation is by surface wave.</p> <p>Some years ago, a ground conductivity survey was conducted in the area proposed for the new AM Broadcast tower.</p> <p>Measured results of ground conductive at four points around the proposed antenna tower location the measured gave ρ values of 37 to 157 Ωm. which should be sufficient to provide protective grounding for the AM antenna tower.</p> <p>It is recommended to install ground plane radials to provide a good RF earth plane.</p> <p>These should extend at least 40 metres from the tower base and consist of 36 or 60 radials.</p> <p>The final number will depend on theoretical radiation efficiency calculations to be carried out by the successful bidder.</p> <p>The aim is to provide good coverage throughout the islands that comprise the Republic of Palau, with a ground wave field strength of at least 0.5 mv / m at the most distant islands.</p>			
<p><u>Mast</u></p> <p>The antenna will be a base insulated guyed mast of approx 150 feet height supported by three layers of guy wires.</p> <p>The mast will be constructed of high quality galvanised steel section and be rated to withstand at least 70 m/s (160 mph) sustained winds and will comply with all relevant specifications contained in Annex 01 at the end of this document.</p> <p>The successful bidder will provide details of the concrete base dimensions required to adequately support the mast.</p> <p>Also, the successful bidder will give full details of wind loading calculations used to design the tower to withstand the expected wind loadings.</p> <p>All fixings and fittings will be either stainless steel or hot dipped galvanised to provide a long life in the severe maritime climate prevailing in Palau.</p>			

<p><u>Guy Wires</u></p> <p>The successful bidder will provide full details of guy anchor blocks needed to withstand the wind loading required.</p> <p>The guy wires will be broken up suitable intervals with heavy duty compression type insulators, to provide isolation, having regard to the operating frequency. The guy wires will be of heavy duty galvanised steel wire having regard to the strength required to withstand the likely wind loading and tower weight.</p>			
<p><u>Radio Earth Mat</u></p> <p>An earth mat will be constructed around the antenna mast using at least 10AWG diameter copper wire buried at least 300 mm into the soil. The earth mat will extend 40 metres out from the tower base, and consist of 36 radials (or as determined by the bidder to provide an adequate ground plane) equally spaced in a circle around the tower base.</p> <p>A 1 inch diameter copper tube may be arranged as a ring around the base of the tower and all earth mat wires will be silver soldered to this ring. A 2 inch wide copper strap will be silver soldered to the ring to provide the ground connection to the antenna coupler.</p> <p>The radio earth mat should be physically connected to the lightning protection earth system.</p> <p>The metalwork for the lower section of the guy wires and guy anchors will be bonded to the earth mat.</p>			
<p><u>Lightning Protection</u> <i>(These specifications are given as general recommendations. The recommendations of the transmitter manufacturer should be followed where available and will supersede the general specifications given here.)</i></p> <p>An independent lightning earthing system will be provided at the base of the tower, together with suitable ball type spark gaps. The spark gap should be separated horizontally to prevent debris and water causing spark over.</p> <p>The earth system will consist of a number of copper clad earth rods driven into the ground and bonded to the base of the tower with heavy gauge stranded copper wire and will terminate on the earth side of the lightning spark gap at the base of the antenna.</p> <p>It is desirable that the earth rods are at least 10 to 15 feet long if possible to keep the ground resistance as</p>			

<p>low as possible.</p> <p>The earth rods will be spaced such that the distance between each rod is at least two times their length. They should be connected to the radial earth mat</p>			
<p><u>Aircraft Obstruction Lighting</u></p> <p>Redundant obstruction lighting will be provided on the tower at the 75 and 150 foot levels.</p> <p>All wiring shall be suitably protected in weatherproof metal conduit and all fittings will be weatherproof.</p> <p>The lighting fittings provided will conform to FAA and FCC specifications for aircraft obstruction lighting on guyed towers.</p> <p>The power feed to the lighting will be via suitable isolation chokes located in the antenna coupling enclosure.</p> <p>The tower will be painted with approved paint and in approved way, to provide aircraft obstruction markings.</p>			
<p><u>Antenna Tuner / Coupler</u></p> <p>A stand alone antenna coupler located in an enclosure adjacent to the base of the tower will be provided to match the 50 ohm coaxial transmission line to the complex impedance at the base of the tower.</p> <p>The coupler will contain adjustable tuning elements to accommodate any small changes in tower impedance over time.</p> <p>The coupling assembly will incorporate a static drain choke to conduct any static charges on the tower to ground.</p> <p>Metering will be provided to measure the antenna current and the reflected power in the transmission line. The meters will be fitted with bypass switches or links to protect against lightning surges induced into the tower.</p> <p>A power feed system to feed power to the tower lighting is required which will provide the necessary isolation between the tower and the mains power supply. All power wiring will be installed in accordance with Palau electrical installation rules and best practices and be fully weatherproof.</p> <p>The coupler enclosure will be weather and insect proof and be constructed of materials that will not deteriorate in the severe maritime climate. Powder coated steel is not acceptable due to severe corrosion</p>			

<p>problems in tropical climates.</p> <p>A copper earth strap will be provided between the antenna tuner and the transmitter building ground reference point.</p> <p>The installation team will be responsible for correct tuning of the coupler unit.</p>			
<p><u>Antenna Feeder Cable</u></p> <p>The successful bidder will supply and install a high grade coaxial cable between the transmitter and the antenna coupler. The cable supplied will be suitably rated to handle 5 kilowatts of RF power at 150 % modulation without excessive heating or risk of insulation breakdown.</p> <p>The feeder cable will have ferrite chokes installed at each end to limit longitudinal currents due to induced lightning surges.</p> <p>The feeder cable outer conductor will be securely bonded to the transmitter building reference ground point with a copper strap.</p> <p>The feeder cable should be buried below the level of the radial mat to reduce induced currents into the feeder</p>			
<p><u>Antenna Security Fence.</u></p> <p>As the base of the tower operates at a high RF voltage a security fence is required surrounding the base of the tower and the antenna coupler. This fence should be located 5 metres from the base of the tower and be at least 2 metres high, to keep personnel at a safe distance as recommended in the ANSI specifications.</p> <p>The fence may be constructed of treated hardwood or chain-link mesh supported by pipe posts.</p> <p>If the fence is of metal construction, it should be bonded to the tower earthing system to reduce the risk of RF burns.</p> <p>Suitable weather resistant easily recognizable..... DANGER, High Voltage ... signs will be securely on the four sides of the fence as an additional safety measure.</p>			
<p><u>5KW AM Transmitter</u></p> <p><u>Overview</u></p> <p>A new AM Medium Wave transmitter is to be supplied.</p> <p>The new transmitter will be transmitting on a frequency of 1584 KHz with an unmodulated carrier</p>			

<p>power of 5 kilowatts nominal.</p> <p>The transmitter will be designed to operate unattended at the remote transmitter site on Malendob Island and will be remotely controlled from the existing studio in Koror.</p> <p>The overall design of the transmitter will ensure that it will operate reliably in a tropical maritime climate such as prevails in Palau.</p> <p>The transmitter will operate from a nominal 208 Volt three phase; 60 Hz power supply, and have a high efficiency to keep power consumption at a minimum.</p>			
<p><u>Overall Transmitter Characteristics</u></p> <p><u>General</u></p> <p>The transmitter will be solid state construction and be of modular design so as to be easily repaired in the event of a failure by replacement of modules.</p> <p>The transmitter will be supplied pretuned to operate at 1584 KHz.</p> <p>The PA modules will be replaceable without the need for tuning and be hot replaceable while the transmitter is still operational. Each PA module will be fully protected against short circuits and other faults.</p> <p>The output power will be adjustable from 1 KW to 5 KW in 1 KW steps. The output power will be stabilized against mains power voltage fluctuations.</p> <p>The power supply will be from three phase grid power at a nominal 208 volts phase to phase and 60 Hz frequency.</p> <p>The transmitter will-have the capability of 140 percent positive modulation at five kilowatts carrier.</p> <p>Written documentation proving satisfactory operation in severe tropical environments similar to that prevailing in Palau. Evidence of similar equipment being supplied in the region is required.</p>			
<p><u>Safety Provisions</u></p> <p>The transmitter will meet all safety requirements specified in publication EN60215: 1996 Safety Requirements for Radio Transmitting Equipment.</p> <p>The transmitter will instantly shut down in the case of a severe antenna or feeder fault where the VSWR exceeds 1.5: 1.</p> <p>In the case of antenna degradation of less than 1.5 : 1 VSWR the transmitter will continue to operate but at</p>			

<p>reduced power.</p> <p>The transmitter output will incorporate matching networks, harmonic filters, surge /transient protection in the form of fast acting spark gaps and a static drain network.</p> <p>The transmitter will have interlocks where applicable to protect personnel from accidental exposure to high voltages.</p> <p>The transmitter earthing point will be firmly bonded to the transmitter building common reference grounding point with a copper strap.</p> <p>The transmitter will be sealed against insect intrusion as much as possible.</p> <p>The transmitter should be installed on an insulating plinth to reduce the likelihood of arcoverns to the floor in the event of a close in lightning strike.</p>			
<p><u>Frequency Stability</u></p> <p>The transmitter will be supplied pretuned to operate at 1584 KHz.</p> <p>The carrier frequency will be held to +- 2 ppm / year over the normal temperature range and is readily adjustable to restore it to specs</p>			
<p><u>Modulation Capability</u></p> <p>The transmitter will be capable of 140 percent positive modulation at 5 KW carrier power.</p> <p>The audio input to the transmitter will be 600 ohms balanced analogue audio input at +10 dBm.</p> <p>Nominal for 100% modulation, adjustable from -10 to +12 dBm.</p> <p>The transmitter will incorporate Modulation Dependent Carrier level Control to ensure maximum efficiency</p>			
<p><u>Frequency Response</u></p> <p>+0.2 dB/-0.8 dB, 30 Hz to 10,000 Hz</p>			
<p><u>Noise and Distortion</u></p> <p>Better than 0.8% (THD), 30 Hz to 10,000 Hz at 95% modulation (typical)</p>			
<p><u>Intermodulation</u></p> <p>SMPTE 1:1 Ratio, 60Hz/7kHz, 95% Mod Peak - 0.5% @ 5 kW (typical)</p> <p>DIM-B, 2.96kHz/9kHz, 80% Mod Peak - 0.5% @ 5 kW</p>			
<p><u>Carrier Shift</u></p>			

0.5% or less at 100% modulation			
<u>Monitoring and Metering</u> <u>Metering</u> <u>Cabinet</u> DC Voltages (B+, PA and 15V) DC Current Sample Levels (PDM and RF Drive) Fan Speeds Heat Sink Temperature <u>Exciter</u> Output Current (RMS, Peak, Carrier) Output Voltage (RMS, Peak, Carrier) Forward Power (RMS, Peak, Carrier) Reflected Power (RMS, Peak, Carrier)			
<u>RF Output</u> The RF output of the transmitter will be 50 ohms unbalanced impedance and terminate on an EIA connector to match the feeder cable used.			
<u>Output RF Monitor</u> A directional coupler will be in the RF output line to enable audio performance measurements to be made with appropriate instruments.			
<u>Cooling</u> The transmitter will be air cooled with replaceable air filters. Each PA module will have at least 2 readily replaceable fans to ensure a reliable cooling air supply to the module. All air input will be filtered with replaceable paper filters. Suitable ducting will be provided to take hot exhaust air outside the transmitter building. This ducting will be provided with insect screens to prevent ingress of insects.			
<u>Status Monitor</u> A logging status monitor will be provided to enable quick status checks particularly in the event of a fault.			
<u>Local Control and Monitoring.</u> Local control and monitoring of the transmitter shall			

<p>be available via a front panel display.</p> <p>Built in instrumentation will provide details of modulation characteristics, spectrum and antenna impedance.</p> <p>The transmitter will have a scheduler where preset operating times and conditions can be preset for up to 100 days.</p>			
<p><u>Remote Control and Monitoring</u></p> <p>Direct wired optically isolated inputs and open collector outputs required.</p> <p>Web interface - All locally available control to be available over TCP/IP web interface.</p>			
<p><u>Documentation and Handbooks</u></p> <p>The transmitter will be supplied with at least two printed copies of all installation and maintenance handbooks, written in the English language.</p> <p>Copies of all manuals will be also provided on digital media.</p>			
<p><u>Spares and Maintenance</u></p> <p>The supplier will provide a list of recommended spares, including spare modules, covering an estimated 5 year period.</p> <p>The output transistors in the PA modules will be easily field replaceable.</p>			
<p><u>Warranties</u></p> <p>The supplied equipment will carry a 3 year warranty against faulty manufacture and module failures.</p>			
<p><u>Program Input equipment</u></p> <p><u>Program Compressor and Limiter for the AM transmitter</u></p> <p>A program compressor and limiter is required at the transmitter location to control the audio levels into the transmitter to prevent over modulation and also provide best reception possible at remote locations.</p> <p><u>The unit supplied will have the following characteristics.</u></p> <p>Rides Gain</p> <p>The unit will ride gain over an adjustable range of up to 25dB, compressing dynamic range and compensating for operator gain-riding errors and for gain inconsistencies in automated systems.</p> <p>Increases the Density and Loudness of the Program</p>			

<p>Material Will increase the density and loudness of the program material by multiband limiting and multiband distortion-cancelling clipping, improving the consistency of the station's sound and increasing loudness and definition without producing audible side effects.</p> <p>Precisely Controls Peak Levels Will precisely controls peak levels to prevent over-modulation.</p> <p>Compensates for the High and Low-Frequency Roll offs Will compensate for the high- and low-frequency roll offs of typical AM receivers with a fully adjustable program equalizer providing up to 20dB of high-frequency boost (at 5 kHz) without producing the side effects encountered in conventional processors. This equalizer can thus produce extreme pre emphasis that is appropriate for very narrow-band radios.</p> <p>Controllable and Adjustable</p> <p>Wide Variety of Factory Presets The unit will be provided with factory presets to accommodate user requirements. The user will be able to further customize the presets, and these can be stored and recalled on command. An LCD and full-time LED meters will be provided to make setup, adjustment and programming of the unit easy. The LEDs show all metering functions of the processing structure (Two-Band or Five-Band) in use.</p> <p>Test and Alignment A Bypass Test Mode can be invoked locally to permit broadcast system test and alignment or "proof of performance" tests.</p> <p>Line-Up Tone Generator it will contain a built-in line-up tone generator that offers sine, square, and triangle waves, facilitating quick and accurate level setting in any system.</p> <p>Upgradeable The unit's software will be upgradable by running factory -supplied downloadable upgrade software.</p> <p>Will control Transmitter Bandwidth as Necessary to Meet Government Regulations The unit will control the transmitter bandwidth as necessary to meet government regulations, regardless of program material or equalization.</p> <p>Two Mono Analogue Outputs and AES3 Digital</p>			
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<p>Inputs and Outputs</p> <p>Unit will include analogue and AES3 digital inputs and outputs. Both the digital input and the two digital outputs will be equipped with sample-rate converters and will operate at 32 kHz, 44.1 kHz, 48, 88.2, and 96 kHz sample rates as required. The pre-emphasis status and output levels will be separately adjustable for the analogue and digital outputs.</p> <p>Rigorously RFI-Suppressed</p> <p>All input, output, and power connections will be rigorously RFI-suppressed to exacting standards, ensuring trouble-free installation and prevent feedback from the AM transmitter.</p> <p>Program Input Rack</p> <p>The program input rack will provide the following facilities:</p> <ul style="list-style-type: none"> Patch panel for audio patching. Space for the AM Program limiter and compressor Space for the STL Receiver. Space for FM transmitter limiter. <p>The program input rack will be securely bonded to the common earth bus.</p>			
<p><u>Transmitter Accommodation</u></p> <p>The original survey called for a container as accommodation for the new transmitter and the existing FM transmitter.</p> <p>The container will be made of non corrosive materials, preferably aluminium or stainless steel, and be mounted off the ground on a concrete foundation.</p> <p>The container will have a well constructed roof over it to shade it from direct sunlight to keep the internal temperature reasonable, and to reduce the air conditioning load.</p> <p>A suitable air conditioning system will be incorporated into the building to keep internal temperatures below 30 degrees C. The successful vendor will calculate the size of the air conditioner taking into account the heat load in the building. It is desired that the hot exhaust air from the transmitter will be ducted outside the building with suitable ductwork.</p> <p>The building will have a main access door and two windows, one on each side to allow for natural lighting. These windows will be protected from</p>			

<p>possible flying debris by hurricane resistant mesh.</p> <p>The transmitter building will have a well designed earthing system comprising a ground ring connected to copper clad grounding rods spaced around the building and interconnected with a heavy gauge stranded earth wire. Approved clamps will be used to attach this wire to each earth rod.</p> <p>This earth ring will be connected by a short heavy stranded copper earth wire to the building common earthing point. The spacing between the earth rods will be at least two to three times the rod length.</p> <p>All incoming lines from outside sources including power lines, audio lines etc. should be provided with suitable surge arrestors and ferrite isolation chokes.</p> <p>A common ground reference point busbar will be established inside the building close to where the antenna feeder cable enters the building. All building equipment earths will be connected to this common earthing point. This is to provide for lightning protection to equipment.</p>			
<p><u>Power Supply and Accessories</u></p> <p><u>3 phase Voltage Stabilizer</u></p> <p>A 208 volt 60 Hz three phase grid power supply will be available at the transmitter site.</p> <p>It is understood that this supply will have a supply rating of 30 kva.</p> <p>It is recommended that the supply to the transmitter be from a 4 wire star connection to avoid unwanted transients and harmonic distortion in the power feed that could damage the transmitter.</p> <p>The grid power supply can be somewhat unstable at times and it is essential that a mains stabilizer is installed between the mains feed and the transmitter.</p> <p>The stabilizer will be rated to supply the full load power required by the transmitter + 40 %.</p> <p>Surge protection will be built into the stabilizer to guard against voltage surges introduced into the power lines by lightning strikes or other disturbances.</p> <p>All incoming lines from outside sources including power lines, audio lines etc should be provided with suitable surge arrestors and ferrite isolation chokes.</p> <p>The stabilizer will be suited for use in tropical environments similar to that prevailing in Palau.</p> <p>A standby generator is also on site. This genset has a</p>			

<p>rating of 25 kva.</p> <p>As the existing accommodation for the generator is in poor condition, bidder will need to provide a new container for the 25KVA stand-by generator. The STBY-GEN should be installed in a separate containerized building for noise filtering.</p> <p>It will be the responsibility of the installer to supply and install the power wiring and switching / overload protective devices between the existing power supply and the new transmitter installation.</p> <p>All wiring will be installed in accordance with the relevant wiring codes in force in Palau.</p>			
<p><u>Studio to transmitter VHF Link equipment</u></p> <p>A complete STL system comprising Transmitter and receiver and antennas will be required to replace an existing aged unit.</p> <p>Preferred band is 940 to 960 MHz the approximate distance to be covered is about 5.5 Km and is line of sight.</p> <p>The STL will be able to accommodate a composite stereo audio feed from the studio to the transmitter site. The stereo generator will be at the studio.</p>			
<p><u>Shift existing FM Transmitter to new Tx accommodation</u></p> <p>It is required to move the existing FM transmitter from the old building to the new transmitter building and move the FM antenna to the Marine VHF mast.</p> <p>Sufficient space will be needed to accommodate the FM transmitter and its associated program input limiter.</p> <p>The existing FM transmitter is a 1 kw unit comprising three units, the FM exciter, the 50 volt 50 amp power supply and the 1 KW power amplifier.</p> <p>Care will need to be taken to ensure that agreement is obtained from the operators of the VHF Marine system to allow the FM antenna to be relocated to their tower.</p> <p>Care will also be needed to ensure that there are no interference problems caused by either overload or inter-modulation products from the FM transmissions to the marine receivers.</p> <p>The antenna feeder for the FM transmitter will need to be re-arranged and to be properly earthed at the entry point to the TX building.</p>			

The marine VHF tower will need to be bonded to the earth ring around the transmitter building.					
<u>Downtown Studio Upgrade</u> The following equipment is required to update the studio. The supplied equipment will need to provide a stereo audio feed to the STL link to the transmitter site. Equipment proposed					
Name of equipment	Mfr / suggested type.	Remarks			
Console	RE55E-12	6 MIC+4STEREO+ 2 TEL INPUT			
Auto coupler	STA-3	PEAS system Controller			
PGM Switcher	SS2.1	PEAS system Swer			
DJ Microphone	AKG C1000				
FU box	SIGMA Monicaf-XLR				
CD Player	American audio UCD 100				
Telephone HYB	COMREX DH22	2ch Telco HYBRID			
DAW	DELL VOSTRO380	Windows7Pro 2TB HDD			
UPS	SAU-A302	AC120V 3KVA Single phase			
STEREO ENCODER	ORBAN 8600				
ON AIR MONITOR	DENON UTU-F88	AM/FM ON AIR MONITOR			
Netkrom IP terminal	Netkrom 5G	IP remote access to AM transmitter			
Monitor PC	DELL Inspiron17	AM TX monitor & control terminal			

Other Related services and requirements <i>(based on the information provided in Section 5b)</i>	Compliance with requirements		Details or comments on the related requirements
	Yes, we comply	No, we can't comply <i>(indicate discrepancies)</i>	

Delivery Term 6 months			
<p><u>Emergency Studio equipment at the Transmitter site</u></p> <p>A set of suitable equipment necessary to provide an emergency operating position at the transmitter site will be required as part of the overall upgrade. Bidders are asked to provide a list of equipment that they would recommend to provide this facility, bearing in mind that it is only for emergency use when the main studio audio feed is unavailable. This emergency studio will feed both the AM and FM transmitters with the same program content.</p>			
<p><u>Training</u></p> <p>It is important that the Palau staff understand and know how to operate and maintain the equipment supplied for this refurbishment.</p> <p>To ensure that they have a good working knowledge of the equipment they will be given detailed instructions by the installation team on the general principles of operation and maintenance of the installed equipment. This will be partly classroom type instruction and on the job instruction.</p> <p>It will be the responsibility of the installation team to make sure that this happens to the satisfaction of the project supervisors.</p>			
<p><u>Spares</u></p> <p>A recommended list of maintenance spares will be provided for each piece of equipment supplied where applicable together with pricing. For items that need regular replacement like air filters and</p>			

other consumable spares a 3 year supply will be required.			
Installation and other work as may be required to fully re-instate the AM broadcast system			

SECTION 3: Management Structure and Key Personnel

- 3.1 Describe the overall management approach toward planning and implementing the project. Include an organization chart for the management of the project describing the relationship of key positions and designations. Provide a spreadsheet to show the activities of each personnel and the time allocated for his/her involvement. – n/a
- 3.2 Provide CVs for key personnel that will be provided to support the implementation of this project using the format below. CVs should demonstrate qualifications in areas relevant to the scope of goods and/or services. CV of trainers should be provided. – n/a

Format for CV of Proposed Key Personnel

Name of Personnel	[Insert]
Position for this assignment	[Insert]
Nationality	[Insert]
Language proficiency	[Insert]
Education/ Qualifications	<i>[Summarize college/university and other specialized education of personnel member, giving names of schools, dates attended, and degrees/qualifications obtained.]</i> [Insert]
Professional certifications	<i>[Provide details of professional certifications relevant to the scope of goods and/or services]</i> <ul style="list-style-type: none"> ▪ Name of institution: [Insert] ▪ Date of certification: [Insert]
Employment Record/ Experience	<i>[List all positions held by personnel (starting with present position, list in reverse order), giving dates, names of employing organization, title of position held and location of employment. For experience in last five years, detail the type of activities performed, degree of responsibilities, location of assignments and any other information or professional experience considered pertinent for this assignment.]</i> [Insert]
References	<i>[Provide names, addresses, phone and email contact information for two (2) references]</i> Reference 1: [Insert] Reference 2: [Insert]

I, the undersigned, certify that to the best of my knowledge and belief, the data provided above correctly describes my qualifications, my experiences, and other relevant information about myself.

Signature of Personnel

Date (Day/Month/Year)

FORM F: PRICE SCHEDULE FORM

Name of Bidder:	[Insert Name of Bidder]	Date:	Select date
ITB reference:	ITB/FJI/JPN/003/20		

The Bidder is required to prepare the Price Schedule following the below format. The Price Schedule must include a detailed cost breakdown of all goods and related services to be provided. Separate figures must be provided for each functional grouping or category, if any.

Bidders shall price their bids based on the details presented in Section 5a. All prices quoted shall comply with requested INCOTERMS 2010 and shall include loading/unloading, insurance, transportation to final destination, installation, initial start-up and training. All prices quoted shall be in US Dollars and shall be exclusive of all taxes (e.g. customs duties, VAT etc.).

UNDP will award the contract to one Bidder, who will present the lowest priced offers of the technically qualified/responsive Bids.

Any estimates for cost-reimbursable items, such as travel of experts and out-of-pocket expenses, should be listed separately.

Bidder is required to specify detailed description of offered goods by providing model, brand, technical parameters and catalogue if available. Offered goods should meet minimum technical specification requirements outlined in the Section 5a: Schedule of Requirements and Technical Specifications/Bill of Quantities.

Currency of the Bid: USD

Price Schedule

Item #	Description	UoM	Q-y	Unit Price	Total Price
1	Rehabilitation of AM Broadcast System (attach detailed breakdown of the Grand Total to this Price Schedule as per Section 5: Schedule of Requirements and Technical Specifications/Bill of Quantities and related works)				
FCA charges, if any					
Bid Subtotal FCA (Incoterms 2010) (please state FCA International Airport):					
Transportation/Delivery Cost					
Bid Total DDP, off-loaded/cleared, Koro, Palau (Incoterms 2010)					
Installation					
Training					
Warranty					
Technical Support					

Other (please specify)	
GRAND TOTAL	

Name of Bidder: _____

Authorised signature: _____

Name of authorised signatory: _____

Functional Title: _____