

KENYA WILDLIFE SERVICE

P.O BOX 40241

NAIROBI.

**TENDER NO.KWS/HQS/TC/30/
2009-2010**

**SUPPLY, INSTALLATION &
COMMISSIONING OF DIGITAL
TRUNKING RADIO SYSTEM**

CLOSING DATE: FRIDAY 4TH JUNE/2010

TIME:12 NOON

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Section A .Tender Notice-

Reference: **KWS/HQS/TC/30/2009-2010-RE-ADVERTISED**

Tender name: **SUPPLY, INSTALLATION & COMMISSIONING OF DIGITAL TRUNKING RADIO SYSTEM**

Kenya Wildlife Service invites sealed tenders from eligible candidates for the supply, delivery and installation of **DIGITAL TRUNKING RADIO SYSTEM**

Interested eligible candidates may obtain further information from and inspect the tender documents at the office of Head Supply Chain management, Kenya Wildlife Service Headquarters, Langata Road, Nairobi during normal working hours 9.00Am to 4.00Pm.

A complete set of tender documents may be obtained by interested candidates upon payment of a non - refundable fee of...Kshs3, 000.00 in cash or bankers cheque at cash office KWS HQS.

Tenders must be accompanied by a bid security of Kshs.100, 000.00 in the form of a bank guarantee or freely convertible currency. Bids must remain valid for a period of ninety (120) days from the date of opening.

Pre-bid meeting will be held on **Friday 21st May 2010** at KWS hqs boardroom starting at **10.00am**.

The completed tenders in plain sealed envelopes clearly marked “**Tender No. KWS/HQS/TC/30/2009-2010 for the Supply, Installation& Commissioning of Digital Trunking Radio System,**” shall be addressed to:

*The Director,
Kenya Wildlife Service
P.O. Box 40241 00100-GPO
Nairobi*

Firms which had purchased the previous tender documents will be exempted from payments of non refundable fee of Kshs 3,000/= upon proof of previous participation by production of an original receipt.

The completed bids in plain sealed envelope marked with tender reference number and tender name, shall be deposited into the **Tender Box** located at the entrance of **Simba court, KWS Headquarters, Langa'ta Road P.O. Box 40241, Nairobi** on or before **12:00 Noon, Friday 4th June 2010**.

Tenders will be opened immediately thereafter in the presence of candidates' representatives who choose to attend in KWS Boardroom.

**HEAD SUPPLY CHAIN MANAGEMENT
FOR: DIRECTOR**

Section B. Invitation for Tenders

Date _____

To: _____ (name of tenderer)
_____/address

Dear Sir/Madam:

Reference: **SUPPLY, INSTALLATION & COMMISSIONING of DIGITAL TRUNKING RADIO SYSTEM, TENDER NO.KWS/HQS/TC/ 30 /2009-2010**

We hereby invite you and other prequalified tenderers to submit sealed tenders for the execution and completion of the above tender.

Tenders will be opened immediately thereafter, in the presence of tenderers' representatives who choose to attend.

Pre-bid meeting will be held on **Friday 21st May 2010** at KWS hqs boardroom starting at **10.00am**.

Bidders must comply with all the instructions and rules of the tender and particularly ensure that all the forms required are properly completed and submitted.

All queries regarding this tender must be in writing to the undersigned.

Upon payment of a non-refundable fee of **Kshs.3, 000.00** payable in cash or bankers

Yours faithfully,

**HEAD SUPPLY CHAIN MANAGEMENT
FOR: DIRECTOR**

Section C. General Information

Introduction

1. Eligible Tenderers

- 1.1 This Invitation for Tenders is open to all tenderers eligible as described in the tender documents. Successful tenderers shall complete the supply of goods by the intended completion date specified in the tender documents.
- 1.2 Tenderers shall provide the qualification information statement that the tenderer (including all members of a joint venture and subcontractors) is not associated, or have been associated in the past, directly or indirectly, with a firm or any of its affiliates which have been engaged by KWS to provide consulting services for the preparation of the design, specifications, and other documents to be used for the procurement of the goods under this Invitation for tenders.
- 1.3 Tenderers shall not be under a declaration of ineligibility for corrupt and fraudulent practices.

1.4 Mandatory requirements

Candidates must prove that they qualify to participate in public procurement by providing the following mandatory documents or evidence.

- a. Certificate of business registration/Certificate of Incorporation
- b. Tax Compliance certificate – valid for the period of tender
- c. Bidders must prove that they are financially capable by either submitting an audited statement of accounts for the last 3 years or giving evidence of backup by a reputable financial institution(attach copies)
- d. Bidders must be licensed by Communication Commission of Kenya (CCK) as Telecommunication vendors (attach certificate)

2. Eligible Goods

- 2.1 All goods to be supplied under the contract shall have their origin in eligible source countries.
- 2.2 For purposes of this clause, “origin” means the place where the goods are mined, grown, or produced. Goods are produced when, through manufacturing, processing, or substantial and major assembly of components, a commercially-recognized product results that is substantially different in basic characteristics or in purpose or utility from its components.

2.3 The origin of goods is distinct from the nationality of the tenderer.

3. Cost of Tendering

3.1 The Tenderer shall bear all costs associated with the preparation and submission of its tender, and KWS will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

The Tender Document

4 Contents

4.1 The tender document comprises the documents listed below and addendum issued in accordance with clause 6 of these instructions to tenders.

- (i) Invitation for Tenders
- (ii) General information
- (iii) General Conditions of Contract
- (iv) Special Conditions of Contract
- (v) Schedule of Requirements
- (vi) Technical Specifications
- (vii) Tender Form and Price Schedules
- (viii) Tender Security Form
- (ix) Contract Form
- (x) Performance Security Form
- (xi) Bank Guarantee for Advance Payment Form
- (xii) Manufacturer's Authorization Form

4.2 The Tenderer is expected to examine all instructions, forms, terms, and specifications in the tender documents. Failure to furnish all information required by the tender documents or to submit a tender not substantially responsive to the tender documents in every respect will be at the tenderers risk and may result in the rejection of its tender.

5. Clarification of Documents

5.1 A prospective tenderer requiring any clarification of the tender document may notify KWS in writing or by cable (hereinafter, the term *cable* is deemed to include telex and facsimile) at the entity's address indicated in the Invitation for tenders. KWS will respond in writing to any request for clarification of the tender documents, which it receives no later than twenty one (21) days prior to the deadline for the submission of tenders, prescribed by the procuring entity. Written copies of KWS response (including an explanation of the query but without identifying the source of inquiry) will be sent to all prospective tenderer that have received the tender document.

6. Amendment of Documents

- 6.1 At any time prior to the deadline for submission of tenders, KWS, for any reason, whether at its own initiative or in response to a clarification requested by a prospective tenderer, may modify the tender documents by amendment.
- 6.2 All prospective candidates that have received the tender documents will be notified of the amendment in writing or by cable, and will be binding on them.
- 6.3 In order to allow prospective tenderers reasonable time in which to take the amendment into account in preparing their tenders, KWS, at its discretion, may extend the deadline for the submission of tenders.

Preparation of Tenders

7. Language of Tender

- 7.1 The tender prepared by the tenderer, as well as all correspondence and documents relating to the tender exchanged by the tenderer and KWS, shall be written in English language, provided that any printed literature furnished by the tenderer may be written in another language provided they are accompanied by an accurate English translation of the relevant passages in which case, for purposes of interpretation of the tender, the English translation shall govern.

8. Documents Comprising the Tender

- 8.1 The tender prepared by the tenderer shall comprise the following components:
 - (a) a Tender Form and a Price Schedule completed in accordance with paragraph 9, 10 and 11 below.
 - (b) documentary evidence established in accordance with paragraph 12 that the tenderer is eligible to tender and is qualified to perform the contract if its tender is accepted;
 - (c) documentary evidence established in accordance with paragraph 13 that the goods and ancillary services to be supplied by the tenderer are eligible goods and services and conform to the tender documents; and
 - (d) tender security furnished in accordance with paragraph 14

9. Tender Form

- 9.1 The tenderer shall complete the Tender Form and the appropriate Price Schedule furnished in the tender documents, indicating the goods to be supplied, a brief description of the goods, their country of origin, quantity, and prices.

10. Tender Prices

- 10.1 The tenderer shall indicate on the appropriate Price Schedule the unit prices and total tender price of the goods it proposes to supply under the contract.
- 10.2 Prices indicated on the Price Schedule shall be entered separately in the following manner:
- (i) the price of the goods quoted EXW (ex works, ex factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties and sales and other taxes already paid or payable;
 - (ii) charges for inland transportation, insurance, and other local costs incidental to delivery of the goods to their final destination; and
- 10.3 Prices quoted by the tenderer shall be fixed during the Tender's performance of the contract and not subject to variation on any account. A tender submitted with an adjustable price quotation will be treated as non-responsive and will be rejected, pursuant to paragraph 22.

11. Tender Currencies

- 11.1 Prices shall be quoted in the following currencies:
- (a) For goods that the tenderer will supply from within Kenya, the prices shall be quoted in Kenya shillings; and
 - (b) For goods that the tenderer will supply from outside Kenya, the prices shall be quoted in US dollars or in another freely convertible currency.

12. Tenderers Eligibility and Qualifications.

- 12.1 Pursuant to paragraph 1 of section III, the tenderer shall furnish, as part of its tender, documents establishing the tenderers eligibility to tender and its qualifications to perform the contract if its tender is accepted.
- 12.2 The documentary evidence of the tenderers eligibility to tender shall establish to KWS's satisfaction that the tenderer, at the time of submission of its tender, is from an eligible source country as defined under paragraph I of section III.
- 12.3 The documentary evidence of the tenderers qualifications to perform the contract if its tender is accepted shall establish to KWS's satisfaction:

- (a) that, in the case of a tenderer offering to supply goods under the contract which the tenderer did not manufacture or otherwise produce, the tenderer has been duly authorized by the goods' Manufacturer or producer to supply the goods;
- (b) that the tenderer has the financial, technical, and production capability necessary to perform the contract;
- (c) that, in the case of a tenderer not doing business within Kenya, the tenderer is or will be (if awarded the contract) represented by an Agent in Kenya equipped, and able to carry out the Tenderers' maintenance, repair, and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications.

13. Goods' Eligibility and Conformity to Tender Document.

13.1 Pursuant paragraph 2 of this section, the tenderer shall furnish, as part of its tender, documents establishing the eligibility and conformity to the tender documents of all goods which the tenderer proposes to supply under the contract.

13.2 The documentary evidence of the eligibility of the goods shall consist of a statement in the Price Schedule of the country of origin of the goods and services offered which shall be confirmed by a certificate of origin issued at the time of shipment.

13.3 The documentary evidence of conformity of the goods to the tender documents may be in the form of literature, drawings, and data, and shall consist of:

- (a) a detailed description of the essential technical and performance characteristics of the goods;
- (b) a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the goods for a period of two (2) years, following commencement of the use of the goods by KWS; and
- (c) a clause-by-clause commentary on KWS's Technical Specifications demonstrating substantial responsiveness of the goods and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.

13.4 For purposes of the commentary to be furnished pursuant to paragraph 13.3(c) above, the tenderer shall note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by KWS in its Technical Specifications, are intended to be descriptive only and not restrictive. The tenderer may substitute alternative standards, brand names, and/or catalogue numbers in its tender, provided that it demonstrates to the KWS's

satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

14. Tender Security

- 14.1 The tenderer shall furnish, as part of its tender, a tender security for the amount specified in the Invitation to tender.
- 14.2 The tender security is required to protect KWS against the risk of Tenderer's conduct which would warrant the security's forfeiture, pursuant to paragraph 14.7
- 14.3 The tender security shall be denominated in Kenya Shillings or in another freely convertible currency, and shall be in the form of a bank/insurance guarantee or a bank draft issued by a reputable bank located in Kenya or abroad, in the form provided in the tender documents or another form acceptable to the KWS and valid for thirty (30) days beyond the validity of the tender.
- 14.4 Any tender not secured in accordance with paragraph 14.1 and 14.3 will be rejected by KWS as non-responsive, pursuant to paragraph 22.
- 14.5 Unsuccessful Tenderer's tender security will be discharged or returned as promptly as possible, but not later than thirty (30) days after the expiration of the period of tender validity prescribed by KWS.
- 14.6 The successful Tenderer's tender security will be discharged upon the tenderer signing the contract, pursuant to paragraph 30, and furnishing the performance security, pursuant to paragraph 31.
- 14.7 The tender security may be forfeited:
- (a) if a tenderer withdraws its tender during the period of tender validity specified by the procuring entity on the Tender Form; or
 - (b) in the case of a successful tenderer, if the tenderer fails:
 - (i) to sign the contract in accordance with paragraph 30
- or**
- (ii) to furnish performance security in accordance with paragraph 31.

15. Validity of Tenders

- 15.1 Tenders shall remain valid for 90 days or as specified in the tender documents after date of tender opening prescribed by KWS, pursuant to paragraph 18. A tender valid for a shorter period shall be rejected by KWS as non-responsive.

15.2 In exceptional circumstances, KWS may solicit the Tenderer's consent to an extension of the period of validity. The request and the responses thereto shall be made in writing. The tender security provided under paragraph 14 shall also be suitably extended. A tenderer may refuse the request without forfeiting its tender security. A tenderer granting the request will not be required nor permitted to modify its tender.

16. Format and Signing of Tender

16.1 Tenderer shall prepare two copies of the tender, **clearly marking one "ORIGINAL TENDER" and the other "COPY OF TENDER,"** as appropriate. In the event of any discrepancy between them, the original shall govern.

16.2 The original and all copies of the tender shall be typed or written in indelible ink and shall be signed by the tenderer or a person or persons duly authorized to bind the tenderer to the contract. The latter authorization shall be indicated by written power-of-attorney accompanying the tender. All pages of the tender, except for un-amended printed literature, shall be initialled by the person or persons signing the tender.

16.3 The tender shall have no interlineations, erasures, or overwriting except as necessary to correct errors made by the tenderer, in which case such corrections shall be initialled by the person or persons signing the tender.

Submission of Tenders

17. Sealing and Marking of Tenders

17.1 The tenderer shall seal the original and a copy of the tender in separate envelopes, duly marking the envelopes as "ORIGINAL" and "COPY." The envelopes shall then be sealed in an outer envelope.

17.2 The inner and outer envelopes shall :

(a) be addressed to KWS at the following address:

**The Director,
Kenya Wildlife Service,
P.O BOX 40241, 00100-GPO
Nairobi.**

(b) Bear, the Tender name, Tender number, and the words: **"DO NOT OPEN BEFORE, Friday 4th June 2010 at 12 noon.**

(c) The inner envelopes shall also indicate the name and address of the tenderer to enable the tender to be returned unopened in case it is declared "late".

17.4 If the outer envelope is not sealed and marked as required by paragraph 17.2, KWS will assume no responsibility for the tender's misplacement or premature opening.

18. Deadline for Submission of Tenders

18.1 Tenders must be received by KWS at the address specified under paragraph 17.2 no later than on **Friday 4th June 2010 at 12 noon.**

18.2 KWS may, at its discretion, extend this deadline for the submission of tenders by amending the tender documents in accordance with paragraph 6, in which case all rights and obligations of KWS and candidates previously subject to the deadline will thereafter be subject to the deadline as extended.

19. Modification and Withdrawal of Tenders

19.1 The tenderer may modify or withdraw its tender after the tender's submission, provided that written notice of the modification, including substitution or withdrawal of the tenders, is received by KWS prior to the deadline prescribed for submission of tenders.

19.2 The Tenderer's modification or withdrawal notice shall be prepared, sealed, marked, and dispatched in accordance with the provisions of paragraph 17. A withdrawal notice may also be sent by cable, but followed by a signed confirmation copy, postmarked not later than the deadline for submission of tenders.

19.3 No tender may be modified after the deadline for submission of tenders.

19.4 No tender may be withdrawn in the interval between the deadline for submission of tenders and the expiration of the period of tender validity specified by the tenderer on the Tender Form. Withdrawal of a tender during this interval may result in the Tenderer's forfeiture of its tender security, pursuant to paragraph 14.7.

Opening and Evaluation of Tenders

20. Opening of Tenders

20.1 KWS will open all tenders in the presence of tenderers' representatives who choose to attend, at Kenya Wildlife Service, Boardroom.

The tenderers' representatives who are present shall sign a register evidencing their attendance.

- 20.2 The tenderers' names, tender modifications or withdrawals, tender prices, discounts, and the presence or absence of requisite tender security and such other details as KWS, at its discretion, may consider appropriate, will be announced at the opening.
- 20.3 KWS will prepare minutes of the tender opening.

21. Clarification of Tenders

- 21.1 To assist in the examination, evaluation and comparison of tenders KWS may, at its discretion, ask the tenderer for a clarification of its tender. The request for clarification and the response shall be in writing, and no change in the prices or substance of the tender shall be sought, offered, or permitted.
- 21.2 Any effort by the tenderer to influence KWS in KWS's tender evaluation, tender comparison or contract award decisions may result in the rejection of the tenderers' tender.

22. Preliminary Examination

- 22.1 KWS will examine the tenders to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the tenders are generally in order.
- 22.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail, and the total price shall be corrected. If the candidate does not accept the correction of the errors, its tender will be rejected, and its tender security may be forfeited. If there is a discrepancy between words and figures, the amount in words will prevail.
- 22.3 The Procuring entity may waive any minor informality or non-conformity or irregularity in a tender which does not constitute a material deviation, provided such waiver does not prejudice or affect the relative ranking of any tenderer.
- 22.4 Prior to the detailed evaluation, pursuant to paragraph 23, the Procuring entity will determine the substantial responsiveness of each tender to the tender documents. For purposes of these paragraphs, a substantially responsive tender is one which conforms to all the terms and conditions of the tender documents without material deviations. KWS's determination of a tender's responsiveness is to be based on the contents of the tender itself without recourse to extrinsic evidence.
- 22.5 If a tender is not substantially responsive, it will be rejected by KWS and may not subsequently be made responsive by the tenderer by correction of the nonconformity.

23. Evaluation and Comparison of Tenders

23.1 KWS will evaluate and compare the tenders which have been determined to be substantially responsive, pursuant to paragraph 22.

23.2 KWS's evaluation of a tender will exclude and not take into account:

- (a) in the case of goods manufactured in Kenya or goods of foreign origin already located in Kenya, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the tenderer; and
- (c) any allowance for price adjustment during the period of execution of the contract, if provided in the tender.

23.3 The comparison shall be of the ex-factory/ex-warehouse/off-the-shelf price of the goods offered from within Kenya, such price to include all costs, as well as duties and taxes paid or payable on components and raw material incorporated or to be incorporated in the goods.

23.4 KWS's evaluation of a tender will take into account, in addition to the tender price and the price of incidental services, the following factors, in the manner and to the extent indicated in paragraph 23.5 and in the technical specifications:

- (a) delivery schedule offered in the tender;
- (b) deviations in payment schedule from that specified in the Special Conditions of Contract;
- (c) the cost of components, mandatory spare parts, and service;
- (d) the availability in Kenya of spare parts and after-sales services for the equipment offered in the tender;

23.5 Pursuant to paragraph 23.4 the following evaluation methods will be applied:

- (a) *Delivery schedule.*
 - (i) KWS requires that the goods under the Invitation for Tenders shall be delivered at the time specified in the Schedule of Requirements. Tenders offering deliveries longer than KWS's required delivery time will be treated as non-responsive and rejected.
- (b) *Deviation in payment schedule.*

Tenderers shall state their tender price for the payment of schedule outlined in the special conditions of contract. Tenders will be evaluated on

the basis of this base price. Tenderers are, however, permitted to state an alternative payment schedule and indicate the reduction in tender price they wish to offer for such alternative payment schedule. The Procuring entity may consider the alternative payment schedule offered by the selected tenderer.

(c) *Spare parts and after sales service facilities.*

Tenderers must offer items with service and spares parts back-up. Documentary evidence and locations of such back-up must be given. Where a tenderer offers items without such back-up in the country, he must give documentary evidence and assurance that he will establish adequate back-up for items supplied.

24. Contacting the KWS

24.1 Subject to paragraph 21, no tenderer shall contact KWS on any matter relating to its tender, from the time of the tender opening to the time the contract is awarded.

24.2 Any effort by a tenderer to influence KWS in its decisions on tender evaluation, tender comparison, or contract award may result in the rejection of the Tenderer's tender.

Award of Contract

25. Post-qualification

25.1 In the absence of pre-qualification, KWS will determine to its satisfaction whether the tenderer that is selected as having submitted the lowest evaluated responsive tender is qualified to perform the contract satisfactorily.

25.2 The determination will take into account the tenderer financial, technical, and production capabilities. It will be based upon an examination of the documentary evidence of the tenderers' qualifications submitted by the tenderer, pursuant to paragraph 12.3, as well as such other information as the Procuring entity deems necessary and appropriate.

25.3 An affirmative determination will be a prerequisite for award of the contract to the tenderer. A negative determination will result in rejection of the Tenderer's tender, in which event KWS will proceed to the next lowest evaluated tender to make a similar determination of that Tenderer's capabilities to perform satisfactorily.

26. Award Criteria

26.1 Subject to paragraph 10,23 and 28 KWS will award the contract to the successful tenderer(s) whose tender has been determined to be substantially responsive and has

been determined to be the lowest evaluated tender, provided further that the tenderer is determined to be qualified to perform the contract satisfactorily.

27. Procuring entity's Right to Vary quantities

27.1 KWS reserves the right at the time of contract award to increase or decrease the quantity of goods originally specified in the Schedule of requirements without any change in unit price or other terms and conditions.

28. KWS's Right to Accept or Reject Any or All Tenders

28.1 KWS reserves the right to accept or reject any tender, and to annul the tendering process and reject all tenders at any time prior to contract award, without thereby incurring any liability to the affected tenderer or tenderers or any obligation to inform the affected tenderer or tenderers of the grounds for KWS's action.

29. Notification of Award

29.1 Prior to the expiration of the period of tender validity, KWS will notify the successful tenderer in writing that its tender has been accepted.

29.2 The notification of award will constitute the formation of the Contract.

29.3 Upon the successful Tenderer's furnishing of the performance security pursuant to paragraph 31, KWS will promptly notify each unsuccessful Tenderer and will discharge its tender security, pursuant to paragraph 14.

30. Signing of Contract

30.1 At the same time as KWS notifies the successful tenderer that its tender has been accepted, KWS will send the tenderer the Contract Form provided in the tender documents, incorporating all agreements between the parties.

30.2 Within thirty (30) days of receipt of the Contract Form, the successful tenderer shall sign and date the contract and return it to KWS.

31. Performance Security

31.1 Within thirty (30) days of the receipt of notification of award from KWS, the successful tenderer shall furnish the performance security in accordance with the Conditions of Contract, in the Performance Security Form provided in the tender documents, or in another form acceptable to KWS.

31.2 Failure of the successful tenderer to comply with the requirement of paragraph 30 or paragraph 31 shall constitute sufficient grounds for the annulment of the award and forfeiture of the tender security, in which event KWS may make the award to the next lowest evaluated Candidate or call for new tenders.

32. Corrupt Fraudulent Practices

32.1 KWS requires that tenderers observe the highest standard of ethics during the procurement process and execution of contracts. In pursuance of this policy, KWS

- (a) defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) “corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution; and
 - (ii) “fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of KWS, and includes collusive practice among tenderer (prior to or after tender submission) designed to establish tender prices at artificial non-competitive levels and to deprive KWS of the benefits of free and open competition;
- (b) will reject a proposal for award if it determines that the tenderer recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- (c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded any contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

32.2 Furthermore, tenderers shall be aware of the provision stated in the General Conditions of Contract.

Section D-General Conditions of Contract

1. Definitions

1.1 In this Contract, the following terms shall be interpreted as indicated:

- (a) “The Contract” means the agreement entered into between KWS and the tenderer, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- (b) “The Contract Price” means the price payable to the tenderer under the Contract for the full and proper performance of its contractual obligations.
- (c) “The Goods” means all of the equipment, machinery, and/or other materials, which the tenderer is required to supply to KWS under the Contract.
- (d) “KWS” means the organization purchasing the Goods under this Contract.
- (e) “The tenderer” means the individual or firm supplying the Goods under this Contract.

2. Application

2.1 These General Conditions shall apply in all Contracts made by KWS for the procurement of goods.

3. Country of Origin

3.1 For purposes of this Clause, “origin” means the place where the Goods were mined, grown, or produced.

3.2 The origin of Goods and Services is distinct from the nationality of the tenderer.

4. Standards

4.1 The Goods supplied under this Contract shall conform to the standards mentioned in the Technical Specifications.

5. Use of Contract Documents and Information

- 5.1 The Candidate shall not, without KWS's prior written consent, disclose the Contract, or any provision thereof, or any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of KWS in connection therewith, to any person other than a person employed by the tenderer in the performance of the Contract.
- 5.2 The tenderer shall not, without KWS's prior written consent, make use of any document or information enumerated in paragraph 5.1 above.
- 5.3 Any document, other than the Contract itself, enumerated in paragraph 5.1 shall remain the property of KWS and shall be returned (all copies) to KWS on completion of the Tenderer's performance under the Contract if so required by KWS.

6. Patent Rights

- 6.1 The tenderer shall indemnify KWS against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof in KWS's country.

7. Performance Security

- 7.1 Within thirty (30) days of receipt of the notification of Contract award, the successful tenderer shall furnish to KWS the performance security in the amount specified in Special Conditions of Contract.
- 7.2 The proceeds of the performance security shall be payable to KWS as compensation for any loss resulting from the Tenderer's failure to complete its obligations under the Contract.
- 7.3 The performance security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to KWS and shall be in the form of a bank guarantee or an irrevocable letter of credit issued by a reputable bank located in Kenya or abroad, acceptable to the KWS, in the form provided in the tender documents.
- 7.4 The performance security will be discharged by KWS and returned to the Candidate not later than thirty (30) days following the date of completion of the Tenderer's performance obligations under the Contract, including any warranty obligations, under the Contract.

8. Inspection and Tests

- 8.1 KWS or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Contract specifications. KWS shall notify the tenderer in writing, in a timely manner, of the identity of any representatives retained for these purposes.
- 8.2 The inspections and tests may be conducted on the premises of the tenderer or its subcontractor(s), at point of delivery, and/or at the Goods' final destination. If conducted on the premises of the tenderer or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to KWS.
- 8.3 Should any inspected or tested Goods fail to conform to the Specifications, the KWS may reject the Goods, and the tenderer shall either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to KWS.
- 8.4 KWS's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival shall in no way be limited or waived by reason of the Goods having previously been inspected, tested, and passed by KWS or its representative prior to the Goods' delivery.
- 8.5 Nothing in paragraph 8 shall in any way release the tenderer from any warranty or other obligations under this Contract.

9. Packing

- 9.1 The tenderer shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract.
- 9.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract.

10. Delivery and Documents

- 10.1 Delivery of the Goods shall be made by the tenderer in accordance with the terms specified by KWS in its Schedule of Requirements and the Special Conditions of Contract.
- 10.2 The Tenderer shall submit bids in two envelopes each clearly marked "ORIGINAL" and "COPY."
- 10.3 The price schedule will read during the tender opening.
- 10.4 Completed technical and financial bids in a plain sealed envelope clearly marked Tender NO.KWS/HQS/30//2009-2010 and addressed to the Director, KWS, P.O Box

40241, Nairobi and must be placed in the tender box at the entrance of Simba Court by the close of this tender.

11. Insurance

11.1 The Goods supplied under the Contract shall be fully insured against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery in the manner specified in the Special conditions of contract

12. Payment

12.1 The method and conditions of payment to be made to the tenderer under this Contract shall be specified in Special Conditions of Contract.

12.2 Payments shall be made promptly by KWS as specified in the contract.

13. Prices

13.1 Prices charged by the tenderer for Goods delivered and Services performed under the Contract shall not, with the exception of any price adjustments authorized in Special Conditions of Contract, vary from the prices by the tenderer in its tender.

14. Assignment

14.1 The tenderer shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Procuring entity's prior written consent.

15. Subcontracts

15.1 The tenderer shall notify KWS in writing of all subcontracts awarded under this Contract if not already specified in the tender. Such notification, in the original tender or later, shall not relieve the tenderer from any liability or obligation under the Contract.

16. Termination for Default

16.1 KWS may, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the tenderer, terminate this Contract in whole or in part:

- (a) if the tenderer fails to deliver any or all of the Goods within the period(s) specified in the Contract, or within any extension thereof granted by KWS.
- (b) if the tenderer fails to perform any other obligation(s) under the Contract.
- (c) if the tenderer, in the judgment of KWS has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

16.2 In the event KWS terminates the Contract in whole or in part, it may procure, upon such terms and in such manner as it deems appropriate, Goods similar to those undelivered, and the tenderer shall be liable to KWS for any excess costs for such similar Goods.

17. Liquidated Damages

17.1 If the tenderer fails to deliver any or all of the goods within the period(s) specified in the contract, the procuring entity shall, without prejudice to its other remedies under the contract, deduct from the contract prices liquidated damages sum equivalent to 0.5% per week of the delivered price of the delayed goods up to a maximum deduction of 10% of the delayed goods. After this the tenderer may consider termination of the contract.

18. Resolution of Disputes

18.1 KWS and the tenderer shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the contract.

18.2 If, after thirty (30) days from the commencement of such informal negotiations both parties have been unable to resolve amicably a contract dispute, either party may require adjudication in an agreed national forum, and/or international arbitration.

19. Language and Law

19.1 The language of the contract and the law governing the contract shall be English language and the Laws of Kenya respectively unless otherwise stated.

20. Force Majeure

20.1 The tenderer shall not be liable for forfeiture of its performance security, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

1 SECTION E. SPECIAL CONDITIONS OF CONTRACT

1. Special Conditions of Contract shall supplement the General Conditions of Contract.

Whenever there is a conflict, the provisions herein shall prevail over those in the General Conditions of Contract.

2. Payment will be effected in three phases; 60% upon delivery of all equipment, 30% upon commissioning and 10% after **three months** of defect free operation of the system.

3. Bidders must show their prices inclusive of applicable duties and VAT, delivery to KWS HQ.

4. If applicable KWS will issue necessary documents to facilitate clearance of equipment without payment of duties.

5. Only technically responsive tenders shall have their financial bids evaluated.

6. Equipment must meet the mandatory technical requirements specified below. Bidders who do not meet these requirements will be disqualified.

7. A bidder must be bid for the whole system. Award will be done for the whole trunking system

8. KWS may reduce, increase or exclude some items depending on availability of funds. Therefore bidders must indicate unit costs of all items.

9 Evaluation criteria shall be:

- a) Compliance with mandatory requirements
- b) Compliance with Technical specifications
- c) Those bids that meet technical specifications shall have their financial bids evaluated and the lowest technically responsive bid shall be awarded the tender.
- d) Bidders must meet the conditions defined in section 4.3, page 35, which will inform preliminary examination of bid documents.

2 SECTION F. SCHEDULE OF REQUIREMENTS

Item No	Item Description	Unit	Qty	Delivery Schedule (shipment) in weeks/months
1.	Digital VHF Trunking sites C/W (i) Inverter charger power back up for Ngong site (AC available) and solar /inverter power back up for the other site in Amboseli (ii) All components for voice communication and SMS (iii) 40M feeders, factory terminated (iv) All programming kits and software (v) Maintenance manual (Hard copy)	NO.	2	
2.	Microwave links. These will depend on path profiles, which bidders will generate to confirm No of paths to link the sites. See project notes	Lot	Lot	
3.	Digital fixed VHF radios, with, C/W 6dB, (3dB offset) omni directional antennae, desk microphone, programming tools and 20M feeder cable, factory terminated	NO.	25	
4.	Digital VHF mobile radios, with GPS capability C/W 3dB antennae, power cables, programming kits, bracket and microphone	NO.	20	
5.	Digital Portable VHF radios, with GPS capability , each C/W two batteries, carrying case, belt strap and unit charger	NO.	30	
6.	GPS software	Lot	Lot	
7.	Battery Multi charger with minimum 6 slots (for charging portable batteries)	NO	2	
8.	Digital Trunking Radio Test Set	NO.	1	
9.	System training : i) System integration (Engineers qty 5 and technicians qty 10). ii) Factory training(qty 5 engineers) Quote separately	Lot	Lot	
10.	Technical service manuals, hard copy for the three radio categories (if base and fixed same then two)	NO.	2 or 3	

Section H. Tender Form and Price Schedules

(i) Form of Tender

Date: _____

Tender N°: _____

To:

.....
[name and address of Procuring entity]

Gentlemen and/or Ladies:

(ii) Having examined the tender documents including Addenda

Nos..... *[insert numbers]*,
the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver.....

[description of goods]
in conformity with the said tender documents for the sum of.....
[total tender amount in words and

figures]

or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Tender.

2. We undertake, if our Tender is accepted, to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

3. If our Tender is accepted, we will obtain the guarantee of a bank in a sum equivalent to _____ percent of the Contract Price for the due performance of the Contract, in the form prescribed by(Procuring entity).

4. We agree to abide by this Tender for a period of.....*[number]* days from the date fixed for tender opening of the Instructions to tenderers, and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

5. Until a formal Contract is prepared and executed, this Tender, together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.

6. We understand that you are not bound to accept the lowest or any tender you may receive.

Dated this _____ day of _____ 20_____.

[signature]

[in the capacity of]

Duly authorized to sign tender for and on behalf of _____

(iii) Price Schedule for Goods

Name of tenderer _____ Tender Number __. Page ___ of ____.

Item No.	Item Description	Country of origin	QTY	Unit price	Total price per item (Inclusive of duty & VAT)	Unit price of other incidental services payable
1.1	Digital VHF Trunking Radio System sites C/W Power back up		2			
1.2	Microwave Links C/W cables and documentation		Lot			
1.3	Digital VHF fixed radios C/W 6dB omni directional antennae		25			
1.4	Digital VHF Mobile radios, C/W 3 dB antennae and mic		20			
1.5	Digital Portable VHF radios C/W batteries (one spare), carrying case and unit charger		30			
1.6	Battery Multi-Chargers (for Portables)		2			
1.7	Digital Trunking Radio Test Set for offered system		1			
1.8	GPS boards for Mobile		20			
1.9	GPS board/accessory for portables		30			
2.0	GPS software		Lot			
2.1	System training: i) system integration ii) Factory		Lot			

Signature of tenderer _____

Note: In case of discrepancy between unit price and total, the unit price shall prevail.

2.1.1 Section I. Tender Security Form

Whereas..... *[name of the tenderer]*
(hereinafter called “the tenderer”) has submitted its tender dated*[date of submission of tender]* for the supply of.....
[name and/or description of the goods]
(hereinafter called “the Tender”).....
KNOW ALL PEOPLE by these presents that WE.....
of..... having our registered office at
..... (hereinafter called “the Bank”), are bound unto.....
[name of Procuring entity] (hereinafter called “the Procuring entity”) in the sum of
.....
for which payment well and truly to be made to the said Procuring entity, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this ____ day of _____ 20 ____.

THE CONDITIONS of this obligation are:

1. If the tenderer withdraws its Tender during the period of tender validity specified by the tenderer on the Tender Form; or
2. If the tenderer, having been notified of the acceptance of its Tender by the Procuring entity during the period of tender validity:
 - (a) fails or refuses to execute the Contract Form, if required; or
 - (b) fails or refuses to furnish the performance security, in accordance with the Instructions to tenderers;

we undertake to pay to the Procuring entity up to the above amount upon receipt of its first written demand, without the Procuring entity having to substantiate its demand, provided that in its demand the Procuring entity will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of tender validity, and any demand in respect thereof should reach the Bank not later than the above date.

[signature of the bank]

2.1.2 Section J. Contract Form

THIS AGREEMENT made the ____ day of _____ 20____ between.....[*name of Procurement entity*] of.....[*country of Procurement entity*] (hereinafter called “the Procuring entity”) of the one part and..... [*name of tenderer*] of..... [*city and country of tenderer*] (hereinafter called “the tenderer”) of the other part:

WHEREAS the Procuring entity invited tenders for certain goods, viz.,..... [*Brief description of goods*] and has accepted a tender by the tenderer for the supply of those goods in the sum of..... [*Contract price in words and figures*] (Hereinafter called “the Contract Price”).

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
 - (a) the Tender Form and the Price Schedule submitted by the tenderer;
 - (b) the Schedule of Requirements;
 - (c) the Technical Specifications;
 - (d) the General Conditions of Contract;
 - (e) the Special Conditions of Contract; and
 - (f) the KWS Notification of Award.
3. In consideration of the payments to be made by the Procuring entity to the tenderer as hereinafter mentioned, the tenderer hereby covenants with the Procuring entity to provide the goods and to remedy defects therein in conformity in all respects with the provisions of the Contract
4. The Procuring entity hereby covenants to pay the tenderer in consideration of the provision of the goods and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the contract at the times and in the manner prescribed by the contract.

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

Signed, sealed, delivered by _____ the _____ (for the Procuring entity)
Signed, sealed, delivered by _____ the _____ (for the tenderer)

in the presence of _____

2.1.3 Section K. Performance Security Form

To:
[name of Procuring entity]

WHEREAS*[name of tenderer]*
(hereinafter called “the tenderer”) has undertaken, in pursuance of Contract
No. _____ *[reference number of the contract]* dated _____ 20____ to
supply.....
[description of goods] (hereinafter called “the Contract”).

AND WHEREAS it has been stipulated by you in the said Contract that the tenderer shall furnish you with a bank guarantee by a reputable bank for the sum specified therein as security for compliance with the Tenderer’s performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the tenderer a guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the tenderer, up to a total of.....
[amount of the guarantee in words and figures], and we undertake to pay you, upon your first written demand declaring the tenderer to be in default under the Contract and without cavil or argument, any sum or sums within the limits of.....
[amount of guarantee] as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the _____ day of _____ 20_____.

Signature and seal of the Guarantors

[name of bank or financial institution]

[address]

[date]

2.1.4 Section M. Manufacturer's Authorization Form

To: *[name of the Procuring entity]*.....

WHEREAS

[name of the Manufacturer]

who are established and reputable manufacturers of.....

[name and/or description of the

goods]

having factories at.....

[address of factory]

do hereby authorize.....

[name and address of Agent]

to submit a tender, and subsequently negotiate and sign the Contract with you against

tender No.....

[reference of the Tender]

for the above goods manufactured by us.

We hereby extend our full guarantee and warranty as per the General Conditions of Contract for the goods offered for supply by the above firm against this Invitation for Tenders.

[Signature for and on behalf of Manufacturer]

Note: This letter of authority should be on the letterhead of the Manufacturer and should be signed by a person competent.

3 PROJECT GENERAL INFORMATION

3.1 PROJECT SUMMARY

- 3.1.1 KWS intends to create a highly efficient and cost effective county-wide digital trunking radio system that uses the upper VHF band (136-174MHz). Antennae should cover the full band
- 3.1.2 The proposed system will allow sharing channels through a trunked radio system in which all eligible users of the VHF channels will be able to have access to channels available on the system regardless of the group they belong.
- 3.1.3 KWS intends to implement the first 2 digital trunking sites as part of this system in Nairobi (site to be at Ngong hill) and Amboseli National Park. The sites will be connected by microwave link (s) to create the first leg of the planned digital trunking system.
- 3.1.4 The proposed system will allow communication of new digital radios as well as existing **analogue** radios using the same system
- 3.1.5 The proposed trunking system will allow for local trunking operation as well as a wide area communications (between Nairobi and Amboseli) regardless of whether communication is between a pair of digital or analogue or a combination of both radios. Mobile and Portable Radios will be GPS enabled during installation. Bidders will supply necessary boards/accessories, software and digital maps.
- 3.1.6 Bidders must detail the proposed site connectivity method and integration of existing analogue equipment.
- 3.1.7 The successful bidder will be expected to guide KWS engineers and technicians in the installation of equipment on the trunking sites and at least one base and mobile. The bidder will be responsible for commissioning the Network.
- 4.1.8 All equipment supplied must have a warranty of 1 year minimum.
- 4.1.9 Detailed training on system maintenance will be required. Bidders must show training content and duration for both local and factory training

3.2 PROJECT AIMS

- 3.2.1 The aim of this Project is to acquire a new digital Trunking radio network based on current digital trunked radio technology. The sites will be fully digital and initially only voice and text messages will be carried by the network. In broad terms the solution **MUST** achieve the following key objectives:
- 3.2.2 The supplied system **MUST** be based on open protocol.
- 3.2.3 The supplied system **MUST** be designed for mission critical response
- 3.2.4 Group-Call operation using closed Talk-Groups
- 3.2.5 Simultaneous voice communication to and from a single terminal (private calls);
- 3.2.6 Segregation by agency of management and security features
- 3.2.7 Potential to use existing equipment available from a variety of manufacturers
- 3.2.8 Flexibility to adapt to operational and organisational changes
- 3.2.9 System should be able to provide Voice, SMS but expandable to allow for a radio based IP Network in future
- 4.3.0 Mobile Radios and Portable Radios will be GPS enabled.
- 4.3.1 KWS has an existing VSAT Network between Amboseli and Nairobi, which is used for both data and VOIP services and bidders are required to show how the proposed system can be used to carry the same services to KWS HQ.

3.3 BIDDERS' REQUIREMENTS

- 3.3.1 Bidders must prove that they are financially capable by either submitting an audited statement of accounts for the last 3 years or giving evidence of backup by a reputable financial institution.
- 3.3.2 Bidders must prove that they have experience (either directly, through partner or Manufacturer) in designing, installing, commissioning and supporting trunked radio communication systems in general and have experience on the offered system (details of customers supported to be attached).
- 3.3.3 Bidders must indicate how many systems of the type offered are installed and operational.
- 3.3.4 Bidders must assign a qualified project manager to the project who will work closely with KWS during installation and after for at least a period of three months.
- 3.3.5 Bidders must have a properly established local work shop, in Nairobi, for after sale and warranty support.
- 3.3.6 Bidders must be able to provide a complete product line from switch, base stations and subscriber units from a single manufacturer.
- 3.3.7 Bidders must be the manufacturer or his authorized agent (agents should present proof of authorization).
- 3.3.8 Bidders must be licensed by Communication Commission of Kenya (CCK) as Telecommunication vendors
- 4.3.9 Bidders must submit up to date tax compliance certificates
- 4.4.1 Bidders are required to deliver equipment WITHINTHREE (3) months after award of contract and commission the Network within two months from the date of delivery of the equipment.

4 SYSTEM ARCHITECTURE

4.1 OPEN SYSTEM ARCHITECTURE

4.1.1 An “open systems architecture” digital trunked radio system is required. The system on offer shall be compliant with the currently adopted and approved standards for trunking. This will allow multiple manufacturers to supply equipment that is operational on the trunking system once it is implemented. Incorporating open systems architecture formats, interfaces and protocols such as those defined in the TIA/EIA IS/TSB102 series of digital radio technical specifications throughout the digital trunked radio system is expected to provide KWS with a number of benefits. Some of these benefits include: an expanded choice of vendors for adding subscriber equipment, improved capability for integration with other public systems (in future), improved capability for subscriber unit roaming to or from, extended useful life of the system, avoidance of being tied to a single vendor etc.

4.1.2 Bidders shall clearly identify where proprietary formats, interfaces, protocols and feature sets not made available to competing vendors are used within their system. Bidders offering a system other than that defined by TIA/EIA IS/TSB102 **OR** any other digital radio technical specifications published by a recognized standards setting body must provide sufficient and convincing technical details, conformance certifications and delivery guarantees in order to be awarded evaluation points for incorporating open systems architecture.

4.2 TRUNKING SITE ARCHITECTURE

4.2.1 The Site must be a single Expandable Site, standalone and multi site system compliant.

4.2.2 The digital modulation method used shall be amplitude, frequency, or phase shift keying, or any combination of these methods. Channel multiple access methods shall be Frequency Division Multiple Access (FDMA), Time Division Multiple Access (TDMA), or a combination of FDMA and TDMA.

4.2.3 The Sites **MUST** be designed to optimize channel capacity requirements operating in the, VHF (136–174 MHz) bands.

4.2.4 The Sites Must be set up in a single trunked mode, with one active control channel and a multiple voice channels.

4.2.5 The Sites Must support at least eight talk groups and support at least three (3) simultaneous conversations

4.2.6 The Sites must Support redundant Site Controller

4.2.7 The RF output power of the base station at the cabinet output **SHOULD** be adjustable and capable of giving at least 25W per carrier.

4.2.8 KWS proposes the link site for Ngong and Amboseli to be at Kilome (off mombasa road in the larger Machakos District). Bidders are required to generate path profiles for the trunking sites’ connectivity and show mast heights in the three sites. Bidders are encouraged to visit sites and take coordinates.

5 SYSTEM FEATURES AND SERVICES

5.1 PROTOCOLS SUPPORT

5.1.1 The System Must be based on Open Protocol

5.2 TRUNKING CAPABILITY

5.2.1 The System Must Support Message Trunking

5.2.2 The System Must Support Dedicated Control Channel

5.3 VOICE FEATURES

5.3.1 The System Must Support Talk group Calls (Voice)

5.3.2 The System Must Support Pre-emptive Emergency Call / Alarm

5.3.3 The System Must Support Private Call

5.3.4 The System Must Support Call Alert

5.4 SUPPLEMENTARY VOICE FEATURES

5.4.1 The System Must Support Busy Queuing & Callback

5.4.2 The System Must Support 8 Talkgroup & Individual Priority Levels

5.4.3 The System Must Support Continuous Assignment Updating – Late Entry

5.4.4 The System Must Support Recent User Priority

5.4.5 The System Must Support Failsoft Operation

5.4.6 The System Must Support Wireless Console capability

5.5 SYSTEM MANAGEMENT

5.5.1 The System Must Support Remote Network Manager

5.6 EXPANDABILITY

5.6.1 The proposed System Must Support Migration to a full radio based IP Network by adding additional components

7. RADIO EQUIPMENT SPECIFICATIONS

7.1 General Requirements

It is the intent of KWS to procure a state of the art digital, trunked radio system capable of supporting generally mission critical communications requirements. Towards that end, KWS expects bidders to offer a range of end user radio equipment and accessories, to include a variety of fixed, mobile and portable radios, providing a performance range from highest quality, highest duty rating, and high performance robust electronic components.

The equipment shall be capable of operation without significant degradation when subjected to applicable shock, humidity and vibration. Among the equipment offered shall be equipment capable of operating in the most extreme

service environments to include, moisture, temperature extremes, dust, combustible environments and other factors.

7.1.1 SECURITY

7.1.2 The Single Site must be transparent to End to End Encryption of the Subscribers

TALK GROUP / CHANNEL CONTROL AND DISPLAY

Bidders shall fully describe the capability and any limitations of the proposed radios relating to their ability to switch and display different talk groups and/or conventional channels that may be assigned.

The radios shall be capable of operating in an analogue or digital, trunked or conventional FM mode. The determination of which mode the radio operates in shall be an automatic function of the channel or talk group selected by the user. Direct radio to radio communications capability is required (talk-around) and the said capability shall be available using both analogue and digital modulation techniques. When operating in talk-around in a digital mode, a method of four level or greater digital modulation for direct radio to radio intercommunications is mandatory. The digital radio method used for direct radio to radio communications is not required to be the same method used in the trunked mode.

The various talk groups/channels shall be easily selectable and identifiable in bright sunlight, and in total darkness.

In addition to the talk group/channel identification, the controls shall also indicate power on, and an indication of transmitter being keyed. It is also required that there be an out of range indication that may be visual and/or audible. It is also required that there be a self test of the radio upon power-up with an indication of any malfunction detected during the self test routine. The radio shall have an inadvertent activation protected emergency alarm button.

It is desirable that the radio have a software adjustable audio output level when the volume control is turned all the way down, however, it shall be possible to adjust the audio level to some minimum level when the volume control is turned all the way down.

There shall be a description of any available full function, remote control head as part of the matrix of available mobile equipment. There shall also be a

description of any available handset and hook switch option as part of the matrix of available accessories.

Some of the mobile radio equipment will be installed in large trucks and other vehicles which do not require remote control heads. Bidders shall provide a price for any available mobile radios without remote control heads as part of the matrix of available equipment.

Scanning

The radios shall be provided with a scanning capability in which the user can program the radio to scan talk groups and/or conventional channels. Bidders shall fully describe their scanning capabilities for each radio offered. The user shall be able to select one talk group or channel to be a priority channel, and it is required that the priority channel be the channel or talk group selected at any one time. Bidders shall explain clearly how the talk groups/channels to be scanned can be selected and changed, and how the priority talk groups/channel can be selected.

7.1.5 Microphone and Speaker

Mobile radios shall be provided with a speaker associated with the control head, and with a microphone. A noise cancelling microphone shall be available as an option. There shall be at least one option for DTMF keypads for telephone interconnect and other uses listed in the matrix of available equipment (schedule of requirements).

7.1.6 Power Supply

The Mobile radio set shall operate from a nominal 13.8 Volt DC primary power source, and shall be equipped with suitable reverse polarity protection to avoid damage if the radio or battery were to be incorrectly installed. The mobile radio shall be protected against source voltages above 14 VDC and operate at source voltages as low as 11 Volts without emitting any spurious emission or loss of programming.

The radio need not meet power output or receiver sensitivity specifications at 11 Volts power but the transmitter shall be capable of full power output at 12.6 Volts DC. Primary power input shall be adequately fused.

7.1.7 Cabling

All cabling required to interconnect the radio set, control unit, vehicle battery and fusing facilities shall be included.

All such cables shall consist of insulated, waterproof material and shall have plugs. Battery and control cables shall be at least 5M long.

7.1.8 **Installation Requirements**

The mobile radios shall be capable of being easily installed in different makes of vehicles. All mounting hardware, appropriate to the installation, including mounting racks, shall be furnished. The assembly shall be capable of being withdrawn from its housing for servicing without disturbing the housing or cabling installation.

7.1.9 **Mechanical Requirements**

Radio Case

The radio housing shall be constructed of a high impact material. The case shall be sealed so that the internal circuitry is protected from dust and moisture.

Temperature

The radio shall meet all parameters in this Specification over a temperature range of -20°C to +60°C.

Environmental Requirements

Portable radio housings must meet or exceed the EIA Drop Test requirements. Radios shall operate when subjected to the shock, vibration, humidity, salt spray, moisture resistance, and dust tests in accordance with the procedures listed in MIL-SPEC-810D.

Electronic Requirements

General

It is required that the portable radios have a low battery indication showing when approximately 10% of the battery life remains.

The portable radios shall have an inadvertent activation protected, emergency alarm button

It is desirable that the receiver have a software adjustable audio output level when the volume control is turned all the way down, however, it shall be possible to adjust the audio level to some minimum level when the volume control is turned all the way down. It is strongly desired that there be the ability to turn off all lights and audible sounds from the radio with a single switch separate from the on-off switch or by some other acceptable means.

DTMF Keypads

There shall be an option for the addition of DTMF keypads to portable radios in the matrix of available options.

Battery Capacity

Bidders shall provide in their Proposals a list of time parameters for each type of battery available for each type of portable radio.

8.1.2 Summary Specifications

MANDATORY

Bidders are required to submit, as part of their specifications for all their equipment on offer, **Brochures/data sheets/Catalogues** of the equipment to ease technical evaluation. Highlight on the brochure the particular parameter being verified.

Digital Trunking sites

Clause	Specifications	Compliance/Remarks
1.1.1	Protocol Open protocol	
1.1.2	Frequency range 136 -174MHz	
1.1.3	Transmitter RF Power 25 Watts programmable	
1.1.4	Operation Simplex and Full duplex	
1.1.5	Services Digital ready support two way radio voice communications provide gateway for analogue radios support short message service(SMS) Ready for additional services	
1.1.6	Talk groups Support at least eight (8) talk groups	
1.1.7	Input power 240V AC 50Hz available (Ngong & Kilome). Provide solar power for Amboseli and inverter charger back up and protection for Ngong.	
1.1.8	Temperature Robust design to withstand -20°c to 60°c	
1.1.9	Redundancy Provide full system redundancy	
1.2.0	Modulation Scheme FSK, Frequency or Hybrid Channel Access methods – TDMA or FDMA	
1.2.1	Manuals Hard copy Technical service manuals Qty 1	
1.2.2	Programming System software and programming kits Provide original software, programming manuals and interfaces	
1.2.3	Warranty (one year min)	

Fixed and Mobile digital radios

Clause	Specifications	Compliance/Remarks
2.1.1	Design Robust design, fully digital radio with keypad C/W 1 folded dipole 6dB base antennas and 20Meter RG213 cables fully terminated with appropriate RF connectors Desk microphone 3dB antennas for mobiles Power supply units for the radios and DC Power cables for direct use on battery	
2.1.2	Frequency range 136 -174MHz	
2.1.3	Channel spacing 12.5 kHz programmable	
2.1.4	Transmitter RF Power 25 Watts programmable	
2.1.5	Receiver Sensitivity 0.3 micro volts	
2.1.6	Operation Simplex and Full duplex	
2.1.7	Number of channels ≥ 16 programmable	
2.1.8	Capability support two way radio voice communications support SMS communication	
2.1.9	Input power 13.8V DC Nominal	
2.2.0	Temperature Robust design to withstand -20°c to 60 °c	
2.2.1	Manuals Hard copy Technical service manuals Qty 1	
2.2.2	System software and programming kits Provide original software, programming manuals and interfaces	
2.2.3	GPS enabled for Mobile radios	
2.2.4	Warranty (one year min)	

Hand held digital radios

Clause	Specification	Compliance/Remarks
3.1.1	General Hand held with a keypad and LCD display to facilitate: Voice and SMS service spare battery antenna carrying case single unit DC/AC/vehicle chargers	
3.1.2	Design Robust design, fully digital radio	
3.1.3	Frequency range 136 -174MHZ	
3.1.4	Frequency spacing 12.5 KHZ programmable	
3.1.5	Transmitter RF Power 5 Watts programmable	

3.1.6	Receiver Sensitivity 0.3 micro volts	
3.1.7	Operation Simplex and Full duplex	
3.1.8	≥ 16 programmable	
3.1.9	Capability support two way radio voice communications support SMS transmission	
3.2.0	Input power 7.5V DC	
3.2.1	Temperature Robust design to withstand -20°C to 60 °C	
3.2.2	Manuals Hard copy Technical service manuals Qty 1	
3.2.3	Programming System software and programming kits. Provide original software, programming manuals and interfaces	
3.2.4	GPS enabled	
3.2.5	Warranty (one year min)	

Microwave Voice/ data Link

Clause	Specification	Compliance/Remarks
4.1.1	Frequency band Unlicensed 5.8GHZ	
4.1.2	Protocol IEEE 802.3 compatible	
4.1.3	Operation Voice and data – IP compatible	
4.1.4	Signalling Rate ≥10Mbps	
4.1.5	Manuals Hard copy Technical service manuals Qty 1	
4.1.6	Programming System software and programming kits Provide original software, programming manuals and interfaces	
4.1.7	Warranty (one year min)	