Kenya Electricity Transmission Company Limited

# REQUEST FOR PROPOSALS

# FOR

# SUPPLY, INSTALLATION, IMPLEMENTATION AND COMMISSIONING OF UPGRADE TO ESRI ARCGIS SERVER AND INTEGRATION OF ARCGIS SYSTEM TO SAP BI OBJECTS ON HANA - ILIS

## KETRACO/PT/006/2016

## CLOSING DATE: 31st May, 2016

**SECTION I - LETTER OF INVITATION**

Dear Mr. /Ms.:

The Kenya Electricity Transmission Company Limited (Ketraco) is a State Corporation whose mandate is to design, construct, operate and maintain high voltage electricity transmission lines.

Ketraco now invites proposals for the provision of Supply, Installation, Implementation and Commissioning of Upgrade to ESRI ArcGIS Server and integration of ArcGIS system to SAP BI Objects on HANA – ILIS including:

1. **GIS Module:** The GIS Module will have several submodules mainly targeting wayleaves management including;
    - **Crop Management Module:** This Module will leverage the integration of the ArcGIS for Server Platform and AGOL hosting Environment to SAP BI Objects. The system should be able to establish the number of crops within a given parcel, level of maturity.. Seamless data flow from the field to office should be achieved with no duplication in data entry.
    - **Land management Module:** Should be able to automate the field to office workflow for collecting land parcel attributes. This should involve the capability to take photos, collect vector data and location information in near real time. This module should be able to synchronize with data existing within SAP as well as consume information from SAP to be utilized in the field.
    - **Structures management Module:** This module should be able to give updated structures information within a parcel and identify whether any modifications have been done since the last field survey. The system should be able to access the historical information from the field in order to enable a comparative analysis with the current situation
2. **Location Intelligence Module:** This module should have map enabled dashboards which will enable configuration of interactive maps within ILIS. The module should also allow users to filter data based on selections made when viewing the dashboard and also insert data from a Universe query or from the embedded spreadsheet in the dashboard. The module should therefore be able to provide, dashboards, web intelligence, crystal reports and design studio.

Interested consultants must provide relevant information and documents, indicating that the ERP implementation services they are offering, at a minimum, fully comply with the requirements above and that they are qualified to perform the services (experience in implementation of ERP system, description of similar assignments, experience in similar conditions/sector, availability of qualified and technically competent staff, etc.)

Details on the services required are provided for in the Terms of Reference.

Please note that (i) the costs of preparing the proposal and of negotiating the contract, including any visit to the Client, are not reimbursable as a direct cost of the Assignment; and (ii) the Client is not bound to accept any of the proposals submitted.

This Request for Proposal (RFP) has been addressed to local Public consulting firms.

Firms will be selected under Quality and Cost-Based Selection (QCBS) and procedures described in this RFP.

**The lowest evaluated bidder will automatically be awarded the tender**

The RFP includes the following documents:

- Letter of Invitation
- Instructions to Consultants (including Data Sheet)
- Appendix 1 - Formats for Technical Proposal
- Appendix 2 - Formats for Financial Proposal
- Terms of Reference (TOR)
- Draft Form of Contract

Please inform us in writing upon receipt through the following address,:

*(a) That you received the Letter of Invitation; and*

*(b) Whether you will submit a proposal alone or in association.*

The Chief Manager, ICT,
The Kenya Electricity Transmission Company Ltd,
Kawi Complex Block B, Popo Lane, Off Red Cross Road, South C
P.O Box 34942--00100
Nairobi
KENYA.

Telephone: +254-20-4956261
Facsimile: +254-20-4956010
E-mail: mgiati@ketraco.co.ke

Tel: +254 20 4956261

Yours faithfully,
For: THE KENYA ELECTRICITY TRANSMISSION COMPANY

Mumbua Giati
**CHIEF MANAGER, ICT**

## SECTION II - INSTRUCTION TO CONSULTANTS

### 1. DOCUMENTS

1.1. To prepare a proposal, please use the attached Documents listed in the Data Sheet.

1.2. Consultants requiring a clarification of the Documents must notify the Client, in writing, not later than seven (7) days before the proposal submission date. Any request for clarification in writing, or by cable, telex or telefax shall be sent to the Client's address indicated in the Data Sheet. The Client shall respond by cable, telex or telefax to such requests, and copies of the response shall be sent to all invited Consultants.

1.3. At any time before the submission of proposals, the Client may, for any reason, whether at its own initiative or in response to a clarification requested by an invited consulting firm, modify the Documents by amendment. The amendment shall be sent in writing or by cable, telex or telefax to all invited consulting firms and will be binding on them. The Client may at its discretion extend the deadline for the submission of proposals.

### 2. PREPARATION OF PROPOSAL

2.1. You are requested to submit a technical and a financial proposal. Your proposal shall be written in the language specified in the Data Sheet.

**Technical Proposal**

2.2. In preparing the technical proposal, you are expected to examine all terms and instructions included in the Documents. Failure to provide all requested information shall be at your own risk and may result in rejection of your proposal.

2.3. During preparation of the technical proposal, you must give particular attention to the following:

(i) If a firm considers that it does not have all the expertise for the assignment, it may obtain a full range of expertise by associating with individual consultant(s) and/or other firms or entities in a joint venture. Consultants shall not associate with the other consultants invited for this assignment. Any firms associating in contravention of this requirement shall automatically be disqualified.

(ii) It is desirable that the majority of the key professional staff proposed be permanent employees of the firm or have an extended and stable working relationship with it.

(iii) The estimated number of professional staff-months is given in the Appendix I. The proposal shall however be based on the number of professional staff-months estimated by the firm.

(iv) No alternative to key professional staff may be proposed, and only one curriculum vitae (CV) may be submitted for each lead position.

vii) Proposed professional staff must as a minimum, have the experience indicated in Appendix I.

(vii) Reports must be in the Language(s) specified in the Data Sheet. Working knowledge of the national language by the firm's personnel is recommended.

2.4. Your technical proposal shall provide the following and any additional information, using the formats attached in Appendix 1:

(i) A brief description of the Consultant's organization and an outline of recent experience on assignments of a similar nature. For each assignment, the outline should indicate, inter alia, the profiles of the staff provided, duration, contract amount and firm involvement.

(ii) Any comments or suggestions on the TOR, and a description of the methodology (work plan) that the Consultants propose to execute the services, illustrated with bar charts of activities and graphics of the Critical Path Method (CPM) or Program Evaluation Review Technique (PERT) type, if appropriate.

(iii) The composition of the proposed staff team, the tasks which would be assigned to each, and their timing.

(v) Estimates of the total time effort (person x months) to be provided to carry out the Assignment, supported by bar chart diagrams showing the time proposed (person x months) for each professional staff member.

(vi) The Consultant's comments, if any, on the data, services and facilities to be provided by the Client and indicated in the TOR.

(vii) If the Data Sheet specifies training as a major component of the Assignment, a detailed description of the proposed methodology, staffing, budget and monitoring.

2.5. The technical proposal shall not include any financial information.

**Financial Proposal**

2.6. The financial proposal should list the costs associated with the Assignment. These normally cover remuneration for staff (foreign and local, in the field and at headquarters), subsistence (per diem, housing), transportation (international and local, for mobilization and demobilization), services and equipment (vehicles, office equipment, furniture and supplies), printing of documents, surveys. These costs should be broken into foreign and local costs. Your financial proposal should be prepared using the formats attached in Appendix 2.

2.7. The financial proposal shall take into account the tax liability and cost of insurances specified in the Data Sheet.

2.8. Costs must be expressed in the Kenya Shillings.

## 3. SUBMISSION OF PROPOSAL

3.1. You shall submit one original technical proposal and one original financial proposal and the number of copies of each indicated in the Data Sheet. Each proposal shall be in a separate envelope indicating original or copy, as appropriate. All technical proposals shall be placed in an envelope clearly marked "Technical Proposal," and the financial proposals in one marked "Financial Proposal." These two envelopes, in turn, shall be sealed in an outer envelope bearing the address and information indicated in the Data Sheet. The envelope shall be clearly marked:

"**DO NOT OPEN, EXCEPT IN PRESENCE OF THE EVALUATION COMMITTEE**."

3.2. In the event of any discrepancy between the copies of the proposals, the original shall govern. The original and each copy of the technical and financial proposal shall be prepared in indelible ink and shall be signed by the authorized Consultant's representative. The representative's authorization shall be confirmed by a written power of attorney accompanying the proposals. All pages of the technical proposal shall be initialled by the person or persons signing the proposal.

3.3. The proposal shall contain no interlineation or overwriting except as necessary to correct errors made by the Consultants themselves. Any such corrections shall be initialled by the person or persons signing the proposal.

3.4. The completed technical and financial proposals shall be delivered on or before the time and date stated in the Data Sheet.

3.5. The proposals shall be valid for the number of days stated in the Data Sheet from the date of its submission. During this period, you shall keep available the professional staff proposed for the assignment. The Client shall make its best effort to complete negotiations at the location stated in the Data Sheet within this period.

## 4. WITHDRAWAL OF PROPOSAL

4.1. Proposals may be withdrawn by written or telegraphic notice received at any time prior to award. Proposals may be withdrawn in person by a proposer or his authorized representative, provided his identity is made known and he signs a receipt for the withdrawal of the offer prior to award.

## 5. MODIFICATION OF PROPOSAL

5.1. Except as otherwise decided by the Client, modifications to proposals must be received not later than the closing date and time specified for receipt of proposals made in response to the request for proposals. Modifications must be made by written or telegraphic notice which clearly identifies the proposals being modified, the nature of the modification, the reference of the request for proposals as well as the closing date and time for receipt of proposals. Modifications must be delivered in writing to the office designated for receipt of proposals with the reason(s) for the modifications.

## 6. PROPOSAL EVALUATION

6.1. A two-stage procedure shall be adopted in evaluating the proposals. The technical evaluation shall be carried out first, followed by the financial evaluation. Firms shall be ranked using a technical score, as indicated below.

**Technical Proposal**

6.2. The evaluation committee appointed by the Client shall carry out its evaluation, applying the evaluation criteria and point system specified in the Data Sheet. Each responsive proposal shall be attributed a technical score (St). Firms scoring less than **80 points** shall be rejected and their financial proposals returned unopened.

**Financial Proposal**

6.3. The evaluation committee, after determining whether the financial proposals are complete and without computational errors, shall convert prices in various currencies to the common currency specified in the Data Sheet. The official selling rates used shall be provided by the source indicated in the Data Sheet and in effect on the date of submission of the proposals. The lowest financial proposal shall be determined.

**Final Ranking**

6.4. Proposals shall finally be ranked according to costs and the firm with the lowest price shall then be selected.

## 7. NEGOTIATIONS

7.1. Prior to the expiration of proposal validity, the Client shall notify the successful Consultant that submitted the highest scoring proposal in writing by registered letter, cable, telex or facsimile and invite it to negotiate the Contract.

7.2. Negotiations normally take from one to five days. The aim is to reach agreement on all points and initial a draft contract by the conclusion of negotiations.

7.3. Negotiations shall commence with a discussion of your technical proposal, the proposed methodology (work plan), staffing and any suggestions you may have made to improve the TOR. Agreement shall then be reached on the final TOR, the staffing, and the bar charts, which shall indicate activities, staff, and periods in the field and in the home office, staff months, logistics and reporting. Special attention shall be paid to optimizing the required outputs from the Consultants within the available budget and to defining clearly the inputs required from the Client to ensure satisfactory implementation of the Assignment.

7.4. Changes agreed upon shall then be reflected in the financial proposal, using proposed unit rates (no negotiation of the staff month rates).

7.5. Having selected Consultants on the basis of, among other things, an evaluation of proposed key professional staff, the Client expects to negotiate a contract on the basis of the staff named in the proposal. Prior to contract negotiations, the Client shall require

assurances that the staff members will be actually available. The Client shall not consider substitutions during contract negotiations except in cases of unexpected delays in the starting date or incapacity of key professional staff for reasons of health.

7.6. The negotiations shall be concluded with a review of the draft form of the contract. The Client and the Consultants shall finalize the contract to conclude negotiations. If negotiations fail, the Client shall invite the Consultants that received the second highest score to Contract negotiations.

## 8. AWARD OF CONTRACT

8.1. The contract shall be awarded after successful negotiations with the successful Consultants. Upon successful completion of negotiations, the Client shall promptly inform the other Consultants that their proposals have not been selected.

8.2. The selected Consultant is expected to commence the Assignment on the date and at the location specified in the Data Sheet.

## 9. CORRUPT OR FRAUDULENT PRACTICES

9.1. The procuring entity requires that the consultants observe the highest standards of ethics during the selection and award of the consultancy contract and also during the performance of the assignment. The tenderer shall sign a declaration that he has not and will not be involved in corrupt or fraudulent practices.

9.2. The procuring entity will reject a proposal for award if it determines that the consultant recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question.

9.3. Further a consultant who is found to have indulged in corrupt or fraudulent practices risks being debarred from participating in public procurement in Kenya.

**INSTRUCTION TO CONSULTANTS DATASHEET**

ITC Clause #

1.1 The name of the Assignment is:

**Supply, Installation, Implementation and Commissioning of Upgrade to ESRI ArcGIS Server and integration of ArcGIS system to SAP BI on HANA - ILIS**

The name of the Client is:

Kenya Electricity Transmission Company Limited (KETRACO).

1.2 The description and the objectives of the Assignment are:

The objective is to Supply, Install, Implement and Commission of Upgrade to ESRI ArcGIS Server and integration of ArcGIS system to SAP BI on HANA - ILIS which shall include, inter alia, the following components/functionality:

- GIS Module: The GIS Module will have several submodules mainly targeting wayleaves management including;
  - Crop Management Module: This Module will leverage the integration of the ArcGIS for Server Platform and AGOL hosting Environment to SAP BI Objects. The system should be able to establish the number of crops within a given parcel, level of maturity.. Seamless data flow from the field to office should be achieved with no duplication in data entry.
  - Land management Module: Should be able to automate the field to office workflow for collecting land parcel attributes. This should involve the capability to take photos, collect vector data and location information in near real time. This module should be able to synchronize with data existing within SAP as well as consume information from SAP to be utilized in the field.
  - Structures management Module: This module should be able to give updated structures information within a parcel and identify whether any modifications have been done since the last field survey. The system should be able to access the historical information from the field in order to enable a comparative analysis with the current situation
- Location Intelligence Module: This module should have map enabled dashboards which will enable configuration of interactive maps within ILIS. The module should also allow users to filter data based on selections made when viewing the dashboard and also insert data from a Universe query or from the embedded spreadsheet in the dashboard. The module should therefore be able to provide, dashboards, web intelligence, crystal reports and design studio.

The solution implemented shall have:

- Modular, extendable and scalable software architecture,
- User interface presentation which should be rendering through multi-tier client/server technologies,
- A centralized database to ensure sharing of information across all functions,
- Software based on an enterprise strength relational database management system (e.g. MS SQL Server).

- Mobile and hand-held devices compatibility with the Central databases to ensure off and on-site information access – to ensure sustained service delivery as well as update information source with real-time on-the-ground realities/facts.
- System redundancy, quick and full recovery should be provided for all servers used centrally.
- Replication to a disaster recovery site

The project shall include:

a) Detailed requirements analysis and documentation
b) Design
c) Implementation of the solution
   - Procurement and configuration of software
   - Software Development and Customization
   - Pilot
   - Training
   - Documentation
   - Change Management
   - Systems Rollout
d) Maintenance and Support of the software application for at least three years

1.3 Phasing of the Assignment (if any): May be suggested

1.5 Pre-Proposal Meeting: No;

Kenya Electricity Transmission Company Limited
Ground floor, Kawi Complex Block B,
Popo Lane, Off Red Cross road,
South C,
P. O. Box: 34942-00100
Nairobi
Phone: +254 20 4956000

The name and address of the Official is:
Mumbua Giati
Chief Manager, ICT
Kenya Electricity Transmission Company Limited
1st floor, Kawi Complex Block B,
Popo Lane, Off Red Cross road,
South C
P. O. Box: 34942-00100
Phone: +254 20 4956279
Email: mgiati@ketraco.co.ke

OR

dkariuki@ketraco.co.ke;

1.6 The Client shall provide the following inputs:

As defined in the Terms of Reference

1.8 The invited firms are:

i. Public

2.2 The address is:
Kenya Electricity Transmission Company Limited
Ground floor, Kawi Complex Block B,
Popo Lane, Off Red Cross road,
South C
P. O. Box: 34942-00100
Nairobi
Phone: +254 20 4956000
Email: mgiati@ketraco.co.ke;

OR dkariuki@ketraco.co.ke

3.1 The language is: English

3.3 (i) A firm may associate with another firm. **No**

(ii) The estimated number of key professional staff months is: To be determined by bidder

(iv) Majority of key proposed staff shall be permanent employees of the Consultants: Yes

(vii) Reports must be written in the following language: English

3.4 Training is an important feature of this assignment and consultants should provide information on relevant training for key Ketraco staff.

3.5 **Tender Security (Bid bond) – of Kshs. 200,000/= must be submitted in a separate sealed envelope within the technical envelope and must be from a reputable local bank.**

3.6 Tax liability, insurances (description or reference to appropriate documentation): Consultant shall pay for all eligible taxes as required by the tax laws in Kenya.

4.1 The number of copies of the proposal required is: Three (3) and **one soft copy on a CD**.

The address is:
Kenya Electricity Transmission Company Limited
Ground floor, Kawi Complex Block B,
Popo Lane, Off Red Cross road,
South C
P. O. Box: 34942-00100

Nairobi
Phone: +254 20 4956261
Email: mgiati@ketraco.co.ke

4.4 The date and time of proposal submission are: **23rd October, 2014 at 10am.**

4.5 Validity period (days, date): **120 days** from date of proposal submission closure.

The location is:
Kenya Electricity Transmission Company Limited
Ground floor, Kawi Complex Block B,
Popo Lane, Off Red Cross road,
South C
P. O. Box: 34942-00100
Phone: +254 20 4956000
Email: mgiati@ketraco.co.ke

7.1 The bid submitted by the Implementer will be evaluated as per the following procedure:

First level of evaluation will be for the pre-qualification bid as mentioned below. Only for those firms who fulfil the eligibility criteria in the pre-qualification bid, will the Technical and Financial Bids be opened.

Second level of evaluation will be on the basis of the Technical Bid.

Third and final evaluation will be the financial bid whereby the lowest qualifying bid wins.

a. Pre-qualification Bid

The following eligibility criteria are a must for the bidder to qualify for the opening of their technical bid. Refer to format in Appendix I and please attach a separate document as per the format

Compulsory Criteria: These criteria are absolutely essential for the bidder to possess. In case the bidder does not adhere to even one of the following points the bidders bid will be rejected:

i. The Bidder must have successful undertaken or be implementing at least three (3) similar integrated ArcGIS with ERPs Projects within Kenya over the last 5 years preferably Within the public sector
ii. The Bidder must have a local office in Kenya that has been in operation for more than five (5) years, and have a minimum of 8 qualified staff on various IT technologies especially SAP, ESRI GIS, and web development with at least 2 resources with a MSc in GIS related fields
iii. Must have letters of Authorization from the Software manufacturers or Authorized distributors
iv. Must provide last 3 years( 2015,2014,2013) and have an average turnover of Kes 500M

v. Must have at least experience in offering enterprise systems implementation for at least 5 clients in Kenya

b. Technical Bid Evaluation

i. Bidders successful in the pre-qualification bid only will be considered for further technical evaluation based on the parameters defined further in this section.
ii. Reference checks will be conducted by Ketraco either by contacting the referenced client or by a documented proof signed by the referenced client. The decision of Ketraco in this regard shall be final.
iii. Technical evaluation team of Ketraco will scrutinize the bidders responses including evaluation criteria and technical responses

The evaluation criteria for the Technical evaluation of the bids are as follows:

i. Past experience (both in items of number of contracts, number of contracts in the Kenyan public sector and the contract values) in handling the contracts covering work similar to the scope of work mentioned in this specification
ii. Adequacy of the proposal: Coverage of the functionalities and processes, Project plan and methodology. Overall work plan including but not limited to – timelines, methodology, appropriateness, compliance/ deviations, quality assurance and project management, tasks and milestones, roles and responsibilities), Change Management, Training strategy, Quality Assurance and Action Plan
iii. Qualifications, competence and experience of the Key Professionals who have been proposed by the Bidder to be a part of the implementation

Criteria, sub-criteria, and point system for the evaluation of Full Technical Proposals are:

| | Points |
|---|---|
| (i) Past experience (both in terms of number of contracts and the contract values) in handling the contracts covering work similar to the scope of work mentioned in these specifications: | **[10]** |
| (ii) Adequacy of the proposal: Coverage of the functionalities and processes, Project plan and methodology. Overall work plan including but not limited to – timelines, methodology, appropriateness, compliance/ deviations, quality assurance and project management, tasks and milestones, roles and responsibilities), Change Management, Training strategy and Action Plan: | |
| a) Technical approach and methodology | [20] |
| b) Work plan | [10] |
| c) Organization and staffing | [10] |
| Total points for criterion (ii): | **[40]** |
| (iii) Qualifications and competence of the Key Professionals who have been proposed by the Bidder to be a part of the implementation team: | |
| i. Project Manager | [20] |

ii. Team Leader [10]
iii. Functional Leads [10]
iv. Database Management & Web development Experts [10]

***Total points for criterion (iii):*** **[50]**

The number of points to be assigned to each of the above positions or disciplines shall be determined considering the following three sub criteria and relevant percentage weights:

1) General qualifications [20%]
2) Relevant ESRI/SAP Certification [20%]
3) Experience in relevant implementations [60%]

Total weight: [100% ]

**Qualifications of key staff:**

**Project Manager - 1**

Must have over 6 years' experience in IT project delivery and management
Must have a Master Degree in information systems
Must be a project management professional PMP - PMI
Must be certified in information systems audit
Must be a member of at least on professional association in project management
Must have training in Capability Maturity Model integration –CMMI

**Project Team Lead - 1**

Must have and Master's degree in GIS related field with over 10 years' experience in Esri integrated technology
Must have Esri Certifications in Database and Web GIS

**GIS Functional Lead - 2**

Must have a degree in a GIS related field with over 10 years' experience in delivering, scoping and managing GIS projects
Must has served in a management position

**Database Management & Web development Expert - 2**

Must have a certification in, Computer Systems, GIS course or any other related course plus over FIVE years' experience in Analysis, Design, Implementation, Testing and Maintenance of web-based & Mobile GIS applications. They must also possess any certification in GIS applications, database design and management.
Must have proven extensive development capabilities

**SAP Lead - 1**

Have a BSc in Computer Science with at least 6 years' experience
Be a SAP certified pre sales professional – Business Intelligence
Be a SAP certified Application Associate – SAP BI Objects
Must possess the following technical skills; SAP BI, SAP ECC 6.0/ BAiO, Advanced Java Programming, PHP, Java scripts and server database management

7.3 The single currency for price comparison is: Kenya Shillings

**The source of the official selling rate is: Central Bank of Kenya (on the date of submission of the proposal)**

7.4 Lowest bid wins

8.2 Commencement of Assignment:
Date: Immediately after Contract Signing
Location: Nairobi, Kenya

## Appendix 1 Formats For Technical Proposal

### Technical Proposal

FROM: TO:

Sir/Madam:

**Subject: Hiring of Consultancy Service for**

Regarding Technical Proposal

I/We _____ Consultant/Consultancy firm herewith enclose a Technical Proposal for selection of my/our firm/organization as Consultant for _____.

Yours faithfully,

Signature _____
(Authorized Representative)

Full Name _____
Designation _____
Address _____

**Firm's References**

**Relevant Services Carried Out in the Last Five Years**
**Which Best Illustrate Qualifications**

Using in the format below, provide information on each reference assignment for which your firm, either individually as a corporate entity or as one of the major companies within a consortium, was legally contracted.

<table>
<tr><td colspan="2">Assignment Name:</td><td>Country:</td></tr>
<tr><td colspan="2">Location within Country:</td><td>Professional Staff Provided by Your Firm:</td></tr>
<tr><td colspan="2">Name of Client:</td><td>№ of Staff:</td></tr>
<tr><td colspan="2">Address:</td><td>№ of Staff Months:</td></tr>
<tr><td>Start Date (Month/Year):</td><td>Completion Date (Month/Year):</td><td>Approx. Value of Services (in Current Kshs):</td></tr>
<tr><td colspan="2">Name of Associated Firm(s), if any:</td><td>№ of Months of Professional Staff Provided by Associated Firm(s):</td></tr>
<tr><td colspan="3">Name of Senior Staff (Project Director/Coordinator, Team Leader) involved and functions performed:</td></tr>
<tr><td colspan="3">Narrative Description of Project:</td></tr>
<tr><td colspan="3">Description of Actual Services Provided by Your Staff:</td></tr>
</table>

Consultants' Name:

**Approach Paper on Methodology Proposed for Performing the Assignment**

| | | |
|---|---|---|
| 2 | Copy of Company or Firm's Registration Certificate | |
| 3 | Copies of PIN and VAT Registration Certificates | |
| 4 | Copy of Valid Tax Compliance Certificate | |
| 5 | Names with full contact as well as physical addresses of previous customers of similar goods | |

| Sr. No. | Line Item | Instructions for response |
|---|---|---|
| | **Relevant Company Experience** | |
| 1 | Copy of Company or Firm's Registration Certificate | Please attach |
| 2 | Copies of PIN and VAT Registration Certificates | Please attach |
| 3 | Copy of Valid Tax Compliance Certificate | Please attach |
| 1 | Details of company expertise / experience | Please attach on separate sheets |
| | **Project Details** | |
| 2 | Bidders understanding of the Project Scope | Describe your understanding of the project scope –what can be done and what cannot be done. *Separate Document Expected.* |
| 3 | Description of the Project Details | Describe your methodology in details of the technology, architecture, modules and solutions that will be used. *Separate document expected.* |
| 4 | Project Plan | Share a detailed project plan including but not limited to Timelines, Important milestones, Resource plan, etc. |
| 5 | Roles and Responsibilities Matrix | List out the Roles and responsibilities of the project team members |
| 6 | Effort Estimation | Please use the effort estimation matrix as mentioned in Appendix 1. for sharing the details on the effort estimation divided by Modules |
| 7 | Resources and Responsibilities expected from Ketraco | Please include the resources and responsibilities as expected from Ketraco |
| 8 | Training Plans | Describe training programs for core team and end users supported by sample training documents. |
| 9 | Documentation Coverage | Describe all the relevant system documentation that you will provide supported by sample documentation/manual. This shall at least include all the documents as listed in the deliverables section |
| 10 | IT Infrastructure requirement | Describe the IT Infrastructure requirements for the project - details of the hardware, software, platform, connectivity requirements, etc. |
| 11 | Security & Controls Plan | Detailed description of security and control features that are built into solutions |
| 12 | Data Migration, Cut-over and commissioning plan | Please include the details of the go-live plan, master data creation plan, data migration plan, plan to digitize the non-digitized data |
| 13 | Testing Plan | Please include details of all the testing that is to be done for the successful implementation of the project |
| 14 | Support Plan | Please include the details of the support during the post go-live |
| | | live onsite handholding and support phase and AMC separately including but not limited to the time spent, kind of resources deputed etc. |

| | | |
|---|---|---|
| 15 | Change Management Plan | Describe your plan to cover any change management issues being faced during the implementation of the project including workshops to be conducted for the same |
| 16 | Quality Plan | Proposed quality plan setting out for controlling quality at different stages of the project and a proposed inspection schedule shall be described |
| 17 | Problem resolution and escalation mechanism | Describe the problem escalation mechanism with the name, designation and contact details as per the details mentioned in Section 2.8 above |
| 18 | Change Request Management Plan | Include the plan to handle any change requests that may be needed during the course of the project including but not limited to details of the process to approve and handle such requests |
| 19 | Project Team Details | Include the details of the proposed project team. Please include the resumes of the relevant team members in the attached format provided in Appendix 1. The identified consultants will have to be a part of the project throughout the duration of the project unless and otherwise specific permission is given by Ketraco to replace the identified resources and an equivalent or higher replacement is proposed. |

**Comments/Suggestions of Consultant**

On the Terms of Reference (TOR):

1.

2.

3.

4.

5.

Etc.

On the data, services and facilities to be provided by the Client indicated in the TOR:

1.

2.

3.

4.

5.

Etc.

Any other comments and/or suggestion to improve the implementation of the assignment

1.

2.

3.

4.

5.

**Format of Curriculum Vitae (CV) For Proposed Key Staff**

Proposed Position: _____

Name of Firm: _____

Name of Staff: _____

Profession: _____

Date of Birth: _____

Years with Firm: _____ Nationality: _____

Membership in Professional Societies: _____

Detailed Tasks Assigned: _____

Key Qualifications:

[Give an outline of staff member's experience and training most pertinent to tasks on assignment. Describe *degree of responsibility held* by staff member on relevant previous assignments and give dates and locations. Use up to half a page.]

Education:

[Summarize college/university and other specialized education of staff member, giving names of schools, dates attended and degrees obtained. Use up to a quarter page.]

Employment Record:

[Starting with present position, list in reverse order every employment held. List all positions held by staff member since graduation, giving dates, names of employing organization, title of positions held and location of assignments. For experience in *last ten years*, also give types of activities performed and client references, where appropriate. Use up to three-quarters of a page.]

Languages:

[Indicate proficiency in speaking, reading and writing of each language: excellent, good, fair, or poor.]

Certification:

I, the undersigned, certify that to the best of my knowledge and belief, these bio data correctly describe myself, my qualifications and my experience.

_____ Date: _____

*Signature of Staff Member or authorized official from the firm* *Day/Month /Year*

**Work Plan and Time Schedule for Key Personnel**

| Name | Position | Reports Due/Activities | Months (in the form of a Bar Chart) | | | | | | | | | | | | Number of Months |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | | | | | | | | | | | | | Subtotal (1) |
| | | | | | | | | | | | | | | | Subtotal (2) |
| | | | | | | | | | | | | | | | Subtotal (3) |
| | | | | | | | | | | | | | | | Subtotal (4) |
| | | | | | | | | | | | | | | | |

Full Time: _____ Reports Due: _____
Part Time: _____ Activities Duration: _____

Yours faithfully,

Signature _____
(Authorized Representative)

Full Name _____
Designation _____
Address _____

**Composition of the Team Personnel and the Task each would be assigned to each Team Member**

**1. Technical/Managerial Staff**

| Name | Position | Task Assignment |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

**2. Support Staff**

| Name | Position | Task Assignment |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

## Work Plan/Time Schedule

### 1. Field Investigation

| Items of Work/Activities | Monthly Program from date of assignment (in the form of a Bar Chart) | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |
| | | | | | | | | | | | | | |

**2. Completion and Submission of Reports** (as indicated under Appendix B enclosed with General Conditions of Contract)

| Reports | Date |
|---|---|
| | |
| | |
| | |
| | |
| | |
| | |

## Appendix 2: Formats for Financial Proposals

**Financial Proposal**

FROM: TO:

Sir/Madam:

**Subject: Hiring of Consultancy Service for**

Regarding Price Proposal

I/We _____ Consultant/Consultancy firm herewith enclose the Price Proposal of my/our firm/organization as Consultant for _____.

Yours faithfully,

Signature _____
(Authorized Representative)

Full Name _____
Designation _____
Address _____

**Schedule of Summary Price Proposal**

| Name of Activities | Currency | Amount | |
|---|---|---|---|
| | | In Words | In Figures |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| Total Amount: | | | |

**Note**: Breakdown of the total price shall be as per Appendix 2, page 3 of 8.

**Breakdown of Summary Price**

For Activity №: _____ Name: _____

| Price Component | Currency | Amount |
|---|---|---|
| Remuneration for basic services | | |
| Out-of-pocket expenses | | |
| Computer software cost | | |
| Training cost | | |
| Miscellaneous expenses | | |
| Subtotal: | | |

**Note**: The above form is to be filled up separately for each activity mentioned in Appendix 2, page 2 of 8.

**Consolidated Summary for Remuneration in Respect of Basic Services**

For Activity №: _____ Name: _____

| Name | Position | Staff-Months | Monthly Rate | Total Amount Expected to be Paid |
|---|---|---|---|---|
| A. Key Personnel | | | | |
| | | | | |
| | | | | |
| B. Support Staff | | | | |
| | | | | |
| Total: | | | | |

**Note**: 1. Breakdown of the cost and charges for monthly rates is indicated in Appendix 2, page 5 of 8.
2. This form is to be filled out separately for each activity mentioned in Appendix 2, page 2 of 8.

**Out-of-Pocket Expenses**

For Activity Nº: _____ Name: _____

| S. Nº | Nomenclature | Unit | Quantity | Unit Price | Total Amount |
|---|---|---|---|---|---|
| 1. | Return flights between _____ and _____ | Trip | | | |
| 2. | Miscellaneous travel expenses | Trip | | | |
| 3. | Subsistence allowance | Trip | | | |
| 4. | Local transportation costs[1] | | | | |
| 5. | Office rent/accommodation/clerical asst. | | | | |
| | Total: | | | | |

Note: This is to be filled out separately for each activity mentioned in Appendix 2, page 2 of 8.

[1] Local transportation costs are not included if local transportation is being made available by Client. Similarly, in the Project site, office rent/accommodations/clerical assistance costs are not to be included if being made available by Client.

**Computer Software Costs**

(Inclusive of Licensing of Software)

For Activity №: _____ Name: _____

| S1 № | Software | Amount |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |
| | Total: | |

**Field Aids/Gadgets**

For Activity Nº: _____ Name: _____

| S1 Nº | Field Aid Gadgets | Amount |
|---|---|---|
| 1. | Allow a provincial sum for purchasing of field aids/gadgets as specified in 3.4 above to be utilized by the Employer's request | As the market cost of the gadgets |
| | Total: | |

Note: This is to be filled out separately for each activity mentioned in Appendix 2, page 2 of 8.

(*The consultant is expected to indicate the amount of monies he requires to purchase the items. The consultant will use the provincial sum purchase the items defined in 3.4 above. The provincial sum will be paid at actual costs.)

For Activity Nº: _____ Name: _____

**Training**

| S1 Nº | Field Aid Gadgets | Amount |
|---|---|---|
| 1. | Allow a provincial sum for training as per 3.5 above to be utilized by the Employer's request | |
| 2. | Allow for management fee of the training fund | |
| Total | | |

Note: This is to be filled out separately for each activity mentioned in Appendix 2, page 2 of 8.

**Miscellaneous Expenses**

For Activity Nº: _____ Name: _____

| S. Nº | Nomenclature | Unit | Quantity | Unit Price | Total Amount |
|---|---|---|---|---|---|
| | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 1. | Communication costs between _____ and _____ (telephone, telegram, telex) | | | | |
| 2. | Drafting, reproduction of reports | | | | |
| 3. | | | | | |
| 4. | | | | | |
| 5. | | | | | |
| | Total: | | | | |

Note: This is to be filled out separately for each activity mentioned in Appendix 2, page 2 of 8.

# TERMS OF REFERENCE

## 1. GENERAL INFORMATION

### 1.1. Background

Kenya Electricity Transmission Company Limited (KETRACO), which is wholly owned by the Government, was incorporated on 2nd December, 2008 under the Companies Act, Cap 486, pursuant to the reforms envisaged under Sessional Paper No. 4 of 2004 on Energy.

KETRACO's mandate is to design, construct, operate and maintain new high voltage electricity transmission lines which will form the backbone of the National Electricity Grid.

KETRACO currently has 7 Esri ArcGIS desktop licenses and one spatial analyst extension. With the successfully implementation of SAP on Hana and ongoing implementation of BI Objects, there is a need to leverage the existing GIS environment. The main objective is to leverage existing platforms within KETRACO in order to achieve an Integrated Location Intelligence System (ILIS)

### 1.2. Purpose

The purpose of this tender is to invite submissions from companies and consulting firms for the Supply delivery and implementation of an Integrated Location Intelligence System. The eventual system shall provide a solution to improve the workflows currently being faced by the various departments within KETRACO in their day to day running. The system will be deployed at KETRACO's headquarters. The system must allow for the capture of existing data. Once deployed, the system must be securely accessible to all users and other offices through KETRACO's WANs and LANs for data sharing and capturing.

Most utility companies normally struggle with important information including;

1. Which spatial system has my data and which version?
2. How do I sync data between business and spatial systems?
3. How do I access my business data from my spatial client tools?
4. How do I merge business and spatial data with my operations systems?
5. How do I connect and sync spatial data to mobile devices?
6. How to I provide web access of data in multiple systems?

The main objective of this tender is therefore to assist KETRACO to improve the value of operations data by enriching it with geographic context, visualizing its shape and presenting it in real-time.

**Main Components**

3. **GIS Module:** The GIS Module will have several submodules mainly targeting wayleaves management including;

    - **Crop Management Module:** This Module will leverage the integration of the ArcGIS for Server Platform and AGOL hosting Environment to SAP BI Objects. The system should be able to establish the number of crops within a given parcel, level of maturity.. Seamless data flow from the field to office should be achieved with no duplication in data entry.

    - **Land management Module:** Should be able to automate the field to office workflow for collecting land parcel attributes. This should involve the capability to take photos, collect vector data and location information in near real time. This module should be able to synchronize with data existing within SAP as well as consume information from SAP to be utilized in the field.

    - **Structures management Module:** This module should be able to give updated structures information within a parcel and identify whether any modifications have been done since the last field survey. The system should be able to access the historical information from the field in order to enable a comparative analysis with the current situation

4. **Location Intelligence Module:** This module should have map enabled dashboards which will enable configuration of interactive maps within ILIS. The module should also allow users to filter data based on selections made when viewing the dashboard and also insert data from a Universe query or from the embedded spreadsheet in the dashboard. The module should therefore be able to provide, dashboards, web intelligence, crystal reports and design studio.

Within these main components are sub-systems that operate in sync with the main components to guarantee efficient and effective workflows and operations. These are intended to augment KETRACO's efficiency and effectiveness in its service delivery across its mandate, synergize collaboration between the different stakeholders and leverage existing technology to yield better results. These have been expounded briefly below:

- Collaborative Platform and medium –inter-departmental and across all relevant stakeholders.
- Mobile/Hand-held device Deployable – off-site access and operability.
- Stringent security levels to prevent unauthorized access - with authorized log-ins, security groups' access definitions.
- Scalable – able to be interfaced with (existing/prospective) modules within the SAP enterprise.
- Geographic demarcations and geo-fencing – Enhance data integrity by ensuring data collection can only be done while within stipulated areas.
- Easy to use – The user interfaces are very user friendly and will not require a steep learning curve for adoption

## 2. FUNCTIONAL SCOPE OF THE REQUIRED SYSTEM

The proposed solution should be web-based and must have a modular design in which each need will be addressed individually so as to ensure that all needs are dealt with effectively. The proposed solution should be able to process (store, analyze and collaborate) large volumes of data (Enterprise – Big Data) in an effective and holistic manner, providing an accurate overview of all data in relation to supporting information modules. This will enable decision-makers within the System to have all the pertinent information at their disposal to make informed decisions and build on the organizations strategic objectives.

The core functionalities as earlier outlined that the System will come equipped with are:

### 2.1. General

Following are the 2 main features of the ILIS:

1.) **The GIS module:** will have the following sub-modules

a. Crop Management module

i. Be able to identify number of crops within a given parcel

ii. Collect information to be used to estimate maturity level, crop yield and acreage

iii. Streamline the wayleaves management workflow

iv. Seamless field to office workflow to enable near real time data capture

b. Land Management module

i. Be able to capture Land parcel information in near real time

ii. Be able to capture both image and vector data

iii. Be able to capture compute area to be acquired by KETRACO

iv. Be able to use updated base maps to confirm parcel location

c. Structures Management module

   i. Be able to identify historical information on structures within a parcel

   ii. Be able to detect additional or modified structures

   iii. Be able to capture size of structures

   iv. Be able to capture image and vector data on the structures

**2.) The Location Intelligence module:** will be able to achieve the following;

d. Be able to provide, dashboards, web intelligence, crystal reports and design studio

e. Be able to add data from ArcGIS platform

f. Have map enabled dashboards to enable configuration of interactive maps

g. Insert data from a Universe query or from embedded spreadsheet in the dashboard

### 2.2. Scope

The scope of the project shall include the following high-level aspects:

- Detailed requirements analysis and documentation
- Design
- Implementation of the solution
  - Procurement and configuration of software
  - Software Development and Customization
  - Pilot
  - Training
  - Documentation

- Change Management
- Systems Rollout
- Maintenance and Support of the software application for at least three years

### 2.3. Software and Database Architecture

- Modular, extendable and scalable software architecture,
- User interface presentation should be rendering through multi-tier client/server technologies,
- Run from a centralized database to ensure sharing of information across all functions,
- Software should be based on an enterprise strength relational database management system (e.g. Oracle, MS SQL Server).
- Mobile and hand-held devices compatibility with the Central databases to ensure off and on-site information access – to ensure sustained service delivery as well as update information source with real-time on-the-ground realities/facts.
- System redundancy, quick and full recovery should be provided for all servers used centrally.

## 3. GENERAL SYSTEM REQUIREMENTS

### 3.1. Overall Design and System Boundaries

The ILIS will be an integrated service-oriented (SOA) system built on a relational database management system (RDBMS) consisting of Crop management, Land management, structures management and Analytics modules. It should provide KETRACO with the capability to leverage the GIS and SAP platforms to work more efficiently and streamline existing workflows.

### 3.2. Requirements

Throughout this document, each requirement shall be uniquely predefined as a Mandatory <M>), Highly-Desirable (<HD>) or Desirable (<D>):

### 3.3. Overall System Requirements (OR)

| REQUIREMENT DESCRIPTIONS |
| --- |
| The ILIS should be developed using industry standard development tools, which can be supported by local expertise. |
| The ILIS should be web-based and work in the intranet and internet environments. |
| The ILIS should be a web based system that could allow external access by project staff to monitor progress and update activity details |
| The ILIS should be support Web and mobile access which could enables remote project staff and external stakeholders to monitor project progress, update task details |
| The ILIS modules should all have a consistent “look & feel.” This includes standardization of data entry screen, function keys, query procedures, and on-screen and hardcopy report format, common icons for example for “search” |
| The ILIS should be a role-based system with sufficient security and protection based on defined roles and users granted permissions |
| The ILIS should be modular and include at least the shown modules. |
| The ILIS should be parameterized as much as possible for simple configuration |
| The ILIS should have an ergonomic design, with as much as possible drop-down choices and little free-entry text to facilitate maximum data validation at the input side |
| The ILIS should be based on a system of unique identifiers, preventing the creation of duplicates, but issuing warnings if users try to do so |

| REQUIREMENT DESCRIPTIONS |
| --- |
| ILIS should be able to work through a virtualized server |
| The ILIS should cope with a large volume of records |
| The ILIS should have the facility to track records through time, maintaining historical records |
| The ILIS should have the facility to track users and what they do on the ULMS |
| Data integrity should be enforced by applying fixed drop down menus and logical controls where possible. |
| The ILMIS should provide for minimal downtime, no extra software should be installed (pure web-based solution). |
| The ILIS should be easily scale-able to cater for 'peak' processing volumes |
| Access to specific data and functionality within each software module should be defined and managed using an appropriate role-based security model. Rather than assigning security rights and privileges to individual users, these should be granted to "roles". Each role should roughly correspond to a job function. The security model should be hierarchical in nature with the ability to grant roles to other roles etc. |
| The Vendors should provide training for the users of the solution including preparation of training manuals and setup of the hardware and software used in training classes. |
| Vendor should provide Code Base for further enhancements and modifications of the existing system to be done when necessary by the customer. |

| REQUIREMENT DESCRIPTIONS |
| --- |
| The ILIS should be user-friendly and intuitive to use for experienced users. |
| The ILIS should facilitate the setting of user rights according to type and level of information. |
| The ILIS should permit the system administrator to see who has changed information, when and how |

3.4. GIS Module Requirements

This module will have 3 Sub Modules including; Crop Management, Land Management, Structure Management. The GIS module should be scaled up further to accommodate

| REQUIREMENT DESCRIPTIONS |
| --- |
| The GIS module Based on Esri's enterprise solution, should be integrated to the SAP BI Objects platform through web services, should support embedded mode, APIs for retrieval of spatial data, APIs for control of the data (e.g. filtering spatial records, zoom/highlight to specific feature, get location etc.). |
| The GIS module should contain a browser based GIS viewer and editor, on-the-fly spatial layer creation, basic business rules (mandatory/optional fields, type-controlled user input). |
| The GIS module should facilitate effective and efficient display of large raster layers (e.g. satellite imagery and aerial photography) |
| The GIS module should support data-related visualization of spatial records (e.g. shading of features based on the value, display of features based on scale level, variable labels etc.). |
| The GI module should support the integration of geo-referenced images or/and raster layers (groups of geo-referenced images) into the existing national coordinate system, whether they are located on the Internet or on a local network or on the end-user's computer<br><br>The following types of data formats should be supported:<br><br>GeoTIFF, JPG, PNG format<br><br>1-bit formats; 8-bit formats ; 16-bit formats ; 24-bit formats; 32-bit formats |

| **REQUIREMENT DESCRIPTIONS** |
| --- |
| The GIS module should support the following types of vector layers:<br><br>Polygon (including multi-part) ; Line (including multi-line) ; Point topology |
| The GIS module should provide:<br><br>• insert and editing of attribute and vector data<br><br>• Use of snapping to node, breakpoint or line-closest point to any vector layer that is use.<br><br>• consistency checking<br><br>• preview and checking of existing data<br><br>• printout of required data, with legend, north arrow and scale |

**REQUIREMENT DESCRIPTIONS**

**Raster layers**

- displaying/hiding individual raster layers – from the catalogue in the table
- transparency settings (1-100 %) for several-bit raster
- colour settings for 1-bit raster
- Compression-loss settings (1-100 %)
- settings for the range of the scale at which the layers are plotted
- removal of the background (e.g. make white colour completely transparent)
- replacement of specific colour (e.g. replace black parcel borders in the raster with red borders)

**REQUIREMENT DESCRIPTIONS**

**Vector layers**

- displaying/hiding individual vector layers
    - on/off plotting of individually displayed layers,
    - settings of parameters for plotting vector layers,
- any parameter can be set up manually or be assigned a value in the "default view" column,
    - Lines: colour, type, thickness,
    - Shade (inside the polygon): colour and/or hatching, level of transparency (1-100 %),
    - Symbols: type, colour, size,
        - size: fixed/changing with the scale
- Text: value, font, size, colour, position,
    - size: fixed/changing with the scale
- display of descriptive data of a selected vector layer object
    - selection by clicking or entering coordinates
- selection by querying attribute data
- zoom to selected
- panning using the mouse
- panning to the position with specific coordinates – image centre (using the mouse or by typing in the coordinates)

| REQUIREMENT DESCRIPTIONS |
| --- |
| **Measuring of distances and areas**<br>• Application should support a possibility to measure distance, and area. |
| **Selection of objects using descriptive data and by positioning on the selection**<br>• User should be able to create a selection set, combining layer features (e.g. polygons) based on specific criteria<br>• Based on query attributes (e.g. land use, plot id, etc.)<br>• Manual selection with the mouse clicking |
| **Creation of filter layers**<br>• Filter layers are required as a tool for analysis, for example "work with all plots which are of residential land use classification". Filter layers should be automatically updated as the data change.<br>• Create layer based on query parameters<br>• Create a list automatically of filter layers based on a field with limited amount of values (selection of values, e.g. land use)<br>• Export data in MS Excel and/or SHP file |
| **Querying objects**<br>• User should be able to set parameters for querying the data within the user interface (based on the fields from specific layer). |

| REQUIREMENT DESCRIPTIONS |
| --- |
| **Display of current status in the status line:**<br>• position of mouse,<br>• scale,<br>• progress bar or at least display of (in)activity status<br>• quick help (e.g. description of what the user should do next) |
| The GIS Module should be flexible enough to accommodate new layers as they become available |
| The GIS Module should be able to import survey information in the right projections with beacon and PIN details and reference numbers |
| The GIS Module should be able to display an object and its attributes |
| The GIS Module should be able to find an object by location (clicking at a point and querying the objects there) |
| The GIS Module should be able to find an object by attribute |
| The GIS Module should be able to import data held in different map projections and display with no distortion |
| The GIS Module should be able to set layer-specific display scales |
| The GIS Module should be able to set layer-specific text annotation scales |
| The GIS Module should be able to display objects according to a legend defined with attribute values form the RDBMS tables |

| REQUIREMENT DESCRIPTIONS |
| --- |
| The GIS Module should be able to generate scaled maps for printing with title, north arrow, scale and legend |
| The GI Module should permit certain key objects (parcels, buildings) to be colour coded according to their status in the database (e.g. non-compliance, use, etc) |
| The GIS module should support input data stream compliant with OGC Standards for Web Map Service |
| The GIS Module should be designed to work on a unified spatial enabled RDBMS |
| The GIS Module with the RDBMS should facilitate the export of data onto mobile devices to facilitate data capture (photos, form, GPS) in the field |
| The GI Module could have the ability to use GPS Capture Devices to register the coordinates of each feature. |
| The GIS Module should be kept in synch with the rest of the system, so that things like parcel splits are also updated on the GIS interface |
| The GI module should support streaming of the data to 3rd party applications, supporting the following methods based on OGC standards: GetCapabilities, GetMap, GetFeatureInfo. |

**3.5.** Location Analytics Module

This module should have map enabled dashboards, web intelligence, crystal reports and design studio.

| REQUIREMENT DESCRIPTIONS |
| --- |
| The LI Module should permit the management of individual details (search, add, edit, delete) according to the prevailing standard (with names, PIN and ID numbers as appropriate, with attachments to each individual |
| Should maintain contact information of all beneficiaries (telephone, postal address, physical address and email) |
| The LI module should be able to generate a full list of beneficiaries and their details and status (e.g. paid, unpaid, Partially paid) |
| The LI module should have the ability to link beneficiaries to parcels through GPS coordinates of location |
| The LI module should manage all Valuation and Land Assessment details as these start to be recorded in the system |
| Facility to attach picture of property to the forms. |
| The system shall have facility to create mailing list for property owners who<br>Have been cleared to get an offer letter |
| The LI module should be able to create an inventory of current land parcels and their assets |
| The LI module should maintain a record of each parcel showing characteristics (size and category) and value |
| The LI module should be able to generate reports listing all parcel that have been and their various attributes |

| REQUIREMENT DESCRIPTIONS |
| --- |
| The LI module should be able to summarize all compensation payments by category |
| The LI module should facilitate the Preparation of offer Letters and any other notifications |
| The LI module should make it possible, for authorized users only, to search, update, edit or even delete property information |
| The LI module should permit the amalgamation of several units into one (if they are owned by one individual) |
| Be able to provide, dashboards, web intelligence, crystal reports and design studio |
| Be able to add data from ArcGIS platform |
| Have map enabled dashboards to enable configuration of interactive maps |
| Insert data from a Universe query or from embedded spreadsheet in the dashboard |
| The LI module should be required to bulk import large amounts of core data collected from the field officers |
| The LI module should be linked to the GIS module. |
| Update to the GIS database should be recorded automatically in the LI module |

| REQUIREMENT DESCRIPTIONS |
| --- |
| Deleted record shall not be removed from the Database, but remain as historical record. |
| User interface for administrators to export data in a variety of standard formats to provide information to relevant stakeholders. |
| Access to parcel information and accounts can only be done by authorized users. |

**3.6.** Training

*Specific Tasks and Activities of this component*:

(a) Advise and support the design of training program, comprising both theoretical and practical parts, which covers the range of subjects and matters that need to be understood and learned by registration staff at all levels.

(b) Advice and support the appropriateness, structure and content of training courses designed for advanced, intermediate and introductory levels.

(c) Advise and support the development of training materials, guidance notes and reference manuals to support both future external and internal training courses.

(d) Advise and support development of training-for-trainers program such that senior and middle management personnel can operate and sustain an internal training program. Trainer of trainer's capacity building roadmap should be clearly defined.

## 4. OUTPUTS AND DELIVERABLES

The following will be the primary outputs/deliverables of this assignment:

1. Working fully integrated system, including database and application software to specification outlined in the general and functional requirements

2. Software and Systems Architecture Documents.
3. Database Design and Interface Design Documents, and Data Transfer Protocol.
4. Software Design Document, which include security systems design, user interface design, and data entry validation rules, and Test Descriptions, and Test Cases.
5. Design of Management Information Reports and Analytics
6. User Acceptance Test Reports.
7. Systems Administration and Train-the-Trainer Training.
8. Training in an authorized training Center for at least 2 Geospatial experts and internal training for other users

.

**5. CLIENT RESPONSIBILITY**

For the purpose of achieving the objectives of this assignment, the Consultant will be provided by the following items, which will form part of the inputs by Ketraco:

a. Provision of pre requisite infrastructure to accommodate the system
b. Dedicated counterparts to assist in the design of the various modules and to perform quality assurance and UAT;
c. Computer equipment, including Internet connection with appropriate bandwidth, for on-site software installation and testing.
d. All required peripherals suitably furnished, for example scanner and printers with toner/cartridges

## 6. MAINTENANCE AND SUPPORT

The successful tenderer shall be expected to provide support and maintenance on all components of the solution including the software application, third party software and all related hardware needed for the successful and continued operation of the system for a period of three (3) years.

## 7. DURATION OF SERVICES,

This consultancy is expected to be carried out and completed within 90 calendar days (3 months) from the signing of the contract for this assignment. The Consultant has to estimate the time input required and include that in a fixed-price quote appropriately.