



KENYA REINSURANCE CORPORATION LTD

P.O.BOX 30271-00100

NAIROBI

Email: kenyare@kenyare.co.ke

TENDER DOCUMENT

FOR

PROPOSED INTEGRATED SECURITY MANAGEMENT

SYSTEM AT REINSURANCE PLAZA, KISUMU

TENDER (ITT) NO KRC/1931/2022/204

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INVITATION TO TENDER

PROCURING ENTITY: *Kenya Reinsurance Corporation Limited*
Nairobi City, Taifa Road, Reinsurance Plaza, 14th Floor,
P.O Box 30271-00100, Nairobi,
Email: Procurement@kenyare.co.ke

CONTRACT NAME AND DESCRIPTION: *Proposed Integrated Security Management System at Reinsurance Plaza, Kisumu.*

1. The **Kenya Reinsurance Corporation Ltd** invites sealed tenders for the *Supply, Installation, Commissioning and Testing of a security management system and associated builders works at Reinsurance Plaza, Kisumu-Kisumu County.*
2. Tendering will be conducted under International open competitive method using a standardized tender document. Tendering is open to all qualified and interested Tenderers.
3. Qualified and interested tenderers may obtain further information and inspect the Tender Documents during office hours **Monday through to Friday between 8:00am and 5:00 pm** at the address given below.
4. Tender documents may be obtained electronically from the Website(s) www.kenyare.co.ke. Tender documents obtained electronically will be free of charge.
5. Tender documents may be viewed and downloaded for free from the website www.kenyare.co.ke. Tenderers who download the tender document must forward their particulars immediately to procurement@kenyare.co.ke
6. Tenders shall be quoted be in **US dollars and shall include all taxes**. Tenders shall remain valid for **180 days** from the date of opening of tenders.
7. All Tenders must be accompanied by a **Tender Security in the amount of USD 20,000.00.**
8. The Tenderers shall chronologically serialize all pages of the tender documents submitted.
9. Completed tenders must be delivered to the address below on or before **10:00am Tuesday, 27th September 2022**. Electronic Tenders **will not** be permitted.
10. Tenders will be opened immediately after the deadline date and time specified above or any deadline date and time specified later. Tenders will be publicly opened in the presence of the Tenderers' designated representatives who choose to attend at the address below.
11. Late tenders will be rejected.
12. The addresses referred to above are:
 - **Address for obtaining further information and for purchasing tender documents**
Kenya Reinsurance Corporation Ltd,
Nairobi City, Taifa Road, Reinsurance Plaza, 14th Floor,
Supply Chain Office,
P.O Box 30271-00100, Nairobi,
Email: Procurement@kenyare.co.ke
Tel: 0703 083 200.

- **Address for Submission of Tenders.**
Kenya Reinsurance Corporation Ltd,
P.O Box 30271-00100, Nairobi,
Attn: Head of Supply Chain,
Nairobi City, Taifa Road, Reinsurance Plaza, 14th Floor, Supply Chain Office.
- **Address for Opening of Tenders.**
Kenya Reinsurance Corporation Ltd
Nairobi City, Taifa Road, Reinsurance Plaza, 17th Floor
- **Invitation for Tenders.**
Kenya Reinsurance Corporation Ltd,
P.O Box 30271-00100, Nairobi,
Managing Director
Authorized Representative: Head of Supply Chain,
Nairobi City, Taifa Road, Reinsurance Plaza, 14th Floor, Supply Chain Office.

PART 1 - TENDERING PROCEDURES

SECTION I: INSTRUCTIONS TO TENDERERS

A General Provisions

1. Scope of Tender

- 1.1 The Procuring Entity as defined in the Appendix to Conditions of Contract invites tenders for Works Contract as described in the tender documents. The name, identification, and number of lots (contracts) of this Tender Document are **specified in the TDS**.

2. Fraud and Corruption

- 2.1 The Procuring Entity requires compliance with the provisions of the Public Procurement and Asset Disposal Act, 2015, Section 62 "Declaration not to engage in corruption". The tender submitted by a person shall include a declaration that the person shall not engage in any corrupt or fraudulent practice and a declaration that the person or his or her sub-contractors are not debarred from participating in public procurement proceedings.
- 2.2 The Procuring Entity requires compliance with the provisions of the Competition Act 2010, regarding collusive practices in contracting. Any tenderer found to have engaged in collusive conduct shall be disqualified and criminal and/or civil sanctions may be imposed. To this effect, Tenders shall be required to complete and sign the "Certificate of Independent Tender Determination" annexed to the Form of Tender.
- 2.3 Unfair Competitive Advantage - Fairness and transparency in the tender process require that the firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender. To that end, the Procuring Entity shall indicate in the **Data Sheet** and make available to all the firms together with this tender document all information that would in that respect give such firm any unfair competitive advantage over competing firms.
- 2.4 Unfair Competitive Advantage - Fairness and transparency in the tender process require that the Firms or their Affiliates competing for a specific assignment do not derive a competitive advantage from having provided consulting services related to this tender being tendered for. The Procuring Entity shall indicate in the **TDS** firms (if any) that provided consulting services for the contract being tendered for. The Procuring Entity shall check whether the owners or controllers of the Tenderer are same as those that provided consulting services. The Procuring Entity shall, upon request, make available to any tenderer information that would give such firm unfair competitive advantage over competing firms.

3. Eligible Tenderers

- 3.1 A Tenderer may be a firm that is a private entity, a state-owned enterprise or institution subject to ITT 3.7 or any combination of such entities in the form of a joint venture (JV) under an existing agreement or with the intent to enter into such an agreement supported by a letter of intent. Public employees and their close relatives (*wives, children, brothers, sisters and uncles and aunts*) are not eligible to participate in the tender. In the case of a joint venture, all members shall be jointly and severally liable for the execution of the entire Contract in accordance with the Contract terms. The JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the members of the JV during the tendering process and, in the event the JV is awarded the Contract, during contract execution. The maximum number of JV members shall be specified in the **TDS**.
- 3.2 Public Officers of the Procuring Entity, their Spouses, Child, Parent, Brothers or Sister. Child, Parent, Brother or Sister of a Spouse, their business associates or agents and firms/organizations in which they have a substantial or controlling interest shall not be eligible to tender or be awarded a contract. Public Officers are also not allowed to participate in any procurement proceedings.
- 3.3 A Tenderer shall not have a conflict of interest. Any tenderer found to have a conflict of interest shall be disqualified. A tenderer may be considered to have a conflict of interest for the purpose of this tendering process, if the tenderer:
 - a) Directly or indirectly controls, is controlled by or is under common control with another tenderer; or
 - b) Receives or has received any direct or indirect subsidy from another tenderer; or
 - c) Has the same legal representative as another tenderer; or

- d) Has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer, or influence the decisions of the Procuring Entity regarding this tendering process; or
 - e) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender; or
 - f) any of its affiliates has been hired (or is proposed to be hired) by the Procuring Entity as Engineer for the Contract implementation; or
 - g) Would be providing goods, works, or non-consulting services resulting from or directly related to consulting services for the preparation or implementation of the contract specified in this Tender Document or
 - h) Has a close business or family relationship with a professional staff of the Procuring Entity who:
 - i) are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract; or
 - ii) would be involved in the implementation or supervision of such Contract unless the conflict stemming from such relationship has been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.
- 3.4 A tenderer shall not be involved in corrupt, coercive, obstructive, collusive, or fraudulent practice. A tenderer that is proven to have been involved any of these practices shall be automatically disqualified.
- 3.5 A Tenderer (either individually or as a JV member) shall not participate in more than one Tender, except for permitted alternative tenders. This includes participation as a subcontractor in other Tenders. Such participation shall result in the disqualification of all Tenders in which the firm is involved. A firm that is not a tenderer, or a JV member may participate as a subcontractor in more than one tender. Members of a joint venture may not also make an individual tender, be a subcontractor in a separate tender or be part of another joint venture for the purposes of the same Tender.
- 3.6 A Tenderer may have the nationality of any country, subject to the restrictions pursuant to ITT 4.8. A Tenderer shall be deemed to have the nationality of a country if the Tenderer is constituted, incorporated, or registered in and operates in conformity with the provisions of the laws of that country, as evidenced by its articles of incorporation (or equivalent documents of constitution or association) and its registration documents, as the case may be. This criterion also shall apply to the determination of the nationality of proposed subcontractors or sub-consultants for any part of the Contract including related Services.
- 3.7 Tenderer that has been debarred from participating in public procurement shall be ineligible to tender or be awarded a contract. The list of debarred firms and individuals is available from the website of PPRA www.ppra.go.ke.
- 3.8 Tenderers that are state-owned enterprises or institutions may be eligible to compete and be awarded a Contract(s) only if they are accredited by PPRA to be (i) a legal public entity of the state Government and/or public administration, (ii) financially autonomous and not receiving any significant subsidies or budget support from any public entity or Government, and (iii) operating under commercial law and vested with legal rights and liabilities similar to any commercial enterprise to enable it compete with firms in the private sector on an equal basis.
- 3.9 A Firms and individuals may be ineligible if their countries of origin (a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country, or (b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods or contracting of works or services from that country, or any payments to any country, person, or entity in that country. A tenderer shall provide such documentary evidence of eligibility satisfactory to the Procuring Entity, as the Procuring Entity shall reasonably request.

- 3.10 Foreign tenderers are required to source at least forty (40%) percent of their contract inputs (in supplies, subcontracts and labor) from national suppliers and contractors. To this end, a foreign tenderer shall provide in its tender documentary evidence that this requirement is met. Foreign tenderers not meeting this criterion will be automatically disqualified. Information required to enable the Procuring Entity determine if this condition is met shall be provided in for this purpose is be provided in "SECTION III - EVALUATION AND QUALIFICATION CRITERIA, Item 9".
- 3.11 Pursuant to the eligibility requirements of ITT 4.10, a tender is considered a foreign tenderer if the tenderer is not registered in Kenya or if the tenderer is registered in Kenya and has less than 51 percent ownership by Kenyan Citizens. JVs are considered as foreign tenderers if the individual member firms are not registered in Kenya or if are registered in Kenya and have less than 51 percent ownership by Kenyan citizens. The JV shall not subcontract to foreign firms more than 10 percent of the contract price, excluding provisional sums.
- 3.12 The National Construction Authority Act of Kenya requires that all local and foreign contractors be registered with the National Construction Authority and be issued with a Registration Certificate before they can undertake any construction works in Kenya. Registration shall not be a condition for tender, but it shall be a condition of contract award and signature. A selected tenderer shall be given opportunity to register before such award and signature of contract. Application for registration with National Construction Authority may be accessed from the website www.nca.go.ke.
- 3.13 The Competition Act of Kenya requires that firms wishing to tender as Joint Venture undertakings which may prevent, distort, or lessen competition in provision of services are prohibited unless they are exempt in accordance with the provisions of Section 25 of the Competition Act, 2010. JVs will be required to seek for exemption from the Competition Authority. Exemption shall not be a condition for tender, but it shall be a condition of contract award and signature. A JV tenderer shall be given opportunity to seek such exemption as a condition of award and signature of contract. Application for exemption from the Competition Authority of Kenya may be accessed from the website www.cak.go.ke
- 3.14 A Kenyan tenderer shall provide evidence of having fulfilled his/her tax obligations by producing a valid tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority.

4. Eligible Goods, Equipment, and Services

- 4.1 Goods, equipment, and services to be supplied under the Contract may have their origin in any country that is not eligible under ITT 3.9. At the Procuring Entity's request, Tenderers may be required to provide evidence of the origin of Goods, equipment, and services.
- 4.2 Any goods, works and production processes with characteristics that have been declared by the relevant national environmental protection agency or by other competent authority as harmful to human beings and to the environment shall not be eligible for procurement.

5. Tenderer's Responsibilities

- 5.1 The tenderer shall bear all costs associated with the preparation and submission of his/her tender, and the Procuring Entity will in no case be responsible or liable for those costs.
- 5.2 The tenderer, at the tenderer's own responsibility and risk, is encouraged to visit and examine the Site of the Works and its surroundings and obtain all information that may be necessary for preparing the tender and entering into a contract for construction of the Works. The costs of visiting the Site shall be at the tenderer's own expense.
- 5.3 The Tenderer and any of its personnel or agents will be granted permission by the Procuring Entity to enter upon its premises and lands for the purpose of such visit. The Tenderer shall indemnify the Procuring Entity against all liability arising from death or personal injury, loss of or damage to property, and any other losses and expenses incurred as a result of the inspection.
- 5.4 The tenderer shall provide in the Form of Tender and Qualification Information, a preliminary description of the proposed work method and schedule, including charts, as necessary or required.

B. Contents of Tender Documents

6. Sections of Tender Document

6.1 The tender document consists of Parts 1, 2, and 3, which includes all the sections specified below, and which should be read in conjunction with any Addenda issued in accordance with ITT 8.

PART 1 Tendering Procedures

- i) Section I - Instructions to Tenderers (ITT)
- ii) Section II - Tender Data Sheet (TDS)
- iii) Section III - Evaluation and Qualification Criteria
- iv) Section IV - Tendering Forms

PART 2 Works Requirements

- i) Section V - Drawings
- ii) Section VI - Specifications
- iii) Section VII - Bills of Quantities

PART 3 Conditions of Contract and Contract Forms

- i) Section VIII - General Conditions of Contract (GCC)
- ii) Section IX - Special Conditions of Contract (SC)
- iii) Section X - Contract Forms

6.2 The Invitation to Tender Document (ITT) issued by the Procuring Entity is not part of the Contract documents.

6.3 Unless obtained directly from the Procuring Entity, the Procuring Entity is not responsible for the completeness of the Tender document, responses to requests for clarification, the minutes of the pre-Tender meeting (if any), or Addenda to the Tender document in accordance with ITT 8. In case of any contradiction, documents obtained directly from the Procuring Entity shall prevail. The Tenderer is expected to examine all instructions, forms, terms, and specifications in the Tender Document and to furnish with its Tender all information and documentation as is required by the Tender document.

7. Site Visit

7.1 The Tenderer, at the Tenderer's own responsibility and risk, is encouraged to visit and examine and inspect the Site of the Required Services and its surroundings and obtain all information that may be necessary for preparing the Tender and entering into a contract for the Services. The costs of visiting the Site shall be at the Tenderer's own expense.

7.2 The site visit date shall be Monday, 12th September 2022 at 10am – GF Reinsurance Plaza Kisumu at the management offices – Main Tower.

8. Pre-Tender Meeting

8.1 The Procuring Entity shall specify in the **TDS** if a pre-tender meeting will be held, when and where. The Procuring Entity shall also specify in the **TDS** if a pre-arranged pretender site visit will be held and when. The Tenderer's designated representative is invited to attend a pre-arranged pretender visit of the site of the works. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.

8.2 The Tenderer is requested to submit any questions in writing, to reach the Procuring Entity not later than the period specified in the **TDS** before the meeting.

8.3 Minutes of the pre-Tender meeting and the pre-arranged pretender site visit of the site of the works, if applicable, including the text of the questions asked by Tenderers and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Tenderers who have acquired the Tender Documents in accordance with ITT 6.3. Minutes shall not identify the source of the questions asked.

8.4 The Procuring Entity shall also promptly publish anonymized Minutes of the pre-Tender meeting and the pre-arranged pretender visit of the site of the works at the web page identified in the **TDS**. Any modification to the Tender Documents that may become necessary as a result of the pre-tender meeting and the pre-arranged pretender site visit, shall be made by the Procuring Entity exclusively through the issue of an Addendum pursuant to ITT 8 and not through the minutes of the pre-Tender meeting. Nonattendance at the pre-Tender meeting will not be a cause for disqualification of a Tenderer.

9. Clarification and amendments of Tender Documents

9.1 A Tenderer requiring any clarification of the Tender Document shall contact the Procuring Entity in writing at the Procuring Entity's address specified in the **TDS** or raise its enquiries during the pre-Tender meeting and the pre-arranged pretender visit of the site of the works if provided for in accordance with ITT 8.4. The Procuring Entity will respond in writing to any request for clarification, provided that such request is received no later than the period specified in the **TDS** prior to the deadline for submission of tenders. The Procuring Entity shall forward copies of its response to all tenderers who have acquired the Tender Documents in accordance with ITT 6.3, including a description of the inquiry but without identifying its source. If specified in the **TDS**, the Procuring Entity shall also promptly publish its response at the web page identified in the **TDS**. Should the clarification result in changes to the essential elements of the Tender Documents, the Procuring Entity shall amend the Tender Documents appropriately following the procedure under ITT 8.4.

10. Amendment of Tendering Document

10.1 At any time prior to the deadline for submission of Tenders, the Procuring Entity may amend the Tendering document by issuing addenda.

10.2 Any addendum issued shall be part of the tendering document and shall be communicated in writing to all who have obtained the tendering document from the Procuring Entity in accordance with ITT 6.3. The Procuring Entity shall also promptly publish the addendum on the Procuring Entity's web page in accordance with ITT 8.4.

10.3 To give prospective Tenderers reasonable time in which to take an addendum into account in preparing their Tenders, the Procuring Entity shall extend, as necessary, the deadline for submission of Tenders, in accordance with ITT 25.2 below.

C. Preparation of Tenders

11. Cost of Tendering

11.1 The Tenderer shall bear all costs associated with the preparation and submission of its Tender, and the Procuring Entity shall not be responsible or liable for those costs, regardless of the conduct or outcome of the tendering process.

12. Language of Tender

12.1 The Tender, as well as all correspondence and documents relating to the tender exchanged by the tenderer and the Procuring Entity, shall be written in the English Language. Supporting documents and printed literature that are part of the Tender may be in another language provided they are accompanied by an accurate and notarized translation of the relevant passages into the English Language, in which case, for purposes of interpretation of the Tender, such translation shall govern.

13. Documents Comprising the Tender

13.1 The Tender shall comprise the following:

- a) Form of Tender prepared in accordance with ITT 14;
- b) Schedules including priced Bill of Quantities, completed in accordance with ITT 14 and ITT 16;
- c) Tender Security or Tender-Securing Declaration, in accordance with ITT 21.1;
- d) Alternative Tender, if permissible, in accordance with ITT 15;
- e) Authorization: written confirmation authorizing the signatory of the Tender to commit the Tenderer, in

accordance with ITT 22.3;

- f) Qualifications: documentary evidence in accordance with ITT 19 establishing the Tenderer's qualifications to perform the Contract if its Tender is accepted;
- g) Conformity: a technical proposal in accordance with ITT 18;
- h) Any other document required in the **TDS**.

13.2 In addition to the requirements under ITT 11.1, Tenders submitted by a JV shall include a copy of the Joint Venture Agreement entered into by all members. Alternatively, a letter of intent to execute a Joint Venture Agreement in the event of a successful Tender shall be signed by all members and submitted with the Tender, together with a copy of the proposed Agreement. **The Tenderer shall chronologically serialize pages of all tender documents submitted.**

13.3 The Tenderer shall furnish in the Form of Tender information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Tender.

14. Form of Tender and Schedules

14.1 The Form of Tender and Schedules, including the Bill of Quantities, shall be prepared using the relevant forms furnished in Section IV, Tendering Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITT 20.3. All blank spaces shall be filled in with the information requested.

15. Alternative Tenders

15.1 Unless otherwise specified in the **TDS**, alternative Tenders shall not be considered.

15.2 When alternative times for completion are explicitly invited, a statement to that effect will be included in the **TDS**, and the method of evaluating different alternative times for completion will be described in Section III, Evaluation and Qualification Criteria.

15.3 Except as provided under ITT 13.4 below, Tenderers wishing to offer technical alternatives to the requirements of the Tender Documents must first price the Procuring Entity's design as described in the Tender Documents and shall further provide all information necessary for a complete evaluation of the alternative by the Procuring Entity, including drawings, design calculations, technical specifications, breakdown of prices, and proposed construction methodology and other relevant details. Only the technical alternatives, if any, of the Tenderer with the Winning Tender conforming to the basic technical requirements shall be considered by the Procuring Entity. When specified in the **TDS**, Tenderers are permitted to submit alternative technical solutions for specified parts of the Works, and such parts will be identified in the **TDS**, as will the method for their evaluating, and described in Section VII, Works' Requirements.

16. Tender Prices and Discounts

16.1 The prices and discounts (including any price reduction) quoted by the Tenderer in the Form of Tender and in the Bill of Quantities shall conform to the requirements specified below.

16.2 The Tenderer shall fill in rates and prices for all items of the Works described in the Bill of Quantities. Items against which no rate or price is entered by the Tenderer shall be deemed covered by the rates for other items in the Bill of Quantities and will not be paid for separately by the Procuring Entity. An item not listed in the priced Bill of Quantities shall be assumed to be not included in the Tender, and provided that the Tender is determined substantially responsive notwithstanding this omission, the average price of the item quoted by substantially responsive Tenderers will be added to the Tender price and the equivalent total cost of the Tender so determined will be used for price comparison.

16.3 The price to be quoted in the Form of Tender, in accordance with ITT 14.1, shall be the total price of the Tender, including any discounts offered.

16.4 The Tenderer shall quote any discounts and the methodology for their application in the Form of Tender, in accordance with ITT 14.1.

16.5 It will be specified in the **TDS** if the rates and prices quoted by the Tenderer are or are not subject to adjustment during the performance of the Contract in accordance with the provisions of the Conditions of Contract, except in cases where the contract is subject to **fluctuations and adjustments**, not fixed price. In such a case, the Tenderer shall furnish the indices and weightings for the price adjustment formulae in the Schedule of Adjustment Data and the Procuring Entity may require the Tenderer to justify its proposed indices and weightings.

16.6 Where tenders are being invited for individual lots (contracts) or for any combination of lots (packages), tenderers wishing to offer discounts for the award of more than one Contract shall specify in their Tender the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITT 16.4, provided the Tenders for all lots (contracts) are opened at the same time.

16.7 All duties, taxes, and other levies payable by the Contractor under the Contract, or for any other cause, as of the date 30 days prior to the deadline for submission of Tenders, shall be included in the rates and prices and the total Tender Price submitted by the Tenderer.

17. Currencies of Tender and Payment

17.1 Tenderers shall quote entirely in **US Dollars**. The unit rates and the prices shall be quoted by the Tenderer in the Bill of Quantities, entirely in US Dollars. A Tenderer expecting to incur expenditures in other currencies for inputs to the Works supplied from outside Kenya shall devise own ways of getting foreign currency to meet those expenditures.

18. Documents Comprising the Technical Proposal

18.1 The Tenderer shall furnish a technical proposal including a statement of work methods, equipment, personnel, schedule, and any other information as stipulated in Section IV, Tender Forms, in sufficient detail to demonstrate the adequacy of the Tenderer's proposal to meet the work's requirements and the completion time.

19. Documents Establishing the Eligibility and Qualifications of the Tenderer

19.1 Tenderers shall complete the Form of Tender, included in Section IV, Tender Forms, to establish Tenderer's eligibility in accordance with ITT 4.

19.2 In accordance with Section III, Evaluation and Qualification Criteria, to establish its qualifications to perform the Contract the Tenderer shall provide the information requested in the corresponding information sheets included in Section IV, Tender Forms.

19.3 A margin of preference will be allowed where the shareholding of firms is majority owned by Kenyan citizens. **The margin shall be 15% of the scores both technical and financial proposals.** Preference and reservations will be allowed, individually or in joint ventures. Applying for eligibility for Preference and reservations shall supply all information required to satisfy the criteria for eligibility specified in accordance with ITT 33.1.

19.4 Tenderers shall be asked to provide, as part of the data for qualification, such information, including details of ownership, as shall be required to determine whether, according to the classification established by the Procuring Entity, a contractor or group of contractors qualifies for a margin of preference. Further the information will enable the Procuring Entity to identify any actual or potential conflict of interest in relation to the procurement and/or contract management processes, or a possibility of collusion between tenderers, and thereby help to prevent any corrupt influence in relation to the procurement process or contract management.

19.5 The purpose of the information described in ITT 19.4 above overrides any claims to confidentiality which a tenderer may have. There can be no circumstances in which it would be justified for a tenderer to keep information relating to its ownership and control confidential where it is tendering to undertake public sector work and receive public sector funds. Thus, confidentiality will not be accepted by the Procuring Entity as a justification for a Tenderer's failure to disclose, or failure to provide required information on its ownership and control.

- 19.6 The Tenderer shall provide further documentary proof, information, or authorizations that the Procuring Entity may request in relation to ownership and control which information on any changes to the information which was provided by the tenderer under ITT 6.3. The obligations to require this information shall continue for the duration of the procurement process and contract performance and after completion of the contract, if any change to the information previously provided may reveal a conflict of interest in relation to the award or management of the contract.
- 19.7 All information provided by the tenderer pursuant to these requirements must be complete, current, and accurate as at the date of provision to the Procuring Entity. In submitting the information required pursuant to these requirements, the Tenderer shall warrant that the information submitted is complete, current, and accurate as at the date of submission to the Procuring Entity.
- 19.8 If a tenderer fails to submit the information required by these requirements, its tender will be rejected. Similarly, if the Procuring Entity is unable, after taking reasonable steps, to verify to a reasonable degree the information submitted by a tenderer pursuant to these requirements, then the tender will be rejected.
- 19.9 If information submitted by a tenderer pursuant to these requirements, or obtained by the Procuring Entity (whether through its own enquiries, through notification by the public or otherwise), shows any conflict of interest which could materially and improperly benefit the tenderer in relation to the procurement or contract management process, then:
- i) if the procurement process is still ongoing, the tenderer will be disqualified from the procurement process,
 - ii) if the contract has been awarded to that tenderer, the contract award will be set aside,
 - iii) the tenderer will be referred to the relevant law enforcement authorities for investigation of whether the tenderer or any other persons have committed any criminal offence.
- 19.10 If a tenderer submits information pursuant to these requirements that is incomplete, inaccurate or out-of-date, or attempts to obstruct the verification process, then the consequences ITT 6.7 will ensue unless the tenderer can show to the reasonable satisfaction of the Procuring Entity that any such act was not material or was due to genuine error which was not attributable to the intentional act, negligence or recklessness of the tenderer.

20. Period of Validity of Tenders

- 20.1 Tenders shall remain valid for the Tender Validity period specified in the **TDS**. The Tender Validity period starts from the date fixed for the Tender submission deadline (as prescribed by the Procuring Entity in accordance with ITT 24). A Tender valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.
- 20.2 In exceptional circumstances, prior to the expiration of the Tender validity period, the Procuring Entity may request Tenderers to extend the period of validity of their Tenders. The request and the responses shall be made in writing. If a Tender Security is requested in accordance with ITT 21.1, it shall also be extended for thirty (30) days beyond the deadline of the extended validity period. A Tenderer may refuse the request without forfeiting its Tender security. A Tenderer granting the request shall not be required or permitted to modify its Tender, except as provided in ITT 20.3.
- 20.3 If the award is delayed by a period exceeding the number of days to be specified in the **TDS** days beyond the expiry of the initial tender validity period, the Contract price shall be determined as follows:
- a) in the case of **fixed price** contracts, the Contract price shall be the tender price adjusted by the factor specified in the **TDS**;
 - b) in the case of **adjustable price** contracts, no adjustment shall be made; or in any case, tender evaluation shall be based on the tender price without taking into consideration the applicable correction from those indicated above.

21. Tender Security

- 21.1 The Tenderer shall furnish as part of its Tender, either a Tender-Securing Declaration or a Tender Security as specified in the **TDS**, in original form and, in the case of a Tender Security, in the amount and currency specified in the **TDS**. A Tender-Securing Declaration shall use the form included in Section IV, Tender Forms.
- 21.2 If a Tender Security is specified pursuant to ITT 19.1, the Tender Security shall be a demand guarantee in any of the following forms at the Tenderer's option:
- a) an unconditional Bank Guarantee issued by reputable commercial bank); or
 - b) an irrevocable letter of credit;
 - c) a Banker's cheque issued by a reputable commercial bank; or
 - d) another security specified in the **TDS**,
- 21.3 If an unconditional bank guarantee is issued by a bank located outside Kenya, the issuing bank shall have a correspondent bank located in Kenya to make it enforceable. The Tender Security shall be valid for thirty (30) days beyond the original validity period of the Tender, or beyond any period of extension if requested under ITT 20.2.
- 21.4 If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 19.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive.
- 21.5 If a Tender Security is specified pursuant to ITT 21.1, the Tender Security of unsuccessful Tenderers shall be returned as promptly as possible upon the successful Tenderer's signing the Contract and furnishing the Performance Security and any other documents required in the **TDS**. The Procuring Entity shall also promptly return the tender security to the tenderers where the procurement proceedings are terminated, all tenders were determined nonresponsive or a bidder declines to extend tender validity period.
- 21.6 The Tender Security of the successful Tenderer shall be returned as promptly as possible once the successful Tenderer has signed the Contract and furnished the required Performance Security, and any other documents required in the **TDS**.
- 21.7 The Tender Security may be forfeited or the Tender-Securing Declaration executed:
- e) if a Tenderer withdraws its Tender during the period of Tender validity specified by the Tenderer on the Form of Tender, or any extension thereto provided by the Tenderer; or
 - f) if the successful Tenderer fails to:
 - i) sign the Contract in accordance with ITT 50; or
 - ii) furnish a Performance Security and if required in the **TDS**, and any other documents required in the **TDS**.
- 21.8 Where tender securing declaration is executed, the Procuring Entity shall recommend to the PPRA that PPRA debars the Tenderer from participating in public procurement as provided in the law.
- 21.9 The Tender Security or the Tender-Securing Declaration of a JV shall be in the name of the JV that submits the Tender. If the JV has not been legally constituted into a legally enforceable JV at the time of tendering, the Tender Security or the Tender-Securing Declaration shall be in the names of all future members as named in the letter of intent referred to in ITT 4.1 and ITT 11.2.
- 21.10 A tenderer shall not issue a tender security to guarantee itself.

22. Format and Signing of Tender

- 22.1 The Tenderer shall prepare one original of the documents comprising the Tender as described in ITT 13 and clearly mark it "ORIGINAL." Alternative Tenders, if permitted in accordance with ITT 15, shall be clearly marked "ALTERNATIVE." In addition, the Tenderer shall submit copies of the Tender, in the number specified in the **TDS** and clearly mark them "COPY." In the event of any discrepancy between the original and the copies, the original shall prevail.

- 22.2 Tenderers shall mark as "CONFIDENTIAL" all information in their Tenders which is confidential to their business. This may include proprietary information, trade secrets, or commercial or financially sensitive information.
- 22.3 The original and all copies of the Tender shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Tenderer. This authorization shall consist of a written confirmation as specified in the **TDS** and shall be attached to the Tender. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the Tender where entries or amendments have been made shall be signed or initialed by the person signing the Tender.
- 22.4 In case the Tenderer is a JV, the Tender shall be signed by an authorized representative of the JV on behalf of the JV, and to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives.
- 22.5 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Tender.

D. Submission and Opening of Tenders

23. Sealing and Marking of Tenders

- 23.1 Depending on the sizes or quantities or weight of the tender documents, a tenderer may use an envelope, package, or container. The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderers shall place the following separate, sealed envelopes:
- a) in an envelope or package or container marked "ORIGINAL", all documents comprising the Tender, as described in ITT 11; and
 - b) in an envelope or package or container marked "COPIES", all required copies of the Tender; and
 - c) if alternative Tenders are permitted in accordance with ITT 15, and if relevant:
 - i) in an envelope or package or container marked "ORIGINAL –ALTERNATIVE TENDER", the alternative Tender; and
 - ii) in the envelope or package or container marked "COPIES- ALTERNATIVE TENDER", all required copies of the alternative Tender.

The inner envelopes or packages or containers shall:

- a) bear the name and address of the Procuring Entity.
 - b) bear the name and address of the Tenderer; and
 - c) bear the name and Reference number of the Tender.
- 23.2 If an envelope or package or container is not sealed and marked as required, the *Procuring Entity* will assume no responsibility for the misplacement or premature opening of the Tender. Tenders that are misplaced or opened prematurely will not be accepted.

24. Deadline for Submission of Tenders

- 24.1 Tenders must be received by the Procuring Entity at the address specified in the **TDS** and no later than the date and time also specified in the **TDS**. When so specified in the **TDS**, Tenderers shall have the option of submitting their Tenders electronically. Tenderers submitting Tenders electronically shall follow the electronic Tender submission procedures specified in the **TDS**.
- 24.2 The Procuring Entity may, at its discretion, extend the deadline for the submission of Tenders by amending the Tender Documents in accordance with ITT 8, in which case all rights and obligations of the Procuring Entity and Tenderers previously subject to the deadline shall thereafter be subject to the deadline as extended.

25. Late Tenders

25.1 The Procuring Entity shall not consider any Tender that arrives after the deadline for submission of tenders, in accordance with ITT 24. Any Tender received by the Procuring Entity after the deadline for submission of Tenders shall be declared late, rejected, and returned unopened to the Tenderer.

26. Withdrawal, Substitution, and Modification of Tenders

26.1 A Tenderer may withdraw, substitute, or modify its Tender after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITT 22.3, (except that withdrawal notices do not require copies). The corresponding substitution or modification of the Tender must accompany the respective written notice. All notices must be:

- a) prepared and submitted in accordance with ITT 22 and ITT 23 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," "MODIFICATION;" and
- b) received by the Procuring Entity prior to the deadline prescribed for submission of Tenders, in accordance with ITT 24.

26.2 Tenders requested to be withdrawn in accordance with ITT 26.1 shall be returned unopened to the Tenderers.

26.3 No Tender may be withdrawn, substituted, or modified 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 Form of Tender or any extension thereof.

27. Tender Opening

27.1 Except in the cases specified in ITT 23 and ITT 26.2, the Procuring Entity shall publicly open and read out all Tenders received by the deadline, at the date, time and place specified in the **TDS**, in the presence of Tenderers' designated representatives who chooses to attend. Any specific electronic Tender opening procedures required if electronic Tendering is permitted in accordance with ITT 24.1, shall be as specified in the **TDS**.

27.2 First, envelopes marked "WITHDRAWAL" shall be opened and read out and the envelopes with the corresponding Tender shall not be opened but returned to the Tenderer. No Tender withdrawal shall be permitted unless the corresponding withdrawal notice contains a valid authorization to request the withdrawal and is read out at Tender opening.

27.3 Next, envelopes marked "SUBSTITUTION" shall be opened and read out and exchanged with the corresponding Tender being substituted, and the substituted Tender shall not be opened, but returned to the Tenderer. No Tender substitution shall be permitted unless the corresponding substitution notice contains a valid authorization to request the substitution and is read out at Tender opening.

27.4 Next, envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Tender. No Tender modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Tender opening.

27.5 Next, all remaining envelopes shall be opened one at a time, reading out: the name of the Tenderer and whether there is a modification; the total Tender Price, per lot (contract) if applicable, including any discounts and alternative Tenders; the presence or absence of a Tender Security or Tender-Securing Declaration, if required; and any other details as the Procuring Entity may consider appropriate.

27.6 Only Tenders, alternative Tenders and discounts that are opened and read out at Tender opening shall be considered further for evaluation. The Form of Tender and pages of the Bills of Quantities are to be initialed by the members of the tender opening committee attending the opening. The number of representatives of the Procuring Entity to sign shall be specified in the **TDS**.

27.7 At the Tender Opening, the Procuring Entity shall neither discuss the merits of any Tender nor reject any Tender (except for late Tenders, in accordance with ITT 25.1).

27.8 The Procuring Entity shall prepare minutes of the Tender Opening that shall include, as a minimum:

- a) the name of the Tenderer and whether there is a withdrawal, substitution, or modification;
- b) the Tender Price, per lot (contract) if applicable, including any discounts;
- c) any alternative Tenders;
- d) the presence or absence of a Tender Security, if one was required.
- e) number of pages of each tender document submitted.

27.9 The Tenderers' representatives who are present shall be requested to sign the minutes. The omission of a Tenderer's signature on the minutes shall not invalidate the contents and effect of the minutes. A copy of the tender opening registers shall be distributed to all Tenderers upon request.

E. Evaluation and Comparison of Tenders

28. Confidentiality

28.1 Information relating to the evaluation of Tenders and recommendation of contract award shall not be disclosed to Tenderers or any other persons not officially concerned with the Tender process until information on Intention to Award the Contract is transmitted to all Tenderers in accordance with ITT 46.

28.2 Any effort by a Tenderer to influence the Procuring Entity in the evaluation of the Tenders or Contract award decisions may result in the rejection of its tender.

28.3 Notwithstanding ITT 28.2, from the time of tender opening to the time of contract award, if a tenderer wishes to contact the Procuring Entity on any **matter related to the tendering process, it shall do so in writing.**

29. Clarification of Tenders

29.1 To assist in the examination, evaluation, and comparison of the tenders, and qualification of the tenderers, the Procuring Entity may, at its discretion, ask any tenderer for a clarification of its tender, given a reasonable time for a response. Any clarification submitted by a tenderer that is not in response to a request by the Procuring Entity shall not be considered. The Procuring Entity's request for clarification and the response shall be in writing. No change, including any voluntary increase or decrease, in the prices or substance of the tender shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Procuring Entity in the evaluation of the tenders, in accordance with ITT 33.

29.2 If a tenderer does not provide clarifications of its tender by the date and time set in the Procuring Entity's request for clarification, its Tender may be rejected.

30. Deviations, Reservations, and Omissions

30.1 During the evaluation of tenders, the following definitions apply:

- a) "Deviation" is a departure from the requirements specified in the tender document;
- b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the tender document; and
- c) "Omission" is the failure to submit part or all of the information or documentation required in the Tender document.

31. Determination of Responsiveness

31.1 The Procuring Entity's determination of a Tender's responsiveness is to be based on the contents of the tender itself, as defined in ITT 13.

31.2 A substantially responsive Tender is one that meets the requirements of the Tender document without material deviation, reservation, or omission. **A material deviation, reservation, or omission is one that, if accepted, would:**

- a) affect in any substantial way the scope, quality, or performance of the Works specified in the Contract; or
- b) limit in any substantial way, inconsistent with the tender document, the Procuring Entity's rights or the

- tenderer's obligations under the proposed contract; or
- c) if rectified, would unfairly affect the competitive position of other tenderers presenting substantially responsive tenders.

31.3 The Procuring Entity shall examine the technical aspects of the tender submitted in accordance with ITT 18, to confirm that all requirements of Section VII, Works' Requirements have been met without any material deviation, reservation, or omission.

31.4 If a tender is not substantially responsive to the requirements of the tender document, it shall be rejected by the Procuring Entity and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

32. Non-material Non-conformities

32.1 Provided that a tender is substantially responsive, the Procuring Entity may waive any non-conformities in the tender.

32.2 Provided that a Tender is substantially responsive, the Procuring Entity may request that the tenderer submit the necessary information or documentation, within a reasonable period, to rectify nonmaterial non-conformities in the tender related to documentation requirements. Requesting information or documentation on such non- conformities shall not be related to any aspect of the price of the tender. Failure of the tenderer to comply with the request may result in the rejection of its tender.

32.3 Provided that a tender is substantially responsive, the Procuring Entity shall rectify quantifiable nonmaterial non-conformities related to the Tender Price. To this effect, the Tender Price shall be adjusted, for comparison purposes only, to reflect the price of a missing or non-conforming item or component in the manner specified in the **TDS**.

33. Arithmetical Errors

33.1 The tender sum as submitted and read out during the tender opening shall be absolute and final and shall not be the subject of correction, adjustment, or amendment in any way by any person or entity.

33.2 Provided that the Tender is substantially responsive, the Procuring Entity shall handle errors on the following basis:

- a) Any error detected if considered a major deviation that affects the substance of the tender, shall lead to disqualification of the tender as non-responsive.
- b) Any errors in the submitted tender arising from a miscalculation of unit price, quantity, and subtotal and total bid price shall be considered as a major deviation that affects the substance of the tender and shall lead to disqualification of the tender as non-responsive. and
- c) if there is a discrepancy between words and figures, the amount in words shall prevail

33.3 Tenderers shall be notified of any error detected in their bid during the notification of a award.

34. Currency provisions

34.1 Tenders will be priced in US Dollars only. Tenderers quoting in currencies other than in US Dollars will be determined non-responsive and rejected.

35. Margin of Preference and Reservations

35.1 Margin of preference of 15% on both Technical and Financial shall be allowed for firms with a majority ownership of Kenyan citizens

35.2 Where it is intended to reserve the contract to specific groups under Small and Medium Enterprises, or enterprise of women, youth and/or persons living with disability, who are appropriately registered as such by the authority to be specified in the **TDS**, a procuring entity shall ensure that the invitation to tender specifically indicates that only businesses/firms belonging to those specified groups are the only ones eligible to tender. Otherwise, if no so stated, the invitation will be open to all tenderers.

36. Nominated Subcontractors

- 36.1 Unless otherwise stated in the **TDS**, the Procuring Entity does not intend to execute any specific elements of the Works by subcontractors selected in advance by the Procuring Entity.
- 36.2 Tenderers may propose subcontracting up to the percentage of total value of contracts or the volume of works as specified in the **TDS**. Subcontractors proposed by the Tenderer shall be fully qualified for their parts of the Works.
- 36.3 The subcontractor's qualifications shall not be used by the Tenderer to qualify for the Works unless their specialized parts of the Works were previously designated by the Procuring Entity in the **TDS** as can be met by subcontractors referred to hereafter as 'Specialized Subcontractors', in which case, the qualifications of the Specialized Subcontractors proposed by the Tenderer may be added to the qualifications of the Tenderer.

37. Evaluation of Tenders

- 37.1 The Procuring Entity shall use the criteria and methodologies listed in this ITT and Section III, Evaluation and Qualification Criteria. No other evaluation criteria or methodologies shall be permitted. By applying the criteria and methodologies the Procuring Entity shall determine the Best Evaluated Tender in accordance with ITT 40.
- 37.2 To evaluate a Tender, the Procuring Entity shall consider the following:
- a) price adjustment due to discounts offered in accordance with ITT 16;
 - b) converting the amount resulting from applying (a) and (b) above, if relevant, to a single currency in accordance with ITT 39;
 - c) price adjustment due to quantifiable nonmaterial non-conformities in accordance with ITT 30.3; and
 - d) any additional evaluation factors specified in the TDS and Section III, Evaluation and Qualification Criteria.
- 37.3 The estimated effect of the price adjustment provisions of the Conditions of Contract, applied over the period of execution of the Contract, shall not be considered in Tender evaluation.
- 37.4 In the case of multiple contracts or lots, Tenderers shall be allowed to tender for one or more lots and the methodology to determine the lowest evaluated cost of the lot (contract) combinations, including any discounts offered in the **Form of Tender, is specified in Section III, Evaluation and Qualification Criteria**.

38. Comparison of Tenders

- 38.1 The Procuring Entity shall compare the evaluated costs of all substantially responsive Tenders established in accordance with ITT 38.2 to determine the Tender that has the lowest evaluated cost.

39. Abnormally Low Tenders

- 39.1 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price or that genuine competition between Tenderers is compromised.
- 39.2 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.
- 39.3 After evaluation of the price analyses, in the event that the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

40. Abnormally High Tenders

40.1 An abnormally high price is one where the tender price, in combination with other constituent elements of the Tender, appears unreasonably too high to the extent that the Procuring Entity is concerned that it (the Procuring Entity) may not be getting value for money or it may be paying too high a price for the contract compared with market prices or that genuine competition between Tenderers is compromised.

40.2 In case of an abnormally high tender price, the Procuring Entity shall make a survey of the market prices, check if the estimated cost of the contract is correct and review the Tender Documents to check if the specifications, scope of work and conditions of contract are contributory to the abnormally high tenders. The Procuring Entity may also seek written clarification from the tenderer on the reason for the high tender price. The Procuring Entity shall proceed as follows:

- i) If the tender price is abnormally high based on wrong estimated cost of the contract, the Procuring Entity may accept or not accept the tender depending on the Procuring Entity's budget considerations.
- ii) If specifications, scope of work and/or conditions of contract are contributory to the abnormally high tender prices, the Procuring Entity shall reject all tenders and may retender for the contract based on revised estimates, specifications, scope of work and conditions of contract, as the case may be.

40.3 If the Procuring Entity determines that the Tender Price is abnormally too high because genuine competition between tenderers is compromised (*often due to collusion, corruption, or other manipulations*), the Procuring Entity shall reject all Tenders and shall institute or cause competent Government Agencies to institute an investigation on the cause of the compromise, before retendering.

41. Unbalanced and/or Front-Loaded Tenders

41.1 If in the Procuring Entity's opinion, the Tender that is evaluated as the lowest evaluated price is seriously unbalanced and/or front loaded, the Procuring Entity may require the Tenderer to provide written clarifications. Clarifications may include detailed price analyses to demonstrate the consistency of the tender prices with the scope of works, proposed methodology, schedule, and any other requirements of the Tender document.

41.2 After the evaluation of the information and detailed price analyses presented by the Tenderer, the Procuring Entity may as appropriate:

- a) accept the Tender; or
- b) require that the total amount of the Performance Security be increased at the expense of the Tenderer to a level not exceeding a 30% of the Contract Price; or**
- c) agree on a payment mode that eliminates the inherent risk of the Procuring Entity paying too much for undelivered works; or
- d) reject the Tender,

42. Qualifications of the Tenderer

42.1 The Procuring Entity shall determine to its satisfaction whether the eligible Tenderer that is selected as having submitted the lowest evaluated cost and substantially responsive Tender, meets the qualifying criteria specified in Section III, Evaluation and Qualification Criteria.

42.2 The determination shall be based upon an examination of the documentary evidence of the Tenderer's qualifications submitted by the Tenderer, pursuant to ITT 19. The determination shall not take into consideration the qualifications of other firms such as the Tenderer's subsidiaries, parent entities, affiliates, subcontractors (other than Specialized Subcontractors if permitted in the Tender document), or any other firm(s) different from the Tenderer.

42.3 An affirmative determination shall be a prerequisite for award of the Contract to the Tenderer. A negative determination shall result in disqualification of the Tender, in which event the Procuring Entity shall proceed to the Tenderer who offers a substantially responsive Tender with the next lowest evaluated price to make a similar determination of that Tenderer's qualifications to perform satisfactorily.

42.4 An Abnormally Low Tender is one where the Tender price, in combination with other elements of the Tender, appears so low that it raises material concerns as to the capability of the Tenderer in regards to the Tenderer's ability to perform the Contract for the offered Tender Price.

42.5 In the event of identification of a potentially Abnormally Low Tender, the Procuring Entity shall seek written clarifications from the Tenderer, including detailed price analyses of its Tender price in relation to the subject matter of the contract, scope, proposed methodology, schedule, allocation of risks and responsibilities and any other requirements of the Tender document.

42.6 After evaluation of the price analyses, if the Procuring Entity determines that the Tenderer has failed to demonstrate its capability to perform the Contract for the offered Tender Price, the Procuring Entity shall reject the Tender.

43. Best Evaluated Tender

43.1 Having compared the evaluated prices of Tenders, the Procuring Entity shall determine the Best Evaluated Tender. The Best Evaluated Tender is the Tender of the Tenderer that meets the Qualification Criteria and whose Tender has been determined to be:

- a) Most responsive to the Tender document; and
- b) the lowest evaluated price.

44. Procuring Entity's Right to Accept Any Tender, and to Reject Any or All Tenders.

44.1 The Procuring Entity reserves the right to accept or reject any Tender and to annul the Tender process and reject all Tenders at any time prior to Contract Award, without thereby incurring any liability to Tenderers. In case of annulment, all Tenderers shall be notified with reasons and all Tenders submitted and specifically, Tender securities, shall be promptly returned to the Tenderers.

F. Award of Contract

45. Award Criteria

45.1 The Procuring Entity shall award the Contract to the successful tenderer whose tender has been determined to be the Lowest Evaluated Tender.

46. Notice of Intention to enter into a Contract

46.1 Upon award of the contract and prior to the expiry of the Tender Validity Period the Procuring Entity shall issue a Notification of Intention to Enter into a Contract / Notification of award to all tenderers which shall contain, at a minimum, the following information:

- a) the name and address of the Tenderer submitting the successful tender;
- b) the Contract price of the successful tender;
- c) a statement of the reason(s) the tender of the unsuccessful tenderer to whom the letter is addressed was unsuccessful, unless the price information in (c) above already reveals the reason;
- d) the expiry date of the Standstill Period; and
- e) instructions on how to request a debriefing and/or submit a complaint during the standstill period;

47. Standstill Period

47.1 The Contract shall not be signed earlier than the expiry of a Standstill Period of 14 days to allow any dissatisfied tender to launch a complaint. Where only one Tender is submitted, the Standstill Period shall not apply.

47.2 Where a Standstill Period applies, it shall commence when the Procuring Entity has transmitted to each Tenderer the Notification of Intention to Enter **into a Contract with the successful Tenderer.**

48. Debriefing by the Procuring Entity

- 48.1 On receipt of the Procuring Entity's Notification of Intention to Enter into a Contract referred to in ITT 46, an unsuccessful tenderer may make a written request to the Procuring Entity for a debriefing on specific issues or concerns regarding their tender. The Procuring Entity shall provide the debriefing within five days of receipt of the request.
- 48.2 Debriefings of unsuccessful Tenderers may be done in writing or verbally. The Tenderer shall bear its own costs of attending **such a debriefing meeting**.

49. Letter of Award

- 49.1 Prior to the expiry of the Tender Validity Period and upon expiry of the Standstill Period specified in ITT 42.1, upon addressing a complaint that has been filed within the Standstill Period, the Procuring Entity shall transmit the Letter of Award to the successful Tenderer. The letter of award shall request the successful tenderer to furnish the Performance Security within 21 days of the date of the letter.

50. Signing of Contract

- 50.1 Upon the expiry of the fourteen days of the Notification of Intention to enter into contract and upon the parties meeting their respective statutory requirements, the Procuring Entity shall send the successful Tenderer the Contract Agreement.
- 50.2 Within fourteen (14) days of receipt of the Contract Agreement, the successful Tenderer shall sign, date, and return it to the Procuring Entity.
- 50.3 The written contract shall be entered into within the period specified in the notification of award and before expiry of the tender validity period.

51. Appointment of Adjudicator

- 51.1 The Procuring Entity proposes the person named in the **TDS** to be appointed as Adjudicator under the Contract, at the hourly fee specified in the **TDS**, plus reimbursable expenses. If the Tenderer disagrees with this proposal, the Tenderer should so state in his Tender. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the Special Conditions of Contract (SCC) pursuant to Clause 23.1 of the General Conditions of Contract (GCC), to appoint the Adjudicator.

52. Performance Security

- 52.1 Within twenty-one (21) days of the receipt of the Letter of Acceptance from the Procuring Entity, the successful Tenderer shall furnish the Performance Security and, any other documents required in the **TDS**, in accordance with the General Conditions of Contract, subject to ITT 40.2 (b), using the Performance Security and other Forms included in Section X, Contract Forms, or another form acceptable to the Procuring Entity. A foreign institution providing a bank guarantee shall have a correspondent financial institution located in Kenya, unless the Procuring Entity has agreed in writing that a correspondent bank is not required.
- 52.2 Failure of the successful Tenderer to submit the above-mentioned Performance Security and other documents required in the **TDS** or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Tender Security. In that event the Procuring Entity may award the Contract to the Tenderer offering the next Best Evaluated Tender.
- 52.3 Performance security shall not be required for contracts estimated to cost less than Kenya shillings five million shillings.

53. Publication of Procurement Contract

53.1 Within fourteen days after signing the contract, the Procuring Entity shall publish the awarded contract at its notice boards and websites; and on the Website of the Authority. At the minimum, the notice shall contain the following information:

- a) name and address of the Procuring Entity;
- b) name and reference number of the contract being awarded, a summary of its scope and the selection method used;
- c) the name of the successful Tenderer, the final total contract price, the contract duration.
- d) dates of signature, commencement and completion of contract;
- e) names of all Tenderers that submitted Tenders, and their Tender prices as read out at Tender opening.

54. Procurement Related Complaints and Administrative Review

54.1 The procedures for making Procurement-related Complaints are as specified in the **TDS**.

54.2 A request for administrative review shall be made in the form provided under contract forms.

Section II - Tender Data Sheet (TDS)

The following specific data shall complement, supplement, or amend the provisions in the Instructions to Tenderers (ITT). Whenever there is a conflict, the provisions herein shall prevail over those in ITT.

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
	A. General
ITT 1.1	The name of the contract is <i>Proposed Integrated Security Management System at Reinsurance Plaza Kisumu</i> The reference number of the Contract is KRC/1931/2022/204
ITT 2.4	The firms that provided consulting services for the contract being tendered for are: <ul style="list-style-type: none"> • M/S I.S.C Group Ltd (Lead Security Consultant & Project Manager) • M/S Heritage Associates Ltd (Architect & Lead Builders works consultant) • M/S Costek Alma (Quantity Surveyor) • M/S Gedox Associates Ltd (Electrical – Mechanical Engineer) • M/S Armitech Consulting Engineers (Civil – Structural Engineer)
ITT 3.1	Maximum number of members in the Joint Venture (JV) shall be: 3 No
B. Contents of Tender Document	
8.1	(A) Pre-Tender conference <i>shall not</i> take place (B) A pre-arranged pretender visit of the site of the works shall take place on the following date, time, and place: - Date: Monday 12TH SEPTEMBER 2022 Time: 10:00am Place: REINSURANCE PLAZA KISUMU
ITT 8.2	The Tenderer will submit any questions in writing, to reach the Procuring Entity not later than Wednesday 21st September 2022 at 12 midnight
ITT 8.4	The Procuring Entity's website where Minutes of the pre-Tender meeting and the pre-arranged pretender site visit will be published is www.kenyare.co.ke
ITT 9.1	For Clarification of Tender purposes, for obtaining further information and for purchasing tender documents, the Procuring Entity's address is: Kenya Reinsurance Corporation Ltd, Nairobi City, Taifa Road, Reinsurance Plaza, 14th Floor, Supply Chain Office, P.O Box 30271-00100, Nairobi, Email: Procurement@kenyare.co.ke, Tel: 0703 083 200. <i>Clarification may be requested no later than seven (7) days to the submission deadline.</i>

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
C. Preparation of Tenders	
ITT 15.1	Alternative Tenders shall not be considered.
ITT 15.2	Alternative times for completion shall not be permitted.
ITT 15.4	Alternative technical solutions will not be permitted .
ITT 16.5	The prices quoted by the Tenderer shall be fixed
ITT 20.1	The Tender validity period shall be 180 days.
ITT 20.3 (a)	(a) The delay exceeding 210 number of days. (b) The Tender price shall be adjusted by the following percentages of the tender price: (i) By 0 % of the local currency portion of the Contract price adjusted to reflect local inflation during the period of extension, (Not applicable) and (ii) By 0% the foreign currency portion of the Contract price adjusted to reflect the international inflation during the period of extension. (Not applicable)
ITT 21.1	A Tender Security shall be required. Every tenderer must submit a twenty thousand dollars (USD 20,000.00) security from a recognizable reputable commercial bank. The tender security must be issued in its original form. A Tender-Securing Declaration shall not be required.
ITT 21.2 (d)	The other Tender Security shall be _N/A_
ITT 21.5	On the Performance Security, other documents required shall be _N/A_
ITT 22.1	In addition to the original of the Tender, the number of copies is: 1No. All tenderers must submit one original and one copy of their tender. Please note that this is a combined technical and financial proposal.
ITT 22.3	The written confirmation of authorization to sign on behalf of the Tenderer shall consist of: _ Power of Attorney

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
D. Submission and Opening of Tenders	
ITT 24.1	<p>(A) For <u>Tender submission purposes</u> only, the Procuring Entity's address is:</p> <p>Kenya Reinsurance Corporation Ltd P.O Box 30271-00100, Nairobi, Email: <u>Procurement@kenyare.co.ke</u>, Tel: 0703 083 200. Nairobi City, Taifa Road, Reinsurance Plaza, 14th Floor, Supply Chain Office</p> <p>The deadline for tender submission is: Date: Tuesday 27th September 2022 Time: 10:00 a.m. (East African Time)</p> <p>Tenders shall not submit tenders electronically.</p>
ITT 27.1	<p>The Tender opening shall take place at the time and the address for Opening of Tenders provided below:</p> <p>Kenya Reinsurance Corporation Ltd Nairobi City, Taifa Road, Reinsurance Plaza, 17th Floor,</p> <p>Tenders to be opened on Tuesday 27th September 2022 at 10:00 a.m.(East African Time)</p>
ITT 27.1	If Tenderers are allowed to submit Tenders electronically, they shall follow the electronic tender submission procedures specified below: <u> N/A </u>
ITT 27.6	The number of representatives of the Procuring Entity to sign is a minimum of 3No.
E. Evaluation, and Comparison of Tenders	
ITT 32.3	The adjustment shall be based on the highest price of the item or component as quoted in other substantially responsive Tenders. If the price of the item or component cannot be derived from the price of other substantially responsive Tenders, the Procuring Entity shall use its best estimate.
ITT 35.2	The invitation to tender is extended to the following groups that qualify for Reservations <u> N/A </u> _____
ITT 36.1	At this time, the Procuring Entity does not intend to execute certain specific parts of the Works by subcontractors selected in advance.
ITT 36.2	Contractors may propose subcontracting: Maximum percentage of subcontracting permitted is: 30% of the total contract amount . Tenderers planning to subcontract more than 10% of total volume of work shall specify, in the Form of Tender, the activity (ies) or parts of the Works to be subcontracted along with complete details of the subcontractors and their qualification and experience.

ITT Reference	PARTICULARS OF APPENDIX TO INSTRUCTIONS TO TENDERS
ITT 36.3	<p>The parts of the Works for which the Procuring Entity permits Tenderers to propose Specialized Subcontractors are designated as follows:</p> <ul style="list-style-type: none"> • Electrical works and Mechanical works but only upon the express written authority of the Project's Electrical and Mechanical Engineers. • Civil/Building works but only upon the express written authority by the Project Architect. <p>For the above-designated parts of the Works that may require Specialized Subcontractors, the relevant qualifications of the proposed Specialized Subcontractors will be added to the qualifications of the Tenderer for the purpose of evaluation.</p>
ITT 37.2 (d)	<p>Additional requirements apply. These are detailed in the evaluation criteria in Section III, Evaluation and Qualification Criteria.</p>
ITT 51.1	<p>The person proposed by the Employer to be appointed as Adjudicator is to be appointed by the President of IQSK of P.O. Box 13929-00800 Tel; 254676823/786676824; info@iqskkenya.org/ iqsknrb@gmail.com at an hourly fee prescribed by the IQSK per day.</p>
ITT 52.2	<p>Other documents required are:</p> <ol style="list-style-type: none"> 1. Proof of accreditation with Information Communication and Technology Authority in any of the 8 categories (To be submitted by the Main Contractor only) 2. Proof of Registration with Communications Authority of Kenya and or Licenses from the Communications Authority of Kenya (To be submitted by the Main Contractor only)
ITT 54.1	<p>The procedures for making a Procurement-related Complaints are detailed in the "Regulations" available from the PPRA Website www.ppra.go.ke or email complaints@ppra.go.ke. If a Tenderer wishes to make a Procurement-related Complaint, the Tenderer should submit its complaint following these procedures, in writing (by the quickest means available, that is either by hand delivery or email to:</p> <p>For the attention: <i>Public Procurement Regulatory Authority</i></p> <p>Title/position: <i>Director General</i></p> <p>Procuring Entity: <i>Kenya Reinsurance Corporation</i></p> <p>Email address: <i>info@ppra.go.ke/feedback@ppra.go.ke</i></p> <p>A Procurement-related Complaint may challenge any of the following:</p> <ol style="list-style-type: none"> (i) the terms of the Tender Documents; and (ii) the Procuring Entity's decision to award the contract.

SECTION III - EVALUATION AND QUALIFICATION CRITERIA

1 General Provisions

Wherever a Tenderer is required to state a monetary amount, the tenderer should indicate the amounts in US Dollars:

This section contains the criteria that the Employer shall use to evaluate tender and qualify tenderers. No other factors, methods or criteria shall be used other than specified in this tender document. The Tenderer shall provide all the information requested in the forms included in Section IV, Tendering Forms. The Procuring Entity shall use The Standard Tender Evaluation Document for Goods and Works for evaluating Tenders.

Evaluation and contract award Criteria

The Procuring Entity shall use the criteria and methodologies listed in this Section to evaluate tenders and arrive at the Lowest Evaluated Tender.

The Lowest Evaluated Tender is the tender that: -

- (i) meets the qualification criteria,
- (ii) has been determined to be substantially responsive to the Tender Documents, and
- (iii) is determined to have the Lowest Evaluated Tender price

The Lowest Evaluated Tender shall be selected for award of contract.

2 Preliminary examination for Determination of Responsiveness

The Procuring Entity will start by examining all tenders to ensure they meet in all respects the eligibility criteria and other requirements in the ITT, and that the tender is complete in all aspects in meeting the requirements of "Part 2 – Procuring Entity's Works Requirements", including checking for tenders with unacceptable errors, abnormally low tenders, abnormally high tenders and tenders that are front loaded. The Standard Tender Evaluation Report Document for Goods and Works for evaluating Tenders provides very clear guidelines on how to deal with review of these requirements. Tenders that do not pass the Preliminary Examination will be considered irresponsive and will not be considered further.

3 Tender Evaluation (ITT 35) Price evaluation: in addition to the criteria listed in ITT 35.2 (a) – (c) the following

criteria shall apply:

- i) **Alternative Completion Times**, if permitted under ITT 13.2, will be evaluated as follows:
.....N/A.....
- ii) **Alternative Technical Solutions** for specified parts of the Works, if permitted under ITT 13.4, will be evaluated as follows:.....N/A.....
- iii) **Other Criteria**; if permitted under ITT 35.2(d):
.....N/A.....

4 Multiple Contracts ___ N/A ___

Multiple contracts **will not** be permitted in accordance with ITT 35.4. Tenderers are evaluated on basis of Lots and the lowest evaluated tenderer identified for each Lot. The Procuring Entity will select one Option of the two Options listed below for award of Contracts.

5 Alternative Tenders (ITT 13.1) ___ N/A ___

An alternative if permitted under ITT 13.1, will be evaluated as follows:

The Procuring Entity shall consider Tenders offered for alternatives as specified in Part 2- Works Requirements. Only the technical alternatives, if any, of the Tenderer with the Best Evaluated Tender conforming to the basic technical requirements shall be considered by the Procuring Entity.

6. **Margin of Preference** is applicable

7. **Post qualification and Contract award (ITT 39), more specifically,**

- a) In case the tender was subject to post-qualification, the contract shall be awarded to the lowest evaluated tenderer, subject to confirmation of pre-qualification data, if so required.
- b) In case the tender was not subject to post-qualification, the tender that has been determined to be the lowest evaluated tenderer shall be considered for contract award, subject to meeting each of the following conditions.
 - i) **The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow of three hundred thousand dollars (USD 300,000.00.)**
 - ii) **Minimum average annual construction turnover of USD 1,800,000.00, equivalent calculated as total certified payments received for contracts in progress and/or completed within the last 5 years.**
 - iii) **At least 2 No. contract(s) of a similar nature executed within Kenya, or the East African Community or abroad, that have been satisfactorily and substantially completed as a prime contractor, or joint venture member or sub-contractor each of minimum value USD 600,000,000.**
 - iv) Contractor's Representative and Key Personnel, which are specified as hereunder
 - v) Contractor's key equipment listed on the table "Contractor's Equipment" below and more specifically listed as *[specify requirements for each lot as applicable]* N/A
 - vi) Other conditions depending on their seriousness.
 - a) **History of non-performing contracts:**

Tenderer and each member of JV in case the Tenderer is a JV, shall demonstrate that non-performance of a contract did not occur because of the default of the Tenderer, or the member of a JV in the last **5 years**. The required information shall be furnished in the appropriate form.
 - b) **Pending Litigation**

Financial position and prospective long-term profitability of the Single Tenderer, and in the case the Tenderer is a JV, of each member of the JV, shall remain sound according to criteria established with respect to Financial Capability under Paragraph (i) above if all pending litigation will be resolved against the Tenderer. Tenderer shall provide information on pending litigations in the appropriate form.
 - c) **Litigation History**

There shall be no consistent history of court/arbitral award or cases and decisions against the Tenderer, in the last **5 years**. All parties to the contract shall furnish the information in the appropriate form about any litigation or arbitration resulting from contracts completed or ongoing under its execution over the years specified. A consistent history of awards against the Tenderer or any member of a JV may result in rejection of the tender.

TENDER EVALUATION CRITERIA

After tender opening, the tenders will be evaluated in 5 stages, namely:

1. Determination of Responsiveness (Mandatory Requirements)
2. Detailed Technical Examination
3. Presentation of the bidder's proposal & demonstration
4. Financial Evaluation
5. Due diligence of the most responsive bidder(s)

STAGE 1- DETERMINATION OF RESPONSIVENESS (MANDATORY REQUIREMENTS)

This stage of evaluation shall involve examination of the pre-qualification conditions as set out in the Tender Advertisement Notice or Letter of Invitation to Tender and any other conditions stated in the bid document.

The following mandatory requirements must be met not withstanding other requirements in the tender document:

ITEM	MANDATORY REQUIREMENT	COMMENT "PROVIDED" or "NOT PROVIDED "
MR1	Provide a Certificate of Incorporation /Registration. (All firms to a Joint Venture to meet requirement; a maximum of two joint venture partners are allowed)	
MR2	Provide CR12 issued within the last twelve months before tender closure date for all local bidders and national identity cards /passports of directors for all local tenderers. International bidders will be required to provide CR12 of their local agents	
MR3	Valid Tax Compliance Certificate issued by Kenya Revenue Authority. (All parties to a Joint Venture to meet requirement)	
MR4	All foreign and international participating bidders MUST provide proof of having a local technical support team. Provide a signed agreement with a local agent .	
MR5	Provide joint venture agreement/ letter of intent to enter into a Joint Venture or a Joint Venture agreement signed by all parties which must be executed and sealed by a licensed commissioner of oaths. (Where Applicable)	
MR6	Power of Attorney of the signatory of the tender to commit the tenderer and in a joint venture a party to the joint venture should be nominated to commit on behalf of the whole team. Main contractor to provide joint venture agreement which must be executed and sealed by a licensed commissioner of oaths.	
MR7	Valid copy of business permit /business license (All parties to a Joint Venture to meet requirement. Local agent to provide proof on behalf of foreign bidders.)	
MR8	Proof of registration with National Construction Authority –for Electrical Engineering Service Contractor NCA category 3 and above (to be submitted by the Main Contractor) Attach a valid annual practicing license for the year 2022. (Local agent to provide proof on behalf of foreign bidders.)	

MR9	Provide proof of details of physical addresses of the Company/business, for the bidding firm attach a lease agreement or proof of ownership of the office. Attach copies of premises ownership /lease or utility bills over the last 6 months. (All parties to a Joint Venture to meet requirement)	
MR10	Provide a dully filled and signed Tender Security form and a Tender Security of USD 20,000 from a reputable Bank in the Republic of Kenya and licenced by the Central Bank of Kenya.	
MR11	Duly completed manufacturer's authorization for the proposed equipment. If the equipment is from different suppliers, list all the equipment in a table and attach (Manufacturer's Authorization Form) MAF for each proposed equipment. Also outline the country of origin of the proposed equipment. (Attach forms to Technical Evaluation Criteria Table 3 Item 6)	
MR12	Dully filled, signed, and stamped Form of Tender	
MR13	Dully filled, signed, and stamped Confidential Business Questionnaire	
MR14	Dully filled, signed, and stamped Certificate of Independent Tender Determination	
MR15	Dully filled, signed, and stamped Self Declaration form that the tenderer will not engage in any corrupt or Fraudulent Practice	
MR16	Duly filled, signed, and stamped Declaration and Commitment to the Code of Ethics	
MR17	Duly filled "Historical Contract Non-Performance, Pending Litigation and Litigation History" form (Form to be signed and stamped by a Commissioner of Oaths)	
MR18	Certified and signed audited accounts for the years 2021, 2020 and 2019 Local agent to provide on behalf of international bidder. (Only for the Main Contractor required.)	
MR19	Proof of Site Visit (<i>duly filled, signed, and stamped site visit form as per Standard Forms</i>). (This form must be signed and stamped by client representative on the specified date of site visit & the bidder's representative must be a permanent and technical employee of the firm who has worked at the firm for at least 4years (CV of the technical staff must be attached in the technical proposal).	
MR20	The tender should be bound appropriately with no loose pages, sequentially paginated with a proper table of contents. The tenderer must state the total number of pages on the cover page. All pages should be stamped and signed/initialized. The tender MUST be serialized on each page of the bid submitted. Submission of tenders will be as per Sec 77 of the Public Procurement and Asset Disposal Act, 2015. The document shall be saddle staple stitched book binding	
ANY BIDDER WHO DOES NOT MEET <u>ALL</u> THE MANDATORY REQUIREMENTS SHALL BE DISQUALIFIED FROM FURTHER EVALUATION		

Notes

- Kenya Reinsurance Corporation may seek further clarification/confirmation if necessary to confirm authenticity/compliance of any condition of the tender. The tenderers who do not satisfy any of the above requirements shall be considered non-Responsive and their tenders will not be evaluated further.
- All bidders must demonstrate conformance to all the requirements tabulated below to proceed to next stages of evaluation. Failure by a bidder to provide any of the mandatory documents listed above will render their bid non responsive and the bid shall be rejected by the Procuring Entity.
- **The tender security must be submitted together with the technical proposal.**
The tender security shall be in accordance with clause 21 of Instructions to Tenderers contained in this document which states as follows:

Clause 21.1 "The tenderer shall furnish as part of its tender...a Tender Surety as specified in the Tender Data Sheet in the original form and in the amount stated in the TDS."

Clause 21.2 "the unconditional Tender surety shall be in US Dollars and be in form of a certified cheque, bank draft, an irrevocable letter of credit or a guarantee from a reputable Bank/or Insurance company located in the Republic of Kenya. The format of the surety shall be in accordance with the sample form included in the tender documents and the tender surety shall be valid for thirty (30) days beyond the original validity period of the tender or beyond any period of extension if requested under ITT 20.0".

Clause 21.4 "If a Tender Security or Tender-Securing Declaration is specified pursuant to ITT 19.1, any Tender not accompanied by a substantially responsive Tender Security or Tender-Securing Declaration shall be rejected by the Procuring Entity as non-responsive".

STAGE 2-TECHNICAL EVALUATION

Technical evaluation shall be carried out only if the tender is determined to be responsive to the preliminary examination i.e. the presentation of all mandatory documents.

All bidders must demonstrate conformance to all the technical specifications and requirements of the tender document, and as tabulated below.

The technical evaluation shall adopt 100 points approach. Non –responsive submissions will be eliminated from the evaluation process and will not be considered further.

The tender document shall be examined based on clause 37.1 of the Instructions to Tenderers. In accordance with the Instructions to Tenderers, the tenderers will be required to provide evidence for eligibility of the award of the tender by satisfying the employer of their eligibility as per Instructions to Tenderers and adequacy of resources to effectively carry out the subject contract. The tenderers shall be required to fill the Standards Forms provided for the purposes of providing the required information. Tenderers are encouraged to attach the required information if they so desire.

Tenderers' bids will be analysed to determine compliance with General and Particular specifications for the works as indicated in the tender document.

The evaluation team will thoroughly scrutinize the documents to satisfy themselves that the tenderer has filled, completed, and provided comprehensive and supportive documents outlining:

1. Key personnel to execute in the works (**attach certified academic certificates to relevant forms**)
2. Contracts completed in the last 5 years and their relevance to the contract (**attach certificate of practical completion and/or reference letters from Client to relevant forms**).
3. Available Credit lines and financial statements (**Attach Certified Bank statements or credit lines to relevant forms**).
4. Ownership and/or ability of leasing of tools and equipment, (Attach copies of Title & leases).
5. Schedule of the on-going contracts and their relevance to the contract.

Presentation of realistic time frame for completion of the contract shall be included with the proposal and evaluated.

TECHNICAL EVALUATION CRITERIA (CIVIL WORKS/BUILDER’S WORKS)

The detailed scoring plan shall be as shown in table 1 below: -

TABLE 1

Item	Description	Point Scored	Max. Points
1	Registration with NCA (Attach Evidence)		5 MARKS
	Registered as NCA 6 and above		
2	Key Personnel (Attach evidence)		4 MARKS
	Project Manager Holder of diploma and above in any relevant Construction field <i>(Attach CV and the college/ university certificate)</i>		
3	Builder’s works contracts successfully completed in the last five (5) years (Max of 3 No. Projects of at least works value of USD 100,000.00) Bidder must provide completion certificates or reference letters from clients (in their letter head) within the last 1 year Project of at least 50,000 US Dollars and above ----- -----2marks for each project		6 MARKS
	TOTAL CARRIED TO THE TECHNICAL EVALUATION SUMMARY		15 MARKS

Note

Pass mark for the Builder’s works bidder shall be 10marks/15marks.

Any bidder that does not score above the pass mark shall not proceed for further evaluation.

TECHNCAL EVALUATION CRITERIA (ELECTRICAL/MECHANICAL WORKS)

The detailed scoring plan shall be as shown in table 2 below: -

TABLE 2

Item	Description	Point Scored	Max. Points
1	Registration with NCA (National Construction Authority)		3 MARKS
	Registered as NCA 4 and above		
2	Registration with EPRA (Energy & Petroleum Regulatory Authority) formerly Energy Regulatory Commission (ERC)		2 MARKS
	Registered Class B and above		
3	Key Personnel (Attach evidence)		4 MARKS
	Project Manager Holder of diploma in any relevant electrical/ mechanical engineering field and above <i>(Attach CV and the college/ university certificate)</i>		
4	Electrical /mechanical installations contracts successfully completed in the last five (5) years (Max of 3 No. Projects of at least works value of USD 100,000.00)		6 MARKS
	Bidder must provide completion certificates or reference letter from clients (in their letter head) within the last 1 year		
	Project of at least 100,000 USD and above ----- -----2marks for each project		
	TOTAL CARRIED TO THE TECHNICAL EVALUATION SUMMARY		15 MARKS

Note

Pass mark for the Electrical/Mechanical works bidder shall be 10marks/15marks.

Any bidder that does not score above the pass mark shall not proceed for further evaluation.

TECHNICAL EVALUATION CRITERIA (SECURITY INSTALLATION WORKS – MAIN CONTRACTOR)

The detailed scoring plan shall be as shown in table 3 below: -

TABLE 3

Bidders shall provide the following:

Item	Description	Point Scored	Max. Points
1	Key Personnel (Attach evidence)		
	Director of the firm Holder of diploma and above <i>(Attach the college/ university certificate)</i>		1.5 MARKS
	At least 1No. Project Manager/Lead Expert (BSc/ Diploma Electrical/Electronic Engineering or BSc/ Diploma in IT relevant Security Installation field With over 5 years’ relevant experience <i>(Attach CV and the college/ university certificate)</i>		2 MARKS
	At least 1No Site Project Manager – Degree/Diploma holder of key personnel in relevant Security Installations field With over 5 years’ relevant experience <i>(Attach CV and the college/ university certificate)</i>		1.5 MARKS
	At least 5No. Installers with trade test certificates/ Factory technical Training Certificate in relevant Security Installation field With over 5 years’ relevant experience ----- ----- 1 mark for each installer <i>(Attach CV and the college/ university certificate)</i>		5 MARKS
2	Contracts successfully completed in the last five (5) years (Max of 3 No. Projects of at least works value of USD 500,000.00) Bidder must provide completion certificates or reference letter from clients (on client’s letter head) within the last 1 year Project of at least 500,000 USD and above ----- -----2 marks for each project		6 MARKS
3	Project Completion period (The marks will be distributed on pro-rata to the lowest completion time submitted) The least submitted time ----- 4 marks for least submitted time Calculated as follows: (Least time) ÷ (Bidder’s time) x 4 = _____marks NB: Should a successful bidder give an unrealistic unreasonably short time frame, which after contract award they cannot meet, unless in occurrence of a force majeure event, a sum of USD 5,000.00 shall be penalized excluded from the stipulated liquidated and ascertained damages provided for		4 MARKS
	Financial reports		1.5 MARKS
4	Certified Audited financial statements 2021, 2020 & 2019 Turn over greater than 600,000.00 USD ----- ----- 0.5 marks for each financial year		
5	Evidence of Financial Resources (cash in hand/ lines of credit/ overdraft facility/ bank statements etc.) Provide bank certified copies of the originals Has financial resources greater than 600,000.00 USD		3.5 MARKS
	TOTAL CARRIED TO THE TECHNICAL EVALUATION SUMMARY		25 MARKS

Note

Pass mark for the Security System Installation works (Main Contractor) bidder shall be 21marks/25marks

Any bidder that does not score above the pass mark shall not proceed for further evaluation.

PROPOSED SYSTEM REQUIREMENTS EVALUATION CRITERIA:

Preliminary assessment

Bidder to provide clearly marked Data Sheets, catalogues, brochures for each product proposed as detailed below MAF's for the proposed equipment;

	System	Comment 'Provided' or 'Not Provided'
1.	Integrated Security Management System (ISMS)	
2.	CCTV Surveillance System (Cameras & NVR)	
3.	License Plate Recognition System (LPR).	
4.	Access Control.	
5.	Walkthrough/Handheld Metal Detector.	
6.	Visitor Management System (VMS).	
7.	Public Address System (PA).	
8.	Video & IP Intercom System.	
9.	Intrusion Detection & Alarm Systems.	
10	Gun Shooting Detector & Lockdown System.	
11.	Handheld Explosives Detector.	
12.	VHF Radio Communication System.	
	<i>For the items below, the bidder to provide Reseller/Distributor Acknowledgement.</i>	
13.	Industrial Monitors.	
14.	Desktops & Mobile work stations.	
15.	Network Switches.	
16.	CAT 6/CAT 6A Network Cables.	

The detailed scoring plan shall be as shown in table 4 below: -

TABLE 4

The Security Systems Installations Bidders shall provide the following:

1	Proposed system requirements evaluation criteria: Bidder to provide clearly marked Data Sheets, catalogues, brochures for each product proposed as detailed below.	Points scored	Max Points
	Integrated Security Management System (ISMS) Solution.(<i>Make reference to Section 7 of Technical Specifications for Security System Installations</i>)		10 Marks
	Network Video Recorder (NVR) (<i>Section 4</i>) & Video Management System (VMS)(<i>Section 3</i>).		4 Marks
	Closed Circuit Television (CCTV) (<i>Section 4.</i>), Analytic Cameras (<i>Section 4.</i>) & License Plate Recognition (LPR) (<i>Section 5.</i>).		6 Marks
	Access control (<i>Section 2.</i>), Walkthrough Metal detectors (<i>Section 5.</i>) & Handheld Metal detectors (<i>Section 5.</i>).		3 Marks
	Visitor Management system (<i>Section 2</i>)		1Mark
	Public Address (PA) (<i>Section 6</i>), Video Intercom, IP Intercom System(<i>Section 6</i>) & Alarm systems(<i>Section 6</i>)		2 Marks
	Gun Shooting Detector(<i>Section 6</i>)		1 Mark
	Handheld Explosives Detector (<i>Section 5</i>)		1 Mark
	<p><u>Project Implementation Schedule/Work Plan</u> Provide detailed Work Plan, activity schedule, proposed equipment requisition, material acquisition and importation plan (where applicable) and timelines for the project, detailing each stage of the proposed project. The work plan should clearly indicate the bidders' proposed duration for carrying out the works.</p> <p>Note</p> <p>The successful bidder will be required to share a revised work plan once the contract is awarded.</p>		2 Marks
	<p>NOTE: Those who score 28 MARKS and above in this sub-section will qualify for the next stage of evaluation i.e. presentation and demonstration of the proposed solution.</p>		
	TOTAL CARRIED TO THE TECHNICAL EVALUATION SUMMARY		30 Marks

Note

Pass mark for proposed system requirements evaluation criteria shall be 28marks /30marks

Any bidder that does not score above the pass mark shall not proceed for further evaluation.

TECHNICAL EVALUATION SUMMARY 1	Points Scored	Max. Points
Brought forward from Builder's Works marking scheme <i>(Pass mark for builder's works shall be 10marks/15marks)</i>		15 MARKS
Brought forward from Electrical/Mechanical Works marking scheme <i>(Pass mark for builder's works shall be 10marks/15marks)</i>		15 MARKS
Brought forward from Security Installations – Main contractor marking scheme <i>(Pass mark for MC works shall be 21marks/25marks)</i>		25 MARKS
Brought forward from proposed system requirements evaluation criteria marking scheme <i>(Pass mark shall be 28marks/30marks)</i>		30 MARKS
SUB TOTAL 1		<u>85 MARKS</u>
Note Those who score 69 MARKS and above will be invited for presentation.		
Presentation & demonstration of the proposed solution <i>(Pass mark for presentations shall be 10marks/15marks)</i>		15 MARKS
TOTAL OF TECHNICAL SCORE		<u>100 MARKS</u>

Notes:

1. Only **Certified** Copies of Academic certificates and financial statements will be considered as sufficient prove.
2. Letters from clients must be in their original letter head and within the past 1 year.
3. Title deeds, Registered leases or utility bills to the specific company shall suffice as evidence for ownership or occupancy of a premises.
4. Logbooks, leasing documents shall be considered as evidence of access or ownership for equipment etc.
5. Should a contractor give an unrealistic unreasonable time frame, which after contract award they cannot meet unless in occurrence of a force majeure event, a sum of **USD 5,000.00** shall be penalized **excluded** from the stipulated liquidated and ascertained damages provided for.

<p>3. Experience of the firm on similar/related works. ----- ----- 0.5 marks maximum</p> <p>4. Explanation of features of the bidder's proposed product(s) and its suitability to meet the client's requirements as per the tender specifications ----- ----- 0.5 marks maximum</p>		2 MARKS
<p>Award 0 marks if not satisfied with the bidder's presentation on each item as listed in the above scoring criteria</p>		
<p><u>Closed Circuit Television (CCTV), License Plate Recognition (LPR) cameras & Access control solution</u></p>		
<p>1. Expertise/ competence –qualifications of the proposed personnel. -----0.5 marks maximum</p> <p>2. Experience of the proposed personnel on similar/related works. ----- 0.5 marks maximum</p> <p>3. Experience of the firm on similar/related works. ----- -----0.5 marks maximum</p> <p>4. Explanation of features of the bidder's proposed product(s) and its suitability to meet the client's requirements as per the tender specifications ----- -----0.5 marks maximum</p>		2 MARKS
<p>Award 0 marks if not satisfied with the bidder's presentation on each item as listed in the above scoring criteria</p>		
<p><u>Walk-through metal detector & handheld metal detectors solutions</u></p>		
<p>1. Expertise/ competence –qualifications of the proposed personnel. -----0.5 marks maximum</p> <p>2. Experience of the proposed personnel on similar/related works. ----- 0.5 marks maximum</p> <p>3. Experience of the firm on similar/related works. ----- ----- 0.5 marks maximum</p> <p>4. Explanation of features of the bidder's proposed product(s) and its suitability to meet the client's requirements as per the tender specifications ----- ----- 0.5 marks maximum</p>		2 MARKS

Award 0 marks if not satisfied with the bidder's presentation on each item as listed in the above scoring criteria

Public Address (PA), Intercom & Alarm systems solution

1. Expertise/ competence –qualifications of the proposed personnel. ----- 0.5 marks maximum
2. Experience of the proposed personnel on similar/related works. ----- 0.5 marks maximum
3. Experience of the firm on similar/related works. -----
-----0.5 marks maximum
4. Explanation of features of the bidder's proposed product(s) and its suitability to meet the client's requirements as per the tender specifications -----
-----0.5 marks maximum

Award 0 marks if not satisfied with the bidder's presentation on each item as listed in the above scoring criteria

Analytic video, Guards Patrol management, Guest control and badge production system solution

1. Expertise/ competence –qualifications of the proposed personnel. ----- 0.5 marks maximum
2. Experience of the proposed personnel on similar/related works. ----- 0.5 marks maximum
3. Experience of the firm on similar/related works. -----
-----0.5 marks maximum
4. Explanation of features of the bidder's proposed product(s) and its suitability to meet the client's requirements as per the tender specifications -----
-----0.5 marks maximum

Award 0 marks if not satisfied with the bidder's presentation on each item as listed in the above scoring criteria

Gun shooting sensor and gun shooting detector solution

1. Expertise/ competence –qualifications of the proposed personnel. ----- 0.5 marks maximum
2. Experience of the proposed personnel on similar/related works. ----- 0.5 marks maximum

2 MARKS

2 MARKS

	<p>3. Experience of the firm on similar/related works. ----- -----0.5 marks maximum</p> <p>4. Explanation of features of the bidder's proposed product(s) and its suitability to meet the client's requirements as per the tender specifications ----- ----- 0.5 marks maximum</p> <p>Award 0 marks if not satisfied with the bidder's presentation on each item as listed in the above scoring criteria</p> <p>A Bidder who does not appear for presentation shall be disqualified from further evaluation.</p>		
--	--	--	--

Note

Pass mark for Presentation shall be 10marks /15marks

Any bidder that does not score above the pass mark shall not proceed for further evaluation.

TECHNICAL & PRESENTATION EVALUATION SUMMARY 2	POINTS SCORED	MAX POINTS
Brought forward from Builder's Works marking scheme	15 MARKS
Brought forward from Services Works marking scheme	15 MARKS
Brought forward from Security installation (MC) marking scheme	25 MARKS
Brought forward from proposed system requirements evaluation marking scheme	30 MARKS
Brought forward from Presentation marking scheme	15 MARKS
TOTAL OF TECHNICAL SCORE	<u>.....</u>	<u>100 MARKS</u>
Note		
<ul style="list-style-type: none"> • Those who score 79 MARKS and above will proceed for financial evaluation. • Majority locally owned (citizens) firms shall get a 15% margin of preference on their technical score against a majority owned international firm (residents with work permits or equivalent) • For effecting of the margin of preference by the evaluators, the foreign bidder's score shall be deducted by 15%: 		
MoP Formula = Bidders Score x 85%		

STAGE 4: FINANCIAL EVALUATION

Financial evaluations of bids will be carried out only for tenderers that have passed: -

Stage 1- Determination of Responsiveness (Mandatory Requirements)

Stage 2- Detailed Technical Examination

Stage 3- Presentation of the bidder's proposal & demonstration

Financial evaluation shall be in accordance to ITT 33, ITT 39, ITT 40 and ITT 41 and as tabulated below.

TABLE 6

NO	FINANCIAL EVALUATION CRITERIA	RESPONSIVE	NON-RESPONSIVE
1	Deviation from official cost estimates - \leq or \geq 15% in accordance with ITT39 and ITT40		
2	Significance of error in accordance with ITT 33		
3	Tender Balance (no frontloading or inconsistencies) in accordance with ITT 41 Note Should a tenderer's bid be found to be unbalanced and or front loaded, the Procuring entity shall require that the total amount of the Performance Securities be increased at the expense of the tenderer to 30% of the contract price in accordance with ITT 41.2(c). The Procuring entity will write to prospective bidders seeking commitment of the same.		
	For effecting of the margin of preference by the evaluators, the foreign bidder's score shall be added by 15%: MoP Formula = Bidders Score x 115%		

THE MOST RESPONSIVE BIDDER SHALL BE THE LOWEST FINANCIAL PROPOSAL AFTER PASSING THE STAGES LISTED ABOVE INCLUDING FINANCIAL EVALUATION AS PRESCRIBED IN THE TABLE 6 HEREBOWE

STAGE 5- DUE DILIGENCE

The Kenya Reinsurance Corporation shall prior to award of this tender determine to its satisfaction whether the selected bidder will be able to perform the contract satisfactorily by carrying out a due diligence visit to the bidder's stated workstation and to previously completed projects completed by the bidder as required.

Successful international bidders who provide locations of completed projects that are outside of Kenya will be required to facilitate the cost incurred by Kenya Reinsurance Corporation Staff in visiting such sites for purposes of due diligence.

SUBMISSION CRITERIA

The submission of tenderers’ bids shall be guided as per clause 23 of the Instruction to Tenderers.

This is a one (1) envelope tender i.e. Combined Technical Proposal and Financial Proposal.

Depending on the sizes or quantities or weight of the tender documents, Kenya Reinsurance Corporation will require tenderers use an envelope, package, or container. The Tenderer shall deliver the Tender in a single sealed envelope, or in a single sealed package, or in a single sealed container bearing the name and Reference number of the Tender, addressed to the Procuring Entity and a warning not to open before the time and date for Tender opening date. Within the single envelope, package or container, the Tenderer shall place the following separate, sealed envelopes:

- a. in an envelope or package or container marked “ORIGINAL”, all documents comprising the Tender, as described in ITT 23
- b. in an envelope or package or container marked “COPIES”, all required copies of the Tender; and

The inner envelopes or packages or containers shall:

- i. bear the name and address of the Procuring Entity.
- ii. bear the name and address of the Tenderer; and
- iii. bear the name and Reference number of the Tender.

The outer envelope/package/package shall be clearly marked: -

“TENDER DOCUMENT FOR PROPOSED INTEGRATED SECURITY MANAGEMENT SYSTEM AT REINSURANCE PLAZA, KISUMU

TENDER (ITT) NO

**ADDRESS Kenya Reinsurance Corporation Ltd,
P.O Box 30271-00100, Nairobi,
Attn: Head of Supply Chain,
Nairobi City, Taifa Road, Reinsurance Plaza, 14th Floor, Supply Chain Office.**

SUBMISSION DATE.....”

If an envelope or package or container is not sealed and marked as required, Kenya Reinsurance Corporation will assume no responsibility for the misplacement or premature opening of the Tender. Tenders that are misplaced or opened prematurely will not be accepted.

8. QUALIFICATION FORM SUMMARY

1	2	3	4	5
Item No.	Qualification Subject	Qualification Requirement	Document To be Completed by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
1	Nationality	Nationality in accordance with ITT 3.6	Forms ELI – 1.1 and 1.2, with attachments	
2	Tax Obligations for Kenyan Tenderers	Has produced a current tax clearance certificate or tax exemption certificate issued by the Kenya Revenue Authority in accordance with ITT 3.14.	Form of Tender	
3	Conflict of Interest	No conflicts of interest in accordance with ITT 3.3	Form of Tender	
4	PPRA Eligibility	Not having been declared ineligible by the PPRA as described in ITT 3.8	Form of Tender	
5	State- owned Enterprise	Meets conditions of ITT 3.7	Forms ELI – 1.1 and 1.2, with attachments	
6	Goods, equipment, and services to be supplied under the contract	To have their origin in any country that is not determined ineligible under ITT 4.1	Forms ELI – 1.1 and 1.2, with attachments	
7	History of Non-Performing Contracts	Non-performance of a contract did not occur as a result of contractor default since 1 st January 2017.	Form CON-2	
8	Suspension Based on Execution of Tender/Proposal Securing Declaration by the Procuring Entity	Not under suspension based on-execution of a Tender/Proposal Securing Declaration pursuant to ITT 19.9	Form of Tender	
9	Pending Litigation	Tender's financial position and prospective long-term profitability still sound according to criteria established in 3.1 and assuming that all pending litigation will NOT be resolved against the Tenderer.	Form CON – 2	
10	Litigation History	No consistent history of court/arbitral award decisions against the Tenderer since 1 st January 2017	Form CON – 2	

1	2	3	4	5
Item No.	Qualification Subject	Qualification Requirement	Document To be Completed by Tenderer	For Procuring Entity's Use (Qualification met or Not Met)
11	Financial Capabilities	<p>(i) The Tenderer shall demonstrate that it has access to, or has available, liquid assets, unencumbered real assets, lines of credit, and other financial means (independent of any contractual advance payment) sufficient to meet the construction cash flow requirements estimated as three hundred thousand dollars (USD 300,000.00) equivalent for the subject contract(s) net of the Tenderer's other commitments.</p> <p>(ii) The Tenderers shall also demonstrate, to the satisfaction of the Procuring Entity, that it has adequate sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.</p> <p>(iii) The audited balance sheets or, if not required by the laws of the Tenderer's country, other financial statements acceptable to the Procuring Entity, for the last three (3) years shall be submitted and must demonstrate the current soundness of the Tenderer's financial position and indicate its prospective long-term profitability.</p>	Form FIN – 3.1, with attachments	
12	Average Annual Construction Turnover	Average annual construction turnover of USD 1,800,000.00 equivalent calculated as total certified payments received for contracts in progress and/or completed within the last <i>five(5)</i> years, divided by <i>five(5)</i> years	Form FIN – 3.2	
13	General Construction Experience	Experience under construction contracts in the role of prime contractor, JV member, sub-contractor, or management contractor for at least the last five [5] years, starting 1 st January 2017.	4. Form EXP – 4.1 Experience	

1 Item No.	2 Qualification Subject	3 Qualification Requirement	4 Document To be Completed by Tenderer	5 For Procuring Entity's Use (Qualification met or Not Met)
	Specific Construction & Contract Management Experience	<p>A minimum number of <i>three</i> similar contracts specified below that have been satisfactorily and substantially completed as a prime contractor, joint venture member, management contractor or sub-contractor between 1st January 2017 and tender submission deadline i.e. Tuesday, 27th September 2022, each of minimum value USD 50,000.00.</p> <p>The similarity of the contracts shall be based on the following: -</p> <ul style="list-style-type: none"> • Size of site whose effective floor area exceeds 1000m² • Works of similar complexity located in a busy city, industrial area or urban region. • Builders work incorporating both wet and dry construction methods and techniques 	Form EXP 4.2(a)	

QUALIFICATION FORMS

1. FORMEQU: EQUIPMENT

The Tenderer shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed in Section III, Evaluation and Qualification Criteria. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Tenderer.

Item of equipment		
Equipment information	Name of manufacturer	Model and power rating
	Capacity	Year of manufacture
Current status	Current location	
	Details of current commitments	
Source	Indicate source of the equipment <input type="checkbox"/> Owned <input type="checkbox"/> Rented <input type="checkbox"/> Leased <input type="checkbox"/> Specially manufactured	

Omit the following information for equipment owned by the Tenderer.

Owner	Name of owner	
	Address of owner	
	Telephone	Contact name and title
	Fax	Telex
Agreements	Details of rental / lease / manufacture agreements specific to the project	

2. FORM PER -1

Contractor's Representative and Key Personnel Schedule

Tenderers should provide the names and details of the suitably qualified Contractor's Representative and Key Personnel to perform the Contract. The data on their experience should be supplied using the Form PER-2 below for each candidate.

Contractor' Representative and Key Personnel

1.	Title of position: _____	
	Name of candidate: _____	
	Duration of appointment:	[insert the whole period (start and end dates) for which this position will be engaged]
	Time commitment for this position:	[insert the number of days/week/months/ that has been scheduled for this position]
	Expected time schedule for this position:	[insert the expected time schedule for this position (e.g. attach Gantt chart)]
2.	Title of position: _____	
	Name of candidate: _____	
	Duration of appointment:	[insert the whole period (start and end dates) for which this position will be engaged]
	Time commitment for this position:	[insert the number of days/week/months/ that has been scheduled for this position]
	Expected time schedule for this position:	[insert the expected time schedule for this position (e.g. attach Gantt chart)]
3.	Title of position: _____	
	Name of candidate: _____	
	Duration of appointment:	[insert the whole period (start and end dates) for which this position will be engaged]
	Time commitment for this position:	[insert the number of days/week/months/ that has been scheduled for this position]
	Expected time schedule for this position:	[insert the expected time schedule for this position (e.g. attach Gantt chart)]
4.	Title of position: _____	
	Name of candidate: _____	
	Duration of appointment:	[insert the whole period (start and end dates) for which this position will be engaged]
	Time commitment for this position:	[insert the number of days/week/months/ that has been scheduled for this position]
	Expected time schedule for this position:	[insert the expected time schedule for this position (e.g. attach Gantt chart)]
5.	Title of position: [insert title]	
	Name of candidate _____	
	Duration of appointment:	[insert the whole period (start and end dates) for which this position will be engaged]
	Time commitment for this position:	[insert the number of days/week/months/ that has been scheduled for this position]
	Expected time schedule for this position:	[insert the expected time schedule for this position (e.g. attach Gantt chart)]

3. FORM PER-2:

Resume and Declaration - Contractor's Representative and Key Personnel.

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Name of Tenderer

Position [#1]: <i>[title of position from Form PER-1]</i>		
Personnel information	Name:	Date of birth:
	Address:	E-mail:
	Professional qualifications:	
	Academic qualifications:	
	Language proficiency: <i>[language and levels of speaking, reading and writing skills]</i>	
Details	Address of Procuring Entity:	
	Telephone:	Contact (manager / personnel officer):
	Fax:	
	Job title:	Years with present Procuring Entity:

Summarize professional experience in reverse chronological order. Indicate particular technical and managerial experience relevant to the project.

Project	Role	Duration of involvement	Relevant experience
<i>[main project details]</i>	<i>[role and responsibilities on the project]</i>	<i>[time in role]</i>	<i>[describe the experience relevant to this position]</i>

Declaration

I, the undersigned _____ *[insert either "Contractor's Representative" or "Key Personnel" as applicable]*, certify that to the best of my knowledge and belief, the information contained in this Form PER-2 correctly describes myself, my qualifications and my experience.

I confirm that I am available as certified in the following table and throughout the expected time schedule for this position as provided in the Tender:

Commitment	Details
Commitment to duration of contract:	<i>[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]</i>
Time commitment:	<i>[insert period (start and end dates) for which this Contractor's Representative or Key Personnel is available to work on this contract]</i>

I understand that any misrepresentation or omission in this Form may:

- a) be taken into consideration during Tender evaluation;
- b) result in my disqualification from participating in the Tender;
- c) result in my dismissal from the contract.

Name of Contractor's Representative or Key Personnel: _____ *[insert name]*

Signature: _____

Date (day month year): _____

Countersignature of authorized representative of the Tenderer:

Signature: _____

Date (day month year): _____

4 TENDERER'S QUALIFICATION WITHOUT PRE-QUALIFICATION

To establish its qualifications to perform the contract in accordance with Section III, Evaluation and Qualification Criteria the Tenderer shall provide the information requested in the corresponding Information Sheets included hereunder.

4.1 FORM ELI -1.1

Tenderer Information Form

Date: _____

ITT No. and title: _____

Tenderer's name:
In case of Joint Venture (JV), name of each member: 1. 2. 3. 4. 5.
Tenderer's actual or intended country of registration: <i>[indicate country of Constitution]</i>
Tenderer's actual or intended year of incorporation:
Tenderer's legal address [in country of registration]:
Tenderer's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____

1. Attached are copies of original documents of

Articles of Incorporation (or equivalent documents of constitution or association), and/or documents of registration of the legal entity named above, in accordance with ITT 3.6

In case of JV, letter of intent to form JV or JV agreement, in accordance with ITT 3.5

In case of state-owned enterprise or institution, in accordance with ITT 3.8, documents establishing:

- Legal and financial autonomy
- Operation under commercial law
- Establishing that the Tenderer is not under the supervision of the Procuring Entity

2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

4.2 FORM ELI -1.2

Tenderer's JV Information Form (to be completed for each member of Tenderer's JV)

Date: _____

ITT No. and title: _____

Tenderer's JV name:
JV member's name:
JV member's country of registration:
JV member's year of constitution:
JV member's legal address in country of constitution:
JV member's authorized representative information Name: _____ Address: _____ Telephone/Fax numbers: _____ E-mail address: _____
1. Attached are copies of original documents of: <input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association), and/or registration documents of the legal entity named above, in accordance with ITT 3.6. <input type="checkbox"/> In case of a state-owned enterprise or institution, documents establishing legal and financial autonomy, operation in accordance with commercial law, and that they are not under the supervision of the Procuring Entity, in accordance with ITT 3.8.
2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

4.3 FORM CON – 2

Historical Contract Non-Performance, Pending Litigation and Litigation History

Tenderer's Name: _____
 Date: _____
 JV Member's Name _____
 ITT No. and title: _____

Non-Performed Contracts in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> Contract non-performance did not occur since 1 st January [insert year] specified in Section III, Evaluation and Qualification Criteria, Sub-Factor 2.1.			
<input type="checkbox"/> Contract(s) not performed since 1 st January [insert year] specified in Section III, Evaluation and Qualification Criteria, requirement 2.1			
Year	Non-performed portion of contract	Contract Identification	Total Contract Amount (current value, currency, exchange rate and US Dollars equivalent)
[insert year]	[insert amount and percentage]	Contract Identification: [indicate complete contract name/ number, and any other identification] Name of Procuring Entity: [insert full name] Address of Procuring Entity: [insert street/city/country] Reason(s) for nonperformance: [indicate main reason(s)]	[insert amount]
Pending Litigation, in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> No pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3.			
<input type="checkbox"/> Pending litigation in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.3 as indicated below.			

Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), US Dollars Equivalent (exchange rate)
		Contract Identification: _____ Name of Procuring Entity: _____ Address of Procuring Entity: _____ Matter in dispute: _____ Party who initiated the dispute: ____ Status of dispute: _____	
		Contract Identification: _____ Name of Procuring Entity: _____ Address of Procuring Entity: _____ Matter in dispute: _____ Party who initiated the dispute: _____ Status of dispute: _____	
Litigation History in accordance with Section III, Evaluation and Qualification Criteria			
<input type="checkbox"/> No Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4.			
<input type="checkbox"/> Litigation History in accordance with Section III, Evaluation and Qualification Criteria, Sub-Factor 2.4 as indicated below.			

Year of award	Outcome as percentage of Net Worth	Contract Identification	Total Contract Amount (currency), US Dollars Equivalent (exchange rate)
<i>[insert year]</i>	<i>[insert percentage]</i>	Contract Identification: <i>[indicate complete contract name, number, and any other identification]</i> Name of Procuring Entity: <i>[insert full name]</i> Address of Procuring Entity: <i>[insert street/city/country]</i> Matter in dispute: <i>[indicate main issues in dispute]</i> Party who initiated the dispute: <i>[indicate "Procuring Entity" or "Contractor"]</i> Reason(s) for Litigation and award decision <i>[indicate main reason(s)]</i>	<i>[insert amount]</i>

4.4 FORM FIN – 3.1:

Financial Situation and Performance

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

4.4.1. Financial Data

Type of Financial information in _____ (currency)	Historic information for previous _____ years, _____ (Amount in currency, currency, exchange rate*, USD equivalent)				
	Year 1	Year 2	Year 3	Year 4	Year 5
Statement of Financial Position (Information from Balance Sheet)					
Total Assets (TA)					
Total Liabilities (TL)					
Total Equity/Net Worth (NW)					
Current Assets (CA)					
Current Liabilities (CL)					
Working Capital (WC)					
Information from Income Statement					
Total Revenue (TR)					
Profits Before Taxes (PBT)					
Cash Flow Information					
Cash Flow from Operating Activities					

*Refer to ITT 15 for the exchange rate

4.4.2 Sources of Finance

Specify sources of finance to meet the cash flow requirements on works currently in progress and for future contract commitments.

No.	Source of finance	Amount US Dollar equivalent)
1		
2		
3		

4.4.3 Financial documents

The Tenderer and its parties shall provide copies of financial statements for _____ years pursuant Section III, Evaluation and Qualifications Criteria, Sub-factor 3.1. The financial statements shall:

- (a) reflect the financial situation of the Tenderer or in case of JV member, and not an affiliated entity (such as parent company or group member).
- (b) be independently audited or certified in accordance with local legislation.
- (c) be complete, including all notes to the financial statements.
- (d) correspond to accounting periods already completed and audited.

Attached are copies of financial statements¹ for the _____ years required above; and complying with the requirements

¹ If the most recent set of financial statements is for a period earlier than 12 months from the date of Tender, the reason for this should be justified.

4.5 FORM FIN – 3.2:

Average Annual Construction Turnover

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

		Annual turnover data (construction only)	
Year	Amount Currency	Exchange rate	US Dollar equivalent
<i>[indicate year]</i>	<i>[insert amount and indicate currency]</i>		
Average Annual Construction Turnover *			

* See Section III, Evaluation and Qualification Criteria, Sub-Factor 3.2.

4.6 FORM FIN – 3.3:

Financial Resources

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total construction cash flow demands of the subject contract or contracts as specified in Section III, Evaluation and Qualification Criteria

No.	Source of financing	Amount (US Dollar equivalent)
1		
2		
3		
4		

4.7 FORM FIN – 3.4:

Current Contract Commitments / Works in Progress

Tenderers and each member to a JV should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

Current Contract Commitments

	Name of Contract	Procuring Entity's Contact Address, Tel,	Value of Outstanding Work [Current USD equivalent /month]	Estimated Completion Date	Average Monthly Invoicing Over Last Six Months [USD equivalent /month]
1					
2					
3					
4					
5					

4.8 FORM EXP - 4.1

General Construction Experience

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

Page _____ of _____ pages

Starting Year	Ending Year	Contract Identification	Role of Tenderer
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	
		Contract name: _____ Brief Description of the Works performed by the Tenderer: _____ Amount of contract: _____ Name of Procuring Entity: _____ Address: _____	

4.9 FORM EXP - 4.2(a)

Specific Construction and Contract Management Experience

Tenderer's Name: _____

Date: _____

JV Member's Name _____

ITT No. and title: _____

Similar Contract No.	Information			
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor <input type="checkbox"/>	Member in JV <input type="checkbox"/>	Management Contractor <input type="checkbox"/>	Sub-contractor <input type="checkbox"/>
Total Contract Amount				US Dollars
If member in a JV or sub-contractor, specify participation in total Contract amount				
Procuring Entity's Name:				
Address:				
Telephone/fax number				
E-mail:				

Similar Contract No.	Information
Description of the similarity in accordance with Sub-Factor 4.2(a) of Section III:	
1. Amount	
2. Physical size of required works items	
3. Complexity	
4. Methods/Technology	
5. Construction rate for key activities	
6. Other Characteristics	

4.10 FORM EXP - 4.2(b)

Construction Experience in Key Activities

Tenderer's Name: _____
 Date: _____
 Tenderer's JV Member Name: _____
 Sub-contractor's Name² (as per ITT 34): _____
 ITT No. and title: _____

All Sub-contractors for key activities must complete the information in this form as per ITT 34 and Section III, Evaluation and Qualification Criteria, Sub-Factor 4.2.

1. Key Activity No One: _____

Information				
Contract Identification				
Award date				
Completion date				
Role in Contract	Prime Contractor <input type="checkbox"/>	Member JV <input type="checkbox"/>	in Management Contractor <input type="checkbox"/>	Sub-contractor <input type="checkbox"/>
Total Contract Amount			US Dollars	
Quantity (Volume, number, or rate of production, as applicable) performed under the contract per year or part of the year	Total quantity in the contract (i)	Percentage participation (ii)		Actual Quantity Performed (i) x (ii)
Year 1				
Year 2				
Year 3				
Year 4				
Procuring Entity's Name:				
Address: Telephone/fax number E-mail:				

Information	
Description of the key activities in accordance with Sub-Factor 4.2(b) of Section III:	

Activity No. Two

3.

² If applicable

OTHER FORMS

5. FORM OF TENDER

INSTRUCTIONS TO TENDERERS

- i) *The Tenderer must prepare this Form of Tender on stationery with its letterhead clearly showing the Tenderer's complete name and business address.*
- ii) *All italicized text is to help Tenderer in preparing this form.*
- iii) *Tenderer must complete and sign CERTIFICATE OF INDEPENDENT TENDER DETERMINATION and the SELF DECLARATION OF THE TENDERER attached to this Form of Tender.*
- iv) *The Form of Tenders shall include the following Forms duly completed and signed by the Tenderer.*
 - *Tenderer's Eligibility- Confidential Business Questionnaire*
 - *Certificate of Independent Tender Determination*
 - *Self-Declaration of the Tenderer*

Date of this Tendersubmission: *[insert date (as day, month and year) of Tendersubmission]*

Request for Tender No.: *[insert identification]*

Name and description of Tender *[Insert as per ITT]*

Alternative No.: *[insert identification No if this is a Tender for an alternative]*

To: *[insert complete name of Procuring Entity]*

Dear Sirs,

1 In accordance with the Conditions of Contract, Specifications, Drawings and Bills of Quantities for the execution of the above-named Works, we, the undersigned offer to construct and complete the Works and remedy any defects therein for the sum of US Dollars *[[Amount in figures]* _____ *US Dollars [amount in words]* _____.

The above amount includes foreign currency amount (s) of *[state figure or a percentage and currency]* *[figures]* _____ *[words]* _____.

The percentage or amount quoted above does not include provisional sums, and only allows not more than two foreign currencies.

2 We undertake, if our tender is accepted, to commence the Works as soon as is reasonably possible after the receipt of the Project Manager's notice to commence, and to complete the whole of the Works comprised in the Contract within the time stated in the Special Conditions of Contract.

3 We agree to adhere by this tender until _____ *[Insert date]*, and it shall remain binding upon us and may be accepted at any time before that date.

4 Unless and until a formal Agreement is prepared and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us. We further understand that you are not bound to accept the lowest or any tender you may receive.

5 We, the undersigned, further declare that:

- i) No reservations: We have examined and have no reservations to the tender document, including Addenda issued in accordance with ITT 28;
- ii) Eligibility: We meet the eligibility requirements and have no conflict of interest in accordance with ITT 3 and 4;
- iii) Tender-Securing Declaration: We have not been suspended nor declared ineligible by the Procuring Entity based on execution of a Tender-Securing or Proposal-Securing Declaration in the Procuring Entity's

Country in accordance with ITT 19.8;

- iv) Conformity: We offer to execute in conformity with the tendering documents and in accordance with the implementation and completion specified in the construction schedule, the following Works: *[insert a brief description of the Works]*;
- v) Tender Price: The total price of our Tender, excluding any discounts offered in item 1 above is: *[Insert one of the options below as appropriate]*
- vi) Option 1, in case of one lot: Total price is: *[insert the total price of the Tender in words and figures, indicating the various amounts and the respective currencies]*; Or
Option 2, in case of multiple lots:
 - a) Total price of each lot *[insert the total price of each lot in words and figures, indicating the various amounts and the respective currencies]*; and
 - b) Total price of all lots (sum of all lots) *[insert the total price of all lots in words and figures, indicating the various amounts and the respective currencies]*;
- vii) Discounts: The discounts offered and the methodology for their application are:
- viii) The discounts offered are: *[Specify in detail each discount offered.]*
- ix) The exact method of calculations to determine the net price after application of discounts is shown below: *[Specify in detail the method that shall be used to apply the discounts]*;
- x) Tender Validity Period: Our Tender shall be valid for the period specified in TDS 18.1 (as amended, if applicable) from the date fixed for the Tender submission deadline specified in TDS 22.1 (as amended, if applicable), and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- xi) Performance Security: If our Tender is accepted, we commit to obtain a Performance Security in accordance with the Tendering document;
- xii) One Tender Per Tender: We are not submitting any other Tender(s) as an individual Tender, and we are not participating in any other Tender(s) as a Joint Venture member or as a subcontractor, and meet the requirements of ITT 3.4, other than alternative Tenders submitted in accordance with ITT 13.3;
- xiii) Suspension and Debarment: We, along with any of our subcontractors, suppliers, Project Manager, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by any entity or individual that is subject to, a temporary suspension or a debarment imposed by the Public Procurement Regulatory Authority or any other entity of the Government of Kenya, or any international organization.
- xiv) State-owned enterprise or institution: *[select the appropriate option and delete the other] [We are not a state-owned enterprise or institution] / [We are a state-owned enterprise or institution but meet the requirements of ITT 3.8]*;
- xv) Commissions, gratuities, fees: We have paid, or will pay the following commissions, gratuities, or fees with respect to the tender process or execution of the Contract: *[insert complete name of each Recipient, its full address, the reason for which each commission or gratuity was paid and the amount and currency of each such commission or gratuity]*.

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

- xvi) Binding Contract: We understand that this Tender, together with your written acceptance thereof included in your Letter of Acceptance, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- xvii) Not Bound to Accept: We understand that you are not bound to accept the lowest evaluated cost Tender, the Most Advantageous Tender or any other Tender that you may receive;
- xviii) Fraud and Corruption: We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption;
- xix) Collusive practices: We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded. To this effect we have signed the "Certificate of Independent Tender Determination" attached below.
- xx) We undertake to adhere by the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal, copy available from _____ (*specify website*) during the procurement process and the execution of any resulting contract.
- xxi) We, the Tenderer, have completed fully and signed the following Forms as part of our Tender:
 - a) Tenderer's Eligibility; Confidential Business Questionnaire – to establish we are not in any conflict to interest.
 - b) Certificate of Independent Tender Determination – to declare that we completed the tender without colluding with other tenderers.
 - c) Self-Declaration of the Tenderer – to declare that we will, if awarded a contract, not engage in any form of fraud and corruption.
 - d) Declaration and commitment to the Code of Ethics for Persons Participating in Public Procurement and Asset Disposal

Further, we confirm that we have read and understood the full content and scope of fraud and corruption as informed in "Appendix 1- Fraud and Corruption" attached to the Form of Tender.

Name of the Tenderer: **[insert complete name of person signing the Tender]*

Name of the person duly authorized to sign the Tender on behalf of the Tenderer: ***[insert complete name of person duly authorized to sign the Tender]*

Title of the person signing the Tender: *[insert complete title of the person signing the Tender]*

Signature of the person named above: *[insert signature of person whose name and capacity are shown above]*

Date signed *[insert date of signing]* day of *[insert month]*, *[insert year]*

Date signed _____ day of _____, _____

Notes

- * In the case of the Tender submitted by joint venture specify the name of the Joint Venture as Tenderer*
- ** Person signing the Tender shall have the power of attorney given by the Tenderer to be attached with the Tender.*

A. TENDERER'S ELIGIBILITY - CONFIDENTIAL BUSINESS QUESTIONNAIRE

Instruction to Tenderer

Tender is instructed to complete the particulars required in this Form, *one form for each entity if Tender is a JV*. Tenderer is further reminded that it is an offence to give false information on this Form.

(a) Tenderer's details

	ITEM	DESCRIPTION
1	Name of the Procuring Entity	
2	Reference Number of the Tender	
3	Date and Time of Tender Opening	
4	Name of the Tenderer	
5	Full Address and Contact Details of the Tenderer.	<ol style="list-style-type: none"> 1. Country 2. City 3. Location 4. Building 5. Floor 6. Postal Address 7. Name and email of contact person.
6	Current Trade License Registration Number and Expiring date	
7	Name, country, and full address (<i>postal and physical addresses, email, and telephone number</i>) of Registering Body/Agency	
8	Description of Nature of Business	
9	Maximum value of business which the Tenderer handles.	
10	State if Tenders Company is listed in stock exchange, give name and full address (<i>postal and physical addresses, email, and telephone number</i>) of state which stock exchange	

General and Specific Details

b) **Sole Proprietor**, provide the following details.

Name in full _____ Age _____

Nationality _____ Country of Origin _____

Citizenship _____

c) **Partnership**, provide the following details.

	Names of Partners	Nationality	Citizenship	% Shares owned
1				
2				
3				

d) **Registered Company**, provide the following details.

i) Private or public Company _____

ii) State the nominal and issued capital of the Company _____

Nominal Kenya Shillings (Equivalent)..... Issued

Kenya Shillings (Equivalent).....

iii) Give details of Directors as follows.

	Names of Director	Nationality	Citizenship	% Shares owned
1				
2				
3				

(e) DISCLOSURE OF INTEREST- Interest of the Firm in the Procuring Entity.

i) Are there any person/persons in Kenya Reinsurance Corporation who has/have an interest or relationship in this firm? Yes/No.....

If yes, provide details as follows.

	Names of Person	Designation in the Procuring Entity	Interest or Relationship with Tenderer
1			
2			
3			

ii) Conflict of interest disclosure

	Type of Conflict	Disclosure YES OR NO	If YES provide details of the relationship with Tenderer
1	Tenderer is directly or indirectly controls, is controlled by or is under common control with another tenderer.		
2	Tenderer receives or has received any direct or indirect subsidy from another tenderer.		
3	Tenderer has the same legal representative as another tenderer		
4	Tender has a relationship with another tenderer, directly or through common third parties, that puts it in a position to influence the tender of another tenderer or influence the decisions of the Procuring Entity regarding this tendering process.		
5	Any of the Tenderer's affiliates participated as a consultant in the preparation of the design or technical specifications of the works that are the subject of the tender.		
6	Tenderer would be providing goods, works, non-consulting services or consulting services during implementation of the contract specified in this Tender Document.		
7	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who are directly or indirectly involved in the preparation of the Tender document or specifications of the Contract, and/or the Tender evaluation process of such contract.		
8	Tenderer has a close business or family relationship with a professional staff of the Procuring Entity who would be involved in the implementation or supervision of such Contract.		
9	Has the conflict stemming from such relationship stated in item 7 and 8 above been resolved in a manner acceptable to the Procuring Entity throughout the tendering process and execution of the Contract.		

f) Certification

On behalf of the Tenderer, I certify that the information given above is complete, current and accurate as at the date of submission.

Full Name _____

Title or Designation _____

(Signature)

(Date)

B. CERTIFICATE OF INDEPENDENT TENDER DETERMINATION

I, the undersigned, in submitting the accompanying Letter of Tender to the _____ [Name of Procuring Entity] for: _____ [Name and number of tender] in response to the request for tenders made by: _____ [Name of Tenderer] do hereby make the following statements that I certify to be true and complete in every respect:

I certify, on behalf of _____ [Name of Tenderer] that:

- 1 I have read and I understand the contents of this Certificate;
- 2 I understand that the Tender will be disqualified if this Certificate is found not to be true and complete in every respect;
- 3 I am the authorized representative of the Tenderer with authority to sign this Certificate, and to submit the Tender on behalf of the Tenderer;
- 4 For the purposes of this Certificate and the Tender, I understand that the word "competitor" shall include any individual or organization, other than the Tenderer, whether or not affiliated with the Tenderer, who:
 - a) has been requested to submit a Tender in response to this request for tenders;
 - b) could potentially submit a tender in response to this request for tenders, based on their qualifications, abilities or experience;
- 5 The Tenderer discloses that [check one of the following, as applicable]:
 - a) The Tenderer has arrived at the Tender independently from, and without consultation, communication, agreement or arrangement with, any competitor;
 - b) the Tenderer has entered into consultations, communications, agreements or arrangements with one or more competitors regarding this request for tenders, and the Tenderer discloses, in the attached document(s), complete details thereof, including the names of the competitors and the nature of, and reasons for, such consultations, communications, agreements or arrangements;
- 6 In particular, without limiting the generality of paragraphs (5)(a) or (5)(b) above, there has been no consultation, communication, agreement, or arrangement with any competitor regarding:
 - a) prices;
 - b) methods, factors or formulas used to calculate prices;
 - c) the intention or decision to submit, or not to submit, a tender; or
 - d) the submission of a tender which does not meet the specifications of the request for Tenders; except as specifically disclosed pursuant to paragraph (5)(b) above;
- 7 In addition, there has been no consultation, communication, agreement or arrangement with any competitor regarding the quality, quantity, specifications or delivery particulars of the works or services to which this request for tenders relates, except as specifically authorized by the procuring authority or as specifically disclosed pursuant to paragraph (5)(b) above;
- 8 the terms of the Tender have not been, and will not be, knowingly disclosed by the Tenderer, directly or indirectly, to any competitor, prior to the date and time of the official tender opening, or of the awarding of the Contract, whichever comes first, unless otherwise required by law or as specifically disclosed pursuant to paragraph (5)(b) above.

Name _____ Title __ Date _____

[Name, title and signature of authorized agent of Tenderer and Date].

C. SELF - DECLARATION FORMS

FORM SD1

SELF DECLARATION THAT THE PERSON/TENDERER IS NOT DEBARRED IN THE MATTER OF THE PUBLIC PROCUREMENT AND ASSET DISPOSAL ACT 2015.

I,, of Post Office Box being a resident of
..... in the Republic of do hereby make a statement as follows: -

1. THAT I am the Company Secretary/ Chief Executive/Managing Director/Principal Officer/Director of *(insert name of the Company)* who is a Bidder in respect of Tender No. for *(insert tender title/description)* for *(insert name of the Procuring entity)* and duly authorized and competent to make this statement.
2. THAT the aforesaid Bidder, its Directors and subcontractors have not been debarred from participating in procurement proceeding under Part IV of the Act.
3. THAT what is deponed to herein above is true to the best of my knowledge, information and belief.

..... (Title)
..... (Signature) (Date)

Bidder Official Stamp

FORM SD2

SELF DECLARATION THAT THE PERSON/TENDERER WILL NOT ENGAGE IN ANY CORRUPT OR FRAUDULENT PRACTICE

I, of P. O. Box being a resident of in the Republic of do hereby make a statement as follows: -

1. THAT I am the Chief Executive/Managing Director/Principal Officer/Director of (*insert name of the Company*) who is a Bidder in respect of Tender No. for (*insert tender title/description*) for (*insert name of the Procuring entity*) and duly authorized and competent to make this statement.

2. THAT the aforesaid Bidder, its servants and/or agents /subcontractors will not engage in any corrupt or fraudulent practice and has not been requested to pay any inducement to any member of the Board, Management, Staff and/or employees and/or agents of (*insert name of the Procuring entity*) which is the procuring entity.

3. THAT the aforesaid Bidder, its servants and/or agents /subcontractors have not offered any inducement to any member of the Board, Management, Staff and/or employees and/or agents of (name of the procuring entity)

4. THAT the aforesaid Bidder will not engage /has not engaged in any corrosive practice with other bidders participating in the subject tender

5. THAT what is deponed to herein above is true to the best of my knowledge information and belief.

.....
(Title)

.....
(Signature)

.....
(Date)

Bidder's Official Stamp

DECLARATION AND COMMITMENT TO THE CODE OF ETHICS

I (person) on behalf of (*Name of the Business/ Company/Firm*)
..... declare that I have read and fully understood the contents of the Public Procurement & Asset Disposal Act, 2015, Regulations and the Code of Ethics for persons participating in Public Procurement and Asset Disposal and my responsibilities under the Code.

I do hereby commit to abide by the provisions of the Code of Ethics for persons participating in Public Procurement and Asset Disposal.

Name of Authorized signatory..... Sign.....

Position.....

Office address..... Telephone.....

Email.....

Name of the Firm/Company.....

Date.....

(Company Seal/ Rubber Stamp where applicable)

Witness Name Sign.....

Date.....

D. APPENDIX 1- FRAUD AND CORRUPTION

1. Purpose

2. The Government of Kenya's Anti-Corruption and Economic Crime laws and their sanction's policies and procedures, Public Procurement and Asset Disposal Act (*no. 33 of 2015*) and its Regulation, and any other Kenya's Acts or Regulations related to Fraud and Corruption, and similar offences, shall apply with respect to Public Procurement Processes and Contracts that are governed by the laws of Kenya.

3. Requirements

The Government of Kenya requires that all parties including Procuring Entities, Tenderers, (applicants/proposers), Consultants, Contractors and Suppliers; any Sub-contractors, Sub-consultants, Service providers or Suppliers; any Agents (whether declared or not); and any of their Personnel, involved and engaged in procurement under Kenya's Laws and Regulation, observe the highest standard of ethics during the procurement process, selection and contract execution of all contracts, and refrain from Fraud and Corruption and fully comply with Kenya's laws and Regulations as per paragraphs 1.1 above.

Kenya's public procurement and asset disposal act (*no. 33 of 2015*) under Section 66 describes rules to be followed and actions to be taken in dealing with Corrupt, Coercive, Obstructive, Collusive or Fraudulent practices, and Conflicts of Interest in procurement including consequences for offences committed. A few of the provisions noted below highlight Kenya's policy of no tolerance for such practices and behavior: -

- 1) a person to whom this Act applies shall not be involved in any corrupt, coercive, obstructive, collusive or fraudulent practice; or conflicts of interest in any procurement or asset disposal proceeding;
- 2) A person referred to under subsection (1) who contravenes the provisions of that sub-section commits an offence;
- 3) Without limiting the generality of the subsection (1) and (2), the person shall be: -
 - a) disqualified from entering into a contract for a procurement or asset disposal proceeding; or
 - b) if a contract has already been entered into with the person, the contract shall be voidable;
- 4) The voiding of a contract by the procuring entity under subsection (7) does not limit any legal remedy the procuring entity may have;
- 5) An employee or agent of the procuring entity or a member of the Board or committee of the procuring entity who has a conflict of interest with respect to a procurement: -
 - a) shall not take part in the procurement proceedings;
 - b) shall not, after a procurement contract has been entered into, take part in any decision relating to the procurement or contract; and
- c) shall not be a subcontractor for the bidder to whom was awarded contract, or a member of the group of bidders to whom the contract was awarded, but the subcontractor appointed shall meet all the requirements of this Act.
- 6) An employee, agent or member described in subsection (1) who refrains from doing anything prohibited under that subsection, but for that subsection, would have been within his or her duties shall disclose the conflict of interest to the procuring entity;
- 7) If a person contravenes subsection (1) with respect to a conflict of interest described in subsection (5)(a) and the contract is awarded to the person or his relative or to another person in whom one of them had a direct or indirect pecuniary interest, the contract shall be terminated and all costs incurred by the public entity shall be made good by the awarding officer. Etc.

In compliance with Kenya's laws, regulations and policies mentioned above, the Procuring Entity:

- a) Defines broadly, for the purposes of the above provisions, the terms set forth below as follows:
 - i) "corrupt practice" is the offering, giving, receiving, or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;
 - ii) "fraudulent practice" is any act or omission, including misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain financial or other benefit or to avoid an obligation;

- iii) "collusive practice" is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;
 - iv) "coercive practice" is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;
 - v) "obstructive practice" is:
 - deliberately destroying, falsifying, altering, or concealing of evidence material to the investigation or making false statements to investigators in order to materially impede investigation by Public Procurement Regulatory Authority (PPRA) or any other appropriate authority appointed by Government of Kenya into allegations of a corrupt, fraudulent, coercive, or collusive practice; and/or threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or
 - acts intended to materially impede the exercise of the PPRA's or the appointed authority's inspection and audit rights provided for under paragraph 2.3 e. below.
- b) Defines more specifically, in accordance with the above procurement Act provisions set forth for fraudulent and collusive practices as follows:
- "fraudulent practice" includes a misrepresentation of fact in order to influence a procurement or disposal process or the exercise of a contract to the detriment of the procuring entity or the tenderer or the contractor, and includes collusive practices amongst tenderers prior to or after tender submission designed to establish tender prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.
- c) Rejects a proposal for award¹ of a contract if PPRA determines that the firm or individual recommended for award, any of its personnel, or its agents, or its sub-consultants, sub-contractors, service providers, suppliers and/ or their employees, has, directly or indirectly, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for the contract in question;
 - d) Pursuant to the Kenya's above stated Acts and Regulations, may sanction or recommend to appropriate authority (ies) for sanctioning and debarment of a firm or individual, as applicable under the Acts and Regulations;
 - e) Requires that a clause be included in Tender documents and Request for Proposal documents requiring (i) Tenderers (applicants/proposers), Consultants, Contractors, and Suppliers, and their Sub-contractors, Sub-consultants, Service providers, Suppliers, Agents personnel, permit the PPRA or any other appropriate authority appointed by Government of Kenya to inspect² all accounts, records and other documents relating to the procurement process, selection and/or contract execution, and to have them audited by auditors appointed by the PPRA or any other appropriate authority appointed by Government of Kenya; and
 - f) Pursuant to Section 62 of the above Act, requires Applicants/Tenderers to submit along with their Applications/Tenders/Proposals a "Self-Declaration Form" as included in the procurement document declaring that they and all parties involved in the procurement process and contract execution have not engaged/will not engage in any corrupt or fraudulent practices.

¹For the avoidance of doubt, a party's ineligibility to be awarded a contract shall include, without limitation, (i) applying for pre-qualification, expressing interest in a consultancy, and tendering, either directly or as a nominated sub-contractor, nominated consultant, nominated manufacturer or supplier, or nominated service provider, in respect of such contract, and (ii) entering into an addendum or amendment introducing a material modification to an existing contract.

² Inspections in this context usually are investigative (i.e., forensic) in nature. They involve fact-finding activities undertaken by the Investigating Authority or persons appointed by the Procuring Entity to address specific matters related to investigations/audits, such as evaluating the veracity of an allegation of possible Fraud and Corruption, through the appropriate mechanisms. Such activity includes but is not limited to: accessing and examining a firm's or individual's financial records and information, and making copies thereof as relevant; accessing and examining any other documents, data and information (whether in hard copy or electronic format) deemed relevant for the investigation/audit, and making copies thereof as relevant; interviewing staff and other relevant individuals; performing physical inspections and site visits; and obtaining third party verification of information.

FORM OF TENDER SECURITY- [Option 1–Demand Bank Guarantee]

Beneficiary: _____

Request for Tenders No:

Date: _____ **TENDER GUARANTEE No:** _____

Guarantor: _____

1. We have been informed that _____ (herein after called "the Applicant") has submitted or will submit to the Beneficiary its Tender (herein after called "the Tender") for the execution of _____ under Request for Tenders No. _____ ("the ITT").
2. Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.
3. At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (_____) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:
 - (a) has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Applicant; or
 - b) having been notified of the acceptance of its Tender by the Beneficiary during the Tender Validity Period or any extension there to provide by the Applicant, (i) has failed to execute the contract agreement, or (ii) has failed to furnish the Performance.
4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) thirty days after the end of the Tender Validity Period.
5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

[signature(s)]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

FORMAT OF TENDER SECURITY [Option 2–Insurance Guarantee]

TENDER GUARANTEE No.: _____

1. Whereas [*Name of the tenderer*] (hereinafter called "the tenderer") has submitted its tender dated [*Date of submission of tender*] for the [*Name and/or description of the tender*] (hereinafter called "the Tender") for the execution of _____ under Request for Tenders No. _____ ("the ITT").
2. KNOW ALL PEOPLE by these presents that WE of [**Name of Insurance Company**] having our registered office at (hereinafter called "the Guarantor"), are bound unto [*Name of Procuring Entity*] (hereinafter called "the Procuring Entity") in the sum of (Currency and guarantee amount) for which payment well and truly to be made to the said Procuring Entity, the Guarantor binds itself, its successors and assigns, jointly and severally, firmly by these presents.

Sealed with the Common Seal of the said Guarantor this ____ day of _____ 20 __.

3. NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the Applicant:
 - a) has withdrawn its Tender during the period of Tender validity set forth in the Principal's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Principal; or
 - b) having been notified of the acceptance of its Tender by the Procuring Entity during the Tender Validity Period or any extension thereto provided by the Principal; (i) failed to execute the Contract agreement; or (ii) has failed to furnish the Performance Security, in accordance with the Instructions to tenderers ("ITT") of the Procuring Entity's Tendering document.

Then the guarantee undertakes to immediately pay to the Procuring Entity up to the above amount upon receipt of the Procuring Entity's first written demand, without the Procuring Entity having to substantiate its demand, provided that in its demand the Procuring Entity shall state that the demand arises from the occurrence of any of the above events, specifying which event(s) has occurred.

4. This guarantee will expire: (a) if the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or (b) if the Applicant is not the successful Tenderer, upon the earlier of (i) our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or (ii) twenty-eight days after the end of the Tender Validity Period.
5. Consequently, any demand for payment under this guarantee must be received by us at the office indicated above on or before that date.

[Date]

[Witness]

[Signature of the Guarantor]

[Seal]

Note: All italicized text is for use in preparing this form and shall be deleted from the final product.

TENDER-SECURING DECLARATION FORM

[The Bidder shall complete this Form in accordance with the instructions indicated]

Date:*[insert date (as day, month and year) of Tender Submission]*

Tender No.:*[insert number of tendering process]*

To:*[insert complete name of Purchaser]* I/We, the undersigned, declare that:

- 1. I/We understand that, according to your conditions, bids must be supported by a Tender-Securing Declaration.
- 2. I/We accept that I/we will automatically be suspended from being eligible for tendering in any contract with the Purchaser for the period of time of _____
[insert number of months or years] starting on _____*[insert date]*, if we are in breach of our obligation(s) under the bid conditions, because we – (a) have withdrawn our tender during the period of tender validity specified by us in the Tendering Data Sheet; or (b) having been notified of the acceptance of our Bid by the Purchaser during the period of bid validity, (i) fail or refuse to execute the Contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the instructions to tenders.
- 3. I/We understand that this Tender Securing Declaration shall expire if we are not the successful Tenderer(s), upon the earlier of:
 - a) our receipt of a copy of your notification of the name of the successful Tenderer; or
 - b) thirty days after the expiration of our Tender.
- 4. I/We understand that if I am/we are/in a Joint Venture, the Tender Securing Declaration must be in the name of the Joint Venture that submits the bid, and the Joint Venture has not been legally constituted at the time of bidding, the Tender Securing Declaration shall be in the names of all future partners as named in the letter of intent.

Signed:

Capacity/title (director or partner or sole proprietor, etc.):.....

Name:

Duly authorized to sign the bid for and on behalf of: *[insert complete name of Tenderer]*

Dated on day of *[Insert date of signing]*

Seal or stamp

SITE VISIT FORM

NAME OF SITE: REINSURANCE PLAZA KISUMU

This is to confirm that

MR /MRS /MISS of ID NUMBER
..... AND COMPANY

of the postal address has visited **Reinsurance Plaza Kisumu** for the purpose of

getting details for the tender **KRC/1893/2022/204 FOR PROPOSED
INTEGRATED SECURITY MANAGEMENT SYSTEMS AT REINSURANCE PLAZA KISUMU**

Signature of Tenderers Representative Date

For Kenya Reinsurance Corporation Ltd.

Name.....

Signature

Date.....

**ENSURE CV & ACADEMIC CERTIFICATES OF THE TECHNICAL PERSON VISITING SITE IS ATTACHED IN THE
TECHNICAL PROPOSAL & COPY OF THEIR IDENTIFICATION DOCUMENT**

Appendix to Tender

Schedule of Currency requirements

Summary of currencies of the Tender for _____ *[insert name of Section of the Works]*

Name of currency	Amounts payable
Local currency: _____	
Foreign currency #1: _____	
Foreign currency #2: _____	
Foreign currency #3: _____	
Provisional sums expressed in local currency _____	[To be entered by the Procuring Entity]

PART II - WORK REQUIREMENTS

SECTION V - DRAWINGS

DRAWINGS USED IN THE PREPARTION OF THESE BILLS ARE: -

ARCHITECTURAL DRAWINGS

- a) Control room floor plan
- b) Control room ceiling plan
- c) Management office floor plan
- d) Management office ceiling plan
- e) Door schedules

SECURITY SYTEM INSTALLATION DRAWINGS

- a) Ground floor plan
- b) First floor -floor plan
- c) Second floor -floor plan
- d) Third floor -floor plan
- e) Fourth floor- floor plan
- f) Fifth floor -floor plan
- g) Sixth floor- floor plan
- h) Seventh floor -floor plan

SECTION VI – SPECIFICATIONS

TECHNICAL SPECIFICATIONS FOR SECURITY INSTALLATIONS

Acronyms

Ref#	Acronyms	Description
1	ACP	Access Control Panel
2	ACS	Access Control System
3	API	Application Program Interface
4	BACnet	Building Automation and Control network
5	BMS	Building Management Systems
6	BDRM	Boarding Deplaning Route Management
7	CCR	Central Control Room
8	CCTV	Closed Circuit Television
9	CMS	Card management System
10	DIU	Door Interface Unit
11	DVR	Digital Video Recorders
12	FS	Fire System
13	HLI	High Level Interface
14	IDS	Intrusion Detection System
15	IP	Internet Protocol
16	ISMS	Integrated Security Management Systems
17	LCD	Liquid Crystal Display
18	LCD Reader	Card Reader with built in LCD display
19	LDAP	Lightweight Directory Access Protocol
20	NVR	Network Video Recorders
21	PACS	Physical Access Control System
22	PoE	Power Over Ethernet
23	PLB	Passenger Loading Bridge
24	PSIM	Physical Security Information Management
25	PSU	Power Supply Unit
26	PTZ	Pan - Tilt - Zoom
27	REX	Request to Exit or push button egress
28	SCC	Security Control Centre
29	SCR	Security Control Room
30	SDK	Software Development Kit
31	SMS	Security Managements System
32	SPL	Stored Procedure Language
33	SSO	Single Sign On
34	T&A	Time and Attendance
35	UDP	User Datagram Protocol
36	VIPPS	Visual Imaging and Pass Production
37	VMS	Video Management System
38	VS	Visitor System or ACS Visitor Enrolment System

SCOPE OF WORKS

The installation shall be a fully operational security solution with all hardware, software, software licenses and system programming to provide a fully operational system, with a complete installation of finished work thoroughly tested, with all necessary training of operations staff ready for operation.

The scope of works includes the following:

1. Supply, installation, cabling and configuration of the entire system. Unless documented as 'Works by Others', the Security Integration Contractor shall be responsible to provide all elements required for the satisfactory completion of the works.
2. Unless specified otherwise, the term 'provide' includes design, document, procure, modify, fabricate, supply, deliver, store, cable, install, conduit, configure, clean, maintain, test, commission, co-ordinate with others and all other actions required for the satisfactory completion of the works.
3. It shall be the responsibility of the selected Contractor to undertake contractual agreements with any additional trades required to deliver these works and to ensure that the works are compatible with the requirements of this specification.
4. The Security Integration Contractor to provide Workshop Drawings for approval, Commissioning results, As-Built Drawings, Operation and Maintenance Manuals

SECTION 1.

1. Integrated systems

1.1. Overview of integrated systems

1.1.1. This section covers the external system interfaces that must exist between the system and other systems.

- a) Access Control Systems (ACS)
- b) Networked Video Recorders (NVR)
- c) Fire Detection Systems (FDS)
- d) Intrusion Detection Systems (IDS)
- e) Perimeter Intrusion Detection Systems (PIDS)
- f) Intercom
- g) Guard Tour
- h) Generic Lift or Elevator interface
- i) Active Directory & LDAP interface
- j) Building Management Systems (BMS)

1.2. Access Control Systems (ACS)

1.2.1. The SMS system shall feature an integral access control system.

- a) The ACS shall have a physical capacity of 65,536 Ethernet card reader pairs (Entry/Exit) per database server.
- b) The ACS shall support an integral generic lift control system. Serial I/O controllers and card readers are acceptable for Lift Access Control interfaces.
- c) The ACS Ethernet reader range must include a portable hand held reader option. Use of third party mobile readers or readers requiring separate or duplicate enrolment shall not be acceptable.
- d) The ACS Ethernet reader range must include a touch screen reader option.

1.3. Network Video Recorders (NVR)

- a) The system should provide high level integrations with CCTV/DVR/NVR systems allowing for live camera call up and playback of recorded video footage.
- b) Alarm events should have the ability to trigger or tag video footage and this footage played back within the access control system.
- c) There should be the ability to place camera icons onto the monitoring systems graphical map display. The operator must be able to view a live video feed by selecting the camera icon from within the map.
- d) A Video Popup application will allow instant live footage to be displayed upon certain alarms. The Video Popup application should utilize a queuing system based on priorities, allowing the system operator to view the live alarm footage in a structured fashion.
- e) The system should also receive alarms from the video system such as video analytics.

1.4. Fire Systems (FS)

1.4.1. The system shall provide high level integrations with fire detection systems.

- a) Received FS events must be able to be included into the monitoring and reporting applications by the SMS, and can be automatically forwarded onto other integrated systems.
- b) FS alarms shall be incorporated into the SMS alarm event display in real time. The ability to place FS icons onto the monitoring system graphical maps to show event locations shall be supported.
- c) The protocol used should be based on industry standard BACnet.
- d) The central monitoring system (SMS/ACS) shall have the ability to trigger or tag video alarm footage on an integrated CCTV/DVR/NVR system.

1.5. Intrusion Detection Systems (IDS)

1.5.1. The system manufacturer shall include a choice of OEM Ethernet I/O controllers; the I/O controllers must be integral to the host system. A minimum of eight inputs and four outputs is required.

1.5.2. The system shall provide high level integrations via Ethernet with Intruder Detection systems including DSC Dimension and/or Honeywell Galaxy panels.

- a) Received IDS events must be able to be included into the monitoring and reporting applications by the SMS, and can be automatically forwarded onto other integrated systems.
- b) Alarms from the IDS should have the ability to trigger video pop up and tag video alarm footage on an integrated CCTV/DVR/NVR system.
- c) IDS alarms shall be incorporated into the SMS alarm event display in real time. IDS icons must show event locations on the monitoring system's graphical maps.
- d) The system shall provide an integral system software application used to Arm/Disarm and reset alarms, or be the ability to display a virtual keypad (if supported by the intruder detection system interface) to allow full usage of keypad features and functionality.

1.6. Perimeter Intrusion Detection Systems (PIDS)

- a) High level integrations with PIDS systems including FFT CAMS systems must be supported.
- b) PIDS alarms shall be incorporated into the SMS alarm event display in real time. The ability to import perimeter icons onto the monitoring system's graphical maps to show event locations must be supported.
- c) Alarms acknowledged or cancelled on the SMS shall also be automatically cancelled on the PIDS. The requirement to manually acknowledge or cancel alarms on the both the SMS and PIDS system will not be acceptable.
- d) Alarms from the Perimeter Detection system should have the ability to trigger or tag video alarm footage on an integrated CCTV/DVR/NVR system.

1.7. Intercom

1.7.1. The system shall supply integral Intercom system software as standard. Systems that require additional costs or integration development for Intercom system integration by others shall not be considered.

- a) The intercom software shall provide support for a multi-functional Ethernet field device featuring intercom, card reader and scramble keypad.
- b) VoIP Intercom functionality that utilises a built in microphone and speaker to allow for two-way conversation between nominated workstations or field intercom units.
- c) Support for a number of station calling options must include as a minimum;
 - Multi-functional Intercom field unit to workstation
 - workstation call to one or more multi-functional Ethernet intercom stations simultaneously
 - Workstation to workstation intercom calls via VoIP
- d) Voice communication methods other than VoIP will not be acceptable.
- e) In the event of an intercom request, the option to automatically display a live video feed via video popup on the operator workstation must be supported. The live video feed will display the vicinity of the intercom terminal. The live video shall be provided by an integrated NVR system.

1.8. Guard Tour

1.8.1. The system shall provide an integral Guard Tour application to enable the configuration and reporting of guard tours throughout the site. Systems that do not provide an OEM Guard Tour application as standard shall not be considered.

- a) Card Holders or Guards shall be assigned to Guard tours set up by the system administrator. The named tours will consist of a start time and set time period for each waypoint configured on the tour.
- b) If the Guard does not swipe at a waypoint within the due times set by the guard tour administrator a notification shall appear on the central control monitoring system.
- c) Guard tour waypoints can be either access control readers (combined with a card transaction) and/or monitored system inputs, e.g. PIR or turnkey sensors.
- d) A tour can be suspended only by an administrator or supervisor.
- e) The guard tour application shall have a reporting function. Reports shall include:-
 - Guard Tour Name
 - Guards Name
 - Alarm Event – e.g. Tour Not Started, waypoint missed etc
 - Waypoint location, date and time

1.9. Lift or elevator interface

- a) The ACS shall support an integral generic lift control system. Serial I/O controllers and card readers are acceptable for generic Lift Access Control interfaces.
- b) The lift interface shall limit access to floors in a building depending on access permissions.

1.10. Building Management Systems (BMS)

1.10.1. The system shall provide a bi-directional BACnet interface.

1.11. System software interface tools

The system shall provide a number of integral software development tools.

1.11.1. Application Programming Interface (API)

a) The system API provides a way to interface a 3rd party system.

The API as a minimum shall enable application developers to:-

- Create, Edit, and Delete cardholder information, including photographic image and signature
- Create, Edit, and Delete visitor card information
- Create, Edit, and Delete vehicle card information
- Acknowledge and Cancel alarms
- Remotely open access control doors (either based on configured door open time or extended opening)
- Remotely switch outputs on field devices

b) Usage of the API should be via Stored Procedure Language (SPL) allowing 3rd party application developers to connect to the system database using ODBC or JDBC to execute the SPL stored procedures.

1.11.2. External systems interface tool shall be provided.

a) The external systems application will allow the user to specify a number of ASCII strings that are to be exported from the system on the event of an alarm.

b) ASCII strings shall be exported to a system connected to the Access Control central database server via Ethernet or RS232.

c) Additional strings shall be sent when a system alarm is acknowledged or cancelled.

1.11.3. Active Directory LDAP Synchronisation

a) The integration must process additions, updates, and deletions on a scheduled basis allowing the Microsoft Active Directory service to centrally manage cardholder access control details.

b) Synchronization should be configurable for hourly or daily updates, with the ability to specify exact time intervals and days of the week.

c) Configuration of the directory synchronization must be carried out using a built in web based interface to the central server.

2. Reporting Tools

2.1. Report tools

2.1.1. Reports shall be accessible via workstation application tools and/or web browser clients.

2.1.2. The operator shall determine report parameters based on simple pick lists available for each individual report menu. Systems requiring the user to type complicated search strings will not be acceptable.

2.1.3. Standard system reports shall include

- Access Level changes
- Alarm Reports

- Transaction Reports
- First & Last transaction report
- Guard Tour
- Device Reports
- Device Access Report
- Device configuration reports
- Personnel Reports
- Card parking Reports
- Absentee Report

2.1.4. Custom reports

- a) The integral web-based report designer will provide a graphical query tool, based on simple pick lists available for each individual report menu enabling users to select data from tables and fields within the system database. Systems requiring third party reporting tools or a command line user interface for custom reports shall not be considered.
- b) Reports including custom user reports shall be exportable, either as an electronic file or automatically as an email attachment.
- c) All reports including custom user reports can be scheduled on a daily, weekly or monthly basis.

2.1.5. A web based system dashboard shall provide an instant system status overview

- a) Access to the web dashboard should be via secure web session using HTTPS/SSL and a unique username and password.
- b) Multiple data displayed should be in widget or module format allowing the user to minimize, edit, or delete widgets dynamically. The system must support the ability to assign access to certain widgets/modules to certain users. Systems without the ability to assign certain widgets/modules to certain users will not be considered.
- c) The dashboard can display data in multiple formats such as bar, line, and pie charts, and tabular formats.
- d) Data displayed should include as a minimum: -
 - Card Swipes
 - Zones Swipes
 - Cards Parked
 - Zone Occupancy
 - Top Alarms
 - Type of Cards Issued and their status
 - Licensing
 - Diagnostics
 - Users logged on
 - Invalid Swipe Analysis
 - Average Alarm Acknowledgement/Cancel
 - Locked Out Accounts

2.1.6. Short reports shall be accessible from within some applications to give relevant instant quick reports.

2.1.7. Tools to create custom reports configured by the end user must be provided. Custom reports once created can be saved. Saved reports can be added to the report scheduling table.

2.1.8. The system data shall not be accessible via industry standard query tools unless secure login credentials are provided.

2.1.9. The system reports shall provide means to access system audit reports. System audit reports shall include all system operator actions recorded by the database and shall include as a minimum Personnel updates, changes to access levels and device configuration updates and any other user updates affecting system policy administration on the system database.

2.1.10. Report Scheduling

- a) The system shall provide a report scheduling tool that allows the user to save report criteria including start time, start date, frequency to run reports, file name and file format.
- b) Scheduled reports will be saved with a unique filename which will include the date and time the report was ran for easy identification.

2.1.11. The system will allow an optional global server to gather cardholder details, transaction and alarms from other similar sites for global alarm and transaction reports.

SECTION 2.

ACCESS CONTROL SYSTEM (ACS)

3. Personnel data, credential management and enrolment

3.1. Visitor management system (VMS)

- 3.1.1. A fully integrated Visitor Management System (VMS) shall provide the ability to register, badge, track and manage visitor traffic.
- 3.1.2. Visitor registration shall be quick and simple and performed at a security workstation.
- 3.1.3. The VMS shall have the capacity to:
 - a) Pre-register expected visitors through a simple web interface.
 - b) Scan arriving visitors Photo ID.
 - c) Capture visitor's photo and/or signature.
 - d) Automatically identify returning visitors, expected visitors and visitors on a watch list;
 - e) Track assigned visitor access cards;
 - f) Check for visitors requiring special approval;
 - g) Print professional colour visitor passes with expiration date, visit area, host being visited and visit purpose;
 - h) Allocate appropriate access restrictions such as clearance level, access area or visit expiry time.
 - i) Automatically notify the host employee of a visitor's arrival using phone, email or realtime network messaging;
 - j) Integrate with access control systems to manage cardholders as hosts and provides access cards to visitors;
 - k) Easily and quickly generate detailed reports of visitor traffic by employee, department or building;
 - l) Sign out the visitor at the end of the visit, or in case the visitor does not sign out, notify the guardhouse, so the guard can check if the visitor has left the site.
- 3.1.4. The VMS will be part of the SMS and fully integrate with the access control system to assist in the production of access cards to those visitors that have been authorised.
- 3.1.5. Issue of Day Passes
- 3.1.6. The SMS shall incorporate a facility for the management and issues of temporary "day pass" access cards for authorised visitors, contractors and staff who have forgotten their card.
- 3.1.7. The system shall:
- 3.1.8. Use a number of pre-programmed access cards with defined, but limited, access privileges shall be issued as temporary day passes.
- 3.1.9. All such temporary access cards shall automatically expire at midnight (or some other global programmed time), after which time all access shall be denied.
- 3.1.10. As part of the registration process, the operator shall have the option to set an individual expiry time, which occurs before the global expiry time (e.g. midday instead of midnight).
- 3.1.11. The temporary cards will remain inactive until activated by an authorised operator as part of the visitor/contractor registration process.
- 3.1.12. The registration and card issues process shall involve:

3.1.13. Verification of the person's identification and purpose on-site

3.1.14. Entry of the persons details into the system; and if subsequently required

3.1.15. Capture and storage of a photo of the person.

- a) The information for such people shall be retained on the system for a period of not less than six (6) months. For regular visitors it shall be possible to retrieve the previously entered information to speed up the registration process.
- b) The name of the temporary cardholder (and any other relevant details) shall be recorded and retained in the system history files. (i.e. The system history files shall not just record the card ID number and rely on the system database to retrieve the person's name and details.) In this manner it shall be possible to search the history files for all activities associated with a specific person/visitor regardless of which temporary card they were issued on specific days.
- c) The system shall provide a facility to monitor the frequency of temporary access cards being issued to staff. The system shall permit the required period (e.g. 30 days), and number of times during that period, that it is acceptable for staff to be issued with temporary day passes. Once the number is exceeded the system shall automatically send a detailed violation report to designated managers, via e-mail, for their action.
- d) A biometric fingerprint reader shall be installed with a centralised database that shall be used to verify the identity of staff who arrive without their access card. Use of the biometric reader shall display the matching photo and details from the cardholder database for manual verification. The staff information from the cardholder database shall be automatically transferred to the relevant fields required for the issue of a temporary day pass.

3.1.16. This requirement/system is not to be confused with, or replace the fingerprint readers associated with higher security areas with the biometric information stored on the smartcard)

- a) The system shall enable a Color label printer to be installed, to enable photo ID labels/cards to be printed and issued with the temporary access card

4. ACS card types and other credential specifications

4.1. Readers and Cards Overview

4.1.1. Although some slight differences in configuration of the system can be expected depending upon which product is chosen, the system must operate in a substantially identical manner from the point of view of the user. It must be possible to mix different card readers, as well as card formats into the same system.

4.1.2. Wiegand card readers should be avoided. Wiegand connectivity for the majority of card readers located at standard doors shall not be used.

4.1.3. It must be possible to combine different card readers as well as card formats on the same door controller.

4.1.4. As a minimum, the following reader types shall be supported in each Access Control Panel (The ACS shall support all of the following access control readers, devices and card technologies):

- a) Contactless card readers
- b) Biometric technology
- c) Long range readers

4.2. Card Types & other credential media

4.2.1. To avoid card cloning, a secure card technology that protects the transmission of data between the card and the reader should be used.

- a) Card technologies providing a reduced level of security are not acceptable.

4.2.2. A smartcard utility shall allow the owner to securely define, manage, and encode card reader and blank DESfire EV2 smartcards with user defined encryption keysets.

- a) Keysets shall be downloaded via a secure Ethernet network to all host system readers.
- b) A fail-safe solution is also provided in the form of a “Key Rolling” feature. Key rolling involves the smart card utility providing an additional secondary keyset, which is also encoded during the smartcard encoding/enrolment process.
- c) The secondary/redundant keyset, with its own unique encryption keys, can be implemented if necessary without needing to reprogram or re-issue current cards.
- d) System host readers will be updated via the secure Ethernet network to begin utilising the secondary keysets encryption keys.

4.3. Card Technology specifications

4.3.1. The system must be capable of supporting all card technologies such as MiFare, iClass, iClass SE and MiFare DesFire EV1.

- a) The system must support a choice between Triple DESFire (3DES) and 128 AES card encryption and verification.
- b) Card technology must conform to ISO/IEC 14443 Type A or ISO15693 standard

4.3.2. High security card requirements

- a) The card type shall be MIFARE DESFire EV1.
- b) Mifare systems compliant only to ISO/IEC 14443 1-3 standard are not acceptable, and will be noted as non-compliant.

4.3.3. Systems relying on facility code to enable a cardholder access when a field device is off-line to its host controller shall not be considered.

4.3.4. A wide variety of card formats must be able to be read by reader type. The reader or reader controller must be able to simultaneously support up to five different card formats. Multi format capability shall be supported via downloadable card definitions or the like. On-line readers or reader controllers requiring local reconfiguring with programme cards or the like shall not be considered.

4.4. Biometric Credentials

4.4.1. The Access Control system must incorporate an integral biometric template enrolment system. These biometric technologies include, but may not be limited to: -

- Card and Finger print recognition
- Card and finger vein recognition
- Photograph on swipe

4.4.2. Fingerprint biometric templates shall be distributed via the network to the Ethernet fingerprint readers. Biometric templates will be distributed using the same network as that used for the access control data to each reader. A separate network for the biometric system will not be acceptable.

4.4.3. Each Ethernet card & fingerprint reader shall be able to store up to 123,000 biometric templates in its on-board database, and have the ability to store up to 8,000 offline transactions.

4.4.4. The Ethernet card & fingerprint reader shall be a fully integrated device, housing the fingerprint scanning module, LCD display, keypad, and all associated connections in a single compact enclosure.

4.4.5. Card enrolment with Fingerprint

- a) Biometric templates and enrolment shall be integral the system avoiding the requirement to enrol on two systems. Standalone software for the biometric system will not be acceptable.
- b) Encoded Fingerprint template enrolment onto the access control system shall be via Ethernet, and be secured with at least RC4 encryption.
- c) The system must include an integral method to create two separate encoded templates generated by a card holder's fingerprint for each card holder in the system.
- d) In the event a card is lost or damaged, the card holder shall not need to return to the enrolment station to have a new card issued.

4.4.6. Card and finger vein solution

- a) The system shall feature an integral card and finger vein solution.
- b) Finger vein templates and enrolment shall be via the host system avoiding the requirement to enrol on two systems. Standalone software for the finger vein system or enrolment will not be acceptable.

5. Access Control System (ACS) requirements

5.1. ACS general description

5.1.1. General ACS functionality

- a) The system shall be a fully integrated Access Control, alarm processing and photo badging system. It shall utilise a fully integrated badging production system and biometric template management.
- b) The system shall have the flexibility to accommodate both enterprise-class server computer equipment and smaller-scale PC based computer equipment, depending upon site requirements.
- c) Except for access tokens, PC computer hardware equipment and integrated systems the ACS system components supplied shall be by one system manufacturer. Use of readers and reader controller panels by others must be approved.
- d) The ACS reader equipment shall be hosted on an integrated Ethernet network. Use of bespoke network connection protocols and interposing 3rd party signal converters shall be avoided

5.1.2. The system must feature a route management capability. A card reader's Route Management graphical interface will enable special card holders to select a route made up of several doors on a route, either by unlocking, or interlocking those doors on the route.

- a) The card holder will be able to configure a time duration at the door for their selected route.
- b) The route management capability will be configured by the end user using a web interface integral to the host system.
- c) Active routes shall dynamically be displayed on the centralised graphical map.
- d) The illustrated route shall be capable of being illustrated by means of

5.1.3. The ACS system must include the option of an integral Room booking capability linked to MS Outlook.

- a) If the room is free, the reader should also provide an instant on-board room booking interface.
- b) If the room is free, the reader should also provide an instant on-board room booking interface.
- c) The room booking feature will be connected to the MS Outlook Meeting Room interface.

5.1.4. High level interface(s)

- a) Provide dedicated high level interface devices to directly connect the following equipment to the LAN communication network so that such equipment becomes an extension of the Access Control & Alarm Monitoring System.
- b) All interfaces shall be through software application interface. If hardware or hardware accessories are needed, it shall be clearly indicated with detailed installation and specification requirements.
- c) The Access Control & Alarm Monitoring System shall have all needed interfaces with the following systems:
 - Integrated Security Management System
 - Closed Circuit Television System
 - Fire Detection & Alarm System
 - Intrusion Detection System

5.1.5. The system shall provide anti-pass back (APB) features, including global APB control. APB must support as standard:

- a) User settings for timeout of a card holder's APB.

- b) Soft anti-pass back for selected devices. In this case, selected devices shall be one or more individual readers within the zone, leaving other readers in the zone with full anti-pass back user requirements.
- 5.1.6. The system must provide an integral software tool designed to reduce or eliminate tail-gating. Restricting or denying access to a card holder will happen automatically if they have entered a zone without a valid card transaction on an IN reader.
- 5.1.7. The system must not rely solely on a facility or site code to enable a cardholder access when a field device is off-line to its host controller.

5.2. ACS system computer equipment

5.2.1. All alarm monitoring system equipment shall be fed from Uninterruptible Power Supply (UPS) panels.

5.2.2. ACS system server

- a) The Access Control central server shall run under a mission critical operating platform such as Linux® 64bit OS. Servers requiring an additional Windows operating system licence will not be considered. The server shall use an IBM Informix®, PostgreSQL or similar database engine.
- b) The central database server database can be maintained by a number of client Windows 7 or 10 (32bit and 64bit) PC workstations connected over Ethernet. The system shall also support web based applications.

5.2.3. Virtualisation

- a) SMS/ACS system server must be supported within a managed virtual application manager environment as an option.

5.2.4. ACS workstations

- a) ACS workstations connected to the central server shall run under Microsoft Windows® 7 or 10 (32bit and 64bit) and will connect to the central server over an ODBC connection.

5.2.5. Ethernet reader controller

- a) Each Ethernet reader controller can support 256 doors, each door can be fitted with one read in/read out Ethernet card reader pair. Thus each Ethernet reader controller can support a minimum of 512 readers.
- b) Up to 256 Ethernet reader controllers can be added to the system, allowing over 65,000 doors for each central system server.
- c) The Ethernet reader controller shall respond to card access requests in real-time.
- d) The Ethernet Reader Controller shall be capable of operating independently from the central system database computer should normal communications between the two be lost.
- e) All transaction and alarm data shall be forwarded to the central database server once communications are re-established.
- f) The Ethernet reader controller must be capable of storing over one million off-line transaction details within the Ethernet Reader Controller off-line database.
- g) Any relevant system updates that have taken place on the central database computer while the Ethernet reader controller offline operation must be automatically transmitted to the Ethernet reader controller without user intervention.

5.2.6. The system must support a multisite capability, linking together an unlimited number of system servers or controllers from different locations.

- a) Linked systems must be able to exchange cardholder details, including photographic image, from their home site to other sites on the company network.

- b) Inversely, when a cardholder is removed or cancelled from their home site their privileges should also be removed from all the other sites they were linked to, thus they no longer can gain access to any site.
- c) As an option, the system will allow for a global server to gather cardholder details, transaction and alarms from all of the sites for reporting.
- d) World time zones. The system will be capable of linking an unlimited number of Ethernet reader controllers located in different time zones. Global alarm reports must reflect correct local event times.

6. ACS card readers

General Card Reader Requirements

All contactless access card readers shall:

- 6.1.1. Be robust and of a neat low profile;
- 6.1.2. Be sealed against any contamination;
- 6.1.3. Be vandal resistant, including the use of security fixings;
- 6.1.4. Provide a minimum read range of 75 mm (300 mm in the case of long range readers);
- 6.1.5. Complete authentication of any supported card format within 150ms.
- 6.1.6. Provide an audible and visual indication of a valid, invalid and faulty card read;
- 6.1.7. Be capable of reading any security system access control card
- 6.1.8. Utilise an open but secure format protocol such as OSDP v2 to communicate with the access control panel, i.e. it must be non-proprietary and made available to any supplier
- 6.1.9. Be rated to IP65 when installed outside or in locations where they may be exposed to the weather, water and the like; and
- 6.1.10. Incorporate an integrated numeric keypad, if necessary, as indicated by the drawings, scope of works and/or equipment schedules.
- 6.1.11. Have the ability for dual credential (card and PIN – via numeric keypad) on designated locations as indicated on the drawings.
- 6.1.12. Where card readers are installed with a numeric keypad, the system shall provide a card reader duress alarm feature, whereby a predetermined change to the correct PIN (e.g.: incrementing the last digit by 1 (i.e.: 1 becomes 2, 3 becomes 4) will result in a keypad duress alarm being generated.
- 6.1.13. In general, the centre line of the access reader shall be installed at the same height as the centre line of the lock/latch assembly for the associated
- 6.1.14. Electrical Supply (non PoE)
 - a) A Power Supply Unit (PSU) sufficient to supply 12VDC to the access control equipment is to be provided at the access controlled door. Where a 24VDC lock is fitted at a door an additional 24VDC supply must also be provided at the access controlled door. (4 Amp or 50W-60W PSU recommended).
 - b) Mains supply, containment and termination to be provided by others.
 - c) All of the access ACS field equipment shall be fed from Uninterruptible Power Supply (UPS) units or the ACS field equipment shall feature built in PSUs with battery management fitted with Mains Fail output, fitted locally at the point of entry.
 - d) Batteries to be supplied by others at the access controlled door to maintain a minimum of 4 hours off-line operation of the complete access control door set in the event of a power outage.

6.1.15. PoE Electrical supply

- a) A PoE+ (IEEE 802.3at) injector sufficient to deliver data and power (12VDC) at 25.5W (installed at a secure location within 90m of the access controlled door) thereby energizing the complete access control door set at each access controlled door.
- b) Only 12VDC locks shall be used with PoE+ access control equipment.
- c) Mains supply, containment and termination to be provided by others.
- d) All of the access PoE ACS field equipment shall be fitted with Uninterruptible Power Supply (UPS) units.
- e) Batteries to be supplied by others at the access controlled door to maintain a minimum of 4 hours off-line operation of the complete access control door set in the event of a power outage.

6.1.16. Devices installation

- a) Door controllers or Door Interface Units (PoE or non-PoE) shall be fitted at the secure location near the access control door.
- b) Electrical supply, containment and termination for the ACS to be provided by others.
- c) All of the access ACS field equipment shall be fed from Uninterruptible Power Supply (UPS) units or the ACS field equipment shall feature built in PSUs with battery management fitted with Mains Fail output, fitted locally at the point of entry.
- d) Batteries to be supplied by others. Batteries at the access controlled door to maintain a minimum of 4 hours off-line operation of the complete access control door set in the event of a power outage.

6.1.17. Card read head technologies

The Access Control system shall have the capability to support currently available ID card technologies. The systems may be single technology, or a combination of technologies.

6.1.18. The ACS readers shall be Ethernet, where serial readers must be used due to existing cable requirements for example; an OEM Ethernet to Serial converter shall be used. The signal converter shall be manufactured by the same manufacturer as ACS system. Use of third party Ethernet to serial converters shall not be considered.

6.2. Ethernet panel door controller with OSDP readers

6.2.1. The Ethernet Door Controller will be responsible for: -

- a) The control of either one or two complete access control door sets, including all door furniture to include magnetic locks, two external OSDP card readers, REX buttons, door sense contact inputs and lock sense contact inputs.
- b) Single door control via a serial card reader for entry and serial card reader for exit, or two door control via single serial card reader for entry and REX button for exit for each door.
- c) The Ethernet door controller will provide the following functionality: -
 - For off-line used an internal database with support for up at least 200,000 card holder records and 50,000 offline transactions. When the door panel is online transactions will be verified by the host Ethernet reader controller.
 - An off-line database in the process of being updated or otherwise incomplete shall not interfere with current online access control requests or alarm event reporting.

6.2.2. Ethernet door control panel hardware specification

- a) Eight monitored inputs with tamper detect.
- b) Physical inputs and outputs not being used for Door Control must be available for general purpose use. User configurable alarms and event management must be supported.
- c) Two 12V open collector outputs limited to 1.5A, and two relays rated at 30V@5A.
- d) On board 10/100 Mbps Ethernet connectivity without the use of any extra converters or 3rd party equipment. Ethernet communications to the host controller shall be encrypted to 128bit RC4.
- e) Be supplied as an enclosure mounted unit with tamper protection.
- f) All of the access ACS field equipment shall be fed from Uninterruptible Power Supply (UPS) units or the door control panel shall feature built in PSUs with battery management fitted with Mains Fail output, fitted locally at the point of entry.
- g) Support two OSDP interfaces (data/data) for 3rd party card read heads.

6.2.3. Support for on-board card technologies must include but not limited to; HID 26 bit, 34 Bit Mifare, HID Corporate1000, HID H10304, and support for other downloadable card formats.

6.2.4. The Ethernet Door Controller will be capable of operating in a number of distinct modes. These include, but may not be limited to: -

- a) DOOR MODE: - the Door Controller controls either a single door or two doors. In most cases there will be an exit reader / exit read head or an egress button on the secure side.
- b) I/O Mode - Input Output Mode, the Ethernet Door Controller is not used as a card reader in this mode. All inputs and outputs are used for general purpose functions.
- c) AIRLOCK - Airlock refers to interlock settings when applied to a Master/Master Ethernet Door Controller i.e. when Door1 is open Door2 cannot be opened until Door1 is closed again; an override card can be configured.
- d) REMOTE ACCESS - The Ethernet Door Controller's sole purpose is to validate ID cards. The door does not unlock when a card holder swipes a valid card at the read head. A guard or system operator must be able to remotely open the door.

6.2.5. In-built diagnostics at the reader shall include the following as a minimum:

- Device system address
- IP address
- reader serial number
- MAC address,
- firmware version

6.3. PoE+ I/O controller

6.3.1. The system manufacturer shall include two options of OEM Ethernet I/O controller integral to the host system. All monitored inputs shall be capable of display on the system monitoring software in the form of a dynamic graphical icon, indicating the position of the sensor connected to the device IP.

- a) PoE I/O controller will provide:
 - Eight monitored inputs with tamper detect.
 - Two 12V open collector outputs limited to 1.5A, and two relays rated at 30V@5A.

- Available output power will be considerably limited when supplied by PoE.
- Local I/O mapping between I/Os.

6.4. PoE+ supply for Readers and Reader controllers

- 6.4.1. The Ethernet card readers must support being powered using Power over Ethernet Plus technology via a PoE+ door interface unit.
- 6.4.2. Only the high power version of PoE (PoE+) will be acceptable in accordance to IEEE 802.3at standard.
- 6.4.3. The PoE+ option should be used in conjunction with a Midspan power injector and provide backup battery charging.
- 6.4.4. The PoE+ door interface unit will be capable of supplying at least 1.9A@12V via a single CAT5/6 cable.
- 6.4.5. The PoE+ Door interface unit must be located at or near the door, and can be up to 90m away from the mid span device.
- 6.4.6. The PoE+ door interface unit shall supply sufficient power to support a complete door set including entry and exit card readers, magnetic lock, door holder and sounder. External power supply units, 3rd party external converters, or standard PoE based on IEEE802.3af are not acceptable.
- 6.4.7. The PoE+ shall be designed to function in harsh environments including an ambient operating temperature of +55°C.
- 6.4.8. The PoE+ door interface unit shall feature trickle charge and local battery management capable of switching to local battery power should remote PoE power fail.
- 6.4.9. PoE Electrical supply
 - a) A PoE+ (IEEE 802.3at) injector sufficient to deliver data and power (12VDC) at 25.5W (installed at a secure location within 90m of the access controlled door) thereby energizing the complete access control door set at each access controlled door.
 - b) Only 12VDC locks shall be used with PoE+ access control equipment. Other devices such as door holders and sounders shall be also 12VDC if sharing the ACS controller PoE supply.
 - c) Mains supply, containment and termination to be provided by others.
 - d) All of the access PoE ACS field equipment shall be fitted with Uninterruptible Power Supply (UPS) units.
 - e) Batteries to be supplied (by others) at the access controlled door to maintain a minimum of 4 hours off-line operation of the complete access control door set in the event of a power outage.

6.5. Exit Buttons

Request to exit buttons shall comply with the following:

- a) A double pole push button which when pressed:
 - Immediately provides a request-to-exit signal to the access control system which shall suppress the associated door alarm and remotely unlock the electric lock; and
 - Momentarily interrupt the power circuit to the electric lock.

- b) Door release buttons shall be green, with a mushroom head, mounted on a stainless steel single gang switch plate engraved with the wording PRESS TO EXIT using 5 mm high Universal font.
- c) Compatible with the requirements of the access control system and door locks (i.e. the device shall signal a valid egress before releasing the electronic lock).
- d) The centre line of the door release button shall be the same as the centreline of the lock/latch assembly for the associated door.

6.6. **Emergency Door Unlock Breakglass Unit**

Emergency break-glass units shall be:

- a) Installed on the egress side of selected access controlled doors as indicated by the drawings, scope of works and/or equipment schedules.
Triple pole device which on activation:
 - b) Directly interrupted to the electric lock; and simultaneously generate an alarm that the break-glass unit has been activated.
 - c) KAC type, green in color, engraved with the wording “EMERGENCY EXIT BREAKGLASS TO RELEASE DOOR”.
 - d) Compatible with the requirements of the access control system and the specific door lock.
 - e) The centre line of the emergency door release unit shall be equal to the centre line of the lock/latch assembly for the associated door.

6.7. **MAGNETIC REED SWITCHES**

6.7.1. Flush Mounting

Flush magnetic reed switches shall be.

- a) Be of commercial quality, from a reputable brand and with a local supply
- b) Be suitable for installation with steel doors and door frames to ensure reliable operation;
- c) Fully sealed and tamper resistant;
- d) 25 mm diameter in size; and
- e) Suitable for installation in fire rated doors.

6.7.2. Surface Type (Heavy Duty)

Surface magnetic reed switches shall be:

- a) Be of commercial quality, from a reputable brand and with a local supply.
- b) Heavy-duty and suitable for installation on roller doors, gates/doors or safes;
- c) Tamper resistant, fully sealed, in aluminium diecast enclosures with armoured stainless steel protected tails;
- d) Provided with tamper proof junction box for cable terminations and end of line resistors;
- e) Designed and positioned so as not to be damaged by vehicles or other traffic;
- f) Supplied complete with all necessary mounting brackets and accessories for its correct installation, alignment and operation; and
- g) Corrosion resistant.

6.8. ELECTRIC MORTICE LOCKSETS

- a) Shall be of commercial quality, from a reputable brand and with a local supply.
- b) Electric mortice locksets shall be of robust construction, provide mechanical deadlocking, adequately rated for continuous operation, and available in various architectural finishes. They shall be constructed from high grade zinc alloy, with a stainless steel latch bolt and face plate. All electric locking, monitoring functions and unit wiring shall be an integral part of the lock and housed within the lock case.

For this project:

- c) Unless specifically indicated otherwise all locksets shall be supplied in a satin chrome finish complete with level handles, escutcheons and the like. The style of the hardware shall be approved by the Consulting Engineer.
- d) All locks shall be keyed to the building master.

In addition to the above requirements, electric mortice locksets shall comply with the following:

- a) Have a S3 (Security) and D3 (Durability) rating
- b) Be fire rated up to 4Hrs
- c) Be continuously rated to work on 12VDC to 24 VDC power.
- d) Incorporate a magnetic reed switch to provide door position monitoring.
- e) Incorporate a micro-switch to provide "door locked" status monitoring.
- f) Monitor the exit handle to provide the required request-to-exit signal.
- g) Incorporate override key cylinder status monitoring.
- h) Provided with lock status LEDs on the outside escutcheon.
- i) Be field adjustable as either "fail-safe" or "fail-secure".
- j) Be available as single sided (i.e. the outside handle electrically locked, with the inside handle providing free exit) and double sided (i.e. both the inside and outside handles electrically locked) models.
- k) Be installed with a chrome plated armoured cable transfer device
- l) Provided with a manufacturers replacement warranty of:
 - five (5) years on the mechanical components of the lockset; and
 - one (1) year on the electrical/electronic components
- m) When configured, activation of the exit handle (i.e.: request-to-exit) shall not unlock the outside handle.

1.2. CABLE TRANSFER UNITS

Cable transfer units shall comply with the following:

- a) Be flexible metallic lead covers that conceal all cabling which include door recess box or approved equivalent. (Cable transfer hinges, curly cord or exposed cable transfer units are not acceptable).

- b) In general, selected, in accordance with the manufacturers recommendation based upon the door opening angle and gap between the door and frame. However, if the opening angle of the door is more than 120° or the distance between pin hinge and door frame is greater than 20 mm, longer units shall be installed.
- c) Installed with all electric mortice locksets so that cabling can transfer from the frame of the door to the door leaf.

1.3. ELECTROMAGNETIC LOCKS

- a) Shall be of commercial quality, from a reputable brand and with a local supply.
- b) Electromagnetic locks shall be suitable for high traffic openings with extreme usage and continuous operation. They shall be heavy-duty, tamper resistant, fully monitored and surface mounted. The mounting design shall automatically compensate for normal door wear, sag, warping, or misalignment.
- c) In addition to the above general requirements, electromagnetic locks to comply with the following:
- d) Unless specifically indicated otherwise supplied with a brushed aluminium finish.
- e) Provide a minimum holding force of 550 kg.
- f) Be fail-safe in operation without residual magnetism.
- g) Be fully monitored and incorporate:
 - A magnetic reed switch to provide door position monitoring; and
 - a hall-effect sensor to provide “door locked” status monitoring.
- h) Provide visual lock/unlock LED indicator.
- i) 12V DC continuously rated
- j) Supplied as a single unit for single doors and a double unit for double doors.
- k) Supplied and installed with all necessary mounting brackets and accessories for its correct installation, alignment and operation.
- l) Further to this, all electromagnetic locks shall be securely fastened to the head or top frame of the door. If the frame is not structurally strong enough to prevent lock movement, the frame shall be strengthened, or the lock mounted in such a manner to ensure it is securely fastened.
- m) Where installed externally, magnetic locks shall be IPP 66 rated and installed using tamper resistant security fixings.

1.4. ELECTRIC STRIKES

- a) Shall be of commercial quality, from a reputable brand and with a local supply.
- b) Electric strikes shall be of high security units of robust construction, manufactured from solid stainless steel and fully compatible with the associated mechanical lockset in terms of lock bolt position monitoring and mechanical deadlocking.
- c) In addition to the above general requirements, electric strikes to comply with the following, as minimum:
- d) Be compatible with the type of lockset and lock bolt installed, including dead latching functionality.
- e) Be 12V DC continuously rated;
- f) Incorporate dead latch pin and lock bolt position monitoring;

- g) The lockbolt monitoring must **NOT** be wired in series with the reed switch and connected as a single alarm input;
- h) Provide an 850 kg holding force;
- i) Operate with up to 25 kg pre-load pressure;
- j) Have a S3 security rating and a D3 durability rating in accordance with AS4145.2;
- k) Be field changeable from fail-safe (i.e. power ON to lock) to fail-secure (i.e. power OFF to lock);
- l) Fire rated up to 4 hours in accordance with Health & Safety Standards;
- m) Provide an endurance rating of one million cycles; and

SECTION 3.

VIDEO MANAGEMENT SYSTEM (VMS)

2. IP Video Management System

2.1. General System Description

The complete IP Video Solution shall consist of some or all of the following components:

- i. IP Cameras
 - ii. Network Video Recorders (NVRs for IP input)
 - iii. External Storage (for extended retention of recorded video)
 - iv. Video Management Software Applications
 - v. Integrations to External Systems (e.g., Access Control, Video Analytics, etc.)
 - vi. Failover / Redundancy / Archive Solution (for high availability)
 - vii. Server-Client Architecture (for a solution that scales up and scales out)
- a)** The complete specifications of the Video Management System are provided throughout this section. The following are the Key Capabilities and Features that should be considered and be available within the Video Management System
- b)** VMS solution installer shall have the option to include TeamViewer™ remote desktop utility during new and upgrade installations.
- c)** VMS solution shall be cyber protected by a manufacturer that takes pro-active steps to ensure that the products follow secure product development practices, execute rigorous internal and external testing, have configuration guidelines for compliancy, and actively monitor for any threats that can impact the solutions in the field. The products shall adhere to the following:
- a) FISMA-Ready
 - b) Backed by a dedicated cross-functional Cyber Protection Team to rapidly respond to any newly discovered threats that could impact the system
- d)** Provide centralized device management to maintain NVR and IP camera passwords and firmware and common security settings, such as enhance security mode.
- e)** VMS client shall support the ability to institute a double password protection that would require two unique validated sets of credentials before the feature's operations can be carried out (video search and retrieve, instant playback, clip export) to support privacy and ensure
- f)** VMS client shall support dynamically displaying menu items and controls which are applicable to the system configuration for improved user experience.
- g)** VMS client shall support the simultaneous display and monitoring, in the same surveillance window, of analogue video and IP video from supported recorders:
- h)** VMS client installed on a hardware platform meeting the recommended specification shall support the simultaneous display of up to 64 video streams across all connected monitors.
- i)** VMS client shall be written with Windows Presentation Foundation (WPF) technology to maximize the quality and quantity of video displayed on connected monitors. VMS client shall employ Windows – style menus and tab-based navigation to ensure ease-of-use for operators.
- j)** VMS client shall provide the ability to view live and recorded video on the same camera within a single application layout.

- k)** VMS client shall provide a completely user-customizable 'Site View': enabling the organization of cameras, recorders, tours, salvos into user-defined, multi-level folders, similar to Windows Explorer-style file organization. On a large or distributed system, a Site will automatically be created in the Site List when a SAS is started.
- l)** VMS client shall support ability to manually track any person or object across multiple cameras and/or virtual PTZ presets when configured with surveillance tracking arrows.
- m)** VMS client shall support ability to automatically track any person or object across multiple cameras and/or virtual PTZ presets when configured with surveillance tracking arrows and appropriate analytics
- n)** VMS client shall support the completion of a motion search over 1 week of available recorded analogue or IP video of a scene containing an average level of motion throughout, regardless of codec or resolution of the recorded video, within 2 minutes.
- o)** From any motion search result, VMS client shall allow the user to add additional, related cameras to the View and shall automatically synchronize the date/time of the added cameras to the original search result ("Investigate mode").
- p)** VMS client shall support seamless access to live video during a fail-over event without any changes on the VMS. After a fail-over event has been resolved, recorded video stored on the temporary fail-over recorder shall be available for search/playback without any changes.
- q)** VMS client shall support seamless search/playback from video that has been archived by a recorder without any changes.
- r)** VMS client shall have the flexibility to select playback of video and audio streams, video only streams and audio only streams for the same or different cameras with search results from recorders. Using object associations, an audio stream shall be able to be associated with a video stream from a different camera on the same or different recorders.
- s)** VMS client shall support virtual Pan-Tilt-Zoom control during playback to enhance the usage of megapixel video.
- t)** VMS client shall support an easy-to-use 3-click Clip Export function and Still Image Capture for improved investigation tools with ability to specify a custom filename for the exported clip. Video overlay can be included on snapshots and exported clip notes shall be attachable for review by the Player
- u)** VMS client shall support ability to record the video viewed in the surveillance window as a video clip when the optional licensed feature for Record Surveillance Window
- v)** VMS client shall include an integrated Web Browser tab that can be combined with other user interface components (Video Views, Site View, Event Viewer, etc.) into an Application Layout. The Web Browser tab shall allow operators to continue monitoring their security system while also receiving weather or news updates from web-based information sources.
- w)** VMS client shall support the ability to provide Client-to-Client "Push" enabling a workstation the ability to "push" any layout (e.g. video, alerts, web site, etc.) to another workstation's monitor based on roles, security and license settings when using victor Application Server. The receiving Client shall have the ability to accept or reject the incoming request.
- x)** VMS client shall support the ability to run in unattended mode as an Agent on the Unified Security and Video Management System for utilization as a Video Wall Client based on license settings for victor Application Server when the optional victor add-on license for Agents is purchased.

- y) VMS client shall support the ability to have an Event Priority Window to display Camera Call-Up Actions associated with events in prioritization sequence based on license settings for victor Application Server when the optional victor add-on license for Agents is purchased.
- z) VMS client shall support a Bi-Directional interface to enable ability to easily integrate with other 3rd party systems over a serial or TCP/IP connection.
- aa) VMS client shall support database management tools which enable ability to setup rules to regulate the archival to provide enhanced support when using a Microsoft SQL Express database.
- bb) VMS client shall support customized On-Screen Display text within the video panes in the Surveillance windows.
- cc) VMS client shall support time line filters and a jump to next button for quicker searchers over longer periods of recorded video.
- dd) VMS client shall support managing recorded video using the storage video vault to protect any tagged video and/or audio from being data culled.
- ee) VMS client shall support advanced integrated mapping that supports standard raster and AutoCAD files when the optional victor add-on license for Maps is purchased. It shall allow creation of one or more layers to organize the objects, custom map icons, video pop-up when hovering over a camera icon or during an event, nest maps, map templates, displaying GIS map layer and dynamically show animated state changes of any object with field-of-view cones to identify expected coverage.
- ff) VMS client shall support ability to execute video intelligence analytic searches on recorders that have been licensed for Video Analytics. The analytic search types can be conducted on cameras that had analytic search feature enabled and shall include:
 - a) Object Detection
 - b) Direction
 - c) Linger
 - d) Enter
 - e) Exit
 - f) Abandoned/Detected
 - g) Dwell
 - h) Crowd Formation
 - i) Queue Analysis (Length Monitoring)
 - j) Heat Map generation
 - k) Combined Video Search (Boolean search of analytic enabled cameras)
- gg) VMS client shall support ability to execute video face analytic searches on recorders that have the Face Recognition and Verification. The analytic search types can be conducted on cameras that had analytic search feature enabled and shall include:
 - a) Face Detection
 - b) Face Recognition
- hh) VMS client shall support the tracking of analytic objects during live surveillance including;
 - a) Face Detection
 - b) Face Recognition
 - c) License Plate Recognition
 - d) Video Intelligence

- ii)** VMS client shall support Live People Counter by using a tripwire in live surveillance and alert once a predetermined number of people have breached the tripwire.
- jj)** VMS client shall support ability to execute license plate recognition searches on recorders that have the License Plate Recognition. The analytic search can be for specific license plates or unrecognized license plates.
- kk)** VMS client shall support edge-based analytic events when recorders are configured with supported camera models. Edge-based analytic shall include face and blur detection events.
- ll)** VMS client shall support searching on alarm rules that were defined on recorders.
- mm)** VMS client shall support data visualization that enables the ability to easily chart graphically across timeline all searchable data, send report in email and drill-down to single events to view patterns for data mining and reporting.
- nn)** VMS client shall support dynamic bandwidth management with recorders by selecting the current bandwidth connection speed, to help optimize the viewing experience over a WAN environment. For policy management, it shall also support enforcing the maximum bandwidth allowed based on the Role or Operator.
- oo)** VMS shall support a snapshot engine allowing the ability to take a snapshot from all managed NVR cameras and store it centrally.
- pp)** VMS client shall support a health monitoring dashboard to allow access to the status updates of their systems with ability to easily drill-down flagged items for identifying root causes of monitoring Health of the various Servers and Recorders
- qq)** VMS client shall support de-warping of fish-eye cameras supported by recorders. De-warping is available for panoramic broad views and rectilinear for high quality view of particular area within the full image. De-warped views can be saved as part of designated layouts and the <SHIFT> key can be used to select the desired de-warp area.
- rr)** VMS client shall support at least TWO Different types & Models of Recording Systems.
- ss)** VMS client shall support managing all of the information associated for an incident and/or event, and utilize a template to generate a single report containing video, still images, report data, report charts, notes, and any externally supported files. The VMS Player shall support playing exported incident package when the optional victor add-on license for Incident Builder is purchased.
- tt)** VMS Client shall support creating single point in time bookmark or bookmark with begin and end time.
- uu)** VMS client shall support automatic removal of bookmarks based on a user defined time period for expiry.
- vv)** VMS client shall directly connect to supported cameras via multicast when a NVR becomes inaccessible to ensure continuous video feed.
- ww)** VMS server shall auto-detect the host machine's operating system version and proceed to install as a native 64-bit application. The ability to run as a 64-bit application enables victor to support a larger amount of memory to boost overall performance and capabilities.
- xx)** VMS server shall provide detailed license status information that includes current software version, expiration date, and a detailed feature set matrix.
- yy)** VMS server shall support alarm persistence notification to recover cached alarms from associated recorders that may have lost communication for up to two weeks.
- zz)** VMS server shall support the Update Server feature that allows update packages for Client to be installed onto the server during upgrades and users can be automatically

prompted to upgrade the client application on next boot. In addition, the Update Server feature will also enable the installation of updated images recorders.

- aaa)** VMS server shall support deployment in a qualified virtual machine environment (VMWare, Hyper-V).
- bbb)** VMS server shall allow administrators to manage user roles and profiles using a native LDAP server interface.
- ccc)** VMS shall support a reporting architecture that can upload data in the Unified POS format to provide rich investigator tools, including customer present analytic, to match the data to the relevant synchronized recorded video footage.
- ddd)** VMS server shall support the ability to allow any VMS client to easily send any object or tabbed item to any monitor that is either locally attached or across the network, for example, a monitor of a remote VMS client machine or unattended video wall when the optional victor add-on license for Agent is purchased.
- eee)** VMS system shall allow ability to use any compatible Windows-based machine to host a web server to enable multiple remote clients to use standard web browsers to view live/recorded video and events from recorders. It shall allow seamless and simultaneously enable access to multiple recorders and their cameras located on the same network segment.
- fff)** VMS client shall include details to download and view training videos.

2.2. VMS FUNCTIONALITY

a) System Performance:

The VMS shall meet the following system performance:

- a) Each instance of VMS client shall support up to 4 connected monitors
- b) VMS client installed on a hardware platform meeting the recommended specification shall support the simultaneous display of up to 64 video streams across all connected monitors.
- c) Each instance of VMS client shall support the simultaneous connection of up to 2 supported CCTV or equivalent keyboards
- d) VMS client shall support the completion of a motion search over 1 week of available recorded analogue or IP video of a scene containing an average level of motion throughout, regardless of codec or resolution of the recorded video, within 2 minutes.
- e) VMS client shall ensure constant audio / video synchronization to within ½ a second for all supported video and audio devices.
- f) VMS shall support event and message volumes up to a maximum of 5 transactions per second
- g) VMS shall support a maximum total database size of 10 GB when running SQL Express (approximately 10 million records).
- h) VMS shall support a maximum total database size of 524,272 TB when running SQL Server Standard Edition (approximately 525,000,000 million records).
- i) VMS client shall detect and adapt to network congestion when viewing video from recorders.
- j) VMS shall support ability to launch the Diagnostic Utility from the Help & Support page.

b) Localization:

The VMS shall meet the following system performance:

- a) VMS client shall automatically detect and support / display the time / date format configured in the Windows operating system.

c) User Authentications (Login Credentials):

The VMS shall support the following user authentications (Login Credentials) options:

- a) VMS client shall have the ability to choose either Windows Authentication for Domain/Application Server or Basic Authentication to log into the VMS.
- b) VMS client shall support ability to institute a double password protection that would require two unique validated sets of credentials before the feature's operations can be carried out (video search and retrieve, instant playback, clip export) to support privacy rights in applicable European markets.

d) VMS Client Graphical User Interface (GUI)

The VMS shall support the following graphical user interface (GUI) features:

- a) VMS client shall be written with Windows Presentation Foundation (WPF) technology to maximize the quality and quantity of video displayed on connected monitors. VMS client shall employ Windows 7 style menus and tab-based navigation to ensure ease-of-use for operators.
- b) VMS client shall provide end users and administrators with functionality in the following areas:
 - Camera Management / Organization
 - Video Live Viewing & Playback
 - Audio Live & Playback
 - Video Overlay of On-Screen Display
 - Video / Analytic / Alarm Rule Search & Export
 - Still Image Capture
 - Event / Alarm Management
 - Advanced Integrated Mapping
 - Virtual Matrix
 - CCTV Keyboard Support
 - Reporting
 - User Management / Permission Controls
 - Recorder Management
 - Storage Video Vault
 - Dynamic Bandwidth Management
 - Integrated Web Browser
 - Fire Panel and Device Management / Organization

- Intrusion Device Management / Organization
 - Maintenance / Software /License Upgrades
 - SDK
- c) VMS client interface shall be an intuitive user interface that is similar to Microsoft's Office Application Suite with its easy navigation.
 - d) VMS client shall provide a GUI that minimizes the number of operator mouse clicks or keyboard strokes and include "right-click" pop-ups with highlighted default selections for common operations
 - e) VMS client interface shall be user-customizable.
 - f) VMS client shall support the ability of the end user to create a customized application layout for the client software. The client application shall support multiple application layouts that can be assigned to each role. These layouts shall also support ability to automatically adjust to accommodate the screen size when option for auto-fit is enabled.
 - g) Each application layout can have multiple tabs in the same window. The panes can have multiple tabs so that different objects such as cameras and tours can be displayed in the same pane. Each pane shall have the ability to be moved to a specific screen. Double-clicking on the surveillance tab name shall undock and open it in full-screen mode.
 - h) VMS client shall be able to swap between two surveillance layouts within the same surveillance tab via back and forward buttons on the tab menu. The layouts can be created by drag-and-drop, double clicking or viewing cameras, recorders and call-ups, but vPTZ call-ups are not supported.
 - i) VMS client shall provide a GUI with organized ribbon bar that supports the expanded feature set for unification of security for video, access control, fire and intrusion.
 - j) VMS client shall support dynamically display menu items and controls which are applicable to the system configuration for improved user experience.
 - k) VMS client shall support dynamic views and ability to add recorders directly within the Recorders dynamic view, and provide details regarding software serial numbers and SSA expiration dates.
 - l) VMS client shall provide different background theme options, a dark for low-light environments and a light for higher contrast in brighter environments.
 - m) VMS client shall be able to use the mouse wheel to scroll through all menus.
 - n) VMS client shall be allowed to resize the toolbar on the surveillance tabs and size changes are saved as part of the layout.

e) Device Management / Organization:

The VMS shall support the following camera management and organizational features:

- a) VMS client shall provide users both a Device View and a user-defined Site View of the following system components:
 - Recorders
 - Workstations
 - Cameras
 - Monitors
 - CCTV Keyboards and Controllers
 - General Purpose Devices
 - General Purpose Monitoring Points

- Analog Matrices
 - Camera Devices
 - POS Systems and Devices
 - BACnet Devices
 - SurGard Receiver
 - Intruder Panels
 - DMP Alarm Point
 - Fire Panels
 - EIOC Controllers
 - Outputs
- b) Device icons (e.g. recorders, cameras, doors, readers, inputs, outputs, etc.) in VMS Client shall provide clear visual indications of whether the devices are online or offline.
- c) VMS shall support global searching of all objects in the system via a simple text search and results should include device list, site list, call ups, clips, incidents and any new tab items.
- d) VMS shall support custom camera names that are alias used by VMS client. It shall maintain the original camera names assignment associated by the recorder.
- e) The Site View shall be completely user-customizable, enabling the organization of devices, tours, salvos into user-defined, multi-level folders, similar to Windows Explorer-style file organization.
- f) A Site View folder may contain an object of any type within VMS.
- g) VMS client shall allow the user to hide, “unpin” or customize the display location of the Device and Site View panes within their Application Layout.
- h) VMS client shall allow the user to display the recording state and firmware version of cameras managed by latest versions of recorder software.
- i) VMS client shall be able to open the health dashboard and device discovery when right-clicking on recorders in the device list.

f) Advanced Integrated Mapping:

The VMS shall support the following advanced integrated mapping functions:

- a) VMS client shall support maps to allow visual management of the security system. The maps shall be created by importing AutoCAD files (e.g. DWG, DXF) and standard raster image files (e.g. JPG, PNG).
- b) VMS client shall be able to support up to 10,000 object/icons (e.g. recorders, cameras, card readers, doors, etc.) for each map. The icons shall allow for monitoring object state and locations as they relate to the site.
- c) VMS client shall be able to restrict displaying only unmapped objects for selection.
- d) VMS client shall be able to provide a navigation button to easily go back to or select a specific map from a drop-down menu.
- e) VMS client shall be able to display health monitoring information on the map icons.
- f) VMS client shall be able to create single layer, multi-layer, and nested maps with the ability to turn on/off layers to show/hide the associated icons. Maps images shall support ability to pan and zoom.
- g) VMS client shall be able to have maps open in the same tab for easier navigation.
- h) VMS client shall be able to enable hover over a map icon and have the associated camera(s) pop-up a live video window. When right-clicking on a map object in view

mode, it shall display that objects standard context menu to enable further interaction. Support ability to automatically close opened windows when in hover mode.

- i) VMS client shall be able to drag-and-drop cameras, tours, salvos onto a monitor object on the map and have it displayed onto that remote or local monitor.
- j) VMS client shall be able to include field-of-view cones to identify expected coverage for devices
- k) VMS client shall be able to expand a pane to reveal the current virtual matrix configuration when a camera is dropped onto the pane on a video wall when virtual matrix is enabled.
- l) VMS client shall be able to bubble-up alarms and events through numerous layers of maps to support seamless alert notifications within any map.
- m) VMS client shall be able to create custom map icons.
- n) VMS client shall be allowed to customize the annunciation and color of a point on a map when creating map or map layer templates.
- o) Maps shall be automatically stored centrally to allow sharing with any VMS client that is granted permission.
- p) VMS client shall display GIS map layer.
- q) VMS client shall display current zoom level on maps as a thumbnail window.
- r) VMS client shall allow maps to zoom in on objects which are in an active alarm state, and will choose the highest priority alarm if multiple objects are alarming at the same time.

g) Video Live Viewing and Playback:

The VMS shall support the following live video viewing and video playback functions:

- a) VMS client shall support the simultaneous display of MJPEG, MPEG-4, H.264, H.264+, Zipstream, and ACC video streams within a single video view.
- b) VMS client shall provide a common user interface and functionality associated with every camera in the system, regardless of the recorder it is connected to or the video codec used.
- c) VMS client shall group the available layouts into three types and each one can be available by setting the preferences via System Values:
 - Standard
 - Wide Screen
 - Portrait
- d) VMS client shall allow video streams to be displayed in any of the following views and support three most recent selections:
- e) VMS client shall also allow the user to create custom video layouts for video surveillance with ability to display still images into any video pane. All custom layouts shall be able to be exported and imported for use by any VMS client.
- f) VMS client shall allow the user to enable video aspect ratio which stretches the client-side video beyond the original aspect ratio so that letterboxing is not visible in each pane. When enabled, both widescreen video (16:9) in a standard definition pane (4:3), and standard definition video (4:3) in a widescreen pane (16:9) will not have any black space.

- g) VMS client shall allow the user to create saved views combining a view, with user selected cameras, tours or PTZ presets.
- h) VMS client shall be able to name and save different camera window displays as salvos or fixed views. Names shall be a maximum of 200 characters long.
- i) VMS client shall provide for each live window pane a popup menu, available via right mouse click, to access the settings for the pane.
- j) VMS client shall allow the user to review motion or embedded analytic searches from stream-based recording with simple “jump to next” result buttons.
- k) VMS client shall provide the user with time filter that enables the ability to quickly perform multi-day searches.
- l) VMS client shall provide the user with ability to customized On-Screen Display text that is displayed within video panes. The Camera/Recorder color and font size shall be changed independently of the Date/Time color and font size to allow for clearer and legible text against various background scenes.
- m) VMS client shall allow the user to enable or disable the red alert border for the live video panes.
- n) VMS client shall be able to rearrange video sources on a multi-pane surveillance window with pane-to-pane drag-and-drop operation.
- o) VMS client shall be able to see the source of alarm trigger with Live Video Hit boxes for any live surveillance in real-time or in timeline view during instant playback.
- p) VMS client shall be able to configure a new custom preset that will use, as default, the Rectilinear dewarp for all fisheye cameras supported by the victor client dewarp feature.
- q) VMS client shall support the tracking of analytic objects during live surveillance including;
 - a. Face Detection
 - b. Face Recognition
 - c. License Plate Recognition
 - d. Video Intelligence
- r) VMS client shall support Live People Counter by using a tripwire in live surveillance and alert once a predetermined number of people have breached the tripwire.
- s) VMS client shall be able to provide System Operators ability to enable or disable motion tracking on Illustra cameras globally (batch edit) or on a per camera basis (PTZ setting) and Intelligent guard tour functionality.

h) Surveillance Tracking:

The VMS shall support the following Surveillance Tracking functions:

- a) VMS client shall be able to start a session to manually track a person or object across multiple camera panes within the surveillance perimeter.
- b) VMS shall provide the ability to configure surveillance tracking arrows on a camera’s FOV that link to another applicable cameras.
- c) VMS client shall support ability to automatically track any person or object across multiple cameras and/or virtual PTZ presets when configured with surveillance tracking arrows and appropriate analytics.
- d) VMS shall allow clients to create a clip of their tracking session.
- e) VMS shall allow clients to create bookmarks for the cameras in the surveillance tracking session.

- f) VMS shall allow clients to drag and drop cameras from the Device List onto a 1x1 surveillance pane during a tracking session, or use a keyboard with an active virtual matrix to create a tracking session by calling up cameras. It can be carried out without configuring tracking arrows.

i) Instant View:

The VMS shall support the following Instant View functions:

- a) VMS shall provide the ability on a live video stream to easily open a new tab that is paused for the same camera to quickly setup the display layout for investigative purposes.
- b) VMS shall support Instant View to be displayed side-by-side or to send it to another display monitor.

j) Instant Playback:

The VMS shall support the following instant playback functions:

- a) VMS shall provide the ability to play, fast forward, rewind directly from video recorded into a recorders database as well as jump to any point in time where the feature is supported by the recorder.
- b) VMS client shall provide the ability to quickly jump back to any user-specified date / time on all visible cameras without interrupting or obscuring video viewing.
- c) VMS client shall provide the user the ability to select some or all of the video panes in a Saved View and view recorded video on those panes, while simultaneously displaying Live video on other panes within the same view.
- d) VMS client shall provide the ability to view a single camera in multiple panes of a single Video View.
- e) VMS client shall provide the ability to view live and recorded video on the same camera within a single application layout.

k) Timeline Control:

The VMS shall support the following timeline control scroll bar feature:

- a) VMS client shall provide the ability to enable the timeline bar on any surveillance view by selecting the timeline icon.
- b) The timeline bar shall display a corresponding data stream bar for each media stream displayed in the surveillance window.
- c) The navigation control for the timeline bar shall be divided into years, months, days, hours, minutes and seconds.
- d) The video control buttons are located in the center of the timeline and can be used for instant playback, with a vertical bar representing the current time.

l) Still Image Capture:

The VMS shall support the following still image capture feature:

- a) VMS client shall provide the ability to capture an image from any paused video stream and directly from the raw video stream.
- b) The captured image can be all or part of the paused stream image.

- c) The captured image is launched in its own pop-up window in the VMS client. From there the operator can:
 - Save the image in a variety of formats.
 - Copy the image to the clipboard.
 - Email the image via SMTP.
 - Print the image (actual size or fit-to-page)
 - Upload a face from the image to the VideoEdge NVR Face Recognition database
 - Open the image in an external application (e.g. MSPAINT.EXE).
- d) VMS client shall support video overlay onto snapshots.
- e) VMS client shall support emailing a snapshot from a camera with the Send Camera Image Action. It can be triggered from an event and activated on a schedule.

m) Mechanical & Digital PTZ:

The VMS shall support the following mechanical and digital PTZ functions:

- a) VMS client shall be assigned a PTZ control queue that enables specific roles or individuals to have higher priority over others to support a hierarchical management schema.
- b) VMS client shall provide Digital PTZ capability on all connected analog and IP fixed cameras (Mega-Pixel and standard resolution). Digital PTZ capability shall include Picture-in-Picture display.
- c) VMS client shall provide virtual PTZ controls that support ability to create virtual presets, mouse wheel quick zoom for one-touch zoom in or out, and Picture-in-Picture display. vPTZ shall be utilized on clip streams to enable cropping and magnifying the video pane during normal surveillance.
- d) VMS client shall provide three options for controlling analog or IP PTZ cameras: CCTV keyboard, on-screen display icons and mouse-based drag and point.
- e) The on-screen display icons for PTZ controls shall include the ability to pan, tilt, and zoom, adjust the focus and iris of the camera, call preset positions and run set patterns where the feature is supported by the underlying camera, encoder or recorder.
- f) VMS shall enable the user to activate 1 to 96 preset camera positions through a transparent control diagram overlay on the live video display of the associated camera. Where supported by the camera.
- g) VMS shall enable the user to activate 1 to 10 pre-programmable preset sequences through a transparent control diagram overlay on the live video display of the associated camera. Where supported by the recorder.
- h) VMS client shall be able to use virtual PTZ controls on dome cameras during playback to better utilize the megapixel forensic video.

n) Call-ups:

The VMS shall support the following call-up functions:

- a) VMS client shall provide an interface for operators to define video tours of related cameras.
- b) Video Tours shall support user configurable dwell-times.
- c) A tour may initiate a preset on a camera.
- d) VMS client shall provide an interface for operators to define video salvos.

- e) VMS client shall provide an interface for operators to define fixed video views
- f) A fixed video view may contain a video tour
- g) VMS client shall provide a call-up list to make the defined call ups easily accessible to operators.
- h) All call ups shall have the option of being assigned a user-configurable or auto-assigned reference number to enable triggering of the call up via a supported CCTV keyboard.

o) Send to Commands:

The VMS shall support the following send to function

- a) VMS client shall provide ability to use the Send to command to transfer any tabbed layout or object such as a specific camera, recorder, surveillance window, or web site onto any accessible monitor on the security network. The credentials of the recipient shall dictate the ability to access the information sent from another VMS client system.
- b) VMS client shall provide confirmation message regarding the Send to command to provide acknowledgement that the operation was either successful or that the attempt had failed.
- c) VMS client shall support option to include the video tool bar on the surveillance windows that are maximized or during the Sent to command to another monitor.

p) De-Warp Fish-Eye Cameras:

- a) The VMS shall support the ability to have the VMS client de-warp supported cameras that use fish-eye lens. Right-click on the fish-eye camera within the pane of the Surveillance tab will allow access to select the de-warp method.
- b) VMS client shall support selecting panoramic de-warp for a broad view of the scene.
- c) VMS client shall support selecting rectilinear de-warp for a high quality view of a region within the full fish-eye image.
- d) VMS client shall use the shift key to quickly select the region of the image to de-warp.
- e) VMS client shall be able to save de-warped views as part of a layout.

q) Audio Live Listening and Playback:

- a) The VMS shall support the following audio live listening and playback functions:
- b) VMS client shall support playing live and recorded audio streams from supported recorders.
- c) VMS client shall provide an on-screen display indication of which cameras have associated audio streams.
- d) VMS client shall provide volume control and mute options to manage audio playback.
- e) VMS client shall ensure constant audio / video synchronization to within ½ a second for all supported video and audio devices.
- f) VMS client shall be configurable to support sending / receiving calls to / from SIP-enabled devices for bi-directional audio and support SIP calls between VMS clients

r) Video Search and Export:

a) Date / Time Search

The VMS shall support the following date/ time search functions:

- VMS client shall provide an easy-to-use wizard interface to simplify the configuration of a date/time search across multiple cameras/recorders within a maximum of three screens.
- The Date / Time search shall allow the user to simultaneously search as many connected cameras across many different recorders, as specified by the operator.
- VMS client shall allow the user to additionally request any audio associated with the video on the specified camera(s).
- VMS shall automatically download the first media clip from a successful search and start playing the video.
- VMS provides 'direct export' mechanism from the Surveillance view. The operator selects a start and end time via the Surveillance view and all on-screen cameras are exported in a single operation to the specified destination.
- VMS shall provide the VMS client the ability to search across online, near-line archived and standby fail-over storage. When the search criteria spans beyond the online forensic video, the VMS shall continue the search seamlessly across recorders archived near-line storage. If any recorder fail-over occurred, the VMS search will seamless span across the standby storage of any fail-over mode recorder.
- VMS client shall be able to playback audio streams independently from the video streams, mix-match them with different cameras from the same or different servers for search results from recorders.
- VMS client shall include thumbnail search results for those recorders versions that support it to provide a simplified visual snapshot of the recorded video. The thumbnails will be spread across the desired specified search time period and can be drilled down quickly when double-clicking on a particular image.
- VMS client shall include data visualization that enables data from all searches and reports to be graphically charted as bar charts and timelines. Ability to easily drilling down through the data to single events for a wider view for analysing data patterns.

s) Motion Search:

The VMS shall support the following motion search functions:

a) VMS shall provide a mechanism to search for motion on a particular camera based on the following criteria:

- Camera
- Start date & time
- End date & time
- Motion search region
- Amount of Motion (% of Region)
- Duration of Motion (0 to 600 seconds)
- Motion Search Sensitivity (where supported by the recorder)

- b) VMS client shall enable users to select inactive or active regions of interest to simplify the configuration of the search criteria.
- c) VMS shall automatically download the first media clip from a successful search and automatically start playing the video.
- d) VMS shall download and play clips from further search results as directed by the operator, and support ability to jump to next and previous clips.
- e) From any motion search result, VMS client shall allow the user to add additional, related cameras to the View and shall automatically synchronize the date/time of the added cameras to the original search result (“Investigate mode”).
- f) VMS client shall enable the operator to set the sensitivity of the motion search setting.

t) Search Across All Available Storage:

- a) The VMS shall provide the VMS client the ability to search across online, near-line archived and standby fail-over storage from recorders. When the search criteria spans beyond the online forensic video, the VMS shall continue the search seamless across VideoEdge archived near-line storage. If any recorder fail-over occurred, victor search will seamlessly span across the standby storage of any fail-over mode VideoEdge Recorder.
- b) VMS client shall be able to playback audio streams independently from the video streams, mix-match them with different cameras from the same or different servers for search results from recorders.
- c) VMS client shall automatically utilize the operator’s display settings when providing the video search results. The search results shall also support ability to open in a dockable new window to avoid interfering with the current layout configuration.
- d) VMS client shall include thumbnail searches for those recorders versions that support it to provide a simplified visual snapshot of the recorded video. The thumbnails will be spread across the desired specified search time period and can be drilled down quickly when double-clicking on a particular image.
- e) VMS client shall include data visualization that enables data from all searches and reports to be graphically charted as bar charts and timelines. Ability to easily drilling down through the data to single events for a wider view for analyzing data patterns.

u) Video Intelligence & Deep Intelligence Analytic Search:

The VMS shall support the following video intelligence analytic search functions:

- a) VMS shall support the integrated video analytics included with the recorders.
- b) VMS shall utilize the information available from recorders to apply the following Analytic Search criteria on the recorded video:
 - Object Detection to locate objects that move into a region of interest for the first time.
 - Object Direction to locate objects moving in a certain direction through a region of interest.
 - Object Linger to locate objects lingering in a region of interest for a minimum time period. An object is lingering if it stays within the region of interest even if it is moving around in the region.

- Object Dwell to locate objects dwelling in a region of interest for a minimum time period. An object is dwelling if it is mostly stationary while in the region of interest.
 - Object Enter to locate objects entering a field-of-view through a doorway or threshold.
 - Object Exit to locate objects exiting a field-of-view through a doorway or threshold
 - Object Abandoned/Removed to locate objects that are left in the field of view or taken from the field of view.
 - Queue Length to identify when a queue reaches a certain length when searched over a certain time period.
 - Crowd Formation to identify when a certain number of people or objects are found in a region of interest when searched over a certain time period.
 - Color Definitions to apply a color filter to further refine analytic searches on video data for Object Detection, Direction, Linger, Enter, Exit, Abandoned/Removed and Dwell. Tripwire detects when an object crosses the tripwire. A count of objects crossing the tripwire is maintained and if the count reaches the given threshold an alert is generated.
 - Combined Video Search to allow for Boolean and compound searches using operators AND, OR, NOT across, up to, 5 analytic search criteria
- c) VMS shall support generation of heat maps from cameras which are configured for motion detection or video analytics on recorders. These heat maps shall provide a visual representation of analytic activity over time by using translucent colored pixels overlaid on a still camera image to represent how much activity each pixel “saw”.
- d) VMS shall support Add Search as Alarm Rule to create a new alarm rule using the criteria defined in a specified search. These alarm rules shall display in the Load Alarm Rule list under the Search and Retrieve Wizard.
- e) VMS shall support Alarm Persistence Notification to enable ability to receive cached alarms for up to 14 days in Recover Mode from recorders that may have lost connection to the VMS server.
- f) VMS shall support edge-based analytics for supported devices. They shall trigger analytic events.
- v) Facial Recognition Analytic Search:**
- The VMS shall support the following facial recognition analytic search functions:
- a) VMS site must have the facial recognition database site license and the recorders must have one or more facial recognition channels licensed in order to support integrated facial recognition engine.
 - b) VMS shall utilize the information available from recorder to apply the following Face Recognition search criteria on the recorded video:
 - c) Search against up to 1,000 indexed faces per recorder database for faster identification and investigation.
 - d) Search across the entire enterprise to find facial matches
 - e) Search for inclusion or exclusion of specific persons and visually see the associated corresponding video.
 - f) Search specific area of interest on the scene

- g) Search requires specific percentage of an object within the area of interest
- h) Load pre-existing alert rules configured on the recorder
- i) Add Search as Alarm Rule to create a new alarm rule using the criteria defined in a specified search
- j) Alerts operators to take immediate action when a face is detected

w) License Plate Recognition Analytic Search:

The VMS shall support the following license plate recognition analytic search functions:

- a) Recorders must have one or more license plate recognition channels licensed in order to support integrated license plate recognition engine.
- b) VMS shall utilize the information available from Recorder to apply the following License Plate Recognition search criteria on the recorded video:
 - Support fuzzy matching for similar alpha-numeric characters
 - Search for all captured license plates
 - Search for inclusion or exclusion of specific license plates
 - Sort LPR search results
 - Generate thumbnail for any LPR search results
 - Generate reports and data visualization for any LPR search result
 - Instant review of video associated with any LPR search result
 - Save any LPR search result as an alarm rule
 - Load pre-existing alert rules configured on the recorder
 - Search LPR alarm entries in the Journal with filter option
- c) VMS shall support License Plate Management by creating a black-and-white list by individual or bulk upload license plates for specific cameras for license plate recognition.

x) Clip Storage / Export:

The VMS shall support the following clip storage and export functions:

- a) VMS client shall allow the user to export clips of video form one or multiple cameras, across multiple recorders, in a single export.
- b) VMS client shall allow the user to assign custom name and export clips to a location of their choice: the client PC, VMS server or an Administrator-specified network storage location.
- c) VMS client shall provide the user the option of exporting video clips in their native format or in an appropriate non-format which can be played using a standard player.
- d) VMS client shall support attaching clip notes to exported video which shall be reviewable by victor Player.
- e) When exporting clips in Native format, VMS client shall provide the user the option of exporting a player application along with the video clips to ensure that exported video can be reviewed on any standard PC without installing VMS client.
- f) VMS shall support exporting “tamper-protected” video clips using dual-authentication mechanism (password protection and check-sum validation). VMS Unified Client and Player shall include a “Verify” button to visually demonstrate that a video clip has not been tampered with.

- g) VMS shall support scheduling of clip downloads, clip download integration with victor events and clip expiration features. Include the ability to set default action to be the Client (now) or Server (now).
- h) VMS shall support custom watermarking images to be overlaid on for non-native exported video clips such as AVI/MP4.
- i) VMS shall allow ability to view the video clip as it is being downloaded from any of the supported recorders
- j) VMS shall support Direct Clip action to split a clip that is comprised of multiple streams to its component streams.
- k) VMS shall support redacting objects from video clips and generating a redacted version of the clip for adding to an incident or exporting for play in VMS or third party video players.
- l) VMS player shall enable the user to playback up to 64 simultaneous video clips regardless of video codec (MJPEG, MPEG-4, H.264, H.264+, Zipstream or ACC) in any of the following layouts:
- m) VMS player shall enable the user to have full video playback controls within exported clips. Video playback controls.

y) Events and Event Monitoring:

The VMS shall support the following events and event monitoring functions:

- a) VMS shall support unlimited operator configurable events, including the action-based trigger of events.
- b) The system shall provide 8 event priority levels with pre-defined colors and labels.
- c) The system shall allow an event to be configured to:
- d) Be sortable by event name, date/time, priority, state, and any other displayable information.
- e) Require or not require operator acknowledgment.
- f) Display an operator-defined text message upon event activation.
- g) Allow the operator to associate an audio wave file with the event.
- h) Run imports and exports.
- i) Run reports and remove report results.
- j) VMS client shall provide an Event Viewer tab that displays a sortable list of active alarms or events within the system. The Event Viewer tab shall have the ability to be incorporated into an Application Layout with other tabs (Video Surveillance tabs, Site View, Device View, etc.) or to occupy all of one connected monitor.
- k) VMS shall be configurable to display all events (alarms) in color based on the user-specified priority of the event.
- l) VMS shall support audible alarm annunciation at operator workstations (operator configurable audio (WAV) files associated with alarms).
- m) VMS shall be able to trigger one or more individual preset actions in the response to system events (or alarms) enabling users to automatically position cameras on relevant areas of interest.
- n) VMS shall be able to trigger one or more fixed views in the response to system events (or alarms) enabling displays of up to 64 cameras to be automatically presented on

specified single or multiple monitors, including Virtual Matrix monitors, to easily show all the video related to the event.

- o) VMS Event Viewer tab shall be capable of displaying the following features:
 - System clock.
 - Date/time when the event was received by the server
 - Count of the active events.
 - Clear event.
 - Clear all events
 - Event action message (automatically display selected message for event).
- p) VMS Event Viewer tab shall provide the ability to view video associated with an event within the same GUI.
- q) Event related video shall by default begin displaying video 30 seconds prior to the time of the event.
- r) VMS Event Viewer shall provide VMS client standard video controls (FFW, RW, Frame forward, etc.) to easily review video prior to the pre-alarm time and after the post-alarm time without leaving the Event Viewer tab.
- s) VMS Event Viewer shall provide filtering to enable ability to exclude events that are restricted from acknowledgement, and switch the event to a non-grouped flat view.
- t) VMS Event Viewer shall include displaying the local time of the recorders which triggered the alerts to allow the VMS client to easily support systems that span multiple time zones.
- u) Events configuration shall allow the user to enable “Event Breakthrough” which shall bring the Event Viewer tab to the forefront of a user’s Application Layout when a specified event occurs.
- v) VMS shall allow configuration of events to be created in a flow chart format, quickly viewed and events cloned from one device to another via a simple drag-and-drop method for simplified event configuration.
- w) VMS shall allow configured events to be quickly viewed and events cloned from one device to another via a simple drag-and-drop method for simplified event configuration.
- x) VMS shall allow configured events to send email when a specified event occurs.
- y) VMS server shall support software triggered external camera alarms from recorders. They can be called and paired to alarms and events in the VMS
- z) VMS shall allow the attachment of a text file or web link to enable the procedure to be viewed and read for specific events.

z) Scheduling:

The VMS shall support the following scheduling functions:

- a) VMS shall provide users with ability to manage the execution of events or journal triggers which are to be activated only during specified time ranges in a scheduler.
- b) VMS shall allow ability to select and build schedules by Day, Week (Sunday-to-Saturday), Work Week (Monday-to-Friday), and Month using the schedule editor’s calendar control.
- c) Schedules are assigned to actions through the Event/Schedule Setup editor.
- d) When a schedule is active (current date/time is within the specified time interval), only the associated events shall be triggered while all others will not be triggered. Alerts will continue whether or not the schedule is active.

- e) VMS shall dynamically update the status of all schedules on the schedule show all page.

aa) Virtual Matrix:

The VMS shall support the following virtual matrix functions when licensed:

- a) VMS client shall allow the user to configure the system as a Virtual Matrix – controlling which cameras, tours or salvos are displayed in each pane of each monitor connected to the Client.
- b) Virtual Matrix control shall be via CCTV keyboard or PC keyboard and mouse.
- c) VMS client shall allow for the creation of an unlimited number of Virtual Matrix profiles. Each Profile shall have its own unique name, camera pseudo-numbering, salvo pseudo-numbering and monitor pseudo-numbering scheme for maximum flexibility of system configuration.
- d) VMS client shall allow sending call-ups (cameras, tours, etc.) to specific virtual matrix monitors using the right-click “Send To” surveillance command.
- e) The Virtual Matrix Editor shall auto-assign camera pseudo-numbers and gives the user the ability to manually edit these auto-assigned values.
- f) The Virtual Matrix Editor shall include a “Preview” function that visually displays how the video panes will be numbered across all defined monitors.
- g) The Virtual Matrix Editor shall auto-assign video pane numbers across all defined monitors and shall allow the user to manually modify these assignments – including defining a fixed start number for each monitor.
- h) VMS client shall display the Virtual Matrix camera number on the video pane when active to overcome naming limitations from newer USB joysticks and gamepads.

bb) CCTV Keyboard and Controllers:

The VMS shall support the following CCTV keyboard and controller functions:

- a) VMS client shall support PTZ, Virtual Matrix and video control using CCTV keyboards and controllers in addition to the system keyboard:

cc) Reporting:

The VMS shall support the following reporting functions:

- a) VMS shall be capable of displaying a log of all activity that occurs in the system, from object state changes and operator logon/logoff to video alert information.
- b) VMS shall provide a scrolling list of lines or tiles showing current activity on the system.
- c) VMS shall display activity in real-time as data is being transmitted by connected cameras and recorders.
- d) VMS shall allow for a “freeze” function that permits an activity to be selected and temporarily prevents the display of subsequent activities which would push the selected activity off the screen.
- e) VMS shall provide reports on the following:
 - All System Messages
 - All Configuration Changes
 - State Changes
 - Operator Login

- System Activity
 - System Error
 - Video Alarms
 - Video Clip Access
 - Objects Created
 - Objects Deleted
 - Objects Changed
 - References Added
 - References Removed
 - Uptime of Recorders
 - Video Start and End Times for Cameras
 - Video Duration for Cameras
 - Health
 - Commissioning - including camera snapshots
- f) VMS shall, for every operator logged into any Client, log every video search that is executed, including which cameras were searched over what date/time period.
- g) VMS shall allow a recorder report action to be triggered for Health and Commissioning reports. The information can be stored centrally or emailed to relevant individuals
- h) VMS shall, for every operator logged into any Client, log all video exports, including the camera names and the start and stop date/time of the video clips exported.
- i) VMS shall allow sending email of journal reports and visualizations.

dd) Clip Builder:

The VMS shall support the following clip building functions:

- a) VMS shall be capable of editing video clips by easily adding clips via drag-n-drop into a timeline for cropping, cutting, and splitting for multiple clip files at once.
- b) VMS shall allow users the ability to create smaller clips from existing clips, and then stitch them together to build an incident clip from all supported recorder and camera types.
- c) VMS shall be capable of adding the edited clips to an incident report or for export.
- d) VMS shall be capable of redacting objects from video clips and generating a redacted version of the clip for adding to an incident or exporting for play in VMS or third party video players.

ee) Incident Builder:

The VMS shall support the following incident building and reporting functions

- a) VMS shall be capable of providing a template for creating an incident report.
- b) VMS shall allow users to combine all motion and/or analytic alerts search results into a single video clip.
- c) VMS shall allow users to manage all of the information and collect the data into the incident report. It shall include, but not limited to the following:
 - Recorded Video Clips with integrated audio
 - Recorded Video Clips
 - Redacted Video Clips
 - Still Images

- Report Data
 - Report Charts
 - User Inputted and Edited Notes
 - Supported External Files
- d) VMS shall allow users to export the incident report using templates.
- e) VMS shall support for centralize storage of incident templates.
- f) VMS shall support creating secure incident export package and playback in player. Exported incidents can also be viewed using third party applications that support the media types.
- g) VMS shall support creating video bookmark either single point in time or with begin and end time.
- h) VMS shall support the listening of integrated audio in both the Incident Builder and Clip Builder applications.
- i) VMS shall support Incident Locker that allows administrators, investigators and users with allocated permissions to lock / unlock incidents. When enabled, it prevents making further changes to the incident while allowing all of its components to be viewed and exported.
- j) VMS shall support the ability to enforce specifying an alternative username and password credentials for accessing clips / incidents to prevent direct access via Windows.

ff) Presentation Builder:

The VMS shall support the following presentation building functions when licensed:

- a) VMS shall support three timelines to manage the organization of the video, image and documents files for the presentation.
- b) VMS shall utilize the Incident Builder outputs and be capable of combining the video clips, images and documents and exporting them as either a Incident Presentation or Report Export. The victor Player can also be exported alongside both of these.
- c) VMS shall include by default three report templates (BOLO, Media Clip Report, Blank) as well as provide ability to support any custom templates.
- d) VMS shall be capable of verifying any exported packages to ensure valid chain of custody from the original export date.

gg) Event Management:

The VMS shall support the following event management functions:

- a) VMS shall support dual phase acknowledgement with the ability to acknowledge an event, investigate the incident to determine what occurred, and then log a message either as a predetermined drop-down or user input field to ensure a seamless event workflow.
- b) VMS shall support using motion meta-data or embedded video intelligence to provide a bounding box that indicates what caused the alarm to be fired for easy visual identification within the Event Viewer.
- c) VMS shall support ability to customize how individual events are configured with regard to Acknowledge and Clear options that are assigned to event priorities.
- d) VMS shall support an Event Viewer that enables the user to acknowledge and/or clear events individually or collectively by group. When the event is acknowledged, it

shall be automatically removed from the Active pane and then added to the Acknowledged pane for further review.

- e) VMS shall support event association to trigger a DIO output action on a recorder and/or Camera.

hh) Object Association:

The VMS shall support the following object association functions:

- a) VMS shall support ability to allow any device within the security system (e.g. camera, door, etc.) to be linked to as many as five other objects. It shall utilize linking of unrelated victor objects with the intent of enabling incident building capability.
- b) Object associated within the VMS shall enable a Review option on the context menu of associated objects which will open a guard view that displays the source and associated objects. The association will be made with the Reports, Event Viewer and Activity List to simplify the task of reviewing events in the Event Viewer and objects in the maps. Hovering over the device icon on the map and clicking on the event could call-up associated video cameras and automatically synchronize the playback to the time of the event for easier investigation.
- c) VMS client shall support associated video with any device. The camera context menu in the device list shall include a “view associated video” option where a camera/door has other cameras associated to it.

ii) Storage Video Vault:

The VMS shall support the following storage video vault functions:

- a) VMS shall provide the ability to protect media on recorders from being data culled, by tagging the associated video and/or audio files. The vaulted items can be reviewed and/or exported from victor, and their vault status can also be changed to allow the files to be overwritten.
- b) VMS shall provide the ability to dynamically define the percentage of an available storage volume for use as the video vault without impacting any recorded video or requiring formatting of volumes.

jj) User Management / Permission Controls:

The VMS shall support the following user management and permission control functions:

- a) VMS shall protect access to objects via role based security permissions.
- b) VMS shall provide the following four pre-configured roles to facilitate easy initial system configuration:
 - Administrator – Full system access
 - Power User – High level access but the users cannot edit users and roles or add new devices to the system
 - Investigator – Secured user who can manage searches, clips and camera views. No access to device level features
 - Guard – Basic access. Users can primarily view information but not modify settings
 - Viewer – Basic View only role.

- c) VMS shall allow further user defined roles to be created and customized to the user's needs.
- d) VMS shall provide ability to simplify role assignments and configure access to types and objects through bulk configuration.
- e) For any individual user or group of users, the Role Editor shall allow the user to control users' access to any of the following functions:
 - Disable or enable access to any of the Menu-Ribbon bar functions, including Video Search, Events Web Browser, etc.
 - Disable or enable access to export clips as non-native AVI/MP4
 - Add, edit or delete any object from the system (e.g., cameras, recorders, keyboard, clips, folders, etc.)
 - Display / hide any camera, recorder, keyboard, monitor or other object in the system
 - Operate manual PTZ controls on an analog or IP PTZ camera
 - View recorded video on any connected camera or recorder
 - Listen to audio on any connected camera
 - Execute Time/Date or Motion searches on selected cameras or recorders
 - Export video from selected cameras or recorders
- f) Within VMS, objects shall be displayed to the operator based on his/her assigned operator privilege. The operator shall only be able to monitor/command those objects for which he or she has been assigned privilege.
- g) When an operator logs out of a workstation and a new operator logs on, the objects displayed on the workstation screen shall be dynamically updated to display only those objects for which the new operator has privilege and utilize their default workstation layout.
- h) VMS client shall allow the association of a default Application Layout to each defined Role, so that when an operator assigned to that role logs into any VMS client, the default Application Layout is displayed.
- i) VMS shall allow operators to be created and associated with a Windows Logon account.
- j) VMS shall support single sign on of users using the Windows account of the logged on user.
- k) VMS shall allow administrators the option to use LDAP to search Active Directories over IP networks to administer user roles and profiles from a single centralized LDAP server.

kk) Device Discovery:

The VMS shall support the following device discovery functions:

- a) VMS shall provide a device discovery tool that can be used to discover recorders and their associated cameras on the network.
- b) VMS shall allow ability to set separate preferences for each supported device type by configuring the system level device discovery settings.
- c) VMS shall support initiating device discovery mode and providing an interface that automatically separates discovered cameras, configured cameras and ignored cameras for each discovered recorder.

ll) Recorder Administration:

The VMS shall support the following recorder administration functions:

- a) VMS shall provide an interface to allow the user to add, edit or delete recorders to / from the system.
- b) VMS shall provide an interface to configure the NVR and Hybrid recorders using the native web administration page.

mm) Integrated Web Browser:

The VMS shall support the following integrated web browser functions:

- a) VMS client shall include an integrated Web Browser tab that can be combined with other user interface components (Video Views, Site View, Event Viewer, etc.) into an Application Layout. The Web Browser tab shall allow operators to continue monitoring their security system while also receiving weather or news updates from web-based information sources.
- b) Access to the Web Browser tab can be restricted via roles and permissions.

nn) Data Storage / Encryption:

The VMS shall support the following data storage and encryption functions:

- a) All programmed information, as well as transactional history, shall be automatically stored in the database for later retrieval and backup. VMS shall support configurations where the VMS database(s) may be installed on a hard drive on VMS, on an independent database server, or in an existing corporate database server.
- b) VMS shall allow activity history to be written to a database. The system shall have the capacity to store a minimum of 50 million transactions. There shall be a method of backing up the activity history on external media and then restoring and replaying it.
- c) VMS shall support AES 256-bit encrypted communications between server and VMS client.
- d) VMS shall support TLS encryption connections to recorders to enable capability to encrypt all RTSP communication between the VMS client and recorders.

oo) Database Backup / Restore:

The VMS shall support the following database backup and restore functions:

- a) VMS shall provide a means to collect, save and restore the system data. VMS can back up an existing database or restore a database from a specified folder location for the system SQL instance.
- b) VMS shall provide this utility within the existing Server Configuration application.
- c) VMS shall provide ability to create and restore recorder configuration backup files from the VMS.

pp) Dynamic Bandwidth Management:

The VMS shall support the following dynamic bandwidth management functions:

- a) VMS client shall allow the user to select from the status bar the bandwidth from the client to the recorders to utilize the frame dropping and transcoding of resolution for

optimal viewing experience for VMS clients connecting from remote locations with narrow bandwidth deployments:

- b) VMS client shall receive native video stream that may be modified by the recorder in an attempt to provide it at a lower data rate that can be consumed within the constraints of the VMS surveillance pane's dimension and connection capability.
- c) Recorder should support transcoding, image smoothing, selectable data rates, and prioritizing of frame rate or resolution when deployments are over a WAN with narrow bandwidth access by remote VMS clients.
- d) VMS client shall monitor and provide system performance information on the status bar:
 - CPU Usage
 - Available Free Memory
 - Available Free Disk Space
 - Network Usage for Individual NICs and Total Usage

qq) Networking:

The VMS shall support the following networking functions:

- a) VMS shall support the use of Ethernet networks as the communications path between VMS server or client and supported recorders. The communications between VMS server and the supported Recorders shall be encapsulated in a TCP/IP network/transport layer.
- b) VMS client shall allow the Administrator to control which network port VMS shall use for video transport in a Wide-Area-Network environment.

rr) Health Monitoring:

- a) The VMS shall support a health monitoring dashboard that will enable the the Operator to quickly identify the status of the devices on their system when licensed. Identifying the cause can be achieved by drilling down through flagged items.
- b) VMS health dashboard shall offer the status of system recorders (e.g. Normal, Reboot, Protection Status - Monitor, Protection Status - Failover, Alarm Recovery Completed, and Sensor Alarm).
- c) VMS health dashboard shall offer the status of Recorder Storage (e.g. Normal, No Volumes, Volumes Missing, Volume Corrupt, Volume Failed, New Volume, volume Re-added, Unhealthy Disk, Disk Temperature, Raid Degradation, and Disk Full).
- d) VMS health dashboard shall offer the status of system camera alerts (e.g. Unknown, Normal, and Video Loss).
- e) VMS health dashboard shall offer the status of video channel storage alerts (e.g. Normal, Maximum Retention, and Minimum Retention).
- f) VMS health dashboard shall show the health of all enterprise-wide supported devices when monitoring at the MAS on a large or distributed system. The states will be correct when launched and will be dynamically updated.
- g) VMS health dashboard shall be able to exclude disabled devices to eliminate non-applicable items and clear false offline camera alerts.
- h) VMS health dashboard shall display devices within tabs on device view for improved organization.

- i) VMS health dashboard shall display a summary of the active health alerts in the system.
- j) VMS health dashboard shall provide date and timestamp of the alerts/malfunctions that occurred to confirm time of failures.
- k) VMS health dashboard shall be able to remove cameras from the Devices and Sites tab.
- l) VMS health dashboard shall be able to have option to flag camera alerts as its parent recorder alerts.
- m) VMS health dashboard shall be able to report up to three streams of Video Stream Failure and Dark Frame Detection for each camera for Clients.
- n) VMS health and alert dashboard shall retrieve data stored on the VMS application Server to allow both Hard Client and Web client to retrieve past alerts to determine accurate recorder and camera status.

ss) Help:

The VMS shall support the following help functions:

- a) VMS shall provide access to help topics, which define the functions and operation of the program
- b) VMS GUI shall provide easy access to the program version information.
- c) VMS shall include link to download and view training video of VMS features.

tt) Printers:

The VMS shall support the following printer functions:

- a) VMS shall support report printing. The report printer(s) may be connected directly to the client PC, or shared over a network. VMS shall support as report printer(s) any printer for which a printer driver exists within the host operating system.

uu) Web Client:

The VMS shall support the following web solutions:

- a) VMS web client solution shall support standard web browsers to view live/recorded video from one or multiple recorders without the need to install any drivers or plug-ins.
- b) VMS web client solution shall support dock-view video and help section for improved user experience. Dockviews shall also remember selected object.
- c) VMS web client solution shall support PTZ control, fixed views, camera tours, salvos, sites, clips, event monitor, event setup, diagnostics, video search, text stream search, logs, event timeline, devices, dock able views, and health monitoring.
- d) VMS web client solution shall support snapshots, building out PTZ support with preset, pattern and sequence.
- e) VMS web client solution shall support accessing cameras from multiple recorders without requiring to logging in/out of each individual recorder (different IP addresses) for seamless user experience.
- f) VMS web client solution shall support various video layouts:

- g) VMS web client solution shall support victor scrub for local playback controls at 1x speed, similar to YouTube™ control.
- h) VMS web client solution shall support bandwidth-efficient “virtual camera” streams that enable a user to setup specific camera views on a multi-pane layout (e.g. 2x2) that will delivery it as a single stream to the clients.
- i) VMS web client solution shall support multiple default accounts that provide different levels of permission. Web client shall adhere to the roles of the Application Server when deployed on a victor Application
- j) VMS web client solution shall have the ability to support Health Monitoring. The dashboard shall be dynamically populated with recorders and their cameras when logging into Web as a Server operator user account. Health status for up to three individual streams of Video Stream Failure and Dark Frame Detection for each camera. It shall be supporting viewing a snapshot from a camera along with its health details.
- k) VMS web client solution shall have the ability to support Maps and one or more Maps exists on victor Application Server.
- l) VMS web client solution shall have the ability to support Retail Reporting. It shall also be able to generate a report for a camera that includes health details with snapshots.
- m) VMS web client solution shall dynamically include recorders and cameras when they are added, and sites when they are created by the VMS client.
- n) VMS web client solution shall support launching a monitor view of cameras and/or tours onto an external video output of a Hybrid spot monitor.
- o) VMS web client solution supports viewing real-time POS text streaming that is configured on the recorder. Text Stream Search shall support option to set number of seconds before and after the transaction search.
- p) VMS web client solution for Windows shall be able to support at least 6 languages. Users shall be able to select the desired language to display when launching the application. No additional installation of the application shall be required. The manufacturer shall make a list of supported languages available on their website.
- q) VMS web client solution shall support recorded video searches on LPR alarms provided that there are License Plate Recognition analytic channel licenses being utilized on the recorders.
- r) VMS web client solution shall support recorded video searches on Perimeter Protection alarms.
- s) VMS web client solution shall support Operators to login as a VMS Application Server Operator to view text streams, saved Views, Tours, and custom layouts within the web client GUI,
- t) VMS web client solution’s Event Monitor page will receive notification alarms with associated video for LPR and Perimeter Protection alerts.
- u) VMS web client solution shall support verification of live and recorded video.

vv) Mobile Client Application:

- The VMS shall support the following mobile solutions:
- VMS shall be able to support mobile clients
- VMS mobile client application shall support installation on both iOS and Android compatible devices which meet the minimum system requirements.

- VMS mobile client application shall utilize the NVR's advanced stream management and transcoding to deliver superior high definition quality video with minimal lag and/or latency.
- VMS mobile client application shall be able to monitor alarms and events remotely.
- VMS mobile client application shall be able to view live events in multiple pane layouts based on available connectivity speed.
- VMS mobile client application shall be able to quickly navigate recorded video to a specific date and time for forensic investigation.
- VMS mobile client application shall monitor and acknowledge events from the Application Server.
- VMS mobile client application shall be able to easily save cameras as "fixed views."
- VMS mobile client application shall instantly be able to control PTZ cameras with intuitive gestures standard to smart devices.

ww) Push-to-Talk:

The VMS shall support the following broadcast audio communication:

- a) VMS shall offer operators a push-to-talk feature that will allow audio to be broadcasted to recorder which, in turn, can then transmit it to speakers or a PA system.

SECTION 4.

3. NETWORK VIDEO RECORDERS & STORAGE

a) Recording Regime

The system shall allow the recording regime to be individually set for each camera in terms of:

- Video quality (i.e. recording resolution, quality and frame rate)
- Recording modes (i.e. continuous (including background), on alarm activation (including alarms via any interfaces), VMD and/or snap shot).
- Further to this, the system shall have the ability to dynamically change the recording settings on alarm.

The recording regime shall be configured as follows:

- Provide a continuous base recording frame rate of 10 (10) frames every second.
- Upon activation of an alarm, the frame rate shall be increased to thirty frames-per-second (30 fps) until the alarm is reset/restored. The system shall also provide ten (10) seconds pre and post alarm recording at the same designated frame rate.
- When movement is detected, regardless of the time, the frame rate shall be increased to fifteen frames-per-second (15) until the movement ceases.
- For the purpose of storage calculations it shall be assumed that movement will be present 50% of the time.
- All images shall be recorded at the best possible quality and a minimum resolution of 1080p (1920x1080 pixels (2.1 megapixel)).
- Under no circumstances shall recording resolution and image quality be compromised to reduce or minimise network bandwidth or hard disk storage capacity
- Utilise H.264 video compression.
- The compression algorithms used for the transmission and storage of video shall be configured with a latency of not more than one-&-one-half (1½) seconds between reference "I" frames.

b) Storage Capacity:

The NVMS shall provide sufficient storage capacity to retain all recorded images/video clips for a minimum of **ninety (90) days** before images are overwritten. The system shall automatically overwrite stored images on a "first in first out" basis (i.e. oldest images are overwritten first).

c) Indoor Dome Cameras c/w IR & Video Analytic License

Feature	Specification Requirement
Video Compression	H.264 / H.265 / MJPEG / IntelliZip
Max Frame Rate	8MP @ 3840 x 2160/30fps
Resolution Options	8MP, 3840x2160 (4K) 16:9, 3264x1840 16:9, 2592x1944 4:3, 2688x1520 16:9, 2048x1536 (QXGA) 4:3, 1920x1080 (1080p) 16:9, 1280x960 (SXGA-) 4:3, 1280x720 (720p) 16:9, 800x600 (SVGA) 4:3, 640x480 (640VGA) 4:3, 640x360 (nHD) 16:9
Imager	1/2.5" CMOS
True Day/Night	True D/N with ICR
Video Streams	Triple Stream
Focus	Motorized Varifocal and Focus
Field of View	Wide Angel: 111°/61°/130° (w), 43°/25°/53° (t)
Power Input	24VAC, PoE IEEE 802.3af class 2
Wide Dynamic Range	Yes, 100dB
Vandal-Resistant	IK10
ONVIF Compliant	ONVIF profile S
Lens Type	Varifocal
Video Intelligence	Linger, exit, direction, abandoned/removed objects, queue, dwell, enter, object detection, crowd ,perimeter
Micro SD Card	Yes
Material	Polycarbonate
Operating Temperature	-14°F ~ 122°F (-10 °C ~ 50 °C)

d) Indoor/Outdoor Bullet Camera c/w IR & Video Analytic License

Feature	Specification Requirement
Video Compression	H.264 / H.265 / MJPEG / IntelliZip
Max Frame Rate	8MP @ 30fps
Resolution Options	8MP, 3840x2160 (4K) 16:9, 3264x1840 16:9, 2592x1944 4:3, 2688x1520 16:9, 2048x1536 (QXGA) 4:3, 1920x1080 (1080p) 16:9, 1280x960 (SXGA-) 4:3, 1280x720 (720p) 16:9, 800x600 (SVGA) 4:3, 640x480 (640VGA) 4:3, 640x360 (nHD) 16:9
Imager	1/2.5" CMOS
True Day/Night	True D/N with ICR
Video Streams	Triple Stream
Focus	Motorized Varifocal and Focus
Field of View	Wide Angel: 111°/61°/130° (w), 43°/25°/53° (t)
Power Input	24VAC, PoE IEEE 802.3af class 2
Wide Dynamic Range	Yes, 100dB
Onboard Storage	Micro SDXC Up To 128GB (Must be Included)
Vandal-Resistant	IK10
ONVIF Compliant	ONVIF profile S
Lens Type	Varifocal
Video Intelligence	Linger, exit, direction, abandoned/removed objects, queue, dwell, enter, object detection, crowd ,perimeter
Environment	IP66
Lens Type	Varifocal
Micro SD Card	Yes
Material	Polycarbonate
Operating Temperature	-14°F ~ 122°F (-10 °C ~ 50 °C)

e) Indoor Panoramic Cameras c/w IR

Feature	Specification Requirement
Video Compression	H.265 High/Main / MJPEG
Max Frame Rate	20 FPS @ 12 MP
Max Resolution	12 MP, (4000x3000)
Noise Reduction	Digital Noise Reduction 3D/2D
Imager	1/1.7" CMOS
True Day/Night	True D/N with ICR
Streams	Stream1: 4000x3000 @20fps, 4096x2160/3840x2160/3000x3000/2560x2560/1920x1080 @25/30fps Stream 2:1280x960/D1/720x720 @25/30fps
Field of View	360° (180° x 180°)
Power Input	12V DC, PoE+ IEEE 802.3at class 4

Wide Dynamic Range	dWDR
Vandal-Resistant	IK10
Environment	IP66

f) Outdoor PTZ Camera c/w IR

Feature	Specification Requirement
Video Compression	H.264 / H.265 / MJPEG / IntelliZip
Max Frame Rate	30 FPS @ 5 MP
Resolution Options	5MP, 4MP, 2MP, 1MP, 1920 x 1080 (1080p) 16:9, 1600 x 900 (HD+) 16:9, 1280 x 720 (720p) 16:9, 1024 x 576 (PAL+) 16:9, 960 x 540 (qHD) 16:9, 800 x 450 16:9, 640 x 360 (nHD) 16:9, 480 x 270 16:9, 320 x 180 16:9, 160 x 90 16:9
Pan Tilt	360° Continuous, -15° ~ +90°
Pre-sets	96
Noise Reduction	Digital Noise Reduction 2D & 3D
Imager	1/3" CMOS
True Day/Night	True D/N with ICR
Video Streams	Triple Stream
Focus	Motorized Varifocal and Focus
Field of View	Wide Angle: 104°/56° / Telephoto: 42°/24°
Power Input	24VAC, PoE+ IEEE 802.3at class 4
Wide Dynamic Range	Yes, 100dB
Vandal-Resistant	IK10
ONVIF Compliant	ONVIF profile S
Lens Type	Varifocal
Video Intelligence	Linger, exit, direction, abandoned/removed objects, queue, dwell, enter, object detection, crowd ,perimeter
Environment	IP66

SECTION 5.

ENTRANCE CONTROL SYSTEM

4. PEDESTRIAN ENTRANCE CONTROL SYSTEMS

The following Pedestrian Entrance Control Systems should be provided to ensure that all pedestrians entering the vicinity are properly inspected prior to entering the premises.

a) Walkthrough Metal Detector (With Thermal/Fever Detection)

Feature	Specification Requirement
Detection Zones	Minimum 33 zones (left, right and centre) with visual and remote alarms.
Detection	Magnetic, non-magnetic and mixed-alloy metal weapons Wide range of threat detection from guns to ½ cutter blade. High precision bidirectional counter with automatic rescreening compensation (option).
Standard Interfaces	RS-232, Infrared, Ethernet, USB
Synchronization	Synchronization with wired AC power lines or with manual frequency selection for wireless operation
Visual Display	LED zone indicator lights on both panels. Pace lights on entry side only, with intuitive images.
Access Control	keypad with numerical codes. Keypad lock to control access and to enable/disable the keypad.
Passage Way Interior Size	At Least; Width 30" (0.76 m) Height 80" (2.03 m) Depth 23" (0.58 m)
Operating Temperature	-4° F (-20° C) to +149° F (65° C); Humidity to 95% non-condensing.
Power	100 ~ 240 VAC, 50 ~ 60 Hertz
Weatherproofing	To meet IP 55, IP 65, IEC 529 Standard for moisture, foreign matter protection

The Walkthrough Metal Detector should be high performance multi zone equal to CEIA/Garett/Meteor 6M/ or equivalent and ensure that all features are equally met for an alternative product suggested.

b) Hand Held Metal Detector

- The required unit shall be a high-sensitivity handheld metal detector designed to detect metal masses on people or objects.
- The required hand held metal detector shall be designed to conduct effective searches of individuals and items such as clothing, baggage, correspondence, etc.
- It should be highly sensitive to both magnetic and nonmagnetic metals and accurately detects weapons, detonators or other small metal masses. Its ergonomic design shall enable rapid security screening and reduces operator fatigue.
- The required hand held metal detector should be with a self-calibrating feature and a rechargeable model.

Specifications:

Power Supply	9V NiMH with contact charger
Operation	Three-position switch
Signal	Built-in buzzer/High intensity pulsed acoustic alarm. Indicator lamps for power on, alarm, and low battery charge. The unit shall be equipped with an optional earpiece output for audible alarm
Battery	In continuous operation: with NiMH batteries: 50 hours maximum
Operating Temperature	-15°C to 60°C
Storage Temperature	-25°C to 70°C
Relative Humidity	0 - 95% without condensation

The battery charger (NiMH batteries) shall also function as a stand for the metal detection unit.

The technical specifications for the charger should be as follows:

- Power supply: 110-240Vac, 50/60 Hz
- Recharging time: 16-18 hours minimum
- ON/OFF switch with indicator lamp
- Length of main cable: 1.8 m
- Length of cable for connecting charging units 0.17 m
- Shock-resistant ABS: black

The unit shall be supplied with carrying-case for safe and convenient storage and transportation of the unit and its accessories, with compartments for the metal detector, battery charger, spare NiMH battery, power supply cable and operating instructions.

c) VEHICLE ENTRANCE CONTROL SYSTEMS

a. Handheld Explosives Detector

Specifications:

Sensor Technologies	High-Frequency Quartz Crystal Microbalance Sensors(HF-QCM) No gas carrier. No Radioactive source
Sample Collection	Trace Particles and Vapors
Explosives Detected	Military and plastic explosives, including: TNT, C4, RDX, Semtex, PETN and other improvised and homemade explosives, including: TATP, HMTD, Urea Nitrate, Ammonium Nitrate and others. Additional explosives upon expandable threat library.
Sensitivity Particle	Low Nano gram (ng) range
Vapour	Low parts per million (ppm) range
False Alarm	Less than 2%
Warm-up Time	Less than 60 seconds
Analysis Time	Between 7 to 15 seconds, or less
Alarm Type	Audio and Visual, with substance identification
Display	At least 3.5" colour TFT touchscreen LCD display
Data Storage	Unlimited data logging, including time, date, sample analysis and system status.
Data Transfer	Micro USB Port, Optional Bluetooth and Wi-Fi
Battery	Rechargeable Lithium-ion battery with 6 hours of field operations
Operating Temperature Range	20°F to 130°F (-7 °C to +54 °C), less than 95% relative humidity, non-condensing
Certification	ISO 9001:2015 Manufacturing Standards

b. LPR Camera

LPR (License Plate Recognition) SYSTEM

- The required LPR (License Plate Recognition) should be a sophisticated image processing system that tracks the cars' plates, reads and identifies their numbers.
- The identified number should be displayed on the system display, and can be transferred to an external computer or to other Windows applications or via the TCP/IP network. The image file(s) can also be saved locally on disk.
- The system will be placed at the side of a traffic lane or in any other location that requires automatic identification.
- The LPR system should include hardware and software, as well as the hardware interface which manages and controls the cameras, illumination units, frame grabber, and I/O card.
- The hardware components should include proprietary integrated camera/illumination units designed and manufactured to the specific demands of the LPR system, thereby providing optimal performance and reliability.

Specifications:

Video compression	H.264 (MPEG-4) / JPEG
Resolution	1920x1080 HDTV 1080p to 160x120
Frame rate	With WDR: Up to 25/30 fps (50/60 Hz) in all resolutions Without WDR: Up to 50/60 fps (50/60 Hz) in all resolutions
Image sensor	1/2.8" progressive scan.
Supported protocols	IPv4, IPv6 USGv6, HTTP, HTTPSa, SSL/TLSa, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, SRTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS, SSH, LLDP, MQTT
Vehicle speed	Up to 200 km/h (81 mph).
Event triggers	Analytics, edge storage events Supervised external input, virtual inputs through API, shock detection
Event actions	Pre- and post-alarm video buffering File upload: FTP, SFTP, HTTP, HTTPS, network share and email Notification: email, HTTP, HTTPS, TCP and SNMP trap
Casing	IP66 Rated, , IK10 impact-resistant aluminum enclosure with integrated dehumidifying membrane, IK08 impact-resistant glass front window, weather shield with anti-glare coating, Wind survivability 60 m/s (134 mph)
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3
Operating conditions	-40 °C to 60 °C (-40 °F to 140 °F), 74 °C (165 °F) Humidity 10-100% RH (condensing)

SECTION 6.

CONTROL ROOM

a) VIDEO WALL

Video Wall Configuration Requirement

The following are the minimum specifications and requirements for the Video Wall required for the Control Room Video Wall.

- Video Wall with Monitor's Minimum Size of 65" each
- The Monitor should be of a Professional/Industrial Grade and from a reputable manufacturer such as NEC, Samsung, Barco, Meccer etc. Rated for 24/7/365 Operation.
- The Monitors should support Full HD
- The Monitors should be able to Auto Sync in order to ensure that the Picture Frame Rate & Resolution is equal across the Video Wall
- Video Wall Matrix Shall Be Provided as part of the Video Wall Configuration
- The Video Wall Matrix Software Should support and be able to be integrated to the Security Management System in order to be able to Push Information to the Fore Front

b) IP based Intercom System

- The required intercom system will serve for communicating the security checkpoints with the security control centre.
- The offered intercom will be using the TCP/IP network which serves the CCTV and all other security systems included in this project.
- The offered system should provide direct and instant two-way communication over TCP/IP Networks.
- The Intercom system should be completely digital and 100% IP-based with endpoints individually addressed for two-way intercom communication and paging.
- System Features
 - a. Network-based intercom system consisting of an exchange unit and dedicated master and door stations.
 - b. Single exchange can connect any combination of door and master stations up to 16 units.
 - c. Up to 80 exchanges can be included on a system for a total of 1280 communication devices.
 - d. IP Direct master station and vandal resistant extensions, connect directly to a LAN/WAN and do not require an exchange unit.
 - e. Efficient method of communicating over local or wide area network using existing infrastructure.
 - f. Full complement of PC Programmable functions and features. Some of them include: Redial, Recall, Auto-dialing, Group Call, Group Searching, Absence transfer, Call Forwarding, Call Hold, and Scan Monitor.
 - g. Automatic echo cancellation prevents clipping and ghosting during hands-free simultaneous conversation.
 - h. Adjustable microphone and speaker levels on all stations for high ambient noise areas.
 - i. Stations incorporate a built-in speaker to allow paging through the units.
 - j. Paging through overhead speaker network using an external amplifier with total broadcast capabilities of up to 160-zones with paging and all-call paging.
 - k. Total system maintenance can be performed off-site using a personal computer with provided software.
 - l. 7 KHz communication frequency provides better clarity than most telephones.
 - m. System occupies a very low amount of bandwidth.

The central unit at the control station will be Standard Handset Master Station with the following features:

- i. Hands-free or Handset Communication
- ii. Keypad for calling

- iii. Programmable one touch dialling assignments
- iv. Paging
- v. Call Transfer

The extension units will have the following functions:

- i. Weather resistant
- ii. Hands-free full duplex communication
- iii. Flush mount (3-gang)
- iv. IP-54 rated
- v. Door release open collector output (30VDC, 50mA)

The Exchange & Multi-Interface Units with the following features:

- i. 16 Stations per exchange
- ii. 2 paging outputs per exchange (0dB, 600□)
- iii. 2 paging control outputs per exchange (24VDC, 500mA)
- iv. 10 BASE-T or 100 BASE-TX network connection (RJ45)
- v. 4 internal and 8 external communication links
- vi. EIA standard rack (1 U) mountable

c) Video Intercom

- a) In few places in the project some local video intercom systems will be required.
- b) Each video intercom system will be based on:
 - Door/gate unit, based on calling panel, microphone, speaker and video camera.
 - Monitoring unit based on answering panel, microphone, speaker and video monitor.
- c) Door Station Features:
 - Push button to call inside station(s)
 - Compact surface mount design
 - Cameras mount to 1-gang box or ring
 - Tilt color camera
 - Call button rings chime at inside monitor
 - Audio and video activate with door call-in
 - Hands free communication when master answers
 - Built-in illumination for low light applications
 - External light with automatic activation can be added
 - Simple 2-wire hook up - can replace existing doorbell
 - Color Video System Features
 - Selective calling and All Call between inside stations.
 - Up to 5 inside stations
 - Camera angle can be adjusted 40° vertically
 - Color video monitor (4" TFT LCD)
 - Illuminating LED's for low light conditions.
 - Chime at inside monitor when called from door
 - Audio and video turns on when called or when monitoring
 - Visually identify visitors before letting them in

- Handset for two-way communication at inside station
- Hands free communication at the door station
- Built-in illumination for low light conditions
- External light with automatic activation can be added
- Remotely activate door strike
- Selective door release with adaptor
- Audio-only handset station available.
- Hands free Audio and Video monitoring.
- Compact surface mount color video door station.

Technical specifications:

Power Source:	24V DC. Use one PS-24E for every two
Operating Temperature:	14° ~ 140° F
Camera Unit:	CCD (Charged Coupled Device)
Overall Viewing Area:	36" Vertical x 72" Horizontal at 20"
Video Monitor:	4" TFT LCD
Scanning Lines:	525 lines
Internal Calling:	Selectively call by voice with hands free reply. All call by voice (no reply)
Communication:	Hands free at door station, Handset at monitor
Material:	ABS plastic
Color:	Black
Mounting:	Surface mount to 1-gang box or ring
Door Release Contact:	Normally Open - 24V DC, 1A Max.
Dimensions (H x W x D):	9" x 7-1/2" x 2-3/4"

d) Public Address System

- Public address system will be supplied and installed in the building to be used only in case of emergency.
- The public address system will be IP based using the security data network. The system will be based on distributed architecture (no central amplifiers).
- The system will be using the same data network used by the other security systems.

- The main components of the system will be the Network ceiling/wall mount Speakers which will be connected directly to the network and operated and managed by a central software.
- The managing Public Address software can be a dedicated package or a feature within the SMS or the VMS package.
- The required Network Horn Speaker should be a simple-to-install outdoor loudspeaker that provides clear, long-range speech.
- In live video monitoring situations, the required system should enable an operator to remotely address people and deter unwanted activity. The loudspeaker should be able also play a pre-recorded audio file when it is manually or automatically triggered in response to an alarm event.
- The system should announcements possible from anywhere with network connectivity. It should easily integrate with video management software (VMS) that support two-way audio and with Voice over IP (VoIP) telephony systems that use SIP (Session Initiation Protocol).
- The loudspeaker unit should be easy to install. The loudspeaker should have a built-in amplifier and supports Power over Ethernet (PoE). It will be connected directly to an IP network with one network cable for communication and power.
- The loudspeaker should have low power consumption, enabling a high sound pressure exceeding 121dB. Being a standalone unit, the loudspeaker can be placed anywhere, enabling a flexible, scalable and cost-effective approach to system design.
- The loudspeaker should have an Auto Speaker Test functionality feature which can check that the speaker is in working order by providing audio feedback to the system.
- The speaker should come with pre-recorded audio files and allows users to upload their own audio.

Technical specifications:

Audio	
Audio Streaming	One-way/two-way (mono)
Audio Compression	G.711 PCM 8 KHz, G.726 ADPCM 8KHz, configurable bit rate.
Audio Input/output	Built-in microphone (can be disabled mechanically)
Built-In Microphone	50 Hz – 16 KHz
Speaker	
Max Sound Pressure Level	Higher than 121dB
Frequency Response	280 Hz - 12.5 kHz
Coverage Pattern	70° horizontal by 100° vertical (at 2 kHz)
Amplifier	Built-in 7 W Class D amplifier
Network	
Security	Password protection, IP address filtering, HTTPSa encryption, IEEE 802.1Xa network access control, Digest authentication, User Access log.
Supported Protocols	IPv4/v6, HTTP, HTTPSa, SIP, SSL/TLSa, QoS Layer 3 DiffServ, FTP, CIFS/SMB, SMTP, Bonjour, UPnP, SNMP v1/v2c/v3(MIB-II), DNS, DynDNS, NTP, TCP, UDP, IGMP, ICMP, DHCP, ARP, SOCKS, SSH

System Integration	
Programming Interface	Open API for software integration, including VAPIX;®
Intelligent Audio	Auto Speaker Test
Event Triggers	Call, Virtual inputs
Event Actions	File upload: HTTP, network share and email Notification: email, HTTP and TCP, Play audio clip, Send Auto Speaker Test, Send SNM trap, Status LED
Built-In Installation Aid	Test tone
Functional Monitoring	Auto Speaker Test, Connection Verification, Built-in system logging
General	
Casing	Impact-resistant aluminium, IP66-, IP67- and NEM 4X-rated.
Memory	256 MB RAM, 256 MB Flash
Power	Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class) max 12.95 W Connectors: RJ45 10BASE-T/100BASE-TX PoE
Operating Conditions	-20° C to 50 °C (-4 °F to 122 °F) Humidity 10–100% RH (condensing)
Coverage pattern	70° horizontal by 100° vertical (at 2 kHz)
Dimensions	Without bracket: 164 x 225 x 250 mm (6 1/2 x 8 7/8 x 9 7/8 in.). With bracket: 164 x225 x 305 mm

e) **Gunshot Detection & Lockdown System**

- The only realistic way to decrease notification and response times is with an automated gunfire detection system.
- The required detector should use gunshot location technology capable of detecting threats of staff, visitors and physical assets whether directly outside the facility or in the surrounding area.
- The detector should ensure continuously monitor for gunshots and acoustic experts filter out false positives. Alerts are sent to first responders, providing them with important context for critical situational awareness.

1) **Detection & Location**

- First, highly-specialized software analyses audio signals for potential gunshots. The software filters out ambient background noise, such as traffic or wind, and listens for impulsive sounds characteristic of gunfire.
- If the sensor detects a pulse, it extracts pulse features from the waveform, such as sharpness, strength, duration and decay time.
- If at least three sensors detect a pulse that is believed to be a gunshot, the sensor then sends a small data packet to cloud servers where

multilateration is used based on time difference of arrival and angle of arrival of the sound to determine a precise location.

2) Classification

- After the software determines the location of the sound source, it analyzes the pulse features to determine if the sound is likely to be gunfire.
- To evaluate and classify the sound, algorithms consider the distance from the sound source, pattern matching and other heuristic methods.
- The machine classifier compares the sound to the large database of known gunfire and other impulsive community sounds to determine if it is gunfire.
- Once an incident is classified as likely gunfire, it operates an alarm signal which is sent to the SMS.

f) 60 Minutes Fire Rated Doors

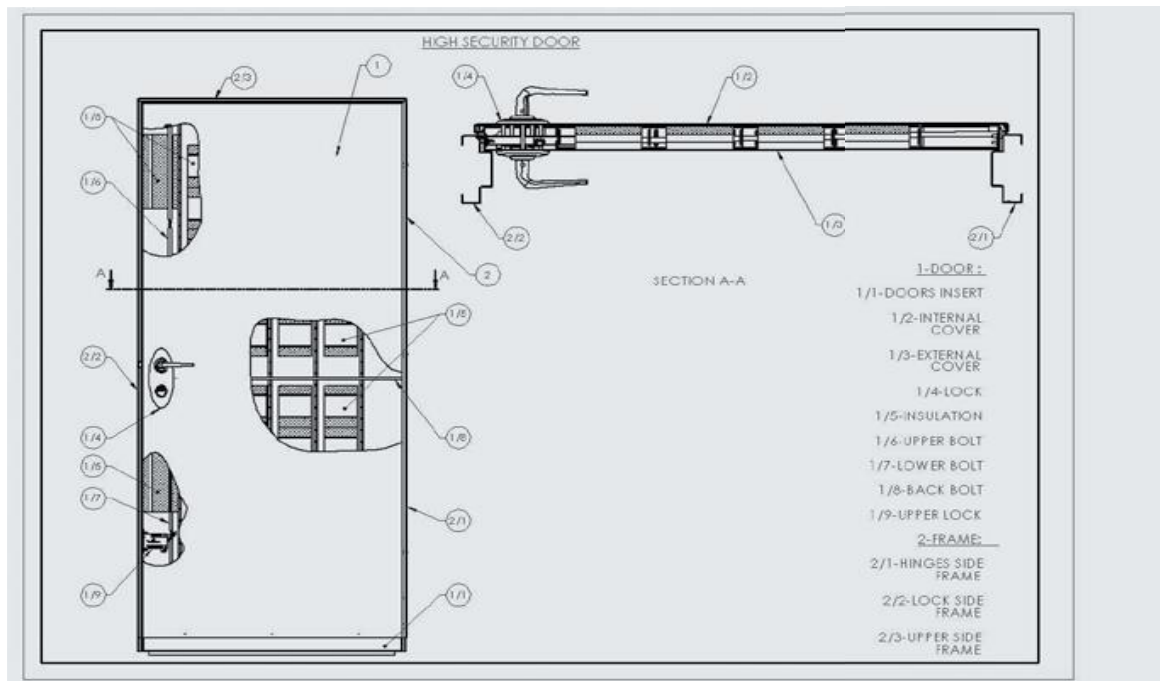
- 1) The required **Single Leaf Fire Door** should be a 60 min fire rated door, meeting with International fire regulations, providing outstanding protection for various types of commercial and residential buildings, industries and institutions.
- 2) Technical specification
 - General Description: Door leaf with two 0.8mm thick galvanized steel casings and interior reinforcements, intumescent gasket between door and frame. Fire rated hardware & telescopic bottom insert for final height adjustment.
 - Hardware & Accessories:
 - Anti -Panic Lock
 - Moveable lever door handles / Fixed handle
 - Panic bar or Push bar.
 - Hydraulic closer.
 - Door closing coordinator for double door.
 - Door Finish: PVC finish or powder coating.

g) Security Door

- 1) The security doors will be installed in the rooms which are defined as safe rooms (shelters) at the Kenya Re floors.
- 2) The door should be made of two 1.25 mm (18 gauge) thick, galvanized, steel casings which are reinforced by 5 longitudinal steel bars placed along the leaf between the casings.
- 3) Acoustic & Thermal Insulation.
The gaps between the longitudinal bars should be filled with self-extinguishing hard polystyrene foam with a density of 13kg (0.811 lb), in compliance with local relevant standards.
- 4) Door Weight.
The standard door leaf weight should be approximately 50 kg (110 lb).
- 5) Door Frame.
Frames should be made of a 1.25 or 1.5 mm bent steel sheet.
- 6) Accessories & Hardware.
The required door should be equipped with

- Geometric 4-way lock,
- High security double cylinder,
- Cylinder protector,
- Floor door stopper,
- Internal door-handle,
- External knob type handle,
- Heavy duty door closer,

7) The following drawing illustrates the structure of the requested security door:



h) VHF Radio Communication System

This shall come complete with a charging dock for the portable radios.

i. Limited Keypad Model

- Integrated accelerometer for optional Man Down
- Bluetooth® 4.0
- Indoor location tracking
- Multi-constellation GPS for increased location accuracy
- Integrated Wi-Fi
- Over-the-air software updates
- Enhanced audio quality
- Improved expandability
- Better battery life (up to 28 hrs)
- Better range on Digital Mode
- Better waterproofing (IP68)

Specifications:

Channel Capacity	1000
Frequency Range	136-174 MHz
High Power Output	5 W
Low Power Output	1W
Channel Spacing	12.5, 20, 25 kHz
Dimensions (HxWxD),Radio + Standard 2250 mAh Battery.	130 x 55 x 41 mm
Weight, Radio + Standard 2250 mAh Battery	347 g
Dimensions(HxWxD), Radio + Slim 2050 mAh Battery	130 x 55 x 36 mm
Digital / Analogue Battery Life 1, Standard 2250 mAh Battery	22 / 16.5 hrs
Digital / Analogue Battery Life1, High Capacity LV 3000 mAh Battery	29 / 22 hrs
Power Supply (Nominal), Battery.	7.5 V

ii. Non-Keypad Model

- Integrated accelerometer for optional Man Down
- Bluetooth® 4.0
- Indoor location tracking
- Multi-constellation GPS for increased location accuracy
- Integrated Wi-Fi
- Over-the-air software updates
- Enhanced audio quality
- Improved expandability
- Better battery life (up to 28 hrs)
- Better range on Digital mode.
- Better waterproofing (IP68)

Specifications:

Channel Capacity	32
------------------	----

Frequency Range	136-174 MHz
High Power Output	5 W
Low Power Output	1W
Channel Spacing	12.5, 20, 25 kHz
Dimensions (HxWxD),Radio + Standard 2250 mAh Battery.	130 x 55 x 40 mm
Weight, Radio + Standard 2250 mAh Battery	322 g
Dimensions(HxWxD), Radio + Slim 2050 mAh Battery	130 x 55 x 34 mm
Digital / Analogue Battery Life 1, Standard 2250 mAh Battery	22 / 16.5 hrs
Digital / Analogue Battery Life1, High Capacity LV 3000 mAh Battery	29 / 22 hrs
Power Supply (Nominal), Battery.	7.5 V

STATIONARY BASE STATION

MUST be CM300 by MOTOROLA or MOST MODERN EQUIVALENT with the following key features (as minimum)

- a. 8 Channels
- b. 8 Character Alphanumeric Display
- c. Switchable 12.5/20/25 kHz
- d. Increases volume of un-answered alarm alert
- e. Voice-Operated Transmit
- f. High/Low Power Settings
- g. Local/Distance Mode
- h. 2 Programmable Buttons
- i. System Scan and Auto Scan
- j. Supports Up to 16 Scan Lists of Up to 16 Channels Each
- k. Frequently scans higher-priority channels
- l. Customizable Audio Indicator Tones
- m. Adjustable Backlit Intensity
- n. Microphone/earpiece cable system
- o. Power cable.

i) **48 Port Full PoE Network Switch**

- i. Up to 48 ports of full Power over Ethernet Plus (PoE+) capability
- ii. Resiliency with Field-Replaceable Units (FRU) and redundant power supply, fans, and modular uplinks
- iii. Flexible downlink options with data, PoE+ or mGig

- iv. Operational efficiency with optional backplane stacking, supporting stacking bandwidth up to 160 Gbps
- v. UADP 2.0 Mini with integrated CPU.
- vi. Enhanced security with AES-128 MACsec encryption.
- vii. Layer 3 capabilities, including OSPF, EIGRP, ISIS, RIP, and routed access
- viii. Advanced network monitoring using Full Flexible NetFlow
- ix. Software-Defined Access (SD-Access).
- x. Simplified operations and deployment with policy-based automation from edge to cloud managed with Identity Services Engine (ISE).
- xi. Plug and Play (PnP) enabled.
- xii. IOS XE: Model-driven programmability and streaming telemetry.
- xiii. ASIC with programmable pipeline and micro-engine capabilities, along with template-based, configurable allocation of Layer 2 and Layer 3 forwarding, Access Control Lists (ACLs), and Quality of Service (QoS) entries
- xiv. Dimensions: 1.73" x 17.5" x 11.3"
- xv. Connectors and cabling:
 - 1000BASE-T ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling
 - 1000BASE-T SFP-based ports: RJ-45 connectors, 4-pair Cat 5E UTP cabling
 - 100BASE-FX, 1000BASE-SX, -LX/LH, -ZX, -BX10, dense wavelength-division multiplexing (DWDM) and Coarse Wavelength-Division Multiplexing (CWDM) SFP transceivers: LC fiber connectors (single-mode or multimode fiber)
 - 10GBASE-SR, LR, LRM (only C9200), ER, ZR, DWDM SFP+ transceivers: LC fiber connectors (single-mode or multimode fiber)
 - SFP+ connector
 - StackWise-160/80 stacking ports: copper-based StackWise cabling
 - Ethernet management port: RJ-45 connectors, 4-pair Cat 5 UTP cabling
 - Management console port: RJ-45-to-DB9 cable for PC connections, USB-C adaptor, USB adaptor
- xvi. Power Connectors:
 - Internal Power supply unit – Auto-ranging unit
 - To support input voltages between 100 and 240V AC

j) GUARD PATROL SYSTEM

20 Point - Patrol Control

The patrol control system is based on the following elements:

- Portable guard tour terminal used by the guard during the patrol with a base for charging the battery and downloading the data to the software application.
- Remote coded units distributed on the site (RFID transponder).

Specifications:

Guard Tour Terminal	The required guard tour terminal should be a durable Data Collection Terminal, based on RFID technology. The required metal housing shall be water-resistant and shock-proof
Features	Robust Baton type metal housing Single-cell battery operation Journal memory 14320 records Water-resistant and shock-proof Simple one button operation for scan and communication LED and buzzer to show operation status Upgradeable Firmware Power saving feature for long battery operation IP66 Rating
Baton/Wand Specifications	Power Requirement: Size C / UM-2 Single-Cell Alkaline battery*1 Reading Range: ~ 4cm Memory: 512K,14320 records Indicator: LED/Beeper Frequency and Format: 125KHz, ASK, 64 bits, Manchester encoding Operating temperature range: -10 ~ +50 degree C
Base Station Specifications	Interface: USB or RS232 Power Requirement: USB: 5V DC/200mA, RS232: 5VDC Indicator: LED Operating temperature range: -10 ~ +50 degree

k) Intrusion Detection & Alarm System.

Integrated intrusion panel

- Up to 520 zones.
- Up to 64 doors controlled.
- Protecting up to 32 groups.
- Up to 1000 users.
- Up to 67 weekly schedules available.
- Up to 32 yearly holiday schedules.
- Door access controlled by access templates and group set status.
- Areas behind a door can be unset automatically via card reader.
- Users can be managed automatically and remotely in up to 5 Galaxy panels with WIN-PAK for Galaxy.
- Events can be identified instantly using realistic floor plans with WIN-PAK for Galaxy.
- Access event log with 1000 events recorded in panel (separate intruder log).
- GPRS, Ethernet, PSTN, USB communications options.
- Groups can be set via door control readers.
- Evacuation control will allow doors to unlock in the event of fire.
- Up to 32 audio verification channels.
- Multi-language interface.
- GX remote control Mobile App for remote management of up to 20 sites from a single smart device.
- The Galaxy Dimension range has been independently tested and is compliant to EN50131-3:2009, EN50131-6:2008, PD6662:2010.
- Compatible with all wiegand readers.
- Up to 8 wireless interface modules (RF portals).
- Up to 192 wireless zones.
- Up to 100 key fobs.
- Full bi-directional agile routing (patented technology).
- Full range of wired and wireless intrusion and environmental detectors.

Keypad

- Suitable for use in all Galaxy systems.
- Combined LCD Keypad proximity card reader.
- Offers the option of setting/unsetting the system either by PIN entry or by presenting a Proximity ID card to the base of the unit.
- Stylish design.
- Tactile backlit rubber buttons.
- Full system control.
- 32 alphanumeric backlit display.
- Tamper protection.
- Can be mounted directly to the panel up to distances of 1000m.
- Easy installation.
- PD6662:2004/2010 EN50131-1 Security Grade 3, Environmental Class II.
- Dimensions (h x w x d): 149 x 91 x 31mm.

DUAL TEC Motion Sensor.

- Type of detection PIR (mirror) + Microwave.
- Range 16 x 22 m.
- EOL resistors.
- Alarm & tamper : 1K, 2.2K, 4.7K & 5.6K ; default = 1K.
- Anti-Mask(*)/trouble : 2.2K, 3K; default = 3K.
- Detection zones 36 long range, 10 intermediate, 12 lower, 2 look down.
- Walk test 30 s.
- Frequency X-Band : 10.587 GHz.
- RFI Immunity 15 V/m, 80 MHz – 2.7 GHz.
- Mounting height 2.3m optimal.

- Power requirements 9 – 15V dc.
- Consumption 9mA typical, 14mA max. (@ambient temperature).
- Alarm relay Form A / 30 mA@25 Vdc, max. 22 Ohm / Duration: 3 s.
- Anti-Mask(*) / trouble relay Form B / 30 mA@25 Vdc, max. 22 Ohm.
- Tamper Form A / 30 mA@25 Vdc - Cover & Wall.
- Operating temperature -10oC to +55oC.
- Temp. compensation Advanced dual slope.
- Relative humidity 5% - 95% non condensing.
- PIR White Light Immunity 10,000 Lux typical.
- Approval (DT8016MF5) EN50131-2-4 Grade 2 Class II, NF&A2P two shields, GOST-R, PD6662:2010.
- Approval (DT8016AF5) EN50131-2-4 Grade 3 Class II, NF&A2P three shields, GOST-R, PD6662:2010

Panic Button

- Silent operation.
- Double-pole double-throw contacts for multi-notifications.
- Twin 45° screw terminals with EOL resistor splicing terminal.
- Adhesive pads for temporary positioning while installing.
- Stainless steel cover (269R and 269SN).
- Fully supervised.
- Convenient reset key for testing and/or reset of alarm.

Siren

- Sound output level: 116dB @ 1m.
- High impact polycarbonate moulding.
- Horizontal or vertical mounting.
- One standard built-in wrap around strobe lens.
- Double skin construction.
- NiCad back-up battery included.
- Front and rear tamper.
- Up to two Piezo sounders.
- Diagnostic LEDs.
- Silent start up.
- Dual tones.
- Strobe Selectable.
- Current flow monitor.
- Compliant to PD6662:2004/2010, BS8243:2010 & EN50131-1:2009 Security Grade 2, Environmental Class IV

SECTION 7.

Integrated Security Management Software

The purpose of Integrated Security and Decision Management Software (ISMS) is to centralize security operations in a single interface (integrating all the security and safety equipment) and to reduce operational costs and operator response times by having the operators following alarm & event management workflows based on standard procedures.

Minimum Requirement
The ISMS shall be the “Common Operational Picture” (COP), i.e., the single software interface that allows command and control of all security & safety systems, by integrating:
Alarms:
<ul style="list-style-type: none"> ▪ Reception & Multi-User Queuing ▪ Prioritization ▪ Clustering (by site)
Video: "live", "pre-alarm" and "post-alarm" video, video-wall content management;
Maps:
<ul style="list-style-type: none"> ▪ Integration with an external GIS¹ platform, like Google Maps or other; ▪ Importing and configuration of site floor plans or sector plans;
Process Guidance Workflow: The ISMS shall incorporate the step-by-step instructions that shall guide the ISMS operators in handling an alarm or event, shall be fully customizable according with the standard operating procedures (SOPs) of the organization.
The ISMS Process Guidance Workflow shall allow for:
<ul style="list-style-type: none"> ▪ Active content: it shall be possible to add active content to the workflow instructions or steps in the form of images (photos), video and audio, device status (alarm panel and/or I/O status, for example), record data retrieved from an Access Control System database, etc.; ▪ Device interaction: it shall be possible to interact, within the workflow, with security, safety, building management and VoIP devices: activating or deactivating an intrusion zone; arming or disarming an alarm panel, requesting "live" or "pre-alarm" video from a CCTV camera; switching on/off building illumination; requesting the Access Control System for the opening of a door or turnstyle; answering a call from, or calling, an internal or external VoIP extension or number; and sending e-mails to recipients or recipient lists.
The ISMS shall allow the implementation of SOPs for, at least, the following scenarios:
<ul style="list-style-type: none"> ▪ Alarm Video Verification ▪ Routine Video Guard Tours (allowing multiple checkpoints) ▪ Entry and Exit Management: ○ Remote Intercom Attendance

○	Access Control Exception Handling (like card error, access denied, etc.)
▪	Escorting People or Vehicles
▪	Emergency Situations (earthquake, fire, explosion, acts of terrorism, riots, evacuation, etc.)
▪	Security & Safety Technical Issues
▪	Other custom SOPs for "On-Demand" Alarms (to be manually generated by the SDMS operators)

Workflow Customization	
The ISMS shall allow for complete customization of the workflows for each alarm or event, thus implementing the standard procedures of the organization.	
The ISMS shall allow the configuration of different workflows for different alarm or event types. The workflows shall be configurable per site, i.e., allowing different workflows for different sites (for example, evacuation procedures could be different from building A to building B).	
The ISMS shall allow for global templates, i.e., global standard procedures for given alarm or event types that can easily be imported into one or more remote sites. In this way, when a change must be made to an SOP, it will be enough to change the procedure's global template, and that change will immediately propagate to all the sites configured with that procedure.	
Simplicity	
The ISMS shall be simple to learn and to operate: it shall offer the operators a "clean" interface, avoiding unnecessary buttons, menus and windows.	
A new operator shall be capable of immediately recognising the anchor areas of the ISMS: the Alarms Queue and the Map. After picking an alarm or event, the operator should immediately view the workflow with the instructions to follow. This will cut down on training times and prevent security gaps that typically occur due to long operator learning times.	
The ISMS shall also avoid other pitfalls of typical PSIM ² software in terms of complexity and setup times, because this will severely limit the number of certified system integrators capable of installing the ISMS	
The ISMS manufacturer shall be capable of fully training an installer, in installing, configuring and maintaining the SDMS, in one week or less.	
Alarms Queue	
In the ISMS Alarms Queue all active (in progress) alarms or events shall be listed in descending priority. Alarms shall be listed and aggregated (clustered) by site, with each row in the queue being associated with a given site.	

<p>Sites shall be identified by their names and locations. When a site has more than one active alarm, the icons for the active alarms are listed in the bottom of each row.</p>
<p>Alarm icons shall indicate both the type and priority of the alarm or event. A red background in the alarm icon shall mean "critical", a yellow one shall mean "high priority", a green one shall mean "medium priority" and a blue one shall mean "low priority".</p>
<p>The operators shall be able to manually add new "on-demand" alarms by clicking a button that should be next to the Alarms Queue for convenience.</p>
<p>Workspace</p>
<p>The ISMS Workspace shall be a task-oriented area. The operators shall easily and quickly store open or pending tasks for later use, i.e., situations that still require attention or further action.</p>
<p>The operators shall be able to minimize an open task to the Workspace, leaving it aside for a while, in order to handle a new situation. Each operator shall have a distinct Workspace and shall not see or change the Workspace of other operators.</p>
<p>The Workspace area shall be filterable in order to only show the selected types of pending tasks.</p>
<p>Map</p>
<p>In the ISMS Map area the operators shall get a geographical view of the entire area or region covered by the ISMS. The ISMS Map shall open with the zoom level adequate to show all the remote sites being managed by the ISMS.</p>
<p>Remote sites shall be shown in the Map, and whenever there are pending alarms or events at that site, the corresponding alarm icons shall indicate that situation by appearing over the site icon. The operators can navigate the Map, "enter" a given remote site (see below "1.11 Navigation in Remote Site"), or start handling an alarm or event that is active at a given site.</p>
<p>The operator shall be able to decide which information is shown on the Map: site labels, site icons, active alarms or events, and mobile devices (security equipment that sends its GPS position to the SDMS in case of alarm). In order to find sites and equipment, the operators shall be able to zoom in or out, or to use a "smart" search box that allows searches based on partial names.</p>
<p>The ISMS Map area shall allow the use of filters to quickly select a given site. The SDMS shall support "online" mapping services, like Google Maps, but also "offline" georeferenced maps like OpenStreetMap³, if an Internet connection is not available or not authorised.</p>
<p>The ISMS shall allow toggling between map and satellite view. Depending on the zoom level, when there are sites very near each</p>

<p>other, the ISMS Map shall be able to group neighbouring sites in one icon with a different representation.</p>
<p>Floor plans</p>
<p>The ISMS shall allow schematic representations to scale of the sites to be monitored. These ISMS floor plans shall allow mapping the devices on its correspondent location.</p>
<p>It shall be possible to represent multiple devices as a group, combining related logical devices (that belong to the same physical device). This group of devices shall be identified with a different representation and should allow interaction with the entire group.</p>
<p>The ISMS floor plans shall have the option to be dynamic or static. If dynamic, when a new alarm or event is received by the ISMS, the correct floor plan shall be selected and centered on the location where the alarm or event was triggered.</p>
<p>The site floor plans shall allow defining device (or device group) influence areas, thus presenting the coverage areas for that device (or device group). These coverage areas shall be represented by different colors depending on the device (or device group) status.</p>
<p>Live Events</p>
<p>The SDMS should present a dashboard or list with real-time alarms and events that are being received. The SDMS Live Events dashboard or list should allow filtering based on alarm/event type, site, date/time and other.</p>
<p>Workflow</p>
<p>The ISMS Workflow shall be immediately shown to the operator when he/she selects an active/pending alarm from the Alarms Queue or from the Map. The Workflow shall flow dynamically according to the actions and answers of the operator: a next step shall depend on the action or answer that was given in a previous step.</p>
<p>The Workflow shall allow the operator to handle alarms or events step-by-step. ISMS workflows shall be easily configurable and changeable, using the ISMS configuration interface, without the need to recompile or add software modules to the ISMS.</p>
<p>ISMS shall support global workflows, i.e., SOP workflows that shall be used in several remote sites. In order to make the most of global workflows, the ISMS workflow configuration interface shall help the user in the task of customizing a global workflow template for a given site, by allowing the user to easily search for device IDs (of cameras, sensors, outputs, phone extensions, etc.) that must be added to, or changed in, the workflow.</p>
<p>ISMS shall allow for collaboration between operators: if an operator needs to leave a given workflow unfinished (to attend to a more important situation), the ISMS shall send the alarm back to the Alarms Queue after a given timeout in order to allow another operator to finish that workflow.</p>

<p>ISMS Reports shall indicate the operator that performed each and every task. Each workflow task shown in the ISMS Reports shall also contain a timestamp for each task completion.</p>
<p>At the end of the workflow, the ISMS shall display the following options: close the alarm; postpone the alarm (specifying a given delay); send the alarm to another operator group; and change the alarm type.</p>
<p>When closing the alarm handling workflow, the ISMS shall allow for an optionally configurable alarm classification list to be shown to the operator, in order to ensure that alarms are being classified when needed. Alarm classification statistics shall be available within the Business Analytics module of ISMS.</p>
<p>When the operator tries to close an alarm without having completed the workflow, a mandatory non-empty comment box should be displayed in order for the operator to fill in the reason for the non-completion of the workflow.</p>
<p>At any moment during the workflow execution, the operator shall have access to the remote site resources (floor plans, device tree, site contacts, site alarms history and video search).</p>
<p>The operator, if allowed by group permissions, shall be able to add at any moment to the workflow: "live" snapshots, "live" video clips, recorded video clips, and any attachable file selected from the workstation's file system. The operator should also be able to add, at any moment, custom comments or remarks.</p>

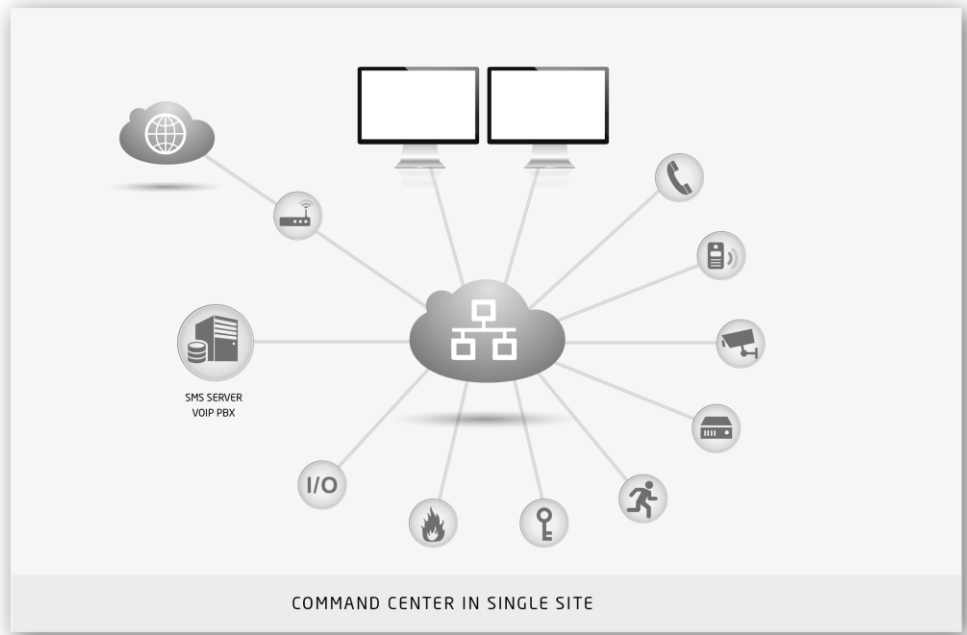
<p>Alarm Video Verification</p>
<p>One of the goals of ISMS is to reduce false alarms and their costs via remote Alarm Video Verification. It is essential to detect a false alarm as soon as possible to avoid allocating unnecessary human resources to the false alarm. In the case of a true alarm, it is equally important to detect them as soon as possible to ensure a prompt response from the operators and from the security team.</p>
<p>An Alarm Video Verification workflow shall help the operator distinguish a false alarm (false positive) from a true alarm (true positive) by: showing video & audio from the remote site ("live" and "pre-alarm" video); allowing phone calls to the remote site or to a supervisor; gathering detailed alarm and site information; and other actions.</p>
<p>Remote Guard Tours / Patrols</p>
<p>Remote Guard Tours or Patrols shall allow operators to complement, or replace, traditional on-site guard tours on foot by performing remote verifications. The ISMS shall guide the operator through a set of previously configured checkpoints.</p>
<p>Each checkpoint shall show the operator a set of cameras (from 1 to 4) in "live" together with a specific workflow for that checkpoint. At each checkpoint, the operator shall be able to see the "live" video feeds and</p>

<p>will be guided in following the step-by-step instructions regarding: information to collect; verifications to perform; or tasks to execute.</p>
<p>The ISMS shall store the operator answers and actions, together with any images, videos and comments that the operator may have added. The ISMS shall provide for the inclusion of this information in a report to be sent to a supervisor.</p>
<p>Remote Guard Tours should be configurable to be automatically triggered at specific dates and times, or at random times within a given time frame, but should also allow for manual triggering by the SDMS operator.</p>
<p>Entry and Exit Management</p>
<p>The ISMS shall help the operators in handling people and/or vehicle entry and exit situations that require human decision.</p>
<p>Within an ISMS workflow, the operator shall be able to receive intercom calls or access control exceptions in order to handle them; and, after validating the ID and the permissions of the person that wants to access the premises, decide whether to grant or deny access to employees, suppliers, visitors and security personnel.</p>
<p>When there is no access control system in the remote premises, the ISMS operator shall be able to use "live" video and audio from an IP intercom in order to perform remote identification and to remotely open doors and/or disarm intrusion systems or zones.</p>
<p>Navigation in Remote Sites</p>
<p>Navigation in remote sites is an important part of daily multi-site security operations: the ISMS operator shall check remote sites by accessing CCTV cameras, floor plans, alarm sensors, intercoms, phones and other site equipment.</p>
<p>The ISMS shall allow the creation and customization of an unlimited number of video mosaics, i.e., collections of cameras for "live" viewing from one or multiple sites. Each operator can have its own video mosaics that can be opened at any time in a single or multi-screen environment.</p>
<p>Reports</p>
<p>The ISMS shall allow the creation of custom reports with graphics (of alarm and/or event statistics) without having to export data to third-party applications in order to generate them. ISMS reports shall contain a detailed list of alarms and events with: their date and time, the tasks or actions made by the operator when handling them, the operator comments and notes, images and video clips gathered by the operator, and two-way audio recording of VoIP calls made from the ISMS.</p>
<p>ISMS reports shall be stored in the Server and any user with the right credentials should be able to access them or send them by e-mail to one or more recipients.</p>
<p>ISMS reports should also be exportable to PDF format or to Microsoft Excel format. Video & Audio clips in the Reports should be exportable to a standard media format. All report creation and exporting</p>

operations should be auditable (see below "1.13 Auditing and Business Analytics").
The ISMS shall allow the configuration of scheduled reports: these reports, previously configured in terms of filtering criteria – site name, alarm types, etc. – shall be automatically created at the configured dates and times and sent to the configured email recipient(s).
Auditing and Business Analytics
The ISMS shall keep auditing records in its internal database of all the relevant operators' actions together with all the video & audio viewed by every operator when handling alarms or events. A user with the right privileges shall be able to access this action log in order to supervise and audit all the actions performed by all the users.
The ISMS shall make available to an authorised user a business analysis interface, in the form of an intuitive dashboard, that continuously shows the ISMS workload and the performance of the security team over time (last few hours): alarm priorities, alarm types, alarm response times and other relevant performance metrics.
Integration
The ISMS shall be an open platform, capable of integrating physical security and safety equipment like IP cameras, DVRs and NVRs, VMS, video wall decoders, alarm detection panels (intrusion, fire and CO) and receivers, access control systems, general-purpose I/O ⁴ modules, VoIP/SIP intercoms, VoIP/SIP Public Address, and GPS ⁵ devices into a single security management platform.
The ISMS shall integrate third-party equipment making use, when made available by the manufacturer, of the equipment's SDK or API This ensures that, if the manufacturer updates the equipment, while keeping unchanged the SDK or API, the SDMS will still be able to communicate with the updated equipment.
Standards
When the equipment to be integrated with the ISMS does not have an SDK or API or is not an alarm panel capable of being integrated through a gateway device, the ISMS shall also allow for an integration based on industry standards.
Operating via Ethernet link (TCP/IP network), the ISMS shall have generic drivers, based on industry standards, to allow the integration of third-party equipment that is compatible with those standards.
The ISMS shall offer generic ONVIF and RTSP drivers to interface with IP video systems; a generic ContactID driver and the possibility of establishing a SIP trunk with a VoIP PBX in order for the ISMS to interface with VoIP ("Voice-over-IP") equipment, like IP intercoms, VoIP Public Address system or any SIP phone extension.
Web

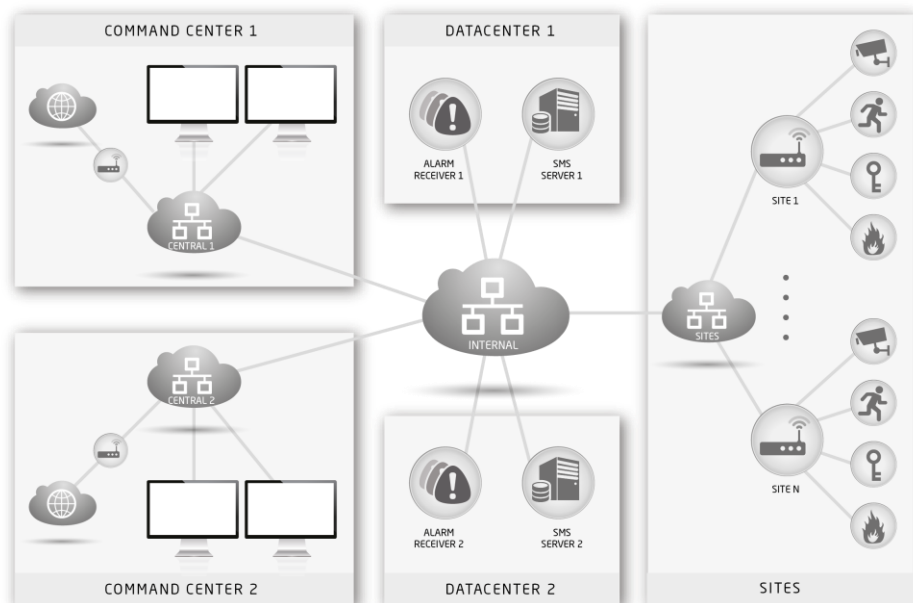
<p>The ISMS shall be a Web application, operated via Web Browser (Google Chrome, Mozilla Firefox, etc.), in order to avoid the need to install client-side software in all the SDMS workstations.</p>
<p>The ISMS should be accessible via HTTPS⁶ protocol, in order to have data encryption between the SDMS Clients and the SDMS Server.</p>
<p>The ISMS Client shall be HTML5 compliant. In this way, any ISMS user, from anywhere in the corporate network, with the right privileges and credentials, can access the Server via an HTML5-compliant Web browser.</p>
<p>APIs</p>
<p>The ISMS shall have a set of Application Programming Interfaces (APIs) supported by Web technologies in order to allow the integration of third-party systems or specific developments as a proprietary mobile application without having to rely on software developments from the ISMS manufacturer. The API shall have a set of well-defined interfaces/classes/objects allowing abstraction of the underlying implementation of the ISMS and interaction with its assets. The API should use RPC architecture to minimize the performance impact on the ISMS Server and on network latency due to the criticality of the system.</p>
<p>Floatable windows</p>
<p>The ISMS shall allow floatable windows in order to give more visibility and flexibility to the operators. Besides the workspace, the ISMS shall allow opening, in other monitors, of additional instances of relevant information such as maps, floor plans, site status, live events, and business analytics or video mosaics.</p>
<p>Video-wall</p>
<p>In order to provide more context to the operators and reduce the ISMS server load due to video requests, the ISMS shall be able to manage a video wall with contents fed either from IP decoders (with video from cameras, DVRs, NVRs or other), or from the SDMS server (as above in "1.18 Floatable windows") or both. The SDMS video wall should support three types of monitors through the use of IP decoders:</p>
<ul style="list-style-type: none"> ● Mosaic monitor: used to constantly monitor "live" video feeds from a site not associated to operation or to ongoing alarm handling;
<ul style="list-style-type: none"> ● Alarm monitor: used to monitor an alarm, following its life cycle since it was triggered by showing "live" video feeds from cameras related with the alarm; these video feeds should be removed when the alarm is closed; the alarm monitor content should be automatically managed by the SDMS;
<ul style="list-style-type: none"> ● Operation monitor: used as support for the operator, to see manually selected "live" video feeds, as an alternative to the SDMS web interface.
<p>The ISMS manufacturer shall also provide its own decoder and still be capable of using third-party decoders.</p>

ISMS Architecture

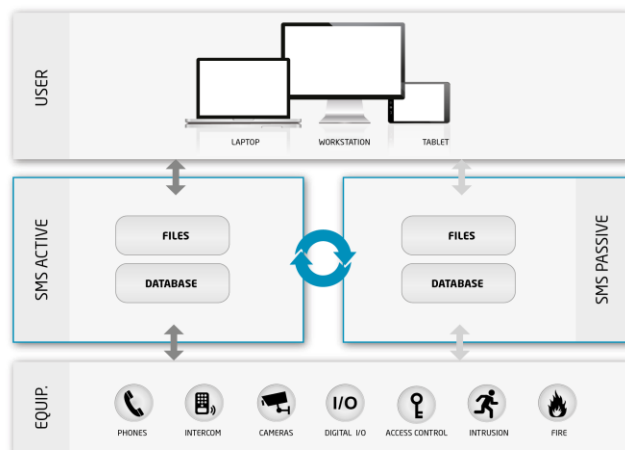


The ISMS single site architecture shall be based on a single Control Room where the ISMS operations team is located and the ISMS server(s) and VoIP PBX are typically located in a data center. The Control Room can have multiple SDMS workstations where the SDMS is operated via Web browser.

The ISMS should also allow for multi-site architectures i.e. the use of SDMS to remotely supervise several places or buildings (sites) from one or more Control Rooms.



<p>The ISMS architecture shall allow for several Control Rooms, or Command Centers, as well as fail over solutions, by having an ISMS Primary Server installed at Datacenter 1 and an SDMS Secondary Server installed at Datacenter 2.</p>
<p>Each Command Center shall have several ISMS Client workstations. It shall be possible for any ISMS workstation to have its own VoIP extension phone, whose extension number will be registered in the organization's PBX.</p>
<p>Whenever the ISMS operator needs to make a VoIP call from within ISMS, he or she shall be able to press a button in ISMS, typically within a particular workflow, in order to establish the connection between his/her workstation phone and the remote VoIP extension via SIP trunk with the PBX. All VoIP calls made from within ISMS shall be recorded by the SDMS Server.</p>
<p>Active / Passive Fail Over Architecture</p>
<p>It shall be possible to implement high availability (HA) clusters using an Active / Passive fail over architecture for ISMS. An Active / Passive HA implementation of ISMS shall comprise at least two server nodes, one for the SDMS Primary Server and another for the SDMS Secondary Server.</p>
<p>In normal ("Active") mode, the users access the ISMS Primary Server, which has its own database. Continuously, a synchronization process shall guarantee that the data in the ISMS Primary Server is the same as the data in the ISMS Secondary Server.</p>
<p>During this "Active" mode, the Web services of the ISMS Secondary Server shall not be running; only the database services shall be running to allow for data synchronization.</p>



<p>In case of failure of the ISMS Primary Server, it will be necessary to commute to the “Passive” operation mode. Commuting to “Passive” mode shall be done by a system Administrator, which will include starting the Web services of the ISMS Secondary Server.</p>
<p>Regarding media file management (audio and video files, and PDF reports), ISMS shall allow for two modes of implementation:</p>
<ul style="list-style-type: none"> • Media file synchronization between the Primary and the Secondary ISMS servers (at each moment, there will be two copies of media data, one copy in each server);
<ul style="list-style-type: none"> • Unique media source, located outside of the ISMS Primary and Secondary Servers, in a network shared partition (at each moment, there will only be a copy of media data).
<p>User Authentication</p>
<p>User authentication in ISMS shall be done through username and password. It shall be possible for an ISMS administrator-level user to reset another user password. It shall be possible to validate a given ISMS user against Microsoft Active Directory (AD) services using the LDAP protocol.</p>
<p>This integration of ISMS with AD via LDAP shall aim at authenticating the user's name and password, because the user's permissions shall be configured and managed in ISMS; this means that ISMS does not need to import any permission or other user definitions configured in Microsoft Active Directory.</p>
<p>The communications channel between ISMS Server and Microsoft Active Directory services, in order to be protected by encryption, shall be established over SSL protocol.</p>

Standard Operating Procedures (SOPs)
One of the key features of ISMS shall be the possibility of configuring personalized SOPs according to corporate guidelines. ISMS shall allow an unlimited number of SOPs for on-demand situations (requested by the operator), as well as SOPs for each type of alarm or event that ISMS receives from the different systems it integrates.
Following, we give examples of alarms, on-demand situations, and routine tours with CCTV cameras ; it shall be possible to handle these situations with ISMS, following standard step-by-step procedures:
Alarm SOPs (alarms generated automatically by the security equipment):
<ul style="list-style-type: none"> ● CCTV: video loss, motion, etc. ● Fire Detection ● Intrusion Detection ● Access Control Exception (card error, out of schedule, access denied, etc.)
Emergency On-Demand SOPs (alarms generated manually by the ISMS operators):
<ul style="list-style-type: none"> ● Fire ● Gas explosion ● Earthquake ● Bomb threat ● Terrorist attack ● Kidnapping ● Police patrol request ● Evacuation (any emergency requiring the immediate evacuation of a building) ● Post-emergency SOP (to return to normality after an emergency)
Other On-Demand SOPs (alarms generated manually by the ISMS operators):
<ul style="list-style-type: none"> ● Lost persons or goods ● Cleaning request ● Maintenance request ● Technical problem ● Security guard request ● Flood ● Key delivery ● Key returning
Remote Tour SOPs with CCTV cameras (scheduled tasks to be performed by the ISMS operators):
<ul style="list-style-type: none"> ● Perimeter ● Pedestrian entry points ● Vehicle entry points ● Supplier entry points ● Emergency exit doors ● Loading docks ● Technical areas ● Supervision of relevant visitor queues

<ul style="list-style-type: none"> • Supervision of relevant vehicle queues
<p>Technical Requirements</p>
<p>Workstations</p>
<p>Due to the fact that the ISMS shall be Web-based and operated via Web browser, the Workstations will only need a Web browser compatible with the ISMS, like, for example, Google Chrome or Mozilla Firefox, regardless of the operating system. The workstations should not require any additional installation besides the web browser.</p>
<p>Server Requirements</p>
<p>The ISMS Server shall run over Microsoft Windows Server, in order to allow for the installation of the third-party SDKs needed for SDMS to communicate with third-party equipment, because typically these SDKs are developed for Microsoft Windows.</p>
<p>The ISMS Server shall also be able to run over virtual machines with Microsoft Windows Server. The virtualization environment could be based on Microsoft HyperV or VMWare.</p>

**TECHNICAL SPECIFICATIONS FOR ELECTRICAL AND
MECHANICAL INSTALLATIONS**

PART A

SPECIFICATION FOR ELECTRICAL WORKS

A. GENERAL CLAUSES

2.01 Regulations

This specification covers the requirements of lighting and power installation in Kenya. All apparatus and material supplied and all work carried out shall comply with the Kenya Government Electrical Specifications, GES.1 and GES.2 and local Statutory Regulations. Installations should also be generally in accordance with the requirements of the 16th Edition of the "Regulations of the Electrical Equipment for Buildings" issued by the institution of Electrical Engineers, which should be used as a "Code of practice" except where they conflict with Kenya Government Legislation regarding electrical installations.

2.02 Standards

Except where otherwise indicated in this Specification the Contract Works and all manufactured items shall comply with the relevant Specification of the British Standards Installation. Such Specification are here in after referred to as "BS". In each case, the latest edition of such Specification shall apply.

Should it be desired to offer equipment covered by other National or International Standards, the approval of the Engineer must be obtained, in Writing, before completion of the tender.

2.03 Records Drawings

The contractor shall mark accurately on one set of drawings the conduit laid during the progress of the work. This information must be made available on site for inspection by the Engineer.

At the completion of the Contract, the Contractor shall supply the engineer with one set of transparent originals, and two complete sets of prints showing the complete installation.

The drawing shall include the location of all apparatus conduits and cable routes and a schematic diagram of the main distribution indicating the phasing of the system.

2.04 Contract Drawings

These drawing form part of this specification and are to be read in conjunction with this specification to enable the contractor to prepare a tender. Where there are any omissions in the bills of quantities, contract drawings supersede the bills of quantities.

These drawings are not intended to be used as working drawings unless they are released for that purpose.

2.05 Working Drawings

The contractor shall prepare the working drawings as may be necessary. These shall be submitted to be Engineer for approval before the execution of the works.

Working drawings, to be prepared by the contractor, shall be detailed as below but not restricted only to these: -

1. General arrangement of drawings showing plants, M.V. Switchgear, distribution boards, consumer units, fittings, switches, switched sockets outlets etc.

2. Layout drawings of concealed and surface conduits, ducts, trucking etc.

3. Any other drawings that are not called for in the Specification.

Two copies of all working drawings shall be submitted to the Engineer for approval.

Thereafter, the contractor shall submit copies of approved working drawings for distribution to the parties concerned. The contractor shall not be relieved of any of this obligations under the contract or from correction any errors on site or elsewhere found subsequently in the approved working drawings by the Engineer.

2.06 **Labels**

All switchgear, switch fuses, distribution boards, etc., shall be clearly labeled with black on white background engraved labels to indicate the name, purpose and position of the gear. All circuits in distribution boards shall be clearly identified in respect of the number and location of the M.C.B. The charts shall be securely fixed inside the covers of the distribution boards.

2.07 **Galvanizing**

Galvanizing shall be applied by the hot process and shall consist of a smooth clean zinc coating free from defects and be uniform in thickness.

The thickness shall be not less than 610gms of zinc per square meter of surface and tested in accordance with the requirements of B.S 729 where applicable. Sheradiling or other alternative processes shall not be used without approval in writing of the Engineer.

The preparation for galvanizing itself shall not adversely affect the mechanical properties of the coated material. Surfaces which are normally in contact with oil shall not be galvanized or cadmium plated.

All out-door structures, access ladders, platforms, equipment cubicles shall be galvanized.

2.08 **Cleaning and painting**

Having due regard to the destination and climate conditions under which the plant is to operate, extreme care shall be exercised in the manufacture of the equipment to prevent the formation of any corrosion. All equipment shall be cleaned of all dust, oil, grease, dirt, scale and rust by power tool operated metal brush or preferably by shot or grit blasting and then ground smooth where necessary. Unless otherwise approved, they shall then immediately have applied to them two coats of approved primer paint. After inspection any rough surface shall be filled in and smoothed over and further painting in the factory shall be as follows: -

(a) All interior of cubicles, kiosks, boxes etc., containing wiring or other apparatus and internal components of the plant which are dispatched to site in an assembled condition, shall be finish painted with at least two coats of white enamel. The final coat shall be of white anti-condensation finish, where so specified.

(b) The external surface of the panels shall be finished in gray stove enamel to B.S.

shade 631 or other shade as may be approved by the Engineer.

(c) All interior surface of tanks and other oil filled chambers and external surface of piping therein shall be painted finally with an oil resisting coating to the approved by the Engineer.

(d) All wall and floor mounted junction boxes, loose starters, etc., throughout the works shall be finished in grey stove enamel or painted finally with to B.S. 381C shade 631 or other shade as may be approved by the Engineer.

After all erection has been made completed at site, the contractor shall make good all defects in painting and galvanizing which have arisen during transport, storage and erection on site and shall apply undercoat and one finished coat of gloss paint to B.S. 311C shade as may be approved by the Engineer to the external surface of all equipment.

Where galvanized metal work has been damaged it shall either be repaired by cold galvanizing at site or alternatively at the discretion of the Engineer, be returned to the manufacturer for re-galvanizing by the hot process.

2.09 **Lighting and Distribution Boards**

General lighting and power distribution boards shall comply with the B.S. 3817, 5861 and B.S. 214 and shall be of the metal clad pattern, flush mounted, except where otherwise specified on the drawings.

2.10 **Construction**

Enclosures shall be substantially constructed from 16S.W.G. Minimum thickness sheet steel having hinged front cover, and shall be vermin and insect proof. Each unit shall house M.C.B.'s and shall be supplied complete with bus-bars, earthing terminal, neutral bar, circuit chart, and blanking plate for any spare ways. The incoming isolator switch shall be integral with the distribution board in consumer Units only.

2.11. **Miniature Circuit Breakers**

All distribution boards shall be supplied with M.C.B.'s manufactured to B.S. 3871 and of a rating as specified on the drawings. The circuit breakers shall incorporate both thermal overload and magnet short circuit tripping, with a trip-free mechanism.

Three phase circuits shall be controlled by integrally manufactured three pole circuit breakers, with one common operating lever. An intertripping mechanism shall ensure isolation of all three poles in the event of an overload or short circuit on any one phase.

2.12 **Earth leakage Circuit Breakers**

If specified or indicated on the Contract drawings the use of E.L.C.B. for isolation of incoming supply in the distribution board shall be of an approved type for flush mounting. The general requirements of the E.L.C.B. are as follows: -

(a) It shall have high sensitivity i.e. it shall operate in 30 milliseconds for a leakage

current of 30 milliampere.

- (b) Its operation shall not rely on the mains supply for tripping under fault conditions. For example, in the event of a leakage from the live to earth conductor occurring at the same time as break in the neutral supply wire, the breaker shall trip.

2.13. **Labeling**

A circuit chart in each board shall show the name, location and current loading of each circuit connected. Each board shall be fitted with an engraved identification label in black on white, such as "Distribution Board D.I.", etc, and all three phase distribution boards shall be labeled in white on red, "DANGER 415 VOLTS".

B. NON-METALLIC CONDUIT

2.14. **Standards and Installation**

All non-metallic conduits shall be class 'A' heavy gauge, high impact, PVC complying with BS 4606 part 2 type all. The minimum size to be used on the Contract is 20mm external diameter. The required sizes are shown on the Contract drawings. All conduit installation shall be concealed in the walls and floors or in structural slabs.

2.15. **Joints**

Conduit will be joined and terminated utilizing the appropriate rigid PVC compounds as detailed below, or standard conduit entry electrical equipment. Jointing will conform to one of the following techniques: -

No. 1 - Permanent Adhesives - The solvent cement supplied by the conduit manufacturers will be used to produce a rigid sealed connection.

No. 2 - Flexible Adhesive - A non-hardening adhesive supplied by the conduit manufacturers will be used to produce a flexible sealed joint where allowance is necessary for longitudinal movement (e.g. expansion couplers).

2.16. **Bends**

Bends and sets in the conduit will be made in accordance with the manufacturer's instructions. The radius of the bend shall not be less than 2.5 times the outside diameter of the conduit or such greater radius which will facilitate easy drawing in of cables.

2.17. **Expansion**

Adequate allowance shall be made for longitudinal expansion and contraction of the conduit under normal working temperature variations as follows: -

(a) Expansion couplers should be used in straight runs exceeding 6 meters with a loose or flexible type joint (NO.2 above) at the long spout end of the coupler.

(b) Saddles as supplied by the manufacturers shall include a sliding support tolerance for longitudinal expansion.

Special consideration may need to be given to the fixing of accessories where this may

prevent natural conduit movements. Over size or slotted fixing holes may be necessary or the introduction of expansion couplers.

2.18. **Support**

Conduits should be supported by saddles, at not more than 900mm intervals. Where working temperatures tend to be high this should be reduced to 600mm.

2.19. **Conduit Boxes and Fittings**

- (a) All conduit boxes shall be circular or square pattern of Rigid PVC suitable for plain connections conforming to sheet 62 B.S. 4607 part 2. Boxes for supporting a fitting or accessory shall be fitted with a PVC lid held in position by means of two 2BA round headed screws Boxes shall have metallic screwed inserts.
- (b) Circular or square boxes shall be provided at all outlet points, unless otherwise specified and lighting fitting, ceiling switches and other accessories will be screwed to the internal lugs of the boxes. Care must be taken when considering the use of totally enclosed fitting with PVC circular boxes where the temperature within the box is likely to rise above 60 C [140 F]. Special steel insert clips should be used in conjunction with circular boxes where heavy pendants are used.
- (c) Looping in boxes of circular P.V.C. pattern to sheet 63B.S. 4607 part 2 may be used in such work as dictated by the structure of the buildings. Conduit entry shall be made by means of P.V.C. bushes.
- (d) Adaptable boxes shall be of molded or fabricated PVC of square or oblong shape complete with P.V.C. Lids secured by 2 BA or steel plates round-headed screws. All adaptable boxes and lids of the same size shall be interchangeable. No adaptable box smaller than 75mm x 50mm or larger than 300mm x 300mm shall be employed. Boxes shall be of adequate depth in relation to the size of conduit entering them.
- (e) Conduits shall be terminated at adaptable boxes, fuse-board switches, sockets outlets or other equipment not possessing push-in or threaded spouts, by means of appropriate size female adapter and PVC hexagonal headed Bare Bush. All cemented joints to be made to a depth of not less than the diameter of the conduit being used.

2.20. **Earth Continuity**

Earth continuity shall be provided by a separate insulated conductor drawn into the plastic conduit and rated in accordance with circuit loadings and appropriate regulations, or as mentioned, on the drawings.

Where required under the Regulations, an earth continuity conductor shall be provided for lighting fittings in which case the control switches shall be equipped with an appropriate earth terminal.

2.21. **Arrangement of Conduit Layout**

The conduit system shall be carefully planned and erected to avoid unnecessary bends or changes in direction. Conduits shall be laid in straight horizontal or vertical lines with easy sets. Where several conduits follow similar routes, they shall be laid out from a

common center. Where draw-in boxes for right angled change of direction are required in multiple runs, adaptable boxes shall be used for such size as to allow conduits to enter the box without sets. Where conduits are concealed or laid on constructional floors, they shall be secured by fixing as approved by the Engineer. Where it is essential that conduits cross one another in floors, the chases shall be deepened and the conduits set to create the minimum desirable diversion.

Care shall be taken to ensure that there are no obstructions to cables within the conduits caused by the ingress of plaster, concrete, or other matter. Conduit ends must be square and cleaned of burrs.

2.22. **Conduit Draw-in Points**

Conduits for each circuit shall be completely erected before any cable is drawn in. Adequate draw-in points shall be provided. Straight runs shall have draw-in facilities at distance not exceeding 12 metres. Runs incorporating sets of bends shall have draw-in facilities at a distance not exceeding 9 metres. These distances may need to be reduced in difficult situations or with particular cable complexes.

Not more than four easy sets, or two right angle bends or sets may be installed between draw-in points. Solid elbows or tees shall not be accepted.

C. **FINAL CIRCUIT WIRING**

2.23. **Type**

All power and lighting wiring cables shall be 600/1000-volt grade, single core, P.V.C. insulated, with stranded copper conductors, manufactured in accordance with B.S. 6006. The minimum size of lighting circuits shall be 1.5 sq.mm sizes, 4.0sq.mm on power spur circuits and 2.5sq.mm on ring main circuits.

2.24. **Installation**

Cables forming circuits connected to different distribution boards shall not be drawn into the same conduit or draw-in box. The cables shall be coloured in accordance with Table B4 of the IEE Regulations. Cables used on extra low voltage circuits shall be of distinctive colours other than these colours.

No reduction of the strands forming the conductors shall be allowed at switch or other terminals, but all strands shall be effectively secured by screws, nuts and washers or other approved means.

Cables shall be joined together at the terminals of ceiling boxes and other accessories. Under no circumstances will joints be permitted in the run of the cable.

D. **P.V.C. INSULATED ARMOURED CABLES**

2.25. **Type**

These shall be 600/1000 voltage grade to BS.6346 or B.S 6004 having copper wire insulated, P.V.C. sheathed, single wire armoured and P.V.C. sheathed overall. The cores of four core cables shall be distinctively coloured red, yellow, blue and black. The

Contractor shall provide suitable glands and accessories for all armoured cable termination, and where cables are suspended shall provide the necessary rack, cleat or hanger supports and fixing.

Cable supports and racks shall be made by a recognized manufacturer and shall be to the approval of the Consulting Engineer.

All supports and racks shall be arranged as far as is practicable for the easy removal of any single cable in a multi-cable run, without threading cables through supports and racks. The number of types of supports and racks shall be kept to a minimum commensurate with meeting the requirements of the Contract Works.

2.26. **Laying of Cables**

The work of excavating and back-filling of all trenches for cables, is included in this contract and the responsibility for positioning, width and depth of trenches, and for laying and bedding of all cables and protective covers is included with the Electrical Works covered by this Specification. Cables shall be laid in trenches at the following minimum depths.

For M.V. cables in open ground	0.55m
For M.V. cables under roads and pavements	0.85

Where more than one cable is laid in a trench, cables shall be spaced as follows:

Between M.V. cables	0.1m
Between M.V. and telephone cables	0.4m
Between M.V. and L.V. cables	0.4m
Between L.V. and telephone cables	0.4m
Between L.V. cables	0.1m

In straight run trenches cable crossings shall not be permitted except where cables branch from the main run. At every draw-in point or junction box the cable should be snaked.

Before cables are laid the bottom of the trench shall be evenly graded and cleared of all loose stones, and shall then be covered with an 80mm layer of sand or sifted soil and lightly compacted, and a further 80mm layer shall be placed on top of the cables. The approved cable protection, see Clause 2.27, shall then be laid and the excavated materials in 0.2m layers, each layer being well compacted by hand or mechanical punners before the next layer is filled.

The width of the trench shall be such that a clearance of 80mm shall be provided between outermost cable and the side of the trench. Where cables are disposed in more than one layer, the vertical spacing shall be 0.4. between centres of cables or cable groups, the depth of the trench being made suitable accordingly.

2.27 **Protective Covers**

The protective covers, of approved local manufacture to BS.2484 shall be provided over cables laid in the ground each complete with an interlocking device to prevent lateral displacement. These protective covers shall extend at least 50mm laterally beyond the outside of the outer cable in each group of cables so protected.

2.28. **Cable Position Markers**

These should be placed adjacent to all points where cables change direction, and at all intervals of not more than 30m and at other positions designated by the Architect or the Consulting Engineer.

2.29. **Sealing of Cable Entries**

Where cables enter a building in pipes, or ducts, the mouths of the pipes or ducts shall be effectively sealed by means of close fitting solid impregnated wooden plugs and mixture of compound and transformer oil, or other approved manner.

All cables passing through interior walls or floors shall be effectively sealed to the approval of the Engineer By means of asbestos cement after the cables have been pulled through, in order to prevent the accumulation of moisture and the ingress of debris, sand or vermin. The cost of sealing the cables shall be included in the rates for erection and laying.

2.30. **Protection against Mechanical Damage**

All cables located in such positions where they are vulnerable to damage by mechanical or other means shall be protected by suitable lengths of steel pipe bushed to prevent damage to the cable.

2.31. **Rating Plates**

Each cable when completely erected shall have permanently attached to it at each end, and in such intermediate positions as may be considered necessary by the Engineer, metal plates upon which is engraved, or stamped, the identification number of cable together with its supplies. This information shall be recorded by the contractor so that it may appear on drawings of the completed installation.

2.32. **Cable Jointing**

The Contractor shall be wholly responsible for sealing and jointing of all cables supplies and erected under the contract. The cable boxes, loop-boxes and glands for power and L.V. cables on all items of equipment shall be provided under the contract.

Sealing and jointing shall be in accordance with the best current practices and of first class workmanship. Where cable armouring is used as earth continuity conductors the glands shall have the necessary contact surfaces or straps to provide a low resistance path under fault conditions.

The Tender shall include for all cable jointing where appropriate and also all labour, jointing material and compound, together with the use of all jointer's tools and making of the tails to the apparatus terminals.

Generally, cable terminations on switchgear, transformers, joint boxes, outgoing, and incoming circuits on the switch-boards shall be glanded in an approved manner.

E. SOCKET OUTLETS

2.33 General

In all areas, general power outlets shall be of the 13 Amp. 3 pin fused plug type complying with BS. 1363. They shall be flush pattern with white or ivory plates unless otherwise specified on the drawings. Where the circuits are supplied from a common feed, two outlets shall form a twin unit in a common box. The earthing terminal of every socket outlet shall be connected to the earth continuity conductor of the final circuit by an appropriately sized insulated copper conductor. Unless otherwise stated they shall be mounted at 300mm above finished floor level.

2.34. Plugs

One fused plug top shall be supplied for each socket outlet installed. Fuses shall be 13 Amp unless otherwise specified.

F. FUSED CONNECTION UNITS

2.35. General

All fused connection units shall be 13 Amp. with fuse and neon indicator lamp. Boxes shall be flush type with white or ivory copper plates and shall be switched type unless otherwise specified on the drawings.

2.36. Fuses

All fused connection units shall be fitted with 13 Amp. fuses, unless otherwise specified.

2.37. Labeling

The front plate of each fused connection unit shall, unless otherwise specified, be engraved with the name of the appliance connected to it.

G. LIGHTING SWITCHES

2.38. Type

Lighting switches shall be of the all insulated rocker operating plate switch type to BS. 3676 of ample rating. Switch inserts shall be white set in white or ivory cover plates.

Switches controlling points in bathrooms shall be placed outside the bathroom or consist of a ceiling switch operated by a non-conducting cord, as specified. Switches mounted outdoors shall be of a weather tight pattern.

Switches shall be one way, two ways or intermediate as specified and where a number of switches are mounted together they shall be tilted in a common box.

Ceiling switches shall be white or ivory semi recessed pattern, and shall only be used where specified. Pull cords shall be fitted with shock absorbing springs.

H. LIGHTING FITTINGS

2.39. General

The Contractor shall supply and fit all lighting fittings of the type indicated on the drawings and in the schedules. All fittings shall be suitable for operation on a 240V, 50Hz supply. Lighting fittings rated other than 240 volts will not be accepted. All lighting fittings shall be supplied with lamps.

2.40. Fluorescent Fittings.

Fluorescent fittings shall generally be of the batten type, with control gear contained within the supporting channel. All fittings shall be supported from conduit boxes, and shall be suspended by two 20mm diameter conduits to give a clearance of 25mm between the top of the fitting and the ceiling. Where fittings are suspended by chains from the ceiling the contractor shall use white flexible cord between the box and the fittings.

The installation of the suspension chain and cord shall be approved on site by the Engineer. In the ceiling, conduit boxes, to BS. 31, shall be fitted with dome covers, to which the suspension conduits shall be joined, so that the lighting fitting hangs vertically below the conduit boxes.

Fitting shall comply with BS. 3820 or class1, indoor normal atmospheres.

All fluorescent fittings shall be fitted with radio interference suppression capacitors and power factor correction capacitors and shall be earthen.

2.41 Reflectors and Diffusers

All reflectors for fluorescent fittings shall be made of sheet metal suitably shaped and stiffened, and shall be of white enamel finish. The diffusers shall be of white enamel finish. The diffusers shall be of white opal type in extruded plastic with external reeding.

2.42. Lamps

All lighting fittings shall be supplied complete with lamps of the type and rating specified. Fluorescent tubes shall be of the "white" type, except where otherwise stated. Pearly type tungsten lamps will be fitted in open fittings.

I. FLEXIBLE CORDS

2.43. General

These shall be of 250-volt grade PVC insulated and shall comply with BS.7. Flexible cords shall not be less than 24/.20(23/.0076).

Flexible cords for pendant fittings shall be circular type, heat resistant and white in colour.

J. EARTHING

2.44 Earthing Electrodes

Earth electrodes shall be minimum 1.4 metres long by 12mm diameter hard drawn copper rod, and shall be located not less than 3 metres apart at a convenient position 6 metres away from the building. The terminal head of each electrode shall be in a

concrete inspection pit, with cover. If the resistance to earth is not satisfactory with one electrode, then additional electrodes or an earth mat shall be provided as directed by the Engineer.

2.45 **Distribution System Earthing**

All distribution boards shall be earthed in accordance with the I.E.E. Regulations. All metal work associated with the regulations currently in force.

2.46 **Testing of Earthing System**

The resistance of the earth continuity system when measured between earthing point and other point in the installation, including all conduit and metal work which may provide a path or earth, shall not exceed 0.5 ohm where steel conduit forms part or the whole part of the system, or 1.0 ohm, if the earth continuity system is composed entirely of copper, copper alloy or aluminium. When the installation is complete the Contractor shall carry out tests for earth loop impedance, polarity insulation resistance, ring circuit continuity and earth electrode resistance, in the presence of, and to the satisfaction of the Engineer and the K.P.&L. The Contractor shall rectify all work not giving test results within the limits prescribed.

2.47. **P.M.E. system**

Provision shall be made for P.M.E. System at supply intake (where applicable) and on the isolators of the adjacent building. "P.M.E." means that system whereby the neutral conductor of the supply network is earthed at a prescribed number of points along its route, together with the installation earth continuity conductor, at each consumer's installation, so providing a metallic path for the flow of earth fault currents. The connections between the neutral conductor of the installation shall be made by the supply. Authority at the point of intake only. The connection at the isolators will be made by the Contractor in the presence of the Engineer after completion of all tests.

2.48. **COMMISSIONING**

All installations shall be tested to the statutory requirements of the Electricity Authority, and commissioned in the presence of and to the satisfaction of the Engineer.

Four copies of tests reports shall be provided within seven days of carrying out the tests; and reports shall include full details of how each test was carried out, and a copy of all readings taken.

PART B

PART 1: **GENERAL MECHANICAL SPECIFICATION**

1.01 Introduction

This section covers the general requirement for plant, equipment and materials forming part of the mechanical works and shall apply except where specifically stated elsewhere in the Specification.

These works shall be as by regulations and standards.

1.02 Regulations and Standards

The Works shall comply with the current editions of the following:

- (a) The Kenya Government Regulations.
- (b) The Kenya Bureau of Standards
- (c) The National Environmental Management Authority Regulations.
- (d) The Kenya Building Code Regulations
- (e) Local Authority By-laws.
- (f) The Electricity Supply Authority By-Laws
- (g) British Standard and Codes of Practice as published by the British Standards Institution (BSI)
- (h) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.
- (i) The United Kingdom Institution of Electrical Engineers (IEE) Regulations for the Electrical Equipment of Buildings.
- (j) The United Kingdom Chartered Institute of Building Services Engineers (CIBSE) Guides.

1.03 Quality of Materials

All plant, equipment and materials supplied as part of these works shall be new and of first class commercial quality, shall be free from defects and imperfections and where indicated shall be of grades and classifications designated herein.

All products or materials shall be products of quality standards.

Materials and apparatus supplied by others for installation and connection shall be carefully

examined on receipt. Any defects noted, should be brought to the attention of the Engineer.

Defective equipment or that damaged in the course of installation or tests shall be replaced as required to the approval of the Engineer.

1.04 **Electrical Requirements**

Plant and equipment supplied shall be complete with all necessary motor starters, control boards, and other control apparatus. Where control panels incorporating several starters are supplied they shall be complete with a main isolator.

The supply power up to and including local isolators shall be provided and installed by the Electrical specialist. All other wiring and connections to equipment shall form part of mechanical works.

Three copies of all schematic, cabling and wiring Diagrams shall be supplied for the Engineer's approval.

The starting current of all electric motors and equipment shall not exceed the maximum permissible starting currents of the protective switch gear.

All electrical plant and equipment supplied shall be rated for the supply voltage and frequency applicable in Kenya, that is 415 Volts, 50Hz, 3-Phase or 240Volts, 50Hz, 1-phase.

Any equipment that is not rated for the above voltages and frequencies shall be rejected by the Engineer.

1.05 **Transport and Storage**

All plant and equipment shall, during transportation be suitably packed, crated and protected to minimize the possibility of damage and to prevent corrosion or other deterioration.

On arrival at site all plant and equipment shall be examined and any damage to parts and protective priming coats made good before storage or installation.

Adequate measures shall be taken to ensure that plant and equipment do not suffer any deterioration during storage. Prior to installation all piping and equipment shall be thoroughly cleaned.

If, in the opinion of the Engineer any equipment has deteriorated or been damaged to such an extent that it is not suitable for installation, the equipment shall be replace at supplier own cost.

1.06 **Site Supervision**

There shall be an English-speaking supervisor on the site at all times during normal working hours.

1.07 **Installation**

Installation of all special plant and equipment shall be carried out by under adequate supervision from skilled staff provided by the plant and equipment manufacturer or his appointed agent in accordance with the best standards of modern practice and to the relevant regulations and standards.

1.08 **Testing**

1.08.1 **Introduction**

The Engineer reserves the right to inspect and test or witness of all manufactured plant equipment and materials.

The right of the Engineer relating to the inspection, examination and testing of plant during manufacture shall be applicable to Insurance companies and inspection authorities so nominated by the Engineer.

The Contractor shall give two week's notice to the Engineer of his intention to carry out any inspection or tests and the Engineer or his representative shall be entitled to witness such tests and inspections.

Six copies of all test certificates and performance curves shall be submitted as soon as possible after the completion of such tests, to the Engineer for his approval.

Plant or equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Contractor's own risk and should the test certificate not be approved new tests may be ordered by the Engineer at the Contractor's expense.

The foregoing provisions relate to tests at manufacturer's works and as appropriate to those carried out at site.

1.08.2 **Material Tests**

All material for plant and equipment to be installed under this works shall be tested, unless otherwise directed, in accordance with the relevant KS or B.S Specification concerned.

For materials where no KS or B.S. Specification exists, tests are to be made in accordance with the best modern commercial methods to the approval of the Engineer, having regard to the particular type of the materials concerned.

Specimens and performance tests and analyses to demonstrate conformance of the various materials with the applicable standards.

If stock material, which has not been specially manufactured for the plant and equipment specified is used, then satisfactory evidence to the Engineer that such materials conform to the requirements stated herein in which case tests of material may be partially or completely waived.

Certified mill test reports of plates, piping and other materials shall be deemed acceptable.

1.08.3 Manufactured Plant and Equipment – Work Tests

The rights of the Engineer relating to the inspection, examination and testing of plant and equipment during manufacture shall be applicable to the Insurance Companies or Inspection Authorities so nominated by the Engineer.

A two weeks' notice shall be given to the Engineer of the manufacturer's intention to carry out such tests and inspections.

The Engineer or his representative shall be entitled to witness such tests and inspections. The cost of such tests and inspections shall be borne by the Manufacturer.

Six copies of all test and inspection certificates and performance graphs shall be submitted to the Engineer for his approval as soon as possible after the completion of such tests and inspections.

Plant and equipment which is shipped before the relevant test certificate has been approved by the Engineer shall be shipped at the Manufacturer's own risk and should the test and inspection certificates not be approved; new tests may be ordered by the Engineer at the manufacturer's expense.

1.08.4 Pressure Testing

All pipework installations shall be pressure tested in accordance with the requirements of the various sections of this Specification. The installations may be tested in sections to suit the progress of the works but all tests must be carried out before the work is buried or concealed behind building finishes. All tests must be witnessed by the Engineer or his representative and a 48 hours' notice to carry out such tests shall be given to Engineer.

Any pipework that is buried or concealed before witnessed pressure tests have been carried out shall be exposed and the specified tests shall then be applied.

A certificate shall be prepared for signature by the Engineer and shall keep a progressive and up-to-date record of the section of the work that has been tested.

1.09 Colour Coding

Unless stated otherwise, all pipework shall be colour coded in accordance with the latest edition of KSIS010526:1999 or B.S 1710 and to the approval of the Engineer.

1.10 **Welding galvanized pipes**

1.10.1 **Preparation**

Joints to be made by welding shall be accurately cut to size with edges sheared, flame cut or machined to suit the required type of joint. The prepared surface shall be free from all visible defects such as lamination, surface imperfection due to shearing or flame cutting operation, etc., and shall be free from rust scale, grease and other foreign matter.

1.10.2 **Method**

All welding shall be carried out by the electric arc processing using covered electrodes in accordance with KS06-206 :1981 (Confirmed 1999) or B.S. 639.

Gas welding may be employed in certain circumstances provided that prior approval is obtained from the Engineer.

1.10.3 **Welding Code and Construction**

All welded joints shall be carried out in accordance with the following Specifications:

a) **Pipe Welding**

All pipe welds shall be carried out in accordance with the requirements of B.S.806.

b) **General Welding**

All welding of mild steel components other than pipework shall comply with the general requirements of KS06-1017-2: 1995 or B.S. 1856.

1.11 **Welding PP-R pipes by means of electric coupling.**

1.11.1 **Preparation**

The surfaces of the pipes and fittings must be clean and without blemish. Ends must be clean cut at right angles.

1.11.2 **Method**

Pipes and fittings are inserted to the edge of the matrix and held steady without rotating. Once the heating has been completed the parts are extracted from the heating element and rapidly joined axially

1.11.3 **Welding by means of coupling**

As the electric coupling can slide along the pipes, it is possible to carry out repairs and welds in any part of an existing plant. The parts to be joined must be clean free of grease and perfectly aligned. After inserting the parts to be welded in the coupling, the coupling has to be electrically connected to the welding machine

1.12.0 Welders' Qualifications

Any welder employed shall have passed the trade tests as laid down by the Government of Kenya.

The Engineer may require to see the appropriate certificate obtained by any welder and should it be proved that the welder does not have the necessary qualifications the Engineer may instruct to replace him with a qualified welder.

2.00 PART2: GENERAL SPECIFICATIONS FOR PLUMBING AND DRAINAGE

2.01 Introduction

This section covers the general requirements for plant, equipment and materials forming for the plumbing and drainage installations.

2.20 MATERIALS AND STANDARDS

2.2.1 Pipework and Fittings

Pipework materials are to be used shall be as follows:

a) Galvanized Steel Pipework

Galvanized steel pipe work up to 65mm nominal bore shall be manufactured in accordance with KS06.366:1982 or B.S. 1387 Medium Grade, with tapered pipe threads in accordance with B.S. 21. All fittings shall be malleable iron and manufactured in accordance with KS06-885:1995 or B.S. 143.

Pipe joints shall be screwed and socketed and sufficient coupling unions shall be allowed so that fittings can be disconnected without cutting the pipe. Running nipples and long screws shall not be permitted unless exceptionally approved by the Engineer.

Galvanized steel pipe work, 80mm nominal bore up to 150mm nominal bore shall be manufactured to comply in all respects with the specification for 65mm pipe, except that screwed and bolted flanges shall replace unions and couplings for the jointing of pipes to valves and other items of plant. All flanges shall comply with the requirements of B.S. 10 to the relevant classifications contained hereinafter under Section 'C' of the Specification.

Galvanizing shall be carried out in accordance with the requirements of B.S. 1387 and B.S. 143 respectively.

b) Polypropylene Pipes –Random (PP-R) Type 3

PP-R type3 pipe work shall be manufactured in accordance with B.S. 7291part 2001.Dimesnsions and quality of PP-R Pipes shall be in accordance with DIN 8077 and pipelines in plastics materials joints, Components parts, Installation to be in accordance DIN 16928. joints And fittings to be in accordance DIN16962.

c) Copper Tubing

All copper tubing shall be as manufactured in accordance with B.S. 2871 from C.160 'Phosphorous De-oxidized Non-Arsenical Copper' in accordance with B.S. 1172.

Pipe joints shall be made with soldered capillary fittings and connections to equipment shall be with compression fittings as manufactured in accordance with B.S. 864.

Short copper connection tubes between galvanized pipe work and sanitary fitments shall not

be used because of the risk of galvanic action. If, as may occur in certain circumstances, it is not possible to make the connection in any way than the use of copper tubing, then a brass straight connector shall be positioned between the galvanized pipe and the copper tube in order to prevent direct contact.

d) Poly-vinyl Chloride (P.V.C). Pressure Pipes and Fittings

All P.V.C. pressure pipes and fittings shall be as manufactured in accordance with KS06-478-2:1993 (B.S. 3505: 1968).

Jointing

The method of jointing to be employed shall be that of solvent welding, using the pipe and manufacturer's approved cement. Seal ring joint shall be introduced where it is necessary to accommodate thermal expansion.

Testing

Pipelines shall be tested in sections under an internal water pressure normally one and a half times the maximum allowable working pressure of the class of pipe used. Testing shall be carried out as soon as practical after laying and when the pipeline is adequately anchored. Precautions shall be taken to eliminate all air from the test section and to fill the pipe slowly to avoid risk of damage due to surge.

e) A.B.S. Waste System

Where indicated on the Designs and Schedules, the contractor shall supply and fix A.B.S. waste pipes and fittings.

The pipes, traps and fittings shall be in accordance with the relevant British Standards, including B.S. 3943 or KS06-7831-1:1990, and fixed generally in accordance with manufacturer's instructions and B.S. 5572: 1978.

Jointing of pipes shall be carried out by means of solvent welding, the manufacturer's instructions according to B.S. 5572: 1978. Standard brackets, as supplied for use with this system, shall be used wherever possible.

Where the building structure renders this impracticable the contractor shall provide purpose made supports, centers of which shall not exceed one meter.

Expansion joints shall be provided as indicated. Supporting brackets and pipe clips shall be fixed on each side of these joints.

f) Poly-vinyl Chloride (P.V.C) Pipes and fittings

The contractor shall supply and fix PVC soil pipes and fittings as indicated on the Designs and Schedules. Pipes and fittings shall be in accordance with relevant British Standards, including B.S. 4514 and fixed to the manufacturer's instructions and B.S. 5572.

The soil system shall incorporate synthetic rubber gaskets as provided by the manufacturer

whose fixing instructions shall be strictly adhere to. Connections to WC pans shall be effected by the use of a WC connector, gasket and cover, fixed to suit pan outlet.

Suitable supporting brackets and pipe clips shall be provided at maximum of one metre centres.

The contractor shall be responsible for the joint into the Gully Trap on Drain as indicated on the Drawings.

2.2.2 Valves

a) Draw-off Taps and Stop Valves (Up to 50mm Nominal Bore)

Draw-off taps and valves up to 50mm nominal bore, unless otherwise stated or specified for attachment or connection to sanitary fitment shall be manufactured in accordance with the requirements of B.S.1010.

b) Gate Valves

All gate valves 80mm nominal bore and above, other than those required for fitting to buried water mains shall be of cast iron construction, in accordance with the requirements of B.S. 3464. All gate valves required for fitting to buried water mains shall be of cast iron construction in accordance with the requirements of B.S.1218.

All gate valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S. 1952.

The pressure classification of all valves shall depend upon the pressure conditions pertaining to the site of works.

c) Globe Valves

All globe valves up to and including 65mm nominal bore shall be of bronze construction in accordance with the requirements of B.S.3061 or KS06-885:1995.

The pressure classification of all globe valves shall depend upon the pressure conditions pertaining to the site of works.

2.2.3 **Waste Fitment Traps**

a) Standard and Deep Seal P & S Traps

Where standard or deep seal traps are specified they shall be manufactured in suitable non-ferrous materials in accordance with the full requirements of B.S. 1184.

In certain circumstances, cast iron traps may be required for cast iron baths and in these instances bath traps shall be provided which are manufactured in accordance with the full requirements of B.S.1291.

b) Anti-Syphon Traps

Where anti-syphon traps are specified, these shall be similar or equal to the range of traps manufactured by Greenwood and Hughes Limited, Deacon Works Littlehampton, Sussex, England. or equal and approved. The tradename for traps manufactured by this company is 'Grevak'.

2.2.4 **Pipe Supports**

a) Introduction

This deals with pipe supports securing pipes to the structure of buildings for above ground application.

The variety and type of support shall be kept to a minimum and their design shall be such as to facilitate quick and secure fixings to metal, concrete, masonry or wood.

Consideration shall be given, when designing supports, to the maintenance of desired pipe falls and the restraining of pipe movements to a longitudinal axial direction only.

The contractor shall supply and install all steelwork forming part of the pipe support assemblies and shall be responsible for making good damage to builders work associated with the pipe support installation.

The contractor shall submit all his proposals for pipe supports to the Engineer for approval before any erection works commence.

b) Steel and Copper Pipes and Tubes

Pipe runs shall be secured by clips connected to pipeangers, wall brackets, or trapeze type supports. 'U' bolts shall not be used as a substitute for pipe clips without the prior approval of the Engineer.

An approximate guide to the maximum permissible supports spacing in metres for steel and copper pipe and tube is given in the following table for horizontal runs.

Size Tube Nominal Bores	to B.S. 659	Copper Tube to B.S. 1387	Steel
15mm	1.25m	2.0m	
20mm	2.0m	2.5m	
25mm	2.0m	2.5m	
32mm	2.5m	3.0m	
40mm	2.5m	3.0m	
50mm	2.5m	3.0m	
65mm	3.0m	3.5m	
80mm	3.0m	3.5m	
100mm	3.0m	4.0m	
125mm	3.0m	4.5m	
150mm	3.5m	4.5m	

The support spacing for vertical runs shall not exceed one and a half times the distances given for horizontal runs.

c) Expansion Joints and Anchors

Where practicable, cold pipework systems shall be arranged with sufficient bends and changes of direction to absorb pipe expansion providing that the pipe stresses are contained within the working limits prescribed in the relevant B.S. specification.

Where piping anchors are supplied, they shall be fixed to the main structure only. Details of all anchor design proposals shall be submitted to the Engineer for approval before erection commences.

The contractor when arranging his piping shall ensure that no expansion movements are

transmitted directly to connections and flanges on pumps or other items of plant.

The contractor shall supply flexible joints to prevent vibrations and other Movements being transmitted from pumps to piping systems or vice versa.

2.2.5 **Sanitary Appliances**

All sanitary appliances supplied and installed as part of the works shall comply with the general requirements of B.S. Code of Practice 305 and the particular requirements of the latest B.S. Specifications.

2.2.6 **Pipe Sleeves**

Main runs of pipework are to be fitted with sleeves where they pass through walls and floors. Generally the sleeves shall be of P.V.C. except where they pass through the structure, where they shall be mild steel. The sleeves shall have 6mm – 12mm clearance all around the pipe or for insulated pipework all around the installation.

The sleeve will then be packed with slag wool or similar.

2.3 **INSTALLATION**

2.3.1 **Introduction**

Installation of all pipework, valves, fittings and equipment shall be carried out under adequate supervision from skilled staff to the relevant codes and standards as specified herein. The contractor shall be responsible to for ensuring that all builders work associated with his piping installation is carried out in a satisfactory manner to the approval of the Engineer.

2.3.2 **Above Ground Installation**

a) **Water Services**

Before any joint is made, the pipes shall be hung in their supports and adjusted to ensure that the joining faces are parallel and any falls which shall be required are achieved without springing the pipe.

Where falls are not shown or stated elsewhere in the Specification, pipework shall be installed parallel to the lines of the buildings and as close to the walls, ceilings, columns, etc., as is practicable.

All water systems shall be provided with sufficient drain points and automatic air vents to enable them to function correctly.

Valves and other user equipment shall be installed with adequate access for operation and maintenance. Where valves and other operational equipment are unavoidably installed beyond normal reach or in such position as to be difficult to reach from a small step ladder, extension spindles with floor or wall pedestals shall be provided.

Screwed piping shall be installed with sufficient number of unions to facilitate easy removal of valves and fittings, and to enable alterations of pipework to be carried out without the need to cut the pipe.

Full allowances shall be made for the expansion and contraction of pipework, precautions being taken to ensure that any force produced by the pipe movements are not transmitted to valves, equipment or plant.

All screwed joints to piping and fittings shall be made with P.T.F.E. tape.

The test pressure shall be maintained by the pump for about one hour and if there is any leakage, it shall be measured by the quantity of water pumped into the main in that time. A general leakage of 4.5 litres per 25mm of diameter, per 1.6 kilometres per 24 hours per 30 metres head, may be considered reasonable but any visible individual leak shall be repaired.

b) Sanitary Services

Soil, waste and vent pipe system shall be installed in accordance with the best standard of modern practice as described in B.S. 5572 to the approval of the Engineer.

The contractor shall be responsible for ensuring that all ground waste fittings are discharged to a gully trap before passing to the sewer via a manhole.

All necessary rodding and inspection facilities within the draining system in positions where easy accessibility is available.

Where a branch requires rodding facilities in a position to which normal access is unobtainable, then that branch shall be extended so as to provide a suitable purpose made rodding eye in the nearest adjacent wall or floor to which easy access is available.

The vent stacks shall terminate above roof level and where stack passes through roof, a weather skirt shall be provided. The contractor shall be responsible for sealing the roof after installation of the stacks.

The open end of each stack shall be fitted with a plastic coated or galvanised steel wire guard. Access for rodding and testing shall be provided at the foot of each stack.

c) Sanitary Appliances

All sanitary appliances associated with the works shall be installed in accordance with the best standard of modern practice as described in C.P. 305 to the approval of the Engineer.

2.4

0 TESTING AND INSPECTION

2.4.1 Site Tests – Pipework Systems

a) Above Ground Internal Water Services Installation

All water service pipe system installed above ground shall be tested hydraulically for a period of one hour to not less than one and half times to design working pressure.

If preferred, testing the pipelines in sections may be done. Any such section found to be satisfactory need not be the subject of a further test when system has been completed, unless specifically requested by the Engineer.

During the test, each branch and joint shall be examined carefully for leaks and any defects revealed shall be made good by the Sub-contractor and the section re-tested.

All necessary precautions to be taken to prevent damage occurring to special valves and fittings during the tests. Any item damaged shall be repaired or replaced at the Sub-contractor's expenses.

b) Above Ground Soil Waste and Ventilation System

All soil, waste and ventilating pipe system forming part of the above ground installation, shall be given appropriate test procedures as described in B.S. 5572, 1972.or KS02-254:1986

Smoke tests on above ground soil, waste and ventilating pipe system shall not be permitted.

Pressure tests shall be carried out before any work which is to be concealed is finally enclosed.

In all respects, tests shall comply with the requirements of B.S. 5572.

2.4.2 **Site Test - Performance**

Following satisfactory pressure test on the pipework system operational tests shall be carried out in accordance with the relevant B. S. Code of practice on the systems as a whole to establish that special valves, gauges, control, fittings, equipment and plant are functioning correctly to the satisfaction of the Engineer. All hot water pipework shall be installed with pre-formed fibre glass lagging to a thickness of 25mm where the pipe runs above a false ceiling or in areas where the ambient temperature is higher than normal with the result that pipe "sweating", due to condensation will cause nuisance.

All lagged pipes which run in a visible position after erection shall be given a canvas cover and prepared for painting as follows:

- i) Apply a coating of suitable filler until the canvas weave disappears and allow to dry.
- ii) Apply two coats of an approved paint and finish in suitable gloss enamel to colors
- iii) Approved by the Engineer.

All lagging for cold and hot water pipes erected in crawlways, ducts and above false ceiling which after erection are not visible from the corridors of rooms, shall be covered with a reinforced aluminium foil finish banded in colours to be approved by the Engineer.

In all respects, unless otherwise stated, the hot and cold water installation shall be carried out in accordance with the best standard of modern practice and described in C.P.342 and C.P.310

respectively to the approval of the Engineer. The test pressure shall be applied by means of a manually operated test pump or, in the case of long main or mains of large diameter, by a power driven test pump which shall not be left unattended. In either case precautions shall be taken to ensure that the required pressure is not exceeded.

Pressure gauges should be recalibrated before the tests. The contractor shall be deemed to have included in his price for all test pumps, and other equipment required under this specification.

The test pressure shall be one and a half times the maximum working pressure except where a pipe is manufactured from a material for which the relevant B.S. specification designates a maximum test pressure.

2.5 **STERILISATION OF COLD WATER SYSTEM**

All water distribution system shall be thoroughly sterilized and flushed out after the completion of all tests and before being fully commissioned for handover.

The sterilisation procedures shall be carried out in accordance with the requirements of B.S. Code of Practice 301, Clause 409 and to the approval of the Engineer.

3.00 PART 3: GENERAL SPECIFICATIONS FOR PORTABLE FIRE EXTINGUISHER.

3.01 INTRODUCTION

The general specification details the requirements for the supply and installation and commissioning of the Portable Fire Extinguishers.

The contractor shall include for all appurtenances and appliances not necessarily called for in this specification or shown on the designs but which are necessary for the completion and satisfactory functioning of the works.

If in the opinion of the Sub-contractor there is a difference between the requirements of the Specifications and the designs, he shall clarify these differences with the Engineer before tendering.

3.02 WATER/CO₂ EXTINGUISHERS

These shall be 9-litre water filled CO₂ cartridge operated portable fire extinguishers and shall comply with B.S. 401 or B.S. 1288.or KSISO7165:1999 and to the requirements of B.S.1004. Unless manufactured with stainless steel, bodies shall have all internal surfaces completely coated with either a lead tin, lead alloy or zinc applied by hot dipping. There shall be no visibly uncoated areas.

The extinguishers shall be clearly marked with the following:

- (a) Method of operation.
- (b) The words 'WATER TYPE' (GAS PRESSURE) in prominent letters.
- (c) Name and address of the manufacturer or responsible vendor.
- (d) The nominal charge of the liquid in imperial gallons and litres.
- (e) The liquid level to which the extinguisher is to be charged.
- (f) The year of manufacture.
- (g) A declaration to the effect that the extinguisher has been tested to a
- (h) Pressure of 24.1 bar (350 p.s.i.).
- (i) The number of British Standard 'B.S' 1004 or B.S. 1449.

3.03 PORTABLE CARBON DIOXIDE FIRE EXTINGUISHERS

These shall be portable carbon dioxide fire extinguishers and shall comply with B.S. 1004.or KSISO7165:1999

The body of extinguisher shall be a seamless steel cylinder manufactured to one of the following British Standards; B.S. 401 or B.S. 1288.(EN3:1996)

The filling ratio shall comply with B.S. 5355 with valves fittings for compressed gas cylinders to B.S.341. Where a hose is fitted it shall be flexible and have a minimum working pressure of 206.85 bar (3000 p.s.i.). The hose is not to be under internal pressure until the extinguisher is operated.

The nozzle shall be manufactured of brass gunmetal, aluminium or stainless steel and may be fitted with a suitable valve for temporarily stopping the discharge if such means are not incorporated in the operating head.

The discharge horn shall be designed and constructed so as to direct the discharge and limit the entrainment of air. It shall be constructed of electrically non-conductive material.

The following markings shall be applied to the extinguishers:-

The words "Carbon Dioxide Fire Extinguisher" and to include the appropriate nominal gas content.

- (a) Method of operation.
- (b) The words "Re-charge immediately after use".
- (c) Instructions for periodic checking.
- (d) The number of the British Standard B.S. 3326: 1960 or B.S. 5423.
- (e) The manufacturers name or identification markings

3.04 _DRY CHEMICAL POWDER PORTABLE FIRE EXTINGUISHER

The portable dry powder fire extinguishers shall comply with BS 1449 or KSISO7165:1999 and BS 1004. The body shall be constructed to steel not less than the requirements of BS 1449 or aluminium to BS 1470 : 1972(EN3: 1996) and shall be suitably protected against corrosion.

The dry powder charge shall be not-toxic and retain it s free flowing properties under normal storage conditions. Any pressurizing agent used as an expellant shall be in dry state; in particular compressed air.

The discharge tube and gas tube if either is fitted shall be made of steel, brass, copper or other not less suitable material. Where a hose is provided it shall not exceed 1,060mm and shall be acid and alkali resistant.

Provision shall be made for securing the nozzle when not in use.

The extinguisher shall be clearly marked with the following information

- (a) The word "Dry Powder Fire Extinguisher"
- (b) Method of operation in prominent letters.
- (c) The working pressure and the weight of the powder charge in Kilogramme.
- (d) Manufacturers name or identification mark
- (e) The words "RECHARGE AFTER USE" if rechargeable type.
- (f) Instructions to regularly check the weight of the pressure container (gas Cartridge) or inspect the pressure indicator on stored pressure types when fitted, and remedy any loss indicated by either.
- (g) The year of manufacture.
- (h) The Pressure to which the extinguisher was tested.
- (i) The number of this British Standard BS 3465 or BS 5423: 1977.
- (j) When appropriate complete instructions for charging the extinguisher shall be clearly marked on the extinguisher or otherwise be with the refill.

3.05 AIR FOAM FIRE EXTINGUISHER

These shall be of 9 litres capacity complete with refills cartridges and wall fixing brackets and complying with B.S. EN 3/BS 1449 and BS 1004 with the following specifications:-

Cylinder: to B.S. 1449 or KSISO7165:1999

Necking: to be 76mm outside diameter steel EN 3A 23/4 X 8TPI female thread.

Head cap: to be plastic moulding acetyl resin.

CO2 Cylinder: to be 75gm P.V.C coated.

Internal Finish: to be polythene lining on phosphate coating.

External finish: to be phosphated - One coat primer paint and one coat stove enamel B.S. 381 C.

4.07 FIRE BLANKET

The fire blanket shall be made from cloth woven with pre-asbestos yarn or any other fire

proof material and to measure 1800 x 1210 mm and shall be fitted with special tapes folded so as to offer instantaneous single action to release blanket from storing jacket to BS 1721.

4.08 SIGNAGE -FIRE EXIT SIGN

Proceed and procure and install as below;

Print Fire Exit signs on the Perspex plate, 5mm thick, with white colour background as follows:-

1. Lettering IN RED COLOUR of not less than 50mm in height.
2. A pendant sign bearing words, FIRE EXIT and with a directional arrow.

The sign must be capable of being read from both approaches to exit and so is double sided.

4.09 SIGNAGE -FIRE INSTRUCTION NOTICE

Print fire instruction on the Perspex plate, 5mm thick with White Colour Background measuring 510mm lengthx380mm width as follows;

FIRE INSTRUCTION NOTICE

In the event of fire;

- 1) Raise the alarm by actuating the nearest alarm system point, Sound Siren /gong or Shout Fire
- 2) Attack fire using the nearest available equipment
- 3) Call fire Brigade 222181 or Police 999 and inform your switchboard (PAF Operator
- 4) Ensure that all personnel not involved in fire fighting evacuation to safety Outside the building.
- 5) Close but DO NOT LOCK doors behind as you leave.
- 6) Evacuate the building using stairs or fire escapes do not use Lifts/escalators Walk calmly. Avoid panic. Do not stop or return for personal belongings.
- 7) Assemble as per floor outside the building for roll call.

4.00 PART 4: GENERAL SPECIFICATIONS FOR THE SUPPLY, INSTALLATION AND COMMISSIONING OF THE HOSEREEL SYSTEM

4.01 Introduction

The general specification details the requirements for the supply, installation and commissioning of the hose reel installation. The hose reel installation shall comply in all respects to the requirements set out in C.O.P. 5306 PART 1 : 1976, AND BS 5274.

4.02 Climatic Conditions

- (d) The following climatic condition apply at the site of the works and all plant equipment, apparatus, materials and installations shall be suitable for these conditions.
- (e) Where not otherwise stated, all ratings of plant, equipment apparatus shall be interpreted as site rating and NOT sea level or other ratings.
- (f) Maximum temperature oC
- (g) Minimum Temperature oC
- (h) Average Temperature oC –oC
- (i) Range of Relative Humidity –%
- (j) Altitude M
- (k) Latitude o'S
- (l) Longitude o'E
- (m) Rainfall extremely heavy at certain period of the year.

4.03 Fire Hosereel Pumps

The fire pumpset shall be a fully automatic package unit. The unit shall consist of pumps of appropriate duty at a given head. The complete specification of the package pump set to be as follows:-

(a) PUMPS- Specify)

(b) PUMP MATERIALS

Suction and Discharge Casing to be made Grey Iron. Shafts, conveyors, diffusers, impellers and the external elements made from Stainless Steel.

(a) Motors

(Specify)

(b) Mechanical Seal

(Specify)

(c) Baseframe

Welded fabrication from Mild Steel sections. With facility for lifting unit.

(d) Pipework

Medium gauge Galvanized Pipework to B.S. 1387 and Galvanized fittings to B.S. 143/1256. All Pipework to terminate with B.S 4504 NP. 16 Flanges. Flexible connections to be affixed to suction and discharge connections.

(e) Valve

Pump Isolating Valves, Butterfly valve to B.S. 5155 with Cast Iron nylon coated disc and black airtrile liner. Non-Return Valve vertical lift type to be manufactured from Cast Iron with nitrile seal.

(f) Control Panel

Standard Panel cubicle to be manufactured to IP. 55 standards, containing Starters of appropriate ratings Panel to include power On Light, Run and Trip Lights, Hand/Off/Auto switches, duty pump selector switch, disconnect switch and line and control circuit fuses, Switches to conform to IP. 54.

Safety features to include 24 volts low voltage controls except for starter coils. Panel mounted on vibration isolators to minimize vibration to electrical equipment.

(g) Pressure Switch:

Differential adjustment type switch manufactured to IP.14 standards.

Multi-pump sequencing control to be affected from a single pressure instrument, utilizing control circuitry specially for pressure boosting applications.

(h) 4" Dial Bottom Connection To B.S. 1780 Calibrated In Bars And Kpa..

(i) Membrane Tank

Fabricated Steel construction housing a natural rubber diaphragm, ideally suited for drinking water applications. Precharged with Nitrogen to correct pressure at test stage.

The panel shall incorporate HRC main fuses and thermal overloads for the pump motors, timer control unit for minimum run period, start relay incorporating timing element for standby pump delay and one set of voltage free changeover contacts to give remote alarm/indication for the indicator lights motioned.

(j) Pipework

The Pipework for the hose reel installation shall be galvanized wrought steel tubing "Medium" Grade Class "B" to BS 1387:1967 with pipe threads to BS 21.

(k) Pipe Fittings

The pipe fittings shall be wrought steel pipe fittings welded or seamless fittings conforming to BS 1740 Part 1971 or malleable iron fittings to BS 143.

All changes in direction will be standard bends or long radius fittings. No. elbows will be permitted.

(l) Flanges

The flanges shall comply with BS 4504: 1969. All flanges shall comply to a nominal pressure rating of 16 bar (P.N. 16) and shall be of either cast iron or steel.

(m) Gaskets

The gaskets for the use with flanges to BS 4304: 1969 shall comply with BS 4865 part 1: 1072 for pressure up to and not exceeding 64 bar.

(n) Non-Return Valves

The non-return valves up to and including 80mm diameter shall be to BS 5153 : 1974 with flanges to BS 4504 P.N. 16.

(o) Gate Valves

The gate valves upto and including 80mm shall be as Crane NO. D151 non-rising stem and wedge disc to BS 21 taper thread.

(p) Sleeves

Where pipework passes through walls, floors or ceilings, a sleeve shall be provided one diameter larger than the diameter of the pipe, the space between to be packed with mineral wool, to the Engineer's approval.

(q) Floor And Ceiling Plates

Where pipe pass through floors, walls or ceilings, floor, wall and ceiling plates shall be secured around the pipe. The plates shall be of stainless steel construction and will serve no other purpose than to present a net finish, to the exposed installation.

(r) Hosereels

The hosereels to the installation shall consist of recess and no-recess automatic hosereels.

All the above hosereels shall comply with BS 5274 : 1976 and BS 3169 : 1970 and is to requirements C.P. 5306 Part I : 1976.

The hosereels shall be supplied and installed complete with first-aid non-kinking hose 30 metres long, with nylon spray/jet/shut-off nozzle fitted. A screw down chrome plated globe valve to BS 1010 to the inlet to the reel. The orifice to the nozzle is to be not less than 4.3 mm to maintain a minimum flow of 0.4L/s to the jet.

(s) Earthing

The hosereel installation shall be electrically earthed by a direct earth connection.

(t) Finish Painting

Upon completion of testing and commissioning of the hosereel installation the pipework shall be primed and finish painted with 2 No. coats of paint to the Engineer's requirements.

(u) Testing And Commissioning

The hosereel system is to be flushed out before testing to ensure that no builder's debris has entered the system. The system is to be then tested to one and half times the working pressure of the installation to the approval of the Engineer. Simulated fault condition of the pumping equipment, is to be carried out before acceptance of the system by the Engineer and Architect.

(v) Instruction Period

The Sub-Contractor shall allow in his contract sum for instructing of use of the equipment to the clients maintenance staff. The period of instruction may be within the contract period but may also be required after the contract period has expired.

The period of time required shall be stipulated by the Client but will not exceed seven days in which time the Clients staff shall be instructed in the operation and maintenance of the equipment.

PART D

SCHEDULES

- (i) The Tenderer shall provide all the schedules and catalogs. The schedules provided **MUST BE** as per specifications and the drawings.
- (ii) The total prices in the main summary of price schedules shall be deemed to include all obligations under the Contract including and not limited to supply of materials equipment, apparatus, fittings, spares, tools, insurance, delivery to site, storage, installation, testing and commissioning in accordance with this specification.
- (iii) Any prices omitted from any section or part of price schedule shall be deemed to have been included in another item, section or part.
- (iv) All prices shall be duty paid and shall also be inclusive of all taxes current at the time of tendering.

NOTES.

The bill of quantities listed hereunder as provisional are approximate and as such are subject to re-measurement on completion.

The quantities listed hereunder are not to be used for ordering purposes. The contractor is to make his own assessment from the documentation provided and from site measurement for the purpose of ordering materials.

BILLS OF QUANTITIES

1. The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works.
2. The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing, commissioning and all taxes (including **16% VAT**).

In accordance with Government policy, the 16% VAT **shall be deducted** from all payments made to the tenderer, and the same shall be forwarded to the **Kenya Revenue Authority (KRA)**.

3. All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part.
4. The brief description of the items given in the Bills of Quantities are for the purpose of establishing a standard to which the sub-contractor shall adhere to. Otherwise alternative brands of **equal** and **approved** quality will be accepted.

Should the sub-contractor install any material not specified here-in before receiving **approval** from the Project Engineer, the sub-contractor shall remove the material in question and, **at his own cost**, install the proper material.

5. The grand total of prices in the price summary page must be carried forward to the **Form of Tender**.

TECHNICAL SPECIFICATIONS FOR BUILDER'S WORKS

PREAMBLES AND PRICING NOTES

GENERALLY

All work is to be carried out in accordance with M.O.W. General Specification issued in 1976 as qualified or amended below.

MANUFACTURER'S NAME and catalogue reference, are given as a guide to quality only. Alternative manufacture of equal quality will be accepted at the discretion of the Architect.

EXCAVATION

Prices are to include for excavating in all materials met with except Rock as specified. Prices are also to include for planking and strutting, and for destroying all white ants' nests in the vicinity of the building.

CONCRETE WORK

All concrete shall conform to the "Concrete Specification for Building 1974" issued by the Structural Branch of the M.O.W. All reinforced concrete to be to class 20 of the above specification, and to be Guaranteed strength as described. Cover to Reinforcement: Unless otherwise specified on the drawings cover is to be:-

Foundations	50mm
Columns	50mm
Beams	25mm
Slabs	15mm

Test Cubes: Allowance must be included in the Tender for the presentation of concrete test cubes as required by the Consulting Engineer.

Precast Concrete Works: Prices are to include for handling, reinforcement, and for bedding in cement mortar. Concrete will be class 20.

WALLING

Concrete Blocks: All concrete walling blocks are to be as described in M.O.W. Standard Specification for Metric Concrete Blocks issued September 1972. Blocks shall be type B, medium density, and solid blocks shall have a density not less than 100kg/cm.

Wall reinforcement shall be hoop iron, one layer per 90mm thickness, and placed in the bed joint of alternate courses.

Samples: Prices are to include for packing and sending sample blocks to M.O.W. or other Testing Laboratory approved by the Structural Engineer..

ROOFING

All roof materials shall be as specified in the Bills of Quantities, and laid in accordance with the manufacturer's instructions.

CARPENTRY AND JOINERY

Cypress: The grading rules for Cypress shall be the same as those for podocarpus.

Laminated plastic sheeting shall be fixed with an approved waterproof adhesive.

Prices of Joinery shall include for pencil rounded arises; for protection against damage and for bedding frames and cills in cement mortar.

Plugged shall mean drilling walling or concrete with a masonry drill and filling with proprietary plugs of the correct size. Cutting with hammer and chisel will not be permitted.

IRONMONGERY

Shall be as specified in the Bills of Quantities or equal and approved.

Prices must include for removing and refixing during and after painting, for labelling all keys, and for fixing with matching screws.

METALWORK

Structural Steelwork shall comply with M.O.W. "Structural Steelwork Specification" 1973.

Generally: All steelwork shall be cleaned free from rust and primed one coat of red lead primer before being delivered to the site.

Prices for Metal Windows are to include for assembling parts. Bedding and pointing in mastic, building in fixing lugs, and plugging as necessary.

PLASTERWORK AND OTHER FINISHINGS

Generally: All plasterwork and paving to be as described in the General Specification and in these Bills of Quantities.

Paving: Prices are to include for brushing concrete clean, wetting and coating with cement and sand grout 1:1.

GLAZING

Polished Plate Glass: Shall be General Glazing Quality

Prime Rebates: Prices are to include for priming rebates before placing putty.

Broken or Scratched glass: The Contractor will be responsible at his own cost for replacing any broken or scratched glass and handing over in perfect condition.

PAINTING

Generally: Note that the Contractor is to provide scaffolding for all trades including painting.

Painting Category: Shall be Category "A" of M.O.W. approved list and applied in accordance with the Manufacturer's instructions.

Prices: Prices are to include for all preparatory work, coats and for protecting other work and for cleaning up on completion. Prices for painting on galvanised metal are to include for mordant solution as necessary.

PLUMBING

Generally: All work shall be executed by an approved sub-contractor and in accordance with the General Specification.

Descriptions: The sizes given are the internal diameter. The words pipe and tube are synonymous.

Prices of Pipes: Are to include for holder bats, clips, reducing bushes and straight couplings.

Prices of Sanitary Fittings: Are to include for assembling and jointing parts plugging as necessary, and all joints to services and wastes or soil pipes.

DRAINAGE

All work to be executed by an approved sub-contractor and in accordance with the General Specification.

ELECTRICAL WORKS

Generally: All work shall be executed by an approved Electrical sub-contractor and in accordance with the Electrical Engineer's instructions.

ROADS AND CAR PARKS

All work must be supervised by an experienced Road Engineer or Foreman.

EXTERNAL WORKS

Prices of excavation are to include for keeping excavations dry and for supporting sides.

SECTION VII-BILLS OF QUANTITIES

**SECTION NO. 01
PRELIMINARIES**

ITEM	DESCRIPTION	TOTAL
	<p><u>PARTICULAR PRELIMINARIES</u></p> <p>A PRICING ITEMS OF PRELIMINARIES:</p> <p>Prices SHALL BE INSERTED against items of “preliminaries” in the tenderer’s priced Bills of Quantities.</p> <p>Please note that failure to price any item of general or particular preliminaries will be construed to mean that the tenderer wishes to provide for that item free of charge.</p> <p>B VALUE ADDED TAX:</p> <p>The tenderer shall include VAT in their prices as no Lumpsum addition on account of this will be accepted. Failure to do so will render his/her tender NON-RESPONSIVE and therefore liable to be disqualified automatically.</p> <p>C SCOPE OF CONTRACT:</p> <p>The works are to be carried out comprise Supply, Installation, Configuration, Testing and Commissioning of Integrated Security Management System (ISMS) and associated civil, electrical and mechanical works at Reonsurance Plaza Kisumu.</p> <p>The works also include associated Mechanical and Plumbing installations ,Electrical installations and assocaited Builders works .</p> <p>D DESCRIPTION OF THE WORKS</p> <p>Ihe works to be carried out under this contract comprise Supply, Installation, Configuration, Testing and Commissioning of Integrated Security Management System (ISMS) with and including the associated civil works, mechanical and electrical installations at Reinsurance Plaza, Kisumu .</p> <p>The works will also include general refurbishment of existing infrastructure and repairs to existing office spaces .</p>	
	<p>Total Total Carried to Collection</p> <p>USD</p>	

ITEM	DESCRIPTION	TOTAL
<p>A MEASUREMENTS</p> <p>In the event of any discrepancies arising between the Bills of Quantities and the actual works, the site measurements shall generally take precedence. However, such discrepancies between any contract documents shall immediately be referred to the Project Manager in accordance with the Conditions of Contract. The discrepancies shall then be treated as a variation and be dealt with in accordance with the said Conditions.</p> <p>B LOCATION OF THE SITES</p> <p>The site of the works is at REINSURANCE PLAZA KISUMU . The site is located within Kisumu CBD at the junction of Oginga Odinga and Achieng Oneko roads .</p> <p>NOTE</p> <p>The tenderer shall be deemed to have visited the above sites and familiarised himself with all site conditions prior to submission of tender.</p> <p>No claims arising from the tenderer's failure to do so will be entertained.</p> <p>C EXISTING BUILDING SERVICES</p> <p>Special precaution shall be required throughout the contract period to avoid damage to the existing building elements, cables, drains and other services. The Tenderer shall take special note that these are live sites with on going government and business organizations and any disruption of services will be devastating and costly.</p> <p>The contractor shall allow for expeditiously making good any damage arising from his actions during execution of this contract at his own expense.</p> <p>D GENERAL SPECIFICATIONS</p> <p>The contractor is referred to the General Specification for Building Works 1976 Edition Pages B1 - B2 inclusive and must allow for all costs in complying with these clauses.</p> <p>E CONTRACT COMPLETION PERIOD</p> <p>The contract completion period must be strictly adhered to by the Contractor.</p> <p>The Project Manager shall strictly monitor the contractor's progress in relation to the progress chart and should it be found necessary, the Project Manager shall inform the contractor in writing that his actual performance on any of the sites is not satisfactory.</p> <p>In all such cases, the contractor shall accelerate his rate of performance, production and progress by all means such as additional labour, plant, etc and working overtime all at his cost.</p>		
	<p>Total Total Carried to Collection</p> <p>USD</p>	

ITEM	DESCRIPTION	TOTAL
A	<p>WORKING CONDITIONS</p> <p>The contractor shall allow in his rates for any interference that he may encounter in the course of execution of the works for the Client may in some cases ask the contractor not to proceed with the works until some activities within the sites are completed.</p>	
B	<p>SIGNBOARD</p> <p>Allow for providing, erecting, maintaining throughout the course of the Contract and afterwards clearing away a signboard as designed, specified and approved by the Project Manager.</p>	
C	<p>LABOUR CAMPS</p> <p>The contractor shall not be allowed to house labour on any of the sites. Allow for transporting workers to and from the sites during the tenure of the contract.</p>	
D	<p>PRICING RATES</p> <p>The tenderer shall include for all costs in executing the whole of the works, including transport, replacing damaged items, fixing, all to comply with the said Conditions of Contract.</p>	
E	<p>URGENCY OF THE WORKS</p> <p>The contractor is notified that these “ works are urgent” and should be completed within the period stated in these Particular Preliminaries.</p> <p>The contractor shall allow in his rates for any costs he deems that he may incur by having to complete these works within the stipulated contract period.</p>	
F	<p>PAYMENT FOR MATERIALS ON SITE</p> <p>All materials for incorporation in the works must be stored on each site before payment is effected, unless specifically exempted by the Project Manager. This is to include materials of the contractor, nominated sub - contractors and nominated suppliers.</p>	
G	<p>CREDIT FOR SALVAGE MATERIAL</p> <p>Demolished material that can be reinstated or whose value is not negligible and whose description in the Bills of Quantities include the element of carting away , must be accounted for by the Main Contractor . The Main Contractor must provide credit to the employer for such items .The value that the Main Contractor provides for these items must be included in these Bills of Quantities . The main contractor must seek the written approval of the Project Manager and or the Project Quantitiv Survevor prior to the extraction of salavage materials</p>	
	<p style="text-align: center;">Total Total Carried to Collection</p> <p style="text-align: right;">USD</p>	

ITEM	DESCRIPTION	TOTAL
<p>A</p>	<p>EXISTING SERVICES</p> <p>Prior to the commencement of any work, the contractor is to ascertain from the relevant Authority(ies) the exact position, depth and level of all existing services in the area and he shall make whatever provisions may be required by the authorities concerned for the support, maintenance and protection of such services.</p>	
<p>B</p>	<p>TENDER DOCUMENTS</p>	
<p>Tender documents are as listed in the Contents Page. The Tenderer should check and confirm that all the documents are included otherwise to notify the Project Manager of any discrepancy before submission of the tender.</p>		
<p>C</p>	<p>DELIVERY OF TENDER</p>	
<p>Tenders and all documents in connection therewith, as specified above must be delivered in the addressed envelope which should be properly sealed and deposited at the offices as specified in the letter accompanying these documents or as indicated in the advertisement.</p>		
<p>Tenders will be opened at the time specified in the letter accompanying these Tender Documents or as indicated in the advertisement. Tenders delivered/received later than the above time will not be opened.</p>		
<p>D</p>	<p>ADVANCE PAYMENT</p>	
<p>Advance payment shall be guided by the General Conditions of Contract (Clause 49) and the Special Conditions of Contract included with this tender document .</p>		
<p>E</p>	<p>FLUCTUATIONS</p>	
<p>This will be a fixed price contract and not subject to the Fluctuations Clause</p>		
<p>F</p>	<p>AS BUILT DRAWINGS FOR ELECTRICAL AND MECHANICAL INSTALLATIONS</p>	
<p>Allow for preparing and submitting "As Built Drawings" for all installations in soft and printed copies as would be instructed by the Consultants.</p>		
<p>Allow for preparing and submitting all operation manuals, test reports and all other handover documents. A minimum of 3 copies of each drawing ,manual ,report ,datasheet e.t.c will be required from the Contractor upon the Employer or Project consultants request . The Main Contractor will be expected to furnish the requested drawings within seven after the requested is formally issued in writing by either the Employer or the project consultants .</p>		
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
D	<p><u>PARTICULARS OF INSERTIONS TO BE MADE IN APPENDIX TO CONTRACT AGREEMENT</u></p> <p>The following are the insertions to be made in the appendix to the Contract Agreement: -</p> <p>Period of Final Measurement 6 Months from Practical completion</p> <p>Defects Liability Period 12 Months from Practical completion</p> <p>Date for Possession To be agreed with the Project Manager.</p> <p>Period for Mobilization Weeks from date of Possession.</p> <p>Date for Completion Weeks from date of Possession.</p> <p>Liquidated and Ascertained At the rate of USD 2,500 per week or part thereof</p> <p>Prime cost sums for which the contractor desires to tender :-</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>Period of Interim Certificates Monthly on application by contractor</p> <p>Period of Honouring Certificates Thirty (30) Days</p> <p>Minimum Certified Amount USD. 100,000</p> <p>Percentage of Certified Value Retained 10%</p> <p>Limit of Retention Fund 10% of Contract Sum</p> <p>Bonds The Bonds required shall be from approved Banking or Insurance Institutions ONLY</p>	
	<p>Total Total Carried to Collection USD</p>	

ITEM	DESCRIPTION	TOTAL
	<p><u>COLLECTION FOR PARTICULAR PRELIMINARIES</u></p> <p>Brought forward from Page 215</p> <p>Brought forward from Page 216</p> <p>Brought forward from Page 217</p> <p>Brought forward from Page 218</p> <p>Brought forward from Page 219</p>	
	TOTAL FOR PARTICULAR PRELIMINARIES CARRIED TO SUMMARY OF PRELIMINARIES	

ITEM	DESCRIPTION	TOTAL
	<p><u>GENERAL PRELIMINARIES</u></p> <p>A PRICING ITEMS OF PRELIMINARIES AND PREAMBLES</p> <p>Prices will be inserted against items of Preliminaries in the contractor's priced Bills of Quantities and Specification. Note that the currency to be used for purposes of pricing is the american dollar (USD).</p> <p>The contractor shall be deemed to have included in his prices or rates for the various items in the Bills of Quantities or Specification for all costs involved in complying with all the requirements for the proper execution of the whole of the works in the Contract.</p> <p>B ABBREVIATIONS</p> <p>Throughout these Bills, units of measurement and terms are abbreviated and shall be all the requirements for the proper execution of the whole of the works in the Contract.</p> <p><i>C.M. or CM</i> Shall mean cubic metre</p> <p><i>S.M. or SM</i> Shall mean square metre</p> <p><i>L.M. or LM</i> Shall mean linear metre</p> <p><i>MM or mm</i> Shall mean Millimetre</p> <p><i>Kg. or KG</i> Shall mean Kilogramme</p> <p><i>No. or No.</i> Shall mean Number</p> <p><i>Prs. or PRS</i> Shall mean Pairs</p> <p><i>B.S.</i> Shall mean the British Standard Specification Published by the <i>British Standards Institution, 2 Park Street, London W.1., England.</i></p> <p><i>Ditto</i> Shall mean the whole of the preceding description <i>except as qualified in the description in which it occurs.</i></p> <p><i>m.s.</i> Shall mean measured separately.</p> <p><i>a.b.d</i> Shall mean as before described.</p>	
	<p>Total Total Carried to Collection USD</p>	

ITEM	DESCRIPTION	TOTAL
A	<p><u>PARTICULARS TO CONDITION OF CONTRACT</u></p> <p>The following terms referring to parties relating to this contract when appearing in this contract shall be ascribed the meanings as detailed below:-</p> <p>EMPLOYER</p> <p>The "Employer" is Kenya Reinsurance Corporation Ltd P.O. Box 30271-00100 NAIROBI</p> <p>The term "Employer" and "Client" wherever used in the contract document shall be synonymous</p> <p>CONSULTANTS</p> <p>Project Manager : International Security Consultant (ISC) P.O Box 42077 – 00100, NAIROBI</p> <p>Architects : Heritage Associate Ltd Architects, Interior designers & Project Managers P.O Box 56293 – 00200, NAIROBI</p> <p>Quantity Surveyor: Costek Alma Quantity Surveyors , Building Economists & Project Managers , P.O. Box 20852 - 00202, NAIROBI</p> <p>Electrical/Mechanical Engineer: Gedox Associates, Consulting Engineers P.O Box 64441 - 00620 , NAIROBI</p> <p>Structural Engineer: Armittech Consulting Engineers, Consulting Engineers , P.O. Box 48453-00100, NAIROBI</p>	
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
<p>A</p>	<p>EXCEPTIONS TO THE STANDARD METHOD OF MEASUREMENT</p> <p>Attendance on nominated Sub-contractors shall be given as an item in each case shall be deemed to include: allowing use of standing scaffolding, mess rooms, sanitary accommodation and welfare facilities; provision of special scaffolding where necessary; providing space for office accommodation and for storage of plant and materials; providing light and water for their work: clearing away rubbish; unloading, checking and hoisting: providing electric power and removing and replacing duct covers, pipe casings and the like necessary for the execution and testing of Sub- contractors' work and being responsible for the accuracy of the same.</p>	
<p>B</p>	<p>GENERAL PRICING NOTES</p> <p><i>Fix Only:-</i></p> <p>"Fix Only" shall mean take delivery, load and transport to Sites where necessary, unload, store, unpack, assemble as necessary, distribute to position, hoist and fix only.</p> <p><i>Supply Only:-</i></p> <p>"Supply only" shall mean that the Contractor is to provide for everything in connection with such items except fixing in position.</p>	
<p>C</p>	<p>CONTINGENCIES</p> <p>Provide the provisional sum of Forty One Thousand dollars only for contingencies to be omitted or expended in whole or in part at the direction of the Project Manager</p>	<p>41,000.00</p>
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
<p>A</p>	<p>FORM OF CONTRACT</p> <p>The Form of Contract shall be as stipulated in the Public Procurement Regulatory Authority's Standard Tender Document for Procurement of Small Works (February 2021 Edition) included herein. The Conditions of Contract are also included therein.</p>	
<p>B</p>	<p>CONDITIONS OF CONTRACT</p> <p>The General Conditions of Contract and Special Conditions of Contract shall be as set out in the Public Procurement Regulatory Authority (PPRA) Standard Tender Document for Procurement of Small Works (February 2021 Edition) .</p>	
<p>C</p>	<p>PERFORMANCE BOND.</p> <p>The contractor shall find and submit on the Form of Tender an approved bank who will be willing to be bound to Kenya Reinsurance Corporation in an amount equal to ten per cent (10%) of the Contract amount for the due performance of the Contract up to the date of completion as certified by the Project Manager and who will, when and if called upon, sign a Bond to that effect on the relevant standard form included herein (without the addition of any limitations) on the same day as the Contract Agreement is signed, by the Client, the contractor shall furnish within seven days another Surety to the approval of the Client</p>	
<p>D</p>	<p>PLANT, TOOLS AND VEHICLES</p> <p>Allow for providing all scaffolding, plant, tools and vehicles required for the works except in so far as may be stated otherwise herein and except for such items specifically and only required for the use of nominated Sub contractors as described herein. No timber used for scaffolding, formwork or temporary works of any kind shall be used afterwards in the permanent work.</p>	
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
A	<p>TRANSPORT.</p> <p>Allow for transporting of workmen, materials and equipment etc., to and from the Sites at such hours and by such routes as may be permitted by the competent authorities.</p>	
B	<p>MATERIALS AND WORKMANSHIP.</p> <p>All materials and workmanship used in the execution of the work shall be of the best quality and description unless otherwise stated. The contractor shall order all materials to be obtained from overseas immediately after the Contract is signed and shall also ensure they are on each site when required for use in the works. The Bills of Quantities shall not be used for the purpose of ordering materials.</p>	
C	<p>SIGN FOR MATERIALS SUPPLIED BY THE CLIENT.</p> <p>The contractor will be required to sign a receipt for all articles and materials supplied by the Client at the time of taking delivery thereof, as having received them in good order and condition, and will thereafter be responsible for any loss or damage and for replacements of any such loss or damage with articles and/or materials which will be supplied by the Client at the current market prices including Customs Duty and V.A.T., all at the contractor's own cost and expense, to the satisfaction of the Project Manager</p>	
D	<p>STORAGE OF MATERIALS</p> <p>The contractor shall provide at his own risk and cost where directed on each site weather proof lock-up sheds and make good damaged or disturbed surfaces upon completion to the satisfaction of the Project Manager. Nominated Sub-contractors are to be made liable for the cost of any storage accommodation provided especially for their use.</p>	
E	<p>SAMPLES</p> <p>The contractor shall furnish at his own cost any samples of materials or workmanship including concrete test cubes required for the works that may be called for by the Project Manager for his approval until such samples are approved by the Project Manager and the Client, may reject any materials or workmanship not in his opinion to be up to approved samples. The Project Manager shall arrange for the testing of such materials as he may at his discretion deem desirable, but the testing shall be made at the expense of the contractor and not at the expense of the Client. The contractor shall pay for the testing in accordance with the current scale of testing charges laid down by the Ministry of Transport, Infrastructure, Housing, Urban Development and Public Works</p> <p>The procedure for submitting samples of materials for testing and the method of marking for identification shall be as laid down by the Project Manager. The contractor shall allow in his tender for such samples and tests except those in connection with nominated sub-contractors' work.</p>	
	<p style="text-align: center;">Total Total Carried to Collection</p>	<p style="text-align: center;">USD</p>

ITEM	DESCRIPTION	TOTAL
<p>A</p>	<p>GOVERNMENT ACTS REGARDING WORK PEOPLE, ETC.</p> <p>Allow for complying with all Government Acts, Orders and Regulations in connection with the employment of Labour and other matters related to the execution of the works. In particular the contractor's attention is drawn to the provisions of the Occupational Safety and Health Act (OSHA), 2007 and his tender must include for all costs arising or resulting from compliance with any Act, Order or Regulation relating to Insurances, pensions and holidays for workpeople or to the safety, health and welfare of the workpeople</p> <p>The Contractor must make himself fully acquainted with current Acts and Regulations, including Police Regulations regarding the movement, housing, security and control of labour, labour camps , passes for transport, etc. It is most important that the contractor, before tendering, shall obtain from the relevant Authority the fullest information regarding all such regulations and/or restrictions which may affect the organisation of the works, supply and control of labour, etc., and allow accordingly in his tender. No claim in respect of want of knowledge in this connection will be entertained</p> <p>In particular the contractor shall allow for complying with the Conditions that may be imposed by the National Environmental Management Authority (NEMA).</p>	
<p>B</p>	<p>SECURITY OF WORKS ETC.</p> <p>The Main Contractor shall be entirely responsible for the security of all the works, stores, materials, plant, personnel, etc., both his own and sub-contractors' and must provide all necessary watching, lighting and other precautions as necessary to ensure security against theft, loss or damage and the protection of the public. The contractor shall allow for providing adequate security for the works and the workers in the course of execution of this contract. No claim will be entertained from the Contractor for not maintaining adequate security for both the works and workers.</p>	
<p>C</p>	<p>PUBLIC AND PRIVATE ROADS.</p> <p>Maintain as required throughout the execution of the works and make good any damage to public or private roads arising from or consequent upon the execution of the works to the satisfaction of the local and other competent authority and the Project Manager</p>	
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
<p>A</p>	<p>EXISTING PROPERTY.</p> <p>The contractor shall take every precaution to avoid damage to all existing property including Building elements, Finishes, Fittings, roads, cables, drains and other services and he will be held responsible for and shall make good all such damage arising from the execution of this contract at his own expense to the satisfaction of the Project Manager</p>	
<p>B</p>	<p>VISITING OF SITES .</p>	
<p></p>	<p>The contractor is recommended to visit the site described in the Particular Preliminaries hereof. Any prospective tenderer shall be deemed to have acquainted himself therewith as to its nature, position, means of access or any other matter which, may affect his tender. No claim arising from the failure to comply with this recommendation will be considered.</p>	
<p>C</p>	<p>ACCESS TO SITES AND TEMPORARY ROADS.</p>	
<p></p>	<p>Means of access to each site shall be agreed with the Client prior to commencement of the work and contractor must allow for building any necessary temporary access roads for the transport of the materials, plant and workmen as may be required for the complete execution of the works including the provision of temporary culverts, crossings, bridges, or any other means of gaining access to the Sites. Upon completion of the works, the contractor shall remove such temporary access roads; temporary culverts, bridges, etc., and make good and reinstate all works and surfaces disturbed to the satisfaction of the Project Manager.</p>	
<p>D</p>	<p>AREA TO BE OCCUPIED BY THE CONTRACTOR</p>	
<p></p>	<p>The area in each site which may be occupied by the contractor for use of storage and for the purpose of erecting workshops, etc., shall be defined on site by the Client. The Contractor shall be responsible for any demarcation that may be required to cut off this area for his use.</p>	
<p>E</p>	<p>OFFICE ETC. FOR THE CONSULTANTS</p>	
<p></p>	<p>The contractor shall provide for Repair and cleaning of any parts that will be assigned and used as the office for the Consultants and or their assistants during the whole period of execution of the works.</p>	
<p></p>	<p>The contractor shall abide by the Client's instructions regarding the use of washrooms that will be allocated him for the use by his workers. He shall provide a cleaner and detergents for cleaning the same so as to ensure its cleanliness to the satisfaction of the Client and the Project Manager, Failure to do so may lead to denial of use of the washrooms.</p>	
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
A	<p>WATER AND ELECTRICITY FOR THE WORKS</p> <p>The contractor shall provide at his own risk and cost all necessary water, electric light and power required for use in the works. The contractor must make his own arrangements for connection to the nearest suitable water main and/or for metering the water used. He must also provide temporary tanks and meters as required at his own cost and clear away when no longer required and make good on completion to the entire satisfaction of the Project Manager . The contractor shall pay all charges in connection herewith. No guarantee is given or implied that sufficient water will be available from mains and the contractor must make his own arrangements for augmenting this supply at his own cost. Nominated Sub contractors are to be made liable for the cost of any water or electric current used and for any installation provided especially for their own use.</p> <p>Notwithstanding the foregoing the Contractor may agree with the Client to use the power and water on site and reimburse the Client for the same by use of check meters.</p>	
B	<p>SANITATION OF THE WORKS</p> <p>The Sanitation of the works shall be arranged and maintained by the contractor to the satisfaction of the Government and/or Local Authorities, Labour Department and the Project Manager</p>	
C	<p>SUPERVISION AND WORKING HOURS</p> <p>The works shall be executed under the direction and to the entire satisfaction in all respects of the Project Manager who shall at all times during normal working hours have access to the works and to the yards and workshops of the contractor and sub-contractors or other places where work is being prepared for the contract. The working hours for this project will be as stipulated in the Instructions to the Tenderers i.e. between 5.00PM and 6.00AM except for weekends and public holidays when the Contractor can work during the day. The Contractor shall allow for this working arrangement against this item as no claim regarding this limitation will be entertained or allowed.</p>	
D	<p>PROVISIONAL SUMS.</p> <p>The term "Provisional Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7(i) of the Standard Method of Measurement. Such sums are net and no addition shall be made to them for profit.</p>	
E	<p>PRIME COST (OR P.C.) SUMS.</p> <p>The term "Prime Cost Sum" or "P.C. Sum" wherever used in these Bills of Quantities shall have the meaning stated in Section A item A7 (ii) of the Standard Method of Measurement. Persons or firms nominated by the Client to execute work or to provide and fix materials or goods described herein as Nominated Sub- contractors. Persons or firms so nominated to supply goods or materials are described herein as Nominated Suppliers</p>	
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
<p>A</p> <p>PROGRESS CHARTS & PROGRAMME OF WORKS.</p> <p>The contractor shall provide within two weeks of Possession of the site and in agreement with the Project Manager a Progress Chart for the whole of the works including the works of Nominated Sub-contractors; one copy to be handed to the Project Manager and a further copy to be retained on site. Progress to be recorded and chart to be amended as necessary as the work proceeds.</p> <p>B</p> <p>ADJUSTMENT OF P.C. SUMS.</p> <p>In the final account all P.C. Sums shall be deducted and the amount properly expended upon the Project Manager's order in respect of each of them added to the Contract sum. The contractor shall produce to the Project Manager such quotations, invoices or bills, properly receipted, as may be necessary to show the actual details of the sums paid by the contractor. Items of profit upon P.C. Sums shall be adjusted in the final account pro-rata to the amount paid. Items of "attendance" following P.C. sums shall be adjusted pro-rata to the physical extent of the work executed (not prorata to the amount paid) and this shall apply though the contractor's Bills show a percentage in the rate column in respect of them.</p> <p>Should the contractor be permitted to tender and his tender be accepted for any work for which a P.C. Sum is included in these Bill of Quantities profit and attendance will be allowed at the same rate as it would be if the work were executed by a Nominated Sub-contractor.</p> <p>C</p> <p>ADJUSTMENT OF PROVISIONAL SUMS.</p> <p>In the final account all Provisional Sums shall be deducted and the value of the work properly executed in respect of them upon the Project Manager's order added to the Contract Sum. Such work shall be valued as described for Variations in Conditions No. 22 of the Conditions of Contract, but should any part of the work be executed by a Nominated Sub- contractor, the value of such work or articles for the work to be supplied by a Nominated Supplier, the value of such work or articles shall be treated as a P.C. Sum and profit and attendance comparable to that contained in the priced Bills of Quantities for similar items added.</p> <p>D</p> <p>NOMINATED SUB-CONTRACTORS</p> <p>When any work is ordered by the Project Manager to be executed by nominated sub contractors, the contractor shall enter into sub-contracts as described in Condition No. 7 of the PPOA Conditions of Contract and shall thereafter be responsible for such sub-contractors in every respect. Unless otherwise described the contractor is to provide for sub contractors any or all of the facilities described in these Preliminaries. The contractor should price for these with the nominated Sub-contractor's work concerned in the P.C. Sums under the description "add for Attendance".</p> <p>E</p> <p>DIRECT CONTRACTS</p> <p>Notwithstanding the foregoing conditions, the Client reserves the right to place a "Direct Contract" for any goods or services required in the works which are covered by a P.C. Sum in the Bills of Quantities and to pay for the same direct. In any such instances, profit relative to the P.C. Sum in the priced Bills of Quantities will be adjusted as described for P.C. Sums and allowed.</p>		
	<p>Total Total Carried to Collection</p> <p>USD</p>	

ITEM	DESCRIPTION	TOTAL
<p>A</p>	<p>ATTENDANCE UPON OTHER TRADESMEN, ETC.</p> <p>The contractor shall allow for the attendance of trade upon trade and shall afford any tradesmen or other persons employed for the execution of any work not included in this Contract every facility for carrying out their work and also for use of his ordinary scaffolding. The contractor, however, shall not be required to erect any special scaffolding for them. The contractor shall perform such cutting away for and making good after the work of such tradesmen or persons as may be ordered by the Project Manager and the work will be measured and paid for to the extent executed at rates provided in these Bills</p>	
<p>B</p>	<p>INSURANCE</p> <p>The contractor shall insure as required in Clause 30 of the Conditions of Contract. No payment on account of the work executed will be made to the contractor until he has satisfied the Project Manager either by production of an Insurance Policy or and Insurance Certificate that the provision of the foregoing Insurance Clauses have been complied with in all respects. Thereafter the Project Manager shall from time to time ascertain that premiums are duly paid up by the sub - contractor who shall if called upon to do so, produce the receipted premium renewals for the Project Manager's inspection</p>	
<p>C</p>	<p>PROVISIONAL WORK</p> <p>All work described as "Provisional" in these Bills of Quantities is subject to remeasurement in order to ascertain the actual quantity executed for which payment will be made. All "Provisional" and other work liable to adjustment under this Contract shall be left uncovered for a reasonable time to allow all measurements needed for such adjustment to be taken by the Project Manager. Immediately the work is ready for measuring, the contractor shall give notice to the Project Manager. If the contractor makes default in these respects he shall if the Project Manager so directs uncover the work to enable all measurements to be taken and afterwards reinstate at his own expense</p>	
<p>D</p>	<p>ALTERATIONS TO BILLS, PRICING, ETC.</p> <p>Any unauthorised alteration or qualification made to the text of the Bills of Quantities may cause the Tender to be disqualified and will in any case be ignored. The contractor shall be deemed to have made allowance in his prices generally to cover any items against which no price has been inserted in the priced Bills of Quantities. All items of measured work shall be priced in detail and the Tenders containing Lump Sums to cover trades or groups of work must be broken down to show the price of each item before they will be accepted</p>	
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
<p>A</p>	<p>MATERIALS ARISING FROM DEMOLITIONS</p> <p>Materials of any kind obtained from the demolitions shall be the property of the Government. Unless the Client directs otherwise such materials shall be dealt with as provided in the Contract. Such materials shall only be used in the works, in substitution of materials which the contractor would otherwise have had to supply with the written permission of the Client, should such permission be given, the contractor shall make due allowance for the value of the materials so used at a price to be agreed.</p>	
<p>B</p>	<p>PROTECTION OF THE WORKS.</p> <p>Provide protection of the whole of the works contained in the Bills of Quantities, including casing , casing up, covering or such other means as may be necessary to avoid damage to the satisfaction of the Client and remove such protection when no longer required and make good any damage which may nevertheless have been done at completion free of cost to the Government.</p>	
<p>C</p>	<p>CLEANING</p> <p>Collect all rubbish and debris from the Buildings and Sites as it accumulates and at the completion of the works and diposit them where directed by the Project Manager.All waste, plant, scaffolding and unused materials at completion should be removed from the Sites.</p>	
<p>D</p>	<p>WORKS TO BE DELIVERED UP CLEAN</p> <p>Clean and flush all gutters, rainwater and waste pipes, manholes and drains, wash (except where such treatment might cause damage) and clean all floors, sanitary fittings, glass inside and outside and any other parts of the works and remove all marks, blemishes, stains and defects from joinery, fittings and decorated surfaces generally, polish door furniture and bright parts of metalwork and leave the whole of the buildings watertight, clean, perfect and fit for occupation to the approval of the Project Manager</p>	
<p>E</p>	<p>FIRM PRICE CONTRACT</p> <p>Unless specifically stated otherwise in the Particular Preliminaries this is a firm price contract and fluctuations clause shall not apply.</p>	
<p>F</p>	<p>GENERAL SPECIFICATION.</p> <p>For the full description of materials and workmanship, method of execution of the work and notes for pricing, the contractor is referred to the Ministry of Roads, Public Works and Housing General Specification dated 1976 or any subsequent revision thereof which is issued as a separate document, and which shall be allowed in all respects unless it conflicts with the General Preliminaries, Trade Preambles or other items in these Bills of Quantities. For security work, the full specifications are attached as part of the contract (and in the tender documents)</p>	
	<p>Total Total Carried to Collection</p>	<p>USD</p>

ITEM	DESCRIPTION	TOTAL
A	<p>TRAINING LEVY</p> <p>The contractor's attention is drawn to legal notice No. 237 of October, 1971, which requires payment by the contractor of a Training Levy at the rate of 1/4 % of the Contract sum on all contracts of more than Kshs. 50,000.00 in value and his tender must include for all cost arising therefrom.</p>	
B	<p>MATERIALS ON SITES</p> <p>All materials for incorporation in the works must be stored on or adjacent to each site before payment is effected unless specifically exempted by the Project Manager. This includes the materials of the Main contractor, Nominated Sub- contractors and Nominated Suppliers.</p>	
C	<p>HOARDING</p> <p>The contractor shall enclose the Sites, as shown on the Sites plan with a hoarding 2.40 metres high, with openings and gates as required constructed of substantial timbers to approval and covered with new galvanised corrugated iron sheeting painted to approval.</p> <p>The contractor shall enclose each of the site with a hoarding 2400mm high consisting of iron sheets gauge 30 on 100 x 50 mm 2nd grade treated sawn cypress timber posts firmly secured at 1800 mm centres with two 75 x 50 mm second grade treated sawn cypress timber rails. The Contractor is in addition required to take all precautions necessary for the safe custody of the works, materials, plant, public and Employer's property on the site.Allow for the following Provisional length; -</p> <p>A length of 200 metres @ USD...../metre</p> <p>(Tenderer must insert rate and extend)</p> <p>Further the Contractor shall allow for dust proof screens between workspaces and adjacent offices as to be instructed and approved by the Project Manager. These shall be in the form of blockboard, marine board or equal and approved material tightly sealed at the joint to cut off dust from adjacent offices or work spaces.</p>	
D	<p>CONTRACTOR'S SUPERINTENDENCE/SITE AGENT</p> <p>The contractor shall constantly keep on the works a literate English speaking Agent or Representative, competent and experienced in the kind of work involved who shall give his whole experience in the kind of work involved and shall give his whole time to the superintendence of the works. Such Agent or Representative shall receive on behalf of the contractor all directions and instructions from the Quantity Surveyor and such directions shall be deemed to have been given to the contractor in accordance with the Conditions of Contract</p>	
E	<p>COPYRIGHT</p> <p>The copyright of these documents is vested in Project Quantity Surveyor. No part of this document may be reproduced in any form or by any means without prior permission.</p>	
	<p style="text-align: right;">Total Total Carried to Collection</p>	<p style="text-align: center;">USD</p>

ITEM	DESCRIPTION	TOTAL
	<u>COLLECTION FOR GENERAL PRELIMINARIES</u>	
	Brought Forward From Page 221	
	Brought Forward From Page 222	
	Brought Forward From Page 223	
	Brought Forward From Page 224	
	Brought Forward From Page 225	
	Brought Forward From Page 226	
	Brought Forward From Page 227	
	Brought Forward From Page 228	
	Brought Forward From Page 229	
	Brought Forward From Page 230	
	Brought Forward From Page 231	
	Brought Forward From Page 232	
	TOTAL FOR GENERAL PRELIMINARIES CARRIED TO SUMMARY OF PRELIMINARIES	

PROPOSED INTEGRATED SECURITY MANAGEMENT SYSTEM
AT REINSURANCE PLAZA -KISUMU FOR KENYA REINSURANCE CORPORATION

SECTION 01 SUMMARY

PRELIMINARY ITEMS SUMMARY

		PAGE	AMOUNT (USD.)
	<u>SUMMARY OF PRELIMINARIES</u>		
1	PARTICULAR PRELIMINARIES	220	
2	GENERAL PRELIMINARIES	233	
	SECTION NO 01 - PRELIMINARIES		
	TOTAL CARRIED TO GRAND SUMMARY		

SECTION NO. 02

SECURITY INSTALLATIONS

Item	Description	Unit	Qty	Rate	USD
	<u>SECTION NO. 2 - SECURITY INSTALLATIONS</u>				
	<u>Factory Training</u>				
	The Contractor at his cost SHALL provide for cost of accommodation, training, disbursements to and from the residences/hotel inclusive of flight travel costs & per diems for the project consultant (1No.) One security consultant.				
	<u>SPECIAL NOTES TO THE BILLS OF QUANTITIES</u>				
1	The Bills of Quantities form part of the contract documents and are to be read in conjunction with the contract drawings and general specifications of materials and works				
2	The prices quoted shall be deemed to include for all obligations under the sub-contract including but not limited to supply of materials, labour, delivery to site, storage on site, installation, testing and commissioning and all taxes (Including 16% VAT)				
3	All prices omitted from any item, section or part of the Bills of Quantities shall be deemed to have been included to another item, section or part.				
4	<p>The brief descriptions of the items given in the Items Specifications are for the purpose of establishing a standard to which the contractor shall adhere to.</p> <p>The Tenderer may quote for the following Brands</p> <ul style="list-style-type: none"> i. CCTV System (Ganz, Axis, GeoVision, Bosch, Vista .etc) ii. Access Control System (Suprema, Honeywell, Idemia, Garrett, GeoVision, Gunnebo .etc) iii. Walkthrough Metal Detector (Garrett, CEIA, Astrophysics) <p>Otherwise alternative brands of equal quality, of European/American Standards will be accepted</p>				
5	Otherwise alternative brands of equal quality, of European/American Standards will be accepted The grand total of prices in the price summary page must be carried forward to the Form of Tender.				
6	Tenderers MUST enclose together with their submitted tenders, detailed coloured manufacturer's Brochures detailing Technical Literature and specifications on all the equipment they intend to offer.				

Item	Description	Unit	Qty	Rate	USD
<u>CCTV SURVEILLANCE SYSTEM</u>					
A	Supply and Install Indoor Dome Camera c/w IR & Video Analytic License	No	84		
B	Supply and Install Outdoor Bullet Camera c/w IR & Video Analytic License and including wall/pole mounts	No	24		
C	Supply and Install Outdoor PTZ Camera c/w Video Analytic License and including wall/pole mounts	No	5		
D	Supply and Install Indoor Panoramic Camera c/w IR & Video Analytic License	No	7		
<u>Perimeter Defence Cameras (PIDS analytics included)</u>					
E	Supply and Install Outdoor Bullet Camera c/w IR & Video Analytic License and including wall/pole mounts	No	6		
<u>Elevator Cameras (installed inside cabinets)</u>					
F	Supply and Install Indoor/Outdoor Dome Camera c/w IR & Video Analytic License	No	2		
G	Mobile Security Camera with docking station	No	4		
H	Supply and Installation of VMS including all channel licences, failover licences for 30% of the cameras	LOT	1		
I	Video Recoding Management Server + Full Redundant	No	2		
J	Main Archiving Servers with not less than 380TB for 90 days recording	LOT	1		
Carried forward				USD	

Item	Description	Unit	Qty	Rate	USD
	Brought forward		USD		
	<u>ACCESS CONTROL AND INTRUSION ALARM SYSTEM</u>				
A	Supply, installation, connecting, testing & commissioning of one way (Entrance only) Access Control for a controlled door including: Proximity contactless smart card readers IP Network Door controller Electric lock/ Electromagnetic lock Magnetic Contact. Local Buzzer. Break Glass Box Access Control key override switch Door closer	UNIT	4		
B	Supply, installation, connecting, testing & commissioning of 2 way (Entrance & Exit) Access Control for a controlled door including: Proximity & Biometric Fingerprint Reader IP Network Door controller Electric lock/ Electromagnetic lock Magnetic Contact. Local Buzzer. Break Glass Box Access Control key override switch Door closer	UNIT	1		
C	Supply, installation, testing & commissioning of an Emergency Exit door (Existing Door) equipped with: Electromagnetic lock. Breaking glass box. Relay Box including connection to the access control and to fire detection systems Local Buzzer	UNIT	12		
D	Supply, installation, testing and commissioning of Magnetic Contact (one per each staircase door/access) for an alarmed door and its connection to the controller	UNIT	22		
E	Supply, installation, testing and Commissioning of Fixed Panic Button and its connection to the controller.	UNIT	6		
F	Supply, installation, testing and Commissioning of Mobile Panic Button and its connection to the controller.	UNIT	4		
G	Supply, installation, testing & commissioning of Visitor Management System - Client Workstation with Central software. - Attribute-based access provisioning - Visitor ID/Passport Scanning System	LOT	2		
	Carried forward		USD		

Item	Description	Unit	Qty	Rate	USD
	Brought forward		USD		
A	Supply, installation, testing and commissioning of all Controllers, Intrusion Alarms Panel and Zone Expanders for all the above mentioned elements, with LAN on-board, TCP/IP interface as per specification mentioned including all accessories including connection to the network.	LOT			
B	Supply, installation, testing and commission of Access Control Server including Access Control Software, integration to Active Directory and global card holder manager as per specification including all accessories including connection to the network.	LOT			
C	All additional equipment, materials accessories and works required for proper installation and operation of the access and intrusion control system as specified in this document.	LOT			
	Carried forward		USD		

Item	Description	Unit	Qty	Rate	USD
	Brought forward			USD	
	<u>Pedestrian Security Checkpoints</u>				
A	Supply installation, testing and commissioning of Walkthrough Metal Detection Gate as specified in this document.	UNIT	2		
B	Supply, installation, testing and commissioning of Hand Held Metal Detection unit as specified in this document.	UNIT	8		
	<u>Video Intercom</u>				
C	Supply installation, testing and commissioning of Video Intercom link including one wall mounted extension and one desktop master station	UNIT	1		
	<u>Main ISMS/USP Management Software</u>				
D	Supply, installation, testing and commissioning of Security Management System (SMS) including hardware and software and all required interfaces with all other subsystems including but not limited to VMS, Access Control, LPR, AUVIS, Fire Detection, Intrusion, Guard Patrol System, Gunshot Detection, Key Management system, elevators. Including Map Interface, SOP Configurations.	UNIT	1		
	<u>IP Intercom System (Video & Audio)</u>				
E	Supply installation, testing and commissioning of Video Audio IP Network Intercom - wall mount calling stations	UNIT	2		
F	Supply installation, testing and commissioning of Video Audio IP Network Intercom - Desktop calling stations	UNIT	2		
G	Supply and install IP Intercom Management Software /Controllers/Server integrated to ISMS/USP (all calls are recorded)	LOT	1		
	Carried forward			USD	

Item	Description	Unit	Qty	Rate	USD
	Brought forward			USD	
	<u>Command Control Room</u>				
A	Command and Control Client workstations i7 including high performance GPU with capacity to be connected to 4K Industrial type surveillance Monitors	UNIT	4		
B	65" Industrial 4K wall-mounted surveillance monitors.	UNIT	2		
C	65" Smart 4k UHD Android TV	UNIT	1		
D	40" Smart 4K UHD Android TV	UNIT	1		
E	24" Industrial 4K surveillance desktop monitors.	UNIT	2		
F	Mobile Workstation i7 with GPU GTX1060 or higher	UNIT	2		
	<u>IP Public Address System</u>				
G	Supply, installation, testing and commissioning of the central software and hardware for the IP based public address system as described and specified in this document. System should include FM player and background music player	UNIT	1		
H	Supply, installation, testing and commissioning of Remote IP based public address & EVAC indoor Wall mount cabinet loudspeakers including fire resistant Speaker cover and PH-30 cabling	UNIT	57		
	<u>Dedicated Data Network for the Security System</u>				
I	Access Switch as Cisco Catalyst 2960X-24PS-L or equivalent including Smartnet SFP modules	UNIT	12		
J	Core Switch as WS-C3850-24S-E or equivalent including Smartnet and SFP modules	UNIT	2		
K	All accessories required to complete installation of Data Network such as: Patch panels, Patch cords, cable organizers, ...etc. as SIEMON or equivalent	LOT	1		
	Carried forward			USD	

Item	Description	Unit	Qty	Rate	USD
	Brought forward			USD	
	<u>Gun shooting detector and gate locking</u>				
A	Supply, installation, testing and commissioning of gun shooting detector sensors as specified in this document.	UNIT	6		
B	Supply, installation, testing and commissioning of the central equipment for the gun shooting detector.	UNIT	1		
	<u>Two Way Radio Communication</u>				
C	Supply two way portable radio unit complete with charging dock as specified in this document – Supplier to program the Radios on the clients' Frequency.	UNIT	14		
D	Supply, Installation and commissioning of Radio Communication Base Station as specified in this document.	UNIT	1		
	<u>Vehicles Access Checkpoint</u>				
E	Supply, installation, testing and commissioning of LPR system for Entry and Exit.	UNIT	2		
F	Supply of Handheld Explosives Detector unit as specified in this document.	UNIT	2		
	<u>Guard Patrol System</u>				
G	Supply, installation, testing and commissioning of a 20 point Guard Patrol System with 2 readers/Wands as specified in this document.	UNIT	1		
	Carried forward			USD	

Item	Description	Unit	Qty	Rate	USD
	Brought forward		USD		
	<u>Engineering, Testing & Commissioning</u>				
A	In house Training for a maximum of 10 personnel; (Client and consultant to specify the personnel) Contractor to facilitate the course content and materials as well as 2 sets of snacks (10am & 3pm) and food (lunch) from a four-star Hotel and above for a minimum of 5 No. days.	COST PER HEAD	10		
B	Factory training for the contract implementation team as appointed by the Accounting officer. Contractor to provide for cost of training, disbursements to and from the residences/ hotel exclusive of flight travel costs & per diems.	COST PER HEAD	6		
C	As Built Drawings	LOT			
	SECTION NO. 2				
	SECURITY INSTALLATIONS				
	TOTAL CARRIED TO GRAND SUMMARY				
			USD		

**SECTION NO. 03
MECHANICAL & ELECTRICAL
INSTALLATIONS**

SECTION NO. 03: MECHANICAL, ELECTRICAL & PLUMBING INSTALLATION WORKS

RATES TO INCLUDE VAT

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	<u>LIGHTING AND POWER</u>				
	Final sub-circuits complete with accessories and fittings as detailed below wired in 20mm diameter conduits clipped onto the ceiling using spacer saddles on one part and in partitioning board on the other part.				
A	Lighting points and emergency exit kit, wired in 3x1.5mm sq single core cables for one/two way switching	NO.	20		
B	Lighting points, wired in 3x2.5mm sq single core cables for one-two way switching	NO.	6		
C	13A single power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed and concealed in PVC conduits	NO.	10		
D	13A twin power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed and concealed PVC conduits	NO.	12		
E	13A single power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed in trunking	NO.	6		
F	13A twin power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed in trunking	NO.	14		
G	15A Non standard socket outlet point, wired using 3 x 4.0mm ² single core PVC insulated copper cable drawn in 25mm dia. PVC heavy gauge conduit but without the outlet plate	NO	4		
H	200x50mm 2 compartment powder coated metallic trunking complete with tees, crossover, bends end cap, jacking brackets etc.	LM	30		
I	150x50mm 2 compartment powder coated metallic trunking complete with tees, crossover, bends end cap, jacking brackets etc.	LM	30		
J	4X32mm diameter PVC conduits for interlinking trunking where it has to pass in the floor. Otherwise all trunking crossing the doors should go above it	LM	36		
K	Single outlet phase plate for the trunking. This should be the same colour as the trunking and coated at the same time as trunking.	NO.	18		
L	Ditto but Twin outlet phase plate for the trunking.	NO.	26		
TOTAL CARRIED FORWARD TO COLLECTION PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
A	Extract fan outlet points, wired in 2x 4mm sq + 2.5mm sq ECC single core cables enclosed and concealed in PVC conduits	NO.	3		
B	Air conditioning, turnstiles points outlet points, wired in 2x 4mm sq + 2.5mm sq ECC single core cables enclosed and concealed in 25mm PVC conduits and saddles	NO.	10		
C	Public address system outlet point drawn inside 25mm dia.Galvanized steel heavy gauge conduits concealed in the floor and walls to roof top but with the outlet plate, circular box and complete with flexible connectors and saddles	NO.	60		
D	Magnetic loop vehicle detector, outlet point drawn inside 25mm dia.Galvanized steel heavy gauge conduits concealed in the floor and walls to roof top but with the outlet plate, circular box and complete with flexible connectors and saddles	NO.	2		
E	CCTV/License plate recognition system outlet point drawn inside 25mm dia.Galvanized/ stainless steel heavy gauge conduits concealed in the floor and walls to roof top but with the outlet plate, circular box and complete with flexible connectors and saddles	NO.	150		
F	Walk through metal detection gate outlet points enclosed and concealed in 25mm diameter Galvanized/Stainless steel conduits, door frame or through the metal trunking whichever way is convenient and with saddles at regular intervals.	NO.	2		
G	Luggage scanners and gun shooting detector outlet points enclosed and concealed in 25mm diameter Galvanized/Stainless steel conduits, door frame or through the metal trunking whichever way is convenient and with saddles at regular intervals.	NO.	2		
H	Turnstiles outlet points enclosed and concealed in 25mm diameter Galvanized/Stainless steel conduits, door frame or through the metal trunking whichever way is convenient and with saddles at regular intervals.	NO.	2		
TOTAL CARRIED FORWARD TO COLLECTION PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
A	Security door, magnetic door contact and access control outlet points enclosed and concealed in 25mm diameter Galvanized/stainless steel conduits, door frame or through the metal trunking whichever way is convenient and with saddles at regular intervals	NO.	16		
B	Emergency kit consisting of the relay box, power supply, emergency breakglass, electromagnetic lock, intrusion alarm point, but without access control outlet points enclosed and concealed in 25mm diameter Galvanized/stainless steel conduits, door frame or through the metal trunking whichever way is convenient and with saddle. Refer to drawings	NO.	25		
C	Panic Buttons outlet outlet points enclosed and concealed in 25mm diameter Galvanized/stainless steel conduits, door frame or through the metal trunking whichever way is convenient and with saddles at regular intervals.	NO.	10		
D	IP and Video Intercom outlet points enclosed and concealed in 25mm diameter Galvanized/Stainless steel conduits, door frame or through the metal trunking whichever way is convenient and with saddles at regular intervals.	NO.	3		
TOTAL CARRIED FORWARD TO COLLECTION PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	<u>STABILISED POWER POINTS</u> Final sub-circuits complete with accessories and fittings as detailed below and marked in red UPS power				
A	13A single power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed in trunking from DB 'B' to outlet points as indicated in the drawing	NO.	6		
B	13A twin power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed in trunking	NO.	12		
C	Allow for attendance to the UPS subcontractor	Item	Item		
D	Allow for provision of flexible conduits for all exposed	Item	Item		
	<u>LIGHT FITTINGS AND ACCESSORIES</u> Lighting control accessories complete with wiring terminations and fixing materials Provide rates for supply & fixing the following Electrical Fittings and accessories				
E	6A One gang one way as MK	NO.	6		
F	6A Two gang two way as MK	NO.	3		
G	6A Three gang two way as MK	NO.	3		
H	6A Architrave switch as MK	NO.	2		
	Lighting fittings as shown in the drawings complete with control gears and lamps:-				
I	600x600mm, LED PANELS recessed/Surface mounted light fitting a clear diffuser as Vtac with voltage range of 95V to 265V AC	NO.	18		
J	1200mm, 1x28W Fluorescent fittings with CAT2 Mirror bright louvres as OSRAM	NO.	4		
K	IP65 Olympic LED flood range, black. 50,000hour average lamp life.100o beam angle. Highly Energy efficient fitting as Nikkon or equivalent and approved	NO.	2		
L	Self illuminated Emergency Exit light with sign as RR With arrows for directions	NO.	36		
TOTAL CARRIED FORWARD TO COLLECTION PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	Supply and install power point accessories & equipment complete with associated wiring terminations & fixing materials				
A	13amps single switched screw less power socket outlet plate in Ivory white finish glad and as Crabtree or MK S2757DP WHI	NO	16		
B	13amps twin switched screw less power socket outlet plate in Ivory white finish and as Crabtree or MK S2747DP WHI	NO	26		
C	13amps NON Standard twin switched socket outlet plate for UPS power and as MK or equivalent and approved. Complete with Top Plugs	NO	12		
D	13amps NON Standard single switched socket outlet plate for UPS power and as MK or equivalent and approved. Complete with Top Plugs	NO	6		
E	20A DP screw less switch in Ivory white finish with neon indicator and as Crabtree or MK S8423 WHI	NO	12		
F	Single Screw less Blanking covers in Ivory white finish finish for data outlet points as Crabtree or MK S3827 WHI	NO	5		
G	Twin Screw less Blanking covers in Ivory white finish finish for data outlet points as Crabtree or MK S3828 WHI	NO	5		
H	Universal 360 degrees PIR Recessed or surface mounted Lighting control available in standard or remote control. Time settings 10sec to 40min adjustable as Robus	NO	4		
TOTAL CARRIED FORWARD TO COLLECTION PAGE					

LIGHTING AND POWER COLLECTION PAGE

ITEM NO.	DESCRIPTION		AMOUNT USD
1	TOTAL BROUGHT FORWARD FROM:		
1	PAGE 245		
2	PAGE 246		
3	PAGE 247		
4	PAGE 248		
5	PAGE 249		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE			

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	POWER DISTRIBUTION Supply, install and commission the following: -				
A	38mm diameter sub mains PVC HG conduit for equipments complete with bends, coupler saddles etc.	LM	120		
B	50mm diameter sub mains PVC HG conduit for equipments complete with bends, coupler saddles etc.	LM	120		
C	100mm diameter HG PVC conduits for fibre optic link complete with bends, coupler. saddles etc.	LM	100		
D	300x50mm metallic perforated cable tray, atleast 2.0mm thick complete complete with tees, crossover, bends end cap, jacking, mounting brackets etc. and bonded to earth The cable tray to have cover.	LM	120		
E	200x50mm metallic perforated cable tray, atleast 2.0mm thick complete complete with tees, crossover, bends end cap, jacking, mounting brackets etc. and bonded to earth The cable tray to have cover.	LM	100		
F	150x50mm metallic perforated cable tray, atleast 2.0mm thick complete complete with tees, crossover, bends end cap, jacking, mounting brackets etc. and bonded to earth The cable tray to have cover.	LM	100		
G	100x50mm metallic perforated cable tray complete complete with tees, crossover, bends end cap, jacking, mounting brackets etc. and bonded to earth	LM	120		
H	12 way TPN Distribution Board ncorporation 100A integral isolator, lockable cover and labelling but without MCB's and as Schneider Acti9 screw less with lock and key.	NO.	4		
I	10 way SPN Distribution Board DB'B' incorporation 100A integral isolator, lockable cover and labelling but without MCB's and as as Schneider Acti9 screw less with lock and key.	NO.	12		
J	Single phase MCB's rating as in schematics	NO	36		
K	Three phase MCB's rating as in schematics	NO	12		
L	Blanking plates	NO	12		
TOTAL CARRIED FORWARD TO NEXT PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
TOTAL BROUGHT FORWARD FROM PREVIOUS PAGE					
A	2C,10mm ² PVC/SWA/PVC Copper cables for terminating the single phase machine isolators complete with their shrouds and cable glands drawn in 32mm diameter PVC heavy gauge conduits	LM	110		
B	4C,10mm ² PVC/SWA/PVC Copper cables for terminating the three phase machine isolators complete with their shrouds and cable glands drawn in 32mm diameter PVC heavy gauge conduits	LM	110		
C	2C,6mm ² PVC/SWA/PVC Copper cables for terminating the three phase machine isolators complete with their shrouds and cable glands drawn in 32mm diameter PVC heavy gauge conduits	LM	80		
D	Three phase power outlet point wired in 4x10mm ² PVC insulated Copper cables for terminating complete with their shrouds and cable glands drawn in 32mm diameter PVC heavy gauge conduits	NO	4		
E	3 PIN Self locking single phase socket outlet point socket with both male and female plugs as CLIPSAL	NO	15		
F	4C, 25mm ² PVC/SWA/PVC copper cable for distribution of power from meter board to DB'A' in 50mm diameter conduit	LM	100		
G	Cable glands and shroud for terminating 4C, 25mm ² PVC/SWA/PVC copper cable	NO	6		
H	Cable glands and shroud for terminating 4C, 10mm ² PVC/SWA/PVC copper cable	NO	6		
I	Cable dressing in the riser duct and existing DB's to Engineers satisfaction and approval. Labelling of all Outgoers from both existing and new DBs with engraved labels.	Item	Item		
TOTAL CARRIED FORWARD TO NEXT PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
TOTAL BROUGHT FORWARD FROM PREVIOUS PAGE					
A	Earthing and bonding to the existing Earthing system for all power boards and metallic equipment through a 38mm diameter PVC heavy gauge conduit lead-in duct and bonded to the board using 16mm ² SC cable to approval	NO	4		
B	Ditto but dedicated to UPS power	NO	5		
C	Photo cell kit of photo cell, socket and bracket Type Thorn Qpk or approved equivalent for additional external lighting	NO.	2		
D	Attendance to mechanical and security subcontractor	item	1		
E	42U Powder coated size 800x1200x2000mm free standing cabinet complete with locking mesh door, 4 fans 6 power outlet Power cable 1No. Sollatek surge protector, and signal grounding key. as TOTEM	No.	2		
F	15U Powder coated size 760x600x600mm wall mounted cabinet complete with locking mesh door, 4 fans 6 power outlet Power cable 1No. C19 and C13 10 way Sollatek surge protector, and signal grounding key. as TOTEM	No.	15		
G	Adequate flexible conduits for managing any exposed cables for the whole security system installation	LM	280		
H	125 A TPN change over switch/Manual bypass switch	NO	3		
I	63A TPN isolator as MEM or equal and approved	NO.	1		
J	32A SP Isolator as MEMABB	NO	15		
K	32A TP Isolator as MEMABB	NO	3		
L	45A TP Isolator as MEMABB	NO	1		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
A	<p><u>UPS INSTALLATION</u></p> <p>Supply, deliver to site, install, test and commission a 20KVA three phase in three phase out, Uninterruptible Power Supply complete with bypass switch as APC/Equal and equivalent with the provided in the specification and summarized below :-</p> <p>(Product Catalogue to be attached)</p> <p>a) Rating 20KVA b) Adequate Battery c) Back up time at 100% load – 30min d) Input Voltage 290 – 480V e) Input power factor 0.95 f) Input frequency 45 – 65 Hz g) Output Voltage 415V +_ 1% h) Output frequency 50Hz i) IP20 j) Noise level 40-55dB k) Multi-function LCD status and control console l) Audible and visible alarms prioritized by severity m) Emergency Power Off (EPO) n) Predictive failure notification o) Automatic restart of loads after UPS shutdown p) Manual bypass switch p) Isolator switch</p> <p>To be environmental friendly</p>	No	1		
B	Ditto as A but 10kVA with batteries for 15 Minutes autonomy	No	2		
C	2U, 1.5KVA Double Conversion Online UPS Including batteries for 15 minutes autonomy.	NO	15		
D	2U, 3KVA Double Conversion Online UPS Including batteries for 15 minutes autonomy.	NO	2		
E	6KVA Smart APC UPS for the above metal detector among other scanners including batteries for 15 minutes autonomy.	ITEM	2		
F	Any other item required for proper operation of the UPS; (Specify)	ITEM	ITEM		
<p>Note: The contractor shall provide a load bank for testing all the UPS's in the project.</p>					
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
A	<p>AUTOMATIC VOLTAGE STABILIZER</p> <p>Supply, install & commission a 30KVA Automatic three phase voltage Stabilizer (AVS) as ORTEA SIRIUS or equal/equivalent and approved with the following specifications: -</p> <p>Attach product catalogues</p> <p>i) Frequency 50Hz ii) Admitted Load Variation from 0 up to 100% iii) Admitted Load Unbalance up to 100% iv) Mains Waveform Distortion Increment <0.2% v) Cooling Natural Air (aided over 40OC) vi) Ambient Temperature -15/+45OC vii) Storage Temperature -25/+60OC viii) Input Voltage 415+₋20% ix) Output voltage 415+₋1% ix) Admitted Overload 200% 2min x) Colour RAL 7032 xi) Protection IP 44 xii) LCD/Digital two multi- task digital network analyzers xiii) Regulator overload protection - digital standby control xiv) Communication system - Ethernet/GPRS/USB xv) In built manual bypass</p>	NO	1		
B	Ditto as above but 16KVA	NO	1		
C	MEM Manual Bypass switch and 2NO. 125A MCCBs	NO	2		
D	Sollatek power surge protector	ITEM	1		
E	Allow for 160A MCCB for tapping power from the main board	NO	1		
F	4C, 25mm ² PVC/SWA/PVC cable for AVR terminations complete with cable glands and shrouds	LM	60		
G	Allow for 160A MCCB breaker as NSX schneider electric complete with an enclosure and lockable.	NO	3		
H	Earthing comprising of copper earth electrode of size 1500mm long x15mm diameter enclosed by a concrete manhole of size 450x450x450mm with removable concrete cover and a 38mm diameter PVC heavy gauge conduit lead-in duct and bonded to the AVR	NO	2		
I	Allow for interconnection between LV Switch board and AVR by a qualified electrician	Item	Item		
I	Any other item required for proper operation of the AVR; Specify	Item	Item		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE					

AIR CONDITIONING AND MECHANICAL VENTILATION SYSTEM

ITEM NO.	DESCRIPTION	QTY	UNIT	RATE	TOTAL
	<p><u>SPLIT SYSTEM</u> Supply and install a split air-conditioning unit inverter type complete as described below, The outdoor unit shall be mounted on the wall and be provided with purpose-made aluminium painted steel angle iron frame cage complete with anti-vibration rubber mountings. The outdoor unit to match the cooling coil unit.</p> <p>The indoor unit shall be wall mounted type using bolts, nuts, spring washer and plate washer on the position shown on the approved working drawings. The indoor unit shall be capable of removing microscopic contaminants and dust using reusable filter.</p> <p>The system to be supplied complete with the following: .Fully charged with R410A gas .A wireless remote control .Ground mounting kit .Interconnecting piping with flared connections .Wired controls .Low temperature kit .Auto Restart .Time delay safety function .Service valves .3-step fan speed</p>				
A	11.2 kW high wall mounted Inverter type split unit complete with its outdoor, the units (Duty & standby)	8	No		
B	<p><u>Refrigeration Pipework</u> A set of refrigeration pipework including 25mm Amaflex insulation for both the liquid and gas lines.</p>	120	LM		
C	<p><u>Surge Protector</u> 1 Phase Power protection unit as Sollatek or equal and approved.</p>	8	No		
D	<p><u>Isolators</u> 1 Phase power isolators as Clipsal/Katko or equal and approved.</p>	8	No		
E	<p><u>Drain</u> 32mm PVC condensate drainage pipework including bends, clips, joints and tees in the running lengths of the pipe to the nearest waste water point.</p>	1	Item		
TOTAL CARRIED FORWARD TO COLLECTION PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	TOTAL
A	Trunking Allow for 100 x 50mm powder coated steel sheet trunking mounted on the wall or ceiling with wall matching colour as shall be directed on site, for concealing the refrigerant and drain pipes.	30	LM		
B	Electrical Works Allow for associated electrical works including but not limited to wiring from local isolators provided by others within one meter to all indoor units, outdoor units and control system. Allow for labeling of all the circuits and equipment.	1	Item		
C	Cleaning and Flushing the Installation Allow for cleaning and flushing the whole installation with appropriate medium before charging the system with refrigerant.	1	Item		
D	Training of maintenance staff and operators Allow for training of personnel on the operation and maintenance of the air conditioning installation. The training to be structured such that the personnel will undergo a course on the working of the machines, operations, settings, trouble shooting and maintenance of the machines.	1	Item		
E	Automation of the AC for cctv Room and the Server room. Allw for scheduling of the AC in such a way that a pair for control room will work together alternaingly in hours as the client/engineer may deem fit.	Item	Item		
F	Testing and Commissioning Allow for testing and commissioning of the entire system installations to the satisfaction of the Engineer.	Item	Item		
G	Any other item required for proper operation of the AC units; Specify	Item	Item		
TOTAL CARRIED FORWARD TO COLLECTION PAGE					

MAIN SUMMARY FOR FOR AIR CONDITIONING & MECHANICAL VENTILATION

ITEM NO.	DESCRIPTION		AMOUNT USD
1	PAGE 256		
2	PAGE 257		
	TOTAL CARRIED FORWARD TO SUMMARY PAGE		

FIRE SUPPRESSION

ITEM	DESCRIPTION	QTY	UNIT	RATE USD	AMOUNT USD
	SECURITY SERVER ROOM (Room Void = 25m2)				
A	125lbs HFC 227ea cylinder filled with 125lbs HFC 227ea gas ,C/W: impulse discharge valve ,nipple, Victaulic coupling, mounting Strap,and Pressure gauge	No.	1		
B	Impulse Valve Operator W/ Manual Strike Button Kit C/W impulse valve operator, reset tool, wire lead w/connector and impulse release.	No.	1		
C	Pressure Switch (Low pressure)	No.	1		
D	Discharge nozzle	No.	2		
E	impulse valve operator w/manual strike button kit	No.	1		
F	Extinguishing Control Panel (2) Detection Zone and Releasing Area (1) C/W 24VDC Back up Battery,	SET	1		
G	Optical Smoke Detector With Base shield	No.	4		
H	Abort Switch w/ back box, model;S111R-AB shield	No.	1		
I	FIRE BELL 6"c/w back box, model HR-SHIELD	No.	1		
J	Strobe horn c/w back box model, model P2R	No.	1		
K	XENON / strobe light w/back box model SR	No.	1		
L	Warning signs	No.	1		
	TOTAL CARRIED TO COLLECTION PAGE				

ITEM	DESCRIPTION	QTY	UNIT	RATE USD	AMOUNT USD
	EXTERNAL SECURITY SERVER ROOM (Room Void = 25m2) Pipework Supply and install Schedule 40/GMS pipework and threaded fittings as follows:-				
A	25mm diameter pipe	Lm.	12		
B	15mm diameter pipe	Lm	21		
	Bends				
C	25mm diameter bend	No	10		
D	15mm diameter bend	No.	9		
	Tees				
E	25mm diameter tee	No	2		
F	15mm diameter tee	No.	2		
	Sockets				
G	25mm diameter socket	No	5		
H	15mm diameter socket	No.	5		
	Unions				
I	25mm diameter unions	No	6		
J	15mm diameter unions	No.	8		
K	Allow for Paintworks/Anchorage installations and Configurations	PC	sum		
L	Allow for electrical connection	PC	sum		
M	Allow for testing and commissioning	PC	sum		
	TOTAL CARRIED TO COLLECTION PAGE				

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
A	<p align="center">PORTABLE FIRE EXTINGUISHERS</p> <p>Supply and install for following;</p> <p><u>Automatic Fire Extinguishers</u></p> <p>Supply and Install 6 Kg Auto fire extinguishers with the specifications as follows:</p> <p>1. Cylinder material: St12</p> <p>2. Max W. P: 14 bars</p> <p>3. Max Test Pressure: 25 bars</p> <p>4. Temp Range: -30 degrees to +60 degrees</p> <p>5. Out diameter: 302mm</p> <p>6. Cylinder Height: 245mm</p> <p>7. Weight: 12.36kg</p>	No	4		
	<p>B UL approved 9kg dry powder multi-purposed fire class A,B and C as manufactured by Angus Fire Armour ABC multipurpose model AP 9K or equal and approved</p>	NO	4		
	<p>C Ditto but water type</p>	NO	2		
	<p>D Ditto but Co2</p>	NO	4		
TOTAL CARRIED TO COLLECTION PAGE					

FIRE SUPPRESSTION & FIGHTING COLLECTION PAGE

ITEM NO.	DESCRIPTION	AMOUNT USD	
1 2 3	BROUGHT FORWARD FROM PAGE 259 PAGE 260 PAGE 261		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE			

GATE AUTOMATION SYSTEM

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
A	<p><u>SWING GATES</u> Allow for Automation of 600Kgs double swing gate (Gate provided by others). Each leaf of the double leaf gate is 2.5M and 300kgs.</p> <p>The equipment to come complete with motor, fixing plate, flashing light, photocells, key selector, fixing brackets and magnetic encoder. The gate should have provision for both manual control and remote control through wireless and wired system/medium.</p> <p><u>The Motor & Control</u></p> <ul style="list-style-type: none"> a) speed of 2.5m/s b) Input Voltage 240/415V c) Input power factor 0.95 d) Input frequency 45 – 65 Hz e) IP20 f) Noise level 40-55dB g) Multi-function LCD status and control console h) Audible and visible alarms prioritized by severity i) Emergency Power Off (EPO) j) Predictive failure notification k) Automatic restart of loads after power shutdown /black out l) Manual bypass switch m) Isolator switch n)To be environmental friendly 	NO	1		
B	<p><u>SLIDING GATES</u> Ditto as A Above but sliding gate of 4M length.</p>	NO	1		
C	<p><u>ROLLER SHUTTER</u> Ditto as A above but for roller shutter</p>	NO	3		
D	<p><u>Control panel</u> The Contractor must provide a Gate Control Panel which is used to control a specified number of A, B & C gates. The Gate Control Panel interconnects with the LCU HOV back panel</p>	ITEM	ITEM		
E	Integration with security, Fire alarm and other systems in the building	ITEM	ITEM		
F	Testing and Commissioning gate Automation and Client Training	ITEM	ITEM		
G	Cables, connectors, isolators, Accessories & Consumables for installations in A, B and C above (sandries)	ITEM	ITEM		
H	Any other item required for proper operation of the UPS; (Specify)	ITEM	ITEM		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE					

PLUMBING & DRAINAGE WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
A	Duravit: D-code Wall Hung WC Suite In Vitreous China Consisting of P trap WC Pan and Heavy duty soft close toilet seat and cover Ref; #220909; #67390 -White in colour as Jaguar, Roca or equivalent and approved	No	5		
B	Geberit concealed push-in flush valve complete with actuator plate as Alpha 01 or equal and approved equivalent brand. Ref 115.035.11.1 in white Alpine or satin finish	No	5		
C	Duravit: D-code semi pedestal Wash Hand Basin In code BWHDRDCO09 070745. size 450 x 340mm or equal and approved, complete with bottle traps, screws and other accessories	No	4		
C	Duravit: D-Code semi Pedestal Wash Hand Basin In Vitreous China Ref 070745. size 450 x 340mm or equal and approved, complete with bottle traps, screws and other accessories	No	1		
D	Sensorflow solo high rise washbasin mounted spout with integral sensor servicing valve and filter as Armitage shanks S8135AA (7991400CP) complete with label and ready for operation and connection to mains power supply	No	5		
E	Hand driers Electric "Mediclinics" automatic touch free hand drier for electrical supply compatible with 220/240V 50Hz single phase supply and to be complete with a mounting plate, centrifugal fan and motor 2700 rpm with thermal overload and radio suppression and 2100w spirally wound element with automatic re-setting thermal cut-out and wiring from local isolator. Ref :- M06A or equal and approved	No	3		
F	Duravit Toilet roll holder No 16329 size 150 x 150 mm	No	5		
G	Chrome plated double coat hook for wall mounting, as Hangsgrohe or equal and approved.	No	5		
H	Automatic soap dispenser with capacity of 1Ltr, touch free soap release mechanism, complete with fixing screws as Mediclinics Ref: DJF0038A or equal and approved.	No	4		
I	Bevelled edge, plain polished glass mirror size 900x 600x6mm thick , fixed on the wall back to prevent against breakage.	No	4		
I	Bevelled edge full height, plain polished glass mirror size 900x 2100 mm x6mm thick , fixed on the wall back to prevent against breakage.	No	2		
TOTAL CARRIED FORWARD TO NEXT PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	BROUGHT FROM PREVIOUS PAGE				
A	Paper towel dispenser as mediclinics, white steel epoxy #E05A or equal and approved.	No	3		
B	Urinal with sensor as Docol or Hansgrohe or approved equivalent	No	3		
C	urinal Divider as Duravit	No	4		
D	Allow for 100mm diameter golden brown uPVC drainage pipe extension to the existing sewer line complete with fittings and accessories	Im	200		
E	Allow for 25mm diameter Indogreen PN 25 PPR pipe extension to the water line complete with fittings and accessories	Im	250		
F	25mm diameter isolation valves	NO	50		
G	Allow for removal of existing sanitaryware	Item	Item		
H	STAINLESS STEEL KITCHEN SINK Heavy gauge Stainless steel kitchen sink as FRANKE "Quinline QLX 621-120". Range cat. No. 101.0039.866 overall size 1200 x 500mm and bowl size 343 x 410 x 149mm. single bowl, single drainer complete with 40mm diameter Chrome plate chain waste and plug, Chrome plated "P" trap and 15mm diameter swivel sprout HANGSGROHE FOCUS swivel mixer tap. No. 13815000, 2No. 15mm Chrome plated angle valves as HANGSGROHE "Angle Valve E" No. 13902000 Or Equal and approved	NO	2		
I	UNDERSINK WATER HEATER 10 litre Ariston water heater power 3kw or equal and approved	NO	2		
J	FIRE BLANKET 1.8metre x 1.2metre Fire Blanket manufactured to BS EN 1869:1997 and BSI Kite marked, with slim-line design with rigid plastic case, plastic that case can be wiped maintaining hygiene in kitchen environments, Includes hole so that the fire blanket can be quickly and easily be wall-mounted, hinged base and complete with toggles for quick and easy to use in the case of a fire emergency.	No.	2		
K	KITCHEN HOOD Provide a portable, ductless kitchen hood as Bosch or equivalent and approved.	No.	2		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	<u>ENVIRONMENTAL MONITORING SYSTEM</u>				
A	EMS controller for the data center that would pro-actively & remotely monitor temperature, humidity, power, water, smoke, airflow, lights, motion, intrusion, data link, sound, access controls and security. System to be able to alert any abnormality via email, SMS, web browser, extensive graphing and data collection. The system should support Modbus over TCP/IP with all necessary gateways and have expandable function for future modules/ sensors. Probe should be able to connect to external GPRS/GSM modem, Bluetooth and WiFi USB adapters. The system to have an elaborate false alarm filter. The subcontractor to include catalogues for the eMS system quoted	Item	1		
B	Price for GSM terminal and GSM lines for SMS alerts. Price to include configuration and testing to selected GSM numbers of kenya re security staff	No	1		
C	Rope water sensor completely connected to main EMS probe able to intelligently detect the presence of water or acid	No	1		
D	Smoke sensor for smoke detection completely connected to EMS	No	1		
E	Intelligent dual/ humidity sensor	No	1		
F	Intelligent digital AC power monitoring sensors	No	1		
G	Instrusion detection including door sensor	No	1		
H	Equipment installation, termination, programming and client training	No.	1		
I	Testing and commissioning of the new installation	Item	Item		
J	Any other item required for proper operation of the network monitoring system	Item	Item		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE					

CABLING INFRASTRUCTURE WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	<u>STRUCTURED CABLING WORKS</u> Supply, install, lay and set to work structured cabling system drawn in trunking provided elsewhere: -				
A	Category 6A 4 pair UTP cable as Siemon fully wired for network points & CCTV approximately 55 meters per point	No	184		
B	Category 6A 4 pair UTP 1m patch cord as Siemon	No.	368		
C	Category 6A 4 pair UTP 3m patch cord as Siemon	No.	184		
D	Category 6A 4 pair UTP 5m patch cord as Siemon	No.	124		
E	Category 6A 24port patch panel as Siemon	No.	12		
F	Category 6A 48port patch panel as Siemon	No.	6		
G	2U Horizontal patch lead organiser	No.	15		
H	24 port fiber panel	No	15		
I	4G SFP Transceivers as Cisco	No	24		
J	Duplex Multimode SC connectors with adaptors	No.	20		
K	24 Core outdoor Multimode fiber cable to other floors	LM	320		
L	Multimode fiber patchcords	No.	30		
M	Rack mountable source transfer switch with 2 inputs and 8 power outputs for 230/240V as APC	No.	2		
N	Power distribution units (PDUs) with 8No power outputs to be mounted on main and distributor racks	No.	15		
O	Testing and commissioning of the cabling works	Item	Item		
TOTAL CARRIED FORWARD TO NEXT PAGE					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	BROUGHT FROM PREVIOUS PAGE				
	<u>PUBLIC ADDRESS/SPEAKER CABLING</u>				
A	Speaker points fully wired in 2 x 2.5 mm sq. Fire rated shielded sound cables approximately 55 meters per point	NO.	67		
B	Cat. 6A F/UTP cable from system manager and inputs unit to the local area network. (approximately 55 meters per point)	NO	12		
C	Cat. 5 STP cables between the remote microphones and the system cabinet. (approximately 55 meters per point)	NO	12		
D	Override fire rated control cables from audio output and surveillance unit to the volume controllers. (approximately 55 meters per point)	NO	12		
E	Testing and commisioning of the cabling works	Item	Item		
	<u>ACCESS CONTROL CABLING CABLING</u>				
F	Connection (CAT6A UTP cables) of the main intrusion detection panel/Controller to the IP LAN including all required RJ45 connectors and modules. (approximately 55 meters per point)	No	41		
G	2PAIR STP (BELDEN 8723) CABLE shield bus cable including interconnecting modules between Intrusion control panel/Controller. (approximately 40 meters per panel)	No	41		
H	10M HDMI cables complete with heads as kramer to engineers approval	No	6		
I	Testing and commisioning of the cabling works	Item	Item		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE					

MANAGEMENT OFFICE ELECTRICAL INSTALLATION WORK

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE USD	TOTAL USD
	<u>LIGHTING AND POWER</u> Final sub-circuits complete with accessories and fittings as detailed below wired in 20mm diameter conduits clipped onto the ceiling using spacer saddles on one part and in partitioning board on the other part.				
A	Lighting points, wired in 3x1.5mm sq single core copper cables for one/two way switching	NO.	32		
B	Signage outlet points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed and concealed in PVC conduits integrated to photocell	NO.	4		
C	13A single power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed and concealed in PVC conduits	NO.	8		
D	13A twin power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed and concealed PVC conduits	NO.	12		
E	13A twin power points, wired in 3x 2.5mm sq single core cables in ring circuit enclosed and concealed trunking	NO.	10		
F	15A Non standard socket outlet point, wired using 3 x 4.0mm ² single core PVC insulated copper cable drawn in 25mm dia. PVC heavy gauge conduit but without the outlet plate	NO	6		
G	200x50mm Powder coated metallic trunking complete complete with tees, crossover, bends end cap, jacking, mounting brackets etc and bonded to earth	LM	60		
H	4X32mm diameter PVC conduits for interlinking trunking where it has to pass in the floor. Otherwise all trunking crossing the doors should go above it	LM	12		
I	Single outlet phase plate for the trunking. This should be the same colour as the trunking and coated at the same time as trunking.	NO.	14		
J	Ditto but Twin phase plates	NO.	14		
K	AC outlet points, wired in 3C, 2.5mm sq XLPE Copper cables enclosed and concealed in PVC conduits	LM	100		
L	3C 1.5mm sq copper flexible cables for Maintained Emergency Exit sign Thornsapphire with direction sign and inscribed EXIT	NO.	8		
M	Security door outlet points enclosed and concealed in 20mm diameter PVC conduits, door frame or through the metal trunking whichever way is convenient	NO.	4		
TOTAL CARRIED TO COLLECTION					

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	TOTAL
	<u>LIGHT FITTINGS AND ACCESSORIES</u> Lighting control accessories complete with wiring terminations and fixing materials				
A	10A One gang one way as MK S4870 WHI or Crabtree	NO.	6		
B	10A two gang two way as MK S8872 WHI	NO.	2		
C	10A Four gang two way as MK S8874 WHI	NO.	1		
	<i>Lighting fittings as shown in the drawings complete with control gears and lamps:-</i>				
D	Self illuminated Emergency Exit light with sign as Thorn With arrows for directions	NO.	8		
E	600mmx600mm recessed LED dimmeable panels as V - TAC VT6060 complete with drivers	NO.	26		
F	LED Neone strip light with uniform illuminance complete with connecting couplers and compatible with the lighting control system or equalequivalent and approved	LM	10		
G	Recessed 80φ round dichroic LED down light with brushed silver effect with a glass diffuser for the mirrors as Eglo (SPEZIA 1) Cat. No. 90057 TYPE C <i>Lighting fittings as shown in the drawings complete with control gears and lamps:-</i>	NO.	8		
	Supply and install power point accessories & equipment complete with associated wiring terminations & fixing materials				
H	13amps single switched weather proof socket outlet plate and as Crabtree or MK S2657DP WHI	NO	12		
I	13amps twin switched socket outlet plate as crabtree or MK S2647DP WHI	NO	24		
J	Blanking covers for data outlet points as MK S3827 WHI	NO	6		
K	15Amps Non standard tea urn socket outlet point fitted with 13A switched socket outlet plate with pilot light as Crabtree	NO.	3		
TOTAL CARRIED TO COLLECTION PAGE					

STRUCTURED & FIBRE CABLING WORKS

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE	TOTAL
	<u>STRUCTURED CABLING FOR THE MANAGEMENT OFFICE</u>				
	Supply, install, lay and set to work structured cabling system drawn in trunking provided elsewhere: -				
	Rates to include, Vat, labour and any others charges				
A	Category 6A 4 pair UTP cable as Siemon fully wired - approximately 55meters per point	No	24		
B	Dual RJ 45 category 6A UTP dual outlets faceplate complete with flush mounting plate and module as Siemon	No	12		
C	Category 6A 4 pair UTP 1m patch cord as Siemon	No.	24		
D	Category 6A 4 pair UTP 3m patch cord as Siemon	No.	12		
E	Category 6A 48port Siemon patch panel 1U	No.	2		
F	2X1U Horizontal patch lead organizer as Nexan	No.	4		
G	Supply and install 6Way PDU for the data cabinet	No.	2		
H	15U Powder coated wall mounted data cabinet complete with locking glass, 4 fans 6 power outlet Power cable 1No. Sollatek surge protector, and signal grounding key. as TOTEM	No.	1		
I	Equipment installation, termination, programming, Testing and commissioning of the new installation	Item	Item		
J	Dressing of cables on the existing data cabinet to the satisfaction of the client/Project Engineer.	Item	Item		
K	Category 6A 4 pair UTP cable as Siemon fully wired - approximately 40meters per point for provision of new cctv and relocation of the existing.	No	4		
L	Allow a sum of USDs. 500 for relocation of switches and servers from the existing data cabinet.	Item	Item		500.00
TOTAL CARRIED TO COLLECTION					

MANAGEMENT OFFICE ELECTRICAL INSTALLATION COLLECTION PAGE

ITEM NO.	DESCRIPTION		AMOUNT KSHS.
1	TOTAL BROUGHT FORWARD FROM: PAGE 269		
2	PAGE 270		
3	PAGE 271		
TOTAL CARRIED FORWARD TO ELECTRICAL SUMMARY PAGE			

PROPOSED INTEGRATED SECURITY MANAGEMENT SYSTEMS FOR KENYA RE-INSURANCE CORPORATION - KISUMU

MECHANICAL, ELECTRICAL & PLUMBING ELECTRICAL INSTALLATION WORKS SUMMARY PAGE

ITEM NO.	DESCRIPTION		AMOUNT USD
	TOTAL BROUGHT FORWARD FROM:		
1	LIGHTING AND POWER INSTALLATION 250		
2	POWER DISTRIBUTION/RETICULATION 253		
3	UPS POWER BACK UP FOR EQUIPMENT 254		
4	AUTOMATIC VOLTAGE STABILIZER FOR EQUIPMENT 255		
5	AIR CONDITIONING AND MECHANICAL VENTILATION SYSTEM 256		
6	FIRE FIGHTING 262		
7	GATE AUTOMATION 263		
8	PLUMBING & DRAINAGE WORKS 265		
9	ENVIRONMENTAL MONITORING WORKS 266		
10	STRUCTURED & FIBRE CABLING 268		
11	MANAGEMENT OFFICE 272		
TOTAL CARRIED TO MECHANICAL,ELECTRICAL & PLUMBING INSTALLATIONS SUMMARY PAGE			

PROPOSED INTEGRATED SECURITY MANAGEMENT SYSTEM
AT REINSURANCE PLAZA -KISUMU FOR KENYA REINSURANCE CORPORATION

SECTION 03 SUMMARY

MECHANICAL ,ELECTRICAL & PLUMBING WORKS SUMMARY

ITEM NO.	DESCRIPTION	AMOUNT USD
1	LIGHTING AND POWER INSTALLATION 250	
2	POWER DISTRIBUTION/RETICULATION 253	
3	UPS POWER BACK UP FOR EQUIPMENT 254	
4	AUTOMATIC VOLTAGE STABILIZER FOR EQUIPMENT 255	
5	AIR CONDITIONING AND MECHANICAL VENTILATION SYSTEM 256	
6	FIRE FIGHTING 262	
7	GATE AUTOMATION 263	
8	PLUMBING & DRAINAGE WORKS 265	
9	ENVIRONMENTAL MONITORING WORKS 266	
10	STRUCTURED & FIBRE CABLING 268	
11	MANAGEMENT OFFICE 272	
TOTAL CARRIED FORWARD TO GRAND SUMMARY PAGE		

**SECTION NO. 04
BUILDER'S WORK**

BILL NO 1
MANAGEMENT OFFICE & WASHROOMS

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<p><u>ELEMENT NO 1</u></p> <p><u>DEMOLITIONS AND ALTERATIONS</u></p> <p><u>ALL PROVISIONAL</u></p> <p><u>Notes:</u></p> <p>i) The Contractor shall provide the method of carrying out demolition works to the Project Manager for approval.</p> <p>ii) The Contractor shall exercise necessary safety measures so as not to cause any damage to the existing structure and adjoining properties.</p> <p>iii) The Contractor shall exercise necessary safety measures so as not to cause injury to users of the building and/or other third parties.</p> <p>iv) The Contractor shall note that all salvage materials shall be the property of the Client and unless indicated as " cart away". The Contractor shall be responsible for carting away debris upon approval by the Project Manager.</p> <p>v) No salvage material shall be incorporated in the works without the express written authority of the Project Manager .</p> <p>vi) The Contractor is advised to include in his rates the cost of making good all disturbed areas where it is expressly included in the description of works to be done or otherwise .</p> <p>vii) The Contractor is advised to take all necessary precautionary measures to guard against dirt , dust and noise pollution</p> <p>viii) The Contractor is advised to take all necessary precautionary measures in the removal ,handling ,storing and fixing of materials recovered from demolitions</p> <p>ix) The works will be carried out in an active site and the contractor will be constrained from noisy operations . Consequently he will carry out his activities after normal working hours and must allow this in his rates</p>				
	Carried forward			USD	

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 1</u>				
	<u>DEMOLITIONS & ALTERATIONS CONTINUED</u>				
	Brought forward				
	<u>Walls & Partitions</u>				
A	Carefully pull down 2850mm high 100mm thick timber framed partition ;load and cart away arising debris and make good all disturbed areas (Approximately 42LM)	ITEM			
B	Carefully cut an opening through 200mm thick natural stone wall ; overall size 1000mm x 2400mm high ; load and cart away debris and make good all disturbed areas (2NO)	ITEM			
C	Carefully hack out existing ceramic wall tiles including cement sand backing ; load and cart away arising debris and make good all disturbed areas (Approximately 84SM)	ITEM			
	<u>Floor</u>				
D	Carefully pull out existing PVC floor tiles including cement sand screed ; load and cart away arising debris and make good all disturbed areas (Approximately 283SM)	ITEM			
E	Carefully hack out existing ceramic floor tiles including cement sand screed ; load and cart away arising debris and make good all disturbed areas (Approximately 92SM)	ITEM			
F	Carefully hack out existing terrazo floor finish including cement sand screed ; load and cart away arising debris and make good all disturbed areas (Approximately 24SM)	ITEM			
	<u>Doors</u>				
F	Carefully bring down 900 x 2100mm high timber door complete with frames and accesories; load and cart away arising debris and make good all disturbed areas (6NO)	ITEM			
G	Carefully bring down 900 x 2100mm high fire door complete with frames and accesories; load and cart away arising debris and make good all disturbed areas (6NO)	ITEM			
H	Carefully bring down 900 x 2400mm high timber flush doors complete with frames and accesories; load and cart away arising debris and make good all disturbed areas (5NO)	ITEM			
I	Carefully bring down 900 x 1200mm high timber trap doors complete with frames and accesories; load and cart away arising debris and make good all disturbed areas (2NO)	ITEM			
	Carried forward				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 1</u>				
	<u>DEMOLITIONS & ALTERATIONS CONTINUED</u>				
	Brought forward				
	<u>Windows</u>				
A	Carefully pull down 1000 x 800mm high timber framed glass louvre windows :load and cart away arising debris and make good all disturbed areas (3NO)	ITEM			
	<u>Sanitary fittings</u>				
B	Pull down wash hand basin and load and cart away arising debris(4No)	ITEM			
C	Pull down water closet, including all pipework and make good; load and cart away arising debris (4No)	ITEM			
D	Pull down urinal fitting ,including all pipeworkon the surface and make good; load and cart away arising debris (3No)	ITEM			
E	Allow a provisional sum of One Thousand dollars (USD.1000) for additional demolitions to be expended in whole or part by the Project Manager	SUM			1,000.00
	ELEMENT 01				
	DEMS & ALTNS				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 02</u>				
	<u>WALLING & PARTITIONS</u>				
	<u>Machine cut stone walling stone or equivalent in cement and sand mortar (1:3) with minimum crushing strength of 7.0 N/mm2</u>				
A	150mm Thick wall	SM	173		
	<u>Gypsum partition</u>				
B	100mm Thick insulated gypsum dry wall partition 2850mm high consisting of galvanized steel stud frames and runners at 1000mm vertical centres;50mm thick acoustic mineral insulation wool sound insulation infill between gypsum boards;12.5 mm thick gypsum boards fixed to both sides complete with screwing and joints covered with approved tape	SM	66		
	ELEMENT 02				
	WALLING & PARTITIONS				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 03</u>				
	<u>DOORS</u>				
	<u>Timber Flush doors to B.S. 459</u>				
A	50mm Thick solid core flush door overall size 900 x 2100mm high in single leaf faced both sides with 3mm thick Mahogany veneer on 3mm thick ordinary plywood for polishing and hardwood lipped all round with and including 300 x 1600mm high viewing panel infilled with 6mm clear sheet glass with frosted film all to Architect's detail and approval	NO	5		
B	45mm Thick solid core flush door overall size 900 x 2100mm high covered both sides with 6mm thick plywood finished with mahogany scratch proof laminate and finished all round with 12.5mm thick hardwood lipping ; all to Architect's detail and approval	NO	3		
C	45mm Thick semi -solid core flush door overall size 900 x 2100mm high covered both sides with 6mm thick plywood finished with mahogany scratch proof laminate and finished all round with 12.5mm thick hardwood lipping ; all to Architect's detail and approval(Washroom doors)	NO	4		
D	Ditto but overall size 900 x 1200mm(Washroom trap doors)	NO	2		
	<u>Frameless glass door</u>				
	<u>Glass</u>				
E	12mm Thick laminated toughened glass in frameless glass door overall size 1200x2100mm high in 1No single leaf	NO	1		
	<u>The following in wrot mahogany :-</u>				
F	200 x 50mm Frames with 2 labours plugged	LM	21		
G	150 x 50mm Frames with 2 labours plugged	LM	20		
H	100 x 50mm Frames with 2 labours plugged	LM	31		
I	50 x 50mm Frames with 2 labours plugged	LM	4		
J	75 x 25mm Architraves	LM	122		
K	25mm Quadrant beading	LM	21		
L	200 x 18mm Thick laminated MDF frame with two labors around door frames all to Architect's detail and approval	LM	21		
	Carried forward		USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 3</u>				
	<u>DOORS -CONTINUED</u>				
	Brought forward				
	<u>Prime back to surfaces of wood before fixing</u>				
A	Surfaces not exceeding 100mm girth	LM	122		
B	Surfaces exceeding 100mm girth but not exceeding 200mm girth	LM	72		
	<u>Prepare and apply three coats of clear polyurethane wood varnish to:</u>				
C	Surfaces not exceeding 100mm girth	LM	122		
D	Surfaces exceeding 100mm girth but not exceeding 200mm girth	LM	72		
E	General surfaces of doors	SM	52		
	<u>Precast concrete class 20/20 :-</u>				
F	200 X 300 mm Thick lintel comprising 4No T12 bars and T8 links at 250mm centres complete with all necessary formwork	LM	7		
	<u>Supply and fix the following ironmongery with matching screws all as per "UNION" catalogue or other equal and approved</u>				
G	100mm Brass polished butt hinges "Union " ref. HN- 2BB-403030-PB	PRS	18		
H	3 Lever mortice door lock "Union " ref. 3L-2277-PL	NO	4		
I	2 Lever mortice door lock "Union " ref. 2L-2295-PB	NO	8		
J	38mm Diameter Oval chrome door stopper "Union" ref. DS-F-001-SSS	NO	12		
K	Polished brass door handles	NO	12		
L	750mm Long x 150mm high x 1.6mm thick aluminium kick plates	NO	8		
M	150mm long solid brass with antique brass finish and lacquer coating hat and coat hook "Union " ref. CH-560-SSS	NO	6		
	Carried forward				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 3</u>				
	<u>DOORS -CONTINUED</u>				
	Brought forward				
	<u>Supply and fix the following ironmongery with matching screws all as per "UNION" catalogue or other equal and approved</u>				
A	250 x 75 mm Stainless door sign with 3.5mm thick aluco board complete with engravings "Union " ref. S-KP-800-200-SSS	NO	8		
B	Overhead door closer; power size 3 ; "Union " ref. DC-8834-SIL	NO	8		
C	Floor spring ;maximum capacity 150KG with 20dig-90dig closing speed adjustment	NO	1		
D	Centre lock	NO	1		
E	Centre keeper	NO	1		
F	Bottom lock	NO	1		
G	Bottom keeper	NO	1		
H	Top patch	NO	1		
I	900mm wide stainles steel pull handle	NO	1		
J	360 degree turning heavy duty brass parliament hinges	PRS	6		
	ELEMENT 03				
	DOORS				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 4</u>				
	<u>WINDOWS</u>				
	<u>Aluminium frames</u>				
A	100 x 100 x 2mm Thick square hollow section powder coated aluminium frames with and including rubber seal all round infilled with glass (m.s)	LM	42		
	<u>Glass</u>				
B	8mm Thick laminated clear glass fixed to aluminium frame	SM	8		
	<u>Glass film</u>				
C	Supply and fix frosted film to glazed panel	SM	10		
	<u>Window Blinds</u>				
	<u>Vertical blinds</u>				
D	Vertical blinds comprising 125mm wide approved synthetic strips complete with rail and fittings fixed to masonry wall or concrete, size 1800 x 2700mm all to Architect's approval	NO	6		
	<u>Wrot mahogany or other equal and approved hardwood :-</u>				
E	150 x 25mm Window board	LM	5		
	<u>Prepare and appply three coats of approved clear polyurthane varnish to :-</u>				
F	Wood surface ;width 100-200mm	LM	5		
	ELEMENT 04				
	WINDOWS				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 5</u>				
	<u>INTERNAL FINISHES</u>				
	<u>FLOOR FINISHES</u>				
	<u>Cement and sand (1:4) screed to receive flooring</u>				
A	32mm Thick to receive ceramic tile flooring	SM	24		
B	30mm Thick to receive porcelain tile flooring	SM	376		
	<u>Non-slip ceramic floor tiles as "Saj" or any other equal and approved :-</u>				
C	Provide a Prime Cost rate of Thirty dollars (USD 12.50) per square metre for supply and delivery to site of 250 x 250 x 8mm glazed ceramic floor tiles, allow taking delivery and fixing with and including approved adhesive and grouting and add for profit and overheads	SM	24		
D	100mm High ceramic tile skirting	LM	132		
	<u>Polished porcelain floor tiles</u>				
E	Provide a Prime Cost rate of Thirty dollars (USD 30/=) per square metre for supply and delivery to site of 300 x 300 x 8mm thick polished porcelain floor tiles, allow taking delivery and fixing with and including approved adhesive and grouting and add for profit and overheads	SM	376		
F	100mm High porcelain tile skirting	LM	199		
	<u>Hardwood timber skirting</u>				
G	25mm Thick 100mm high mahogany timber skirting fixed to gypsum with well rounded top edge	LM	49		
	<u>Prime back to surfaces of wood before fixing</u>				
H	Surfaces of hardwood skirting of girth 0-100mm	LM	49		
	<u>Prepare and apply 1 undercoat and 2 coats of clear polyurethane varnish to :-</u>				
I	Surfaces of hardwood skirting of girth 100-200mm	LM	49		
	Carried forward		USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 5</u>				
	<u>INTERNAL FINISHES -CONTINUED</u>				
	Brought forward				
	<u>WALL FINISHES</u>				
	<u>Cement ,lime ,sand plaster</u>				
A	12mm Thick cement lime sand (1:1:6) in two coats steel trowelled smooth	SM	346		
	<u>Prepare and apply one undercoat and two finishing coats of silk vinyl emulsion paint to:-</u>				
B	Plastered surfaces of walls	SM	346		
	<u>Skim, prepare and apply one undercoat and two finishing coats of silk vinyl emulsion paint to:-</u>				
C	Surfaces of gypsum boards	SM	132		
D	Previously plastered surfaces of walls	SM	325		
	<u>Cement and sand (1:3) backing</u>				
E	12mm Thick to receive ceramic wall tiles	SM	118		
	<u>First grade Saj Ceramic Tiles</u>				
F	250 x 250 x 6mm Thick coloured ceramic wall tiles on prepared backing all to Architect's approval	SM	118		
	<u>Plastic tile edge strip</u>				
G	9mm wide White PVC edge trim	LM	2		
	<u>CEILING FINISHES</u>				
	<u>Accoustic ceiling</u>				
H	600 x 600 x 16mm Thick suspended accoustic ceiling tiles as "Armstrong Tegular Dune" or other equal and approved laid in a grid including 50 x 50 mm runners at 600mm centres complete with exposed metal hangers fixed approximately 150mm below soffits of concrete slab(Board room,reception and Management Office)	SM	219		
	Carried forward				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<p><u>ELEMENT NO 5</u></p> <p><u>INTERNAL FINISHES -CONTINUED</u></p> <p>Brought forward</p> <p><u>CEILING FINISHES</u></p> <p><u>Wash down fill all cracks ,prepare surfaces and apply two coats of vinyl silk emulsion paint on previously painted surfaces of:-</u></p> <p>A Soffites of suspended slab</p>	SM	181		
	<p>ELEMENT 05</p> <p>INTERNAL FINISHES</p>				<p>TOTAL CARRIED TO</p> <p>BILL SUMMARY</p>
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 6</u>				
	<u>JOINERY FITTINGS & FIXTURES</u>				
	<u>Concrete</u>				
A	Concrete class 15 in 100mm Thick plinths	SM	3		
	<u>Sawn formwork to:</u>				
B	Edges of beds and slab 75 - 150mm high	LM	5		
	<u>Kitchen worktop</u>				
C	20mm Thick granite with and including bull-nosed edges fixed on block board (m.s)	SM	3		
D	25mm Thick blockboard	SM	3		
E	100 x 20mm Thick granite fascia with bull nosed edges	LM	7		
F	Extra over 20mm Thick granite top for cutting sink opening size 1000 x 550mm wide;load and cart away arising debris	NO	1		
G	Extra over 25mm Thick blockboard for cutting sink opening size 1000 x 550mm wide;load and cart away arising debris	NO	1		
	<u>Washroom countertops</u>				
H	75mm Thick concrete class 20/20 in suspended slab	SM	4		
I	BRC mesh fabric reinforcement in slabs ref. A142	SM	4		
J	Formwork to soffites of slab	SM	4		
K	Formwork to edges of beds 75 - 150mm high	LM	8		
L	Allow for boxing for the WHB size 350 x 350mm	NO	4		
M	12mm Thick cement sand (1:3) screed to receive granite slabs	SM	4		
N	20mm Thick granite slab with and including bull-nosed edges laid on prepared screed	SM	4		
O	Ditto but in 100mm high fascia to worktop	LM	4		
	Carried forward			USD	

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 6</u>				
	<u>JOINERY FITTINGS & FIXTURES</u>				
	Brought forward				
	<u>Kitchen Cabinets</u>				
A	Low level fitting overall size 1500mm long x 600mm deep x 750mm high comprising 20mm laminate MDF sides, top, bottom and 1 No. divisions; 1 NO. 2700mm long shelf; 1 No. full length 50 x 25mm thick timber bearer plugged to wall; 4No. laminate MDF doors each size 450mm wide x 700mm high with and including 2 No. MEPLA hinges and 100mm stainless steel handles.	NO	1		
B	High level fitting overall size 2000mm long x 600mm deep x 900mm high comprising 20mm laminate MDF sides, top, bottom and 1 No. divisions; 1 NO. 1400mm long shelf; 3 No. full length average 25 x 25mm thick timber bearers plugged to walls; 4No. beech laminate MDF doors each size 500mm wide x 900mm high with and including 2 No. MEPLA hinges and 100mm stainless steel handles	NO	1		
	ELEMENT 06				
	JOINERY FITTINGS				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 7</u>				
	<u>RECEPTION COUNTERS (ALL PROVISIONAL)</u>				
	<u>Machine cut stone walling minimum strength 7N/mm bedded and jointed in cement sand mortar mix (1:3) ;reinforced with and including 25mm wide 26 gauge hoop iron at alternate courses</u>				
A	100mm Thick walls	SM	12		
	<u>Vibrated reinforced concrete class 25/20 (20mm aggregate) in:-</u>				
B	100mm Thick slab	SM	8		
	<u>Fabric Reinforcement</u>				
C	BRC mesh type No. A142 weighing 2.22KG/SM including 200mm minimum end and side laps	SM	8		
	<u>Formwork to:</u>				
D	Soffits of slab	SM	8		
E	Edges of slab over 75 - 150mm high	LM	36		
	<u>Cement and sand (1:1:6) lime plaster to walls & counter top</u>				
F	12mm Thick two coat plaster to soffits of slab	SM	8		
	<u>Cement and sand (1:3) backing to walls and counter tops</u>				
G	15mm Thick backing to receive granite slabs	SM	28		
	<u>Prepare and apply three coats of silk vinyl emulsion paint to:</u>				
H	Plastered walls	SM	8		
	<u>Granite slabs with an approved adhesive and jointed and grouted with approved coloured</u>				
I	20mm Thick granite slabs on prepared screed (measured separately)	SM	28		
J	Allow a provisional sum of US Dollars One Thousand Five Hundred for installation of recessed Kenya Re backlight logo size 1500 x 800mm	SUM			1,500
	ELEMENT 07				
	RECEPTION COUNTER				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
A	<p><u>ELEMENT NO 8</u></p> <p><u>FURNITURE</u></p> <p>Allow a Provisional Sum of USD 20,000 for the Supply, delivery and fixing in position of all furniture for the Management office all to the approval of the Project Architect and Employer .</p> <p>Minimum requirements for supplied furniture to include :-</p> <p>3600 x 2400mm boardroom table ; 12No boardroom chairs ; 2No High back mesh chairs ; 2No Orthopedic chairs ; 1No L-shaped executive desk and chair ; 2No 120x40x90mm high lockable cabinet ;1No 1400x1200mm high 3 drawer mobile pedestal reception counter ;2No 1650x 700x 900mm heavy duty – seater waiting bench with leather padding.</p>	SUM			20,000.00
	<p>ELEMENT 08</p> <p>FURNITURE</p>			USD	<p>TOTAL CARRIED TO</p> <p>BILL SUMMARY</p> <p>20,000.00</p>

Item	Description	Unit	Qty	Rate (USD)	AMOUNT
<u>CREDIT FOR SALVAGE MATERIALS</u>					
A	2850mm high 100mm thick timber framed partition	LM	42		
B	900 x 2100mm high timber door complete with frames and accessories	NO	6		
C	900 x 2400mm high timber flush doors complete with frames and accessories	NO	5		
D	1000 x 800mm high timber framed glass louvre windows	NO	3		
E	400X350mm Wash hand basin	NO	4		
F	Floor mount WC suite with toilet seat and cover	NO	4		
G	Urinal	NO	2		
TOTAL CREDIT FOR SALVAGE MATERIALS CARRIED TO SUMMARY OF BILL				USD.	

<u>BILL NO 1</u>			
<u>MANAGEMENT OFFICE</u>			
<u>BILL SUMMARY</u>			
<u>ELEMENT NO.</u>	<u>NAME</u>	<u>PAGE</u>	<u>AMOUNT (USD.)</u>
1	Demolition	279	
2	Walling & Partitions	280	
3	Doors	283	
4	Windows	284	
5	Internal Finishes	287	
6	Joinery Fitting & Fixtures	289	
7	Reception counter	290	
8	Furniture	290	20,000.00
SUB-TOTAL 1			
	<u>Less</u> Credit for salvage material	292	
BILL NO 1	TOTAL CARRIED TO		
MANAGEMENT OFFICE	SECTION SUMMARY		USD.

BILL NO 2
CONTROL ROOM

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<p><u>ELEMENT NO 1</u></p> <p><u>DEMOLITIONS AND ALTERATIONS</u></p> <p><u>ALL PROVISIONAL</u></p> <p><u>Notes:</u></p> <p>i) The Contractor shall provide the method of carrying out demolition works to the Project Manager for approval.</p> <p>ii) The Contractor shall exercise necessary safety measures so as not to cause any damage to the existing structure and adjoining properties.</p> <p>iii) The Contractor shall exercise necessary safety measures so as not to cause injury to users of the building and/or other third parties.</p> <p>iv) The Contractor shall note that all salvage materials shall be the property of the Client unless indicated as "cart away". The Contractor shall be responsible for carting away debris upon approval by the Project Manager.</p> <p>v) No salvage material shall be incorporated in the works without the express written authority of the Project Manager .</p> <p>vi) The Contractor is advised to include in his rates the cost of making good all disturbed areas where it is expressly included in the description of works to be done or otherwise .</p> <p>vii) The Contractor is advised to take all necessary precautionary measures to guard against dirt , dust and noise pollution</p> <p>viii) The Contractor is advised to take all necessary precautionary measures in the removal ,handling ,storing and fixing of materials recovered from demolitions</p> <p>ix) The works will be carried out in an active site and the contractor will be constrained from noisy operations . Consequently he be required to carry out some of his activities after normal working hours and must allow this in his rates</p>				
	Carried forward			USD	

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 1 - DEMOLITIONS & ALTERATIONS</u> CONTINUED				
	Brought forward				
	<u>Floor</u>				
A	Carefully pull out existing PVC floor tiles including cement sand screed ; load and cart away arising debris and make good all disturbed areas (Approximately 50SM)	ITEM			
	<u>Ceiling</u>				
B	Carefully bring down existing gypsum board ceiling and timber brandering; load and cart away arising debris and make good all disturbed areas (Approximately 50SM)	ITEM			
	<u>Partitions</u>				
C	Carefully pull down 100mm thick x 2850mm high timber framed partition comprising 100x50mm timber framing all round and 50 x 25 intermediate posts at 1000mm vertical centres infilled with 5mm thick plywood on both sides ;load and cart away arising debris ;make good all disturbed areas(Approximately 12LM)	ITEM			
	<u>Doors</u>				
D	Carefully bring down 900 x 2100mm high timber door complete with frames and accesories; load and cart away arising debris and make good all disturbed areas (2NO)	ITEM			
	ELEMENT 01				
	DEMS & ALTNS				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<p><u>ELEMENT NO 2</u></p> <p><u>WALLING & PARTITIONS</u></p> <p><u>Expanded Polystyrene Panels (EPS)</u></p> <p>A 150mm Thick expanded polystyrene panels covered on either side with electro-welded high tensile steel wire mesh joined by steel wire connectors through the EPS panel core to form a three dimensional hyper static composite of steel mesh and EPS core panel</p>	SM	92		
	<p>ELEMENT 02</p> <p>WALLING & PARTITIONS</p>			USD	<p>TOTAL CARRIED TO</p> <p>BILL SUMMARY</p>

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 3</u>				
	<u>DOORS</u>				
	<u>Aluminium door</u>				
A	Supply and fix 50mm Thick powder coated aluminium door overall size 900 x 2100mm high comprising 50 x 50 x 2mm thick frames, stiles, transomes and rails infilled with 8mm thick laminated clear sheet glass complete with 150x25mm diameter pull handles, 2 pairs of stainless steel hinges, a pair of 900x150x2mm bumper strip plate, 2No. 900 x 150 x 1.6mm kicking plates fixed to bottom rail , "UNION" cylinder lock and escutcheon	NO	1		
	<u>Purpose -made security steel door</u>				
B	Supply and fix powder coated security steel door overall size 1000 x 2100mm high as " Multi-T Lock Security Systems" or other equal and approved manufacturer ; complete with powder coated steel frame and fixing including all necessary iron mongery and door furniture; all to Architect's detail and approval	NO	1		
	<u>Timber door</u>				
	<u>Flush doors to B.S. 459</u>				
C	45mm Thick solid core flush door overall size 900 x 2100mm high covered both sides with 6mm thick plywood finished with mahogany scratch proof laminate and finished all round with 12.5mm thick hardwood lipping all to Architect's detail and approval	NO	1		
	<u>The following in wrot mahogany :-</u>				
D	150 x 50mm Frames with 2 labours plugged	LM	6		
E	75 x 25mm Architraves	LM	6		
F	16mm Quadrant beading	LM	6		
	<u>Prime back to surfaces of wood before fixing</u>				
G	Surfaces not exceeding 100mm girth	LM	12		
H	Surfaces exceeding 200mm girth but not exceeding 300mm girth	LM	6		
	Carried forward			USD	

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
<u>ELEMENT NO 3 - DOORS CONTINUED</u>					
Brought forward					
<u>Prepare and apply three coats of clear polyurethane wood varnish to:</u>					
A	Surfaces not exceeding 100mm girth	LM	12		
B	Surfaces exceeding 200mm girth but not exceeding 300mm girth	LM	6		
C	General surfaces of doors	SM	4		
<u>Precast concrete class 20/20 :-</u>					
D	200 X 300 mm Thick lintel comprising 4No T12 bars and T8 links at 250mm centres complete with all necessary formwork	LM	2		
<u>Supply and fix the following ironmongery with matching screws all as per "UNION" catalogue or other equal and approved</u>					
E	100mm Brass polished butt hinges	PRS	2		
F	2 Lever mortice door lock	NO	1		
G	38mm Diameter Oval chrome door stop asr "Union" ref. DS-01 CH or other equal and approved	NO	3		
H	Polished brass lever door handles	NO	1		
I	750mm Long x 150mm high x 2mm thick aluminium kick plates	NO	1		
J	150mm long solid brass with antique brass finish and lacquer coating hat and coat hook	NO	1		
K	250 x 75 mm Stainless door sign with 3.5mm thick aluco board complete with engravings	NO	3		
L	900 x 23 x 8mm Aluminium plated nylon soft brush door sweep fixed to bottom of server room door	NO	1		
M	Overhead door closer standard power 4 with cover or other equal and approved	NO	3		
ELEMENT 03 DOORS	TOTAL CARRIED TO BILL SUMMARY				


Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 4</u>				
	<u>WINDOWS</u>				
	<u>Aluminium posts</u>				
A	80 x 40 x 1.5mm(0.900kg/m) Thick rectangular hollow section powder coated aluminium frames with and including rubber seal all round infilled with glass (m.s)	LM	6		
	<u>Glass</u>				
B	8mm Thick laminated clear glass fixed to aluminium frame with and including aluminium beadings	SM	2		
	<u>Glass film</u>				
C	Supply and fix frosted film to glazed panels	SM	2		
	<u>Mild Steel Grille Burglar Proofing</u>				
D	Mild steel grille grille comprising 50 x 30 x 3mm RHS vertical members welded in 650mm centres ,20 x 20 x 3mm SHS horizontal rails welded to vertical frame members in 410mm centres, infilled with 20 x 20 x 3mm SHS vertical members welded to 20 x 20 x 3mm SHS horizontal middle members in 100mm centres and vertical mid members in 20 x 20 x 2mm RHS horizontal members at 380mm centres as per the Architect's detail	SM	7		
	<u>Prime and apply three coats gloss paint on:-</u>				
E	Metal surfaces of burglar proofing grilles (measured both sides overall)	SM	13		
	ELEMENT 04				
	WINDOWS				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 5</u>				
	<u>INTERNAL FINISHES</u>				
	<u>FLOOR FINISHES</u>				
	<u>Cement and sand (1:4) screed to receive flooring</u>				
A	32mm Thick to receive porcelain tiles	SM	50		
	<u>Polished porcelain floor tiles</u>				
B	Provide a Prime Cost rate of Thirty dollars (USD 30/=) per square metre for supply and delivery to site of 300 x 300 x 8mm polished porcelain floor tiles, allow taking delivery and fixing with and including approved adhesive and matching colored grouting and add for profit and overheads	SM	50		
C	100mm High porcelain tile skirting	LM	78		
	<u>WALL FINISHES</u>				
	<u>Cement ,lime ,sand plaster</u>				
G	12mm Thick cement lime sand (1:1:6) in two coats steel trowelled smooth	SM	184		
	<u>Prepare and apply one undercoat and two finishing coats of silk vinyl emulsion paint to:-</u>				
H	Plastered surfaces of walls	SM	184		
	<u>Cement and sand (1:3) backing</u>				
I	12mm Thick to receive ceramic wall tiles	SM	13		
	<u>First grade Saj Ceramic Tiles</u>				
J	250 x 250 x 6mm Thick coloured ceramic wall tiles on prepared backing all to Architect's approval	SM	13		
	<u>Plastic tile edge strip</u>				
K	9mm wide White PVC edge trim	LM	3		
	Carried forward			USD	

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 5</u>				
	<u>INTERNAL FINISHES -CONTINUED</u>				
	Brought forward				
	<u>CEILING FINISHES</u>				
	<u>Accoustic ceiling</u>				
A	600 x 600 x 16mm Thick suspended accoustic ceiling tiles as "Armstrong Tegular Dune" or other equal and approved laid in a grid including 50 x 50 mm runners at 600mm centres complete with exposed metal hangers fixed approximately 250mm below soffits of concrete slab	SM	50		
	<u>Gypsum Board Ceiling</u>				
B	12.5mm Thick gypsum bulkhead ceiling to shapes and patterns as per Arctitect's details complete with standard galvanised metal sections fixed approximately 350mm below soffits of concrete slab	SM	25		
	<u>Skim,prepare and apply three coats matt vinyl emulsion paint to:-</u>				
C	Gypsum board ceiling	SM	25		
	ELEMENT 05				
	INTERNAL FINISHES				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 6</u>				
	<u>JOINERY FITTINGS</u>				
	<u>Concrete</u>				
A	Concrete class 15 in 100mm Thick plinths	SM	2		
	<u>Sawn formwork to:</u>				
B	Edges of beds and slab 75 - 150mm high	LM	3		
	<u>Kitchen worktop</u>				
C	20mm Thick granite with and including bull-nosed edges fixed on block board (m.s)	SM	2		
D	25mm Thick blockboard	SM	2		
E	100 x 20mm Thick granite fascia with bull nosed edges	LM	4		
F	Extra over 20mm Thick granite top for cutting sink opening size 1000 x 550mm wide;load and cart away arising debris	NO	1		
G	Extra over 25mm Thick blockboard for cutting sink opening size 1000 x 550mm wide;load and cart away arising debris	NO	1		
	<u>Washroom countertops</u>				
H	75mm Thick concrete class 20/20 in suspended slab	SM	1		
I	BRC mesh fabric reinforcement in slabs ref. A142	SM	1		
J	Formwork to soffites of slab	SM	1		
K	Formwork to edges of beds 75 - 150mm high	LM	3		
L	Allow for boxing for the WHB size 350 x 350mm	NO	1		
M	12mm Thick cement sand (1:3) screed to receive granite slabs	SM	1		
N	20mm Thick granite slab with and including bull-nosed edges laid on prepared screed	SM	1		
O	Ditto but in 100mm high fascia to worktop	LM	1		
	Carried forward			USD	

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>ELEMENT NO 6</u>				
	<u>JOINERY FITTINGS (CONTINUED)</u>				
	Brought forward				
	<u>Kitchen Cabinets</u>				
H	Low level fitting overall size 2700mm long x 600mm deep x 750mm high comprising 20mm laminate MDF sides, top, bottom and 1 No. divisions; 1 NO. 2700mm long shelf; 1 No. full length 50 x 25mm thick timber bearer plugged to wall; 4No. laminate MDF doors each size 450mm wide x 700mm high with and including 2 No. MEPLA hinges and 100mm stainless steel handles (HA/01/A/16 WD-18)	NO	1		
I	High level fitting overall size 2400mm long x 300mm deep x 900mm high comprising 20mm laminate MDF sides, top, bottom and 1 No. divisions; 1 NO. 1400mm long shelf; 3 No. full length average 25 x 25mm thick timber bearers plugged to walls; 4No. beech laminate MDF doors each size 500mm wide x 900mm high with and including 2 No. MEPLA hinges and 100mm stainless steel handles	NO	1		
	ELEMENT 06				
	JOINERY FITTINGS				
	TOTAL CARRIED TO				
	BILL SUMMARY				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
<u>ELEMENT NO 7</u>					
<u>FURNITURE</u>					
A	Provide a Provisional Sum of USD 15,000 for the Supply, installation, testing and commissioning of all the equipment and infrastructure (conduits, cabling, racks, power suppliers, furniture etc..) for the Command Control Room as defined in this document. <p style="text-align: right;">Minimum requirements for supplied furniture to include :- 3600 x 1200mm work table ; 4No Orthopedic chairs ; 4No 120x40x90mm high lockable cabinet ;Monitor support stands :customised arommets on workstations</p>	SUM			15,000.00
					
ELEMENT 07 FURNITURE	TOTAL CARRIED TO BILL SUMMARY		USD		15,000.00

Item	Description	Unit	Qty	Rate (USD)	AMOUNT
<u>CREDIT FOR SALVAGE MATERIALS</u>					
A	2850mm high 100mm thick timber framed partition	LM	12		
B	900 x 2100mm high timber door complete with frames and accessories	NO	2		
TOTAL CREDIT FOR SALVAGE MATERIALS CARRIED TO SUMMARY OF BILL			USD.		

<u>BILL NO 2</u>			
<u>CONTROL ROOM</u>			
<u>BILL SUMMARY</u>			
<u>ELEMENT NO.</u>	<u>NAME</u>	<u>PAGE</u>	<u>AMOUNT (USD.)</u>
1	Demolition	296	
2	Walling & Partitions	297	
3	Doors	299	
4	Windows	300	
5	Internal Finishes	302	
6	Joinery Fitting	304	
7	Furniture	305	15,000.00
SUB-TOTAL 1			
	<u>Less</u> Credit for salvage material	306	
BILL NO 2	TOTAL CARRIED TO		
CONTROL ROOM	SECTION SUMMARY		USD.

BILL NO 3

**FIRE DOORS ,ROLLER
SHUTTERS & GATES**

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>BILL NO 3</u>				
	<u>FIRE DOORS , ROLLER SHUTTERS & GATES</u>				
	<u>Demolition</u>				
A	Carefully remove existing fire exit doors including all frames and accessories ; load and cart away arising debris and make good all disturbed area (22 NO)	ITEM			
	<u>Purpose made units</u>				
	<u>Metal Fire Rated Doors to BS 476-22:1987</u>				
B	Supply and fix 54mm Thick FR60 fire rated steel door including steel fire rated door frames, overhead door closer ,door locks , 3No. spring loaded 360 degree turning heavy duty parliament hinges ,panic bar with and including 20x4mm wide intumescent seals fitted all round ;door to be equiped with magnetic door contacts as per Security Consultants specification ; door leaf and frames finished in bright red intumescent paint ;door overall size 900x2100mm high all to the approval of the Project Manager	NO	4		
	<u>Timber Fire Rated Doors to BS 476-22:1987</u>				
C	Supply and fix 54mm Thick FR90 fire rated timber door including fire rated door frames, overhead door closer ,door locks , 3No. spring loaded self closing hinges ,panic bar with and including 20x4mm wide intumescent seals fitted all round ;door to be equiped with magnetic door contacts as per Security Consultants specification ; door leaf and frames finished in bright red intumescent paint ;door overall size 900x2100mm high all to the approval of the Project Manager	NO	18		
	<u>Roller shutters</u>				
D	Supply and fix purpose made mild steel roller shutter overall size 1800x 3350mm high; complete with 100x100x3mm thick mild steel SHS all round ; shutter to comprise door panel with folding slates ,socket head screws with pins ,flange platesaiming pully ,locking box and steel bar pedestal fixed to floor ;include one coat of primer before fixing ,one undercoat and two finishing coats of gloss oil paint to the approval of the Architect (Main Tower Entrance)	NO	2		
	Carried forward				
			USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	BILL NO 3				
	<u>FIRE DOORS ROLLER SHUTTERS & GATES-CONTINUED</u>				
	Brought forward				
	<u>Roller shutters-continued</u>				
A	Supply and fix purpose made mild steel roller shutter overall size 4000x 3350mm high; complete with 100x100x3mm thick mild steel SHS all round ; shutter to comprise door panel with folding slates ,socket head screws with pins ,flange platesaiming pully ,locking box and steel bar pedestal fixed to floor ;include one coat of primer before fixing ,one undercoat and two finishing coats of gloss oil paint to the approval of the Architect (Main tower Entrance and Shop Units Entrance)	NO	1		
	<u>Mild steel gate</u>				
B	Steel gate, overall size 6000 x 4000mm high in 2No.equal leaves size 2000mm x 4000mm comprising 40 x 40 x 2mm RHS frames 40 x 25 x 1.5mm RHS middle horizontal members at 950mm centres, 40 x 25 x 1.5mm RHS alternating intermediate vertical frames at 125mm centres with iron spikes to approval on the opposite side anchored to 100 x 100 x 3mm RHS frames all round ;include one coat of primer before fixing ,one undercoat and two finishing coats of gloss oil paint to the approval of the Architect(Main entry gate)	NO	1		
	SUB -TOTAL 1				
	<u>Less Salvage material</u>				
	<u>CREDIT FOR SALVAGE MATERIALS</u>				
C	900 X 2100mm high fire exit doors including all frames and accessories	NO	22		
	BILL NO 3				
	FIRE DOORS & SHUTTERS				
	TOTAL CARRIED TO SECTION SUMMARY				
			USD		

BILL NO 4
BUILDERS WORK IN
CONNECTION WITH
SPECIALIST WORKS

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>BUILDERS WORKS IN CONNECTION TO SPECIALIST WORKS(ALL PROVISIONAL)</u>				
	<u>SECURITY INSTALLATIONS</u>				
	<u>Cut for and attend in all trades on the Contractor installing the following points in a mainly concealed system ,including chases, holes and recesses, notching timber drilling etc., making good all finishes</u>				
A	Walk through metal detectors	NO	2		
B	Fixed panic button	NO	6		
C	Intercom system outlet points	NO	3		
D	Wall monitors	NO	3		
E	Emergency break glass key box	NO	25		
F	Public address system speakers outlet points	NO	60		
G	Gun shooting detector sensors	NO	6		
H	CCTV/LPR system outlet points	NO	150		
I	Guard patrol system points	NO	20		
J	Installations of boom barrier	NO	2		
	Carried forward		USD		

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>BUILDERS WORKS IN CONNECTION TO SPECIALIST WORKS - CONTINUED</u>				
	Brought forward				
	<u>MECHANICAL WORKS</u>				
	<u>Cut for and attend in all trades on the Contractor installing the following points in a mainly concealed system,including chases ,holes and recesses , notching timber ,drilling etc... and making good all finishes(PROVISIONAL)</u>				
A	Wall hung WC suite	NO	5		
B	Wall hung urinal	NO	2		
C	Pedestal wash hand basin	NO	5		
D	Hand driers	NO	3		
E	Undersink water heater	NO	2		
F	Kitchen hood	NO	2		
G	Kitchen sink	NO	2		
H	Chasing for 100mm uPVC drain pipe	LM	200		
I	Extract fan outlet point	NO	3		
J	Air conditioning unit outlet point	NO	10		
K	Chasing for 25mm diamter PPR /GMS pipes	LM	262		
L	Chasing for 15mm diamter GMS pipes	LM	21		
	Carried forward				

Item	Description	Unit	Qty	Rate(USD)	AMOUNT
	<u>BUILDERS WORKS IN CONNECTION TO SPECIALIST WORKS - CONTINUED</u>				
	Brought forward				
	<u>ELECTRICAL WORKS</u>				
	<u>Cut for and attend in all trades on the Contractor installing the following points in a part concealed part surface mounted system,including chases ,holes and recesses , notching timber ,drilling etc., and making good all finishes(PROVISIONAL)</u>				
A	Lighting points with associated switches	NO	38		
B	Emergency exit light points	NO	20		
C	Power outlet points	NO	131		
D	Distribution boards & MCBs	NO	64		
E	Magnetic loop vehicle detector outlet point	NO	2		
F	Walk through metal detector outlet point	NO	2		
G	Luggage scanners outlets point	NO	2		
H	Turnstiles outlet point	NO	2		
I	Access contol outlet points	NO	4		
J	Panic button outlet points	NO	10		
K	Chasing for PVC conduits passing through floor	LM	48		
L	Chasing for PVC conduits passing through walls	LM	280		
M	Allow a provisional sum of US Dollars One Thousand (USD 1000/=) for additional builders works in connection to specialist works	SUM			1,000.00
	BILL NO 4 BUILDERS WORK IN CONNECTION TO SPECIALIST INSTALLATION TOTAL CARRIED TO SECTION SUMMARY				

PROPOSED INTEGRATED SECURITY MANAGEMENT SYSTEM

AT REINSURANCE PLAZA -KISUMU FOR KENYA REINSURANCE CORPORATION

SECTION 04 SUMMARY

BUILDERS WORK SUMMARY

	<u>BILL NAME</u>	PAGE	AMOUNT (USD.)
1	MANAGEMENT OFFICE	293	
2	CONTROL ROOM	307	
3	FIRE DOORS & SHUTTERS	310	
4	BUILDERS WORK IN CONNECTION WITH SPECIALIST INSTALLATIONS	314	
	SECTION NO 4 - BUILDERS WORK TOTAL CARRIED FORWARD TO GRAND SUMMARY		

PROPOSED INTEGRATED SECURITY MANAGEMENT SYSTEM

AT REINSURANCE PLAZA -KISUMU FOR KENYA REINSURANCE CORPORATION

GRAND SUMMARY

	<u>SECTION NAME</u>	PAGE	AMOUNT (USD.)
1	PRELIMINARIES	234	
2	SECURITY INSTALLATIONS	243	
3	MECHANICAL ,ELECTRICAL AND PLUMBING INSTALLATIONS	274	
4	BUILDERS WORK	315	
	TOTALTENDER PRICE CARRIED FORWARD TO FORM OF TENDER	USD.	

**PART III - CONDITIONS OF CONTRACT AND
CONTRACT FORMS**

SECTION VIII - GENERAL CONDITIONS OF CONTRACT

These General Conditions of Contract (GCC), read in conjunction with the Special Conditions of Contract (SCC) and other documents listed therein, should be a complete document expressing fairly the rights and obligations of both parties. These General Conditions of Contract have been developed on the basis of considerable international experience in the drafting and management of contracts, bearing in mind a trend in the construction industry towards simpler, more straightforward language.

The GCC can be used for both smaller admeasurement contracts and lump sum contracts.

General Conditions of Contract

A. General

1. Definitions

1.1 Bold face type is used to identify defined terms.

- a) **The Accepted Contract Amount** means the amount accepted in the Letter of Acceptance for the execution and completion of the Works and the remedying of any defects.
- b) **The Activity Schedule** is a schedule of the activities comprising the construction, installation, testing, and commissioning of the Works in a lump sum contract. It includes a lump sum price for each activity, which is used for valuations and for assessing the effects of Variations and Compensation Events.
- c) **The Adjudicator** is the person appointed jointly by the Procuring Entity and the Contractor to resolve disputes in the first instance, as provided for in GCC 23.
- d) **Bill of Quantities** means the priced and completed Bill of Quantities forming part of the Bid.
- e) **Compensation Events** are those defined in GCC Clause 42 hereunder.
- f) **The Completion Date** is the date of completion of the Works as certified by the Project Manager, in accordance with GCC Sub-Clause 53.1.
- g) **The Contract** is the Contract between the Procuring Entity and the Contractor to execute, complete, and maintain the Works. It consists of the documents listed in GCC Sub-Clause 2.3 below.
- h) **The Contractor** is the party whose Bid to carry out the Works has been accepted by the Procuring Entity.
- i) **The Contractor's Bid** is the completed bidding document submitted by the Contractor to the Procuring Entity.
- j) **The Contract Price** is the Accepted Contract Amount stated in the Letter of Acceptance and thereafter as adjusted in accordance with the Contract.
- k) **Days** are calendar days; months are calendar months.
- l) **Day works** are varied work inputs subject to payment on a time basis for the Contractor's employees and Equipment, in addition to payments for associated Materials and Plant.
- m) **A Defect** is any part of the Works not completed in accordance with the Contract.
- n) **The Defects Liability Certificate** is the certificate issued by Project Manager upon correction of defects by the Contractor.
- o) **The Defects Liability Period** is the period **named in the SCC** pursuant to Sub-Clause 34.1 and calculated from the Completion Date.
- p) **Drawings** means the drawings of the Works, as included in the Contract, and any additional and modified drawings issued by (or on behalf of) the Procuring Entity in accordance with the Contract, include calculations and other information provided or approved by the Project Manager for the execution of the Contract.
- q) **The Procuring Entity** is the party who employs the Contractor to carry out the Works, **as specified in the SCC**, who is also the Procuring Entity.
- r) **Equipment** is the Contractor's machinery and vehicles brought temporarily to the Site to construct the Works.

- s) **"In writing" or "written"** means hand-written, type-written, printed or electronically made, and resulting in a permanent record;
- t) The Initial Contract Price is the Contract Price listed in the Procuring Entity's Letter of Acceptance.
- u) **The Intended Completion Date** is the date on which it is intended that the Contractor shall complete the Works. The Intended Completion Date is **specified in the SCC**. The Intended Completion Date may be revised only by the Project Manager by issuing an extension of time or an acceleration order.
- v) **Materials** are all supplies, including consumables, used by the Contractor for incorporation in the Works.
- w) **Plant** is any integral part of the Works that shall have a mechanical, electrical, chemical, or biological function.
- x) **The Project Manager** is the person **named in the SCC** (or any other competent person appointed by the Procuring Entity and notified to the Contractor, to act in replacement of the Project Manager) who is responsible for supervising the execution of the Works and administering the Contract.
- y) **SCC** means Special Conditions of Contract.
- z) **The Site** is the area of the works as **defined as such in the SCC**.
- aa) **Site Investigation Reports** are those that were included in the bidding document and are factual and interpretative reports about the surface and subsurface conditions at the Site.
- bb) **Specification** means the Specification of the Works included in the Contract and any modification or addition made or approved by the Project Manager.
- cc) **The Start Date** is **given in the SCC**. It is the latest date when the Contractor shall commence execution of the Works. It does not necessarily coincide with any of the Site Possession Dates.
- dd) **A Subcontractor** is a person or corporate body who has a Contract with the Contractor to carry out a part of the work in the Contract, which includes work on the Site.
- ee) **Temporary Works** are works designed, constructed, installed, and removed by the Contractor that are needed for construction or installation of the Works.
- ff) **A Variation** is an instruction given by the Project Manager which varies the Works.
- gg) **The Works** are what the Contract requires the Contractor to construct, install, and turn over to the Procuring Entity, **as defined in the SCC**.

2 Interpretation

- 2.1 In interpreting these GCC, words indicating one gender include all genders. Words indicating the singular also include the plural and words indicating the plural also include the singular. Headings have no significance. Words have their normal meaning under the language of the Contract unless specifically defined. The Project Manager shall provide instructions clarifying queries about these GCC.
- 2.2 If sectional completion is specified in the SCC, references in the GCC to the Works, the Completion Date, and the Intended Completion Date apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).
- 2.3 The documents forming the Contract shall be interpreted in the following order of priority:
 - a) Agreement,
 - b) Letter of Acceptance,
 - c) Contractor's Bid,
 - d) Special Conditions of Contract,
 - e) General Conditions of Contract, including Appendices,
 - f) Specifications,
 - g) Drawings,
 - h) Bill of Quantities⁶, and
 - i) any other document **listed in the SCC** as forming part of the Contract.

⁶In lump sum contracts, delete "Bill of Quantities" and replace with "Activity Schedule."

3. Language and Law

- 3.1 The language of the Contract is English Language and the law governing the Contract are the Laws of Kenya.
- 3.2 Throughout the execution of the Contract, the Contractor shall comply with the import of goods and services prohibitions in the Procuring Entity's Country when
- a) as a matter of law or official regulations, Kenya prohibits commercial relations with that country; or
 - b) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations, Kenya prohibits any import of goods from that country or any payments to any country, person, or entity in that country.

4. Project Manager's Decisions

- 4.1 Except where otherwise specifically stated, the Project Manager shall decide contractual matters between the Procuring Entity and the Contractor in the role representing the Procuring Entity.

5. Delegation

- 5.1 Otherwise **specified in the SCC**, the Project Manager may delegate any of his duties and responsibilities to other people, except to the Adjudicator, after notifying the Contractor, and may revoke any delegation after notifying the Contractor.

6. Communications

- 6.1 Communications between parties that are referred to in the Conditions shall be effective only when in writing. A notice shall be effective only when it is delivered.

7. Subcontracting

- 7.1 The Contractor may subcontract with the approval of the Project Manager but may not assign the Contract without the approval of the Procuring Entity in writing. Subcontracting shall not alter the Contractor's obligations.

8. Other Contractors

- 8.1 The Contractor shall cooperate and share the Site with other contractors, public authorities, utilities, and the Procuring Entity between the dates given in the Schedule of Other Contractors, as **referred to in the SCC**. The Contractor shall also provide facilities and services for them as described in the Schedule. The Procuring Entity may modify the Schedule of Other Contractors and shall notify the Contractor of any such modification.

9. Personnel and Equipment

- 9.1 The Contractor shall employ the key personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Manager. The Project Manager shall approve any proposed replacement of key personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.
- 9.2 If the Project Manager asks the Contractor to remove a person who is a member of the Contractor's staff or work force, stating the reasons, the Contractor shall ensure that the person leaves the Site within seven days and has no further connection with the work in the Contract.
- 9.3 If the Procuring Entity, Project Manager or Contractor determines, that any employee of the Contractor be determined to have engaged in Fraud and Corruption during the execution of the Works, then that employee shall be removed in accordance with Clause 9.2 above.

10. Procuring Entity's and Contractor's Risks

10.1 The Procuring Entity carries the risks which this Contract states are Procuring Entity's risks, and the Contractor carries the risks which this Contract states are Contractor's risks.

11. Procuring Entity's Risks

11.1 From the Start Date until the Defects Liability Certificate has been issued, the following are Procuring Entity's risks:

- a) The risk of personal injury, death, or loss of or damage to property (excluding the Works, Plant, Materials, and Equipment), which are due to
 - i) use or occupation of the Site by the Works or for the purpose of the Works, which is the unavoidable result of the Works or
 - ii) negligence, breach of statutory duty, or interference with any legal right by the Procuring Entity or by any person employed by or contracted to him except the Contractor.
- b) The risk of damage to the Works, Plant, Materials, and Equipment to the extent that it is due to a fault of the Procuring Entity or in the Procuring Entity's design, or due to war or radioactive contamination directly affecting the country where the Works are to be executed.

11.2 From the Completion Date until the Defects Liability Certificate has been issued, the risk of loss of or damage to the Works, Plant, and Materials is a Procuring Entity's risk except loss or damage due to

- aa) a Defect which existed on the Completion Date,
- bb) an event occurring before the Completion Date, which was not itself a Procuring Entity's risk, or
- cc) the activities of the Contractor on the Site after the Completion Date.

12. Contractor's Risks

12.1 From the Starting Date until the Defects Liability Certificate has been issued, the risks of personal injury, death, and loss of or damage to property (including, without limitation, the Works, Plant, Materials, and Equipment) which are not Procuring Entity's risks are Contractor's risks.

13. Insurance

13.1 The Contractor shall provide, in the joint names of the Procuring Entity and the Contractor, insurance cover from the Start Date to the end of the Defects Liability Period, in the amounts and deductibles **stated in the SCC** for the following events which are due to the Contractor's risks:

- a) loss of or damage to the Works, Plant, and Materials;
- b) loss of or damage to Equipment;
- c) loss of or damage to property (except the Works, Plant, Materials, and Equipment) in connection with the Contract; and
- d) personal injury or death.

13.2 Policies and certificates for insurance shall be delivered by the Contractor to the Project Manager for the Project Manager's approval before the Start Date. All such insurance shall provide for compensation to be payable in the types and proportions of currencies required to rectify the loss or damage incurred.

13.3 If the Contractor does not provide any of the policies and certificates required, the Procuring Entity may effect the insurance which the Contractor should have provided and recover the premiums the Procuring Entity has paid from payments otherwise due to the Contractor or, if no payment is due, the payment of the premiums shall be a debt due.

13.4 Alterations to the terms of an insurance shall not be made without the approval of the Project Manager.

13.5 Both parties shall comply with any conditions of the insurance policies.

14. Site Data

14.1 The Contractor shall be deemed to have examined any Site Data **referred to in the SCC**, supplemented by any information available to the Contractor.

15. Contractor to Construct the Works

15.1 The Contractor shall construct and install the Works in accordance with the Specifications and Drawings.

16. The Works to Be Completed by the Intended Completion Date

16.1 The Contractor may commence execution of the Works on the Start Date and shall carry out the Works in accordance with the Program submitted by the Contractor, as updated with the approval of the Project Manager, and complete them by the Intended Completion Date.

17. Approval by the Project Manager

17.1 The Contractor shall submit Specifications and Drawings showing the proposed Temporary Works to the Project Manager, for his approval.

17.2 The Contractor shall be responsible for design of Temporary Works.

17.3 The Project Manager's approval shall not alter the Contractor's responsibility for design of the Temporary Works.

17.4 The Contractor shall obtain approval of third parties to the design of the Temporary Works, where required.

17.5 All Drawings prepared by the Contractor for the execution of the temporary or permanent Works, are subject to prior approval by the Project Manager before this use.

18. Safety

18.1 The Contractor shall be responsible for the safety of all activities on the Site.

19. Discoveries

19.1 Anything of historical or other interest or of significant value unexpectedly discovered on the Site shall be the property of the Procuring Entity. The Contractor shall notify the Project Manager of such discoveries and carry out the Project Manager's instructions for dealing with them.

20. Possession of the Site

20.1 The Procuring Entity shall give possession of all parts of the Site to the Contractor. If possession of a part is not given by the date **stated in the SCC**, the Procuring Entity shall be deemed to have delayed the start of the relevant activities, and this shall be a Compensation Event.

21. Access to the Site

21.1 The Contractor shall allow the Project Manager and any person authorized by the Project Manager access to the Site and to any place where work in connection with the Contract is being carried out or is intended to be carried out.

22. Instructions, Inspections and Audits

22.1 The Contractor shall carry out all instructions of the Project Manager which comply with the applicable laws where the Site is located.

22.2 The Contractor shall keep and shall make all reasonable efforts to cause its Subcontractors and sub-consultants to keep, accurate and systematic accounts and records in respect of the Works in such form and details as will clearly identify relevant time changes and costs.

223 The Contractor shall permit and shall cause its subcontractors and sub-consultants to permit, the Procuring Entity and/or persons appointed by the Public Procurement Regulatory Authority to inspect the Site and/or the accounts and records relating to the procurement process, selection and/or contract execution, and to have such accounts and records audited by auditors appointed by the Public Procurement Regulatory Authority. The Contractor's and its Subcontractors' and sub-consultants' attention is drawn to Sub-Clause 25.1 (Fraud and Corruption) which provides, inter alia, that acts intended to materially impede the exercise of the Public Procurement Regulatory Authority's inspection and audit rights constitute a prohibited practice subject to contract termination (as well as to a determination of ineligibility pursuant to the Public Procurement Regulatory Authority's prevailing sanctions procedures).

23. Appointment of the Adjudicator

231 The Adjudicator shall be appointed jointly by the Procuring Entity and the Contractor, at the time of the Procuring Entity's issuance of the Letter of Acceptance. If, in the Letter of Acceptance, the Procuring Entity does not agree on the appointment of the Adjudicator, the Procuring Entity will request the Appointing Authority designated in the SCC, to appoint the Adjudicator within 14 days of receipt of such request.

232 Should the Adjudicator resign or die or should the Procuring Entity and the Contractor agree that the Adjudicator is not functioning in accordance with the provisions of the Contract, a new Adjudicator shall be jointly appointed by the Procuring Entity and the Contractor. In case of disagreement between the Procuring Entity and the Contractor, within 30 days, the Adjudicator shall be designated by the Appointing Authority designated in the SCC at the request of either party, within 14 days of receipt of such request.

24. Settlement of Claims and Disputes

24.1 Contractor's Claims

24.1.1 If the Contractor considers itself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give Notice to the Project Manager, describing the event or circumstance giving rise to the claim. The notice shall be given as soon as practicable, and not later than 30 days after the Contractor became aware, or should have become aware, of the event or circumstance.

24.1.2 If the Contractor fails to give notice of a claim within such period of 30 days, the Time for Completion shall not be extended, the Contractor shall not be entitled to additional payment, and the Procuring Entity shall be discharged from all liability in connection with the claim. Otherwise, the following provisions of this Sub- Clause shall apply.

24.1.3 The Contractor shall also submit any other notices which are required by the Contract, and supporting particulars for the claim, all as relevant to such event or circumstance.

24.1.4 The Contractor shall keep such contemporary records as may be necessary to substantiate any claim, either on the Site or at another location acceptable to the Project Manager. Without admitting the Procuring Entity's liability, the Project Manager may, after receiving any notice under this Sub-Clause, monitor the record- keeping and/or instruct the Contractor to keep further contemporary records. The Contractor shall permit the Project Manager to inspect all these records and shall (if instructed) submit copies to the Project Manager.

24.1.5 Within 42 days after the Contractor became aware (or should have become aware) of the event or circumstance giving rise to the claim, or within such other period as may be proposed by the Contractor and approved by the Project Manager, the Contractor shall send to the Project Manager a fully detailed claim which includes full supporting particulars of the basis of the claim and of the extension of time and/or additional payment claimed. If the event or circumstance giving rise to the claim has a continuing effect:

- a) this fully detailed claim shall be considered as interim.
 - b) the Contractor shall send further interim claims at monthly intervals, giving the accumulated delay and/or amount claimed, and such further particulars as the Project Manager may reasonably require; and
 - c) the Contractor shall send a final claim within 30 days after the end of the effects resulting from the event or circumstance, or within such other period as may be proposed by the Contractor and approved by the Project Manager.
- 24.1.6 Within 42 days after receiving a Notice of a claim or any further particulars supporting a previous claim, or within such other period as may be proposed by the Project Manager and approved by the Contractor, the Project Manager shall respond with approval, or with disapproval and detailed comments. He may also request any necessary further particulars but shall nevertheless give his response on the principles of the claim within the above defined time period.
- 24.1.7 Within the above defined period of 42 days, the Project Manager shall proceed in accordance with Sub-Clause
- 24.1.8 [Determinations] to agree or determine (i) the extension (if any) of the Time for Completion (before or after its expiry) in accordance with Sub-Clause 8.4 [Extension of Time for Completion], and/or (ii) the additional payment (if any) to which the Contractor is entitled under the Contract.
- 24.1.9 Each Payment Certificate shall include such additional payment for any claim as has been reasonably substantiated as due under the relevant provision of the Contract. Unless and until the particulars supplied are sufficient to substantiate the whole of the claim, the Contractor shall only be entitled to payment for such part of the claim as he has been able to substantiate.
- 24.1.10 If the Project Manager does not respond within the timeframe defined in this Clause, either Party may consider that the claim is rejected by the Project Manager and any of the Parties may refer to Arbitration in accordance with Sub-Clause 24.4 [Arbitration].
- 24.1.11 The requirements of this Sub-Clause are in addition to those of any other Sub-Clause which may apply to a claim. If the Contractor fails to comply with this or another Sub-Clause in relation to any claim, any extension of time and/or additional payment shall take account of the extent (if any) to which the failure has prevented or prejudiced proper investigation of the claim, unless the claim is excluded under the second paragraph of this Sub-Clause 24.3.

24.2 Amicable Settlement

- 24.1.1 Where a notice of a claim has been given, both Parties shall attempt to settle the dispute amicably before the commencement of arbitration. However, unless both Parties agree otherwise, the Party giving a notice of a claim in accordance with Sub-Clause 24.1 above should move to commence arbitration after the fifty-sixth day from the day on which a notice of a claim was given, even if no attempt at an amicable settlement has been made.

24.3 Matters that may be referred to arbitration

- 24.3.1 Notwithstanding anything stated herein the following matters may be referred to arbitration before the practical completion of the Works or abandonment of the Works or termination of the Contract by either party:
- a) The appointment of a replacement Project Manager upon the said person ceasing to act.
 - b) Whether or not the issue of an instruction by the Project Manager is empowered by these Conditions.
 - c) Whether or not a certificate has been improperly withheld or is not in accordance with these Conditions.
 - e) Any dispute arising in respect of war risks or war damage.
 - f) All other matters shall only be referred to arbitration after the completion or alleged completion of the Works or termination or alleged termination of the Contract unless the Procuring Entity and the Contractor agree otherwise in writing.

24.4 Arbitration

- 24.4.1 Any claim or dispute between the Parties arising out of or in connection with the Contract not settled amicably in accordance with Sub-Clause 24.3 shall be finally settled by arbitration.
- 24.4.2 No arbitration proceedings shall be commenced on any claim or dispute where notice of a claim or dispute has not been given by the applying party within ninety days of the occurrence or discovery of the matter or issue giving rise to the dispute.
- 24.4.3 Notwithstanding the issue of a notice as stated above, the arbitration of such a claim or dispute shall not commence unless an attempt has in the first instance been made by the parties to settle such claim or dispute amicably with or without the assistance of third parties. Proof of such attempt shall be required.
- 24.4.4 The Arbitrator shall, without prejudice to the generality of his powers, have powers to direct such measurements, computations, tests, or valuations as may in his opinion be desirable in order to determine the rights of the parties and assess and award any sums which ought to have been the subject of or included in any certificate.
- 24.4.5 The Arbitrator shall, without prejudice to the generality of his powers, have powers to open up, review and revise any certificate, opinion, decision, requirement or notice and to determine all matters in dispute which shall be submitted to him in the same manner as if no such certificate, opinion, decision requirement or notice had been given.
- 24.4.6 The arbitrators shall have full power to open up, review and revise any certificate, determination, instruction, opinion, or valuation of the Project Manager, relevant to the dispute. Nothing shall disqualify representatives of the Parties and the Project Manager from being called as a witness and giving evidence before the arbitrators on any matter whatsoever relevant to the dispute.
- 24.4.7 Neither Party shall be limited in the proceedings before the arbitrators to the evidence, or to the reasons for dissatisfaction given in its Notice of Dissatisfaction.
- 24.4.8 Arbitration may be commenced prior to or after completion of the Works. The obligations of the Parties, and the Project Manager shall not be altered by reason of any arbitration being conducted during the progress of the Works.
- 24.4.9 The terms of the remuneration of each or all the members of Arbitration shall be mutually agreed upon by the Parties when agreeing the terms of appointment. Each Party shall be responsible for paying one-half of this remuneration.

24.5 Arbitration with National Contractors

- 24.5.1 If the Contract is with national contractors, arbitration proceedings will be conducted in accordance with the Arbitration Laws of Kenya. In case of any claim or dispute, such claim or dispute shall be notified in writing by either party to the other with a request to submit it to arbitration and to concur in the appointment of an Arbitrator within thirty days of the notice. The dispute shall be referred to the arbitration and final decision of a person to be agreed between the parties. Failing agreement to concur in the appointment of an Arbitrator, the Arbitrator shall be appointed, on the request of the applying party, by the Chairman or Vice Chairman of any of the following professional institutions.

- i) Architectural Association of Kenya
- ii) Institute of Quantity Surveyors of Kenya
- iii) Association of Consulting Engineers of Kenya
- iv) Chartered Institute of Arbitrators (Kenya Branch)
- v) Institution of Engineers of Kenya

- 24.5.2 The institution written to first by the aggrieved party shall take precedence over all other institutions.

24.6 Alternative Arbitration Proceedings

- 24.6.1 Alternatively, the Parties may refer the matter to the Nairobi Centre for International Arbitration (NCIA) which offers a neutral venue for the conduct of national and international arbitration with commitment to providing institutional support to the arbitral process.

24.7 Failure to Comply with Arbitrator's Decision

24.7.1 The award of such Arbitrator shall be final and binding upon the parties.

24.7.2 In the event that a Party fails to comply with a final and binding Arbitrator's decision, then the other Party may, without prejudice to any other rights it may have, refer the matter to a competent court of law.

24.8 Contract operations to continue

24.8.1 Notwithstanding any reference to arbitration herein,

- a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
- b) the Procuring Entity shall pay the Contractor any monies due the Contractor.

25. Fraud and Corruption

25.1 The Government requires compliance with the country's Anti-Corruption laws and its prevailing sanctions policies and procedures as set forth in the Constitution of Kenya and its Statutes.

25.2 The Procuring Entity requires the Contractor to disclose any commissions or fees that may have been paid or are to be paid to agents or any other party with respect to the bidding process or execution of the Contract. The information disclosed must include at least the name and address of the agent or other party, the amount and currency, and the purpose of the commission, gratuity, or fee.

B. Time Control

26. Program

26.1 Within the time stated in the SCC, after the date of the Letter of Acceptance, the Contractor shall submit to the Project Manager for approval a Program showing the general methods, arrangements, order, and timing for all the activities in the Works. In the case of a lump sum contract, the activities in the Program shall be consistent with those in the Activity Schedule.

26.2 An update of the Program shall be a program showing the actual progress achieved on each activity and the effect of the progress achieved on the timing of the remaining work, including any changes to the sequence of the activities.

26.3 The Contractor shall submit to the Project Manager for approval an updated Program at intervals no longer than the period stated in the SCC. If the Contractor does not submit an updated Program within this period, the Project Manager may withhold the amount stated in the SCC from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program has been submitted. In the case of a lump sum contract, the Contractor shall provide an updated Activity Schedule within 14 days of being instructed to by the Project Manager.

26.4 The Project Manager's approval of the Program shall not alter the Contractor's obligations. The Contractor may revise the Program and submit it to the Project Manager again at any time. A revised Program shall show the effect of Variations and Compensation Events.

27. Extension of the Intended Completion Date

27.1 The Project Manager shall extend the Intended Completion Date if a Compensation Event occurs or a Variation is issued which makes it impossible for Completion to be achieved by the Intended Completion Date without the Contractor taking steps to accelerate the remaining work, which would cause the Contractor to incur additional cost.

27.2 The Project Manager shall decide whether and by how much to extend the Intended Completion Date within 21 days of the Contractor asking the Project Manager for a decision upon the effect of a Compensation Event or Variation and submitting full supporting information. If the Contractor has failed to give early warning of a delay or has failed to cooperate in dealing with a delay, the delay by this failure shall not be considered in assessing the new Intended Completion Date.

28. Acceleration

28.1 When the Procuring Entity wants the Contractor to finish before the Intended Completion Date, the Project Manager shall obtain priced proposals for achieving the necessary acceleration from the Contractor. If the Procuring Entity accepts these proposals, the Intended Completion Date shall be adjusted accordingly and confirmed by both the Procuring Entity and the Contractor.

28.2 If the Contractor's priced proposals for an acceleration are accepted by the Procuring Entity, they are incorporated in the Contract Price and treated as a Variation.

29. Delays Ordered by the Project Manager

29.1 The Project Manager may instruct the Contractor to delay the start or progress of any activity within the Works.

30. Management Meetings

30.1 Either the Project Manager or the Contractor may require the other to attend a management meeting. The business of a management meeting shall be to review the plans for remaining work and to deal with matters raised in accordance with the early warning procedure.

30.2 The Project Manager shall record the business of management meetings and provide copies of the record to those attending the meeting and to the Procuring Entity. The responsibility of the parties for actions to be taken shall be decided by the Project Manager either at the management meeting or after the management meeting and stated in writing to all who attended the meeting.

31. Early Warning

31.1 The Contractor shall warn the Project Manager at the earliest opportunity of specific likely future events or circumstances that may adversely affect the quality of the work, increase the Contract Price, or delay the execution of the Works. The Project Manager may require the Contractor to provide an estimate of the expected effect of the future event or circumstance on the Contract Price and Completion Date. The estimate shall be provided by the Contractor as soon as reasonably possible.

31.2 The Contractor shall cooperate with the Project Manager in making and considering proposals for how the effect of such an event or circumstance can be avoided or reduced by anyone involved in the work and in carrying out any resulting instruction of the Project Manager.

C. Quality Control

32. Identifying Defects

32.1 The Project Manager shall check the Contractor's work and notify the Contractor of any Defects that are found. Such checking shall not affect the Contractor's responsibilities. The Project Manager may instruct the Contractor to search for a Defect and to uncover and test any work that the Project Manager considers may have a Defect.

33. Tests

33.1 If the Project Manager instructs the Contractor to carry out a test not specified in the Specification to check whether any work has a Defect and the test shows that it does, the Contractor shall pay for the test and any samples. If there is no Defect, the test shall be a Compensation Event.

34. Correction of Defects

34.1 The Project Manager shall give notice to the Contractor of any Defects before the end of the Defects Liability Period, which begins at Completion, and is defined in the SCC. The Defects Liability Period shall be extended for as long as Defects remain to be corrected.

34.2 Every time notice of a Defect is given; the Contractor shall correct the notified Defect within the length of time specified by the Project Manager's notice.

35. Uncorrected Defects

- 35.1 If the Contractor has not corrected a Defect within the time specified in the Project Manager's notice, the Project Manager shall assess the cost of having the Defect corrected, and the Contractor shall pay this amount.

D. Cost Control

36. Contract Price⁷

- 36.1 The Bill of Quantities shall contain priced items for the Works to be performed by the Contractor. The Bill of Quantities is used to calculate the Contract Price. The Contractor will be paid for the quantity of the work accomplished at the rate in the Bill of Quantities for each item.

37. Changes in the Contract Price⁸

- 37.1 If the final quantity of the work done differs from the quantity in the Bill of Quantities for the particular item by more than 25 percent, provided the change exceeds 1 percent of the Initial Contract Price, the Project Manager shall adjust the rate to allow for the change. The Project Manager shall not adjust rates from changes in quantities if thereby the Initial Contract Price is exceeded by more than 15 percent, except with the prior approval of the Procuring Entity.
- 37.2 If requested by the Project Manager, the Contractor shall provide the Project Manager with a detailed cost breakdown of any rate in the Bill of Quantities.

38. Variations

- 38.1 All Variations shall be included in updated Programs produced by the Contractor.
- 38.2 The Contractor shall provide the Project Manager with a quotation for carrying out the Variation when requested to do so by the Project Manager. The Project Manager shall assess the quotation, which shall be given within seven (7) days of the request or within any longer period stated by the Project Manager and before the Variation is ordered.
- 38.3 If the Contractor's quotation is unreasonable, the Project Manager may order the Variation and make a change to the Contract Price, which shall be based on the Project Manager's own forecast of the effects of the Variation on the Contractor's costs.
- 38.4 If the Project Manager decides that the urgency of varying the work would prevent a quotation being given and considered without delaying the work, no quotation shall be given and the Variation shall be treated as a Compensation Event.

⁷In lump sum contracts, replace GCC Sub-Clauses 36.1 as follows:

36.1 The Contractor shall provide updated Activity Schedules within 14 days of being instructed to by the Project Manager. The Activity Schedule shall contain the priced activities for the Works to be performed by the Contractor. The Activity Schedule is used to monitor and control the performance of activities on which basis the Contractor will be paid. If payment for materials on site shall be made separately, the Contractor shall show delivery of Materials to the Site separately on the Activity Schedule.

⁸In lump sum contracts, replace entire GCC Clause 37 with new GCC Sub-Clause 37.1, as follows:

The Activity Schedule shall be amended by the Contractor to accommodate changes of Program or method of working made at the Contractor's own discretion. Prices in the Activity Schedule shall not be altered when the Contractor makes such changes to the Activity Schedule.

⁹In lump sum contracts, add "and Activity Schedules" after "Programs." ¹⁰In lump sum contracts, delete this paragraph.

385 The Contractor shall not be entitled to additional payment for costs that could have been avoided by giving early warning

386 If the work in the Variation corresponds to an item description in the Bill of Quantities and if, in the opinion of the Project Manager, the quantity of work above the limit stated in Sub-Clause 39.1 or the timing of its execution do not cause the cost per unit of quantity to change, the rate in the Bill of Quantities shall be used to calculate the value of the Variation. If the cost per unit of quantity changes, or if the nature or timing of the work in the Variation does not correspond with items in the Bill of Quantities, the quotation by the Contractor shall be in the form of new rates for the relevant items of work

387 Value Engineering: The Contractor may prepare, at its own cost, a value engineering proposal at any time during the performance of the contract. The value engineering proposal shall, at a minimum, include the following.

- a) the proposed change(s), and a description of the difference to the existing contract requirements.
- b) a full cost/benefit analysis of the proposed change(s) including a description and estimate of costs (including life cycle costs) the Procuring Entity may incur in implementing the value engineering proposal; and
- c) a description of any effect(s) of the change on performance/functionality.

388 The Procuring Entity may accept the value engineering proposal if the proposal demonstrates benefits that:

- a) accelerate the contract completion period; or
- b) reduce the Contract Price or the life cycle costs to the Procuring Entity; or
- c) improve the quality, efficiency, safety or sustainability of the Facilities; or
- d) yield any other benefits to the Procuring Entity, without compromising the functionality of the Works.

389 If the value engineering proposal is approved by the Procuring Entity and results in:

- a) a reduction of the Contract Price; the amount to be paid to the Contractor shall be the **percentage specified in the SCC** of the reduction in the Contract Price; or
- b) an increase in the Contract Price; but results in a reduction in life cycle costs due to any benefit described in (a) to (d) above, the amount to be paid to the Contractor shall be the full increase in the Contract Price.

39. Cash Flow Forecasts

391 When the Program¹¹, is updated, the Contractor shall provide the Project Manager with an updated cash flow forecast. The cash flow forecast shall include different currencies, as defined in the Contract, converted as necessary using the Contract exchange rates.

40. Payment Certificates

401 The Contractor shall submit to the Project Manager monthly statements of the estimated value of the work executed less the cumulative amount certified previously.

402 The Project Manager shall check the Contractor's monthly statement and certify the amount to be paid to the Contractor.

403 The value of work executed shall be determined by the Project Manager.

404 The value of work executed shall comprise the value of the quantities of work in the Bill of Quantities that have been completed¹².

405 The value of work executed shall include the valuation of Variations and Compensation Events.

406 The Project Manager may exclude any item certified in a previous certificate or reduce the proportion of any item previously certified in any certificate in the light of later information.

40.7 Where the contract price is different from the corrected tender price, in order to ensure the contractor is not paid less or more relative to the contract price (which would be the tender price), payment valuation certificates and variation orders on omissions and additions valued based on rates in the Bill of Quantities or schedule of rates in the Tender, will be adjusted by a plus or minus percentage. The percentage already worked out during tender evaluation is worked out as follows: $(\text{corrected tender price} - \text{tender price}) / \text{tender price} \times 100$.

41. Payments

41.1 Payments shall be adjusted for deductions for advance payments and retention. The Procuring Entity shall pay the Contractor the amounts certified by the Project Manager within 30 days of the date of each certificate. If the Procuring Entity makes a late payment, the Contractor shall be paid interest on the late payment in the next payment. Interest shall be calculated from the date by which the payment should have been made up to the date when the late payment is made at the prevailing rate of interest for commercial borrowing for each of the currencies in which payments are made.

41.2 If an amount certified is increased in a later certificate or as a result of an award by the Adjudicator or an Arbitrator, the Contractor shall be paid interest upon the delayed payment as set out in this clause. Interest shall be calculated from the date upon which the increased amount would have been certified in the absence of dispute.

41.3 Unless otherwise stated, all payments and deductions shall be paid or charged in the proportions of currencies comprising the Contract Price.

41.4 Items of the Works for which no rate or price has been entered in shall not be paid for by the Procuring Entity and shall be deemed covered by other rates and prices in the Contract.

42. Compensation Events

42.1 The following shall be Compensation Events:

- a) The Procuring Entity does not give access to a part of the Site by the Site Possession Date pursuant to GCC Sub-Clause 20.1.
- b) The Procuring Entity modifies the Schedule of Other Contractors in a way that affects the work of the Contractor under the Contract.
- c) The Project Manager orders a delay or does not issue Drawings, Specifications, or instructions required for execution of the Works on time.
- d) The Project Manager instructs the Contractor to uncover or to carry out additional tests upon work, which is then found to have no Defects.
- e) The Project Manager unreasonably does not approve a subcontract to be let.
- f) Ground conditions are substantially more adverse than could reasonably have been assumed before issuance of the Letter of Acceptance from the information issued to bidders (including the Site Investigation Reports), from information available publicly and from a visual inspection of the Site.
- g) The Project Manager gives an instruction for dealing with an unforeseen condition, caused by the Procuring Entity, or additional work required for safety or other reasons.
- h) Other contractors, public authorities, utilities, or the Procuring Entity does not work within the dates and other constraints stated in the Contract, and they cause delay or extra cost to the Contractor.
- i) The advance payment is delayed.
- j) The effects on the Contractor of any of the Procuring Entity's Risks.
- k) The Project Manager unreasonably delays issuing a Certificate of Completion.

42.2 If a Compensation Event would cause additional cost or would prevent the work being completed before the Intended Completion Date, the Contract Price shall be increased and/or the Intended Completion Date shall be extended. The Project Manager shall decide whether and by how much the Contract Price shall be increased and whether and by how much the Intended Completion Date shall be extended.

423 As soon as information demonstrating the effect of each Compensation Event upon the Contractor's forecast cost has been provided by the Contractor, it shall be assessed by the Project Manager, and the Contract Price shall be adjusted accordingly. If the Contractor's forecast is deemed unreasonable, the Project Manager shall adjust the Contract Price based on the Project Manager's own forecast. The Project Manager shall assume that the Contractor shall react competently and promptly to the event.

424 The Contractor shall not be entitled to compensation to the extent that the Procuring Entity's interests are adversely affected by the Contractor's not having given early warning or not having cooperated with the Project Manager.

43. Tax

431 The Project Manager shall adjust the Contract Price if taxes, duties, and other levies are changed between the date 30 days before the submission of bids for the Contract and the date of the last Completion certificate. The adjustment shall be the change in the amount of tax payable by the Contractor, provided such changes are not already reflected in the Contract Price or are a result of GCC Clause 44.

44. Currency of Payment

441 All payments under the contract shall be made in US Dollars

45. Price Adjustment

451 Prices shall be adjusted for fluctuations in the cost of inputs only if **provided for in the SCC**. If so provided, the amounts certified in each payment certificate, before deducting for Advance Payment, shall be adjusted by applying the respective price adjustment factor to the payment amounts due in each currency. A separate formula of the type specified below applies:

$$P = A + B \text{ Im/Io}$$

where:

P is the adjustment factor for the portion of the Contract Price payable.

A and B are coefficients¹³ **specified in the SCC**, representing the non-adjustable and adjustable portions, respectively, of the Contract Price payable and Im is the index prevailing at the end of the month being invoiced and IO is the index prevailing 30 days before Bid opening for inputs payable.

452 If the value of the index is changed after it has been used in a calculation, the calculation shall be corrected, and an adjustment made in the next payment certificate. The index value shall be deemed to take account of all changes in cost due to fluctuations in costs.

46. Retention

461 The Procuring Entity shall retain from each payment due to the Contractor the proportion stated in the **SCC** until Completion of the whole of the Works.

462 Upon the issue of a Certificate of Completion of the Works by the Project Manager, in accordance with GCC 53.1, half the total amount retained shall be repaid to the Contractor and half when the Defects Liability Period has passed, and the Project Manager has certified that all Defects notified by the Project Manager to the Contractor before the end of this period have been corrected. The Contractor may substitute retention money with an "on demand" Bank guarantee.

47. Liquidated Damages

471 The Contractor shall pay liquidated damages to the Procuring Entity at the rate per day stated in the **SCC** for each day that the Completion Date is later than the Intended Completion Date. The total amount of liquidated damages shall not exceed the amount defined in the **SCC**. The Procuring Entity may deduct liquidated damages from payments due to the Contractor. Payment of liquidated damages shall not affect the Contractor's liabilities.

472 If the Intended Completion Date is extended after liquidated damages have been paid, the Project Manager shall correct any overpayment of liquidated damages by the Contractor by adjusting the next payment certificate. The Contractor shall be paid interest on the overpayment, calculated from the date of payment to the date of repayment, at the rates specified in GCC Sub-Clause 41.1.

48. Bonus

48.1 The Contractor shall be paid a Bonus calculated at the rate per calendar day **stated in the SCC** for each day (less any days for which the Contractor is paid for acceleration) that the Completion is earlier than the Intended Completion Date. The Project Manager shall certify that the Works are complete, although they may not be due to be complete.

49. Advance Payment

49.1 The Procuring Entity shall make advance payment to the Contractor of the amounts stated in the **SCC** by the date stated in the **SCC**, against provision by the Contractor of an Unconditional Bank Guarantee in a form and by a bank acceptable to the Procuring Entity in amounts and currencies equal to the advance payment. The Guarantee shall remain effective until the advance payment has been repaid, but the amount of the Guarantee shall be progressively reduced by the amounts repaid by the Contractor. Interest shall not be charged on the advance payment.

49.2 The Contractor is to use the advance payment only to pay for Equipment, Plant, Materials, and mobilization expenses required specifically for execution of the Contract. The Contractor shall demonstrate that advance payment has been used in this way by supplying copies of invoices or other documents to the Project Manager.

49.3 The advance payment shall be repaid by deducting proportionate amounts from payments otherwise due to the Contractor, following the schedule of completed percentages of the Works on a payment basis. No account shall be taken of the advance payment or its repayment in assessing valuations of work done, Variations, price adjustments, Compensation Events, Bonuses, or Liquidated Damages.

50. Securities

50.1 The Performance Security shall be provided to the Procuring Entity no later than the date specified in the Letter of Acceptance and shall be issued in an amount **specified in the SCC**, by a bank or surety acceptable to the Procuring Entity and denominated in the types and proportions of the currencies in which the Contract Price is payable. The Performance Security shall be valid until a date 28 day from the date of issue of the Certificate of Completion in the case of a Bank Guarantee, and until one year from the date of issue of the Completion Certificate in the case of a Performance Bond.

51. Dayworks

51.1 If applicable, the Dayworks rates in the Contractor's Bid shall be used only when the Project Manager has given written instructions in advance for additional work to be paid for in that way.

51.2 All work to be paid for as Dayworks shall be recorded by the Contractor on forms approved by the Project Manager. Each completed form shall be verified and signed by the Project Manager within two days of the work being done.

51.3 The Contractor shall be paid for Dayworks subject to obtaining signed Dayworks forms.

52. Cost of Repairs

52.1 Loss or damage to the Works or Materials to be incorporated in the Works between the Start Date and the end of the Defects Correction periods shall be remedied by the Contractor at the Contractor's cost if the loss or damage arises from the Contractor's acts or omissions.

E. Finishing the Contract

53. Completion

53.1 The Contractor shall request the Project Manager to issue a Certificate of Completion of the Works, and the Project Manager shall do so upon deciding that the whole of the Works is completed.

54. Taking Over

54.1 The Procuring Entity shall take over the Site and the Works within seven days of the Project Manager's issuing a certificate of Completion.

55. Final Account

55.1 The Contractor shall supply the Project Manager with a detailed account of the total amount that the Contractor considers payable under the Contract before the end of the Defects Liability Period. The Project Manager shall issue a Defects Liability Certificate and certify any final payment that is due to the Contractor within 56 days of receiving the Contractor's account if it is correct and complete. If it is not, the Project Manager shall issue within 56 days a schedule that states the scope of the corrections or additions that are necessary. If the Final Account is still unsatisfactory after it has been resubmitted, the Project Manager shall decide on the amount payable to the Contractor and issue a payment certificate.

56. Operating and Maintenance Manuals

56.1 If "as built" Drawings and/or operating and maintenance manuals are required, the Contractor shall supply them by the dates stated in the SCC.

56.2 If the Contractor does not supply the Drawings and/or manuals by the dates stated in the SCC pursuant to GCC Sub-Clause 56.1, or they do not receive the Project Manager's approval, the Project Manager shall withhold the amount **stated in the SCC** from payments due to the Contractor.

57. Termination

57.1 The Procuring Entity or the Contractor may terminate the Contract if the other party causes a fundamental breach of the Contract.

57.2 Fundamental breaches of Contract shall include, but shall not be limited to, the following:

- a) the Contractor stops work for 30 days when no stoppage of work is shown on the current Program and the stoppage has not been authorized by the Project Manager;
- b) the Project Manager instructs the Contractor to delay the progress of the Works, and the instruction is not withdrawn within 30 days;
- c) the Procuring Entity or the Contractor is made bankrupt or goes into liquidation other than for a reconstruction or amalgamation;
- d) a payment certified by the Project Manager is not paid by the Procuring Entity to the Contractor within 84 days of the date of the Project Manager's certificate;
- e) the Project Manager gives Notice that failure to correct a particular Defect is a fundamental breach of Contract and the Contractor fails to correct it within a reasonable period of time determined by the Project Manager;
- f) the Contractor does not maintain a Security, which is required;
- g) the Contractor has delayed the completion of the Works by the number of days for which the maximum amount of liquidated damages can be paid, as **defined in the SCC**; or
- h) if the Contractor, in the judgment of the Procuring Entity has engaged in Fraud and Corruption, as defined in paragraph 2.2 a of the Appendix A to the GCC, in competing for or in executing the Contract, then the Procuring Entity may, after giving fourteen (14) days written notice to the Contractor, terminate the Contract and expel him from the Site.

57.3 Notwithstanding the above, the Procuring Entity may terminate the Contract for convenience.

57.4 If the Contract is terminated, the Contractor shall stop work immediately, make the Site safe and secure, and leave the Site as soon as reasonably possible.

57.5 When either party to the Contract gives notice of a breach of Contract to the Project Manager for a cause other than those listed under GCC Sub-Clause 56.2 above, the Project Manager shall decide whether the breach is fundamental or not.

58. Payment upon Termination

58.1 If the Contract is terminated because of a fundamental breach of Contract by the Contractor, the Project Manager shall issue a certificate for the value of the work done and Materials ordered less advance payments received up to the date of the issue of the certificate and less the percentage to apply to the value of the work not completed, as specified in the SCC. Additional Liquidated Damages shall not apply. If the total amount due to the Procuring Entity exceeds any payment due to the Contractor, the difference shall be a debt payable to the Procuring Entity.

58.2 If the Contract is terminated for the Procuring Entity's convenience or because of a fundamental breach of Contract by the Procuring Entity, the Project Manager shall issue a certificate for the value of the work done, Materials ordered, the reasonable cost of removal of Equipment, repatriation of the Contractor's personnel employed solely on the Works, and the Contractor's costs of protecting and securing the Works, and less advance payments received up to the date of the certificate.

59. Property

59.1 All Materials on the Site, Plant, Equipment, Temporary Works, and Works shall be deemed to be the property of the Procuring Entity if the Contract is terminated because of the Contractor's default.

60. Release from Performance

60.1 If the Contract is frustrated by the outbreak of war or by any other event entirely outside the control of either the Procuring Entity or the Contractor, the Project Manager shall certify that the Contract has been frustrated. The Contractor shall make the Site safe and stop work as quickly as possible after receiving this certificate and shall be paid for all work carried out before receiving it and for any work carried out afterwards to which a commitment was made.

¹³The sum of the two coefficients A and B should be 1 (one) in the formula for each currency. Normally, both coefficients shall be the same in the formulae for all currencies, since coefficient A, for the non-adjustable portion of the payments, is a very approximate figure (usually 0.15) to take account of fixed cost elements or other non-adjustable components. The sum of the adjustments for each currency are added to the Contract Price.

SECTION IX - SPECIAL CONDITIONS OF CONTRACT

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
A. General	
GCC 1.1 (q)	The Procuring Entity is <i>Kenya Reinsurance Corporation</i>
GCC 1.1 (u)	The Intended Completion Date for the whole of the Works shall be <i>9 months from the date of site handover</i> <i>[If different dates are specified for completion of the Works by section ("sectional completion" or milestones), these dates should be listed here]</i>
GCC 1.1 (x)	The Project Manager is <i>International Security Consulting Holdings Ltd P.O. Box 42077-00100 Nairobi</i>
GCC 1.1 (z)	The Site is located at <i>Kisumu Reinsurance Plaza</i> along Oginga Odinga street
GCC 1.1 (cc)	The Start Date shall be as stated in the letter of acceptance
GCC 1.1 (gg)	The Works consist of <i>Installation of Integrated Security System and associated electrical , mechanical and builder's works</i>
GCC 2.2	Sectional Completions are: <i>NOT APPLICABLE (NOT ACCEPTABLE)</i>
GCC 5.1	The Project manager may delegate any of his duties and responsibilities.
GCC 8.1	Schedule of other contractors: <i>NOT APPLICABLE</i>
GCC 9.1	<p>Key Personnel GCC 9.1 is replaced with the following:</p> <p>9.1 Key Personnel are the Contractor's personnel named in this GCC 9.1 of the Special Conditions of Contract. The Contractor shall employ the Key Personnel and use the equipment identified in its Bid, to carry out the Works or other personnel and equipment approved by the Project Implementation Committee. The Project Implementation Committee shall approve any proposed replacement of Key Personnel and equipment only if their relevant qualifications or characteristics are substantially equal to or better than those proposed in the Bid.</p> <p>[insert the name/s of each Key Personnel agreed by the Procuring Entity prior to Contract signature.]</p>
GCC 13.1	<p>The minimum insurance amounts and deductibles shall be:</p> <ul style="list-style-type: none"> (a) for loss or damage to the Works, Plant and Materials: <i>shall be equal to the agreed contract sum</i> (b) For loss or damage to Equipment: <i>US Dollars 50,000</i> (c) for loss or damage to property (except the Works, Plant, Materials, and Equipment) in connection with Contract; <i>US Dollars 100,000</i> (d) for personal injury or death: <ul style="list-style-type: none"> (i) of the Contractor's employees: <i>US Dollars 50,000</i> (ii) of other people: <i>US Dollars 50,000</i>

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract
GCC 14.1	Site Data are as provided on the Security Installation drawings, Mechanical and Electrical Drawings and Architectural drawings and details.
GCC 20.1	The Site Possession Date shall be as stated determined after the signing of the contract agreement between the Employer and the selected bidder.
GCC 23.1 & GCC 23.2	Appointing Authority for the Adjudicator: President, <i>Institute of Quantity Surveyors of Kenya</i> Hourly rate and types of reimbursable expenses to be paid to the Adjudicator: <i>As prescribed by IQSK</i>
B. Time Control	
GCC 26.1	The Contractor shall submit for approval a Program for the Works within <i>14</i> days from the date of official site handover.
GCC 26.3	The period between Program updates is <i>60</i> days. The amount to be withheld for late submission of an updated Program is <i>US Dollars 2000</i>
C. Quality Control	
GCC 34.1	The Defects Liability Period is: <i>12months after the official date of practical completion as determined by the project manager</i>
D. Cost Control	
GCC 38.9	If the value engineering proposal is approved by the Procuring Entity the amount to be paid to the Contractor shall be 0% of the reduction in the Contract Price.
GCC 44.1	The currency of the Procuring Entity's Country is: <i>Kenyan shillings</i>
GCC 45.1	The Contract <i>is not</i> subject to price adjustment in accordance with GCC Clause 45, and the following information regarding coefficients <i>does not</i> apply.
GCC 46.1	The proportion of payments retained is: <i>10% of the certified amount to be paid</i>

Number of GC Clause	Amendments of, and Supplements to, Clauses in the General Conditions of Contract																		
GCC 47.1	<p>The liquidated damages for the whole of the Works are three hundred dollars per day. The maximum amount of liquidated damages for the whole of the Works is 10% of the final Contract Price. Over and above liquidated damages:</p> <p>Unrealistic time frame (i.e. exceeding of specified contract duration shall be charged at USD 5,000.00 excluded from the liquidated damaged) further:</p> <p>The contractor upon elapse of the contract period and not having completed the works, shall be liable for the payment of project consultants' expenses incurred in visiting the site when carrying out site meetings, site inspections, valuations and their travelling time. This is however applicable on condition that the delay in completing the works is caused by the Main Contractor, subcontractors, domestic subcontractors, or other representatives of the Main Contractor. Disbursement will be charged at the costs incurred +VAT.</p> <p>Payment to project consultants shall be at the rates given below (exclusive of VAT): -</p> <table border="1"> <thead> <tr> <th>Item</th> <th>1-3years</th> <th>4-5years</th> <th>6-7 years</th> <th>8-12 years</th> <th>Over 12 years</th> </tr> </thead> <tbody> <tr> <td>Man month</td> <td>300,000</td> <td>500,000</td> <td>600,000</td> <td>800,000</td> <td>1,000,000</td> </tr> <tr> <td>Man hour rate</td> <td>2000</td> <td>3,000</td> <td>4,000</td> <td>5,000</td> <td>6,000</td> </tr> </tbody> </table>	Item	1-3years	4-5years	6-7 years	8-12 years	Over 12 years	Man month	300,000	500,000	600,000	800,000	1,000,000	Man hour rate	2000	3,000	4,000	5,000	6,000
Item	1-3years	4-5years	6-7 years	8-12 years	Over 12 years														
Man month	300,000	500,000	600,000	800,000	1,000,000														
Man hour rate	2000	3,000	4,000	5,000	6,000														
GCC 48.1	The Bonus for the whole of the Works is 0% of final Contract Price per day. The maximum amount of Bonus for the whole of the Works is 0% of the final Contract Price.																		
GCC 49.1	The Advance Payments shall be: 20% of Contract sum Less PC and Provisional Sums and shall be paid to the Contractor no later than 60 days after the provision of advance payment bond from the Main contractor. The advance payment bond should be equal to the value of the advanced payment																		
GCC 50.1	<p>The Performance Security amount is 10% of the total accepted contract price</p> <p>(a) Performance Security – Bank Guarantee: in the amount(s) of 10 percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount.</p> <p>(b) Performance Security – Performance Bond: in the amount(s) of 10 percent of the Accepted Contract Amount and in the same currency(ies) of the Accepted Contract Amount.</p> <p>(c) Should a successful bidders tender be successful and awarded the bid ,they will require to provide a performance bond equal to 30% of the contract price .</p>																		
E. Finishing the Contract																			
GCC 56.1	<p>The date by which operating, and maintenance manuals are required is <i>within 14 days from Practical Completion.</i></p> <p>The date by which "as built" drawings are required is <i>14 days from practical completion.</i></p>																		
GCC 56.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required in GCC 58.1 is <i>US Dollars 20,000</i>																		
GCC 57.2 (g)	The maximum number of days is: <i>180 days</i>																		
GCC 58.1	The percentage to apply to the value of the work not completed, representing the Procuring Entity's additional cost for completing the Works, is <i>25%</i> .																		

FORM No 1: NOTIFICATION OF INTENTION TO AWARD

This Notification of Intention to Award shall be sent to each Tenderer that submitted a Tender. Send this Notification to the Tenderer's Authorized Representative named in the Tender Information Form on the format below.

FORMAT

1. For the attention of Tenderer's Authorized Representative
 - i) Name: *[insert Authorized Representative's name]*
 - ii) Address: *[insert Authorized Representative's Address]*
 - iii) Telephone: *[insert Authorized Representative's telephone/fax numbers]*
 - iv) Email Address: *[insert Authorized Representative's email address]*

[IMPORTANT: insert the date that this Notification is transmitted to Tenderers. The Notification must be sent to all Tenderers simultaneously. This means on the same date and as close to the same time as possible.]

2. Date of transmission: *[email]* on *[date]* (local time)

This Notification is sent by *(Name and designation)* _____

3. Notification of Intention to Award

- i) Procuring Entity: *[insert the name of the Procuring Entity]*
- ii) Project: *[insert name of project]*
- iii) Contract title: *[insert the name of the contract]*
- iv) Country: *[insert country where ITT is issued]*
- v) ITT No: *[insert ITT reference number from Procurement Plan]*

This Notification of Intention to Award (Notification) notifies you of our decision to award the above contract. The transmission of this Notification begins the Standstill Period. During the Standstill Period, you may:

4. Request a debriefing in relation to the evaluation of your tender

Submit a Procurement-related Complaint in relation to the decision to award the contract.

- a) The successful tenderer
 - i) Name of successful Tender _____
 - ii) Address of the successful Tender _____
 - iii) Contract price of the successful Tender US Dollars _____ (in words _____)
- b) Other Tenderers

Names of all Tenderers that submitted a Tender. If the Tender's price was evaluated include the evaluated price as well as the Tender price as read out. For Tenders not evaluated, give one main reason the Tender was unsuccessful.

SNo	Name of Tender	Tender Price as read out	Tender's evaluated price (Note a)	One Reason Why not Evaluated
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				

(Note a) State NE if not evaluated

5. How to request a debriefing

- a) DEADLINE: The deadline to request a debriefing expires at midnight on *[insert date]* (local time).
- b) You may request a debriefing in relation to the results of the evaluation of your Tender. If you decide to request a debriefing your written request must be made within three (3) Business Days of receipt of this Notification of Intention to Award.
- c) Provide the contract name, reference number, name of the Tenderer, contact details; and address the request for debriefing as follows:
 - i) Attention: *[insert full name of person, if applicable]*
 - ii) Title/position: *[insert title/position]*
 - ii) Agency: *[insert name of Procuring Entity]*
 - iii) Email address: *[insert email address]*
- d) If your request for a debriefing is received within the 3 Days deadline, we will provide the debriefing within five (3) Business Days of receipt of your request. If we are unable to provide the debriefing within this period, the Standstill Period shall be extended by five (3) Days after the date that the debriefing is provided. If this happens, we will notify you and confirm the date that the extended Standstill Period will end.
- e) The debriefing may be in writing, by phone, video conference call or in person. We shall promptly advise you in writing how the debriefing will take place and confirm the date and time.
- f) If the deadline to request a debriefing has expired, you may still request a debriefing. In this case, we will provide the debriefing as soon as practicable, and normally no later than fifteen (15) Days from the date of publication of the Contract Award Notice.

6. How to make a complaint

- a) Period: Procurement-related Complaint challenging the decision to award shall be submitted by midnight, *[insert date]* (local time).
- b) Provide the contract name, reference number, name of the Tenderer, contact details; and address the Procurement-related Complaint as follows:
 - i) Attention: *[insert full name of person, if applicable]*
 - ii) Title/position: *[insert title/position]*
 - iii) Agency: *[insert name of Procuring Entity]*
 - iv) Email address: *[insert email address]*
- c) At this point in the procurement process, you may submit a Procurement-related Complaint challenging the decision to award the contract. You do not need to have requested, or received, a debriefing before making this complaint. Your complaint must be submitted within the Standstill Period and received by us before the Standstill Period ends.
- d) Further information: For more information refer to the Public Procurement and Disposals Act 2015 and its Regulations available from the Website info@ppra.go.ke or complaints@ppra.go.ke.
You should read these documents before preparing and submitting your complaint.
- e) There are four essential requirements:
 - i) You must be an 'interested party'. In this case, that means a Tenderer who submitted a Tender in this tendering process, and is the recipient of a Notification of Intention to Award.
 - ii) The complaint can only challenge the decision to award the contract.
 - iii) You must submit the complaint within the period stated above.
 - iv) You must include, in your complaint, all of the information required to support your complaint.

7. Standstill Period

- i) DEADLINE: The Standstill Period is due to end at midnight on *[insert date]* (local time).
 - ii) The Standstill Period lasts ten (14) Days after the date of transmission of this Notification of Intention to Award.
 - iii) The Standstill Period may be extended as stated in paragraph Section 5(d) above.
- If you have any questions regarding this Notification please do not hesitate to contact us. On behalf of the Procuring Entity:

Signature: _____ Name: _____

Title/position: _____ Telephone: _____ Email: _____

FORM FOR REVIEW (r.203(1))

PUBLIC PROCUREMENT ADMINISTRATIVE REVIEW BOARD

APPLICATION NO..... OF.....20.....

BETWEEN

..... APPLICANT

AND

.....RESPONDENT (Procuring Entity)

Request for review of the decision of the..... (Name of the Procuring Entity ofdated the...day of20.....in the matter of Tender No.....of20.... for(Tender description).

REQUEST FOR REVIEW

I/We....., the above named Applicant(s), of address: Physical address..... P. O. Box No..... Tel. No.....Email, hereby request the Public Procurement Administrative Review Board to review the whole/part of the above mentioned decision on the following grounds, namely:

- 1.
2.

By this memorandum, the Applicant requests the Board for an order/orders that:

- 1.
2.

SIGNED (Applicant) Dated on..... day of/...20.....

FOR OFFICIAL USE ONLY Lodged with the Secretary Public Procurement Administrative Review Board on.....day of20.....

SIGNED

Board Secretary

FORM NO 3: LETTER OF AWARD

[letterhead paper of the Procuring Entity] [date]

To: *[name and address of the Contractor]*

This is to notify you that your Tender dated *[date]* for execution of the *[name of the Contract and identification number, as given in the Contract Data]* for the Accepted Contract Amount *[amount in numbers and words] [name of currency]*, as corrected and modified in accordance with the Instructions to Tenderers, is hereby accepted by (*name of Procuring Entity*).

You are requested to furnish the Performance Security within 30 days in accordance with the Conditions of Contract, using, for that purpose, one of the Performance Security Forms included in Section VIII, Contract Forms, of the Tender Document.

Authorized Signature:

Name and Title of Signatory:

Name of Procuring Entity.....

Attachment: *Contract Agreement*.....

FORM NO 4: CONTRACT AGREEMENT

THIS AGREEMENT made the _____ day of _____, 20____, between _____ of _____ (hereinafter "the Procuring Entity"), of the one part, and _____ of _____ (hereinafter "the Contractor"), of the other part:

WHEREAS the Procuring Entity desires that the Works known as _____ should be executed by the Contractor, and has accepted a Tender by the Contractor for the execution and completion of these Works and the remedying of any defects therein,

The Procuring Entity and the Contractor agree as follows:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Contract documents referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement. This Agreement shall prevail over all other Contract documents.
 - a) the Letter of Acceptance
 - b) the Letter of Tender
 - c) the addenda Nos _____ (if any)
 - d) the Special Conditions of Contract
 - e) the General Conditions of Contract;
 - f) the Specifications
 - g) the Drawings; and
 - h) the completed Bills of Quantities, Schedules and any other documents forming part of the contract.
3. In consideration of the payments to be made by the Procuring Entity to the Contractor as specified in this Agreement, the Contractor hereby covenants with the Procuring Entity to execute the Works 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 Contractor in consideration of the execution and completion of the Works 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 the Laws of Kenya on the day, month and year specified above.

Signed and sealed by _____ (for the Procuring Entity)

Signed and sealed by _____ (for the Contractor).

FORM NO. 5 - PERFORMANCE SECURITY

[Option 1 - Unconditional Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[insert name and Address of Procuring Entity]* **Date:** _____
_____ *[Insert date of issue]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with (name of Procuring Entity) _____ (the Procuring Entity as the Beneficiary), for the execution of _____ (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, a performance guarantee is required.
3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (in words),¹ such sum being payable in the types and proportions of currencies in which the Contract Price is payable, upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Applicant is in breach of its obligation(s) under the Contract, without the Beneficiary needing to prove or to show grounds for your demand or the sum specified therein.
4. This guarantee shall expire, no later than the Day of, 2.....², and any demand for payment under it must be received by us at the office indicated above on or before that date.
5. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee."

[Name of Authorized Official, signature(s) and seals/stamps].

Note: *All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.*

¹The Guarantor shall insert an amount representing the percentage of the Accepted Contract Amount specified in the Letter of Acceptance, less provisional sums, if any, and denominated either in the currency of the Contract or a freely convertible currency acceptable to the Beneficiary.

²Insert the date twenty-eight days after the expected completion date as described in GC Clause 11.9. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.

FORM No. 6 - PERFORMANCE SECURITY

[Option 2– Performance Bond]

[Note: Procuring Entities are advised to use Performance Security – Unconditional Demand Bank Guarantee instead of Performance Bond due to difficulties involved in calling Bond holder to action]

[Guarantor letterhead or SWIFT identifier code]

Beneficiary: _____ *[insert name and Address of Procuring Entity]* **Date:**
_____ *[Insert date of issue].*

PERFORMANCE BOND NO. _____

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. By this Bond _____ as Principal (hereinafter called "the Contractor") and _____] as Surety (hereinafter called "the Surety"), are held and firmly bound unto _____] as Obligee (hereinafter called "the Procuring Entity") in the amount of _____ for the payment of which sum well and truly to be made in the types and proportions of currencies in which the Contract Price is payable, the Contractor and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.
2. WHEREAS the Contractor has entered into a written Agreement with the Procuring Entity dated the _____ day of _____, 20, for _____ in accordance with the documents, plans, specifications, and amendments thereto, which to the extent herein provided for, are by reference made part hereof and are hereinafter referred to as the Contract.
3. NOW, THEREFORE, the Condition of this Obligation is such that, if the Contractor shall promptly and faithfully perform the said Contract (including any amendments thereto), then this obligation shall be null and void; otherwise, it shall remain in full force and effect. Whenever the Contractor shall be, and declared by the Procuring Entity to be, in default under the Contract, the Procuring Entity having performed the Procuring Entity's obligations thereunder, the Surety may promptly remedy the default, or shall promptly:
 - 1) complete the Contract in accordance with its terms and conditions; or
 - 2) obtain a tender or tenders from qualified tenderers for submission to the Procuring Entity for completing the Contract in accordance with its terms and conditions, and upon determination by the Procuring Entity and the Surety of the lowest responsive Tenderers, arrange for a Contract between such Tenderer, and Procuring Entity and make available as work progresses (even though there should be a default or a succession of defaults under the Contract or Contracts of completion arranged under this paragraph) sufficient funds to pay the cost of completion less the Balance of the Contract Price; but not exceeding, including other costs and damages for which the Surety may be liable hereunder, the amount set forth in the first paragraph hereof. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable by Procuring Entity to Contractor under the Contract, less the amount properly paid by Procuring Entity to Contractor; or
 - 3) pay the Procuring Entity the amount required by Procuring Entity to complete the Contract in accordance with its terms and conditions up to a total not exceeding the amount of this Bond.
4. The Surety shall not be liable for a greater sum than the specified penalty of this Bond.
5. Any suit under this Bond must be instituted before the expiration of one year from the date of the issuing of the Taking-Over Certificate. No right of action shall accrue on this Bond to or for the use of any person or corporation other than the Procuring Entity named herein or the heirs, executors, administrators, successors, and assigns of the Procuring Entity.
6. In testimony whereof, the Contractor has hereunto set his hand and affixed his seal, and the Surety has caused these presents to be sealed with his corporate seal duly attested by the signature of his legal representative, this day _____ of _____ 20_____.

SIGNED ON _____ on behalf of by _____ in the capacity of _____ in the presence of _____

SIGNED ON _____ on behalf of by _____ in the capacity of _____ in the presence of _____

FORM NO. 7 - ADVANCE PAYMENT SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[Insert name and Address of Procuring Entity]*

Date: _____ *[Insert date of issue]*

ADVANCE PAYMENT GUARANTEE No.: _____ *[Insert guarantee reference number]* **Guarantor:**

_____ *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ (hereinafter called "the Contractor") has entered into Contract No. _____ dated _____ with the Beneficiary, for the execution of _____ (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, an advance payment in the sum _____ (in words) is to be made against an advance payment guarantee.
3. At the request of the Contractor, we as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of _____ (in words _____)¹ upon receipt by us of the Beneficiary's complying demand supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating either that the Applicant:
 - a) has used the advance payment for purposes other than the costs of mobilization in respect of the Works; or
 - b) has failed to repay the advance payment in accordance with the Contract conditions, specifying the amount which the Applicant has failed to repay.
4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the advance payment referred to above has been credited to the Contractor on its account number _____ at _____.
5. The maximum amount of this guarantee shall be progressively reduced by the amount of the advance payment repaid by the Contractor as specified in copies of interim statements or payment certificates which shall be presented to us. This guarantee shall expire, at the latest, upon our receipt of a copy of the interim payment certificate indicating that ninety (90) percent of the Accepted Contract Amount, less provisional sums, has been certified for payment, or on the ____ day of _____, 2, ² whichever is earlier. Consequently, demand for payment under this guarantee must be received by us at this office on or before that date.
6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

¹The Guarantor shall insert an amount representing the amount of the advance payment and denominated either in the currency of the advance payment as specified in the Contract.

²Insert the expected expiration date of the Time for Completion. The Procuring Entity should note that in the event of an extension of the time for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.

FORM NO. 8 - RETENTION MONEY SECURITY

[Demand Bank Guarantee]

[Guarantor letterhead]

Beneficiary: _____ *[Insert name and Address of Procuring Entity]*

Date: _____ *[Insert date of issue]*

Advance payment guarantee no. *[Insert guarantee reference number]*

Guarantor: *[Insert name and address of place of issue, unless indicated in the letterhead]*

1. We have been informed that _____ *[insert name of Contractor, which in the case of a joint venture shall be the name of the joint venture]* (hereinafter called "the Contractor") has entered into Contract No. _____ *[insert reference number of the contract]* dated _____ with the Beneficiary, for the execution of _____ *[insert name of contract and brief description of Works]* (hereinafter called "the Contract").
2. Furthermore, we understand that, according to the conditions of the Contract, the Beneficiary retains moneys up to the limit set forth in the Contract ("the Retention Money"), and that when the Taking-Over Certificate has been issued under the Contract and the first half of the Retention Money has been certified for payment, and payment of *[insert the second half of the Retention Money]* is to be made against a Retention Money guarantee.
3. At the request of the Contractor, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[insert amount in figures]* _____ *[insert amount in words _____]*¹ upon receipt by us of the Beneficiary's complying demands supported by the Beneficiary's statement, whether in the demand itself or in a separate signed document accompanying or identifying the demand, stating that the Contractor is in breach of its obligation(s) under the Contract, without your needing to prove or show grounds for your demand or the sum specified therein.
4. A demand under this guarantee may be presented as from the presentation to the Guarantor of a certificate from the Beneficiary's bank stating that the second half of the Retention Money as referred to above has been credited to the Contractor on its account number ____ at _____ *[insert name and address of Applicant's bank]*.
5. This guarantee shall expire no later than the Day of, 2.....², and any demand for payment under it must be received by us at the office indicated above on or before that date.
6. The Guarantor agrees to a one-time extension of this guarantee for a period not to exceed *[six months]* *[one year]*, in response to the Beneficiary's written request for such extension, such request to be presented to the Guarantor before the expiry of the guarantee.

[Name of Authorized Official, signature(s) and seals/stamps]

Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.

¹The Guarantor shall insert an amount representing the amount of the second half of the Retention Money.

²Insert a date that is twenty-eight days after the expiry of retention period after the actual completion date of the contract. The Procuring Entity should note that in the event of an extension of this date for completion of the Contract, the Procuring Entity would need to request an extension of this guarantee from the Guarantor. Such request must be in writing and must be made prior to the expiration date established in the guarantee.

FORM NO. 9 BENEFICIAL OWNERSHIP DISCLOSURE FORM

INSTRUCTIONS TO TENDERERS: DELETE THIS BOX ONCE YOU HAVE COMPLETED THE FORM

This Beneficial Ownership Disclosure Form ("Form") is to be completed by the successful tenderer. In case of joint venture, the tenderer must submit a separate Form for each member. The beneficial ownership information to be submitted in this Form shall be current as of the date of its submission.

For the purposes of this Form, a Beneficial Owner of a Tenderer is any natural person who ultimately owns or controls the Tenderer by meeting one or more of the following conditions:

- Directly or indirectly holding 25% or more of the shares.*
- Directly or in directly holding 25% or more of the voting rights.*
- Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.*

Tender Reference No.: _____ [insert identification no]

Name of the Assignment: _____ [insert name of the assignment] to:
 _____ [insert complete name of Procuring Entity]

In response to your notification of award dated _____ [insert date of notification of award] to furnish additional information on beneficial ownership: _____ [select one option as applicable and delete the options that are not applicable]

i) We here by provide the following beneficial ownership information.

Details of beneficial ownership

Identity of Beneficial Owner	Directly or indirectly holding 25% or more of the shares (Yes / No)	Directly or indirectly holding 25 % or more of the Voting Rights (Yes / No)	Directly or indirectly having the right to appoint a majority of the board of the directors or an equivalent governing body of the Tenderer (Yes / No)
[include full name (last, middle, first), nationality, country of residence]			

OR

ii) We declare that there is no Beneficial Owner meeting one or more of the following conditions: directly or indirectly holding 25% or more of the shares. Directly or indirectly holding 25% or more of the voting rights. Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer.

OR

We declare that we are unable to identify any Beneficial Owner meeting one or more of the following conditions. [If this option is selected, the Tenderer shall provide explanation on why it is unable to identify any Beneficial Owner]

Directly or indirectly holding 25% or more of the shares. Directly or indirectly holding 25% or more of the voting rights.

Directly or indirectly having the right to appoint a majority of the board of directors or equivalent governing body of the Tenderer]"

Name of the Tenderer:*[insert complete name of the Tenderer]_____

Name of the person duly authorized to sign the Tender on behalf of the Tenderer: ** [insert complete name of person duly authorized to sign the Tender]

Title of the person signing the Tender: [insert complete title of the person signing the Tender]

Signature of the person named above: [insert signature of person whose name and capacity are shown above]

Date signed [insert date of signing] day of..... [Insert month], [insert year]