



**Ministry of Education**  
**State Department for Technical, Vocational**  
**Education and Training**

**KfW Development Bank**

**German Financial Cooperation with Kenya:**  
**Promotion of Youth Employment and Vocational Training in Kenya**  
**BMZ No. 2016 67 211 / 2016 65 298**

**International Competitive Bidding**  
**ICB-07/MOE-VTT/TVET/KfW 2016 67 211/003/2023-2024**

**Bidding Documents for:**

**Supply, Delivery and Commissioning of Equipment for Technical**  
**Training Institutes in Kenya:**  
**Training and Specialized Equipment for Industrial**  
**Mechatronics**

**Lot 1: Training Equipment for Industrial Mechatronics**  
**Lot 2: Specialized Electronics for Industrial Mechatronics**

**November 2023**

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# INVITATION FOR BIDS

Ministry of Education, State Department for Technical, Vocational Education and Training  
Promotion of Youth Employment and Vocational Training in Kenya  
BMZ No. 2016 67 211 / 2016 65 298

**28<sup>th</sup> November 2023**

Tender Reference: ICB-07/MOE-VTT/TVET/KfW 2016 67 211 /003/2023-2024

The State Department for Technical, Vocational Education and Training, Ministry of Education, Government of the Republic of Kenya has received financing from KfW toward the cost of the programme “Promotion of Youth Employment and Vocational Training in Kenya”, and intends to apply part of the proceeds toward payments under the contract(s) for *Supply, Delivery and Commissioning of Equipment for Technical Training Institutes in Kenya: Training and Specialized Equipment for Industrial Mechatronics*.

The Ministry of Education, State Department for Technical, Vocational Education and Training, now invites sealed Bids from eligible Bidders for *the supply of training and specialized equipment for industrial mechatronics, including delivery, installation and related training at: Kiambu Institute of Science and Technology (KIST)*. This tender includes 2 Lots. Lot 1: *Training Equipment for Industrial Mechatronics*; Lot 2: *Specialized Electronics for Industrial Mechatronics*. The required items, quantities, delivery periods, and other details are specified in the bidding document.

Bidding will be conducted by means of the International Competitive Bidding procedure with qualification as specified in KfW’s Procurement Guidelines (“Guidelines for the Procurement of Consulting Services, Works, Plant, Goods and Non-Consulting Services in Financial Cooperation with Partner Countries”, Version 2019; updated 2021), with due regard to the Kenyan Public Procurement and Asset Disposal Act (2015) and regulations 2020.

Interested eligible Bidders may obtain further information from the Ministry of Education, State Department for Technical, Vocational Education and Training, on 7th floor room 703 Uchumi House, Along Agha Khan Walk or by writing to the following email address: [tenders.moe.tvet@gmail.com](mailto:tenders.moe.tvet@gmail.com).

A complete set of bidding documents is available to interested Bidders and can be downloaded from the Ministry of Education website <https://www.education.go.ke/index.php/tenders>. In order to receive any potential notifications in relation to these bidding documents, interested Bidders should immediately send their contact details (including the tender reference number) to the email address: [tenders.moe.tvet@gmail.com](mailto:tenders.moe.tvet@gmail.com).

Bids must be delivered to the Tender Box marked Ministry of Education, State Department for Technical, Vocational Education and Training KfW project located on the ground floor of Jogoo House B, Harambee Avenue on or before **11.00 am (East Africa Time), 30th January 2024**. Late Bids will be rejected.

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Bids will be opened in a public session on 10th floor of Jogoo House B, Conference room in the presence of the Bidders' designated representatives.

All Bids must be accompanied by a **Bid Security of two percent (2%)** of the Total Bid Price, and in accordance with the Instructions to Bidders.

The Purchaser will not be responsible for any costs or expenses incurred by bidders in connection with the preparation or delivery of bids.

*HEAD SUPPLY CHAIN MANAGEMENT  
FOR; PRINCIPAL SECRETARY  
STATE DEPARTMENT FOR TECHNICAL, VOCATIONAL EDUCATION AND TRAINING*

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# **PART 1 – Bidding Procedures**

# Section I. Instructions to Bidders

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# Section I. Instructions to Bidders<sup>1</sup>

## A. General

- |  |   |
|--|---|
| 1. <b>Scope of Bid</b>                     | <p>1.1 In connection with the Invitation for Bids, <b>specified in the Bid Data Sheet (BDS)</b>, the Purchaser, <b>as specified in the BDS</b>, issues these Bidding Documents for the Procurement of Goods and Related Services incidental thereto as specified in Section VII, Schedule of Requirements. The name, identification and number of lots (contracts) of this International Competitive Bidding (ICB) are <b>specified in the BDS</b>.</p> <p>1.2 Throughout these Bidding Documents:</p> <ul style="list-style-type: none"> <li>(a) The term “in writing” means communicated in written form (e.g. by mail, e-mail, fax, telex) with proof of receipt;</li> <li>(b) If the context so requires, “singular” means “plural” and vice versa; and</li> <li>(c) “Day” means calendar day.</li> </ul> |
| 2. <b>Source of Funds</b>                  | <p>2.1 The Purchaser <b>specified in the BDS</b> has applied for or received financing (hereinafter called “funds”) from the KfW Entwicklungsbank (hereinafter called “the KfW”), toward the project <b>named in the BDS</b>. The Purchaser intends to apply a portion of the funds to eligible payments under the contract for which these Bidding Documents are issued.</p>   |
| 3. <b>Corrupt and Fraudulent Practices</b> | <p>3.1 KfW requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Section VI.</p> <p>3.2 In further pursuance of this policy, Bidders shall permit and shall cause its agents to provide information and permit KfW or an agent appointed by KfW to inspect on site all accounts, records and other documents relating to bid submission and contract performance (in the case of award), and to have them audited by auditors or agents appointed by KfW.</p>   |
| 4. <b>Eligible Bidders</b>                 | <p>4.1 A Bidder may be a firm that is a private entity, a state-owned entity- subject to ITB 4.3 - or any combination of such entities in the form of a joint venture (“JV”) under an existing JV Agreement or with the intent to enter into such an agreement supported by a letter of intent to execute a JV Agreement, in accordance with ITB 11.2. In the case of a JV, all members shall be jointly and severally liable for the execution of the Contract in accordance with the Contract terms. The Bidder shall nominate an authorised representative who shall have the authority to conduct all business for and on behalf of Bidder and any and all its members, if the Bidder is a JV,</p>  |

<sup>1</sup> [Text in this Section shall not be modified.]

during bidding and contract execution (in the event the Bidder is awarded the Contract). Unless specified in the BDS, there is no limit on the number of members in a JV.

- 4.2 A Bidder shall not have a conflict of interest. Any Bidder found to have a conflict of interest shall be disqualified. A Bidder may be considered to have a conflict of interest for the purpose of this bidding process, if the Bidder:
- (a) Directly or indirectly controls, is controlled by or is under common control with another Bidder; or
  - (b) Receives or has received any direct or indirect subsidy from another Bidder; or
  - (c) Has the same legal representative as another Bidder; or
  - (d) Has a relationship with another Bidder, directly or through common third parties, that puts it in a position to influence the bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; or
  - (e) Participates in more than one bid in this bidding process, both as an individual firm and as a JV member. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which such Bidder is involved. However, this does not limit the inclusion of the same subcontractor in more than one bid; or
  - (f) Any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods that are the subject of the bid; or
  - (g) Any of its affiliates has been hired (or is proposed to be hired) by the Purchaser for the Contract implementation; or
  - (h) Has a close business or family relationship with a professional staff of the Purchaser (or of the project implementing agency, or of a recipient of a part of the funds) who: (i) are directly or indirectly involved in the preparation of the bidding documents or specifications of the contract, and/or the bid 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 KfW throughout the procurement process and execution of the contract.
- 4.3 The KfW's eligibility criteria to bid are described in Section V, Eligibility criteria.
- 4.4 A Bidder shall not be under suspension from bidding by the Purchaser as the result of the execution of a Bid-Securing Declaration.

- 4.5 This bidding is open only to eligible Bidders, who will be subject to qualification.
- 4.6 A Bidder shall provide such evidence of eligibility satisfactory to the Purchaser, as specified in ITB 17.1 or as the Purchaser shall reasonably request.
- 5. Eligible Goods and Related Services**
- 5.1 All the Goods and Related Services to be supplied under the Contract and financed by the KfW shall have their origin in any country in accordance with Section V, Eligibility Criteria.
- 5.2 For purposes of this Clause, the term “goods” includes commodities, raw material, machinery, equipment, and industrial plants; and “related services” includes services such as insurance, installation, training, and initial maintenance.
- 5.3 The term “origin” means the country where the goods have been mined, grown, cultivated, produced, manufactured or processed; or, through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.

## **B. Contents of Bidding Documents**

- 6. Sections of Bidding Documents**
- 6.1 The Bidding Documents consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read in conjunction with any Addenda issued in accordance with ITB 8.

### **PART 1 - Bidding Procedures**

- Section I. Instructions to Bidders (ITB);
- Section II. Bid Data Sheet (BDS);
- Section III. Qualification and Evaluation Criteria;
- Section IV. Bidding Forms;
- Section V. Eligibility Criteria;
- Section VI. KfW Policy - Corrupt and Fraudulent Practices and Social and Environmental Responsibility;

### **PART 2 - Supply Requirements**

- Section VII. Schedule of Requirements;

### **PART 3 - Contract**

- Section VIII. General Conditions of Contract (GC);
- Section IX. Particular Conditions of Contract (PC);

- Section X. Contract Forms.

- 6.2 The Invitation for Bids issued by the Purchaser is not part of the Bidding Documents.
- 6.3 Unless obtained directly from the Purchaser, the Purchaser is not responsible for the completeness of the Bidding Documents, responses to requests for clarification or Addenda to the Bidding Documents in accordance with ITB 8. In case of any contradiction, documents obtained directly from the Purchaser shall prevail.
- 6.4 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Documents and to furnish with its Bid all information or documentation as is required by the Bidding Documents.
- 7. Clarification of Bidding Documents**
- 7.1 A Bidder requiring any clarification of the Bidding Documents shall contact the Purchaser in writing at the Purchaser's address **specified in the BDS**. The Purchaser will respond in writing to any request for clarification, provided that such request is received no later than 14 (fourteen) days prior to the deadline for submission of bids. The Purchaser shall forward copies of its response to all Bidders who have acquired the Bidding Documents in accordance with ITB 6.3, including a description of the inquiry but without identifying its source. If so **specified in the BDS**, the Purchaser shall also promptly publish its response at the web page **identified in the BDS**. Should the clarification result in changes to the essential elements of the Bidding Documents, the Purchaser shall amend the Bidding Documents following the procedure under ITB 8 and ITB 22.2.
- 8. Amendment of Bidding Document**
- 8.1 At any time prior to the deadline for submission of bids, the Purchaser may amend the Bidding Documents by issuing addenda.
- 8.2 Any addendum issued shall be part of the Bidding Documents and shall be communicated in writing to all who have obtained the Bidding Documents from the Purchaser in accordance with ITB 6.3. The Purchaser shall also promptly publish the addendum on the Purchaser's web page in accordance with ITB 7.1.
- 8.3 To give Bidders reasonable time in which to take an addendum into account in preparing their bids, the Purchaser may, at its discretion, extend the deadline for the submission of bids, pursuant to ITB 22.2.

### C. Preparation of Bids

- 9. Cost of Bidding**
- 9.1 The Bidder shall bear all costs associated with the preparation and submission of its bid, and the Purchaser shall not be responsible or liable for those costs,

regardless of the conduct or outcome of the bidding process.

- 10. Language of Bid** 10.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language **specified in the BDS**. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages into the language **specified in the BDS**, in which case, for purposes of interpretation of the Bid, such translation shall govern.
- 11. Documents Comprising the Bid** 11.1 The Bid shall comprise the following:
- (a) Qualification
    - (i) Bid Submission Form [see also (b)(i) below], in accordance with Section III (1.2) (Table 1);
    - (ii) Declaration of Undertaking duly signed, in accordance with Section III (1.2) (Table 1);
    - (iii) Written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 20.2 and Section III (1.2) (Table 1);
    - (iv) Any other forms and supporting documents required in Section III (1.1) (1.2) (Tables 1 to 5).
  - (b) Technical and Financial Bid
    - (i) Bid Submission Form and the Bidding Forms in accordance with ITB 12;
    - (ii) Completed schedules, in accordance with ITB 12 and 14;
    - (iii) Bid Security, in accordance with ITB 19.1;
    - (iv) Alternative bids, if permissible, in accordance with ITB 13;
    - (v) Documentary evidence in accordance with ITB 17 establishing the Bidder's qualifications to perform the contract if its Bid is accepted;
    - (vi) Documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to bid;
    - (vii) Documentary evidence in accordance with ITB 16, that the Goods and Related Services to be supplied by the Bidder are of eligible origin;
    - (viii) Documentary evidence in accordance with ITB 16 and 30, that the Goods and Related Services conform to the Bidding Documents;
    - (ix) Any other document **required in the BDS**.

- 11.2 In addition to the requirements under ITB 11.1, bids 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 bid shall be signed by all members and submitted with the bid, together with a copy of the proposed Agreement.
- 11.3 The Bidder shall furnish in the Bid Submission Form information on commissions and gratuities, if any, paid or to be paid to agents or any other party relating to this Bid.
- 12. Declaration of Undertaking, Qualification Forms, and Bid Submission Form, Bidding Forms, Price Schedules**
- 12.1 The Declaration of Undertaking and the Qualification Forms as listed in ITB 11.1(a) shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.4. All blank spaces shall be filled in with the information requested.
- 12.2 The Bid Submission Form, the Price Schedules, and the Bidding Forms as listed in ITB 11.1(b) shall be prepared using the relevant forms furnished in Section IV, Bidding Forms. The forms must be completed without any alterations to the text, and no substitutes shall be accepted except as provided under ITB 20.4. All blank spaces shall be filled in with the information requested.
- 13. Alternative Bids**
- 13.1. Unless otherwise **specified in the BDS**, alternative bids shall not be considered.
- 14. Bid Prices and Discounts**
- 14.1 The prices and discounts quoted by the Bidder in the Bid Submission Form and in the Price Schedules shall conform to the requirements specified below.
- 14.2 All lots (contracts) and items must be listed and priced separately in the Price Schedules.
- 14.3 The price to be quoted in the Bid Submission Form shall be the total price of the bid, excluding any discounts offered.
- 14.4 The Bidder shall quote any discounts and indicate the methodology for their application in the Bid Submission Form.
- 14.5 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, **unless otherwise specified in the BDS**. A bid submitted with an adjustable price quotation shall be treated as nonresponsive and shall be rejected, pursuant to ITB 30. However, if in accordance with the BDS, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero.

- 14.6 If so specified in ITB 1.1, bids are being invited for individual lots (contracts) or for any combination of lots (packages). Prices quoted shall correspond to 100 % of the items specified for each lot and to 100% of the quantities specified for each item of a lot. Bidders wishing to offer discounts for the award of more than one Contract shall specify in their bid the price reductions applicable to each package, or alternatively, to individual Contracts within the package. Discounts shall be submitted in accordance with ITB 14.4 provided the bids for all lots (contracts) are opened at the same time.
- 14.7 The term CIP (Carriage and Insurance Paid to), and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by The International Chamber of Commerce, as **specified in the BDS**.
- 14.8 Prices shall be quoted as specified in each Price Schedule included in Section IV, Bidding Forms. The disaggregation of price components is required solely for the purpose of facilitating the comparison of bids by the Purchaser. In quoting prices, the Bidder shall be free to use transportation through carriers registered in any eligible country, in accordance with Section V, Eligibility Criteria. Similarly, the Bidder may obtain insurance services from any eligible country in accordance with Section V, Eligibility Criteria. Prices shall be entered in the following manner:
- (a) For Goods manufactured in the Purchaser's Country:
- (i) The price of the Goods quoted CIP named place of destination (final destinations), including all customs duties and sales and other taxes already paid or payable on the components and raw material used in the manufacture or assembly of the Goods;
  - (ii) All related services required in these Bidding Documents; and
  - (iii) Any Purchaser's Country sales tax and other taxes which will be payable on the Goods if the contract is awarded to the Bidder.
- (b) For Goods manufactured outside the Purchaser's Country, to be imported:
- (i) The price of the Goods, quoted CIP named place of destination (port of entry and/or place of customs clearance), in the Purchaser's Country, **as specified in the BDS**; and
  - (ii) All related services required in these Bidding Documents.

- (c) For Goods manufactured outside the Purchaser's Country, already imported:
- (i) The price of the Goods, quoted CIP named place of destination (final destinations), excluding the custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already imported;
  - (ii) All related services required in these Bidding Documents; and
  - (iii) All custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already imported in the Purchaser's country, payable on the Goods, if the Contract is awarded to the Bidder;
  - (iv) Any Purchaser's Country sales and other taxes which will be payable on the Goods if the contract is awarded to the Bidder; and
- (d) For Related Services specified in Section VII - Schedule of Requirements:
- (i) All related services are to be included in the respective Price Schedule [(a), (b), or (c) above] submitted by each Bidder.

- 15. Currencies of Bid and Payment**
- 15.1 The currency(ies) of the bid and the currency(ies) of payments shall be **as specified in the BDS**. The Bidder shall quote in the currency of the Purchaser's Country the portion of the bid price that corresponds to expenditures incurred in the currency of the Purchaser's country, unless otherwise **specified in the BDS**.
- 16. Documents Establishing the Eligibility and Conformity of the Goods and Related Services**
- 16.1 To establish the eligibility of the Goods and Related Services in accordance with ITB 5, Bidders shall complete the country of origin declarations in the Price Schedule Forms, included in Section IV, Bidding Forms.
- 16.2 To establish the conformity of the Goods and Related Services to the Bidding Documents, the Bidder shall furnish as part of its Bid the documentary evidence that the Goods conform to the technical specifications and standards specified in Section VII, Schedule of Requirements.
- 16.3 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to the technical specification, and if applicable, a statement of deviations

and exceptions to the provisions of the Section VII, Schedule of Requirements.

- 16.4 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods during the period **specified in the BDS** following commencement of the use of the goods by the Purchaser.
- 16.5 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in the Section VII, Schedule of Requirements.
- 17. Documents Establishing the Eligibility and Qualifications of the Bidder**
- 17.1 To establish Bidder's their eligibility in accordance with ITB 4, Bidders shall complete the Bid Submission Form, included in Section IV, Bidding Forms.
- 17.2 The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted shall establish to the Purchaser's satisfaction:
- (a) That, if **required in the BDS**, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in the Purchaser's Country;
  - (b) That, if **required in the BDS**, in case of a Bidder not doing business within the Purchaser's Country, the Bidder is represented by an Agent in the country equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications; and
  - (c) That the Bidder meets each of the qualification criterion specified in Section III, Qualification and Evaluation and Criteria.
- 18. Period of Validity of Bids**
- 18.1 Bids shall remain valid for the period **specified in the BDS** after the bid submission deadline date prescribed by the Purchaser in accordance with ITB 22.1. A bid valid for a shorter period shall be rejected by the Purchaser as nonresponsive.
- 18.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request bidders to

extend the period of validity of their bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB Clause 19, it shall also be extended for forty-two (42) days beyond the deadline of the extended validity period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its bid, except as provided in ITB 18.3.

- 18.3 If the award is delayed by a period exceeding fifty-six (56) days beyond the expiry of the initial bid validity, the Contract price shall be determined as follows:
- (a) In the case of fixed price contracts, the Contract price shall be the bid price adjusted by the factor **specified in the BDS**;
  - (b) In the case of adjustable price contracts, no adjustment shall be made;
  - (c) In any case, bid evaluation shall be based on the bid price without taking into consideration the applicable correction from those indicated above.

## 19. Bid Security

- 19.1 The Bidder shall furnish as part of its bid, a Bid Security, as **specified in the BDS**, in original form and in the amount and currency **specified in the BDS**.
- 19.2 A Bid Security shall use the form included in Section IV, Bidding Forms, without deviations. The Bid Security must be issued in the currency of the Bid.
- 19.3 If a Bid Security is specified pursuant to ITB 19.1, the Bid Security shall be a demand guarantee in any of the following forms at the Bidder's option:
- (a) An unconditional guarantee issued by a reputable bank or financial institution (such as an insurance, bonding or surety company);
  - (b) A cashier's or certified check issued by a bank; or
  - (c) Another security **specified in the BDS**;

From a reputable source from an eligible country as specified in Section V, Eligibility Criteria. Bidders are free to use any reputable bank for the purpose of issuing the required Bid Security, subject to all conditions of ITB 19 are being met without exception; the issuing bank shall have a correspondent bank in the Purchaser's country. In the case of a bank guarantee, the Bid Security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms, or in another substantially similar format approved by the Purchaser prior to bid submission. The Bid Security shall be valid for forty-two (42) days beyond the original validity period of the bid, or beyond any period of extension if requested under ITB 18.2.

- 19.4 If a Bid Security is specified pursuant to ITB 19.1, any bid not accompanied by a substantially responsive Bid Security shall be rejected by the Purchaser as non-responsive.
- 19.5 The Bid Security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's signing the contract and furnishing the Performance Security pursuant to ITB 42.
- 19.6 The Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the contract and furnished the required performance security.
- 19.7 The Bid Security may be forfeited:
- (a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Submission Form, or any extension thereto provided by the Bidder; or
  - (b) If the successful Bidder fails to:
    - (i) Sign the Contract in accordance with ITB 41; or
    - (ii) Furnish a performance security in accordance with ITB 42.
- 19.8 The Bid Security of a JV must be in the name of the JV that submits the bid. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, the Bid Security shall be in the names of all future members as named in the letter of intent referred to in ITB 4.1 and ITB 11.2.
- 19.9 If a Bid Security is **not required in the BDS**, pursuant to ITB 19.1, and:
- (a) If a Bidder withdraws its bid during the period of bid validity specified by the Bidder on the Bid Submission Form, or any extension thereto provided by the Bidder; or
  - (b) If the successful Bidder fails to: sign the Contract in accordance with ITB 41; or furnish a performance security in accordance with ITB 42;

the Purchaser may, **if provided for in the BDS**, declare the Bidder ineligible to be awarded a contract by the Purchaser for a period of time **as stated in the BDS**.

## 20. Format and Signing of Bid

- 20.1 The Bidder shall prepare one original of the documents comprising the bid as described in ITB 11, clearly mark "ORIGINAL". Alternative bids, if permitted in accordance with ITB 13, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the bid, in the number **specified in the BDS** and clearly mark them "COPY". In the

event of any discrepancy between the original and the copies, the original shall prevail.

- 20.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation **as specified in the BDS** and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid where entries or amendments have been made shall be signed or initialed by the person signing the bid.
- 20.3 In case the Bidder is a JV, the Bid shall be signed by an authorized representative of the JV on behalf of the JV, and so as to be legally binding on all the members as evidenced by a power of attorney signed by their legally authorized representatives. If the JV has not been legally constituted into a legally enforceable JV at the time of bidding, then the Bid shall be signed by every member of the proposed JV.
- 20.4 Any inter-lineation, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

#### **D. Submission and Opening of Bids**

##### **21. Sealing and Marking of Bids**

- 21.1 The Bidder shall enclose the original and all copies of the bid, including alternative bids, if permitted in accordance with ITB 13, in separate sealed envelopes, duly marking the envelopes as "ORIGINAL", "ALTERNATIVE" and "COPY". These envelopes containing the original and the copies shall then be enclosed in one single envelope/package.

In addition an electronic version as true and complete colour copy in one file in unalterable PDF format on CD or flashdrive must be submitted; Considering that a CD or flashdrive and its content may be considered dutiable goods by customs authorities in the Purchaser's country, it is the full responsibility and risk of the Bidder, pursuant to ITB 22 and ITB 23, to either (i) include the electronic version in the inner envelope containing the original or (ii) send the electronic version separately to arrive within one week from the date and time stipulated in ITB 22; the electronic version is meant for convenience of the Purchaser and shall have no legal status.

- 21.2 The inner and outer envelopes shall:
- (a) Bear the name and address of the Bidder;
  - (b) Be addressed to the Purchaser in accordance with ITB 22.1;

- (c) Bear the specific identification of this bidding process indicated in ITB 1.1; and
- (d) Bear a warning not to open before the time and date for opening of the qualification documents.
- 21.3 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the qualification documents and/or bid.
- 22. Deadline for Submission of Bids**
- 22.1 Bids, as defined in ITB 21.1, must be received by the Purchaser at the address and no later than the date and time **specified in the BDS**.
- 22.2 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with ITB 8, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.
- 23. Late Bids**
- 23.1. The Purchaser shall not consider any Bid that arrives after the deadline for submission of bids, in accordance with ITB 22. Any Bid received by the Purchaser after the deadline for submission of bids shall be declared late, rejected, and returned unopened to the Bidder.
- 24. Withdrawal, Substitution, and Modification of Bids**
- 24.1 A Bidder may withdraw, substitute, or modify its bid after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization (the power of attorney) in accordance with ITB 20.2. The corresponding substitution or modification of the bid must accompany the respective written notice. All notices must be:
- (a) Prepared and submitted in accordance with ITB 20 and 21 (except that withdrawal notices do not require copies), and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," "SUBSTITUTION," or "MODIFICATION"; and
- (b) Received by the Purchaser prior to the deadline prescribed for submission of bids, in accordance with ITB 22.
- 24.2 Bids requested to be withdrawn in accordance with ITB 24.1 shall be returned unopened to the Bidders.
- 24.3 No Bid may be withdrawn, substituted, or modified in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the Bid Submission Form or any extension thereof.
- 25. Bid Opening**
- 25.1 Except in cases specified in ITB 23 and ITB 24, the Purchaser shall publicly open and read out in accordance with ITB 25.2 all Bids received by the deadline (regardless

of the number of Bids received), at the date, time and place **specified in the BDS**, in public and in the presence of Bidders' designated representatives.

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

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

Envelopes marked "MODIFICATION" shall be opened and read out with the corresponding Bid. No Bid modification shall be permitted unless the corresponding modification notice contains a valid authorization to request the modification and is read out at Bid opening.

Only bids that are opened and read out at Bid opening shall be considered further.

- 25.3 All other envelopes shall be opened one at a time, reading out: the name of the Bidder and whether there is a modification; the total Bid Prices, per lot (contract) if applicable, including any discounts and alternative bids (if permitted pursuant to ITB 13); the presence or absence of a Bid Security, if required; and any other details as the Purchaser may consider appropriate. Only discounts and alternative bids read out at bid opening shall be considered for evaluation. The Purchaser shall neither discuss the merits of any bid nor reject any bid (except for late bids, in accordance with ITB 23.1).

- 25.4 The Purchaser shall prepare a record of the opening session that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, substitution, or modification; the Bid Price, per lot (contract) if applicable, including any discounts, and alternative bids; and the presence or absence of a Bid Security, if one was required. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders.

## E. Evaluation and Comparison of Bids

- 26. Confidentiality**
- 26.1 Information relating to the examination, evaluation, and comparison of the bids, and qualification of the Bidders and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with the bidding process until information on Contract Award is communicated to all Bidders in accordance with ITB 40.
- 26.2 Any attempt by a Bidder to influence the Purchaser in the examination, evaluation, and comparison of the bids, and qualification of the bidders, or contract award decisions may result in the rejection of its Bid.
- 26.3 Notwithstanding ITB 26.2, from the time of bid opening to the time of Contract Award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it shall do so in writing.
- 27. Qualification of the Bidder**
- 27.1 The Purchaser shall determine to its satisfaction whether the Bidder meets the qualifying criteria specified in Section III, Qualification and Evaluation Criteria, Qualification.
- 27.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 17.2 (c), Qualification.
- 27.3 Only those criteria listed in Section III, Qualification and Evaluation Criteria, 1. Qualification, shall be used during this evaluation step.
- 27.4 An affirmative determination shall be a prerequisite for successful qualification of the Bidder, and continued evaluation of the Bidder's Bid. A negative determination shall result in disqualification of the bid.
- 28. Clarification of Bids**
- 28.1 To assist in the examination, evaluation, comparison of the qualification and technical and financial bids of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid, given a reasonable time for a response. Any clarification submitted by a Bidder that is not in response to a request by the Purchaser shall not be considered. The Purchaser'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 Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the Evaluation of the bids, in accordance with ITB 32.
- 28.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the Purchaser's request for clarification, its Bid may be rejected.

- 29. Deviations, Reservations, and Omissions**
- 29.1 During the evaluation of bids, the following definitions apply:
- (a) “Deviation” is a departure from the requirements specified in the Bidding Documents;
  - (b) “Reservation” is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Documents; and
  - (c) “Omission” is the failure to submit part or all of the information or documentation required in the Bidding Documents.
- 30. Determination of Responsiveness**
- 30.1 The Purchaser’s determination of a bid’s responsiveness is to be based on the contents of the bid itself, as defined in ITB 11.
- 30.2 A substantially responsive Bid is one that meets the requirements of the Bidding Documents without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that:
- (a) If accepted, would:
    - (i) Affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in the Contract; or
    - (ii) Limit in any substantial way, inconsistent with the Bidding Documents, the Purchaser’s rights or the Bidder’s obligations under the proposed Contract; or
  - (b) If rectified, would unfairly affect the competitive position of other bidders presenting substantially responsive bids.
- 30.3 The Purchaser shall examine the technical aspects of the bid submitted in accordance with ITB 16, in particular, to confirm that all requirements of Section VII, Schedule of Requirements have been met without any material deviation or reservation, or omission.
- 30.4 If a bid is not substantially responsive to the requirements of the Bidding Documents, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.
- 31. Non-conformities, Errors and Omissions**
- 31.1 Provided that a Bid is substantially responsive, the Purchaser may waive any nonmaterial nonconformities in the Bid.
- 31.2 Provided that a bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify nonmaterial nonconformities in the bid related to documentation

requirements. Requesting information or documentation on such nonconformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid.

- 31.3 Provided that a bid is substantially responsive, the Purchaser shall rectify quantifiable nonmaterial nonconformities related to the Bid Price. To this effect, the Bid Price shall be **adjusted as specified in the BDS**, for comparison purposes only, to reflect the price of a missing or non-conforming item or component.
- 32. Correction of Arithmetical Errors**
- 32.1 Provided that the Bid is substantially responsive, the Purchaser shall correct arithmetical errors on the following basis:
- (a) If there is a discrepancy between the unit price and the line item total that is obtained by multiplying the unit price by the quantity, the unit price shall prevail and the line item total shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the line item total as quoted shall govern and the unit price shall be corrected;
  - (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and
  - (c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject to (a) and (b) above.
- 32.2 Bidders shall be requested to accept correction of arithmetical errors. Failure to accept the correction in accordance with ITB 32.1 shall result in the rejection of the Bid.
- 33. Conversion to Single Currency**
- 33.1 For evaluation and comparison purposes, the currency(ies) of the Bid shall be converted in a single currency as **specified in the BDS**.
- 34. Margin of Preference**
- 34.1 **Unless otherwise specified in the BDS**, a margin of preference shall not apply.
- 35. Evaluation of Bids**
- 35.1 The Purchaser shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be permitted.
- 35.2 To evaluate a Bid (evaluation will be done for Lots (contracts)), the Purchaser shall consider the following:
- (a) The Bid Price as quoted in accordance with clause 14;

- (b) Price adjustment for correction of arithmetic errors in accordance with ITB 32.1;
  - (c) Price adjustment due to discounts offered in accordance with ITB 14.4;
  - (d) Price adjustment due to quantifiable nonmaterial nonconformities in accordance with ITB 31.3;
  - (e) Converting the amount resulting from applying (a) to (d) above, if relevant, to a single currency in accordance with ITB 33;
  - (f) The additional evaluation factors as specified in Section III, Qualification and Evaluation Criteria, 2. Evaluation.
- 35.3 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 taken into account in bid evaluation.
- 35.4 If these Bidding Documents allows Bidders to quote separate prices for different lots (contracts), the methodology to determine the lowest evaluated price of the lot (contract) combinations, including any discounts offered in the Bid Submission Form, is specified in Section III, Qualification and Evaluation Criteria.
- 35.5 The Purchaser's evaluation of a bid will exclude and not take into account:
- (a) In the case of Goods manufactured in the Purchaser's Country, sales and other similar taxes, which will be payable on the goods if a contract is awarded to the Bidder;
  - (b) In the case of Goods manufactured outside the Purchaser's Country, already imported or to be imported, customs duties and other import taxes levied on the imported Good, sales and other similar taxes, which will be payable on the Goods if the contract is awarded to the Bidder;
  - (c) In the case of Related Services, customs duties and sales and other similar taxes that will be payable on the Related Services if the contract is awarded to the Bidder;
  - (d) Any allowance for price adjustment during the period of execution of the contract, if provided in the bid.
- 35.6 The Purchaser's evaluation of a bid may require the consideration of other factors, in addition to the Bid Price quoted in accordance with ITB 14. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services. The effect of the factors selected, if any, shall be expressed in monetary terms to facilitate comparison of bids, unless otherwise **specified in Section III**,

**Qualification and Evaluation Criteria.** The criteria and methodologies to be used shall be as specified in Section III, Qualification and Evaluation Criteria.

- 35.7 If the bid, which results in the lowest Evaluated Bid Price, is significantly lower than the Purchaser's estimate, the Purchaser shall require the Bidder to produce detailed price analyses for any or all items of the Price Schedules, to demonstrate the internal consistency of those prices with the supply requirements and the method and schedule proposed. If one or several inconsistencies are evidenced, or if a bidder does not provide the required detailed price analyses, the bid shall be declared non-compliant and rejected.
- 36. Comparison of Bids** 36.1 The Purchaser shall compare the evaluated prices of all substantially responsive bids established in accordance with ITB 35.2 to determine the lowest evaluated bid.
- 37. Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids** 37.1 The Purchaser reserves the right to accept or reject any Bid, and to annul the bidding process and reject all Bids at any time prior to Contract Award, without thereby incurring any liability to Bidders. In case of annulment, all Bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

## F. Award of Contract

- 38. Award Criteria** 38.1 Subject to ITB 37.1, the Purchaser shall award the Contract to the qualified, pursuant to ITB 27, Bidder whose bid has been determined to be the lowest evaluated bid and is substantially responsive to the Bidding Documents.
- 39. Purchaser's Right to Vary Quantities at Time of Award** 39.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section VII, Schedule of Requirements, provided this does not exceed the percentages **specified in the BDS**, and without any change in the unit prices or other terms and conditions of the bid and the Bidding Documents.
- 40. Notification of Award** 40.1 Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its Bid has been accepted; for this purpose the Letter of Acceptance Form attached to these Bidding Documents shall be used. The notification letter (hereinafter and in the Conditions of Contract and Contract Forms called the "Letter of Acceptance") shall specify the sum that the Purchaser will pay the Supplier in consideration of the supply of Goods (hereinafter and in the Conditions of Contract and Contract Forms called "the Contract Price"). At the same time, the Purchaser shall also notify all other Bidders of the results of the bidding.

- 40.2 Until a formal Contract is prepared and executed, the notification of award shall constitute a binding Contract.
- 40.3 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, after notification of award in accordance with ITB 40.1, requests in writing the grounds on which its bid was not selected.
- 41. Signing of Contract**
- 41.1 Promptly after notification, the Purchaser shall send the successful Bidder the Contract Agreement.
- 41.2 Within twenty-eight (28) days of receipt of the Contract Agreement, the successful Bidder shall sign, date, and return it to the Purchaser.
- 41.3 Notwithstanding ITB 41.2 above, in case signing of the Contract Agreement is prevented by any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, where such export restrictions arise from trade regulations from a country supplying those products/goods, systems or services, the Bidder shall not be bound by its bid, always provided however, that the Bidder can demonstrate to the satisfaction of the Purchaser and of the KfW that signing of the Contract Agreement has not been prevented by any lack of diligence on the part of the Bidder in completing any formalities, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract.
- 42. Performance Security**
- 42.1 Within twenty-eight (28) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the Performance Security<sup>2</sup> in accordance with the GC, using for that purpose the Performance Security Form included in Section X, Contract Forms. Bidders are free to use any reputable bank acceptable to the Purchaser for the purpose of issuing the required performance security, subject to all conditions of ITB 42 and GC are being met without exception the issuing bank shall have a correspondent bank in the Purchaser's country.
- 42.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose bid is qualified, pursuant to ITB 27, and substantially responsive.

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<sup>2</sup> Bonds shall only be permitted with prior approval from KfW.

## Section II. Bid Data Sheet (BDS)

The following specific data for the goods to be procured shall complement, supplement, or amend the provisions in the Instructions to Bidders (ITB). Whenever there is a conflict, the provisions herein shall prevail over those in ITB.

ITB Clause Reference	A. General
ITB 1.1	The number of the Invitation for Bids is: <b>ICB-07/MOE-VTT/TVET/KfW 2016 67 211 / 003/2023-2024</b>
ITB 1.1	The Purchaser is: <b>Ministry of Education, State Department for Technical, Vocational Education and Training</b>
ITB 1.1	<p>The name and identification number of the ICB are: <b>Training and Specialized Equipment for Industrial Mechatronics, ICB-07/MOE-VTT/TVET/KfW 2016 67 211 /003/2023-2024</b></p> <p>The number, identification and names of the lots (contracts) comprising this ICB are:</p> <p><b>Lot 1: Training Equipment for Industrial Mechatronics</b></p> <p><b>Lot 2: Specialized Electronics for Industrial Mechatronics</b></p> <p><b>Bidders may apply for 1 (one) or more Lots and may be awarded 1 (one) or more Lots. Refer to ITB 35.4.</b></p>
ITB 2.1	The name of the Project is: <b>Promotion of Youth Employment and Vocational Training in Kenya</b>
	<b>B. Contents of Bidding Documents</b>
ITB 7.1	<p>For <u>clarification of bid purposes</u> only, the Purchaser's address is:</p> <p>Address:</p> <p><b>The Principal Secretary</b></p> <p><b>Ministry of Education</b></p> <p><b>State Department for Technical, Vocational Education and Training,</b></p> <p><b>Jogoo House B, Harambee Avenue,</b></p> <p><b>P.O.BOX 9583 00200 Nairobi, Kenya</b></p> <p>Electronic mail address: <b><u>tenders.moe.tvet@gmail.com</u></b></p>
ITB 7.1	Web page: <b>None</b>
	<b>C. Preparation of Bids</b>
ITB 10.1	The language of the bid is: <b>English.</b>

	All correspondence exchange shall be in the English language. Language for translation of supporting documents and printed literature is English.
<b>ITB 11.1 (b ix)</b>	The Bidder shall submit the following additional documents in its bid: <b>None.</b>
<b>ITB 13.1</b>	Alternative Bids <b>shall not be</b> considered.
<b>ITB 14.5</b>	The prices quoted by the Bidder <b>shall not</b> be adjustable.
<b>ITB 14.7</b>	The Incoterms edition is Incoterms 2010.
<b>ITB 14.8 (a), (b), (c)</b>	The prices quoted shall be <b>exclusive</b> of all government taxes and levies.
<b>ITB 14.8 (b) (i)</b>	Named Place of Destination: <b>- CIP Kiambu Institute of Science and Technology (KIST)</b>
<b>ITB 14.8 (d) (i)</b>	<b>Local services (including transportation to final delivery destination and related services) shall be quoted.</b> <b>Final delivery destinations (Project Sites):</b> <b>according to Section VII. Schedule of Requirements, 6. Distribution of Goods.</b>
<b>ITB 15.1</b>	The prices shall be quoted by the bidder in: <b>€/EUR</b> The Bidder <b>is not</b> required to quote in the currency of the Purchaser's Country the portion of the bid price that corresponds to expenditures incurred in that currency.
<b>ITB 16.4</b>	Period of time the Goods are expected to be functioning (for the purpose of spare parts): <b>five (5) years</b>
<b>ITB 17.2 (a)</b>	<b>Manufacturer's authorization is: <u>required</u> for items specified in Section VII. Schedule of Requirements, 3. Technical Specifications.</b> <b>As a general requirement, the Bidder is required to submit documentation to substantiate that it is an authorized dealer, distributor, or reseller of the goods being procured.</b>
<b>ITB 17.2 (b)</b>	After sales service is: <b>required for items specified in Section VII. Schedule of Requirements, 3. Technical Specifications.</b>
<b>ITB 18.1</b>	The bid validity period shall be <b>120</b> days.
<b>ITB 18.3 (a)</b>	The bid price shall be adjusted by the following factor: <b>Not applicable</b>
<b>ITB 19.1</b>	A Bid Security <b>is</b> required.

	<p>If a Bid Security shall be required, the percentage and currency of the Bid Security shall be:</p> <p><b>The amount and currency of the bid security shall be 2% of the bid price for each lot in Euro.</b></p> <p><b>The Bid Security shall be issued by a reputable bank or financial institution acceptable to the Purchaser, and shall be without deviation in the form as provided in Section IV. Bidding Forms.</b></p>
<b>ITB 19.3 (c)</b>	Other types of acceptable securities: <b>None, no other forms of bid securities are acceptable.</b>
<b>ITB 19.9</b>	<b>Not applicable.</b>
<b>ITB 20.1</b>	In addition to the original of the bid, the number of copies is: <b>1 (one).</b> <b>See also ITB 21.1 below.</b>
<b>ITB 20.2</b>	The written confirmation of authorization to sign on behalf of the Bidder shall consist of: <b>original power of attorney established in the name of the signatory of the bid.</b>
	<b>D. Submission and Opening of Bids</b>
<b>ITB 21.1</b>	<p>Bidders take note the requirement stated in the Instructions to Bidders to submit an electronic version, in addition to the physical Original and Copy:</p> <p><b>“In addition an electronic version as true and complete colour copy in one file in unalterable PDF format on CD or flash drive must be submitted ...”</b></p>
<b>ITB 22.1</b>	<p><b>For bid submission purposes, the Purchaser’s address is:</b></p> <p>Address:</p> <p><b>The Principal Secretary</b> <b>Ministry of Education</b> <b>State Department for Technical, Vocational Education and Training,</b> <b>Jogoo House B, Harambee Avenue,</b> <b>P.O.BOX 9583 00200 Nairobi, Kenya</b></p> <p>Floor-Room number: <b>Tender Box marked Ministry of Education, State Department for Technical, Vocational Education and Training KfW project located on the ground floor.</b></p> <p><b>The deadline for the submission of bids is:</b> Date: <b>30th January 2024</b> Time: <b>11.00 am East Africa Time (EAT)</b></p>
<b>ITB 25.2</b>	<p>The bid opening shall take place at:</p> <p>Address:</p>

	<p><b>Ministry of Education</b>  <b>State Department for Technical, Vocational Education and Training,</b>  <b>Jogoo House B, Harambee Avenue,</b>  <b>10th Floor at the conference room</b>  <b>P.O.BOX 9583 00200 Nairobi, Kenya</b></p> <p>No minimum number of bids is required in order to proceed to bid opening.</p>
<b>ITB 25.2</b>	<p>The public bid opening session shall take place on/at:  Date: <b>30th January 2024</b>  Time: <b>11.00 am East Africa Time (EAT)</b></p>
	<b>E. Evaluation and Comparison of Bids</b>
<b>ITB 31.1</b>	<p>The provisions in ITB 31.1 do not apply to items classified as major items in Section VII.  Bidders are expected to quote for all the items.</p>
<b>ITB 33.1</b>	<p>The currency that shall be used for bid evaluation and comparison purposes to convert all bid prices expressed in different currencies into a single currency is: <b>€/EUR</b></p>
<b>ITB 34.1</b>	<p>A margin of domestic preference <b>shall not</b> apply.</p>
	<b>F. Award of Contract</b>
<b>ITB 39.1</b>	<p>The maximum percentage by which quantities may be increased is:  <b>10%</b>  The maximum percentage by which quantities may be decreased is:  <b>10%</b></p>
<b>ITB 41.3</b>	<p><b>Bidders are advised to familiarize themselves with the Kenya Bureau of Standards' Pre-Export Verification of Conformity (PVoC) requirements, which may be applicable to item(s) in this tender and for which the successful bidder is responsible. More information is available at <a href="http://www.kebs.org">www.kebs.org</a></b></p>

# Section III. Qualification and Evaluation Criteria

*[This Section complements the Instructions to Bidders. It contains the criteria that the Purchaser may use to determine whether a Bidder has the required qualifications and to evaluate a bid. No other criteria shall be used.]*

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## 1. Qualification (ITB 27)

All qualification documents listed here (including attached forms, and required support documents) shall be submitted in accordance with ITB 25 and ITB 27, and will be evaluated first; only bids passing the qualification shall be evaluated further.

### 1.1 The Qualification Document submission shall consist of:

#### (1) Bid Submission Form, Declaration of Undertaking, and Eligibility (Table 1)

Bidder shall meet the requirements as per Table 1 and submit the required forms and supporting documents; forms provided in this bidding document may not be amended but only completed following the instructions in this bidding document.

Mandatory or Optional (when required) + power of attorney

#### (2) Historical Contract Non-Performance (Table 2)

Both forms must be submitted duly filled and signed; any non-performance during the required period stated in Form CON-2 will lead to disqualification of the Bidder's bid.

#### (3) Financial Situation and Performance (Table 3)

Bidders shall meet the requirements as per Table 3 and submit the required forms and supporting documents; forms provided in this bidding document may not be amended but only completed following the instructions in this bidding document.

#### (4) Experience (Table 4)

Submission of the required number of references (similar experience / contracts).

#### (5) Technical Capacity, Spare Parts and Local Agent (if applicable) (Table 5)

Submission of the required information, in response the requirements stated in Section VII, Schedule of Requirements.

## 1.2. Requirements and Criteria

The following tables describe qualification requirements and criteria, in accordance with ITB 27 and Section III (Qualification), which must be satisfied by each Bidder. Only specified requirements and criteria shall be used, and requirements and criteria not included in the tables below shall not be used in the evaluation of the Bidder's Qualification.

<b>Table 1</b>							
<b>Qualification Criteria</b>			<b>Compliance Requirements</b>				<b>Documentation</b>
<b>No.</b>	<b>Subject</b>	<b>Requirement</b>	<b>Single Entity</b>	<b>Joint Venture (existing or intended)</b>			<b>Submission Requirements</b>
				<b>All Parties Combined</b>	<b>Each Member</b>	<b>One Member</b>	
<b>1. Bid Submission Form, Declaration of Undertaking, and Eligibility</b>							
1.1	<b>Bid Submission Form</b>	Submission, in accordance with Section III, Qualification	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Bid Submission Form
1.2	<b>Declaration of Undertaking</b>	Submission, in accordance with ITB 12	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Declaration of Undertaking
1.3	<b>Power of Attorney</b>	Submission, in accordance with ITB 20.2	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Power of Attorney (free format)
1.4	<b>Joint Venture Agreement</b>	JV Agreement or Letter of Intent, (in case of a JV), in accordance with ITB 4.1	N/A	Must meet requirement	Must meet requirement	N/A	Relevant pages of an existing JV Agreement or Letter of Intent (free format)
1.5	<b>Nationality</b>	Nationality in accordance with ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Forms ELI – 1.1 and ELI - 1.2 (in case of JV), with attachments
1.6	<b>Conflict of Interest</b>	No conflicts of interest in accordance with ITB 4.2	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Bid Submission Form
1.7	<b>KfW Eligibility</b>	Not being ineligible for KfW financing, as described in ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Bid Submission Form
1.8	<b>State-owned Entity</b>	Meets conditions of ITB 4.3	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Forms ELI – 1.1 and ELI - 1.2 (in case of JV), with attachments

<b>Table 2</b>							
<b>Qualification Criteria</b>			<b>Compliance Requirements</b>				<b>Documentation</b>
<b>No.</b>	<b>Subject</b>	<b>Requirement</b>	<b>Single Entity</b>	<b>Joint Venture (existing or intended)</b>			<b>Submission Requirements</b>
				<b>All Parties Combined</b>	<b>Each Member</b>	<b>One Member</b>	
<b>2. Historical Contract Non-Performance</b>							
2.1	<b>History of Non-Performing Contracts</b>	Termination of a contract <sup>1</sup> did not occur as a result of Supplier default in the past 5 years.	Must meet requirement <sup>2</sup>	Must meet requirements	Must meet requirement <sup>2</sup>	N/A	Form CON - 2
2.2	<b>Suspension Based on Execution of Bid Securing Declaration by the Purchaser or withdrawal of the Bid within Bid validity</b>	Not under suspension based on execution of a Bid Securing Declaration pursuant to ITB 4.4 or withdrawal of a Bid pursuant ITB 19.9.	Must meet requirement	Must meet requirement	Must meet requirement	N/A	Bid Submission Form
2.3	<b>Pending Litigation</b>	All pending litigation shall in total not represent more than one hundred percent (100%) of the Bidder's net worth and shall be treated as resolved against the Bidder.	Must meet requirement	N/A	Must meet requirement	N/A	Form CON – 2

<sup>1</sup> Non-performance shall include all terminations of contracts where (a) non-performance was not challenged by the supplier, including through referral to the dispute resolution mechanism under the respective contract, and (b) contracts that were so challenged but fully settled against the supplier. Non-performance shall not include contracts where Purchaser's decision was overruled by the dispute resolution mechanism.

<sup>2</sup> This requirement also applies to contracts executed by the Bidder as a JV member.

Table 3							
Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
<b>3. Financial Situation and Performance</b>							
3.1	<b>Financial Capabilities</b>	<p><b>Submission of audited balance sheets</b> or if not required by the law of the Bidder's country, other financial statements acceptable to the Purchaser, <b>for the last three (3) years</b> to demonstrate the current soundness of the Bidder's financial position based on the following criteria:</p> <p><b>a) Liquidity ratio <math>\geq 1.1</math></b>            ((Current Assets) / (Current Liabilities) <math>\geq 1.1</math>)</p> <p><b>b) Indebtedness ratio <math>\leq 80\%</math></b>            ((Total Liabilities) x 100 / (Total Assets) <math>\leq 80\%</math>)</p>	Must meet requirement	N/A	Must meet requirement	N/A	Form FIN – 3.1, with attachments

Table 3							
Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
<b>3. Financial Situation and Performance</b>							
3.2	<b>Average Annual Supplier Turnover</b>	Minimum average annual supplier turnover of following amounts for <b>Lot 1: EUR 820,000 (Euro Eight hundred and Twenty thousand), and Lot 2: EUR 3,400,000 (Euro three million Four hundred Thousand), (for clarity: if bidding for both Lots, the minimum requirement is the sum total of both values),</b> calculated as total certified payments received for contracts in progress and/or completed within the last <b>three (3) years</b> , divided by <b>three (3) years</b> .	Must meet requirement	Must meet requirement	Must meet at least twenty-five percent (25%) of the requirement	Must meet at least forty percent (40%) of the requirement	Form FIN – 3.2
3.3	<b>Access to Liquidity</b>	Access to liquidity of <b>at least</b> the following amounts for <b>Lot 1: EUR 410,000 (Euro four hundred and ten thousand) and Lot 2: EUR 1,700,000 (Euro One Million, seven hundred thousand) (for clarity: if bidding for both Lots, the minimum requirement is the sum total</b>	Must meet requirement	Must meet requirement	Must meet at least twenty-five percent (25%) of the requirement	Must meet at least forty percent (40%) of the requirement	Liquidity Letter issued by the Bidder's bankers (free format)

Table 3							
Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
<b>3. Financial Situation and Performance</b>							
		of both values).					

Table 4							
Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
<b>4. Experience</b>							
4.1	<b>Similar Experience</b>	<b>A minimum number of similar<sup>3</sup> contracts</b> specified below that have been satisfactorily and substantially <sup>4</sup> completed as Supplier, or joint venture member <sup>5</sup> , during the past <b>five (5) years: minimum two (2) contracts, each of a</b>	Must meet requirement	Must meet requirement <sup>6</sup>	N/A	N/A	Form EXP - 4.1 (one per contract)

<sup>3</sup> The similarity shall be based on the physical size, complexity, methods/technology and/or other characteristics described in Section VII, Schedule of Requirements. Summation of number of small value contracts (less than the value specified under requirement) to meet the overall requirement will not be accepted.

<sup>4</sup> Substantial completion shall be based on 80% or more completed under the contract.

<sup>5</sup> For contracts under which the Bidder participated as a joint venture member or sub-contractor, only the Bidder's share, by value, shall be considered to meet this requirement.

<sup>6</sup> In the case of JV, the value of contracts completed by its members shall not be aggregated to determine whether the requirement of the minimum value of a single contract has been met. Instead, each contract performed by each member shall satisfy the minimum value of a single contract as required for single entity. In determining whether the JV meets the requirement of total number of contracts, only the number of contracts completed by all members each of value equal or more than the minimum value required shall be aggregated.

Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
<b>4. Experience</b>							
		minimum value for Lot 1: EUR 410,000 (Euro four hundred and ten thousand) and Lot 2: EUR 1,700,000 (Euro One Million, seven hundred thousand)					

Qualification Criteria			Compliance Requirements				Documentation
No.	Subject	Requirement	Single Entity	Joint Venture (existing or intended)			Submission Requirements
				All Parties Combined	Each Member	One Member	
<b>5. Technical Capacity, Spare Parts and Local Agent (if applicable)</b>							
5.1	<b>Technical Capacity</b>	If so required in Section VII, Schedule of Requirements, the Bidder's <b>must have qualified personnel to satisfy the requirements.</b>	Must meet requirement	Must meet requirement	N/A	N/A	Support documents as required in Section VII, Schedule of Requirements
5.2	<b>Spare Parts</b>	If so required in Section VII, Schedule of Requirements, the Bidder's <b>must confirm availability of spare parts.</b>	Must meet requirement	Must meet requirement	N/A	N/A	Form SPA - 5.1, and any support documents as required in Section VII, Schedule of Requirements

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5.3	<b>Local Agent</b>	According to Section VII, Schedule of Requirements: <b>If applicable, qualified local agent.</b>	Must meet requirement	Must meet requirement	N/A	N/A	Support documents as required in Section VII, Schedule of Requirements
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## **2. Evaluation (ITB 35)**

### **2.1 Evaluation Criteria (ITB 35.6)**

**Not applicable.**

### **2.2. Multiple Contracts (ITB 35.4)**

The Purchaser shall award multiple contracts to the Bidder that offers the lowest evaluated combination of bids (one contract per bid) and has met the qualification criteria (this Section III, 1. Qualification (ITB 27)).

The Purchaser shall:

- (a) Evaluate only lots or contracts that include at least the percentages of items per lot and quantity per item as specified in ITB Sub Clause 14.6;
- (b) Take into account:
  - (i) The lowest-evaluated bid for each lot; and
  - (ii) The price reduction per lot and the methodology for its application as offered by the Bidder in its bid.

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### **3. Domestic Preference (ITB 34)**

Not applicable.

## Documents Index

Bidders must carefully read the requirements detailed in the Instruction to Bidders (ITB), Bid Data Sheet (BDS), Qualification and Evaluation Criteria, Schedule of Requirements, and Contract Conditions.

Bidders must ensure they submit all requested documents according to the specified conditions, completed in full and including attachments as applicable. This refers to administrative aspects (e.g. minimum days of bid validity after submission deadline; validity of their Bid Security; all blank spaces filled in the templates; duly-signed, dated, and initialled documents etc.) and technical aspects (e.g. offers for every item in the Lot, submission of supporting catalogues/leaflets etc.). In case of a Joint Venture (JV) bid, ensure relevant documents are completed and submitted for each member, as specified in the qualification criteria and provided forms/templates.

Bidders are requested to clearly compile and index their submitted documents. The following table serves as a guide for Bidders to compile and index their bids. In case of discrepancies, the referenced clauses or sections take precedent over other parts of the table.

No.	Clause reference	Document	Template provided?	Location of template	Completed in full according to requirements, and submitted?
1	ITB 11.1 (a)(i)	Bid Submission Form	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
2	ITB 11.1 (a)(ii)	Declaration of Undertaking	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
3	ITB 11.1 (a)(iii)	Power of Attorney (authorized signatory)	NO	(free format)	<input type="checkbox"/>
4	ITB 11.1 (b)(iii)	Bid Security	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
5	ITB 11.1 (a)(iv)	Form ELI - 1.1: Bidder Information Form ( <i>and Attachments</i> )	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
6	ITB 11.1 (a)(iv)	Form ELI - 1.2: Bidder's JV Information Form ( <i>if applicable</i> ) ( <i>and Attachments</i> )	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
7	ITB 11.1 (a)(iv)	Form CON - 2: Historical Contract Non-Performance, Pending Litigation and Litigation History	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
8	ITB 11.1 (a)(iv)	Form FIN - 3.1: Financial Situation and Performance ( <i>and Attachments: Financial Documents</i> )	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
9	ITB 11.1 (a)(iv)	Form FIN - 3.2: Average Annual Turnover	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
10	ITB 11.1 (a)(iv)	Liquidity Letter issued by the Bidder's banker	NO	(free format)	<input type="checkbox"/>
11	ITB 11.1 (a)(iv)	Form EXP - 4.1: Experience ( <i>One form per contract</i> )	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
12	ITB 11.1 (a)(iv)	Technical Capacity (CVs)	NO	(free format)	<input type="checkbox"/>
13	ITB 16.4	Form SPA - 5.1: Spare Parts	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
14	ITB 17.2 (b)	Local Agent ( <i>if applicable</i> ) ( <i>CVs, company description, certificate of registration, tax registration</i> )	NO	(free format)	<input type="checkbox"/>
15	ITB 11.1 (b)(ii)	Price Schedule: Goods Manufactured Outside the Purchaser's Country, to be Imported ( <i>if applicable</i> ) ( <i>One schedule per Lot</i> )	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
16	ITB 11.1 (b)(ii)	Price Schedule: Goods Manufactured Outside the Purchaser's Country, Already Imported ( <i>if applicable</i> ) ( <i>One schedule per Lot</i> )	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
17	ITB 11.1 (b)(ii)	Price Schedule: Goods Manufactured in the Purchaser's Country ( <i>if applicable</i> ) ( <i>One schedule per Lot</i> )	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
18	ITB 17.2 (a)	Manufacturer's Authorization ( <i>required for listed items specified in Technical Specifications &gt; "Manufacturer's Authorization"</i> )	YES (MA)	(Section IV. Bidding Forms)	<input type="checkbox"/>
		( <i>General requirement: submit documentation as authorized dealer, distributor, reseller</i> )	NO	(free format)	<input type="checkbox"/>
19	GCC 13	List of Goods and Delivery Schedule	YES	(Section VII. Schedule of Requirements)	<input type="checkbox"/>
20	ITB 11.1 (b)(ii)	Lot 1: Technical Specifications ( <i>if applicable</i> ) ( <i>and Attachments: documentary evidence - catalogues/leaflets/literature</i> )	YES	(Section VII. Schedule of Requirements)	<input type="checkbox"/>

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21	ITB 11.1 (b)(ii)	Lot 2: Technical Specifications <i>(if applicable) (and Attachments: documentary evidence - catalogues/leaflets/literature)</i>	YES	<i>(Section VII. Schedule of Requirements)</i>	<input type="checkbox"/>
22	-	<i>Any other supporting documentation, determined as relevant by the Bidder to their bid.</i>	NO	<i>(free format)</i>	<input type="checkbox"/>

# Section IV. Bidding Forms

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## Declaration of Undertaking

Reference name of the Application/Offer/Contract: ("Contract")<sup>1</sup>

To: ("Project Executing Agency")

1. We recognise and accept that KfW only finances projects of the Project Executing Agency ("PEA")<sup>2</sup> subject to its own conditions which are set out in the Funding Agreement it has entered into with the PEA. As a matter of consequence, no legal relationship exists between KfW and our company, our Joint Venture or our Subcontractors under the Contract. The PEA retains exclusive responsibility for the preparation and implementation of the Tender Process and the performance of the Contract.
2. We hereby certify that neither we nor any of our board members or legal representatives nor any other member of our Joint Venture including Subcontractors under the Contract are in any of the following situations:
  - 2.1) being bankrupt, wound up or ceasing our activities, having our activities administered by courts, having entered into receivership, reorganisation or being in any analogous situation;
  - 2.2) convicted by a final judgement or a final administrative decision or subject to financial sanctions by the United Nations, the European Union or Germany for involvement in a criminal organisation, money laundering, terrorist-related offences, child labour or trafficking in human beings; this criterion of exclusion is also applicable to legal Persons, whose majority of shares are held or factually controlled by natural or legal Persons which themselves are subject to such convictions or sanctions;
  - 2.3) having been convicted by a final court decision or a final administrative decision by a court, the European Union, national authorities in the Partner Country or in Germany for Sanctionable Practice in connection with a Tender Process or the performance of a Contract or for an irregularity affecting the EU's financial interests (*in the event of such a conviction, the Applicant or Bidder shall attach to this Declaration of Undertaking supporting information showing that this conviction is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction*);
  - 2.4) having been subject, within the past five years to a contract termination fully settled against us for significant or persistent failure to comply with our contractual obligations during such Contract performance, unless this termination was challenged and dispute resolution is still pending or has not confirmed a full settlement against us;
  - 2.5) not having fulfilled the applicable fiscal obligations with regard to the payment of taxes at the respective tax residence and in the country of origin of the PEA (*contractors based in Annex 1 countries (<https://www.consilium.europa.eu/de/policies/eu-list-of-non-cooperative-jurisdictions/>) must submit a fully completed and legally countersigned declaration of tax conformity (Appendix 1 to the Declaration of Undertaking) in addition to the Declaration of Undertaking at the time of award*)

<sup>1</sup> Capitalised terms used, but not otherwise defined in this Declaration of Undertaking have the meaning given to such term in KfW's "Guidelines for the Procurement of Consulting Services, Works, Goods, Plant and Non-Consulting Services in Financial Cooperation with Partner Countries".

<sup>2</sup> The PEA means the purchaser, the employer, the client, as the case may be, for the procurement of Consulting Services, Works, Plant, Goods or Non-Consulting Services.

*of the contract/contract review. This shall become an integral part of the contract. Failure to submit may result in exclusion from the awarding procedure. For contractors based in countries not listed as Annex I countries, only the Declaration of Undertaking must be submitted, and not the declaration of tax conformity;*

2.6) being subject to an exclusion decision of the World Bank or any other multilateral development bank and being listed on the website <http://www.worldbank.org/debar> or respectively on the relevant list of any other multilateral development bank (*in the event of such exclusion, the Applicant or Bidder shall attach to this Declaration of Undertaking supporting information showing that this exclusion is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction*); or

2.7) being guilty of misrepresentation in supplying the information required as condition to participation in this Tender Procedure.

3. We hereby certify that neither we, nor any of the members of our Joint Venture or any of our Subcontractors under the Contract are in any of the following situations of conflict of interest:

3.1) being an affiliate controlled by the PEA or a shareholder controlling the PEA, unless the stemming conflict of interest has been brought to the attention of KfW and resolved to its satisfaction;

3.2) having a business or family relationship with a PEA's staff involved in the Tender Process or the supervision of the resulting Contract, unless the stemming conflict of interest has been brought to the attention of KfW and resolved to its satisfaction;

3.3) being controlled by or controlling another Applicant or Bidder, or being under common control with another Applicant or Bidder, or receiving from or granting subsidies directly or indirectly to another Applicant or Bidder, having the same legal representative as another Applicant or Bidder, maintaining direct or indirect contacts with another Applicant or Bidder which allows us to have or give access to information contained in the respective Applications or Offers, influencing them or influencing decisions of the PEA;

3.4) being engaged in a Consulting Services activity, which, by its nature, may be in conflict with the assignments that we would carry out for the PEA;

3.5) in the case of procurement of Works, Plant or Goods:

- i. having prepared or having been associated with a Person who prepared specifications, drawings, calculations and other documentation to be used in the Tender Process of this Contract;
- ii. having been recruited (or being proposed to be recruited) ourselves or any of our affiliates, to carry out works supervision or inspection for this Contract;

4. If we are a state-owned entity, and compete in a Tender Process, we certify that we have legal and financial autonomy and that we operate under commercial laws and regulations.

5. We undertake to bring to the attention of the PEA, which will inform KfW, any change in situation with regard to points 2 to 4 here above.

6. In the context of the Tender Process and performance of the corresponding Contract:

6.1) neither we nor any of the members of our Joint Venture nor any of our Subcontractors under the Contract have engaged or will engage in any Sanctionable Practice during the Tender Process and in the case of being awarded a Contract will engage in any Sanctionable Practice during the performance of the Contract;

6.2) neither we nor any of the members of our Joint Venture or any of our Subcontractors under the Contract shall acquire or supply any equipment nor operate in any sectors under an embargo of the United Nations, the European Union or Germany; and

6.3) we commit ourselves to complying with and ensuring that our Subcontractors and major suppliers under the Contract comply with international environmental and labour standards, consistent with laws and regulations applicable in the country of implementation of the Contract and the fundamental conventions of the International Labour Organisation<sup>3</sup> (ILO) and international environmental treaties. Moreover, we shall implement environmental and social risks mitigation measures when specified in the relevant environmental and social management plans or other similar documents provided by the PEA and, in any case, implement measures to prevent sexual exploitation and abuse and gender based violence.

7. In the case of being awarded a Contract, we, as well as all members of our Joint Venture partners and Subcontractors under the Contract will, (i) upon request, provide information relating to the Tender Process and the performance of the Contract and (ii) permit the PEA and KfW or an auditor appointed by either of them, and in the case of financing by the European Union also to European institutions having competence under European Union law, to inspect the respective accounts, records and documents, to permit on the spot checks and to ensure access to sites and the respective project.
8. In the case of being awarded a Contract, we, as well as all our Joint Venture partners and Subcontractors under the Contract undertake to preserve above mentioned records and documents in accordance with applicable law, but in any case for at least six years from the date of fulfillment or termination of the Contract. Our financial transactions and financial statements shall be subject to auditing procedures in accordance with applicable law. Furthermore, we accept that our data (including personal data) generated in connection with the preparation and implementation of the Tender Process and the performance of the Contract are stored and processed according to the applicable law by the PEA and KfW.

Name: \_\_\_\_\_ In the capacity of: \_\_\_\_\_

Duly empowered to sign in the name and on behalf of<sup>4</sup>: \_\_\_\_\_

Signature:

Dated:

\_\_\_\_\_

<sup>3</sup> In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

<sup>4</sup> In the case of a JV, insert the name of the JV. The person who will sign the application, bid or proposal on behalf of the Applicant/Bidder shall attach a power of attorney from the Applicant/Bidder.

**Appendix 1**

**Declaration of tax conformity – binding confirmation for legal persons**

**Name of company**

I hereby confirm with my signature that:

1. I am authorised to make this declaration on behalf of the above company;
2. the company properly pays all taxes in accordance with the tax laws of the country in which the company is domiciled;
3. the company is not currently nor has been in the past involved in any legal proceedings concerning the taxation of the company;
4. the company will duly pay taxes that may arise from the provision of contracted services;
5. all information and statements provided in advance are complete, accurate in terms of content and currently correct.

.....

(Place)

.....

(Date)

.....

(Name of the consultant)

.....

(Signature(s))

## Appendix 1

**Declaration of tax conformity – binding confirmation for natural persons**

I hereby confirm with my signature that:

1. I make this declaration in my name/on my own account;
2. I duly pay taxes that I am obliged to pay under the tax law of my country of residence;
3. I am not currently involved in tax law court proceedings, nor have I been in the past;
4. I will duly pay taxes that may arise from the provision of contracted services;
5. I have filled in all the information and statements of this confirmation in full, accurately in terms of content and that they are up to date at this time.

.....  
(Place)                      (Date)                      (Name of the person)

.....  
(Signature)

## Form ELI - 1.1: Bidder Information Form

*[The Bidder shall in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted.]*

Date: *[Insert]*

ICB No.: *[Insert]*

Page *[Insert]* of *[Insert]* pages

Bidder's name: <i>[Insert Bidder's legal name]</i>
In case of Joint Venture (JV), legal name of each member: <i>[Insert legal name of each member in JV]</i>
Bidder's actual or intended country of registration: <i>[Insert actual or intended country of registration]</i>
Bidder's year of registration: <i>[Insert Bidder's year of registration]</i>
Bidder's address in country of registration: <i>[Insert Bidder's legal address in country of registration]</i>
Bidder's Authorized Representative Information Name: <i>[Insert Authorized Representative's name]</i> Address: <i>[Insert Authorized Representative's address]</i> Telephone/Fax numbers: <i>[Insert Authorized Representative's telephone/fax numbers]</i> E-mail address: <i>[Insert Authorized Representative's email address]</i>
<p><b>1. Attached are copies of original documents of</b> <i>[Check the box(es) of the attached original documents]</i></p> <p><input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association) and/or documents of registration of the legal entity named above, in accordance with ITB 4.5;</p> <p><input type="checkbox"/> In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1;</p> <p><input type="checkbox"/> In case of a state-owned enterprise or institution, in accordance with ITB 4.3 documents establishing:</p> <p style="padding-left: 40px;">a) Legal and financial autonomy;</p> <p style="padding-left: 40px;">b) Operation under commercial law;</p> <p style="padding-left: 40px;">c) Establishing that the Bidder is not dependent agency of the Purchaser.</p> <p><b>2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.</b></p>

Title of the person signing the Bid *[Insert complete title of the person signing the Bid]*

Signature of the person named above *[Signature of the person named above]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

## Form ELI - 1.2: Bidder's JV Information Form

*[The Bidder shall fill in this Form in accordance with the instructions indicated below. The following table shall be filled in for the Bidder and for each member of a Joint Venture. No alterations to its format shall be permitted and no substitutions shall be accepted.]*

Date: *[Insert]*

ICB No.: *[Insert]*

Page *[Insert]* of *[Insert]* pages

Bidder's name: <i>[Insert Bidder's legal name]</i>
Bidder's JV Member's name: <i>[Insert JV's Member legal name]</i>
Bidder's JV Member's country of registration: <i>[Insert JV's Member country of registration]</i>
Bidder's JV Member's year of registration: <i>[Insert JV Member's year of registration]</i>
Bidder's JV Member's legal address in country of registration: <i>[Insert JV's Member legal address in country of registration]</i>
Bidder's JV Member's Authorized Representative Information Name: <i>[Insert name of JV's Member Authorized Representative]</i> Address: <i>[Insert address of JV's Member Authorized Representative's]</i> Telephone/Fax numbers: <i>[Insert telephone/fax numbers of JV's Member Authorized Representative]</i> E-mail address: <i>[Insert email address of JV's Member Authorized Representative]</i>
<p><b>1. Attached are copies of original documents of</b> <i>[Check the box(es) of the attached original documents]</i></p> <p><input type="checkbox"/> Articles of Incorporation (or equivalent documents of constitution or association) of the legal and/or documents of registration of the legal entity named above, in accordance with ITB 4.1 and ITB 4.5;</p> <p><input type="checkbox"/> In case of a state-owned enterprise or institution, in accordance with ITB 4.3 documents establishing:</p> <p style="padding-left: 40px;">a) Legal and financial autonomy;</p> <p style="padding-left: 40px;">b) Operation under commercial law;</p> <p style="padding-left: 40px;">c) Establishing that the Bidder is not dependent agency of the Purchaser.</p> <p><b>2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.</b></p>

Title of the person signing the Bid *[Insert complete title of the person signing the Bid]*

Signature of the person named above *[Signature of the person named above]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

## Form CON - 2: Historical Contract Non-Performance, Pending Litigation and Litigation History

*[To be completed by the Bidder and by each member of the Bidder's JV]*

Bidder's Name: *[Insert]*

Date: *[Insert]*

JV Member's Name: *[Insert or state "None" if the Bidder is not a Joint Venture]*

ICB No.: *[Insert]*

Page *[Insert]* of *[Insert]* pages

### Non-Performed Contracts in accordance with Section III, Qualification and Evaluation Criteria

**Contract non-performance did not occur since 1st January 2018** specified in Section III, Qualification and Evaluation Criteria, Qualification, subclause 2.1.

**Or** *[Tick as appropriate]*

**Contract(s) not performed since 1st January 2018** specified in Section III, Qualification and Evaluation Criteria, Qualification, subclause 2.1 are as follows:

Year	Non- performed Portion of Contract	Contract Identification	Total Contract Amount (current value, currency, exchange rate and €-equivalent)
<i>[Insert year]</i>	<i>[Insert amount and percentage]</i>	Contract Identification: <i>[Indicate complete contract name/ number, and any other identification]</i> Name of Purchaser: <i>[Insert full name]</i> Address of Purchaser: <i>[Insert street/city/country]</i> Reason(s) for non-performance: <i>[Indicate main reason(s)]</i>	<i>[Insert amount and values]</i>

Non-Performed Contracts in accordance with Section III, Qualification and Evaluation Criteria			
Pending Litigation, in accordance with Section III, Qualification and Evaluation Criteria and Requirements			
<input type="checkbox"/> <b>No pending litigation</b> in accordance with Section III, Qualification and Evaluation Criteria and Requirements, Qualification, subclause 2.3. <b>Or</b> <i>[Tick as appropriate]</i>			
<input type="checkbox"/> <b>Pending litigation</b> in accordance with Section III, Qualification and Evaluation Criteria, Qualification, subclause 2.3 as indicated below:			
Year of dispute	Amount in dispute (currency)	Contract Identification	Total Contract Amount (currency), €-equivalent (exchange rate)
<i>[Insert year]</i>	<i>[Insert amount]</i>	Contract Identification: Name of Purchaser: Address of Purchaser: Matter in dispute: Party who initiated the dispute: Status of dispute:	<i>[Insert amount and values]</i>

Title of the person signing the Bid *[Insert complete title of the person signing the Bid]*

Signature of the person named above *[Signature of the person named above]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

## Form FIN - 3.1: Financial Situation and Performance

*[To be completed by the Bidder and by each member of the Bidder's JV]*

Bidder's Name: *[Insert]*

Date: *[Insert]*

JV Member's Name: *[Insert or state "None" if the Bidder is not a Joint Venture]*

ICB No.: *[Insert]*

Page *[Insert]* of *[Insert]* pages

### 1. Financial Data

Type of Financial Information in <i>[Insert Bidder's home currency]</i>	Historic information for last available three (3) years (amount in Bidder's home-currency, exchange rate, €-equivalent)		
	<i>[Insert Year 1]</i>	<i>[Insert Year 2]</i>	<i>[Insert Year 3]</i>
<b>Statement of Financial Position (Information from Balance Sheet)</b>			
Total Assets (TA)	<i>[Insert value in Bidder's home currency]</i>	<i>[Insert value in Bidder's home currency]</i>	<i>[Insert value in Bidder's home currency]</i>
	<i>[Insert exchange rate]</i>	<i>[Insert exchange rate]</i>	<i>[Insert exchange rate]</i>
	<i>[Insert €-equivalent]</i>	<i>[Insert €-equivalent]</i>	<i>[Insert €-equivalent]</i>
Total Liabilities (TL)			
Total Equity/Net Worth (NW)			
Current Assets (CA)			
Current Liabilities (CL)			
Working Capital (WC)			
<b>Information from Income Statement</b>			
Total Revenue (TR)			
Profits Before Taxes (PBT)			
<b>Cash Flow Information</b>			
Cash Flow from Operating Activities			

### 2. Financial Documents

The Bidder and its parties shall provide **copies of financial statements for the last available three (3) years** pursuant Section III, Qualification and Evaluation Criteria, Qualification, Sub-factor 3.1.

The financial statements shall:

- (a) Reflect the financial situation of the Bidder 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 statements<sup>1</sup> for the last available three (3) years** required above and complying with the requirements.

Title of the person signing the Bid *[Insert complete title of the person signing the Bid]*

Signature of the person named above *[Signature of the person named above]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

---

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

## Form FIN - 3.2: Average Annual Turnover

*[To be completed by the Bidder and by each member of the Bidder's JV]*

Bidder's Name: *[Insert]*

Date: *[Insert]*

JV Member's Name: *[Insert or state "None" if the Bidder is not a Joint Venture]*

ICB No.: *[Insert]*

Page *[Insert]* of *[Insert]* pages

Annual Turnover Data			
Year	Currency & Amount	Exchange Rate	€-equivalent
Average Annual Turnover <sup>1</sup>			

Title of the person signing the Bid *[Insert complete title of the person signing the Bid]*

Signature of the person named above *[Signature of the person named above]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

<sup>1</sup> See Section III, Qualification and Evaluation Criteria, Qualification, Sub-Factor 3.2

## Form EXP - 4.1: Experience

*(To be completed by the Bidder and by each member of the Bidder's JV)*

Bidder's Legal Name: *[Insert]*

Date: *[Insert]*

JV Member's Legal Name: *[Insert]*

ICB No.: *[Insert]*

Page *[Insert]* of *[Insert]* pages

**Note: fill out one form for each contract (refer to minimum requirements stated in Section III. Evaluation and Qualification Criteria, 4.1 "Similar Experience")**

<b>Similar Contract No. <i>[Insert specific number]</i> of <i>[Total number of contracts]</i> required</b>	<b>Information</b>	
Contract Identification:		
Award date:		
Completion date:		
Role in Contract:		
Total contract amount:		€ equivalent: <i>[Insert]</i>
If member in a JV, specify participation in total contract amount:	<i>[Insert]</i> %	€ equivalent: <i>[Insert]</i>
Purchaser's Name:		
Address:		
Telephone/fax number:		
E-mail:		
Description of the similarity in accordance with Sub-Factor 4.1 or 4.2 of Section III:		
Amount		
Physical size		
Complexity		
Methods/Technology		
Other Characteristics		

Title of the person signing the Bid *[Insert complete title of the person signing the Bid]*

Signature of the person named above *[Signature of the person named above]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

## Form SPA - 5.1: Spare Parts

*[To be completed by the Bidder and by at least one member of the Bidder's JV]*

Bidder's Legal Name: *[Insert]*

Date: *[Insert]*

JV Member's Legal Name: *[Insert]*

ICB No.: *[Insert]*

Page *[Insert]* of *[Insert]* pages

We confirm that, if awarded the Contract, spare parts will be available on short notice, through us / our local agent / the manufacturer-appointed official representative *[Select as appropriate]*.

We further confirm that, if awarded the Contract, we (i) will carry sufficient inventories to assure ex-stock supply of consumables and consumable spares, and other spare parts and components will be supplied as promptly as possible but in any case within *[Insert number of days – same as used in the PC attached at the end of this Bidding Document]* days of placement of order; (ii) will be for a period of *[Insert number of years – same as used in the PC attached at the end of this Bidding Document]* years from the date of delivery and commissioning under obligation to supply spare parts, and will, in the event of termination of production of the spare parts, send an advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements

Title of the person signing the Bid *[Insert complete title of the person signing the Bid]*

Signature of the person named above *[Signature of the person named above]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

## Bid Submission Form

*[The Bidder shall prepare his Bid Submission Form on a Letterhead paper specifying the Bidder's complete name, address and communication details].*

***[Note: All italicized text is for use in preparing these forms by bidders and shall be deleted from the final document.]***

Date: *[Insert date]*

ICB No.: *[Insert ICB No.]*

To: *[Insert complete name of Purchaser]*

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Documents, including Addenda *[Insert Addenda No./Nos., if any]* issued in accordance with Instructions to Bidders (ITB 8);
- (b) We meet the eligibility requirements and have no conflict of interest in accordance with ITB 4;
- (c) We have not been suspended nor declared ineligible by the Purchaser based on execution of a Bid Securing Declaration in the Purchaser's country in accordance with ITB 4.4;
- (d) We offer to supply in conformity with the Bidding Documents and in accordance with the Delivery Schedule(s) specified in the Schedule of Requirements the following Goods: *[Insert a brief description of the Goods and Related Services]*;
- (e) The total price of our Bid, excluding any discounts offered in item (f) below is:
  - i) In case of only one lot, total price of the Bid is: *[Insert total price and currency in words and figures] [Delete if multiple lots are offered]*
  - ii) In case of multiple lots, total price of each lot is: *[Insert a list/table showing the total price and currency in words and figures for each lot offered] [Delete if only one lot is offered]*
  - iii) In case of multiple lots, total price of all lots (sum of all lots) is: *[Insert the total price and currency in words and figures for all lots offered] [Delete if only one lot is offered]*
- (f) The discounts offered and the methodology for their application are:
  - i) The discounts offered are: *[Specify in detail each discount offered; if no discount is offered state "None"]*
  - ii) The exact method of calculations to determine the net price after application of discounts is: *[Specify in detail the method that shall be used to apply the offered discounts; if no discount is offered state "None"]*
- (g) Our bid shall be valid for a period of *[Insert the number of calendar days]* days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

- (h) If our bid is accepted, we commit to obtain and submit a performance security in accordance with ITB 42 of the Bidding Documents;
- (i) We are not participating, as a Bidder, in more than one bid in this bidding process in accordance with ITB 4.2(e), other than alternative bids submitted in accordance with ITB 13;
- (j) We, along with any of our subcontractors, suppliers, consultants, manufacturers, or service providers for any part of the contract, are not subject to, and not controlled by an entity or individual that is subject to, a temporary suspension or a debarment imposed by a member of the World Bank Group or a debarment imposed by the KfW, the World Bank in accordance with the Agreement of Mutual Enforcement of Debarment Decisions between the World Bank and other development banks, or any other similar funding agency;
- (k) We have paid, or will pay the following commissions, gratuities, or fees with respect to the bidding process or execution of the Contract: *[Insert complete name of each recipient, its full address, the reason for which each commission, gratuity or fee was or will be paid and the amount and currency of each such commission, gratuity or fee]*

Name of Recipient	Address	Reason	Amount

*[If none has been paid or is to be paid, insert "none"].*

- (l) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;
- (m) We understand and accept that (i) the Purchaser is not bound to accept the lowest evaluated bid or any other bid that the Purchaser may receive, and (ii) the Purchaser reserves the right to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders; and
- (n) We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in any type of fraud and corruption.

Name of the Bidder *[Insert the complete name of the bidder; in the case of a Bid submitted by a Joint Venture insert the name of the Joint Venture as Bidder]*

Name of the person duly authorized to sign the Bid on behalf of the Bidder *[Insert complete name of the person duly authorised to sign the Bid; the person signing the Bid shall have the power of attorney given by the Bidder to be attached with the Bid Schedules]*

Title of the person signing the Bid *[Insert complete title of the person signing the Bid]*

Signature of the person named above *[Signature of the person named above]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

## Price Schedule Forms

*[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules** shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements; **separate Price Schedules must be submitted for each lot offered**].*

## Price Schedule: Goods Manufactured Outside the Purchaser's Country, to be Imported

Currencies in accordance with ITB Sub-Clause 15						Date: <i>[Insert]</i>	
						ICB No.: <i>[Insert]</i>	
						Lot No.: <i>[Insert, if applicable]</i>	
						Page <i>[Insert]</i> of <i>[Insert]</i>	
1	2	3	4	5	6	7	8
Line Item No.	Description of Goods	Country of Origin	Delivery Time in Days at named place of CIP <b>in accordance with ITB 14.8 (b) (i)</b>	Quantity and Physical Unit	Unit Price & Currency <b>CIP</b> in accordance with ITB 14.8(b)(i)	Unit Price & Currency Related Services (handling, inland transportation to final destination(s), commissioning, and where applicable installation and training in accordance with ITB 14.8(b)(ii))	Total Price & Currency per Line item (Col. (6+7)x5)
<i>[Insert number of the item]</i>	<i>[Insert name of Goods]</i>	<i>[Insert country of origin of the Goods]</i>	<i>[Insert quoted Delivery Time in days]</i>	<i>[Insert number of units to be supplied and name of the physical unit]</i>	<i>[Insert currency &amp; unit price CIP per unit]</i>	<i>[Insert currency &amp; unit price for all required local services]</i>	<i>[Insert currency &amp; total price of the line item]</i>
<b>Total Price (including currency) CIP plus local services (if any) <i>[Insert name of Purchaser's Country]</i></b>							

Name of Bidder *[Insert complete name of Bidder]* Signature of Bidder *[Signature of person(s) signing the Bid]* Date *[Insert Date]*

## Price Schedule: Goods Manufactured Outside the Purchaser's Country, Already Imported

Currencies in accordance with ITB Sub-Clause 15								Date: <i>[Insert]</i>	
								ICB No.: <i>[Insert]</i>	
								Lot No.: <i>[Insert, if applicable]</i>	
								Page <i>[Insert]</i> of <i>[Insert]</i>	
1	2	3	4	5	6	7	8	9	10
Line Item No.	Description of Goods	Country of Origin	Delivery Time in Days at named place of CIP destination <b>in accordance with ITB 14.8 (c) (i)</b>	Quantity and Physical unit	CIP Unit Price & Currency excluding Custom Duties and Import Taxes paid, in accordance with ITB 14.8(c)(i)	Unit Price & Currency Related Services (handling, commissioning, and where applicable installation and training in accordance with ITB 14.8(c)(ii))	Custom Duties and Import Taxes paid & Currency per unit in accordance with ITB 14.8(c)(iii), [to be supported by documents]	Sales and other taxes paid or payable & Currency per item if Contract is awarded, in accordance with ITB 14.8(c)(iv)	Currency & Total Price per line item (Col. (6+7)x5)
<i>[Insert number of the item]</i>	<i>[Insert name of Goods]</i>	<i>[Insert country of origin of the Goods]</i>	<i>[Insert quoted Delivery Time in days]</i>	<i>[Insert number of units to be supplied and name of the physical unit]</i>	<i>[Insert unit price per unit]</i>	<i>[Insert currency &amp; unit price for all required local services]</i>	<i>[Insert custom duties and taxes paid &amp; currency per unit]</i>	<i>[Insert sales and other taxes payable &amp; currency per item if Contract is awarded]</i>	<i>[Insert currency &amp; total price per line item]</i>
<b>Total Price (including currency) CIP plus local services (if any) <i>[Insert name of Purchaser's Country]</i></b>									

Name of Bidder *[Insert complete name of Bidder]* Signature of Bidder *[Signature of person(s) signing the Bid]* Date *[Insert Date]*

## Price Schedule: Goods Manufactured in the Purchaser's Country

Currencies in accordance with ITB Sub-Clause 15						Date: <i>[Insert]</i>	
						ICB No.: <i>[Insert]</i>	
						Lot No.: <i>[Insert, if applicable]</i>	
						Page <i>[Insert]</i> of <i>[Insert]</i>	
1	2	3	4	5	6	7	8
Line Item No.	Description of Goods	Delivery Time in Days at named place of destination <b>in accordance with ITB 14.8 (a) (i)</b>	Quantity and Physical unit	Unit Price & Currency CIP	Unit Price & Currency Related Services (handling, commissioning, and where applicable installation and training in accordance with ITB 14.8(a)(ii))	Sales and other taxes payable per line item if Contract is awarded, in accordance with ITB 14.8(a)(iii)	Total Price & Currency per line item (Col. (5+6) x 4)
<i>[Insert number of the item]</i>	<i>[Insert name of Goods]</i>	<i>[Insert quoted Delivery Time in days]</i>	<i>[Insert number of units to be supplied and name of the physical unit]</i>	<i>[Insert CIP unit price &amp; currency]</i>	<i>[Insert currency &amp; unit price for all required local services]</i>	<i>[Insert sales and other taxes payable per line item if Contract is awarded]</i>	<i>[Insert total price &amp; currency per item]</i>
<b>Total Price (including currency) CIP plus local services (if any) <i>[Insert name of Purchaser's Country]</i></b>							

Name of Bidder *[Insert complete name of Bidder]* Signature of Bidder *[Signature of person(s) signing the Bid]* Date *[Insert Date]*

*[Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.]*

## Bid Security

**Beneficiary:** *[Insert name and Address of Purchaser]*

**Date:** *[Insert date of issue]*

**BID GUARANTEE No.:** *[Insert guarantee reference number]*

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of the bidder, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called "the Applicant") has submitted or will submit to the Beneficiary its bid (hereinafter called "the Bid") for the supply of *[Insert project, object of the contract/brief description of the goods and related services]* under International Competitive Bidding No. *[Insert ICB number]*.

Waiving all objections and defenses, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]* upon receipt by us of the Beneficiary's first 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 Bid during the period of bid validity set forth in the Applicant's Bid Submission Form (the Bid Validity Period"); or
- (b) Having been notified of the acceptance of its Bid by the Beneficiary during the Bid Validity Period, (i) has failed to sign the contract agreement, or (ii) has failed to furnish the performance security, in accordance with the Instructions to Bidders ("ITB") of the Beneficiary's bidding document.

This guarantee shall expire not later than *[Insert expiry date]*<sup>1</sup>.

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

*[As preferred option regarding guarantee rules insert<sup>2</sup>: This guarantee is subject to the Uniform Rule for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758.]*

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Place, date

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Guarantor's authorized signature(s)

<sup>1</sup> Pursuant to ITB Clause 19.3 the guarantee must be valid for at least 42 days beyond the bid validity.

<sup>2</sup> In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.

## Manufacturer's Authorization

*[The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. The Bidder shall include it in its bid, if so indicated in the **BDS**, and for Items listed in the **BDS** and/or **Specifications**]*

***[Note: All italicized text is for use in preparing these forms by bidders and shall be deleted from the final document.]***

Date: *[Insert date]*

ICB No.: *[Insert ICB No.]*

To: *[Insert complete name of Purchaser]*

### WHEREAS

We *[Insert complete name of Manufacturer]*, who are official manufacturers of *[Insert type of goods manufactured]*, having factories at *[Insert full address of Manufacturer's factories]*, do hereby authorize *[Insert complete name of Bidder]* to submit a bid the purpose of which is to provide the following Goods, manufactured by us:

*[Insert name and or brief description of the Goods],*

and to subsequently negotiate and sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 28 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Signed: *[Insert signature(s) of authorized representative(s) of the Manufacturer]*

Name: *[Insert complete name(s) of authorized representative(s) of the Manufacturer]*

Title: *[Insert title]*

Date signed *[Insert date of signing]* day of *[Insert month]* *[Insert year]*

# Section V. Eligibility Criteria

## Eligibility in KfW-Financed Procurement

1. Consulting Services, Works, Goods, Plant and Non-Consulting Services are eligible for KfW financing regardless of the country of origin of the Contractors (including Subcontractors and suppliers for the execution of the Contract), except where an international embargo or sanction by the United Nations, the European Union or the German Government applies.
2. Applicants/Bidders (including all members of a Joint Venture and proposed or engaged Subcontractors) shall not be awarded a KfW-financed Contract if, on the date of submission of their Application/Offer or on the intended date of Award of a Contract, they:
  - 2.1 are bankrupt or being wound up or ceasing their activities, are having their activities administered by courts, have entered into receivership, or are in any analogous situation;
  - 2.2 have been
    - (a) convicted by a final judgement or a final administrative decision or subject to financial sanctions by the United Nations, the European Union and/or the German Government for involvement in a criminal organisation, money laundering, terrorist-related offences, child labour or trafficking in human beings; this criterion of exclusion is also applicable to legal Persons, whose majority of shares are held or factually controlled by natural or legal Persons which themselves are subject to such convictions or sanctions;
    - (b) convicted by a final court decision or a final administrative decision by a court, the European Union or national authorities in the Partner Country or in Germany for Sanctionable Practice during any Tender Process or the performance of a Contract or for an irregularity affecting the EU's financial interests, unless they provide supporting information together with their Declaration of Undertaking (Form available as Appendix to the Application/Offer which shows that this conviction is not relevant in the context of this Contract and that adequate compliance measures have been taken in reaction;
  - 2.3 have been subject within the past five years to a Contract termination fully settled against them for significant or persistent failure to comply with their contractual obligations during Contract performance, unless this termination was challenged and the dispute resolution is still pending or has not confirmed a full settlement against them;
  - 2.4 have not fulfilled applicable fiscal obligations regarding payments of taxes either in the country where they are constituted or the PEA's country;
  - 2.5 are subject to an exclusion decision of the World Bank or any other multilateral development bank and are listed in the respective table with debarred and cross-debarred firms and individual available on the World Bank's website or any other multilateral development bank unless they provide supporting information together with their Declaration of Undertaking which shows that this exclusion is not relevant in the context of this Contract or
  - 2.6 have given misrepresentation in documentation requested by the PEA as part of the Tender Process of the relevant Contract.

- 3 State-owned entities may compete only if they can establish that they (i) are legally and financially autonomous, and (ii) operate under commercial law. To be eligible, a state-owned entity shall establish to KfW's satisfaction, through all relevant documents, including its charter and other information KfW may request, that it: (i) is a legal entity separate from their state (ii) does not currently receive substantial subsidies or budget support; (iii) operates like any commercial enterprise, and, inter alia, is not obliged to pass on its surplus to their state, can acquire rights and liabilities, borrow funds and be liable for repayment of its debts, and can be declared bankrupt

# Section VI. KfW Policy – Sanctionable Practice – Social and Environmental Responsibility

## 1) Sanctionable Practice

The PEA and the Contractors (including all members of a Joint Venture and proposed or engaged Subcontractors) must observe the highest standard of ethics during the Tender Process and performance of the Contract.

By signing the Declaration of Undertaking the Contractors declare that (i) they did not and will not engage in any Sanctionable Practice likely to influence the Tender Process and the corresponding Award of Contract to the PEA's detriment, and that (ii) in case of being awarded a Contract they will not engage in any Sanctionable Practice.

Moreover, KfW requires to include in the Contracts a provision pursuant to which Contractors must permit KfW and in case of financing by the European Union also to European institutions having competence under European law to inspect the respective accounts, records and documents relating to the Tender Process and the performance of the Contract, and to have them audited by auditors appointed by KfW.

KfW reserves the right to take any action it deems appropriate to check that these ethics rules are observed and reserves, in particular, the rights to:

- (a) reject an Offer for Award of Contract if during the Tender Process the Bidder who is recommended for the Award of Contract has engaged in Sanctionable Practice, directly or by means of an agent in view of being awarded the Contract;
- (b) declare misprocurement and exercise its rights on the ground of the Funding Agreement with the PEA relating to suspension of disbursements, early repayment and termination if, at any time, the PEA, Contractors or their legal representatives or Subcontractors have engaged in Sanctionable Practice during the Tender Process or performance of the Contract without the PEA having taken appropriate action in due time satisfactory to KfW to remedy the situation, including by failing to inform KfW at the time they knew of such practices.

KfW defines, for the purposes of this provision, the terms set forth below as follows:

<b>Coercive Practice</b>	The impairing or harming, or threatening to impair or harm, directly or indirectly, any person or the property of the person with a view to influencing improperly the actions of a person.
<b>Collusive Practice</b>	An arrangement between two or more persons designed to achieve an improper purpose, including influencing improperly the actions of another person.
<b>Corrupt Practice</b>	The promising, offering, giving, making, insisting on, receiving, accepting or soliciting, directly or indirectly, of any illegal payment or undue advantage of any nature, to or by any person, with the intention of influencing the actions of any person or causing any person to refrain from any action.

- Fraudulent Practice** Any action or omission, including misrepresentation that knowingly or recklessly misleads, or attempts to mislead, a person to obtain a financial benefit or to avoid an obligation.
- Obstructive Practice** Means (i) deliberately destroying, falsifying, altering or concealing evidence material to the investigation or the making of false statements to investigators, in order to materially impede an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice, or threatening, harassing or intimidating any Person to prevent them from disclosing their knowledge of matters relevant to the investigation or from pursuing the investigation, or (ii) any act intended to materially impede the exercise of KfW's access to contractually required information in connection with an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice.
- Sanctionable Practice** Any Coercive Practice, Collusive Practice, Corrupt Practice, Fraudulent Practice or Obstructive Practice (as such terms are defined herein) which is unlawful under the Financing Agreement.

## 2) Social and Environmental Responsibility

Projects financed in whole or partly in the framework of Financial Cooperation have to ensure compliance with international Environmental, Social, Health and Safety (ESHS) standards (including issues of sexual exploitation and abuse and gender based violence) Contractors in KfW-financed projects shall consequently undertake in the respective Contracts to:

- (a) comply with and ensure that all their Subcontractors and major suppliers, i.e. for major supply items comply with international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the respective Contract and the fundamental conventions of the International Labour Organisation<sup>1</sup> (ILO) and international environmental treaties and;
- (b) implement any environmental and social risks mitigation measures, as identified in the environmental and social impact assessment (ESIA) and further detailed in the environmental and social management plan (ESMP) as far as these measures are relevant to the Contract and implement measures for the prevention of sexual exploitation and abuse and gender-based violence

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<sup>1</sup> In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

## **PART 2 – Supply Requirements**

# Section VII. Schedule of Requirements

## Contents

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6. Distribution of Goods .....	Error! Bookmark not defined.

## 1. List of Goods and Delivery Schedule

[The Purchaser shall fill in this table, with the exception of the column "**Bidder's offered Delivery date**" to be filled by the Bidder. The item list should be identical to the Price Schedule (Section IV); alternatively, lot numbers may be used if the required delivery time is identical for all items of a lot]

Line Item No. or Lot No.	Description of Goods	Quantity <sup>1</sup>	Physical Unit <sup>1</sup>	Named Place of Destination as specified in BDS	Delivery (as per Incoterms) Date		
					Earliest Delivery Date <sup>2</sup> at named place of destination	Latest Delivery Date at named place of destination	Bidder's offered Delivery date at named place of destination [to be provided by the bidder]
Lot 1	All items as described in Technical Specifications	-	-	Final destination in accordance with "6. Distribution of Goods."	No minimum	180 days	
Lot 2	All items as described in Technical Specifications	-	-	Final destination in accordance with "6. Distribution of Goods."	No minimum	180 days	

<sup>1</sup> Only required to be filled in case of line items being listed; not required for lots.

<sup>2</sup> Earliest delivery date is used in cases where the Purchaser cannot accept delivery before a specific date, e.g. if construction work is still under way; if there is no earliest delivery date required, leave this column blank.

## 2. List of Related Services and Completion Schedule

<b>Service No.</b>	<b>Description of Service</b>	<b>Quantity<sup>1</sup></b>	<b>Physical Unit<sup>1</sup></b>	<b>Place where Services shall be Performed</b>	<b>Final Completion Date(s) of Services</b>
<i>[Insert Service No]</i>	<i>[Insert description of Related Services]</i>	<i>[Insert quantity of items to be supplied]</i>	<i>[Insert physical unit for the items]</i>	<i>[Insert name(s) of the Place]</i>	<i>[Insert required Completion Date(s)]</i>
<b>1</b>	<b>Inland transportation</b>	-	-	<b>To final destination / project site(s)</b>	<b>30 days</b>
<b>2</b>	<b>Installation and Commissioning</b>	-	-	<b>Final destination / project site(s)</b>	<b>Within 45 days of delivery</b>
<b>3</b>	<b>Training</b>	-	-	<b>Final destination / project site(s)</b>	<b>Within 45 days of delivery</b>
<b>4</b>	<b>Servicing and maintenance</b>	-	-	<b>Final destination / project site(s)</b>	<b>As specified in “3. Technical Specifications”</b>

<sup>1</sup> Only use if quantity/physical unit can be clearly attributed.

### 3. Technical Specifications

Bidder shall note that specifications, standards for workmanship, material and equipment, and open or hidden references to brand names or catalogue numbers, designated by the Purchaser in the Specifications, are intended to be descriptive only and not restrictive.

The bidder may substitute other specifications, authoritative standards, brand names and/or catalogue numbers in its Bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions are equivalent or superior to those designated in the Specifications.

All Goods offered by Bidders and supplied by the successful Bidders must be new and unused, be of the most recent or current models, and must incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

#### List of Bid Packages

Lot No.	Description	No. of Line Items	Page No.
Lot 1	Training Equipment for Industrial Mechatronics	41	-
Lot 2	Specialized Electronics for Industrial Mechatronics	252	-

**Bidders shall provide a clause-by-clause commentary (see attached table) on the Purchaser's specifications, demonstrating the Goods' and related Services' responsiveness to those specifications or a statement of deviation and exceptions to the provisions of the Purchaser's specifications.** General replies to the Purchaser's specifications, such as 'acceptable', 'comply', 'yes', etc., or simply copying the Purchaser's specifications word-by-word, will be treated without exception as non-responsive during the technical evaluation; bidders are also requested to strictly refrain from self-classification of their replies to the Purchaser's specifications (such as 'better', 'compliant', 'acceptable', etc.); **any statement made by the Bidder(s) must be verifiable in the provided catalogues/leaflets/literature** ('custom-made' catalogues/leaflets/literature, i.e. literature specifically manufactured for this tender, and e.g. only consisting of a picture and some text, and generally appearing unprofessional, will not be accepted).

#### Technical Evaluation

The technical evaluation shall be conducted based on a thorough comparison of the Bidder's offered specifications against the Purchaser's required specifications, using the following four (4) evaluation terms: **comply** (an item complies with, or exceeds, the Purchaser's specifications; the classification 'exceeds specification' shall be used rational and an excessive overspecification, e.g. in terms of capacity, size, power, shall not be considered and accepted), **acceptable** (an item does not fully comply with the Purchaser's specifications, has minor deviations, but fulfills perfectly well the intended purpose), **borderline** (an item deviates considerably from the Purchaser's specifications, but may just be considered for the purpose

intended; this classification is not permitted for major items), and **not comply** (an item deviates to an extent not suitable for the intended purpose).

### **Bidder's Technical Capacity**

**Bidders must have at least two (2) – to be proven with CVs - qualified equipment technicians or engineers**, certified by the manufacturer(s) where appropriate, for the purpose of installation and training, and available to support the local agent for after sales services on short notice.

### **Standards and Certifications**

In accordance with “3. Technical Specifications”: Common Specifications & Requirements and Item Specifications.

### **Spare Parts Requirements**

**Spare parts must be available on short notice**, through the bidder, the bidder's local agent or the manufacturer-appointed official representative of the goods.

Mandatory consumables and/or spare parts required for the proper functioning of equipment for an initial given period of time are specified as items in “3. Technical Specifications”, as applicable.

### **After Sales Service (Local Agent)**

**If the bidder is making use of a local agent** in the Purchaser's country, the local agent must be a qualified firm handling goods' similar to those offered within their business activities, and must have at least **two (2) – to be proven with CVs - adequate and qualified maintenance and service staff**, certified by the manufacturer(s) where appropriate, for the goods offered by the bidder. **A brief description of the local agent, including registration/ licence documents and proof of tax registration shall also be provided.**

### **Common Specifications & Requirements**

The equipment and accessories are intended to be used in technical vocational education and training in Kenya, in an as much as possible near praxis environment.

The following specifications are common to all relevant items. In their bids, bidders must include information indicating compliance with these requirements.

- a) Electrical items must perform correctly, safely, and be compatible with the public Kenyan electricity supply, in terms of voltage, frequency, and interface. Bidders must factor in this requirement in their offers for electrical items.
- b) All equipment items must be provided with an instruction / user manual in the English language.
- c) All equipment items must be provided with the relevant safety and/or quality certificates (e.g. CE-marking, compliance to relevant or mandatory ISO, DIN, IEC standards).

- d) All equipment items must include a warranty in accordance with Contract Conditions, Section 28 "Warranty", valid in Kenya.
- e) In their bids, bidders must provide 1) Table of Contents 2) Sample pages for teaching instructions / books for students and trainers (if such items are required in the lot or tender).

### **Purchaser's and Supplier's Responsibilities for Installation and Work on Site**

<b>Item</b>	<b>Subject</b>	<b>Assignment</b>	<b>Responsibility</b>
1	Preparation	Each workshop/laboratory/etc. at the Project Site(s), including the necessary outlets for electricity, water supply, drain, etc., installed and functional	Purchaser
		Listing requirements for above	Supplier
2	Transportation	Arranging transportation and insurance CIP place of entry, and after customs clearance (also arranged by the Supplier) to each Project Site (final destination(s))	Supplier
		Storage on site in an easily accessible storage room at the Purchaser's premises	Purchaser
		Lifting and handling on site	Purchaser
		Supervision of above	Supplier
		Unpacking and checking against the contract	Purchaser and Supplier
		Processing of damages and/or insurance claims	Purchaser and Supplier
3	Installation	Foundation works for equipment (including materials)	Purchaser
		Listing requirements for above	Supplier
		Supply of utilities for installation	Purchaser
		All necessary material to connect various items into functioning systems	Supplier
		Installation	Supplier
4	Electric Wiring	Up to the required sockets at point of installation	Purchaser
		Listing requirements for above	Supplier
5	Ancillary Items	Any ancillary items required for the proper operation of each item, unless part of the specifications	Purchaser

Item	Subject	Assignment	Responsibility
6	User Training	For items defined and listed in the specifications	Supplier
7	<b>Acceptance</b>	<b>Acceptance of delivered items</b>	<b>Purchaser and Beneficiaries</b>

### Manufacturer's Authorization

The following items require a manufacturer's authorization to be submitted by the Supplier:

Lot 1	Reference is made to Section II. Bid Data Sheet (BDS); B. Contents of Bidding Documents; ITB 17.2 (a)
Lot 2	Reference is made to Section II. Bid Data Sheet (BDS); B. Contents of Bidding Documents; ITB 17.2 (a)  <b>Manufacturer's Authorization is required for the following items:</b>  * 219 Set of Basic equipment for mechatronic stations (Station 1-6)  * 248 Robot station

### Installation of items

The following items require installation by the Supplier:

Lot 1	Items: 3 Tool Presetting Device 7 Tool Cabinets with viewing window swing doors 8 Upright Drilling Machine 9 Bench Drilling Machine 10 Workbench for item 9. 143 Sheet Metal Rack 144 Cantilever Arm Racking 161 Screw Air Compressor 179 Conventional Turning Machine (Lathe) + Accessories 180 Installation and Commissioning 181 Practical User Training 182 Conventional Milling Machine + Accessories
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	<p>183 Installation and Commissioning</p> <p>184 Practical User Training</p> <p>185 Cylindrical Grinding Machine + Accessories</p> <p>186 Installation and Commissioning</p> <p>187 Practical User Training</p> <p>188 CNC Machining Centre (Milling Machine) for Vocational Training + Accessories</p> <p>189 Installation and Commissioning</p> <p>190 Practical User Training</p> <p>229 Welding Fumes Extraction Unit</p>
Lot 2	<p>Items:</p> <p>150 Pneumatic Experimenting Board</p> <p>165 <b>Pneumatics Supply Training Kit</b></p> <p>175 <b>Electropneumatics Training Kit</b></p> <p>177 <b>Pneumatics Control Panel/Board</b></p> <p>202 Sensor Trainer</p> <p>219 Set of Basic equipment for mechatronic stations (Station 1-6)</p> <p>222 Station 2: Additional Equipment - Separation Semi-Parts (Raw Material Storage)</p> <p>223 Station 3: Additional equipment - Filling Station (Dosing and Weighing System)</p> <p>224 Station 4: Additional equipment - Optical Quality Inspection Station</p> <p>225 Station 5: Additional equipment - Handling Station (Individual Product Mounting)</p> <p>226 Station 6: Additional equipment - Assembly and Disassembly by Pressing (in combination with "Functional Safety")</p> <p>227 Station 7: Intelligent Storage (Autonomous High Shelving Storage)</p> <p>229 SCADA PLC Package</p> <p>248 <b>Robot station</b></p> <p>325 Workstation, Hydraulics, 230V/50Hz, double sided</p> <p>328 Multiprocess welding systems (MIG/MAG, MMA, TIG)</p> <p>348 Augmented Reality Welding Simulator System</p> <p>349 Server and software for Welding Simulator</p> <p>426 PV Off-Grid Hybrid System</p> <p>431 On-Grid Inverter Board</p> <p>433 Trainer PV On-Grid System</p>

439	Simulation Software
440	Air conditioner split system (training system)
441	Student workplace
442	Teacher workplace
445	Basic Workbench
446	Roller Cabinet
452	Computer Table
460	Power Distribution Cabinet
478	Software package CNC Training Turning / Milling
479	Simulation Software for the subjects
481	User Training II

### Initial User Training for items

If not already specified as separate items in the Technical Specifications, the following items require initial user training by the Supplier:

Lot 1	As specified.
Lot 2	As specified.

Bidders are required to include the related costs in their Price Schedule(s) under local services.

### User Manuals

If not already specified as separate items in the Technical Specifications, the following items require user manuals to be provided, in English language, by the Supplier:

Lot 1	Already specified in the Technical Specifications.
Lot 2	Already specified in the Technical Specifications.

### Maintenance & Consumable Requirements

Maintenance services and consumables must be available from the supplier's appointed local agent.

If the technical specifications already specify maintenance services, spare parts and/or consumables as separate line items, then bidders are required to provide their quotations for such items.

**Environmental, Social, Health and Safety (ESHS) Requirements**

In accordance with the Technical Specifications and KfW Declaration of Undertaking.

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
Item No.	Item Name	Specifications	Unit	Quantity	Major Item	Statement of Compliance
					(Yes / No)	(Bidder's Offered Item & Specification)
N/A	N/A	1 – 2 not included in this Lot.	N/A	N/A	N/A	N/A
3	Tool Presetting Device	Tool setting desktop device; measuring range (appr.): longitudinal axis: 300 mm, diameter: 200 mm; digital measured value display: 0.01 mm; repeat accuracy: 0.01 mm; mechanical cutting edge scanning; precision dial gage display: 0.01 mm; base with hardened and ground basic adaptor; stable measurement support column; precision-guided measuring slide; quick adjustment for measuring slide; fine adjustment using trapezoidal thread; rotating precision tool holder, hardened and ground with gauges X and Z for zero point adoption / different taper sizes of exchangeable adaptor sleeves; any zero point selection; replaceable holding sleeves with different taper sizes (SK/HSK/PSC/VDI).	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	4 – 6 not included in this Lot.	N/A	N/A	N/A	N/A
7	Tool Cabinets with viewing window swing doors	Sheet Metal Cabinets; mountings for shelves at 25 mm intervals; viewing window swing doors are reinforced on the inside and can be locked by push handle using a cylinder lock; Levelling base for base cabinets, with 4 individually adjustable feet to compensate for unevenness in the floor. Colour: Body RAL 7035 light grey or equivalent, doors RAL 7016 or equivalent anthracite powder-coated. Supplied with 5 storage shelves with 100 kg load capacity, each. Height: 2000 mm, Width: 1250 mm, Depth: 500 mm.	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
8	Upright Drilling Machine	<p>Separate emergency stop impact switch, Stable casting column, depth stop, Precisely machined drill table with diagonal T-slots and circumferential cooling water channel, Drilling table 360° rotatable, V-belt cover with safety switch, V-belt quick-clamping device; massive, large base plate with grooves, strongly ribbed on the back; by swinging away the drilling table, base plate can be used as a work surface for particularly high workpieces; guaranteed concentricity measured better than 0.015 mm in the drill quill, drill spindle with precision ball bearings, large, height-adjustable protective screen with safety switch. Dimensions: Column diameter 92 mm, Length approx. 698 mm, Width/depth approx. 449 mm, Height approx. 1721 mm. Drilling performance: steel (S235JR) or equivalent 28 mm, continuous drilling performance steel (S235JR) or equivalent 24 mm. Drilling table: Workspace length 340 mm, Workspace width 360 mm, T-groove type: diagonal, T-groove size: 14 mm, Rotation 360 °, Max. distance spindle -drilling table: 860 mm, Supply voltage 400 V, 50 Hz. Machine base: Max. distance spindle - machine base 1285 mm, Work area length 320 mm, Work area width 320 mm, machine base T-groove size: 14 mm, Machine base T-groove number: 2, Machine base T-groove spacing: 120 mm. Number of gears spindle motor: 1 stages, Speed range 120 – 4000 min<sup>-1</sup>, Number of gears: 16 Stages, Speed control manually. Spindle: Quill stroke 105 mm, Spindle chuck MT 3, Reach 200 mm. Accessories: Keyless chuck 1-16 mm, Morse cone MK 3 / B16, T-nuts. With instruction manual in English;. British Standard Power Plug. CE-marking (or equivalent).</p>	Piece	2	N	<p>[Manufacturer/Brand] [Model] [Offered specifications]</p>

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
9	Bench Drilling Machine	Industrial use with safety switch and emergency stop impact switch. Safety electronics in 24 DC. Large, height-adjustable protective screen with safety switch. Dimensions: Column diameter 73 mm, Length approx. 615 mm, Width/depth approx. 330 mm, Height approx. 1015 mm; Drilling performance: Steel (S235JR) or equivalent 25 mm, continuous drilling performance steel (S235JR) or equivalent 20 mm; Drilling table: Workspace length 280 mm, Workspace width 245 mm, T-groove size 12 mm, Rotation 360 °, Angle 45 °, Max. distance spindle - drilling table 425 mm; Machine base: Max. distance spindle - machine base 618 mm, Work area length 240 mm, Work area width 250 mm, Machine base T-groove size 16 mm, Machine base T-groove number 2, Machine base T-groove spacing 170 mm; Speed range: 200 - 2440 min <sup>-1</sup> , Number of gears: 12,; Spindle: Quill stroke 80 mm, Spindle chuck MK2, Reach 180 mm; Supply Voltage: 230V, 50 Hz. Accessories: Keyless chuck 1-16 mm, Morse cone MK 2 / B16, T-nuts. With instruction manual in English. British Standard Power Plug. CE-marking (or equivalent).	Piece	2	N	[Manufacturer/Brand] [Model] [Offered specifications]
10	Workbench for item 9.	Suitable for item 9 (Bench Drilling Machine). Sturdy steel construction. Support legs 50 mm wide with cross bracing and mounting for height adjustment. Feet with plastic pads, do not damage the floor. With 2 pairs of stabilising plates for stiffening. Colour: Body and supports light grey, powder-coated. Height: 850 mm, Beech marine ply Worktop: length: 1500 mm, depth 750 mm, thickness: 50 mm; load capacity: 400 kg	Piece	2	N	[Manufacturer/Brand] [Model] [Offered specifications]
11	Machine Vice suitable for item 8. and item 9.	Suitable for item 8 (Upright Drilling Machine) and item 9 (Bench Drilling Machine). Vice in industrial quality, replaceable prism jaws, long guides on moving jaw prevent tilting, precision ground prism jaws, premium grey cast, scraped guide surfaces: Jaw height 35 mm, Jaw width 100 mm, Span 110 mm, Deep hole width 12	Piece	4	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
		mm, Length without crank 216 mm, Clamping height 40 mm, Construction height 74 mm.				
N/A	N/A	12 – 142 not included in this Lot.	N/A	N/A	N/A	N/A
143	Sheet Metal Rack	Base frame 1560×600 mm with galvanised base plate; easy-running galvanised support roller (diameter 60 mm) for easy deposit and retrieval; plug-in frames 400 mm and 800 mm high of square hollow section 30×30 mm; with insertion stop of steel plate 30 mm high; height min. 880 mm; width min. 1560 mm; depth min. 600; 5 or more compartments; load capacity per compartment min. 200 kg. CE-marking (or equivalent).	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
144	Cantilever Arm Racking	Single-sided rack; stiles each with 1 floor-level storage and 4 cantilever arms (= 5 storage levels); stiles IPE profiles IPE 120 hot-rolled; IPE profile cantilever arms, bolted; welded-on anti-roll restraints; all racks must include horizontal ties and cross braces, together with heavy-duty anchors for floor anchoring; rack width 5000 mm; depth 500 mm; load capacity per cantilever arm 400 kg; load capacity per stile incl. floor-level storage 2000 kg; rack height 2500 mm; 5 rack stiles; 4 rack bays. CE-marking (or equivalent).	Piece	3	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	145 – 160 not included in this Lot.	N/A	N/A	N/A	N/A

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
161	Screw Air Compressor	Compressed air tank inside and outside hot-dip galvanized, 15-year warranty on the container against rusting; steering trolley with parking brakes and large, puncture-proof PU foam wheels for comfortable transport; flexible tank hose line with heat protection; effective oil pre-separation by gravity (oil sump is at its deepest point); oil separator cartridge and oil filter cartridge easily accessible for maintenance; effective delivery volume approx. 270 l/min; pressure 10 bar; pressure vessel capacity 100 l; 230V, 50Hz, 3kW; sound pressure level below 70 dB(A); with pressure switch, oil heat exchanger, oil separator cartridge, compressed air outlet 1/2 inch ball valve, drive transmission: direct coupling; supplied with maintenance kit for maintenance after 2000 hours or two years of operation (e.g. air filter, oil filter, separator filter, oil); with instruction manual in English; British Standard Power Plug. CE-marking (or equivalent).	Piece	3	N	[Manufacturer/Brand] [Model] [Offered specifications]
162	Compressed Air Gun	Blow gun for compressed air; scratch-resistant surface and solvent-resistant; with easy to use interchangeable nozzles; rotating quick-release head is unlocked, stops in a range of detent positions; supplied with: steel connection adapters, with 7-piece nozzle set; operating pressure 15 bar; flow rate at 6 bar 330 l/min; case (e.g. ABS plastic box) included. CE-marking (or equivalent).	Piece	3	N	[Manufacturer/Brand] [Model] [Offered specifications]
163	Hose Reel	Industrial hose reel, sheet steel, with handle; turning handle and drum brake; hose internal diameter 9 mm; operating pressure 12 bar; usable hose length 20 m.	Piece	3	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	164 – 170 not included in this Lot.	N/A	N/A	N/A	N/A

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
171	Stepladder	Made of aluminium; stiles of rectangular hollow section, serrated square rungs 30x30 mm, permanently swaged to the stiles, tapered stiles for stability; upper ends of the stile fitted with end caps; non-slip ladder end caps; 2 high-strength Perlon straps to prevent splaying ensure high stability; transport security clips; galvanised steel hinges with screw attachment; compliance with ISO standards; no. of steps 2 x 6; length appr. 1.8 m; for working height of appr. 3 m; load capacity 150 kg. CE-marking (or equivalent).	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	172 – 176 not included in this Lot.	N/A	N/A	N/A	N/A
177	Socket Set (1/4 inch square drive)	Chrome vanadium steel, chrome-plated; with 1/2 inch square drive; 41 pieces; supplied with: hexagon sockets (surface drive), 13 pieces, sizes 4, 4.5, 5, 5.5, 6, 7, 8, 9, 10, 11, 12, 13, 14; hexagon (C 6.3) bits, 4 pieces, sizes 3, 4, 5, 6; pozidrive bits (C 6.3), 3 pieces, sizes 1/25, 2/25, 3/25; bits for Philips (C 6.3), 3 pieces, sizes 1/12, 2/25, 3/25; slot bits (C 6.3); slot bits (C 6.3), 3 pieces, sizes 3.5x0.6, 5.5x0.8; 8x1.2; bits for torx (C 6.3), 6 pieces, sizes TX10, TX15, TX20, TX25, TX30, TX40; T-handle; spin type speeder; extensions "wobble" fix, 2 pieces size 50 and 100; universal joint; ratchet with ejector; converter, size 2 (E6.3 1/4 inch - 1/4 inch; adapter E6.3, size 6.3K for 1/4 inch bits C6.3; bit adapter 1/4 inch to 1/4 inch; with ABS plastic box; drives / accessories to comply to relevant ISO standards.	Set	43	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	178 not included in this Lot.	N/A	N/A	N/A	N/A

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
179	Conventional Turning Machine (Lathe) + Accessories	Work area: appr. center width 1400 mm, minimum swing diameter over bed 550 mm, swing over cross slide 350 mm or more; headstock: minimum spindle bore 70 mm, spindle mount / taper Camlock D1-8 / MT7 or comparable, minimum spindle speed 30 1/min or less, maximum spindle speed 1600 1/min or higher, speed continuously variable or in min. 12 steps; carriage: cross slide travel 130 mm or more, tool shank 20 x 20 sqmm; tailstock: tailstock sleeve MT5 or comparable, tailstock travel 160 mm or more; threading: feed range metric threads 0.25 to 14 mm/rev., thread pitch imperial threads available in comparable range; drive capacity: motor rating main drive 4 kW or higher, supply voltage 400 V 50 Hz; measures and weights appr., maximum dimensions (l x w x h) 3000 x 1250 x 1600 mm, maximum permissible weight 2.500 kg; must include the following standard equipment: full set of wrenches, grease gun, 3-axis position indicator, 3-jaw chuck diameter 315 mm, 4-jaw face plate chuck diameter 350 mm, face plate diameter 450 mm, quick tool changer head WC, quick change tool holder WCD 32150, coolant system, steady and follow rests, stop spindle, fixed splash guard (wall), chuck guard, foot brake pedal, LED work lamp, reducing sleeve, dead center, thread gauge, operating tools, operator instructions, tool holder WCD 32x150 (3 pc), wing elements LK 5 (6 pc); Additional accessories: 1x Driving plate, 1x Reduction Sleeve MT 5/4, 1x Accessory-Set MT 4 (8 pc) - Contents / Set: reducing sleeve: MT 4 / MT 3, reducing sleeve: MT 4 / MT 2, reducing sleeve: MT 4 / MT 1, extension sleeve: MT 4 / MT 5, tool-holder bit: MT 4 / B 18, tool-holder bit: MT 4 / B 16, quick-action chuck: 3-16 mm / B 18, quick-action chuck: 1-13 mm / B 16, 1x Clamped Turning Tool Set 25 mm - includes 8 different clamped turning tools with 1 each indexable insert, plus 1 indexable insert set, cutting edge height of 25 mm, indexable inserts P25 for	Piece	3	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
		<p>forged, rolled, and tempered steel, 1x Indexable Insert Set 25 mm (30 pc) - P25 Indexable Inserts for forged, rolled and tempered steel, 1x Live Centers MT 5; operator manual in English; compliant with ISO standards; with British power plug. CE-marking (or equivalent).</p>				
180	Installation and Commissioning	<p>Refer to item 179 (Conventional Turning Machine (Lathe) + Accessories). Installation and commissioning of the machines at the final destination (Kiambu Institute of Science and Technology - KIST).</p>	Piece	1	Y	<p>[Manufacturer/Brand] [Model] [Offered specifications]</p>

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
181	Practical User Training	Refer to item 179 (Conventional Turning Machine (Lathe) + Accessories). User training for Trainers (2-4 participants) at the final destination (Kiambu Institute of Science and Technology - KIST). Aim / usage of the machines: training on how to produce cylindrical parts, not automated. Minimum goal of the training: user is aware of work and safety regulations of the respective machine, and is able to fully operate, maintain and care for it with the help of supplied instruction manuals. Language: English. Duration of training: appr. 2 days	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]
182	Conventional Milling Machine + Accessories	Work area: minimum table set up area 1350 x 320 mm; travels: minimum longitudinal travel 900 mm, minimum cross travel 320 mm, minimum vertical travel: 375 mm; vertical milling head: swivel angle of milling head $\pm 360^\circ$ , minimum spindle speed (vertical) 45 1/min or lower, maximum spindle speed (vertical) 1600 1/min or higher, spindle mount ISO 40; horizontal milling spindle: minimum spindle speed (horizontal) 35 1/min or less, maximum spindle speed (horizontal) 1500 1/min or more, minimum feed X, Y, Z axis 30 mm/min or less, maximum feed X, Y, Z axis 600 mm/min or higher; drive motor capacity: milling head spindle 3 kW or higher, level spindle 3 kW or higher, feed motor 0,75 kW or higher, supply voltage 400 V 50 Hz; measures and weights appr.: maximum overall dimensions (l x w x h) 2000 x 2500 x 2500 mm, maximum permissible weight 2500 kg; must include the following standard equipment: dividing head, tail stock, chip tray, coolant system, central lubrication, 3-axis position indicator, M16 draw bar, outer arbor support for horizontal milling, LED work lamp, operating tools, 1 each horizontal arbor (diameter 22 mm and 27 mm), Accessory-Set ISO 40 5 pc: Contents / Set: Reducing Sleeve: ISO 40 / MT 2, reducing sleeve: ISO 40 / MT 3, reducing sleeve: ISO 40 / MT 4, tool-holder bit: ISO 40 / B 18, quick-action chuck: 3-16 mm / B, Swing Elements LK 5 (4 pc); Additional	Piece	3	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
		accessories:1x ER 49 Collet Set (15 pc) - 3,4,5,6,8,10,12,14,15,16,18,20,22,24 and 25 mm; 1x ER 40 Collet Chuck / Mount ISO 40; 1x HS 125 Hydraulic Machine Vise; 1x Clamping tool Set De Luxe 14/M12; 1x End Milling Set HSS TiN; 1x Roughing Shank Cutter (10 pc); 1x Shell End Milling Arbor Ø16 SK 40; 1x Shell End Milling Arbor Ø22 SK 40; 1x Shell End Milling Arbor Ø27 SK 40; 1x Roughing End Mill Cutter 40; 1x Roughing End Mill Cutter 50; 1x Roughing End Mill Cutter 63; 1x Roughing End Mill Cutter 80; operator and instruction manual in English; compliant with ISO standards; with British power plug. CE-marking (or equivalent).				
183	Installation and Commissioning	Refer to item 182 (Conventional Milling Machine + Accessories). Installation and commissioning of the machines at the final destination (Kiambu Institute of Science and Technology - KIST).	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]
184	Practical User Training	Refer to item 182 (Conventional Milling Machine + Accessories). User training for Trainers (2-4 participants) at the final destination (Kiambu Institute of Science and Technology - KIST). Aim / usage of the machines: training on how to produce various parts through chipping procedures, not automated. Minimum goal of the training: user is aware of work and safety regulations of the respective machine, and is able to fully operate,	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
		maintain and care for it with the help of supplied instruction manuals. Language: English. Duration of training: appr. 2 days				
185	Cylindrical Grinding Machine + Accessories	For outside and inside grinding of cylindrical and conical parts; working area: minimum travel of table 600 mm or more; minimum center height 135 mm; workpiece weight 50 kg or more; minimum swivel range of work table between -3° and +9° or greater; speeds and feeds: minimum work head spindle speed 25 rpm or less; maximum work head spindle speed 380 rpm or more; speeds continuously variable; maximum peripheral speed of grinding wheel 38 m/s or higher; maximum internal wheel spindle speed 16000 rpm or higher; minimum hydraulic traverse feed 0,1 m / min. or less; maximum hydraulic traverse feed 4 m / min. or higher; grinding diameters: minimum external grinding diameter 8 mm or less; maximum external grinding diameter 200 mm or more; minimum internal grinding diameter 13 mm or less; maximum internal grinding diameter 100 mm or more; work table: minimum speed 100 mm/min; maximum speed 3500 mm/min or higher; wheel head: angular displacement 15 / 30 deg.; drive power between 3,5 and 4,5 kW; circumferential speed between 30 and 40 m/s; maximum wheel head speed 2000 rpm or higher; universal work head: variable speeds from 25 to 220 rpm or better (infinitely variable); minimum spindle feedthrough 20 mm; minimum torque during live spindle grinding 8 Nm; tailstock: fitting taper MT 4; drive capacity: motor rating main drive 5,5 kW or higher, 400V, 50 Hz; must include the following standard equipment: 2-axis position indicator, internal grinding equipment, 3-jaw chuck diameter 200 mm, chuck flange,	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
		balancing station, balancing mandrel, dress equipment, center point, grinding wheel flange, coolant system, drivers, work lamp, operating tools, open rest, closed rest, swing elements LK5 (4x), 5x coolant concentrate, 2x hydraulic oil HLP 46 (barrel at 208 litre), 1 x standard grinding wheel + 1 additional grinding wheel (spare); measures and weights: maximum overall dimensions (l x w x h): 2700 x 1800 x 1700 mm, maximum weight : 2750 kg; operator and instruction manual in English; compliant with ISO standards; with British power plug. CE-marking (or equivalent).				
186	Installation and Commissioning	Refer to item 185 (Cylindrical Grinding Machine + Accessories). Installation and commissioning of the machines at the final destination (Kiambu Institute of Science and Technology - KIST).	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]
187	Practical User Training	Refer to item 185 (Cylindrical Grinding Machine + Accessories). User training for Trainers (2-4 participants) at the final destination (Kiambu Institute of Science and Technology - KIST). Aim / usage of the machines: training on how to produce various parts through chipping procedures, not automated. Minimum goal of the training: user is aware of work and safety regulations	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
		of the respective machine, and is able to fully operate, maintain and care for it with the help of supplied instruction manuals. Language: English. Duration of training: appr. 2 days				
188	CNC Machining Centre (Milling Machine) for Vocational Training + Accessories	Working area: table dimensions: 400x145 mm; table load capacity: 20 kg; number of T-slots: 3 Pieces; T-slots, width: 12 mm; T-slots, spacing: 40 mm; Spindle nose-to-table surface distance: 60 - 240 mm; Throat: 200 mm; Travels: Travel X-axis: 260 mm, Travel Y-axis: 152 mm, Travel Z-axis: 180 mm; Headstock: spindle speed: 80 - 5.000 1/min, Spindle mount: ISO 20; Rapid feed X-axis : 2.000 mm/min, Y-axis: 2.000 mm/min, Z-axis: 2.000 mm/min; with operating tools; Feed: Work feed: 500 mm/min, work feed X-axis: 500 mm/min, Y-axis: 500 mm/min, Z-axis: 500 mm/min; torque feed motor: X-axis: 2,2 Nm, Y-axis: 2,2 Nm, Z-axis: 2,2 Nm; Tooling: number of tool stations: 4 Pieces, Tool size diameter x L: 10x110 mm; tool weight: 0,5 kg; tool-change time tool/tool: 10 sec or better; Accuracies: positioning accuracy X-axis: $\pm 0,015$ mm, Y-axis: $\pm 0,015$ mm, Z-axis: $\pm 0,015$ mm; repeatability X-axis: $\pm 0,01$ mm, Y-axis: $\pm 0,01$ mm, Z-axis: $\pm 0,01$ mm; drive capacity Motor rating main drive: 1 kW; measures and weights appr.: overall dimensions (length x width x height): 1,4x0,9x1,8 m, weight not more than 500 kg; Includes the following standard accessories: Industrial type PLC, Electronic hand-wheel, 4-station tool charger, Mobile base, Central lubrication, Work lamp, Operating tools; Additional accessories: 1x Collet chucks ISO 20 / ER16, 1x Collet set ER 16 with collet sizes of 3, 4, 5, 6, 7, 8, 9 and 10, 1x Engraving tool set; operating manual and programming instructions in English language; with British power plug. CE-marking (or equivalent).	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
189	Installation and Commissioning	Refer to item 188 (CNC Machining Centre (Milling Machine) for Vocational Training + Accessories). Installation and commissioning of the machines at the final destination (Kiambu Institute of Science and Technology - KIST).	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]
190	Practical User Training	Refer to item 188 (CNC Machining Centre (Milling Machine) for Vocational Training + Accessories). User training for Trainers (2-4 participants) at the final destination (Kiambu Institute of Science and Technology - KIST). Aim / usage of the machines: training on how to produce various parts through chipping procedures, not automated. Minimum goal of the training: user is aware of work and safety regulations of the respective machine, and is able to fully operate, maintain and care for it with the help of supplied instruction manuals. Language: English. Duration of training: appr. 2 days	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	191 – 199 not included in this Lot.	N/A	N/A	N/A	N/A
200	Vacuum Cleaner	For cleaning of machines and workshops; wet and dry; with automatic filter cleaning system and a moisture-resistant PES flat pleated filter for the dust-free removal of large amounts of fine dust over long work intervals; dirt and liquids can be reliably collected in a rugged 30-litre container which has a bumper and sturdy metal castors; comes with accessories which can be conveniently stored in the integrated suction hose and accessory storage feature; rubberised surfaces and lashing options mean that tools and boxes can be placed on the flat machine head in a slip-tight manner or even affixed to it; with flexible hose and power cord storage; Air flow rate (l/s) 74; Vacuum (mbar/kPa) 254 / 25.4; Container capacity appr. (l) 30; rated input power appr. (W) 1400; Sound pressure level below dB(A) 70; Container material plastic; 230V, 50 Hz; comes with 1 x Suction hose with bend, 2.5 m; 2 x Suction tubes, stainless steel; 1 x Wet and dry floor nozzle, 360 mm; 1	Piece	4	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
		x Crevice nozzle; 1 x Flat pleated filter, PES; 1 x Filter bag, Fleece; manual in English. CE-marking (or equivalent).				
N/A	N/A	201 – 219 not included in this Lot.	N/A	N/A	N/A	N/A
220	CO2 Steel Cylinder	50 Liter capacity empty bottle. must fulfil Kenyan Safety Standard Requirements (KS / ISO ...).	Piece	9	N	[Manufacturer/Brand] [Model] [Offered specifications]
221	Acetylene Cylinder	Suitable for item 226: Oxygen/Acetylene cutting and welding kit 50 Liter (or equivalent) must fulfill Kenyan Safety Standard Requirements (KS / ISO ...).	Piece	9	N	[Manufacturer/Brand] [Model] [Offered specifications]
222	Oxygen Cylinder	Suitable for item 226: Oxygen/Acetylene cutting and welding kit 50 Liter (or equivalent) must fulfil Kenyan Safety Standard Requirements (KS / ISO ...).	Piece	9	N	[Manufacturer/Brand] [Model] [Offered specifications]
223	Oxy-Acetylene Hose	Matched pairs of hose-one each for oxygen (blue) and acetylene (red). Kink and crush resistant. Supplied fully fitted complete with hose check valves / fittings Minimum hose diameter:10mm & length: 5m; must fulfil Kenyan Safety Standard Requirements (KS / ISO ...).	Piece	9	N	[Manufacturer/Brand] [Model] [Offered specifications]
224	Oxygen Regulator	0-10 bar; designed with 2 gauges to indicate cylinder contents and outlet pressure; 4.0 Bar Oxygen regulator full 300 bar capacity; 10.0 Bar Oxygen regulator full 300 bar capacity ; bottom entry design, which is suited for top outlet cylinder valves / fitted with ¼ parallel threaded gauges, standard 3/8 BSP outlet and 5/8 BSP inlet connection; must fulfill Kenyan Safety Standard Requirements (KS / ISO ...).	Piece	7	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
225	Acetylene Regulator	0-1.5 bar; designed with 2 gauges to indicate cylinder contents and outlet pressure / Argon regulator outlet gauge is calibrated for flow 0- 35 lpm / Acetylene regulator has calibrated flow rate of 0- 1.5 BAR with full 250 bar capacity / Futures: flow rate up to 80 m <sup>3</sup> /h / 300 bar capability / Bottom entry design suited for top outlet cylinder valves / Fitted with ¼ parallel threaded gauges; Fitted with standard 3/8 BSP outlet; Fitted with 5/8 BSP inlet connection; must fulfill Kenyan Safety Standard Requirements (KS / ISO ...).	Piece	7	N	[Manufacturer/Brand] [Model] [Offered specifications]
226	Oxy-Acetylene Welding and Cutting Set	Contents: Saffire 5 shank / acetylene welding mixer / 6 swaged nozzles (size 2,5,7,10,13 & 25) / cutting attachment / 2 ANM cutting nozzles (size 3/64 ; 1/16 ) / AHT 25 heating neck and tip / O-rings / spark lighter with 9 flints / nozzle cleaner / carrying case / welding capacity up to 8mm / cutting capacity up to 75mm; must fulfill Kenyan Safety Standard Requirements (KS / ISO ...).	Set	7	N	[Manufacturer/Brand] [Model] [Offered specifications]
227	Oxy-Acetylene Welding Goggles	According to ISO standards, flip up goggles with; 4 indirect vents Soft PVC frame; ABS Lens holder; Green filter polycarbonate lens.	Piece	30	N	[Manufacturer/Brand] [Model] [Offered specifications]
228	Wall Bracket for Gas Cylinders	Galvanized with 2 cylinder brackets and bore for wall attachment, width 60 cm, for 50 l bottles, Ø 229 mm	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
229	Welding Fumes Extraction Unit	Compact unit for welding fume extraction; mobile welding fume filter with highly durable wheels (with brake); integrated EC fan; with a combination of pre-separator system and filter cartridge to ensure a very high degree of separation; purified air is returned to the working area through outlets located close to the floor; unit is equipped with a two metre long extraction arm; the rotating and pivoting hood covers a very large intake area and through its special shape users are not required to perform frequent tracking adjustments during welding; in contrast to conventional extraction arms, the support structure is on the exterior, this avoids pressure losses and guarantees an effective extraction process and low maintenance requirements; Technical data: airflow 1000 m <sup>3</sup> /h or more; intake diameter 140 mm; negative pressure 1350 Pa; 230V, 50 Hz, appr. 0.5kW (with British Plug); filter surface 12 m <sup>2</sup> ; dimensions not more than LxWxH 850x700x1150 without extraction arm; sound emission less than 70 dB(A); weight not more than 120 kg including extraction arm; comes with high quality filter cartridge, integrated impact separator for the pre-separation of coarse and heavy particles, extraction arm with external support structure; with instruction manual in English; CE-marking (or equivalent).	Piece	6	N	[Manufacturer/Brand] [Model] [Offered specifications]
230	Replacement Filter Cartridge	Suitable with item 229 (Welding Fumes Extraction Unit).	Piece	6	N	[Manufacturer/Brand] [Model] [Offered specifications]
M 1	Round Material Steel	Solid material, diameter 30 mm; length 2000 mm; ST37/42	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
M 2	Round Material Steel	Solid material, diameter 50 mm; length 2000 mm; ST37/42	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 1: Training equipment for Industrial Mechatronics						
M 3	Square Material Steel	Solid material, diameter 30 mm; length 2000 mm; ST37/42	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
M 4	Square Material Steel	Solid material, diameter 50 mm; length 2000 mm; ST37/42	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
N/A	N/A	1 – 43 not included in this Lot.	N/A	N/A	N/A	N/A
44	Set of safety connections, 4mm	for photovoltaics training system, 42 parts;13 connecting plugs, grey, 4mm/19mm, with tap; Connecting leads, 4mm: 100cm: 1x blue, brown, green/yellow each;75cm: 1x blue, green/yellow, red, black each;50cm: 3x brown, 2x blue, gr/ye each, 1x red, black each;25cm: 1x green/yellow, 6 x red, black each. CE-marking (or equivalent).	Set	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	45 – 149 not included in this Lot.	N/A	N/A	N/A	N/A
150	Pneumatic Experimenting Board	Experimenting Board in A4 format for setting up pneumatic circuits. Prepared areas for process-oriented arrangement of pneumatic components. Graphical display of the basic components and their arrangement options. Integrated function groups:- 2 threefold compressed air supplies/distributions in the nominal bores NB4, NB6 and NB8 (with ball check function) for individual use;- 4 distribution boxes with compressed air display for 3 Schott connections NB4 with ball check function. Each box can be connected or disconnected as well as exhausted individually; - 2 3/2-way	Piece	10	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		valves, with pushbutton, normally closed;- 2 3/2-way valves, with latching pushbutton, normally closed;- 2 time delay valves, normally closed; Connection of all components via 4mm bulkhead fittings. Design: Board with photorealistic, four-colour front panel design. Coloured lines according to colour code. A special coating makes the panel surface scratch-proof. Extended utilization of the Board with the electropneumatic components. CE-marking (or equivalent).				
151	Quick Start Guide, laminated	Pneumatic Experimenting Board; in english language	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
152	Pneumatic component assortment BASIC	consisting of: 1 double-acting cylinder;1 single-acting cylinder;2 3/2-way roller level valves, normally closed;2 throttling check valve;1 5/2-way valve, monostable;3 5/2-way valves, bistable;8 silencers;1 shuttle valve (OR function);2 twin-pressure AND valves;2 quick exhaust valves;1 manometer;1 hose cutter	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
153	Case for pneumatic components, synthetic	Storage case with foam inserts for the basic pneumatic component assortment. System case with collapsible carrying handle; can be linked with the electropneumatics component case; Dimensions (w x h x d): 400mm x 105mm x 300mm	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
154	Pneumatic hose, 4mm	blue, length: 100m	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
155	Pneumatic project Universal Overlay	For do-it-yourself process configuration (by means of photos or drawings of systems); Application (front panel overlay)	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
156	Pneumatic project Skylight	Direct control of a single-acting cylinder; Application (front panel overlay) - basic pneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
157	Pneumatic project Press 01	Direct control of a double-acting cylinder; Application (front panel overlay) - basic pneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
158	Pneumatic project Press 02	AND operation of a double-acting cylinder; Application (front panel overlay) - basic pneumatics;	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
159	Pneumatic project Pneumatic Tin Magazine	Sequence control: OR function of a double-acting cylinder; Application (front panel overlay) - basic pneumatics;	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
160	Pneumatic project Sliding Door	Time-dependent sequence control of a double-acting cylinder; Application (front panel overlay) - basic pneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
161	Student manual, incl. CD-ROM	"Pneumatics"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
162	Instructor's manual, incl. CD-ROM	"Pneumatics"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
163	Presentation aids, on CD-ROM	"Pneumatics"	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
165	Pneumatics Supply Training Kit	Experimenting Board in A4 format for regulating the working pressure; Integrated function groups:- Service unit;- Pressure relief valve;- 3/2-way valve with push-lock and turn-reset button;- 3/2-way valve, monostable, normally open; Connection via 4mm bulkhead fittings. Design: Board with photorealistic, four-colour front panel design. Coloured lines according to colour code. A special coating makes the panel surface scratch-proof. CE-marking (or equivalent).	Piece	10	Y	[Manufacturer/Brand] [Model] [Offered specifications]
166	Quick Start Guide, laminated	Pneumatics Supply Training Kit; in English language	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
167	Pneumatic component assortment ADVANCED	consisting of: 3 double-acting cylinder;6 3/2-way roller level valves, normally closed;1 twin-pressure AND valve;1 quick exhaust valve;1 5/3-way valve, bistable, closed in mid-position	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
168	Quick Start Guide, laminated	Pneumatics - components and small parts; in english language	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
169	Pneumatic project Double Sliding Door	Time-dependant sequence control of two double-acting cylinders; Application (front panel overlay) - advanced pneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
170	Pneumatic project Lifting Table	Sequence control of two double-acting cylinders; Application (front panel overlay) - advanced pneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
171	Pneumatic project Embossing Machine	Cascade control of two double-acting cylinders; Application (front panel overlay) - advanced pneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
172	Pneumatic project Assembly Machine	Cascade control of three double-acting cylinders; Application (front panel overlay) - advanced pneumatics;	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
173	Pneumatic project Metal Forming Machine	Sequence control of four double-acting cylinders; Application (front panel overlay) - advanced pneumatics;	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	174 not included in this Lot.	N/A	N/A	N/A	N/A
175	Electropneumatics Training Kit	Experimenting Training Kit in A4 format with a basic outfit of magnetic valves, for setting up electropneumatic circuits in combination with the Pneumatic Applications Board; Integrated functions:- 2 x threefold compressed air supplies/distributions in the nominal bores NB4, NB6 and NB8 (with ball check function) for individual use;- 4 x bulkhead fittings NB4 (with ball check function) for compressed air supply of the electromagnetic valves;- 2 x 3/2-way solenoid valves, monostable, normally closed ; - 2 x 5/2-way solenoid valves, monostable, normally closed;- 3 x 5/2-way solenoid valves, bistable, normally closed;- 1 x 5/3-way solenoid valve, bistable, closed in mid-position; Graphic display of the circuit symbols on the front panel. Connection of all pneumatic components via 4mm bulkhead fittings. All electric in- and	Piece	10	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		outputs and supply connections via 4mm safety sockets. Design: Board with photorealistic, four-colour front panel design. Coloured lines according to colour code. A special coating makes the panel surface scratch-proof. CE-marking (or equivalent).				
176	Quick Start Guide, laminated	Electropneumatics Training Kit; in English language	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
177	Pneumatics Control Panel/Board	Experimenting Panel/ Board in A4 format for controlling electropneumatic circuits; Integrated function groups:- 4 relays, 24V DC;- 2 switch-on delayed relays, 24V DC; 0..30 sec;- 2 switch-off delayed relays, 24V DC; 0..30 sec;- 2 control switches, hand / 0 / auto, 2NO;- 1 emergency-Off button, 2NC;- 2 pushbuttons NO/NC; Connection areas for reed contacts and sensors. All electric in- and outputs and supply connections via 4mm safety sockets. Design: Board with photorealistic, four-colour front panel design. Coloured lines according to colour code. A special coating makes the panel surface scratch-proof. CE-marking (or equivalent).	Piece	10	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
178	Quick Start Guide, laminated	Pneumatics Control Panel/Board; in English language	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
179	4 Reed contacts	incl. connection line and M12 plugs	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
180	Case for electropneumatic components, synthetic	Storage case with foam inserts for the electropneumatic components (reed contacts, sensors). System case with collapsible carrying handle; can be linked with the pneumatics component case; Dimensions (w x h x d): 400 mm x 105 mm x 300 mm	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
181	Set of safety connections, 4mm	for electropneumatic circuits, 40 parts; Safety measuring leads: 6x green 50 cm; 10x black 25 cm; 4x black 50 cm; 1x black 150 cm; 11x red 25 cm; 6x red 150 cm; Bridging plugs: 1x red, with tap; 1x black, with tap	Set	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
182	Electropneumatic project Safety Door	Time-dependant sequence control of a double-acting cylinder; Application (front panel overlay) - basic electropneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
183	Electropneumatic project Pallet Lift	Basic circuit of a double-acting cylinder; Application (front panel overlay) - basic electropneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
184	Electropneumatic project Disassembly	Basic circuit: AND operation of a double-acting cylinder; Application (front panel overlay) - basic electropneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
185	Electropneumatic project Assembly	Sequence control of a double-acting cylinder; Application (front panel overlay) - basic electropneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
186	Electropneumatic project Workpiece Lift	Basic circuit: OR operation of a double-acting cylinder; Application (front panel overlay) - basic electropneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
187	Electropneumatic project Clamping Device	Time-dependant sequence control of two double-acting cylinders; Application (front panel overlay) - basic electropneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
188	Electropneumatic project Pneumatic Feeder	Sequence control of two double-acting cylinders; Application (front panel overlay) - basic electropneumatics;	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
189	Electropneumatic project Dip Tank	Sequence control with lock of a double-acting cylinder; Application (front panel overlay) - basic electropneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
190	Student manual, incl. CD-ROM	"Electropneumatics"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
191	Instructor's manual, incl. CD-ROM	"Electropneumatics";Contents same as in manual student manual, however with solutions; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
192	Presentation aids, on CD-ROM	"Electropneumatics"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	<i>193 not included in this Lot.</i>	N/A	N/A	N/A	N/A
194	Sensor set	1 inductive sensor;1 capacitive sensor;1 optical sensor;2 connecting lines, M12, 4-pin	Set	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
195	Set of test bodies for electropneumatic experiments	1 x plastic, 1 x stainless steel	Set	10	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
196	Quick Start Guide, laminated	Electropneumatics - components and small parts; in English language	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
197	Electropneumatic project Positioning, detecting	Testing sensors (inductive, capacitive, optical) with two test bodies; Application (front panel overlay) - advanced electropneumatics;	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
198	Electropneumatic project Printing machine	Sequence control of three double-acting cylinders; Application (front panel overlay) - advanced electropneumatics	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
199	Set of pneumatic hoses	100m pneumatic hose, 6mm, blue;100m pneumatic hose, 8mm, blue	Set	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
200	Set of pneumatic accessories	consisting of:1 spout;10 T-unions, 6mm;10 reducers, 6/4 ;10 T-unions, 4mm;1 reducer, B/6;2 plugs, 4mm; 2 plugs, 6mm;1 tube strip MPL-4;1 tube strip MPL-6;PU tube 6 x 4 x 1 mm blue, 10m;PU tube 4 x 2 x 1 mm blue, 10m	Set	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
201	Laboratory compressor	Whisper-quiet, with filter pressure regulator; Voltage/frequency: 230V / 50(60)Hz; Motor: (appr.) 0,46/0,34 HP/kW; Displacement: 50 l/min; Max. pressure: 8 bar; Tank volume: 15l; CE-marking (or equivalent).	Piece	2	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
202	Sensor Trainer	Experimenting Board in A4 format for performing measurement tasks with various sensors; with front panel overlays for a great variety of different experiments; Large working area with writable color millimeter grid for precise positioning of material samples; Integrated function units:- Power supply 24V/4.5A, with fuse;- Meter 0...10V/4...20mA, accuracy 0.1%, input via 4mm safety sockets; USB port for configuration;- Sensor terminal for connecting sensors, with 5-pin terminal block, 5-pin M12 socket, 5 safety sockets;- Switch for teaching the sensors, 0V/24V;- 2 signal LEDs for status display of the sensors;- 2 switching outputs (SP1/SP2) DO 24VDC;- 3 plug-in spaces for sensors; Design: Board with photorealistic, four-colour front panel design. Coloured lines according to colour code. A special coating makes the panel surface scratch-proof. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. w x h x d: 532 x 297 x 90 mm CE-marking (or equivalent).	Piece	10	Y	[Manufacturer/Brand] [Model] [Offered specifications]
203	Quick Start Guide, laminated	Sensor Trainer; in English language	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
204	Basic Assorted Sensors	Set of sensors with digital output, consisting of:1 optical sensor;1 inductive sensor;1 capacitive sensor;1	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		retro-reflective sensor; on pluggable carriers for precise positioning and quick building and rebuilding of measurement circuits on the Sensor Board;1 reflector for retro-reflective sensor				
205	Basic Sensorics Application Set	6 front panel overlays for performing the experiments described in the manual or for configuring one's own experiments	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
206	Advanced Sensor Assortment	Set of sensors with analog output, consisting of:1 optical sensor;1 inductive sensor;1 ultrasonic sensor;on pluggable carriers for precise positioning and quick building and rebuilding of measurement circuits on the Sensor Board	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
207	Advanced Sensoric Application Set	5 front panel overlays;for performing the experiments described in the manual or for configuring one's own experiments	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
208	Set of universal sensor holders for adjustment exercises	for securing the sensors on the Sensor Trainer	Piece	5	N	[Manufacturer/Brand] [Model] [Offered specifications]
209	Set of sensor cables	1 M12 cable, 1m (socket/plug);1 M12 cable, 1m (socket/free end);1 M8/M12 cable, 1m (socket/plug);1 M8 cable, 1m (socket/free end)	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
210	Set of material samples	from different materials (wood, aluminium, stainless steel, synthetic) of various colour and transparency; incl. sample holder with magnetic foot; minimum size; cube 60mm, circle	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		diameter 60mm, equilateral triangle of sides 10mm				
211	Component case Sensorics	Synthetic case with two foam inlays, with room for all the sensorics components; System case with collapsible carrying handle; Dimensions (w x h x d): 400 mm x 170 mm x 300 mm	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
212	USB Programming Connection Line	USB interface A-B, approx. 3m, recommended USB generation 4.0 with speed of 40 Gbps	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
213	Set of safety connections, 4mm	15 parts, consisting of: Safety measuring leads: 2x green 25cm; 2x yellow 25cm; 2x black 25cm; 2x black 50cm; 2x red 25cm; 2x red 50cm; Bridging plugs; 1x red; 1x black; 1x yellow/green. CE-marking (or equivalent).	Piece	10	N	[Manufacturer/Brand] [Model] [Offered specifications]
214	Student manual, incl. CD-ROM	"Fundamentals of sensor technology - digital sensorics"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
215	Instructor's manual, incl. CD-ROM	"Fundamentals of sensor technology - digital sensorics"; Contents as in student manual, however with solutions; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
216	Digital learning assistant "Sensorics"	Free App with process animations, manuals, datasheets, explanations, assembling and disassembling instructions with augmented reality; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
217	Sensor assortment Cylindrical sensors	with different connection principles, consisting of: 1 reed contact, 2-wire ;1 reed contact, 3-wire ;1 position	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		sensor; 1 pneumatic cylinder with mounting grooves, on pluggable carrier				
218	Sensor assortment PT100	consisting of: 1 temperature sensor PT100 with evaluation unit 0-10V; 1 fan; on pluggable carriers for precise positioning and quick building and rebuilding of measurement circuits	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
	<b>Training System Applied Mechatronics (General Description)</b>	<p>The training system for mechatronics must consist of separate mobile training stations that can be used individually or together. An industrial type PLC and touch panel must be available in each of the individual stations to achieve fast set-up times. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired.</p> <p>In order to achieve flexibility in the setup of the systems, all stations must be usable in both pallet movement directions.</p> <p>The transfer systems must be designed as a double belt system in order to reach the underside of the workpieces/pallet with sensors and actuators. This ensures flexibility for future developments of the system.</p> <p>Each station must be equipped with 2 read/write RFID devices to ensure data exchange (from both movement directions) even when the system is divided into individual CPS. All other sensors and actuators in the system must also be available in such numbers that operation in both directions is</p>			

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
		<p>possible.</p> <p>The following stations must be multi-functional in their mode of operation:</p> <ul style="list-style-type: none"> <li>· Pallet Storage: storage and retrieval of pallets; loaded or empty</li> <li>· Separation of semi-parts: emptying or filling the stock</li> <li>· Handling: individual product mounting or separating parts</li> <li>· Individual Machining Process: assembling and disassembling</li> </ul> <p>Each station must be able to be switched to test/maintenance mode via a touch-screen. In this operating mode, it must be possible to test each sensor and actuate each actuator.</p> <p>It must be possible to record the number of working cycles of each actuator (predictive maintenance/service intervals). With this information it must be possible to create warning signals or other reaction of the system at set values.</p> <p>The entire system must be equipped with OPC-UA so that it can be connected and used as a CPS with</p> <ul style="list-style-type: none"> <li>· SAP ERP</li> <li>· SAP ME / MII</li> </ul>			

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		<ul style="list-style-type: none"><li><b>SAP4school IUS with SAP Plant Connectivity.</b></li></ul> <p><b>The system must be able to function with and without the MES in order to enable different learning scenarios. It must be possible to generate and process an order without MES - (Manufacturing Excecution System).</b></p> <p><b>Digital Twins software and integrating the TIA Portal must be available.</b></p>				

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
	<b>Training System Applied Mechatronics (General Description) - Continued</b>	<b>The system must be able to function with and without the MES in order to enable different learning scenarios. It must be possible to generate and process an order without MES. Digital Twins based on the NX12 software and integrating the TIA Portal must be available. The training stations 1-6 are set up identically with the following basic equipment. In the description of the individual station, only the additional different equipment for each station is listed. CE-marking or equivalent.</b>				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
219	Set of Basic equipment for mechatronic stations (Station 1-6)	<p>consisting of: 1 x Project and test cart with power supply and 2-line experimenting frame; Table trolley with size 5/8 T-slot plate as a universal platform for mounting devices and systems; Cascadable for setting up larger systems; Equipped with 4 rubber castors, 75mm, two of which lockable; Dimensions: w = 800mm, d = 750mm, h = 895mm; 2-line experimenting frame for accommodating experiment panels in A4 format; incl. fixing material; 1 x PLC industrial type training system; Experimenting Board in A4 format; Function groups: CPU with the following features: - 2 + 1 Profinet interfaces; - Profibus interface; - 32 digital inputs; - 32 digital outputs; - 8 analog inputs, 4 analog outputs; - 24MB memory card; Touch Panel: - 7" colour graphical display with touch function; - Profinet interface; - Profibus interface; 5-port Profinet switch: for setting up a Profinet network; mounted on: PLC Experimenting Board; with short mounting rail and internal 24V DC supply; for universal assembly with industrial type PLC components and a 7" touch panel; prepared for: - 32 digital inputs, 32 digital outputs 24V DC; - 8 analog inputs, 4 analog outputs <math>\pm 10V</math> DC; - industrial Ethernet switch; - touch panel; equipped with: - power supply 110...240V AC, 50...60Hz; - power cord with plug; -</p>	Piece	6	Y	<p>[Manufacturer/Brand] [Model] [Offered specifications]</p>

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
		<p>central on/off switch; - integrated power supply 24V DC/6.5A; - 2 system interfaces SUB-D 25-pin; - 32 safety sockets, 4mm, for digital in- and outputs; - 12 safety sockets, 4mm, for analog in- and outputs; - 16 push/lock-in switches to simulate the digital inputs; - 1 simulation field for analog processing; - C-rail and supply connection for industrial switch; - connection terminals for external consumers, emergency cut-off; Design and workmanship: Board with front panel in photorealistic, four-colour design. Wires depicted according to colour code. A special coating makes the panel surface scratch-proof. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. Dimensions: 532 x 297 x 85mm; Inclusive of the following software:- Industrial type software, single license.</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
	Set of Basic equipment for mechatronic stations (Station 1-6) - continued	1 x Quick Start Guide, laminated; PLC Experimenting Board Safety instructions; 1 x Quick Start Guide, laminated; PLC Experimenting Board - Assembly and commissioning; 1 x Quick Start Guide, laminated; Comfort Panel; - Operating the device; 1 x Patch cable set; 2 x 0.25m; 2 x 0.5m; 1 x PLC Package PN IO Link; consisting of: 1 X Standard mounting rail 35 mm, length: 483 mm, for 19" cabin; 1 X IM155-6PN HF including server module; 2 X DI 8x24VDC/0.5A HF; 2 X DQ 8x24VDC/0.5HF; 1 X Bus adapter 2xRJ45; 5 X BU type A0, 16 push-in, 2 infeed terminals separated (digital/analog, max. 24VDC/10A); including: mounting set; Sub-D25 interface; 1 x RFID System for Profinet: Identification system consisting of: data processing unit for up to 2 read/write modules for Profinet/IO (operating voltage 24 V DC), assembled on a mounting plate for installation in a transfer system; 2 read/write modules for mobile media, with retainer for flexible connection to a transfer system; power supply cable, 4mm on power plug; RJ45 network cable on push pull connector; Included in the scope of delivery: 5 mobile data media with 2kByte EEPROM memory; 5 spacers for mobile data media; CD with device driver files and manual.			[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
	<p>Set of Basic equipment for mechatronic stations (Station 1-6) continued</p>	<p>1 x Project and test cart with power supply and 2-line experimenting frame                      Table trolley with size 5/8 T-slot plate as a universal platform for mounting devices and systems Cascadable for setting up larger systems                      Equipped with 4 rubber castors, two of which lockable                      2-line experimenting frame for accommodating experiment panels in A4 format, incl. fixing material</p> <ul style="list-style-type: none"> <li>- Profibus interface</li> <li>- 32 digital inputs</li> <li>- 32 digital outputs</li> <li>- 8 analog inputs, 4 analog outputs</li> <li>- 24MB memory card</li> </ul> <p>Touch Panel with Comfort Applications:                      - 7" colour graphical display with touch function</p> <ul style="list-style-type: none"> <li>- Profinet interface</li> <li>- Profibus interface</li> </ul> <p>5-port Profinet switch for setting up a Profinet network                      mounted on:                      PLC Experimenting Board with short mounting rail and internal 24V DC supply, for universal assembly with PLC components and a 7" touch panel prepared for:</p> <ul style="list-style-type: none"> <li>- 32 digital inputs, 32 digital outputs 24V DC</li> <li>- 8 analog Inputs, 4 analog Outputs ±10V DC</li> <li>- industrial Ethernet switch</li> </ul>			<p>[Manufacturer/Brand]                      [Model]                      [Offered specifications]</p>

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<ul style="list-style-type: none"> <li>- touch panel equipped with:</li> <li>- power supply 110...240V AC, 50...60Hz</li> <li>- power cord with plug</li> <li>- central on/off switch</li> <li>- integrated power supply 24V DC/6.5A</li> <li>- 2 system interfaces SUB-D 25-pin</li> <li>- 32 safety sockets, 4mm, for digital in- and outputs</li> <li>- 12 safety sockets, 4mm, for analog in- and outputs</li> <li>- 16 push/lock-in switches to simulate the digital inputs</li> <li>- 1 simulation field for analog processing</li> <li>- C-rail and supply connection for industrial switch</li> <li>- connection terminals for external consumers, emergency cut-off</li> </ul> <p>Design and workmanship: Board with front panel in photorealistic, four-color design. Wires depicted according to color code. A special coating makes the panel surface scratch-proof. Didactic standard labelling with operating instructions and connection possibilities facilitates commissioning by the user.</p> <p>Dimensions: 532 x 297 x 85mm Inclusive of the following software:</p> <ul style="list-style-type: none"> <li>- PLC software full industrial version, single license</li> <li>- Software for Touch Panel full industrial version, single license</li> </ul>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<p>1 x Instruction for use, laminated  1 x Instruction for use, laminated  1 x Instruction for use, laminated -  Operating the device  1 x Patch cable set  2 x 0.25m; 2 x 0.5m</p> <p>1 X Standard mounting rail 35 mm, for  19" cabin  16 x Digital Input 24VDC  16 x Digital output 24VDC  1 X Bus adapter 2xRJ45</p> <p>1 x RFID System for Profinet  Identification system consisting of:  data processing unit for up to 2  read/write modules for Profinet /IO  (operating voltage 24 V DC),  assembled on a mounting plate for  installation in a transfer system 2  read/write modules for mobile media,  with retainer for flexible connection to  a transfer system power supply cable,  4mm on power plug RJ45 network  cable on push pull connector  Included in the scope of delivery:  5 mobile data media with 2kByte  EEPROM memory  5 spacers for mobile data media  CD with device driver files and manual</p> <p>1 x Transfer system 24V DC  The transfer system must be designed  as a double belt system to allow  access for sensors and actuators from</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<p>the bottom length = 650-850 mm, width = 140-180 mm, track = 100-140 mm for accomplishing operational tasks, e. g. mounting and control of drives, automatic systems, interfaces, setup of buffer systems, signal transfer etc. 24V DC gear motor - 2 directions of rotation, locked DC control unit - integrated PWM motor control with overload protection - analogue continuous speed control, optional actuation by external signal, 0...10V - digital control, rapid traverse - control panel for external tapping/feeding of signals and voltage by means of switches and potentiometers - 12 x 4mm safety sockets 2 detection modules - for end position recognition, with 2- wire sensor, M12 connectors and supporting back , - 2 x M12 DI M12 8-fold interface for connection of automatic systems, sensors, actuators, etc. - 8 inputs on 4 x M12, for double assignment - 8 outputs on 4 x M12, for double assignment standard industry assignment: pin 4 signal 1/pin 2 signal 2 - separate control current circuits of sensors/actuators for safety-relevant</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		<p>functions</p> <p>1 x Quick Start Guide, laminated Transfer systems with DC power drive and separated digital in- and outputs 1 x Connecting cable, SUB-D 25-pin Length: 3m</p> <p>1 x Set of 2 Pre-stoppers pneumatically actuated stopper for pallet singling - single-action stop cylinder - Reed sensor at M12 connector for detecting the work position - compressed air connection 4mm, working pressure 5bar Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired. CE- marking or equivalent.</p>				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
221	Station 1: Additional Equipment - Pallet Storage	consisting of: 1 x Pallet storage system; Bidirectional buffer or store system with up to 12 storage levels: - Storage system for workpiece carrier pall or workpiece carrier pall with workpiece, or mixed use; - Stopper cylinders on either side, with work position detection; - Optical sensors on either side, for detection of workpiece carrier pallet; - 2 single-acting compact cylinders for singling, with work position detection; - Lift for storage and retrieval with double-acting lifting cylinder, end and middle position detection; 2 flow control valves with display for equalizing the motion speed; - Compressed air connection 4mm with shut-off valve, working pressure 5 bar; - valve terminal with three monostable 5/2-way valves and one bistable 5/2-way valve, individually controlled, with LED status indication, reverse polarity protected, 24V DC operating voltage; 1 x Quick Start Guide, laminated: Pallet store; 1 x Sensor system Fill level control, analog and IO-Link: - 1 laser distance sensor with analog output 0...10V, teachable via the M12 connectors or IO-Link: - Fastening material and connecting line with M12 connector; 100 pcs of industrial ethernet RJ45 connectors; For realization of 100 MBit/s industrial ethernet; connection in the field range; FastConnect RJ45 m connector with	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		robust; metal housing acc. to EN 50173 / ISO IEC 11801; for CAT 5 connections up to 100 m; 10 x Industrial ethernet line 2 x 2 (spiral quad); Length = 20 m; For realization of 100 MBit/s industrial ethernet; connection in the field range; FastConnect: for CAT 5 connections up to 100 m; double shielded; 5 x Stripper for industrial ethernet line for FastConnect plug; 1 x Trainer Package Analog modules extension; consisting of: 2 X AI 2xU/I 2-/4-wire HS; 1 X AQ 2xU/I HS; 3 X BU type A0, 16 push-in, 2 infeed terminals (digital/analog, max. 24VDC/10A); cable set for power supply.				
	Station 1: Additional Equipment - Pallet Storage (continued)	1 x Set of RFID data storage media: Mobile data carriers matching the facility in the workpiece carrier pallet; 20 pcs. data carriers 8 kByte EEPROM, round; 1 x Industrial Ethernet connecting cable; with RJ45 plugs: Length: approx. 2.5 m; Industrial fast connectors; Metal plugs; 1 x Connecting cable, SUB-D 25-pin: Length: 3m; 1 x Student manual, incl. CD-ROM; "Pallet storage system"; 1 x Instructor's manual, incl. CD-ROM; "Pallet storage system"; Contents same as in student manual, however with solutions; 1 x Set of equipment markings for automatic machines; Marking for: - Sensors (position, level, testing); - pneumatic elements; 10 x				[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		<p>Workpiece carrier pallet: - Dimensions: 119 x 119 x 15 mm; - Exchange workpiece carrier, screwed for workpieces up to 54mm in diameter; - Holder for 4-bit ident system; - Holder for mobile data carrier ident system; 10 x 4-bit ident system for pallets; Set, 4-fold; Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable; 1 x Industrial Ethernet connecting cable; with RJ45 plugs; Length: approx. 2.5 m; Industrial fast connectors. Metal plugs. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired. CE- marking or equivalent.</p>				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
222	Station 2: Additional Equipment - Separation Semi-Parts (Raw Material Storage)	consisting of: 2 x Workpiece carrier pallet: - Dimensions: 119 x 119 x 15 mm; - Holder for 4-bit ident system; - Holder for mobile data carrier ident system; 2 x 4-bit ident system for pallets: Set, 4-fold; Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable; 2 x Connecting cable, SUB-D 25-pin; Length: 3m; 1 x Storage station for workpiece bases: Bidirectional storage system for up to 10 workpiece bases (click boxes): - Stopper cylinders on either side, with work position detection; - Inductive NCs on either side, for detection of workpiece carrier pallet; - 2 single-acting compact cylinders for singling, with work position detection, flow control valves with display for equalizing the motion speed; - Lift for storage and retrieval with double-acting lifting cylinder, end and middle position detection; 2 flow control valves with display for equalizing the motion speed; - Compressed air connection 4mm with shut-off valve, working pressure 5 bar; - valve terminal with three monostable 5/2-way valves and one bistable 5/2-way valve, individually controlled, with LED status indication, reverse polarity protected, 24V DC operating voltage; - Connection via M12 connectors, incl. Y-adapters, for use of M12 interfaces with double assignment; 1 x Quick	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<p>Start Guide, laminated; Storage for box bases; 1 x Fill level control, digital and IO-Link; - 1 adjustable ultrasonic sensor with long range, for minimum level detecting; test unit for testing and programming sensors; 1 x Inductive sensor including fastening material and connecting line with M12 connector; 1 x Workpiece set - different colours; click mechanism, 50 pieces; 1 x Student manual, incl. CD-ROM; "Storage station for workpiece bases"; 1 x Instructor's manual, incl. CD-ROM"; Storage station for workpiece bases"; Contents as in student manual, however with solutions; 1 x Instructions for Experiments; 1 x Set of equipment markings for automatic machines; Marking for: - Sensors (position, level, testing); - pneumatic elements. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired. CE-marking or equivalent.</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
223	Station 3: Additional equipment - Filling Station (Dosing and Weighing System)	consisting of: 1 x Filling Station with 3 reservoirs for individual filling; - Hand-operated 3/2 compressed air way valve ON/OFF; - 3 separating cylinders with position detection through 3-wire sensor (magnetic); - 6 x one-way-restrictors for waste-air throttled insertion in the end positions; - 3 x optical drop control; - 2x integrated module for palette recognition with 3-wire sensor; - electro-pneumatic 5/2 way valve terminal, quintuple monostable with pneumatically supported manual override and LED display of the switching mode, operating voltage 24 V, protected against reverse polarity; - 2x stop cylinders with position detection through 3-wire sensor (magnetic) for palette positioning; - 2x filling level control capacitive; - 1x filling level control optical; - 4mm compressed air connection with stop valve, operating pressure 5 bar; - Connection via M12 plug; - 11 inputs; - 5 outputs; 2 x Set of precisions balls and rubber pads: Precision balls in red, green and blue with different weights, 100 pcs. each; 20 pcs. rubber pads; 1x Set of Quick Start Guide, laminated "Filling"; consisting of: - Handling of electric components; - Handling of pneumatics components; 1 x Weighing station; - Lifting unit for lifting the palette with position detection through 3-wire sensor	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		<p>(magnetic) ; - Stage scales; - Rated load 5kg; - Precision class C3; - Weighing electronics incl. terminal module; - Software for scale setup; - USB interface on RS485 for connection to parameter interface; - Electro-pneumatic 5/2 way valve terminal, double monostable with pneumatically supported manual override and LED display of the switching state, operating voltage 24 V, protected against reverse polarity; - 4mm compressed air connection, operating pressure 5 bar; - Connection via M12 plug; - 2 inputs; - 1 outputs; 1 x Set RFID data storage media; Mobile data carriers matching the facility in the workpiece carrier pallet; 20 pcs. data carriers 8 kByte EEPROM, round; 2 x Workpiece carrier pallet; - Dimensions: 119 x 119 x 15 mm; - Exchange workpiece carrier, screwed for workpieces up to 54mm in diameter; - Holder for 4-bit ident system; - Holder for mobile data carrier ident system; 1 x 4-bit ident system; Set, 4-fold; Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable.</p>				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
	Station 3: Additional equipment - Filling Station (Dosing and Weighing System) - continued	2 x Connecting cable, SUB-D 25-pin; Length: 3m; 1 x Industrial Ethernet connecting cable; with RJ45 plugs; Length: approx. 2.5 m; Industrial fast connectors. Metal plugs. 1 x Instructions for Experiments; "Filling Station"; 1 x Student manual, incl. CD-ROM; "Station Filling"; 1 x Instructor's manual, incl. CD-ROM; "Station Filling"; 1 x Student Manual, incl. CD-ROM; "Weighing station"; 1 x Instructor's Manual, incl. CD-ROM; "Weighing station"; Practical experiments for students; 1 x Quick Start Guide, laminated "Weighing"; 1 x Set of equipment markings for automatic machines; Marking for: - Sensors (position, level, testing); - pneumatic elements. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired. CE-marking or equivalent.				[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
224	Station 4: Additional equipment - Optical Quality Inspection Station	consisting of: 1 x Station Inspection Camera: - Profinet Camera system incl. software for the evaluation of quantities; - Inspection chamber for partitioning the test process against exposure to extraneous light; - Illumination for inspection chamber with LED RGB module; - 2 sliding gates with double-acting compact cylinders to darken the inspection chamber. Per cylinder: 2 sensors for end positions and 2 exhaust air throttles for adjusting the movement speed; - Stop cylinder on both sides with query of the working position; - Inductive sensors on both sides for detecting the workpiece carrier pallet; - Manually operated 3/2 directional control valve for compressed air; - Electropneumatic 5/2 directional valve terminal, 2-fold monostable and 2-fold bistable with pneum. Supported manual override and LED display of the switching state, operating voltage 24 V, polarity protected; - Compressed air connection 4mm, working pressure 5 bar; - Connection cable for camera and profile system; - Mounting material and connecting cables with M12 connector; M12 interface, 8-fold, 8DI / DO for connecting machines, sensors, actuators, etc.; - 8 inputs on 4 x M12, double assignable; - 8 outputs on 4 x M12, double assignable; - 1 SUB D system connection, 25-pin; - Separate control	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
		<p>circuits sensors / actuators for safety-related functions; 1 x Instructions for Experiments; Quality Control Inspection; 1 x Quick Start Guide, laminated "Optical Quality Inspection"; 1 x Set RFID data storage media; Mobile data carriers matching the facility in the workpiece carrier pallet; 20 pcs. data carriers 8 kByte EEPROM, round; 1 x Industrial Ethernet connecting cable with RJ45 plugs; Length: approx. 2.5 m; Industrial fast connectors. Metal plugs; 1 x Workpiece carrier pallet; - Dimensions: 119 x 119 x 15 mm; - Exchange workpiece carrier, screwed for workpieces up to 54mm in diameter; - Holder for 4-bit ident system; - Holder for mobile data carrier ident system; 1 x 4-bit ident system; Set, 4-fold; Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable; 1 x Connecting cable, SUB-D 25-pin; Length: 3m. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired. CE-marking or equivalent.</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
225	Station 5: Additional equipment - Handling Station (Individual Product Mounting)	<p>consisting of: 1 x Industrial Ethernet connecting cable with RJ45 plugs; Length: approx. 2.5 m; Industrial fast connectors. Metal plugs; 1 x Workpiece carrier pallet; - Dimensions: 119 x 119 x 15 mm; - Exchange workpiece carrier, screwed for workpieces up to 54mm in diameter; - Holder for 4-bit ident system; - Holder for mobile data carrier ident system; 1 x 4-bit ident system; Set, 4-fold; Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable; 1 x Connecting cable, SUB-D 25-pin; Length: 3m; 1 x Handling station: Handling machine with bidirectional lifting-swivel mechanism for singling/feeding workpieces or workpiece parts into the production process or stores/magazine; Hand-operated 3/2-way valve compressed air ON/OFF; Swivel cylinder with 4 positions; Position scanning by 3-wire sensors (inductive); 2 x throttle check valve for exhaust air throttled driving to end positions; 2 double action stop cylinders, with position scanning by 2-wire sensor (magnetic), 3rd stop cylinder as fixed stop; Lifting cylinder double action, with vacuum suction and 3-wire sensor for lifting switchover for variable heights - lifting height max.: 100 mm; Vacuum</p>	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
		<p>generator with 2-wire vacuum sensor;            2 x throttle check valve for exhaust air            throttled driving to end positions;            Integrated double action stop cylinder            for clear positioning of workpiece            carrier pall on the transfer system;            Integrated module detection of pall            with 2-wire sensor and mounting            bracket; Electropneumatic 6x 5/2-way            valve terminal, - 5x monostable, - 1x            pulse-controlled, - pneumatically            supported manual actuation with LED            display of switching status:            - operating voltage 24 V; - reverse            polarity protected; Connection for            compressed air 4 mm, working            pressure: max. 8 bar; Interface            module SUB D 25-pin: - 8 inputs, - 8            outputs; Dimensions: approx.            330x330x450mm (WxDxH); including:            Set of magazines: Three fall or            stacking magazines for holding            workpieces or workpiece parts; 1 x            Workpiece set - different colours; click            mechanism, 40 pieces; 1 x Test            module: Inductive detection of            workpiece top part; Inductive 3-wire            sensor for detection of workpiece top            part; Fixing material; M12 connectors,            24 V DC; 1 x Test module: Inductive            detection of workpiece bottom part;            Inductive 3-wire sensor for detection            of workpiece bottom part;</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
	Station 5: Additional equipment - Handling Station (Individual Product Mounting) - continued	Fixing material; M12 connectors, 24 V DC; 1 x Test module: Colour detection for colour detection of the top workpiece; - 3 switching outputs individually teachable with one colour or as binary coding; 7 colours teachable; - IO-Link, output of switching states or RGB values; Adjustable holder for flexible assembly to a transfer system; Connecting cable and connectors for connection to the sensor interface; 1 x Set of equipment markings for automatic machines; Marking for: - Sensors (position, level, testing); - pneumatic elements; 2 x Connecting cable 25-pin; SUB D 25-pin for connection with the Automation or System Connector Board S7/300; 1 x Manual Practical Experiments, incl. CD-ROM; "Automatic handling machines"; 1 x Manual Trainer Section, incl. CD-ROM"; Automatic handling machines"; Contents same as in manual Practical Experiments, however with solutions; 1 x Set of Quick Start Guide, laminated: Handling; consisting of: Quick Start Guide, laminated; Handling: Electric components; Quick Start Guide, laminated; Handling: Pneumatic components; 1 x Instructions for Experiments. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic				[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		controller and automation systems is desired. CE-marking or equivalent.				
226	Station 6: Additional equipment - Assembly and Disassembly by Pressing (in combination with "Functional Safety")	consisting of: 1 x Pneumatic assembly/disassembly system, incl. valve terminal; - Automatic system for assembling workpiece top parts, with double action lifting cylinder; - Automatic system for disassembling workpiece top parts, with double action lifting cylinder; - Hand-operated 3/2-port valve compressed air ON/OFF; - 4 three-wire sensors (2 per cylinder) for position detection; - 2 integrated single action stop cylinders, spring return, for positioning the workpiece carrier pallet on the transfer system; - Electropneumatic 5/2-port valve terminal, 2x monostable and 2x bistable with pneumatically supported manual actuation and LED indication of switching state, operating voltage 24V, reverse polarity protected; - 2 throttle check valves; - Connection for compressed air: 4mm, working pressure: max. 8 bar; - 2 integrated detection modules with inductive NC	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<p>sensors; - 8 sensors; - 6 actuators; - 1 system plug SUB D, 25-pin; 1 x Quick Start Guide, laminated;</p> <p>Assembly/disassembly system; 1 x Sensor System for height measurement; analog sensor 0..10V;</p> <p>1 x Student manual, incl. CD-ROM; "Assembly/disassembly system"; 1 x Instructor's manual, incl. CD-ROM; "Assembly/disassembly system"; Contents identical to student manual, however with solutions and answers; 1 x Instructions for Experiments; 1 x Training System for functional safety for the realisation of functional safety applications for machines and plants up to Performance Level e (PL e) / Safety Integrity Level 3 (SIL 3), e.g.;</p> <ul style="list-style-type: none"> <li>- Emergency stop;</li> <li>- safety gate monitoring;</li> <li>- Two-hand operation;</li> <li>- Contactor monitoring;</li> <li>- Safe time function;</li> <li>- Light grid;</li> <li>- Muting;</li> <li>- Enabling switch;</li> <li>- Logical links, e.g. AND, OR, counter, edge evaluation;</li> </ul> <p>Selection of the functions used via preconfigured memory modules or software. An empty memory module is already plugged in when the unit is delivered; Status display via LEDs or software; Programme change via software or pre-configured memory modules; Performance features:</p> <ul style="list-style-type: none"> <li>- Safety module, mounted and wired;</li> <li>- 20 safe inputs (24V DC/approx. 3mA);</li> <li>- 4 safe outputs (24V DC/max. 2A);</li> <li>- 4 signalling outputs (24V DC/max.</li> </ul>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		100mA); - 2 safe earth-switching outputs (0V/max. 2A); - 2 safe two-channel clock outputs for cross-circuit detection (T<100ms/24VDC/max. 100mA); All inputs and outputs on 4mm safety sockets.;Operating voltage 24V DC, USB interface, short-circuit protection.				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
	Station 6: Additional equipment - Assembly and Disassembly by Pressing (in combination with "Functional Safety") - continued	1 x Light curtain 450 mm; - Transmitter and receiver; - Mounting material and connection cables; 1 x Trainer Package Analog modules extension; consisting of: 2 X AI 2xU/I 2-/4-wire HS; 1 X AQ 2xU/I HS; 3 X BU type A0, 16 push-in, 2 infeed terminals (digital/analog, max. 24VDC/10A); set of cable for power supply; 1 x Industrial Ethernet connecting cable with RJ45 plugs; Length: approx. 2.5 m; Industrial fast connectors. Metal plugs; 1 x Workpiece carrier pallet; - Dimensions: 119 x 119 x 15 mm; - Holder for 4-bit ident system; - Holder for mobile data carrier ident system; 1 x 4-bit ident system; Set, 4-fold; Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable; 2 x Connecting cable, SUB-D 25-pin; Length: 3m; 1 x Universal interface for expanding the inputs and outputs of training systems; - 4 flat cable connections, 16-pole, for connection to expansion modules; 2 x connection sockets Sub-D, 25-pole; - 16 digital inputs on 4 mm safety sockets; - 16 digital outputs on 4-mm- safety sockets; 1 x Safety load contactor unit DC 24V/3kW; Contactor AC-3 3kW/400V Coil: 24V DC; Auxiliary contacts: 3NC/2NC; Inputs/outputs on 4mm safety technology; 1 x Safety contactor unit DC 24V/3kW; Switching units:			[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		<p>4NO/4NC; Inputs/outputs on 4mm safety technology; Coil: 24V DC; 1 x Combination box and cable set; - Combination box with emergency stop and release button; 1 x Programming software for safety technology; 1 classroom licence of the configuration software for Windows; 1 configuration cable; 1 x Set of equipment markings for automatic machines; Marking for: - Sensors (position, level, testing);- pneumatic elements. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired. CE-marking or equivalent.</p>				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
227	Station 7: Intelligent Storage (Autonomous High Shelving Storage)	Intelligent storage consisting of: 1 x Project and test cart; Table trolley with size 5/8 T-slot plate as a universal platform for mounting devices and systems; Cascadable for setting up larger systems; Equipped with 4 rubber castors, 75mm, two of which are lockable; Dimensions: w = 800mm, d = 750mm, h = 895mm; for accommodating experiment panels in A4 format; incl. fixing material; 1 x Protective enclosure; Complete protective enclosure for the high-bay warehouse consisting of: - Four-sided secured working area made of Plexiglas and aluminium profiles (approx. 750 x 800 x 1000mm), mounted on test cart, with lateral cut-outs for material transfer in larger and linear assembly processes. 1 x Storage tower: - 4 levels with subdivision into 5 storage locations each for storing a total of 20 workpiece carriers; 1 x Transfer system 24V DC; The transfer system must be designed as a double belt system to allow access for sensors and actuators from the bottom; length = 750 mm, width = 160 mm, track = 120 mm; for accomplishing operational tasks, e. g. mounting and control of drives, automatic systems, interfaces, setup of buffer systems, signal transfer etc.; 24V DC gear motor: - 2 directions of rotation, locked; DC control unit: - integrated	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<p>PWM motor control with overload protection; - analogue continuous speed control, optional actuation by external signal, 0...10V; - digital control, rapid traverse; - control panel for external tapping/feeding of signals and voltage by means of switches and potentiometers; - 12 x 4mm safety sockets; 2 detection modules; - for end position recognition, with 2-wire sensor, M12 connectors and supporting bracket; - 2 x M12 DI; M12 8-fold interface for connection of automatic systems, sensors, actuators, etc.; - 8 inputs on 4 x M12, for double assignment; - 8 outputs on 4 x M12, for double assignment; standard industry assignment: pin 4 signal 1/pin 2 signal 2; - separate control current circuits of sensors/actuators for safety-relevant functions; 10 x workpiece carrier pallets; - Dimensions: 119 x 119 x 15 mm; - Exchange workpiece carrier, screwed for workpieces up to 54mm in diameter; - Holder for 4-bit ident system; - Holder for mobile data carrier ident system; 1 x Flat Panel 15" Display.</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
	Station 7: Intelligent Storage (Autonomous High Shelving Storage) - continued	<p>Features: Operating elements: touch screen, keys for free assignment; reporting systems; Profinet interface; 3 linear axes with Profinet controller; 1 x Switch cabinet; - 3 independent 100W power supply units for the power supply of the axes, the CPU and the tape motor; - Industrial type PLC open Controller, CPU with Profinet interface and integrated decentralized periphery; - 6x input modules; - 4x output modules; - 1x IO-Link module; 1 x Set of 2 Pre-stoppers; pneumatically actuated stopper for pallet singling; - single-action stop cylinder; - Reed sensor at M12 connector for detecting the work position; - compressed air connection 4mm, working pressure 5bar; 1 x Swivel and lift cylinders; - for the transfer from the transfer system to the 3-axis lifting device; - 4x position sensing (2x per cylinder) by 3-wire sensor; - integrated angle scale; 1 x Electro-pneumatic 5/2 directional valve unit; 2-fold monostable and 2-fold bistable with pneumatically assisted manual override and LED Indication of switching status, operating voltage 24 V, reverse polarity protected; 1 x Pneumatic maintenance unit; - Pressure reducer with water separator and manometer for exact adjustment of the working pressure; 1 x RFID system for Profinet; Identification system</p>				<p>[Manufacturer/Brand] [Model] [Offered specifications]</p>

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		consisting of: Evaluation unit for up to 2 read/write heads for Profinet/IO (operating voltage 24 V DC); mounted on mounting plate for mounting in transfer system; 2 read/write heads for mobile data media; 1 x M12 interface, 8x, 8DI/DO for connection of sensors and actuators; - 8 inputs on 4 x M12, double assignable; - 8 outputs on 4 x M12, double assignable; 2 x Module length measurement; Diffuse reflection laser light scanner with analog output (0 . . 10 V) for high-resolution position determination of the axes; adjustable holder for flexible attachment to the linear axes. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired. CE-marking or equivalent.				
228	Training Package Smart Maintenance with augmented reality applications	The application allows wireless access to each actuator of the corresponding sub-system as well as to all sensor signals; including all pneumatic and electrical circuit diagrams of the subsystems; consisting of: Software Application Smart Maintenance for Station Pallet Store (number of users is unlimited); Software Application Smart Maintenance for Station Handling (number of users is unlimited); Software Application Smart Maintenance for Station Individual	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		Manufacturing Process (number of users is unlimited).				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
229	SCADA PLC Package	<ul style="list-style-type: none"> <li>- Profibus interface</li> <li>- 32 digital inputs</li> <li>- 32 digital outputs</li> <li>- 8 analog inputs, 4 analog outputs</li> <li>- 24MB memory card</li> <li>Touch Panel with Comfort</li> <li>Applications:</li> <li>- 7" colour graphical display with touch function</li> <li>- Profinet interface</li> <li>- Profibus interface</li> <li>5-port Profinet switch</li> <li>for setting up a Profinet network</li> <li>mounted on:</li> <li>PLC Experimenting Board</li> <li>with short mounting rail and internal 24V DC supply,</li> <li>for universal assembly with PLC components and a 7" touch panel</li> <li>prepared for:</li> <li>- 32 digital inputs, 32 digital outputs</li> <li>24V DC</li> <li>- 8 analog inputs, 4 analog outputs</li> <li>±10V DC</li> <li>- industrial Ethernet switch</li> <li>- touch panel</li> <li>equipped with:</li> <li>- power supply 110...240V AC, 50...60Hz</li> <li>- power cord with plug</li> <li>- central on/off switch</li> <li>- integrated power supply 24V DC/6.5A</li> <li>- 2 system interfaces SUB-D 25-pin</li> <li>- 32 safety sockets , 4mm, for digital in- and outputs</li> </ul>	Piece	1	Y	<p>[Manufacturer/Brand]</p> <p>[Model]</p> <p>[Offered specifications]</p>

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<ul style="list-style-type: none"> <li>- 12 safety sockets , 4mm, for analog in- and outputs</li> <li>- 16 push/lock-in switches to simulate the digital inputs</li> <li>- 1 simulation field for analog processing</li> <li>- C-rail and supply connection for industrial switch</li> <li>- connection terminals for external consumers, emergency cut-off</li> </ul> <p>Design and workmanship: Board with front panel in photorealistic, four-colour design. Wires depicted according to colour code. A special coating makes the panel surface scratch-proof. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user.</p> <p>Inclusive of the following software: Inclusive of the following software:</p> <ul style="list-style-type: none"> <li>- PLC software full industrial version, single license</li> <li>- Software for Touch Panel full industrial version, single license</li> </ul> <p>Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired.</p>			

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
230	Quick Start Guide, laminated	PLC Experimenting Board - Safety instructions 1 x Instruction for use, laminated	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
231	Quick Start Guide, laminated	PLC Experimenting Board with - Assembly and commissioning 1 x Instruction for use, laminated	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
232	Quick Start Guide, laminated	Comfort Panel - Operating the device 1 x Instruction for use, laminated	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
233	Patch cable set	2 x 0.25m; 2 x 0.5m	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
234	Set of industrial ethernet RJ45 connectors	1 set = 10 pieces; For realization of 100 MBit/s industrial ethernet; connection in the field range; FastConnect RJ45 m connector with robust; metal housing acc. to EN 50173 / ISO IEC 11801; for CAT 5 connections up to 100 m	Set	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
235	Industrial ethernet line 2 x 2 (spiral quad)	Length = 20 m; For realization of 100 MBit/s industrial ethernet; connection in the field range; FastConnect; for CAT 5 connections up to 100 m; double shielded	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
236	Stripper for industrial ethernet line	for Fast Connect plug	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
237	Student manual, incl. CD-ROM	"Industrial type PLC Fundamentals"	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
238	Instructor's manual, incl. CD-ROM	"Industrial type PLC Fundamentals"; Structure of the manual and contents same as in student edition, however with solutions	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	239 – 243 not included in this Lot.	N/A	N/A	N/A	N/A
244	Student manual, incl. CD-ROM	"Transfer system with DC drive"; Contents: 1. Experiment 1: Electrical commissioning;2. Experiment 2: Jog mode;3. Experiment 3: Speed control;4. Experiment 4: Workpiece transport; Structure of the manual: 1. Task;2. Equipment and components required;3. Technology diagram and layout plan;4. Completing the circuit diagram;5. Compiling the symbol table;6. Wiring and commissioning;7. Function test	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
245	Instructor's manual	incl. CD-ROM; "Transfer system with DC drive"; Contents as in student manual, however with solutions	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
246	Presentation aids, incl. CD ROM	"Transfer system with DC drive"; Contents: View transfer system; View control panel; Digital in-/output module assembly CPU; Analog in-/output module assembly CPU; Experiment 2: Jog mode - layout plan;Experiment 2: Jog mode - circuit diagram;Experiment 2: Jog mode - solution example;Experiment 3: Speed control - qualitative speed curve;Experiment 3: Speed control - layout plan;Experiment 3: Speed control - circuit diagram;Experiment 3: Speed	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		control - solution example;Experiment 4: Workpiece transport - layout plan;Experiment 4: Workpiece transport - flowchart;Experiment 4: Workpiece transport - circuit diagram;Experiment 4: Workpiece transport - solution example.				
N/A	N/A	247 not included in this Lot.	N/A	N/A	N/A	N/A
248	Robot station	<p>Vertical articulated-arm robot, incl. control unit with Profinet slave interface, programming device, trolley with protective housing and light curtains, software and conveyor belt.</p> <p>a) Vertical articulated-arm robot; Features: - 6 controllable axes; - Position repeatability +/- 0.01mm; - Max. payload: 3kg (4kg for vertical wrist); - Working range at wrist center: 580mm; - Max. speed 6.2m/s;</p> <p>Included in delivery: Control unit for connection with a PC or programming device, Profinet, Ethernet, an emergency stop and door circuit contact, 16 digital in- and outputs (24V DC); DeviceNet module; Interface with 16 additional in- and outputs;</p> <p>Operating and programming device for programming and monitoring of all robot functions; Technical data: - Graphical colour touch screen; - Connecting cable, 10m, with system connectors; - USB connection for data saving; - Editor for creating a visualisation surface on the device;</p> <p>Programming and monitoring</p>	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
		<p>functions; - Information read-out, even during operation; - Virtual on-screen keyboard for creating and editing programs; - Monitoring in- and outputs; - Maintenance reminder indicating service intervals; - Error indication; - Teaching of positions; - System languages: English, (further languages on request); Robot programming software for on-line programming of the robot; Features: - Programming; - File manager; - Backup and restore; - Configuration editor; - Program editor; - Online monitor; - Virtual programming device; Accessories: - Ethernet connecting line PC - robot, 3m; b) Pneumatic vacuum tool set, multifunction gripper; consisting of: - 2-finger gripper to hold assembly/disassembly tool, pencil, ballpen, cubic workpieces; - Vacuum suction pad; - Vacuum generator (Venturi tube); - Vacuum sensor; - Valve terminal with three 5/2-way valves, monostable; - Vacuum hose, plug-in connection, mechanical flange adapter for the robot's manual interface; - 2 multifunction gripper jaws; c) Set of fastening material; Fixing rails with screws and slot nuts to fasten the robot on the trolley; d) Protective housing, incl. control; consisting of: - Protective housing, approx. 750 x 800 x 1000mm, three-side safe working space made from plexiglass and aluminium profiles, for</p>			

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		assembly on mechatronics trolley. Cut-out a the sides for material forwarding in larger or line assembly processes. - Light curtain, transmitter and receiver;				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
	Robot station - continued	<p>Switch cabinet for RCDs and terminals; Operating panel with Emergency-Stop, start, stop and selector switch HAND/0/AUTOMATIC and signal lamps; - Display field with 8 status LEDs for the robot outputs; - Interface to the external PLC via 25-pin SUB-D; - 25-pin SUB-D interface; - Power supply 24V DC/4.5A; e) Mechatronics trolley; Project and test cart; - Table trolley with aluminium T-slot plate for universal assembly of devices and systems; - T-slot plate with size 5 and 8 slots, for universal fixing of mechanical components; - Cascadable for setting up larger systems; - Equipped with 4 rubber castors, 75mm, two of which with brakes; - Support frame made of powder-coated extruded aluminium with vertical slots for accommodating accessories. - The vertical slots allow optimum height adjustment of all mountable parts.; - Dimensions: w = 800mm, d = 750mm, h = 895mm; f) Twin material chute; Material singling station for the tin workpiece bottoms and tops allowing programming experiments around measurements of user coordinate systems and palleting. The incline of the sliding surfaces is individually adjustable. g) Flat storage tray with 12 deposit places and 5 tracking contours, for deposition of workpieces, assembly and disassembly tools and pencils.; Milled-</p>			<p>[Manufacturer/Brand] [Model] [Offered specifications]</p>

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		in tracks allow programming exercises for different motion commands. h) Robot tooling set; Assembly and disassembly tools, pencil; incl. effector flange for 2-finger gripper;				
	Robot station - continued	i) Transfer system 24V DC; length = 750 mm, width = 160 mm, track = 120 mm; for accomplishing operational tasks, e. g. mounting and control of drives, automatic systems, interfaces, setup of buffer systems, signal transfer etc.; 24V DC gear motor; - 2 directions of rotation, locked; DC control unit; - integrated PWM motor control with overload protection; - analogue continuous speed control, optional actuation by external signal, 0...10V; - digital control, rapid traverse; - control panel for external tapping/feeding of signals and voltage by means of switches and potentiometers; - 12 x 4mm safety sockets; 2 detection modules; - for end position recognition, with 2-wire sensor, M12 connectors and supporting brackets, - 2 x M12 DI;				[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		M12 8-fold interface for connection of automatic systems, sensors, actuators, etc.; - 8 inputs on 4 x M12, for double assignment; - 8 outputs on 4 x M12, for double assignment; standard industry assignment: pin 4 signal 1/pin 2 signal 2; - 1 system connection SUB D, 25-pin, - separate control current circuits of sensors/actuators for safety-relevant functions; j) Basic commissioning / parameterization; (factory setting). Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired. CE-marking or equivalent.				
249	1 x Quick Start Guide, laminated	Robot system	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
250	1 x Quick Start Guide, laminated	Robot system - mobile programming device	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
251	1 x Quick Start Guide, laminated	Robot system - Controller	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
252	1 x Quick Start Guide, laminated	Robot system - Profinet	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
253	Workpiece carrier pallet	Dimensions: 119 x 119 x 15 mm; D288- Holder for 4-bit ident system; - Holder for mobile data carrier ident system	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
254	4-bit ident system	Set, 4-fold; Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
255	Connecting cable, SUB-D 25- pin	Length: 3m	Piece	2	N	[Manufacturer/Brand] [Model] [Offered specifications]
256	Workpiece set - white metal box	click mechanism, 10 pieces	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
257	Workpiece set - white metal box with different marking than item 256	click mechanism, 10 pieces	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
258	Workpiece set - white metal box with different marking than item 257	click mechanism, 10 pieces	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
259	Workpiece set - white metal box with different marking than item 258	click mechanism, 10 pieces	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
260	Robot exercise ground	with repository for three tools in pencil form in different colours e.g red, green and blue; incl. fastening material; The exercise ground consists of a platform with an exchangeable plastic overlay which has a flat and an arched area and is imprinted with various contours and deposit zones for the cubic workpieces. The coloured pencils serve as tools for retracing the contours when programming path-	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		precise movements. The arched area allows programming exercises with regard to the spatial orientation of the tools in path retracing.				
261	Set of cubic workpieces	14 workpieces in different colours e.g white, red, green, blue, black, yellow, orange; The cubes are imprinted with different forms. They can be used for pick&place jobs with the Exercise Ground. In addition, the cubes serve as objects for quality control and parts localisation for experiments with the Integrated Vision feature of the robot station.	Set	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
262	Pencil tool set	with repository, incl. fastening material; For drawing objects with the Exercise Ground as a support. The pencil is picked out of the repository with the gripper of the robot. Then the robot can produce a drawing on an A4 paper sheet laid on the Exercise Ground.	Set	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
263	Student manual, incl. CD-ROM	;"Robotics" in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
264	Instructor's manual, incl. CD-ROM	"Robotics"; Contents identical to student manual, however with solutions and answers in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
265	Presentation aids, incl. CD-ROM	"Robotics - Basic principles" in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
266	Control, simulation and programming software	for online and offline programming of the robot system or simulation; Full industrial version for educational institutions (evidence required). Network license for classroom/training centre. - Teaching, direct control and program transfer (up-/download of programs into/from the control unit); - Transfer of actual position into the project, moving the robot arm to defined positions; Simulation software; Offline programming reduces the risk by visualizing and confirming solutions and layouts before the actual robot is installed, and generates higher part quality through the creation of more accurate paths. - Virtual robot control: - Virtual programming device; - Collision detection; - Path optimization; - CAD import; - AutoPath; - Graphics editor; - Comprehensive parts library; Predefined instruction templates; with tasks for programming of industrial robots; Programming software included RAPID. Compatibility with existing SIMATIC series as per the Industrial Mechatronics Level 6 curriculum of programmable logic controller and automation systems is desired.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
267	Student manual, incl. CD-ROM	"Robotics - Basic simulation exercises" in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
268	Instructor's manual, incl. CD-ROM	"Robotics - Basic simulation exercises"; Contents identical to student manual, however with solutions and answers. in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
269	Components and software	for the integration of the robot station into the applied mechatronics concept; consisting of transfer system, RFID reading and writing units, pre-stopper, software.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	<i>270 – 321 not included in this Lot.</i>	N/A	N/A	N/A	N/A
322	Voltage and continuity tester	DC voltage: 12 - 690 V; AC voltage: 12 - 690 V; Continuity: 0 - 400 kΩ; Phase rotation: 100 - 690 V. CE-marking or equivalent.	Piece	9	N	[Manufacturer/Brand] [Model] [Offered specifications]
<b>Hydraulics / Electrical Machines</b>						
N/A	N/A	<i>323 – 324 not included in this Lot.</i>	N/A	N/A	N/A	N/A

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
325	Workstation, Hydraulics, 230V/50Hz, double sided	each consisting of:1 base frame with:2 grids;1 unit, 230V/50Hz with LS double pump, oil pan, hose set, switch box, and P/T distributor;2 module frames, double-row;1 integrated container;2 measuring glasses;1 hose tray for 50 hoses;1 load unit, swivel-mounted, 15 kg;4 oil drip trays;completely assembled; 2 Device sets for workstation "On/off hydraulics - manual operation , complete; each consisting of:1 x Differential cylinder with protective housing and connection facility for load unit ;1 x Planetary motor;1 x 4/2-way directional control valve;3 x 4/3-way directional control valve ;2 x Pressure relief valve;1 x Pressure relief valve, pilot operated;1 x Pressure reducing valve, directly operated;1 x 2-way flow control valve;1 x Throttle valve;1 x Throttle check valve;1 x Non-return valve;1 x Non-return valve, hydraulic pilot controlled;1 x Accumulator module;Hydraulic distributor 4 ports;1 x Shut-off valve;4 x Manometer 0 to 100 bar with measuring hose;8 x Hose line 630 mm;4 x Hose line 1000 mm with 90° fitting and Minimes port;2 x Hose line 1500 mm with Minimes port; 2 x Expanded device set for hydraulic workstation from "On/off hydraulics - manual operation" to "On/off hydraulics - electrical operation; each consisting of:2 x 4/2-way directional control valve	Piece	5	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		4WE6C6X;1 x 4/3-way directional control valve 4WE6G6X;1 x 4/3-way directional control valve 4WE6J6X;1 x 4/3-way directional control valve 4WE6E6X; 2 x Electrical device sets for workstation "On-off hydraulics - electrical operation , each consisting of:1 x Control unit 19" version,;1 x Control unit 19" version, I/O module;1 x Adapter plate 19" version, 1 switch, IEC socket, connecting cable 0,5 m;1 x Electronic pressure switch;2 x Proximity switch, inductive;3 x Solenoid cable with connector form A, black, with LED, with protective circuit;1 x Cable Set hydraulics 2; 2 x Expanded device set for workstation for "On/off; hydraulics - electrical operation ;each consisting of:;1 x Pressure relief valve, pilot operated;3 x Non-return valve ;1 x Electronic pressure switch ;1 Hydraulic distributor 4 ports; 1 x Storage system for hydraulic components;component carrier with grid, double sided - assembled, including;consisting of: Base frame: 2 grids, top; 2 grids, bottom. CE-marking or equivalent.				
326	Training Set Industry 4.0 in hydraulics	Expanded device set for workstation from On/Off hydraulics - electrical operation to "Industry 4.0 in hydraulics" consisting of: 1 x IoT Gateway module with Fieldbus coupler, 16 DI, 4 AI; 1 x Basic module, bracket with connection for power	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		supply 24 V DC; 1 x Temperature sensor (4...20 mA) with connection plate and cable; 1 x Connection cable external power supply - bracket; 1 x Ethernet cable for connecting IoT Gateway - Modbus coupler; Ethernet cable for connecting PC - IoT Gateway.				
327	Set of accessories for workstations	consisting of: 200 l Hydraulic oil RSL22; 10 Pressure relief coupling; 1 Fill and testing device for hydraulic accumulators; Cable holder for 50 measurement lines; 1 Exercise book with solutions (trainer's manual) "On/off hydraulics - manual operation; 5 Exercises (trainee's manual) "On/off hydraulics - manual operation; 1 Exercises with solutions (trainer's manual) "On/off hydraulics; electrical operation , EN;5 Exercises (trainee's manual) "On/off hydraulics - electrical operation , EN; 5 x Technical book "Knowledge compact: Hydraulics basic principles"; 5 x Technical book "Hydraulic trainer, volume 1 - Hydraulics. Basic principles and components", All in English language.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
		<b>Workshop Welding</b>				
328	Multiprocess welding systems (MIG/MAG, MMA, TIG)	consisting of: Power source: Welding current max. 270 A; Welding current min.10 A; Welding current / Duty cycle [10min/40°C]; 270A 30% MIG/MAG, MMA, TIG; Welding current / Duty cycle [10min/40°C]; 170A 100% MIG/MAG, MMA, TIG; Open-circuit voltage 85 V; Mains voltage 3 x 380V /	Piece	6	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		400V / 460V; Degree of protection IP23; Dimensions 687 x 276 x 445 mm; Feed roller, 0.9-1.0; Pressure reducer W21, 8x1/14"; Earth cable 35mm <sup>2</sup> 4m EC/BY earth clamp /BY male; ToolBox: designed with the same footprint and fittings as the power source and so just sit the power source onto the top of the ToolBox and secure with four screws (provided); Trolley: carriage designed for the inclusion of cooling unit, power source and gas bottle (must fulfill Kenyan Safety Standard Requirements (KS / ISO ...); Electrode cable 35mm <sup>2</sup> , 4m, 300A. CE-marking or equivalent.				
329	Welding wire	SG2 , ø 1.0mm, 15kg K-300 coil	Piece	18	N	[Manufacturer/Brand] [Model] [Offered specifications]
330	Insulating sleeve	ø 12,,2 / ø17.7x17.5 complete	Piece	30	N	[Manufacturer/Brand] [Model] [Offered specifications]
331	Nozzle holder	M6 / SW9x31 / ø13.5	Piece	60	N	[Manufacturer/Brand] [Model] [Offered specifications]
332	Contact tube	1.0 / M6 / ø8x24	Piece	240	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	333 not included in this Lot.	N/A	N/A	N/A	N/A

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
334	Gas nozzle	ø13 / ø22x58 CT M20x2	Piece	60	N	[Manufacturer/Brand] [Model] [Offered specifications]
335	Steel core bright	Wire rope 1.0 / 15m	Piece	12	N	[Manufacturer/Brand] [Model] [Offered specifications]
336	Rutile Cellulosic Coated Electrode	Diameter x Length (mm) 2.5 x 350, 270 pieces per set	Piece	18	N	[Manufacturer/Brand] [Model] [Offered specifications]
337	Rutile Cellulosic Coated Electrode	Diameter x Length (mm) 3.2 x 350, 170 pieces per set	Piece	18	N	[Manufacturer/Brand] [Model] [Offered specifications]
338	Welding gloves E-Hand, MIG/MAG	Welding gloves E-Hand, MIG/MAG	Piece	60	N	[Manufacturer/Brand] [Model] [Offered specifications]
339	MIG torch holder with magnet	MIG torch holder with magnet	Piece	6	N	[Manufacturer/Brand] [Model] [Offered specifications]
340	Welding Helmet	protects face and neck from flash burn, ultraviolet light, sparks, infrared light, and heat. An automatic welding filter combines a passive UV and a passive IR filter with an active filter, the luminous transmittance of which varies in the visible region of the spectrum, depending on the irradiance from the welding arc. The luminous transmittance of the automatic welding filter has an initial high value (light state). After the welding arc strikes and within a defined switching time, the luminous transmittance of the filter changes to a low value (dark state).	Piece	13	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		Classification in accordance with Kenyan Standards or ISO Optical class = 1; Scattered light = 1; Homogeneity = 1; Viewing angle dependence = 2; CE-marking or equivalent.				
341	Leather welding apron	Leather welding apron	Piece	20	N	[Manufacturer/Brand] [Model] [Offered specifications]
342	Wire brush cast steel	Wire brush cast steel	Piece	20	N	[Manufacturer/Brand] [Model] [Offered specifications]
343	Cinder Hammer (250g)	Cinder Hammer (250g)	Piece	13	N	[Manufacturer/Brand] [Model] [Offered specifications]
344	Pliers for 12 - 15 mm gas nozzle	Pliers for 12 - 15 mm gas nozzle	Piece	12	N	[Manufacturer/Brand] [Model] [Offered specifications]
345	Welding booth	Sonic noise-absorbing wall elements and movable lamella segments; Dimensions: - H 2200 x W 2024 x D 2024 mm. - Free-standing set-up. The rear wall and the two walls are made of Sonic noise-absorbing wall elements. The entrance is at the front and consists of 2 sliding slat segments in a double rail system; The double rail system above the entrance hangs on a height of approx. 2.20 m. - Sonic noise-absorbing wall elements. Dimensions: Total 6 pieces 2200 x 1012 x 50 mm (H x W x D). -	Piece	6	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		Perforated sheet metal on both sides, filling of sound-absorbing mineral wool, optimally compressed (60 kg/m <sup>3</sup> ) with black glass fibre fleece (prevents emitting of mineral dust); In the middle, a thin steel plate is included.				
346	Welding table	900x500 mm	Piece	6	N	[Manufacturer/Brand] [Model] [Offered specifications]
347	Workpiece holder for welding table	Workpiece holder for welding table	Piece	6	N	[Manufacturer/Brand] [Model] [Offered specifications]
348	Augmented Reality Welding Simulator System	consisting of: Augmented Reality Simulator; welding torches for GMAW/FCAW, SMAW and GTAW, router, antenna and standard accessories. Software & Support License; Included: GMAW, SMAW, FCAW-G, FCAW-S for the standard coupons (T-angled plate, Overlapped plate, V-Butt plate, V-Butt Pipe 6", Tangled plate to pipe 6" in carbon steel, stainless steel and aluminum, Workstand (short) for fixation of work pieces in different positions; Flight case. CE-marking or equivalent.	Piece	3	Y	[Manufacturer/Brand] [Model] [Offered specifications]
349	Server and software for Welding Simulator	Server (physical server); Teacher Software (LMS) and E-Learning Platform. GMAW – Curriculum English; GMAW course with practical and theoretical exercises, SMAW course with practical and theoretical exercises, TIG – Curriculum English;	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		TIG course with practical and theoretical exercises. CE-marking or equivalent.				
		<b>Project Workshop / Mechanical Assembly</b>				
350	Helical gear unit, single-stage, in system case	Disassembled helical gear unit, supplied in system case for transport and storage; Case dim.: appr. (w x h x d) 400 mm x 578 mm x 300 mm; components included:1 gear housing;1 gear unit cover;1 output shaft, stainless;1 input shaft, stainless;1 toothed wheel, stainless;1 pinion, stainless;1 set of grooved ball bearings), stainless;1 set of retaining rings;1 set of keys;1 set of sealing rings;4 cylinder head bolts, ISO 4762, M8x16, stainless;1 bleed screw, brass, M10x1; 2 end screws, stainless, M10x1;1 hand wheel.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
351	Tool set for gear units, in system case	required for performing the experiments in manual "Gear unit technology";consisting of: Pliers for retaining rings A1, 10-25;Pliers for retaining rings A2, 19-60;Pliers for retaining rings J3, 40-100;Angular pliers for retaining rings J31, 40-100;Socket wrench, SW. 10;Spanner, SW. 10/13;Angular hexagon socket wrench, SW. 5;Angular hexagon socket wrench, SW. 6;Synthetic system case with facility to accommodate and fix tools, for assembly with the basic gear case,	Set	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		with fold-down handle; Case dim.: appr. (w x h x d) 400 mm x 105 mm x 300 mm				
352	Assembly and disassembly instruction, incl. CD-ROM	Helical gear unit, single-stage; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
353	Caster for gear unit system case	with 4 wheels, two of which lockable;The case can be fixed on the caster. Excellent motion through big wheels and long wheelbase. Recessed pull handles. Dimensions (w x h x d): 519mm x 157mm x 365mm	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
354	Rubber mat	for safety at work and protection of facility, 800 mm x 500 mm	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
355	Manual Practical Experiments, incl. CD-ROM	"Gear Unit Technology - Helical gear, single-stage"; Contents: 1. Fundamentals of Demo Gear;2. Technical Communication;3. Gear Ratio;4. Gear Wheels and Gear Drives;5. Assembly and Disassembly;6. Maintenance and Upkeep;7. Quality Control; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
356	Manual Trainer Section, incl. CD-ROM	"Gear Unit Technology - Helical gear, single-stage";Contents same as for Practical Experiments, however with solutions; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
357	Set of colour transparencies, incl. CD-ROM	"Gear Unit Technology- Helical gear, single-stage"; in English language	Set	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
358	Set of Quick Start Guide, laminated	"Helical gear unit"; in English language	Set	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
359	Digital learning assistant "Helical Gear, single stage"	App with process animations, manuals, datasheets, explanations, assembling and disassembling instructions with augmented reality; unlimited license period, unlimited number of users; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
360	Video clips "Helical Gear, single-stage"	on CD, site license;1. Function;2. Assembly; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
361	CAD data for helical gear unit	in IGES and STEP format; exclusively for educational purpose; - Assembly preparation in CAD; - Visualisation of assemblies; - Documentation of assemblies; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
362	Spare part set for single-stage helical gear unit	consisting of: 3 keys;16 retaining rings in different sizes; 2 end screws; 2 sealing rings	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
363	Helical gear unit 2/3-stage in system case	Disassembled helical gear unit, supplied in 2-part dismountable system case for transport and storage; Components included:1 gear wheel, coated; z=27;1 gear wheel, coated; z=21;1 gear wheel, coated; z=78;1 gear wheel, coated; z=31;1 gear wheel, coated; z=66;1 gear wheel, coated; z=93;1 pinion shaft, coated; z=21;1 pinion shaft, coated; z=16;1 driven shaft, stainless steel;1 set of	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		feather keys (2-stage, 3-stage), stainless;1 set of grooved ball bearings (2-stage, 3-stage), stainless;1 set of cylinder screws M8 x 20-8.8, stainless;1 set of hexagon bolts M8 x 20-8.8 stainless; set of hexagon bolts M6 x 16-8.8 stainless;1 flange, output side; 2 spacer tubes, stainless steel;1 gear housing;1 set of seal rings for shafts and bores;1 gear cover with gasket;2 closing caps;1 set of shim rings;1 assembly aid ;1 gear cover with coated input shaft;1 handwheel; Case dim.: (w x h x d) 400 mm x 578 mm x 300 mm				
364	Tool set for gear units in system case	required for performing the experiments in manual "Gear Unit Technology"; Components included: Pliers for locking snap rings A1, 10-25;Pliers for locking snap rings A2, 19-60;Pliers for locking snap rings, J3, 40-100;Pliers for locking snap rings, angular J31, 40-100; Socket wrench, SW. 10; Open-end wrench, SW. 10/13; Angular hexagon socket wrench SW. 5; Angular hexagon socket wrench SW. 6; Synthetic system case with facility to accommodate and fix tools, for assembly with the basic gear case, with fold-down handle. Case dim.: (w x h x d) 400 mm x 105 mm x 300 mm	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
365	Assembly instructions, incl. CD-ROM	2/3-stage helical gear; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
366	Student Manual, incl. CD-ROM	"Gear Unit Technology - 2/3-stage helical gear unit"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
367	Instructor's Manual, incl. CD-ROM	"Gear Unit Technology - 2/3-stage helical gear unit"; Contents same as in student manual, however with solutions; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
368	Presentation Aids, incl. CD-ROM	"Gear Unit Technology - 2/3-stage helical gear unit"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
369	Digital learning assistant "Helical Gear "	App with process animations, manuals, datasheets, explanations, assembling and disassembling instructions with augmented reality; unlimited licence period, unlimited number of users; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
370	Video clips "2/3-stage helical gear unit"	1. Function of a two-stage gearbox; 2. Assembly of a two-stage gearbox; 3. Function of a three-stage gearbox; 4. Assembly of a three-stage gearbox; on CD, site license; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
371	Spare part set for the 2/3-stage helical gear unit	consisting of: 5 x key; 25 x locking snap ring; 1 x locking screw; 30 x position shim; 2 x cylinder bot; 2 x locking snap ring	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
372	CAD data for the 2/3-stage helical gear unit,	in IGS, DWG, STL and STP formats; exclusively for use in lessons: - CAD assembly preparation; - Visualization of assembly processing; - Documentation of assembly processing; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
373	Dial Gauge with case	Components included: - Stativ with dovetail gauge holder: activity radius about 150mm; - Magnetic base: 50 x 60 x 55mm; holding force: 750N; -	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		Sensor measuring device: measuring range 1.0mm; reading 0.01mm; diameter 32mm; sensor length: 16.6mm;- Gauge: measuring range 10mm; reading 0,01mm; diameter 58mm; - Open-end wrench SW 8/10.				
374	Set of bevel gear components in system case	3-stage bevel gear unit with upstream/downstream helical gear, 2 additional ratio types; Set of components, supplied in 2-part dismountable system case for transport and storage; consisting of: 1 Housing, coated; 1 Lid, drive-side, coated; 1 Drive shaft, stainless (rustproof); 1 Gear wheel (pinion gear), stainless (rustproof), z=21; 1 Gear wheel 2, stainless (rustproof), z=73; 1 Bevel pinion shaft 3, stainless (rustproof), z=13; 1 Crown wheel 4, stainless (rustproof), z=41; 1 Pinion drive shaft 5, stainless (rustproof), z=17; 1 Gear wheel 6, stainless (rustproof), z=55; 1 Drive shaft, stainless (rustproof); 1 Spacer, stainless (rustproof); 1 Cover, plexiglass; 1 Grooved ball bearing, stainless (rustproof),; 1 Grooved ball bearing, stainless (rustproof),; 2 Grooved ball bearing, stainless (rustproof),; 2 Tapered roller bearing, stainless (rustpr.),; 2 Tapered roller bearing, stainless (rustpr.), 1 Feather key, stainless (rustproof), -A5x5x16; 1 Feather key, stainless (rustproof),- A5x5x20; 2 Feather key, stainless (rustproof), -A6x6x20; 1 Feather key,	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		stainless (rustproof), A10x8x32; 4 Cylinder screws, ISO 4762-M8x16, stainless (rustproof); 8 Cylinder screws, ISO 4762-M6x12, stainless (rustproof); 1 Set of shim rings, stainless (rustproof); 1 Groove nut, stainless (rustproof); 1 Locking plate, stainless (rustproof); 1 Set of shim rings (0.1 / 0.3 ), bright steel; 2 Locking screws M10x1, stainless (rustproof); 1 Venting screw, brass; 1 Shaft seal ring, mounted in adapter; 1 Cover, round, POM; 2 Locking cap, with knurled screw and magnets; 1 Hand wheel, aluminium; 1 Mounting sleeve, small, POM; 1 Mounting sleeve, big, POM; 1 Mounting aid, angular, POM; Synthetic system case with facility to accommodate and fix tools, for assembly with the Gear unit technology, mit fold-down handle.; Case dim.: (w x h x d) 400 mm x 740 mm x 300 mm				
375	Tool set for gear units, in system case	required for performing the experiments in manual "Gear unit technology"; consisting of: Snap ring pliers A1, 10-25; Snap ring pliers A2, 19-60; Snap ring pliers, J3, 40-100; Snap ring pliers, angled J31, 40-100; Socket wrench, SW. 10; Open-end spanner, SW. 10/ 13; Hexagonal key, SW. 5; Hexagonal key, SW. 6; Synthetic system case with facility to accommodate and fix tools, for assembly with the basic gear case,	Set	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		with fold-down handle; Case dim.: (w x h x d) 400 mm x 105 mm x 300 mm				
376	Additional ratio type Step 1	Additional mounting options and;gear ratio alternation.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
377	Additional ratio type Step 3	Additional mounting options and;gear ratio alternation.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
378	Manual "Assembly / Disassembly", incl. CD-ROM	Bevel gear unit; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
379	Student Manual: Practical Experiments, incl. CD-ROM	"Gear Unit Technology - Bevel Gear"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
380	Instructor's Manual, incl. CD-ROM	"Gear Unit Technology - Bevel Gear"; Contents same as for Practical Experiments, however with solutions; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
381	Presentation aids, incl. CD-ROM	"Gear unit technology - Bevel gear unit"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
382	Set of Quick Start Guide, laminated	Set of Quick Start Guide, laminated; in English language	Set	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
383	Video clips "Bevel Gear "	on CD, site license;1. Function;2. Assembly; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
384	Set of spare parts for bevel gear units	consisting of: 4 Feather key;30 Shim rings in various sizes 0.1 and 0.3; 2 Cylinder screws; 2 Shaft sealing rings; 19 Shim rings; 1 Locking plate; 1 Locking screw	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
385	Additional documentation "Bevel gear unit "	Additional documentation "Bevel gear unit "	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
386	CAD data "Bevel gear unit ETS7"	in IGS, DWG, STL and STP formats; exclusively for teaching purposes related to: - Assembly preparation in CAD; - Visualisation of assembly processes; - Documentation of assembly processes	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
387	Worm gear in case	Disassembled worm gear unit in synthetic transport and storage case, incl. required tools and accessories;Parts list:1 gear housing aluminium cast;1 gear cover, output side aluminium cast;2 gear bases aluminium cast;2 gear covers, input side aluminium cast;1 worm shaft rustproof;1 worm gear hollow shaft rustproof;1 inspection window cover aluminium cast;1 spacer ring rustproof;2 grooved ball bearings, roller bearing steel; 2 tapered roller bearings, roller bearing steel ; 1 locking cap plastic 35x7; 16 cylinder screws with hex socket head, with low profile head rustproof M6x14; 8 cylinder screws with hex socket head, with low profile head rustproof M5x16; 1 radial shaft seal ring AS17x35x7; 2 radial shaft seal rings.AS35x50x7; 1	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		copper sealing ring form C copper 10x16x1.5; 1 locking screw rustproof M10x1; 3 shim rings rustproof 42x52x0; 2 shim rings rustproof 50x62x0.1; 1 Allen wrench 4mm, hexagonal nickel-plated; 1 Allen wrench 5mm, hexagonal nickel-plated ; 1 sin punch, 5x10x150mm hardened impact head; 1 soft-faced hammer; 1 surface paste, blue; 1 sign writing brush with Chinese bristles.				
388	Assembly instructions, incl. CD-ROM	Worm gear; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
389	Quick Start Guide, laminated	Worm gear - Sectional view; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
390	Quick Start Guide, laminated	Worm gear - Exploded view; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
391	Student manual, incl. CD-ROM	"Worm gear type - gear unit technology"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
392	Instructor's manual, incl. CD-ROM	"Worm gear type - gear unit technology" Contents as student Manual ,however with Solutions; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
393	Augmented documentation Worm Gear	Augmented documentation Worm Gear; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
394	Hammer mounting through inner ring	Training system for mechanical mounting and dismounting of deep groove anti-friction bearings through the inner ring, in synthetic storage case; consisting of: 1 shaft journal; 1 deep groove anti-friction bearing; 1 impact sleeve with detachable impact ring; 1 soft-faced hammer, 460g; 1 two-jaw, self-centering puller; 1 dismounting aid; 1 double-ended open jaw spanner, size 30/32; 1 ring spanner, size 17; 1 mounting plate.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
395	Quick Start Guide, laminated	Anti-friction bearing: Hammer assembly of inner ring; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
396	Quick Start Guide, laminated	Anti-friction bearing: Experimental setup of inner ring hammer assembly; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
397	Hammer mounting through outer ring	Training system for mechanical mounting and dismounting of deep groove anti-friction bearings through the outer ring, in synthetic storage case; consisting of: 1 dummy housing; 1 borenut; 1 deep groove anti-friction bearing; 1 impact sleeve with detachable impact ring ; 1 soft-faced hammer, 460g; 1 face spanner wrench, size 5; 1 internal extractor; 1 counterstay fitting the internal extractor, 30-39; 1 double-ended open jaw spanner, size 30/32; 1 double-ended open jaw spanner, size 14/15; 1 double-ended open jaw spanner, size 20/22; 1 mounting plate.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
398	Quick Start Guide, laminated	Anti-friction bearing: Hammer assembly of outer ring I; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
399	Quick Start Guide, laminated	Anti-friction bearing: Hammer assembly of outer ring II; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
400	Quick Start Guide, laminated	Anti-friction bearing: Experimental setup of outer ring hammer assembly; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
401	Press fit of shaft in housing	Training system for mechanical mounting and dismounting of a shaft in housing, in synthetic storage case; consisting of: 1 shaft journal; 1 dummy housing with ejector pin; 1 flange cover plate with radial shaft seal; 1 ejector pin plate; 1 distance disk; 1 deep groove anti-friction bearing; 1 circlip; 1 circlip pliers A2; 1 impact ring; 1 hexagon screwdriver, size 3; 1 hexagon screwdriver, size 5; 1 two-jaw puller; 1 double-ended open jaw spanner, size 30/32; 1 ring spanner, size 17; 1 mounting plate.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
402	Quick Start Guide, laminated	Anti-friction bearing: Press assembly of shaft in housing I; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
403	Quick Start Guide, laminated	Anti-friction bearing: Press assembly of shaft in housing II; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
404	Quick Start Guide, laminated	Anti-friction bearing: Experimental setup of shaft in housing press assembly; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
405	Roller bearing - mechanical mounting on a tapered shaft seat	Training system for mechanical assembly and hydraulic disassembly of a spherical roller bearing with tapered bore, in plastic case. Mounting kit consisting of:- spherical roller bearing;- mounting plate;- tapered dummy shaft 1:12;- 2 lock nuts KM11;- hook spanner 68/75;- support washer;- double-ended open jaw spanner, size 19/22;- double-ended open jaw spanner, size30/32;- 12m sealing tape	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
406	Quick Start Guide, laminated	Mechanical tapered press fit; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
407	Quick Start Guide, laminated	Anti-friction bearing: Test Assembly of Mechanical; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
408	Roller bearing - hydraulic mounting on a tapered shaft seat	Training system for hydraulic assembly and disassembly of a spherical roller bearing with tapered bore, in plastic case. Mounting kit consisting of:- mounting plate;- tapered dummy shaft 1:12;- spherical roller bearing;- hydraulic nut;- lock nut KM11;- allen key size 5;- double-ended open jaw spanner, size 19/22;- double-ended open jaw spanner, size 30/32;- 12m sealing tape	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
409	Quick Start Guide, laminated	Hydraulic tapered press fit; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
410	Quick Start Guide, laminated	Anti-friction bearing: Test Assembly Hydraulic Tapered; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
411	Thermal mounting on tapered shaft seat	Training system for mounting of a self-aligning ball bearing on a shaft by heating of the bearing, in synthetic storage case. Set consisting of:- self-aligning ball bearing;- mounting plate;- shaft journal;- pressure plate;- dismounting aid;- allen key SW5;- double-ended open jaw spanner SW 19/22;- double-ended open jaw spanner SW 30/32;- 3-arm puller.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
412	Induction heating device	For warming up bearings;Features:- temperature and time control;- fast and efficient warming-up;- consistent and controlled heating;- automatic demagnetization;- safe control;- workpiece weight up to 10 kg; Technical Data;- power supply: 230V;- current consumption: 10A;- clear width / clear height: 65mm / 100mm;- length x width: 24cm x 20cm;- weight: 7kg; supplied incl. 3 bars for bearings with bore diameter of 15mm and above, temperature sensor, protective gloves. CE-marking or equivalent.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
413	Quick Start Guide, laminated	Anti-friction bearing: base symbols; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
414	Student manual, incl. CD-ROM	"Anti-Friction Bearing Technology"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
415	Instructor's manual, incl. CD-ROM	"Anti-Friction Bearing Technology"; Colour print; Contents same as in student manual, however with solutions; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
416	Hydraulic hand pump, 2-speed operation, 700bar	For building up pressure for hydraulic nuts or connection to fitting dummies, with 1.8m hose, coupling and adapter. - 63mm manometer, 0-1000 bar; - reservoir capacity: 700ml; - oil displacement per stroke: 7.2/ 0.9 ml; - connection thread: 3/8"; - weight: 4.3kg.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
417	Arbor press	Size of ram: 36mm; Throat opening: 200mm; Leverage by 25kg force on lever: 5t; Weight: 25kg; l x w x h (in mm): 277 x 172 x 400	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
418	Set of photovoltaic components for project work	<p>consisting of: 32 pcs. solar modules, monocrystalline; min. power: 340 Wp / module; min. total power 10880 Wp; 1 Set of training roofs for Solar (PV and Thermal) installations; consisting of: 1 x Lean-to roof with a minimum roof area of 5 x 5m; Roof pitch 30 degrees; Wooden roof construction with ridge beams and eaves purlin at least 10 x 10 cm; Rafters with at least 10 x 5 cm; Battens for concrete roof tiles or tiles; Substructure made of wood, fastened to concrete plinths; Eaves height 1m; 1 x Lean-to roof with at least 5 x 5m roof area; Roof pitch 20 degrees; Wooden roof construction with ridge beams and eaves purlin at least 10 x 10 cm; Rafters with at least 10 x 5 cm; Battens for metal roofing tiles (deca or similar); Substructure of wood, fastened to concrete plinths; Eaves height 1m; 1 x Lean-to roof with at least 5 x 5m roof area; Roof pitch 15 degrees; Wooden roof construction with ridge beams and eaves purlin at least 10 x 10 cm; Rafters with at least 10 x 5 cm; Battening for metal roof panel; Substructure of wood, fastened to concrete plinths; Eaves height 1m; 1 Set of fastening material for 4 PV systems with 8 modules each, module size 1 m x 170 cm. The fastening material must be suitable for the 3 roof constructions and a flat roof installation. All fastening parts are made of aluminium or stainless steel;</p>	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
		<p>Minimum requirements: 80 m aluminium support rail; 60 pcs. Roof hooks; 100 module clamps; Alu-triangular-frame for flat roof installation of 8 modules; Equipotential bonding system; 200 m earthing cable 10 mm<sup>2</sup> with 200 m earthing cable 10 mm<sup>2</sup>; Accessories like screws, cable ties, earthing clamps, 1 Cabling Set; consisting of: 1 set of solar cables with 6,0mm<sup>2</sup> cross-section; solar cable red, blue, black, 500 m each; solar plugs MC 4 male 250 pcs.; solar plugs MC 4 female 250 pcs.; solar plugs Tyco Solarlok male 100 pcs.; solar plugs Tyco Solarlok female 100 pcs.; solar plugs Sunclix male 50 pcs.; solar plugs Sunclix female 50 pcs.; 4 x Surge protection box for photovoltaic systems (SPD Class II, Type 2); Pre-assembled protection solution; For insulated and grounded PV systems with 2 strings; With plug-in surge arresters with fault display and remote indicator contact; Including SUNCLIX connector. Installation and commissioning on site included.</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
	Set of photovoltaic components for project work - continued	4 x DC disconnecter box for 1 string;ready for connection; Suitable for unprotected outdoor installation, UV-resistant; Plug-in connections compatible with MC4 Length of connection cables: 2 x 500 mm; with transparent door; Rated voltage: UOC STC= DC 1000 V; Rated current: DC 30 A; Protection class: II; Protection class: IP 65; acc. to IEC 60 695-2-11.1 x Mains switching box; switching device for all-pole switching of a power supply from mains operation to off-grid supply, including 3-phase smart meter; 2 Inverters single phase with Rated power 3000 W; Max appearing power: 3000VA; MPP voltage range: 110V -500V; Input-side disconnection point, Ground fault monitoring / grid monitoring, DC reverse polarity protection, All-pole-sensitive residual-current monitoring uni, Protection class (as per IEC 61140) / overvoltage category (according to IEC 60664-1); Easy commissioning via integrated WiFi; Integrated datalogger and webserver; 1 inverter 3 phase with Rated power 3000 W; Max appearing power: 3000VA; MPP voltage range: 150 - 1000V; Input-side disconnection point; Ground fault monitoring / grid monitoring; Protection class (as per IEC 61140) / overvoltage category (according to IEC 60664-1); Easy commissioning via integrated WiFi;				[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		Integrated datalogger and webserver; 1 Set of Installation material for inverters; including sub distribution box with circuit breakers, cables; 2 Aluminium folding scaffolding with platform, max platform height: 6.0 m; 2 x Aluminium ladder: max. working height 6.1m; 2 x Personal safety set Safety harness, safety device and shock absorbing rope (15 m) Must fulfill Kenyan safety Standards or ISO Safety Standards. CE-marking or equivalent.				
419	Set PV Module Test Equipment	consisting of: 1 x Sun position simulator; Mobile rack for measuring experiments with solar modules, operating voltage: 230V; Features:- Light source with dimmer, pivoted and swiveling, for simulation of the sun path in the course of the day and the year;- Holder for the 10W and 50W solar modules, adjustable, for simulating different roof tilt angles, adjustable by degree scale;- Modules fixed with original roof fixing material which makes the simulator also suitable for practical assembly training; 1 Set of 10W solar modules; The set includes a polycrystalline (10W) and an amorphous (6W) solar module. Equipped with a mounting frame and Sunclix plugs, the modules are ready for connection. 1 x Set of		1		[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<p>50W solar modules; The set includes a monocrystalline (50W) and a polycrystalline (50W) solar module. Equipped with a mounting frame and Sunclix plugs, the modules are ready for connection. These modules should be examined outdoors in sun light! 1 x I/V curve tester; The instrument allows the on field measurement of I-V curve as well as of the main parameters of a single module and of a whole photovoltaic system up to a maximum of 1000V and 10A. The instrument allows to perform quick tests (IVCK) to measure the open voltage Voc, the short circuit current Isc and the maximum power point on PV modules/strings. The acquired data are then worked out and transferred to the reference conditions (STC) in order to compare them with the rated data declared by the manufacturer of those modules. The comparison between the detected and the rated data permits to immediately determine whether the string or the module respect the parameters declared by the manufacturer. The I/V curve tester is delivered in a rigid carrying case including the following accessories: - PV adaptors (MC3, MC4, Sunclix); - reference cell for radiation measurements; - Probe for cell temperature measurement; - Mechanical inclinometer; - PC</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		adapter, USB, incl. evaluation software;				

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
	<p>Set PV Module Test Equipment - continued</p>	<p>Technical data:- VDC voltage range; 2.0 up to 999.9V, resolution 0.1V, +/- (1.0%rdg + 2dgt); (measurement start for VDC &gt; 15V);- IDC current range; 0.10 up to 10.00A, resolution 0.01A, +/- (1.0%rdg+ 2dgt);- Power range; 50.0 up to 999.9W, resolution 0.1W, +/- (1.0%rdg + 6dgt); (measurement start for Pmax &gt; 10W);- Solar irradiance; 1.0 up to 100.0mV, resolution 0.1mV, +/- (1.0%rdg + 5dgt);- Temperature of modules; -20 up to 100°C, resolution 0.1°C, +/- (0.5%rdg + 5dgt); Saved data: approx. 200 curves; voltage per unit: 12 V, nominal capacity: 150Ah at a 10-hour rate to EOD of 1.8V per cell at 25°C, maximum discharge current: 1500A, recommended max charging current: 45A; 1 x Solar power meter; Portable digital meter for power solar radiation measurements up to 2000W/m<sup>2</sup>, extremely compact and easy to use with photo sensor connected to the meter to perform accuracy readings. With carrying bag and battery. 1 x Digital Clamp Meter; Type: AC/DC; Jaw diameter: 48 mm, Digit display: 4-digit LCD-display (max. 6000) with backlight and bargraph; AC Amp: 60/600/1000A, 10 mA; DC Amp: 60/600/1000A, 10 mA; AC Voltage: 600mV/6/60/600/1000 V; DC Voltage: 600mV/6/60/600/1000 V; Resistance: 0-60 MOhm; Frequency 0-10 MHz; Continuity test; Diode test;</p>			<p>[Manufacturer/Brand] [Model] [Offered specifications]</p>

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		Capacitance 40/400 nF/4/40/400/4000 $\mu$ F/4/40 mF; Accessories: carrying case, test leads, type-K-thermocouple, battery, manual in English;; 3 x Tool set for PV installations consisting of: crimping plier, swage fittings for MC3, MC4 and SOLARLOK connectors, stripping tool for common solar cables, stripper for SUNCLIX, safety cable cutter, Philipps screwdriver: PH1, PH2, slotted screwdriver 0.6x3.5 and 0.8x4.0. CE-marking or equivalent.				
420	Mobile training stand, completely mounted, for photovoltaic systems	4 big swivel castors for heavy weights, two of which with brake;- Profile columns on the sides allow integrated cable duct, column door with magnetic lock;- Cable and accessory holders in one profile column; Dimensions: 1800x920x750mm (hxwxd)	Piece	2	N	[Manufacturer/Brand] [Model] [Offered specifications]
421	Lamp Holder	for experiments with lamps; Technical data:- 3 sockets for consumers (E27);- Power supply via 4 mm safety sockets, separately for each consumer;- 3 on/off switches;- Operation voltage/frequency: 230V; 50Hz; Design: Experimenting Board in A4 format with photorealistic, four-colour front panel design. Coloured lines according to colour code. A special coating makes the panel surface scratch-proof. Didactic	Piece	2	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. CE-marking or equivalent.				
422	Set of lamps	3 energy saving lamps, 230V 6W; 3 halogen lamps 230V 28W; 1 LED lamp 230V 6W; suitable for item 421 "Lamp Holder"; with E 27 CE-marking or equivalent.	Set	2	N	[Manufacturer/Brand] [Model] [Offered specifications]
423	Safety measuring lead 4mm	200cm brown 1000V / 15A / 0.75mm <sup>2</sup> / PVC CE-marking or equivalent.	Piece	2	N	[Manufacturer/Brand] [Model] [Offered specifications]
424	Safety measuring lead 4mm	200cm green/yellow 1000V / 15A / 0.75mm <sup>2</sup> / PVC CE-marking or equivalent.	Piece	2	N	[Manufacturer/Brand] [Model] [Offered specifications]
425	Safety measuring lead 4mm	200cm blue 1000V / 15A / 0.75mm <sup>2</sup> / PVC CE-marking or equivalent.	Piece	2	N	[Manufacturer/Brand] [Model] [Offered specifications]
426	PV Off-Grid Hybrid System	The practice trainer PV Off-Grid Hybrid System allows to simulate and examine an off-grid system, a DC connected hybrid system, an AC connected hybrid system and a backup system. Hybrid means that the system is supplied by several forms of energy generation; DC hybrid e.g. by PV, small wind turbine and a small hydropower installation; AC hybrid; e.g. by mains electricity, an on-grid PV system and a generator. Features:- PV simulator (simulation of a PV generator); OC voltage: approx. 17V, short-circuit current: 2,5A; Display of	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		quantities U, I, P; USB interface for value display on a PC;- 2 energy counters with bus connection for integration in a Smart Grid (MID-compliant), displayed quantities: voltage, current, power, work;- Plug-in area for charge controller;- DC fuse;- DC switch disconnecter;- DC overvoltage protection;- Terminal resistor for RS484 bus system;- PV off-grid inverter with charge controller;- AC load;- DC load;- Solar battery, 60Ah;- External current sensor (Hall effect sensor). CE-marking or equivalent.				
427	Student manual, incl. CD-ROM	"Photovoltaics - Off-grid hybrid system"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
428	Instructor's manual, incl. CD-ROM	;Photovoltaics - Off-grid hybrid system";Contents identical to student manual, however with solutions and data sheets; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
429	Commissioning/troubleshooting manual, incl. CD-ROM	"Photovoltaics - Off-grid hybrid system"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
430	Presentation aids, incl. CD-ROM	"Photovoltaics - Off-grid hybrid system"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
431	On-Grid Inverter Board	Experimenting Board in A4 format; with a grid-connected inverter; operating with a minimum input voltage of 20V DC. Technical features: PV input data;- Sunclix plug;- Max. PV power: 250W;- Max. DC voltage: 45V;- Min./max. start voltage: 18V / 45V;- MPP range: 20V...40V;- Max. DC current: 11A;AC output data;- AC rated power: 240W;- Rated current: 1,0A;- Power factor: >0.99;- AC rated voltage: 230V;- Rated frequency: 50,0Hz; Automated anti-islanding; Design and workmanship: Board with photorealistic, four-colour front panel design. Coloured lines according to colour code. A special coating makes the panel surface scratch-proof. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. CE-marking or equivalent.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
432	Set of safety measuring leads, 4mm	30 parts consisting of: 6x brown 100 cm; 3x brown 50 cm; 6x brown 30 cm; 2x grey 100 cm; 1x grey 50 cm; 2x grey 30 cm; 2x blue 100 cm; 1x blue 50 cm; 2x blue 30 cm; 2x yellow/green 100 cm; 1x yellow/green 50cm; 2x yellow/green 75 cm CE-marking or equivalent.	Set	3	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
433	Trainer PV On-Grid System	<p>Technical features:1. Power supply: - Key switch and pushbutton for release of the energy supply;- Simulation of a foundation earth electrode; - Simulation of the equipotential bonding through the main earthing bar;- Overvoltage protection on the AC side;- RCD, 2-pole;- Line circuit breaker, single-pole;- Energy counter with bus connection for integration in a Smart Grid (MID-compliant). Displayed values: voltage, current, power, work; 2. PV inverter; PV inverter, three-phase; Technical data: - Max. PV generator power: 2kW; - MPP range: 125V...510V; - 1 MPP controller; - Reverse polarity protection; - cos phi: 0.80 inductive ... 0.80 capacitive; - self-commutated, - Interfaces: RS232, RS485, S0 for counter;3. PV system;consisting of the simulation of a PV generator and the DC wiring;- PV generator simulation with the following data:- Output voltage: 0...300V DC;- Output power: 1.2kW; Configuration parameters: - Adjustable voltages: UMPP, U0; - Adjustable currents: Ishort circuit, IMPP; With these parameters it is possible to simulate shading portions or systems with different cells as well as real systems with their proper data. An Excel tool allows to plot the respective characteristics and to transfer them to the simulator via a memory card. DC wiring: - PV input</p>	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		plug Sunclix (Phoenix); - DC string fuses; - DC switch disconnecter; - DC overvoltage protection. CE-marking or equivalent.				
N/A	N/A	<i>Item 434 not included in this Lot</i>	N/A	N/A	N/A	N/A
435	Student manual, incl. CD-ROM	"Photovoltaics - On-grid system"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
436	Instructor's manual, incl. CD-ROM	"Photovoltaics - On-grid system"; Contents identical to student manual, however with solutions and data sheets; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
437	Commissioning/troubleshooting manual, incl. CD-ROM	"Photovoltaics - On-grid system"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]
438	Presentation aids, incl. CD-ROM	"Photovoltaics - On-grid system"; in English language	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
439	Simulation Software	Classroom license for 20 users in a network (floating license); Simulations software for the subjects: Power electronics; Photovoltaics; Wind energy; Fuel cell; Hybrid electric vehicles; Batteries; Features: Library; Passive components; Active components (Mosfet, IGBT, diode, thyristor, LED); Analog integrated circuits (operational amplifier, comparator, NE555); Digital circuits; Electric machines (DC, AC, three-phase motors, reluctance motors, universal motors); Mechanical components (shafts, masses, bearings, gears, conveyor belts, wheel); Modules for power measurements, calculation of loss and power factor; Controlled voltage/current sources; Regulating and controlling elements; Preconfigured examples of the topics: Power electronics; Photovoltaics (solar cells, MPP controllers); Wind energy (turbine, synchronous/asynchronous generators, controllers, grid infeed); Energy storage devices (fuel cell, battery, SuperCap); Hybrid electric vehicles; tutorial book on green energy; subjects: Hydro and Ocean Power; Wind Energy; Solar Power; Batteries; Fuel Cell with preconfigured examples. All in English language.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
440	Air conditioner split system (training system)	<p>Compact, mobile frame made of powder-coated aluminium system profile with stable steel base frame and 4 swivel castors (2 lockable); The installation of the system is practical due to the spatially separate arrangement of the indoor and outdoor units. The visible installation of the pipe system enables easy conversion to the system circuit diagram. System visualisation by means of laminated 4-colour digital print. 2 analogue combination gauges for displaying pressure and temperature in the refrigeration circuit. 2 modular digital thermometers with system holder and sensor fixation for flexible choice of measuring choice of measuring location on the functional model. Operation of the split unit via remote control as well as directly on the indoor unit. Display of the operating states "Automatic", "Cooling", "Heating", "Dehumidification".</p> <p>Dimensions: approx. 1200 x 700 x 1500 mm (LxWxH); Weight: approx. 80 kg; Electrical connection: 230V, 50Hz; Cooling capacity: 2.7 KW; Heating capacity: 3.0 KW; including: Service Case "air conditioner"; consisting of: -empty case;- Surface probe with widened measuring tip, waterproof;- Vacuum gauge 80mm, 1000-0 mbar, incl. stopcock;- Filling hose ¼" SAE, 150 cm set of 3, incl. mounted stopcocks;- Allen key set</p>	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
		with ball head, 2-10 mm, 8 pcs.;- Lamellar comb made of spring steel wire;- Flaring tool 525 "Grabber" Universal, 5-16 mm, 316"-5,8;- Roller fork spanner 200 mm, clamping width 24 mm;- Roller fork spanner 250 mm, clamping width 28 mm;- Pipe cutter 3-16 mm;- Pipe cutter 3-36 mm;- Cold ratchet ¼"- 3/8"- 3/16"- 5/16 "-;- Bit holder ¼", hexagonal socket, incl. magnet;- Bit set XSelector, 11 pcs.;- Quick coupling bent, for R410 A;- Quick coupling bent, for R407 C;- Hand deburrer 20 mm;- Bottle adapter 7/16 "-;- Leak detector, electronic;- Current clamp AC & DC, 600V incl. measuring tips;- Safety goggles, clear;- Protective gloves against cold and wetness, size XXL;- Vacuum pump. CE-marking or equivalent.			
		<b>Furniture and Accessories</b>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
441	Student workplace	each consisting of: System table W = 1800 mm, D = 900 mm, H = 750 mm; Equipment: Table top with front edge strip, hinged cable flap, 150-mm-high cable trough; Table top: - Table top 30 mm thick, with 0.8-mm-thick HPL laminate, non-glare and abrasion-resistant in accordance with EN 438/ISO 4586, heat resistant for short periods, resistant to organic solvents, weak acids and bases as well as gasoline and oil; - 3-mm impact-resistant edging strip on sides and back; Information on front edge, see features; Table frame: - Made of welded square bar steel frame, 40 x 40 mm / 40 x 20 mm, 2-mm-thick walls; - Robust center rail, ready for mounting under-table cabinet (left, center, right); - Conductive powder coating; Table legs: - Made of extruded aluminum sheath with grooves for mounting accessories such as PC holders, etc.; - Integrated height adjusters for leveling on uneven floors; Special Features: All edges of table top with edge strip, 3 mm thick, impact and scratch resistant; Hinged cable flap over the entire table width with sealing profile. Conductive, powder-coated sheet-metal trough under table to receive cable guides, socket strips, etc.; load capacity: 500 kg; Support columns (pair) for system attachments / shelves / shelving units; W = 110 mm, D = 130 mm, H = 1020	Piece	13	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		mm; Support column: - made of extruded aluminium profile with grooves for mounting accessories such as PC holders, measuring/test lead holders, etc.; - columns designed as "vertical ducts" with cable chambers inside for tidy routing of network and data cables as well as for installation purposes; - suitable for installation of profiled work surfaces; - vertically extendable; Power supply channel: W = 1728, D = 160 mm; made from extruded aluminium section, to accept 3 HU power supply panels.				
	Student workplace - continued	Three-phase current mains field 3/N/PE~50 Hz 400 V 10...16 A; E q u i p m e n t : 1 GFCI 4-pole Type B, sensitive to all currents for flat DC residual currents 30 mA, Nominal current 25 A, 1 key-operated push-button switch I/O; 1 motor-overload switch 10...16 A with undervoltage trigger; 3 exterior control indicator lamps; 1 CEE socket 5-pole 16 A, red; Emergency OFF Switch; Mains voltage 3ph AC 50Hz 230/400V 16A; 5 safety lab terminals (L1, L2, L3, N, PE); Mains voltage 1ph AC 50Hz 230V 16A; to 8 outlets British Standard; 4 sockets each are switched via a switch; Interface panel RJ45; 2 Interface conector 8-pole Cat.6 double-sidedly pluggable;				[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		Pressurized air supply, 1 quick-lock coupling NW 5-1/8" incl. plug-in nipple NW 5 for plastic hose 6/4; Set of cover plates to close the front of the power supply channel without gaps; H-Profile for DIN A4 Training Boards; (2 pieces) for tablewidth 1800 mm with brush strip at the lower side of the profile for chatterfree working with the trainings systems; PC Tower Holder, adjustable in width, for mounting on left or right side of the table; capacity load 15 kg; Heavy-load monitor arm for TFT monitors with 27" monitor arm for profile systems, pivoting and adjustable in height, monitor rest with ball pivot VESA 75/10. CE-marking or equivalent.				
442	Teacher workplace	each consisting of: System table: W = 1800 mm, D = 900 mm, H = 750 mm; Equipment: Table top with front edge strip, hinged cable flap, 150-mm-high cable trough; Table top: - Table top 30 mm thick, with 0.8-mm-thick HPL laminate, non-glare and abrasion-resistant, heat resistant for short periods, resistant to organic solvents, weak acids and bases as well as gasoline and oil; - 3-mm impact-resistant edging strip on sides and back; Information on front edge, see features; Table frame: - Made of welded square bar steel frame, 40 x 40 mm / 40 x 20 mm, 2-mm-thick walls; - Robust center rail, ready for mounting under-table cabinet (left,	Piece	15	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)					
		<p>center, right); - Conductive powder coating; Table legs: - Made of extruded aluminum sheath with grooves for mounting accessories such as PC holders, etc.; - Integrated height adjusters for leveling on uneven floors; Special Features: All edges of table top with edge strip, 3 mm thick, impact and scratch resistant; Hinged cable flap over the entire table width with sealing profile. Conductive, powder-coated sheet-metal trough under table to receive cable guides, socket strips, etc.; load capacity: 500 kg; Support column, 1 piece for system attachments / shelves / shelving units; H = 600 mm; Support column: - made of extruded aluminium profile with grooves for mounting accessories such as PC holders, measuring/test lead holders, etc.; - column designed as "vertical ducts" with cable chambers inside for tidy routing of network and data cables as well as for installation purposes; - suitable for installation of profiled work surfaces; - vertically extendable; PC Tower Holder, adjustable in width, for mounting on left or right side of the table; capacity load 15 kg; Heavy-load monitor arm for TFT monitors with 27" monitor arm for profile systems; pivoting and adjustable in height; monitor rest with ball pivot VESA 75/10.</p>			

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
443	Wheeled container	W = 425, D = 600, H = 635 mm; Equipment: pull-out shelf, drawers 2HU + 2HU + 2HU + 3HU, coverplate, castors; Corpus - 19-mm-thick multi-layer particle board coated with non-glare melamine resin, which makes it heat resistant for short periods and resistant to organic solvents, weak acids and bases as well as gasoline and oil - edges protected with impact- and scratch- resistant edging strips; Equipment (from top to bottom) - 1 material pullout 70% extension, self-closing roller bearing guides with shock cushioning, moulded plastic drawer organizer for storing office supplies - 3 drawer 2HU - 1 drawer 3HU each on concealed self-closing roller bearing guides with shock cushioning, 110% extension, sheet-metal drawer, black powder-coated sheet metal with predrilled circumferential holes for organising units. - 1 lock with foldable key - Cover plate and set castors Ø50mm, two of which are lockable - pull-out shelves with handle 200 mm.	Piece	15	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	<i>444 not included in this Lot.</i>	N/A	N/A	N/A	N/A
445	Basic Workbench	1500 x 800 x 840 mm (w x d x h); Worktop plate: 1500 x 800 x 40 mm (w x d x h); solid beech; lengthways interlocked bonded strips; oiled surface; max. load: 800 kg; prepared	Piece	35	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		for mounting a height adjuster for a vice; steel base frame 45/45/2 mm.				
446	Roller Cabinet	Drawer mobile cabinets with storage tray; with 6 metal drawers (h=90 mm); - full pull-out and standard pull-out block; - load capacity per drawer: 100 kg; - perforated base; - slotted sides for individual compartments; - profiled handle with labelling option; - central lock with 2 keys; Drawer inside dimensions: 500 x 540 mm (WxD); Abrasion-resistant smooth-running castors; 2 fixed and 2 lockable swivel castors (castors Ø 125 mm); max. load per castor = 200 kg, possible max. load inclusive tare weight of the mobile cabinet = 600 kg; 660 x 615 x 750 mm (WxDxH).	Piece	27	Y	[Manufacturer/Brand] [Model] [Offered specifications]
447	Bench Vice	Jaw width 150 mm. Entirely of forged steel. Slides forward on opening. Milled, surface-hardened jaws. Large capacity. Strong lead screw with trapezoidal thread. Lead screw and guides protected from dirt. Adjustable guide; broad hardened anvil area. Supplied with fasteners for attachment to the workbench.	Piece	32	N	[Manufacturer/Brand] [Model] [Offered specifications]
448	Height adjuster for vices	Height adjustment range 242 mm; strong clamping; built-in gas pressure spring to ensure weight compensation during height adjustment; quick clamping in any desired position by means of the safety clamping lever; in conjunction with the height adjuster	Piece	32	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
		the vice can be rotated by 360° without an additional swivel base; complete with all fastening screws for attachment to the workbench.				
449	Pipe clamping jaws	For clamping pipes with external diameter from 1" to 4"; (1pair)	Piece	32	N	[Manufacturer/Brand] [Model] [Offered specifications]
450	Magnetic vice jaws	Jaw width 150 mm. Extruded aluminium, with integrated permanent magnets.; (1 pair)	Piece	32	N	[Manufacturer/Brand] [Model] [Offered specifications]
451	Trapezoid welded metal table	Table top, 3-layer chipboard (E1), melamine coated, highly abrasion-resistant, with 3 mm corner radius, with 3 mm plastic edge, thickness: 25 mm, four-legged substructure, legs; round tube: 40/2 mm, frame square tube; rounded: 40/20/2 mm, welded, epoxy resin coated, floor protector with levelling device, Size tested according to ISO Standard; refer to a table top thickness of 25 mm; H/W/D (mm) 760/1600 /800; Weight (kg) 28; Colour of the frame and the frame is selectable.	Piece	38	N	[Manufacturer/Brand] [Model] [Offered specifications]
452	Computer Table	consisting of: Workbench 1500 x 800 mm (WxD): Bench Top with PP Plastic Edge; Bench height: 780 mm; Solid bench frame made of tubular steel. Both sides with sleeves for a vibration-free and flush connection of bench legs. Durable, light grey powder coating; Hard-wearing 30mm bench top; Surface with 0,8mm HPL layer; All sides with durable 3mm PP plastic	Piece	60	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		edge; cable outlet with rotatable, sprung flap, Spacious cable tray with space for cabling: width 1500 mm, height adjustable; Make: Sheet steel, light grey powder coated finish; Depth: 200mm, Height: 120mm; Suspended PC support made of sheet steel; stepless adjustable width; aluminium profile with surrounding slots and two closed cable channels; durable powder coated for height-adjustable mounting of monitor holder; length 600 mm; Heavy-load monitor arm for TFT monitors with 27"; pivoting and adjustable in height; monitor rest with ball pivot VESA 75/10.				
453	Rectangular table (800 x 2000 mm)	Table top, 3-layer chipboard (E1), melamine coated, highly abrasion-resistant, with 3 mm plastic edge, thickness: 25 mm; frame: side parts round tube: 40/2 mm and square tube rounded: 40/20/2 mm, welded; Frame square tube rounded: 40/20/2 mm; floor protectors with level compensation. Board decor: according to colour chart; Board edge: 3 mm edge, colour chart; Corner radius of top: 3 mm; Frame colour: chrome silver; H/W/D (mm) 750 / 2000 / 800; Mesh cable duct for cabling; Cable outlet.	Piece	22	N	[Manufacturer/Brand] [Model] [Offered specifications]
454	Student Chair for laboratory and workshop	with polyamid base, gaslift and double-wheel castors for hard floor; seat height adjustable; back rest adjustable in height and depth; seat	Piece	132	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		and back rest made of polyurethane foam.				
455	Teacher Chair for laboratory and workshop	with polyamid base, gaslift and double-wheel castors for hard floor; seat height adjustable; back rest adjustable in height and depth; seat and back rest made of polypropylene.	Piece	45	Y	[Manufacturer/Brand] [Model] [Offered specifications]
456	Work Stool	Seat: Beech wood nature; Seat height: 50-67 cm; Seat width: 35 cm; Seat depth: 35 cm; Aluminium base, polished; with gaslift and double-wheel castors; hard floor castors; Weight: approx. 7 kg.	Piece	80	N	[Manufacturer/Brand] [Model] [Offered specifications]
N/A	N/A	457 not included in this Lot.	N/A	N/A	N/A	N/A
458	Cabinet (Storage)	W x D x H: 1000 x 625 x 2004 mm; Body made of 19mm thick melamine resin covered chip board; Side walls with hole line in 32mm raster; Solid, decorative rear wall (13mm thick); Dust protected due to surrounding rubber lip; 270° opening hinges, completely made of metal; Right door with espagnolette lock (master-key-system); Wooden doors with safety glass inlay, 6mm clear; equipped with 5 shelves.	Piece	6	Y	[Manufacturer/Brand] [Model] [Offered specifications]
459	Cabinet for training systems in A4-format	W = 1000mm, D = 625mm, H = 2004 mm; Equipment: 2 swing doors, 1 center wall, 2 x 6 height-adjustable shelves, 2 x 5-piece set of grooved mats; Shelf dimensions: W = 480, D =	Piece	3	Y	[Manufacturer/Brand] [Model] [Offered specifications]

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
		540, H = 19 mm; Wooden doors with safety glass inlay, 6mm clear.				
460	Power Distribution Cabinet	with RCD, Control for Emergency Stop, Circuit Breakers ...; consisting of: metal cabinet with wing door; ON/OFF switching and protection of power supply; 1 switch disconnecter (circuit breaker) with undervoltage release and motor operator; 1 key operated switch I/O; 1 automatic circuit breaker 1p6AB; 1 Emergency OFF switch; 1 Main Switch; 11 automatic circuit breaker 3pol.16A; characteristic C; 1 earth leakage circuit breaker 4pol. (PCs); type A, 4-pole 40A, residual current 30 mA; 10 automatic circuit breaker 1pol. 16A (PC 1-10); characterist.C, (not connected to emergency off); 1 earth leakage circuit breaker 4pol. (for addit. equipment); type B, 4-pole 25A, residual currents 30 mA, sensitive to all currents for flat DC; 1 automatic circuit breaker 3pol. 20A (for addit. equipment); characteristic C; All components connected via terminal block. W = 500 mm, D = 200 mm, H = 1100 mm CE-marking or equivalent.	Piece	4	Y	[Manufacturer/Brand] [Model] [Offered specifications]
461	Wall Mount First Aid Steel Cabinet	Industrial First Aid Station acc. Kenyan Safety Standards	Piece	4	N	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>						
462	Long Wall Board (White Board)	200 x 120 cm; wallmounted; chalk ledge; enameled magnetic steel, surface in white; including: Whiteboard accessory set with 4 board markers (red, blue, green, black); Board wiper, 10 sheets of non-woven board wiper fleece, 1 bottle of whiteboard cleaner, 125 ml, 10 solid magnets, Ø 32 mm.	Piece	20	N	[Manufacturer/Brand] [Model] [Offered specifications]
465	Laboratory compressor	Whisper-quiet, with filter pressure regulator; Voltage/frequency: 230V / 50(60)Hz; Motor: (appr.) 0,46/0,34 HP/kW; Displacement: 50 l/min; Max. pressure: 8 bar; Tank volume: 15l; CE-marking or equivalent.	Piece	2	Y	[Manufacturer/Brand] [Model] [Offered specifications]
466	Set of ring binders	consisting of: -ring binder for printed media with dividers;- ring binder for digital media	Piece	21	N	[Manufacturer/Brand] [Model] [Offered specifications]
<b>Measuring Equipment</b>						
N/A	N/A	467 – 473 not included in this Lot.	N/A	N/A	N/A	N/A
474	Digital leakage current clamp	for accurate measurements of low AC current values; 10µA ... 100A AC TRMS; Features:- Measurements in TRMS (AC);- Data HOLD;- Auto HOLD;- Peak HOLD;- Manual range selection;- Auto power off; Accessories included:- Carrying bag;- Batteries;- User manual CE-marking or equivalent.	Piece	6	Y	[Manufacturer/Brand] [Model] [Offered specifications]
<b>Software</b>						
N/A	N/A	475 – 477 not included in this Lot.	N/A	N/A	N/A	N/A

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
478	Software package CNC Training Turning / Milling	<p>consisting of: SYMplus™ Turning with plusCARE™; - Language: English; - License type: CodeMeter (Dongle);- Term of License: Unlimited;- Number of users: 20;- Simulation: 2D+3D;- Module: Virtual Shopfloor;- Module: Control Simulator;- Module: CAD/CAM;- Simulator: DIN Basic Education;- Simulator: PAL; SYMplus™ Turning - Teacher license, 5 years;- License type: CodeMeterWAN;- Term of License: Term of plusCARE™;- Number of users: 5; SYMplus™ Milling with plusCARE™;- Language: English;- License type: CodeMeter (Dongle);- Term of License: Unlimited;- Number of users: 20;- Simulation: 2D+3D;- Module: Virtual Shopfloor;;- Module: Control Simulator- Module: CAD/CAM;- Simulator: DIN Basic Education;- Simulator: PAL; SYMplus™ Milling - Teacher license, 5 years;- License type: CodeMeterWAN;- Term of License: Term of plusCARE™;- Number of users: 5; plusCARE™ for SYMplus Turning 5 years update; plusCARE™ for SYMplus Milling 5 years update; 1 x CmStick (CodeMeter USB-Dongle). Or equivalent software.</p>	Piece	1	Y	<p>[Manufacturer/Brand] [Model] [Offered specifications]</p>

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
479	Simulation Software for the subjects:	Hydraulics;- Proportional Hydraulics;- Pneumatics;- Proportional Pneumatics;- Component Sizing Module;- Mechanical Links;- Electrical Controls;- Electrotechnical (A.C. & D.C., Motor Control);- One-Line Electrotechnical Diagram;- PLC Ladder Logic Library (Allen Bradley™);- PLC Ladder Logic Library (Siemens™);- PLC Ladder Logic Library (IEC 61131-3);- PLC Ladder Logic Library (LSIS);- HMI 2D/3D & Control Panels;- SFC Grafset IEC 61131;- Digital Electronics;- Diagnostics & Troubleshooting;- Embedded View and Sequence Diagram;- Bill of Materials (BOM) & Report Module;- OPC Client;- Block Diagram (Math) Workshop;- Number of users: 20 Or equivalent software.	Piece	1	Y	[Manufacturer/Brand] [Model] [Offered specifications]
		<b>Training</b>				
N/A	N/A	480 not included in this Lot.	N/A	N/A	N/A	N/A

Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)						
481	User Training II	Training of Trainers for the following items: 150. Pneumatic Experimenting Board; 165. Pneumatics Supply Training Kit; 175. Electropneumatics Training Kit; 177. Pneumatics Control Panel/ Board; 202. Sensor Trainer; 219. Set of Basic equipment for mechatronic stations (Station 1-6); 220. Set of Basic equipment for mechatronic stations (Station 1-6); 221. Station 1: Additional Equipment - Pallet Storage; 222. Station 2: Additional Equipment - Separation Semi-Parts (Raw Material Storage); 223. Station 3: Additional equipment - Filling Station (Dosing and Weighing System); 224. Station 4: Additional equipment - Optical Quality Inspection Station; 225. Station 5: Additional equipment - Handling Station (Individual Product Mounting); 226. Station 6: Additional equipment - Assembly and Disassembly by Pressing (in combination with "Functional Safety"); 227. Station 7: Intelligent Storage (Autonomous High Shelving Storage); 228. Training Package Smart Maintenance with augmented reality applications; 229. SCADA PLC Package;	Days	30	Y	[Manufacturer/Brand] [Model] [Offered specifications]

<b>Technical specifications Lot 2: Procurement of specialized electronics (Industrial Mechatronics)</b>					
		248. Robot station with Profinet connection; 325. Workstation, Hydraulics, 230V/50Hz, double sided; 326. Training Set Industry 4.0 in hydraulics; 328. Multiprocess welding systems (MIG/MAG, MMA, TIG); 418. Set of photovoltaic components for project work; 419. Set PV Module Test Equipment; 426. PV Off-Grid Hybrid System; 431. On-Grid Inverter Board; 433. Trainer PV On-Grid System; 439. Simulation Software; 440. Air conditioner split system (training system); 478. Software package CNC Training Turning / Milling; 479. Simulation Software for the subjects. Total days of training required by electronics engineer or technician: minimum 30 days			

## 4. Drawings

These Bidding Documents include **no** drawings.

## 5. Inspections and Tests

The following inspections and tests shall be performed:

**(i) The Purchaser or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Specifications. The Special Conditions of Contract and/or the Specifications shall specify what inspections and tests the Purchaser requires and where they are to be conducted. The Purchaser shall notify the Supplier in writing of the identity of any representatives retained for these purposes.**

**(ii) The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at point of delivery and at the Goods' final destination. Where conducted on the premises of the Supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.**

**(iii) Should any inspected or tested Goods fail to conform to the Specifications, the Purchaser may reject them, and the Supplier shall either replace the rejected Goods or make all alterations necessary to meet the requirements of the Specifications, free of cost to the Purchaser.**

**(iv) The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival in the Purchaser's country shall in no way be limited or waived by reason of the Goods' having previously been inspected, tested and passed by the Purchaser or its representatives prior to the Goods' shipment from the country of origin.**

**(v) Nothing in this Clause shall in any way release the Supplier from any Warranty or other obligations under the Contract.**

## 6. Distribution of Goods

The Goods shall be distributed to the following recipients and destinations:

<b>List of Recipients</b>			
<b>Recipient</b>			
<b>No.</b>	<b>Official Name</b>	<b>Address &amp; Communication</b>	<b>Contact Person</b>
1	Kiambu Institute of Science and Technology (KIST)	P.O BOX 414 00900 KIAMBU KENYA	Persons to be specified at time of contract.

Distribution List:

**Lots 1 and 2, including all items, are for delivery to Recipient 1: Kiambu Institute of Science and Technology (KIST).**

## **PART 3 - Contract**

# **Section VIII. General Conditions of Contract**

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## Section VIII. General Conditions of Contract<sup>1</sup>

1. **Definitions**
- 1.1 The following words and expressions shall have the meanings hereby assigned to them:
- (a) “KfW” means the KfW Entwicklungsbank;
  - (b) “Contract” means the Contract Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein;
  - (c) “Contract Documents” means the documents listed in the Contract Agreement, including any amendments thereto;
  - (d) “Contract Price” means the price payable to the Supplier as specified in the Contract Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract;
  - (e) “Day” means calendar day;
  - (f) “Completion” means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract;
  - (g) “GC” means the General Conditions of Contract;
  - (h) “Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract;
  - (i) “Purchaser’s Country” is the country **specified in the Particular Conditions of Contract (PC)**;
  - (j) “Purchaser” means the entity purchasing the Goods and Related Services, as **specified in the PC**;
  - (k) “Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other such obligations of the Supplier under the Contract;
  - (l) “PC” means the Particular Conditions of Contract;
  - (m) “Subcontractor” means any natural person, private or state entity, or a combination of the above, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier;
  - (n) “Supplier” means the natural person, private or state entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Contract Agreement;

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<sup>1</sup> [Text in this Section shall not be modified.]

- (o) "The Named Place of Destination"/"Project Site," where applicable, means the place(s) **named in the PC**.
- 2. Contract Documents** 2.1 Subject to the order of precedence set forth in the Contract Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory. The Contract Agreement shall be read as a whole.
- 3. Fraud and Corruption** 3.1 The KfW requires compliance with its policy in regard to corrupt and fraudulent practices as set forth in Appendix 1 to the PC.
- 4. Interpretation** 4.1 If the context so requires it, singular means plural and vice versa.
- 4.2 Incoterms
- (a) Unless inconsistent with any provision of the Contract, the meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms;
- (b) The terms CIP and other similar terms, when used, shall be governed by the rules prescribed in the current edition of Incoterms **specified in the PC** and published by the International Chamber of Commerce in Paris, France.
- 4.3 Entire Agreement
- The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of the parties with respect thereto made prior to the date of Contract.
- 4.4 Amendment
- No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.
- 4.5 Nonwaiver
- (a) Subject to GC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract;
- (b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

- 4.6 Severability
- If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.
5. Language
- 5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the Purchaser, shall be written in the language **specified in the PC**. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified, in which case, for purposes of interpretation of the Contract, this translation shall govern.
- 5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation, for documents provided by the Supplier.
6. Joint Venture, Consortium or Association
- 6.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser. The designated party to act as lead firm with full authority shall be **specified in the PC**.
7. Eligibility
- 7.1 All Goods and Related Services to be supplied under the Contract and financed by the KfW shall have their origin in any eligible source as **specified in the PC**. For the purpose of this Clause, origin means the country where the goods have been grown, mined, cultivated, produced, manufactured, or processed; or through manufacture, processing, or assembly, another commercially recognized article results that differs substantially in its basic characteristics from its components.
8. Notices
- 8.1 Any notice given by one party to the other pursuant to the Contract shall be in writing to the address **specified in the PC**. The term "in writing" means communicated in written form with proof of receipt.
- 8.2 A notice shall be effective when delivered or on the notice's effective date, whichever is later.
9. Governing Law
- 9.1 The Contract shall be governed by and interpreted in accordance with the laws of the Purchaser's Country, unless otherwise **specified in the PC**.
10. Settlement of Disputes
- 10.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

- 10.2 If, after twenty-eight (28) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract. Arbitration proceedings shall be conducted in accordance with the rules of procedure **specified in the PC**.
- 10.3 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 Purchaser shall pay the Supplier any monies due the Supplier.
- 11. Inspections and Audit by the KfW**
- 11.1 The Supplier shall keep, and shall make all reasonable efforts to cause its Subcontractors to keep accurate and systematic accounts and records, in respect of the Goods in such form and details as will clearly identify relevant time changes and costs.
- 11.2 The Supplier shall permit, and shall cause its Subcontractors and consultants to permit, the KfW and/or persons appointed by the KfW to inspect the Supplier's offices and all accounts and records relating to the performance of the Contract and the submission of the bid, and to have such accounts and records audited by auditors appointed by the KfW if requested by the KfW.
- 12. Scope of Supply**
- 12.1 The Goods and Related Services to be supplied shall be as specified in the Schedule of Requirements.
- 13. Delivery and Documents**
- 13.1 Subject to GC Sub-Clause 33.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Schedule of Requirements. The details of shipping and other documents to be furnished by the Supplier are **specified in the PC**.
- 14. Supplier's Responsibilities**
- 14.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GC Clause 12, and the Delivery and Completion Schedule, as per GC Clause 13.
- 15. Contract Price**
- 15.1 Prices charged by the Supplier for the Goods supplied and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments **authorized in the PC**.

- 16. Terms of Payment and Reimbursement**
- 16.1 The Contract Price, including any Advance Payments, if applicable, shall be paid as **specified in the PC**.
- 16.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GC Clause 13 and upon fulfillment of all other obligations stipulated in the Contract.
- 16.3 Payments shall be made promptly by the Purchaser, but in no case later than sixty (60) days after submission of an invoice or request for payment by the Supplier, and after the Purchaser has accepted it.
- 16.4 The currencies in which payments shall be made to the Supplier under this Contract shall be those in which the bid price is expressed.
- 16.5 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period **set forth in the PC**, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate **shown in the PC**, for the period of delay until payment has been made in full, whether before or after judgment or arbitration award.
- 16.6 In the event of any reimbursement, guarantee or similar claimable payments and any insurance payments under this Contract, payment shall be effected as **specified in the PC**.
- 17. Taxes and Duties**
- 17.1 For goods manufactured outside the Purchaser's Country, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside the Purchaser's Country.
- 17.2 For goods manufactured within the Purchaser's country, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser.
- 17.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in the Purchaser's Country as **specified in the PC**, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.
- 18. Performance Security**
- 18.1 The Supplier shall, within twenty-eight (28) days of the notification of contract award, provide a performance security for the performance of the Contract in the amount **specified in the PC**.
- 18.2 The proceeds of the Performance Security shall be payable to the Purchaser pursuant to GC 16.6 (reimbursement) as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

- 18.3 The Performance Security shall be denominated in the currency(ies) of the Contract, and shall be in one of the format **stipulated by the Purchaser in the PC**, or in another format acceptable to the Purchaser.
- 18.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier's performance obligations under the Contract, including any warranty obligations, unless **specified otherwise in the PC**.
- 19. Copyright**
- 19.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.
- 20. Confidential Information**
- 20.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GC Clause 20.
- 20.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the performance of the Contract.
- 20.3 The obligation of a party under GC Sub-Clauses 20.1 and 20.2 above, however, shall not apply to information that:
- (a) The Purchaser or Supplier need to share with the KfW or other institutions participating in the financing of the Contract;
  - (b) Now or hereafter enters the public domain through no fault of that party;
  - (c) Can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or

- (d) Otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.
- 20.4 The above provisions of GC Clause 20 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.
- 20.5 The provisions of GC Clause 20 shall survive completion or termination, for whatever reason, of the Contract.
- 21. Subcontracting**
- 21.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the bid. Such notification, in the original bid or later shall not relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.
- 21.2 Subcontracts shall comply with the provisions of GC Clauses 3 and 7.
- 22. Specifications, Standards and Spare Parts**
- 22.1 Technical Specifications and Drawings
- (a) The Goods and Related Services supplied under this Contract shall conform to the technical specifications and standards mentioned in Section VII, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the Goods' country of origin.
- (b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.
- (c) Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GC Clause 33.
- 22.2 Spare Parts
- (a) The Supplier shall carry sufficient inventories to assure ex-stock supply of consumables and consumable spares. Other spare parts and components shall be supplied as promptly as possible but in any case within the number of days **specified in the PC** of placement of order.
- (b) The Supplier shall be for a period of years **specified in the PC** from the date of delivery and commissioning under obligation to supply spare parts. However, the

Supplier shall, in the event of termination of production of the spare parts:

- (i) Send an advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and
- (ii) Furnish, following such termination, at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if and when requested.

- 23. Packing and Documents**
- 23.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their named place of destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods' named place of destination and the absence of heavy handling facilities at all points in transit.
- 23.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, **specified in the PC**, and in any other instructions ordered by the Purchaser.
- 24. Insurance**
- 24.1 Unless otherwise **specified in the PC**, the Goods supplied under the Contract shall be fully insured - in the currency(ies) of the Contract from an eligible country - against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner **specified in the PC**.
- 25. Transportation**
- 25.1 Unless otherwise **specified in the PC**, responsibility for arranging transportation of the Goods shall be in accordance with the specified Incoterms.
- 25.2 The Supplier may be required to provide any or all of the following services, including additional services, if any, **specified in PC**:
- (a) Performance or supervision of on-site assembly and/or start-up of the supplied Goods;
  - (b) Furnishing of tools required for assembly and/or maintenance of the supplied Goods;
  - (c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
  - (d) Performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties,

provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and

- (e) Training of the Purchaser's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.

25.3 Prices charged by the Supplier for incidental services, if not included in the Contract Price for the Goods, shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

**26. Inspections and Tests**

26.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are **specified in the PC**.

26.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, and/or at the Goods' named place of destination, or in another place in the Purchaser's Country as **specified in the PC**. Subject to GC Sub-Clause 26.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance, including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

26.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GC Sub-Clause 26.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

26.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

26.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications, codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impedes the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.

26.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

- 26.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GC Sub-Clause 26.4.
- 26.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GC Sub-Clause 26.6, shall release the Supplier from any warranties or other obligations under the Contract.
- 27. Liquidated Damages**
- 27.1 Except as provided under GC Clause 32, if the Supplier fails to deliver any or all of the Goods by the Date(s) of delivery or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage **specified in the PC** of the delivered price of the delayed Goods or unperformed Services for each week or part thereof of delay until actual delivery or performance, up to a maximum deduction of the percentage **specified in those PC**. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GC Clause 35.
- 28. Warranty**
- 28.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.
- 28.2 Subject to GC Sub-Clause 22.1(b), the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of named place of destination.
- 28.3 Unless otherwise **specified in the PC**, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the named place of destination **indicated in the PC**, or for eighteen (18) months after the date of shipment from the port or place of loading in the country of origin, whichever period concludes earlier.
- 28.4 The Purchaser shall give notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

- 28.5 Upon receipt of such notice, the Supplier shall, within the period **specified in the PC**, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.
- 28.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the **PC**, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

## 29. Patent Indemnity

29.1 The Supplier shall, subject to the Purchaser's compliance with GC Sub-Clause 29.2, indemnify and hold harmless the Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

- (a) The installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and
- (b) The sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

- 29.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GC Sub-Clause 29.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.
- 29.3 If the Supplier fails to notify the Purchaser within twenty-eight (28) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.
- 29.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

- 29.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.
- 30. Limitation of Liability**
- 30.1 Except in cases of criminal negligence or willful misconduct,
- (a) The Supplier shall not be liable to the Purchaser, whether in contract, tort, or otherwise, for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and
  - (b) The aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort or otherwise, shall not exceed the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the supplier to indemnify the purchaser with respect to patent infringement
- 31. Change in Laws and Regulations**
- 31.1 Unless otherwise specified in the Contract, if after the date of twenty-eight (28) days prior to date of Bid submission, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in the place of the Purchaser's country where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GC Clause 15.
- 32. Force Majeure**
- 32.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- 32.2 For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not

foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions, and freight embargoes.

32.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

**33. Change Orders and Contract Amendments**

33.1 The Purchaser may at any time order the Supplier through notice in accordance GC Clause 8, to make changes within the general scope of the Contract in any one or more of the following:

- (a) Drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b) The method of shipment or packing;
- (c) The place of delivery; and
- (d) The Related Services to be provided by the Supplier.

33.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery/Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within twenty-eight (28) days from the date of the Supplier's receipt of the Purchaser's change order.

33.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

33.4 Subject to the above, no variation in or modification of the terms of the Contract shall be made except by written amendment signed by the parties.

**34. Extensions of Time**

34.1 If at any time during performance of the Contract, the Supplier or its subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GC Clause 13, the Supplier shall promptly notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion extend the Supplier's time for performance, in

which case the extension shall be ratified by the parties by amendment of the Contract.

34.2 Except in case of Force Majeure, as provided under GC Clause 32, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GC Clause 27, unless an extension of time is agreed upon, pursuant to GC Sub-Clause 34.1.

## 35. Termination

### 35.1 Termination for Default

- (a) The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate the Contract in whole or in part:
  - (i) If the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GC Clause 34;
  - (ii) If the Supplier fails to perform any other obligation under the Contract; or
  - (iii) If the Supplier, in the judgment of the Purchaser has engaged in fraud and corruption, as defined in GC Clause 3, in competing for or in executing the Contract.
- (b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GC Clause 35.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to the Purchaser for any additional costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

### 35.2 Termination for Insolvency

- (a) The Purchaser may at any time terminate the Contract by giving notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

### 35.3 Termination for Convenience

- (a) The Purchaser, by notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the

Supplier under the Contract is terminated, and the date upon which such termination becomes effective;

- (b) The Goods that are complete and ready for shipment within twenty-eight (28) days after the Supplier's receipt of notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:
  - (i) To have any portion completed and delivered at the Contract terms and prices; and/or
  - (ii) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

**36. Assignment**

36.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

**37. Export  
Restriction**

37.1 Notwithstanding any obligation under the Contract to complete all export formalities, any export restrictions attributable to the Purchaser, to the country of the Purchaser, or to the use of the products/goods, systems or services to be supplied, which arise from trade regulations from a country supplying those products/goods, systems or services, and which substantially impede the Supplier from meeting its obligations under the Contract, shall release the Supplier from the obligation to provide deliveries or services, always provided, however, that the Supplier can demonstrate to the satisfaction of the Purchaser and of the KfW that it has completed all formalities in a timely manner, including applying for permits, authorizations and licenses necessary for the export of the products/goods, systems or services under the terms of the Contract. Termination of the Contract on this basis shall be for the Purchaser's convenience pursuant to Sub-Clause 35.3.

## Section IX. Particular Conditions of Contract

The following Particular Conditions of Contract (PC) shall supplement and / or amend the General Conditions of Contract (GC). Whenever there is a conflict, the provisions herein shall prevail over those in the GC.

<b>GC 1.1(i)</b>	The Purchaser's country is: <b>Kenya</b>
<b>GC 1.1(j)</b>	The Purchaser is: <b>Ministry of Education, State Department for Technical, Vocational Education and Training, Government of Kenya</b>
<b>GC 1.1 (o)</b>	The Named Place of Destination(s) is/are: <ul style="list-style-type: none"> <li>- <b>CIP Kiambu Institute of Science and Technology (KIST)</b></li> </ul> The Project Site(s) is/are: <b>according to Bidding Document Section VII. Schedule of Requirements, 6. Distribution of Goods.</b>
<b>GC 4.2</b>	The version edition of Incoterms shall be Incoterms 2010. However, the definition of the place and date associated with "delivery" is modified as follows: <ul style="list-style-type: none"> <li>(a) Under "CIP" Incoterms defines "delivery" as the place and date where risk transfers from the seller to the buyer.</li> <li>(b) In these Bidding Documents, when using "CIP" and not referring to the transfer of risk, the term "delivery" shall be interpreted as the date and place where the Goods and Related Services arrive at the named place of destination, and this date shall be reflected in the Delivery and Completion Schedule.</li> </ul>
<b>GC 5.1</b>	The governing and communication language shall be English.
<b>GC 6.1</b>	The designated party to act as lead firm with full authority is: <i>[Insert complete legal name of the lead firm]</i>
<b>GC 7.1</b>	Goods and services from countries under embargo from Germany, the European Union or the United Nations are not eligible. Goods and services from countries which are legally barred in the country of the contracting agency.

<b>GC 8.1</b>	<p>For <b>notices</b>, the <b>Purchaser's</b> address shall be:  Attention: <i>[Insert full name of person, if applicable]</i>  Street Address: <b>Ministry of Education, State Department for Technical, Vocational Education and Training, Jogoo House B, Harambee Avenue</b>  City: <b>P.O.BOX 9583 00200 Nairobi</b>  Country: <b>Kenya</b>  Telephone: <i>[Include telephone number, including country and city codes]</i>  Electronic mail address: <i>[Insert e-mail address, if applicable]</i></p> <p>For <b>notices</b>, the <b>Supplier's</b> address shall be:  Attention: <i>[Insert full name of person, if applicable]</i>  Street Address: <i>[Insert street address and number]</i>  City: <i>[Insert name of city or town]</i>  ZIP Code: <i>[Insert postal ZIP code, if applicable]</i>  Country: <i>[Insert name of country]</i>  Telephone: <i>[Include telephone number, including country and city codes]</i>  Electronic mail address: <i>[Insert e-mail address, if applicable]</i></p>
<b>GC 9.1</b>	<p>The governing law shall be the law of: <b>Government of the Republic of Kenya</b></p>
<b>GC 10.2</b>	<p>The rules of procedure for arbitration proceedings pursuant to GC Clause 10.2 shall be as follows:</p> <p><i>"Clause 10.2 (a) shall be retained in the case of a Contract with a foreign Supplier and clause 10.2 (b) shall be retained in the case of a Contract with a national of the Purchaser's country."</i></p> <p><b>(a) Contract with foreign Supplier:</b></p> <p><b>GC 10.2—Any dispute, controversy or claim arising out of or relating to this Contract, or breach, termination or invalidity thereof, shall be settled by arbitration in accordance with the UNCITRAL Arbitration Rules as at present in force.</b></p> <p><b>(b) Contracts with Supplier national of the Purchaser's country:</b></p> <p>In the case of a dispute between the Purchaser and a Supplier who is a national of the Purchaser's country, the dispute shall be referred to adjudication or arbitration in accordance with the laws of the Purchaser's country.</p>
<b>GC 13.1</b>	<p><b>For Goods supplied from abroad:</b></p> <p>Upon shipment, the Supplier shall notify the Purchaser and the Insurance Company by cable or by electronic way previously agreed between the parties the full details of the shipment, including contract number, description of Goods, quantity, the mode of transport, the bill of lading number and date, place of loading, date of shipment, place of discharge,</p>

	<p>etc. The Supplier shall mail the following documents to the Purchaser, with a copy to the Insurance Company:</p> <ul style="list-style-type: none"> <li>(i) <b>Original and three (3) copies of the Supplier's invoice<sup>1</sup></b> showing Goods' and Related Services' description, quantity, unit price, total amount, number of packages, names of the exporter and the consignee; Goods and Related Services must be carefully described (accurate, specific, and complete description of merchandise);</li> <li>(ii) <b>Original negotiable and two (2) non-negotiable copies (stamped and dated according to the original) of the clean, on-board bill of lading marked "freight prepaid" or equivalent</b> (air waybill, road waybill, FCR, CMR), showing gross and net weights, volume of measurement, marks and identification, name and address of importer of consignee;</li> <li>(iii) <b>Original and three (3) copies of the packing list</b> identifying contents of each package; packing and weighing list shall describe accurately and in detail the contents of each package / case included in the shipment and give the net and gross weights;</li> <li>(iv) <b>Original insurance certificate;</b></li> <li>(v) <b>Original Manufacturer's or Supplier's warranty certificate;</b></li> <li>(vi) <b>Original inspection certificate</b>, issued by the nominated inspection agency, and the Supplier's factory inspection report;</li> <li>(vii) <b>Certified certificate of origin: original and two (2) copies;</b> origin to be certified by the Chamber of Commerce in the supplier's country; and</li> <li>(viii) Any other document that may be required in specific cases.</li> </ul> <p>The above documents shall be received by the Purchaser at least one week before arrival of the Goods at the place of arrival and, if not received, the Supplier will be responsible for any consequent expenses.</p> <p><b>For Goods from within the Purchaser's country:</b></p> <p>Upon delivery of the Goods EXW or to the transporter, the Supplier shall notify the Purchaser and submit the following documents to the Purchaser:</p> <ul style="list-style-type: none"> <li>(i) <b>Original and three (3) copies of the Supplier's invoice</b> showing Goods' and Related Services' description, quantity, unit price, and total amount;</li> <li>(ii) <b>Original delivery note, railway receipt, or truck receipt;</b></li> <li>(iii) <b>Original insurance certificate;</b></li> <li>(iv) <b>Original Manufacturer's or Supplier's warranty certificate;</b></li> <li>(v) <b>Original inspection certificate</b>, issued by the nominated inspection agency, and the Supplier's factory inspection report;</li> <li>(vi) <b>Certified certificate of origin: original and two (2) copies;</b> origin to be certified by the Chamber of Commerce in the supplier's country; and</li> <li>(vii) Any other document that may be required in specific cases.</li> </ul>
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<sup>1</sup> If required for due process (e.g. customs clearance in the Purchaser's country), the invoice can be split into two invoices, one showing CIP values and the other local services (inland transportation, installation, training, etc.).

	The above documents shall be received by the Purchaser before shipping of the Goods and, if not received, the Supplier will be responsible for any consequent expenses.
<b>GC 15.1</b>	<p>The prices charged for the Goods supplied and the related Services performed <b>shall not be adjustable</b>.</p> <p>If prices are adjustable, the following method shall be used to calculate the price adjustment: <b>not applicable</b>.</p>
<b>GC 16.1</b>	<p>GC 16.1—The method and conditions of payment to be made to the Supplier under this Contract shall be as follows:</p> <p><b>Methods of Payment:</b></p> <p>Payments shall be made using the KfW's <b>Simplified Direct Disbursement</b> procedure.</p> <p><b>Payment for Goods supplied:</b></p> <p>Payment of foreign currency portion shall be made in <b>Euro (EUR)</b> in the following manner:</p> <p>(i) <b>Advance Payment<sup>2</sup> (optional): Twenty (20) percent of the Contract Price</b> shall be paid through the payment method stipulated above within sixty (60) days of signing of the Contract by both parties, against submission of a satisfactory Performance Guarantee, and upon submission of a claim and a satisfactory Advance Payment Guarantee for equivalent amount valid until the Goods are delivered to the final destination(s); guarantees shall be in the form provided in the bidding documents. <b><i>The guarantees will have to be authenticated by the Central Bank of Kenya (CBK) through a local bank in Kenya.</i></b></p> <p>(ii) <b>On Delivery and acceptance: Eighty (80) percent of the Contract Price</b> of Goods and Related Services received shall be paid through the payment method stipulated above within sixty (60) days of receipt of the Goods and completion of the Related Services at the final destination(s) upon submission of claim supported by the presentation of the Purchaser's inspection certificate, issued by the Purchaser [which shall be issued by the Purchaser within fifteen(15) days from the successful distribution/installation/commission/training (whichever is the latter)], and subject to a satisfactory Performance Guarantee covering the warranty period.</p>
<b>GC 16.1</b>	Payment to the Supplier of the amounts due in each currency shall be made into the following bank accounts:

<sup>2</sup> For off-the-shelf items with short EXW/CIP delivery time, this payment will be made together with the payment described in (ii); this also applies to smaller value contracts where the Supplier does not wish to receive an advance payment.

	<p><i>[Insert bank account details at the time of contract signing]</i></p> <p>Account holder: _____</p> <p>Account number: _____</p> <p>Bank, branch: _____</p> <p>Account number (IBAN): _____</p> <p>SWIFT/BIC: _____</p> <p>Bank address: _____</p>
<b>GC 16.5</b>	<b>GC 16.5 does not apply to this Contract, and no interest payments will be made.</b>
<b>GC 16.6</b>	<p>Reimbursement payments shall be made to KfW to the following bank account:</p> <p>Account holder: KfW Entwicklungsbank</p> <p>Account number: 38 000 000 00</p> <p>Branch code (BLZ): 500 204 00</p> <p>Account number (IBAN): DE53 5002 0400 3800 0000 00</p> <p>SWIFT/BIC: KFWIDEFF</p> <p>Payment to be made for the account of the <b>Ministry of Education of Kenya, for BMZ No. 2016 67 211..</b></p>
<b>GC 17.3</b>	<p>The following taxes, duties and fees exemptions apply to the Contract:</p> <p><b>The Project shall be exempt from indirect taxes, such as import duties, VAT and other public charges in accordance with the Kenyan law. The Project has a tax exemption certificate.</b></p>
<b>GC 18.1</b>	The amount of the Performance Security shall be: <b>Ten (10) percent of the Contract Price.</b>
<b>GC 18.3</b>	<p>The Performance Security shall be in the form of: <b>A Performance security, to be authenticated by the Central Bank of Kenya (CBK) through a local bank in Kenya.</b></p> <p>The Performance security shall be denominated in <b>the currencies of payment of the Contract, in accordance with their portions of the Contract Price.</b></p>
<b>GC 18.4</b>	Discharge of the Performance Security shall take place: <b>according to sub clause GC 18.4: The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than twenty-eight (28) days following the date of Completion of the Supplier's performance obligations under the Contract, including any warranty obligations</b>
<b>GC 22.2(a)</b>	The number of days shall be: <b>Fifteen (15) days from dispatch</b>
<b>GC 22.2 (b)</b>	The number of years shall be: <b>Five (5) years</b>

<b>GC 23.2</b>	<p>The packing, marking and documentation within and outside the packages shall be:</p> <p><b>Ministry of Education of Kenya</b>  <b>Contract No.: ICB-07/MOE-VTT/TVET/KfW 2016 67 211/003/2023-2024</b>  <b>Government of the Republic of Kenya</b></p>
<b>GC 24.1</b>	<p>The insurance coverage shall be as follows:</p> <p><b>Up to Kenya (final destination/s) in an amount equal to 110% of the Contract Price (CIP/EXW value plus all required local services)</b> from “warehouse to warehouse” on “All Risks” basis including War Risks and Strike Clauses. The Institute War Clauses do not apply for land transport (rail or road).</p> <p>Any payments of the insurer are to be made to KfW for the account of <b>Ministry of Education of Kenya</b> to the extent that the risk has already come to lie with the Purchaser. The insurance certificate/policy <b>must</b> include the following Clause:</p> <p>“In the event of any claim under this insurance policy, payment shall be effected to KfW, Frankfurt am Main (BIC: KFWIDEFF, BLZ/Branch Code 500 204 00), Account No. 38 000 000 00 (IBAN: DE53 5002 0400 3800 0000 00) for account of <b>Ministry of Education of Kenya, for BMZ No. 2016 67 211</b>”.</p>
<b>GC 25.1</b>	<p>Responsibility for transportations shall be as follows:</p> <p><b>The Supplier is required under the Contract to ship the Goods CIP point of entry / point of customs clearance (enter place) and after completion of customs clearance by the Supplier to transport the Goods to a specified named place of destination within the Purchaser’s country, defined as the Project Site; transport to such named place of destination in the Purchaser’s country, including insurance and storage, as shall be specified in the Contract, shall be arranged by the Supplier, and related costs shall be included in the Contract Price.</b></p>
<b>GC 25.2</b>	<p>Incidental services to be provided are: <b>the selected services according to Bid Documents Section VII. Schedule of Requirements, included in the Contract Price.</b></p>
<b>GC 26.1</b>	<p>The inspections and tests shall be: <b>as specified in Bid Documents Section VII. Schedule of Requirements.</b></p>
<b>GC 26.2</b>	<p>The Inspections and tests shall be conducted at: <b>the premises of the Supplier or its subcontractor(s), at point of delivery and at the Goods’ final destination.</b></p>
<b>GC 27.1</b>	<p>The liquidated damage shall be: <b>0.5% per calendar week of the contract price.</b></p>
<b>GC 27.1</b>	<p>The maximum amount of liquidated damages shall be: <b>10% of the contract price.</b></p>

<b>GC 28.3</b>	<p>The period of validity of the Warranty shall be: <b>as per GC 28.3 (minimum period, except for items specified as requiring extended Warranty according to Bid Document Section VII. Schedule of Requirements 3. Technical Specifications).</b></p> <p>For purposes of the Warranty, the named place(s) of destination(s) shall be: <b>according to Bid Document Section VII. Schedule of Requirements 6. Distribution of Goods.</b></p>
<b>GC 28.5 and GC 28.6</b>	<p>The period for repair or replacement shall be: <b>30 days.</b></p>

## Attachment 1 to Particular Conditions of Contract

# KfW Policy – Sanctionable Practice – Social and Environmental Responsibility

### 1) Sanctionable Practice

The PEA and the Contractors (including all members of a Joint Venture and proposed or engaged Subcontractors) must observe the highest standard of ethics during the Tender Process and performance of the Contract.

By signing the Declaration of Undertaking the Contractors declare that (i) they did not and will not engage in any Sanctionable Practice likely to influence the Tender Process and the corresponding Award of Contract to the PEA's detriment, and that (ii) in case of being awarded a Contract they will not engage in any Sanctionable Practice.

Moreover, KfW requires to include in the Contracts a provision pursuant to which Contractors must permit KfW and in case of financing by the European Union also to European institutions having competence under European law to inspect the respective accounts, records and documents relating to the Tender Process and the performance of the Contract, and to have them audited by auditors appointed by KfW.

KfW reserves the right to take any action it deems appropriate to check that these ethics rules are observed and reserves, in particular, the rights to:

- (a) reject an Offer for Award of Contract if during the Tender Process the Bidder who is recommended for the Award of Contract has engaged in Sanctionable Practice, directly or by means of an agent in view of being awarded the Contract;
- (b) declare misprocurement and exercise its rights on the ground of the Funding Agreement with the PEA relating to suspension of disbursements, early repayment and termination if, at any time, the PEA, Contractors or their legal representatives or Subcontractors have engaged in Sanctionable Practice during the Tender Process or performance of the Contract without the PEA having taken appropriate action in due time satisfactory to KfW to remedy the situation, including by failing to inform KfW at the time they knew of such practices.

KfW defines, for the purposes of this provision, the terms set forth below as follows:

<b>Coercive Practice</b>	The impairing or harming, or threatening to impair or harm, directly or indirectly, any person or the property of the person with a view to influencing improperly the actions of a person.
<b>Collusive Practice</b>	An arrangement between two or more persons designed to achieve an improper purpose, including influencing improperly the actions of another person.
<b>Corrupt Practice</b>	The promising, offering, giving, making, insisting on, receiving, accepting or soliciting, directly or indirectly, of any illegal payment or undue advantage of any nature, to or by any person, with the intention of influencing the actions of any person or causing any person to refrain from any action.

- Fraudulent Practice** Any action or omission, including misrepresentation that knowingly or recklessly misleads, or attempts to mislead, a person to obtain a financial benefit or to avoid an obligation.
- Obstructive Practice** Means (i) deliberately destroying, falsifying, altering or concealing evidence material to the investigation or the making of false statements to investigators, in order to materially impede an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice, or threatening, harassing or intimidating any Person to prevent them from disclosing their knowledge of matters relevant to the investigation or from pursuing the investigation, or (ii) any act intended to materially impede the exercise of KfW's access to contractually required information in connection with an official investigation into allegations of a Corrupt Practice, Fraudulent Practice, Coercive Practice or Collusive Practice.
- Sanctionable Practice** Any Coercive Practice, Collusive Practice, Corrupt Practice, Fraudulent Practice or Obstructive Practice (as such terms are defined herein) which is unlawful under the Financing Agreement.

## 2) Social and Environmental Responsibility

Projects financed in whole or partly in the framework of Financial Cooperation have to ensure compliance with international Environmental, Social, Health and Safety (ESHS) standards (including issues of sexual exploitation and abuse and gender based violence) Contractors in KfW-financed projects shall consequently undertake in the respective Contracts to:

- (a) comply with and ensure that all their Subcontractors and major suppliers, i.e. for major supply items comply with international environmental and labour standards, consistent with applicable law and regulations in the country of implementation of the respective Contract and the fundamental conventions of the International Labour Organisation<sup>3</sup> (ILO) and international environmental treaties and;
- (b) implement any environmental and social risks mitigation measures, as identified in the environmental and social impact assessment (ESIA) and further detailed in the environmental and social management plan (ESMP) as far as these measures are relevant to the Contract and implement measures for the prevention of sexual exploitation and abuse and gender-based violence..

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<sup>3</sup> In case ILO conventions have not been fully ratified or implemented in the Employer's country the Applicant/Bidder/Contractor shall, to the satisfaction of the Employer and KfW, propose and implement appropriate measures in the spirit of the said ILO conventions with respect to a) workers grievances on working conditions and terms of employment, b) child labour, c) forced labour, d) worker's organisations and e) non-discrimination.

**Attachment: Price Adjustment Formula<sup>1</sup>**

**Not applicable.**

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<sup>1</sup> Delete if no price adjustment is permitted in GC 15.1.

## Section X. Contract Forms

This Section contains forms which, once completed, will form part of the Contract. The forms for Performance Security and Advance Payment Security, when required, shall only be completed by the successful Bidder after contract award.

### Table of Forms

<b>Letter of Acceptance .....</b>	<b>247</b>
<b>Contract Agreement .....</b>	<b>248</b>
<b>Performance Security .....</b>	<b>250</b>
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## Letter of Acceptance

*[Use letterhead paper of the Purchaser]*

*[Insert date]*

To: *[Insert name and address of the Supplier]*

Subject: **Notification of Award Contract No. *[Insert contract number]***

This is to notify you that your Bid dated *[Insert date]* for execution of the *[Insert name of the contract and identification number, as given in the PC]* for the Accepted Contract Amount of *[Insert contract price in numbers and words including code and name of currency]*, as corrected and modified in accordance with the Instructions to Bidders is hereby accepted by the undersigned Purchaser.

You are requested to furnish the Performance Security within twenty-eight (28) days in accordance with the Conditions of Contract, using for that purpose the Performance Security Form included in Section X, Contract Forms, of the Bidding Documents.

Authorized Signature:

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Name and Title of Signatory:

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Name of Institution:

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**Attachment: Contract Agreement<sup>1</sup>**

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<sup>1</sup> If the Purchaser cannot send the contract agreement together with the letter of acceptance, it must be sent electronically to the Supplier within a reasonable period of time not exceeding ten days; for the purpose of issuing the required Performance Guarantee, the supplier must be advised of the Contract date.

## Contract Agreement

THIS AGREEMENT made

the *[Insert number]* day of *[Insert: month]*, *[Insert: year]*.

BETWEEN

- (1) *[Insert complete name of Purchaser]*, a/an *[Insert description of type of legal entity, for example, an agency of the Ministry of .... of the State of {Insert name of Country of Purchaser}, or corporation incorporated under the laws of {Insert name of Country of Purchaser}]* and having its principal place of business at *[Insert address of Purchaser]* (hereinafter called "the Purchaser"), and
- (2) *[Insert name of Supplier]*, a corporation incorporated under the laws of *[Insert: country of Supplier]* and having its principal place of business at *[Insert address of Supplier]* (hereinafter called "the Supplier").

WHEREAS the Purchaser invited bids for certain Goods and ancillary services, viz., *[Insert brief description of Goods and Services]* and has accepted a Bid by the Supplier for the supply of those Goods and Services in the sum of *[Insert Contract Price in words and figures, expressed in the Contract currency(ies)]* (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the 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 Bid Submission Form and Appendix to Bid Submission Form (including the signed Declaration of Undertaking);
  - (c) The Addenda Nos. \_\_\_\_\_ (if any);
  - (d) Particular Conditions of Contract, including Annex 1;
  - (e) General Conditions of Contract;
  - (f) The Specification (including Schedule of Requirements and Technical Specifications);
  - (g) The completed Bidding Forms (including Price Schedules); and
  - (h) Any other document listed in GC as forming part of the Contract.
3. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.
4. In consideration of the payments to be made by the Purchaser to the Supplier as specified in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
5. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Services 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 *[Insert the name of the Contract governing law country]* on the day, month and year indicated above.

For and on behalf of the Purchaser<sup>2</sup>:

Signed: *[Insert signature]*

In the capacity of *[Insert title or other appropriate designation]*

In the presence of *[Insert identification of official witness]*

For and on behalf of the Supplier:

Signed: *[Insert signature of authorized representative(s) of the Supplier]*

In the capacity of *[Insert title or other appropriate designation]*

In the presence of *[Insert identification of official witness]*

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<sup>2</sup> In cases where the Purchaser is different from the Beneficiaries of the Contract, it may be advisable to have authorized representatives from the Beneficiary Institutions sign as witnesses, accepting the Goods to be supplied.

*[Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.]*

## Performance Security

**Beneficiary:** *[Insert name and Address of Purchaser]*

**Date:** *[Insert date of issue]*

**PERFORMANCE GUARANTEE No.:** *[Insert guarantee reference number]*

**Guarantor:** *[Insert name and address of place of issue, unless indicated in the letterhead]*

We have been informed that *[Insert name and address of supplier, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[Insert reference number of the contract]* dated *[Insert contract date]* with the Beneficiary, for the supply of *[Insert object of the contract and brief description of Goods and related Services]* (hereinafter called "the Contract"). Furthermore we understand that, according to the conditions of the Contract, a performance guarantee is required for *[Insert percentage in words and figures]* % of the contract price.

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary, any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]*<sup>3</sup> upon receipt by us of the Beneficiary's first demand, supported by the Beneficiary's statement, whether in the demand itself or 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 the demand or the sum specified therein.

*[For guarantees issued in foreign currency insert the following:]*

In the event of any claim under this guarantee, payment shall be effected to KfW, Frankfurt am Main (BIC: KFWIDEFF, BLZ 500 204 00), account no. 38 000 000 00 (IBAN: DE53 5002 0400 3800 0000 00), for the account of *[Insert name of the Purchaser and the Purchaser's country]*.

*[For guarantees issued in local currency insert the following:]*

In the event of any claim under this guarantee, payment shall be effected to *[Insert the account on which payments are to be made]*, for the account of *[Insert name of the Purchaser and the Purchaser's country]*.

This guarantee shall expire not later than *[Insert expiry date]*<sup>4</sup>.

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

<sup>3</sup> This guarantee shall be issued in the contract currency only.

<sup>4</sup> Pursuant to GC Clause 18.4 the guarantee shall be valid for at least 28 days from the date of contractual contract completion (including warranty obligations).

*[As preferred option regarding guarantee rules insert<sup>5</sup>: This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.]*

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Place, date

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Guarantor's authorized signature(s)

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<sup>5</sup> In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.

*[Note: All italicized text (including footnotes) is for use in preparing this form and shall be deleted from the final product.]*

## Advance Payment Security

**Beneficiary:** *[Insert name and Address of Purchaser]*

**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]*

We have been informed that *[Insert name and address of supplier, which in the case of a joint venture shall be the name and address of the joint venture]* (hereinafter called "the Applicant") has entered into Contract No. *[Insert reference number of the contract]* dated *[Insert contract date]* with the Beneficiary, for the supply of *[Insert object of the contract and brief description of Goods and related Services]* (hereinafter called "the Contract"). Furthermore we understand that, according to the conditions of the Contract, an advance payment in the sum of *[Insert amount and currency in words and figures]*<sup>6</sup>, representing *[Insert percentage in words and figures]* % of the contract price, is to be made against an advance payment guarantee.

Waiving all objections and defences, we, as Guarantor, hereby irrevocably and independently undertake to pay the Beneficiary, any sum or sums not exceeding in total an amount of *[Insert guarantee amount and currency in words and figures]* upon receipt by us of the Beneficiary's first demand, supported by the Beneficiary's statement, whether in the demand itself or 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 the demand or the sum specified therein.

The advance payment guarantee shall come into force and effect as soon as the advance payment has been credited to the Applicant on its account. Minor deductions of the above mentioned amount notably due to bank fees shall have no effect on the entry into force.

*[For guarantees issued in foreign currency insert the following:]*

In the event of any claim under this guarantee, payment shall be effected to KfW, Frankfurt am Main (BIC: KFWIDEFF, BLZ 500 204 00), account no. 38 000 000 00 (IBAN: DE53 5002 0400 3800 0000 00), for the account of *[Insert name of the Purchaser and the Purchaser's country]*.

*[For guarantees issued in local currency insert the following:]*

In the event of any claim under this guarantee, payment shall be effected to *[Insert the account on which payments are to be made]*, for the account of *[Insert name of the Purchaser and the Purchaser's country]*.

This guarantee shall expire not later than *[Insert expiry date]*.

By this date we must have received any claims for payment by letter or encoded telecommunication.

It is understood that you will return this guarantee to us on expiry or after payment of the total amount to be claimed hereunder.

<sup>6</sup> This guarantee must be issued in the contract currency only.

*[As preferred option regarding guarantee rules insert<sup>7</sup>: This guarantee is subject to the Uniform Rules for Demand Guarantees (URDG) 2010 Revision, ICC Publication No. 758, except that the supporting statement under Article 15(a) is hereby excluded.]*

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Place, date

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Guarantor's authorized signature(s)

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<sup>7</sup> In the case the issuing bank will not add the preferred option, the following must be added instead: This guarantee is governed by the laws of *[Insert country of jurisdiction]*. Note: the country of jurisdiction shall be the country where the bank's branch issuing the guarantee is physically located.