



**Ministry of Education**  
**State Department for Vocational and Technical**  
**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-01/MOE-VTT/TVET/KfW 2016 67 211/001/2021-2022**

**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**

**March 2022**

---



---

# INVITATION FOR BIDS

Ministry of Education, State Department for Vocational and Technical Training

Promotion of Youth Employment and Vocational Training in Kenya

BMZ No. 2016 67 211 / 2016 65 298

8.03.2022

Tender Reference: ICB-01/MOE-VTT/TVET/KfW 2016 67 211 /001/2021-2022

The State Department for Vocational and Technical 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 Vocational and Technical 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 Vocational and Technical Training, on 7th floor room 706 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 Vocational and Technical Training KfW project located on the ground floor of Jogoo House B, Harambee Avenue on or before **11.00 am (East Africa Time), 21.04.2022**. Late Bids will be rejected.

---

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 VOCATIONAL AND TECHNICAL TRAINING*

## Table of Contents

<b>PART 1 – Bidding Procedures</b> .....	<b>4</b>
Section I. Instructions to Bidders .....	5
Section II. Bid Data Sheet (BDS).....	27
Section III. Qualification and Evaluation Criteria .....	31
Section IV. Bidding Forms .....	42
Section V. Eligibility Criteria.....	63
Section VI. KfW Policy – Sanctionable Practice – Social and Environmental Responsibility .....	65
<b>PART 2 – Supply Requirements</b> .....	<b>67</b>
Section VII. Schedule of Requirements .....	68
<b>PART 3 - Contract</b> .....	<b>174</b>
Section VIII. General Conditions of Contract .....	175
Section IX. Particular Conditions of Contract.....	192
Section X. Contract Forms .....	202

---

# **PART 1 – Bidding Procedures**

# Section I. Instructions to Bidders

## Table of Contents

<b>A. General</b> .....	<b>7</b>
1. Scope of Bid .....	7
2. Source of Funds .....	7
3. Corrupt and Fraudulent Practices .....	7
4. Eligible Bidders .....	7
5. Eligible Goods and Related Services .....	9
<b>B. Contents of Bidding Documents</b> .....	<b>9</b>
6. Sections of Bidding Documents .....	9
7. Clarification of Bidding Documents .....	10
8. Amendment of Bidding Document .....	10
<b>C. Preparation of Bids</b> .....	<b>10</b>
9. Cost of Bidding .....	10
10. Language of Bid .....	11
11. Documents Comprising the Bid.....	11
12. Declaration of Undertaking, Qualification Forms, and Bid Submission Form, Bidding Forms, Price Schedules .....	12
13. Alternative Bids.....	12
14. Bid Prices and Discounts .....	12
15. Currencies of Bid and Payment .....	14
16. Documents Establishing the Eligibility and Conformity of the Goods and Related Services.....	14
17. Documents Establishing the Eligibility and Qualifications of the Bidder.....	15
18. Period of Validity of Bids .....	15
19. Bid Security .....	16
20. Format and Signing of Bid .....	17
<b>D. Submission and Opening of Bids</b> .....	<b>18</b>
21. Sealing and Marking of Bids .....	18
22. Deadline for Submission of Bids .....	19
23. Late Bids .....	19
24. Withdrawal, Substitution, and Modification of Bids .....	19
25. Bid Opening.....	19
<b>E. Evaluation and Comparison of Bids</b> .....	<b>21</b>
26. Confidentiality .....	21
27. Qualification of the Bidder .....	21
28. Clarification of Bids .....	21
29. Deviations, Reservations, and Omissions .....	22
30. Determination of Responsiveness .....	22
31. Non-conformities, Errors and Omissions.....	22
32. Correction of Arithmetical Errors .....	23
33. Conversion to Single Currency .....	23
34. Margin of Preference .....	23
35. Evaluation of Bids .....	23
36. Comparison of Bids .....	25

---

37.	Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids .....	25
<b>F.</b>	<b>Award of Contract .....</b>	<b>25</b>
38.	Award Criteria .....	25
39.	Purchaser's Right to Vary Quantities at Time of Award .....	25
40.	Notification of Award .....	25
41.	Signing of Contract .....	26
42.	Performance Security .....	26

# 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.

---

<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-01/MOE-VTT/TVET/KfW 2016 67 211 / 001/2021-2022</b>
ITB 1.1	The Purchaser is: <b>Ministry of Education, State Department for Vocational and Technical Training</b>
ITB 1.1	<p>The name and identification number of the ICB are: <b>Training and Specialized Equipment for Industrial Mechatronics, ICB-01/MOE-VTT/TVET/KfW 2016 67 211 /001/2021-2022</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 <b><u>clarification of bid purposes</u></b> 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 Vocational and Technical 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: <a href="mailto:tenders.moe.tvet@gmail.com">tenders.moe.tvet@gmail.com</a></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>	Manufacturer's authorization is: <b>required 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 or KES.</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>
ITB 19.3 (c)	Other types of acceptable securities: <b>None, no other forms of bid securities are acceptable.</b>
ITB 19.9	<b>Not applicable.</b>
ITB 20.1	In addition to the original of the bid, the number of copies is: <b>1 (one).</b>
ITB 20.2	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>
ITB 22.1	<p><b>For bid submission purposes, the Purchaser's address is:</b></p> <p>Address:</p> <p><b>The Principal Secretary Ministry of Education State Department for Vocational and Technical Training, Jogoo House B, Harambee Avenue, P.O.BOX 9583 00200 Nairobi, Kenya</b></p> <p>Floor-Room number: <b>Tender Box marked Ministry of Education, State Department for Vocational and Technical Training KfW project located on the ground floor.</b></p> <p><b>The deadline for the submission of bids is:</b></p> <p>Date: <b>21<sup>st</sup> April 2022</b></p> <p>Time: <b>11.00 am East Africa Time (EAT)</b></p>
ITB 25.2	<p>The bid opening shall take place at:</p> <p>Address:</p> <p><b>Ministry of Education State Department of Vocational and Technical Training, Jogoo House B, Harambee Avenue, 10th Floor at the conference room P.O.BOX 9583 00200 Nairobi, Kenya</b></p>

	No minimum number of bids is required in order to proceed to bid opening.
<b>ITB 25.2</b>	The public bid opening session shall take place on/at: Date: <b>21<sup>st</sup> April 2022</b> Time: <b>11.00 am East Africa Time (EAT)</b>
	<b>E. Evaluation and Comparison of Bids</b>
<b>ITB 31.1</b>	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.
<b>ITB 33.1</b>	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>
<b>ITB 34.1</b>	A margin of domestic preference <b>shall not</b> apply.
	<b>F. Award of Contract</b>
<b>ITB 39.1</b>	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>
<b>ITB 41.3</b>	<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>

# 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.]*

## Contents

1. Qualification (ITB 27).....	32
2. Evaluation (ITB 35) .....	39
3. Domestic Preference (ITB 34) .....	40

## 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>Submission of audited balance sheets or if not required by the law of the Bidder's country, other financial statements acceptable to the Purchaser, for the last <b>three (3)</b> years 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 700,000 (Euro seven hundred thousand)</b> , and <b>Lot 2: EUR 2,000,000 (Euro two million)</b> , (for clarity: if <b>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 300,000 (Euro three hundred thousand)</b> and <b>Lot 2: EUR 825,000 (Euro eight hundred and twenty-five thousand)</b> (for clarity: if <b>bidding for both Lots, the minimum requirement is the sum total of both values</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 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>	A minimum number of similar <sup>3</sup> contracts 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</b> , each of a minimum value for <b>Lot 1: EUR 275,000 (Euro two hundred and seventy-five thousand) and/or Lot 2: EUR 800,000 (Euro eight hundred thousand)</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.

<b>Table 5</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>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 must have qualified personnel to satisfy the requirements.	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 must confirm availability of spare parts.	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
5.3	<b>Local Agent</b>	If so required in Section VII, Schedule of Requirements, the Bidder's must have a local agent including qualified personnel for the purpose of after sales services.	Must meet requirement	Must meet requirement	N/A	N/A	Support documents as required in Section VII, Schedule of Requirements

## **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.

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

**Not applicable.**

## Documents Index / Checklist

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.

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 (and Attachments)	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
6	ITB 11.1 (a)(iv)	Form ELI - 1.2: Bidder's JV Information Form (if applicable) (and Attachments)	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 (and Attachments: Financial Documents)	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 (One form per contract)	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 – CVs (if applicable)	NO	(free format)	<input type="checkbox"/>
15	ITB 11.1 (b)(ii)	Price Schedule: Goods Manufactured Outside the Purchaser's Country, to be Imported (if applicable) (One schedule per Lot)	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 (if applicable) (One schedule per Lot)	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
17	ITB 11.1 (b)(ii)	Price Schedule: Goods Manufactured in the Purchaser's Country (if applicable) (One schedule per Lot)	YES	(Section IV. Bidding Forms)	<input type="checkbox"/>
18	ITB 17.2 (a)	Manufacturer's Authorization (not required – instead: submit documentation as authorized dealer, distributor, reseller)	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 (if applicable) (and Attachments: documentary evidence - catalogues/leaflets/literature)	YES	(Section VII. Schedule of Requirements)	<input type="checkbox"/>
21	ITB 11.1 (b)(ii)	Lot 2: Technical Specifications (if applicable) (and Attachments: documentary evidence - catalogues/leaflets/literature)	YES	(Section VII. Schedule of Requirements)	<input type="checkbox"/>
22	-	Any other supporting documentation, determined as relevant by the Bidder to their bid.	NO	(free format)	<input type="checkbox"/>

# Section IV. Bidding Forms

## Table of Forms

<b>Declaration of Undertaking.....</b>	<b>43</b>
<b>Form ELI - 1.1: Bidder Information Form.....</b>	<b>46</b>
<b>Form ELI - 1.2: Bidder's JV Information Form.....</b>	<b>47</b>
<b>Form CON - 2: Historical Contract Non-Performance, Pending Litigation and Litigation History.....</b>	<b>48</b>
<b>Form FIN - 3.1: Financial Situation and Performance.....</b>	<b>50</b>
<b>Form FIN - 3.2: Average Annual Turnover.....</b>	<b>52</b>
<b>Form EXP - 4.1: Experience.....</b>	<b>53</b>
<b>Form SPA - 5.1: Spare Parts.....</b>	<b>54</b>
<b>Bid Submission Form.....</b>	<b>55</b>
<b>Price Schedule: Goods Manufactured Outside the Purchaser's Country, to be Imported.....</b>	<b>58</b>
<b>Price Schedule: Goods Manufactured Outside the Purchaser's Country, Already Imported.....</b>	<b>59</b>
<b>Price Schedule: Goods Manufactured in the Purchaser's Country.....</b>	<b>60</b>
<b>Bid Security.....</b>	<b>61</b>
<b>Manufacturer's Authorization.....</b>	<b>62</b>

## 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 applicable fiscal obligations regarding payments of taxes either in the country where we are constituted or the PEA's country;
  - 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/debarr> or respectively on the relevant list of any other multilateral development bank (*in the event of such exclusion, the Applicant or*

<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.

*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.

## 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>
1. Attached are copies of original documents of <i>[Check the box(es) of the attached original documents]</i> <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; <input type="checkbox"/> In case of JV, letter of intent to form JV or JV agreement, in accordance with ITB 4.1; <input type="checkbox"/> In case of a state-owned enterprise or institution, in accordance with ITB 4.3 documents establishing: <ul style="list-style-type: none"> <li>a) Legal and financial autonomy;</li> <li>b) Operation under commercial law;</li> <li>c) Establishing that the Bidder is not dependent agency of the Purchaser.</li> </ul>
2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

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>
1. Attached are copies of original documents of <i>[Check the box(es) of the attached original documents]</i> <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; <input type="checkbox"/> In case of a state-owned enterprise or institution, in accordance with ITB 4.3 documents establishing: a) Legal and financial autonomy; b) Operation under commercial law; c) Establishing that the Bidder is not dependent agency of the Purchaser. 2. Included are the organizational chart, a list of Board of Directors, and the beneficial ownership.

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 *[insert current year number less 5]* specified in Section III, Qualification and Evaluation Criteria, Qualification, subclause 2.1.

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

- Contract(s) not performed since 1st January *[insert current year number less 5]* 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"/> No pending litigation 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"/> Pending litigation 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

<b>Annual Turnover Data</b>			
<b>Year</b>	<b>Currency &amp; Amount</b>	<b>Exchange Rate</b>	<b>€-equivalent</b>
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

Similar Contract No. <i>[Insert specific number]</i> of <i>[Total number of contracts]</i> required	Information	
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.]*

---

Place, date

---

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

---

<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

1. List of Goods and Delivery Schedule.....	69
2. List of Related Services and Completion Schedule.....	70
3. Technical Specifications.....	71
4. Drawings .....	171
5. Inspections and Tests .....	172
6. Distribution of Goods.....	173

## 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	206	-
Lot 2	Specialized Electronics for Industrial Mechatronics	234	-

**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 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
6	User Training	For items defined and listed in the specifications	Supplier

<b>Item</b>	<b>Subject</b>	<b>Assignment</b>	<b>Responsibility</b>
<b>7</b>	<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	Not applicable.
Lot 2	Not applicable.

### **Installation of items**

The following items require installation by the Supplier:

Lot 1	Items 7, 8, 9, 10, 11, 12, 14, 16, 23, 24, 25, 26, 28, 138, 139, 143, 144
Lot 2	Items 1, 16, 23, 29, 31, 33, 35, 37, 39, 41, 43, 48, 53, 68, 72, 80, 87, 88, 92, 106, 111, 125, 126, 134, 141, 270, 297, 319, 441, 442, 443, 444, 446, 458, 459, 460, 465, 470

### **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	Items 8, 9, 12, 14, 16, 20, 23, 24, 25, 26, 28, 140, 151, 159, 160, 161, 207, 214
Lot 2	Items 87, 88, 125, 141, 272, 274, 276, 285, 297, 314, 319, 321, 467, 468, 470, 473, 474, 477

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 (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
1	Arbor Press	Sturdy, hollow cast body of special cast iron with large base; base with mounting holes for attaching to support (stand / subframe); rack and pinion slide ram of wear-resistant steel for heavy duty; precise operation due to hardened and polished rack and pinion slide ram with long guides; rotating table with four different recesses for the support of different workpieces; slide ram actuation by lever arm; includes handwheel and ratchet; includes retainer and retraction springs; pressure delivery: 8 kN or more; slide ram stroke up to 400 mm; for workpiece diameter up to 400 mm; CE-marking mandatory, with instruction manual in English.	Piece	1	N	[Manufacturer/Brand] [Model] [Offered specifications] <sup>1</sup>
2	Stand for Arbor Press	<b>Suitable for item: Arbor Press;</b> with 2-3 storage compartments.	Piece	1	N	“ “ “
N/A	N/A	<i>Item 3 not included in this Lot.</i>	N/A	N/A	N/A	N/A
4	Pipe Cutter for Steel Pipes	With 1 cutter wheel and 2 guide rollers; body of stainless steel drop-forged; wear-resistant spindle with plastic handle; cutter wheel for steel pipes of stainless steel, accurately hardened for long tool life; guide rollers of special steel; chromium-plated; external burr is rolled over automatically when cutting; cut pipe end is immediately ready for thread cutting; for pipe outer diameter inch 1/8-2.	Piece	12	N	

<sup>1</sup> Bidder's shall provide a clause-by-clause commentary on the Purchaser's Specifications, demonstrating the Goods' and Services' responsiveness to those Specifications or a statement of deviations 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 "acceptable", "better", "compliant", etc.); any statement made by the Bidder's must be verifiable in the provided catalogues/leaflets ("custom-made" catalogues/leaflets, i.e. literature specifically manufactured for this tender, and only consisting of a picture and some text, and generally appearing unprofessional, will not be accepted).

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
5	Precision Angle Bender	Powerful bending machine (suitable for workbench) for precise bending of various profiles up to 180°; positive and secure clamping of the profiles; with good repetition accuracy, precise bending and clamping jig; integral angle and length stops for quick working with exact bending results; ensuring smooth operation even with solid profiles due to a needlebearing turntable (size 60 and 100); for hot and cold bending (bending angle 0–180°), both with angular bending edges and also with various bending radii; 1 bending plate (r = 2 mm), 90° size 2; 1 angle stop; 1 length stop; 1 operating handle; component height 100 mm; maximum bending capacity for flat material (cold) 100x7 / 18x18 mm; maximum bending capacity for flat material (hot) 100x10 / 22x22 mm; maximum bending capacity for round material (cold) diameter 18 mm; including fixing materials for workbench; with CE-marking and manual in English.	Piece	1	N	
6	Anvil	Cast steel anvil, appr. 30-50 kg; made of drop-forged, high-grade steel for high hardness, maximum strength and durability; withstands heavy blows; with round horn and flat horn; rounded horn for smooth bending and shaping, the hardy hole for accessories, punching and bending; fully polished surface area, through quenching treatment, spray coating relieves oxidation reaction.	Piece	3	N	
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, doors RAL 7016 anthracite powder-coated. Supplied with 5 storage shelves with 100 kg load capacity, each. Height: 2000 mm, Width: 1250 mm, Depth: 500 mm.	Piece	8	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
8	Upright Drilling Machine	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) 28 mm, continuous drilling performance steel (S235JR) 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; CE-marking mandatory. British Standard Power Plug.	Piece	2	N	
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	Piece	3	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		mm; Drilling performance: Steel (S235JR) 25 mm, continuous drilling performance steel (S235JR) 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; CE-marking mandatory. British Standard Power Plug.				
10	Workbench	<b>Suitable for item: Bench Drilling Machine.</b> 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 RAL 7035, powder-coated. Height: 850 mm, Beech marine ply Worktop: length: 1500 mm, depth 750 mm, thickness: 50 mm; load capacity: 400 kg	Piece	3	N	
11	Machine Vice	<b>Suitable for item: Upright Drilling Machine and for item: Bench Drilling Machine.</b> 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 mm, Length without crank 216 mm, Clamping height 40 mm, Construction height 74 mm.	Piece	5	N	
12	Manual Guillotine Sheet Metal Shear	For sheet thickness 1.5 mm and material tensile strength 400 N/qmm, cutting length 1200-1500 mm, rear stop adjustment range min. 0-550 mm, heavy cast iron construction (not welded), table dimensions appr. 1500	Piece	2	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		mm x 600 mm, overall dimensions appr. 2400 x 1000 x 1800 (L x W x H), weight: appr. 400-450 kg				
13	Spare Knife	<b>Suitable for item: Manual Guillotine Sheet Metal Shear.</b>	Piece	2	N	
14	Manual Lever Shear	For cutting metal plates, round and flat steel, sheets of up to 4 mm cutting diameter or more and a cutting length of min. 230 mm.	Piece	2	N	
15	Spare Knife	Spare Knife Set (2 pieces). <b>Suitable for item: Manual Lever Shear</b>	Piece	2	N	
16	Double Bench Grinder with base and integrated extraction system	For heavy industrial use; suitable for very strong shear forces on the grinding wheels; maintenance-free and durable induction motor with 400V, 50Hz; housing made of cast iron; spark protection; stable, adjustable workpiece support; with integrated exhaust system, aluminum fan and self-cleaning blades; dust bag made of self-extinguishing tissue; sturdy base with water bowl; weight appr. 80-100 kg; Grinding wheels: external diameter 250 mm, width 30 mm, drill hole 25 mm, speed 1400 1/min. With instruction manual in English; CE-marking mandatory. British Standard Power Plug.	Piece	3	N	
17	Grinding Wheels	<b>Suitable for item: Double Bench Grinder with base and integrated extraction system.</b> Hardness M, Normal Corundum, Grain size K 80, Outer diameter 250 mm, Width 30 mm, Bore diameter 25 mm	Piece	9	N	
18	Silicone Carbid Grinding Wheels	<b>Suitable for item: Double Bench Grinder with base and integrated extraction system.</b> Hardness M, Special Corundum, Grain size K 80, Outer diameter 250 mm, Width 30 mm, Bore diameter 25 mm	Piece	9	N	
19	Grinding Wheel Dressing Stone	<b>Suitable for item: Grinding Wheels and for item: Grinding Wheel Dressing Stone.</b> SC 24	Piece	9	N	
20	Portable Grinding Machine	For precise grinding of double-edged twist drills, complete equipment with ER collets preferable in the interior of the machine, grinding capacity drill diameter 3-30 mm, tip sharpening angle 90-145°, with collets ER 20 size from diameter 3-8 mm and collets ER 40 size from diameter	Piece	1	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		8-30 mm or equivalent. 230V, 50 Hz. With instruction manual in English; CE-marking mandatory. British Standard Power Plug.				
21	Grinding Wheel	<b>Suitable for item: Portable Grinding Machine;</b> CBN for High Speed Steel (HSS), Grain Size 170-200	Piece	2	N	
22	Grinding Wheel	<b>Suitable for item: Portable Grinding Machine;</b> Diamond for Carbide (HM), Grain Size 150	Piece	2	N	
23	Manual Bending Machine	Heavy and stable cast iron construction; asymmetric 3-roller system for easy pre-bending; swing-out top roller; roller drive via hand crank, suitable for bending wires with the diameters 3, 5 and 8 mm; quick clamping of the sheet metal by means of a lever; pre-bending performance in steel 400 N/mm <sup>2</sup> 2.0 mm or higher; min. bending diameter 115 mm or smaller. With instruction manual in English; CE-marking mandatory.	Piece	2	N	
24	Manual Folding Machine	Workpiece clamping by means of foot pedal; powerful auxiliary cylinder facilitates bending; with segmented sharp-bending tools, continuous bending strip and continuous bed support; self-lubricating plain bearings; clamping pressure of the upper beam via non-slip thumbscrews easily adjustable; adjustment of material thickness by means of knurled screw; adjustable stop for bending angle; working width min. 1250 mm; bending angle 135° or more; segmentation 25-30-35-40-45-50-75-100-150-200-250-270 mm; Sheet thickness: Steel 235N/qmm: 2.0 mm, Steel 400N/qmm: 2.0 mm, Stainless steel: 1.2 mm, aluminium: 2.4 mm. With rear stop 300 mm or longer. With instruction manual in English; CE-marking mandatory.	Piece	2	N	
25	Manual Bead Bending Machine	Heavy and stable cast iron construction; adjustable sub-waves; steel shafts; adjustable stop plate; roller length 140 mm or more; roller diameter appr. 62 mm; bending performance in steel 400 N/qmm: 1.2 mm or more; collar width: 100 mm; with standard wheels / rollers S1-S8;	Piece	2	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		special tool for assembly / disassembly of the rollers. With instruction manual in English; CE-marking mandatory.				
26	Metal Band Saw	With swivel saw bow; continuously adjustable saw blade speed appr. 20-90 m/min - possible to change during operation; stable cast execution; lowering of saw arm via hydraulic cylinder with throttle valve infinitely adjustable; micro switch for automatic limit switch; coolant system; high-quality bi-metal saw band included; adjustable material stop for serial work; ball bearing saw band guide; quick-action vice adjustable by handwheel; clamping of workpiece with a handy quick release lever; easy to read scale for angle adjustment; overload protection; easy and correct adjustment of saw blade tension; cutting ranges minimum: 0° round (full material) 225 mm, 0° quadratic (full material) 150 mm, 0° rectangle horizontal (full material) 150 x 230 mm, +45° round (full material) 145 mm, +45° quadratic (full material) 145 mm, +45° rectangle horizontal (full material) 145 x 180 mm, +60° round (full material) 90 mm, +60° quadratic (full material) 90 mm, +60° rectangle horizontal (full material) 90 x 120 mm; saw band length 2480 mm; saw band width 27 mm; saw band thickness 0.9 mm; cutting angle 0–60°; feed infinitely adjustable; 230V, 50Hz, with coolant pump. With instruction manual in English; CE-marking mandatory. British Standard Power Plug.	Piece	3	N	
27	Saw Band Set	2,480 x 27 x 0,9 mm <b>suitable for item: Metal Band Saw</b> , consisting of: 1x saw band 5-8 ZpZ, tooth angle 0°; 1x saw band 5-8 ZpZ, tooth angle 6°; 1x saw band 6-10 ZpZ, tooth angle 0°	Piece	9	N	
28	Manual Metal-Cutting Circular Saw with substructure and coolant system	Swivel range of ± 45°; Easy-to-read angle; seconds adjustment of the miter; protected vise spindle; massive machine base on both sides with holes for the mounting of the material stand MSR; long handle allows sawing without great effort with integrated push-button (on / off); automatic switching on of the coolant pump when sawing; functional	Piece	3	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		protection device, closed construction, movable; fast opening mechanism for optimum safety when cutting; centrally exciting vise, 4-fold guided with individually adjustable clamping jaws; cutting always takes place in optimal position to the workpiece; protected vise spindle; Saw blade speed(s) 19/38 1/min; saw blade diameter 315 mm; miter angle -45 – +45°; feed manually; cutting capacity: 0° (round) solid material 85 mm, 0° (square) solid material 85 mm, 0° (rectangle) solid material 70 x 130 mm, +45° (round) solid material 85 mm, +45° (square) solid material 85 mm, +45° (rectangle) solid material 70 x 90 mm; 230V, 50 Hz. With instruction manual in English; CE-marking mandatory. British Standard Power Plug.				
29	Set of HSS Circular Saw Blades	<b>Suitable for item: Manual Metal-Cutting Circular Saw with substructure and coolant system;</b> 1. Saw blade diameter 315 mm, Saw blade bore 40 x 2.5 mm, 240 teeth, 4 mm/tooth. 2. Saw blade diameter 315 mm, Saw blade bore 40 x 2.5 mm, 150 teeth, 6 mm/tooth. 3. Saw blade diameter 315 mm, Saw blade bore 40 x 2.5 mm, 110 teeth, 8 mm/tooth.	Piece	9	N	
30	Vernier Caliper	With spring-loaded thumb-lock; Satin chromium plated anti-glare reading parts. Fine high-contrast scale; Precision lapped measuring faces; flat vernier scale for parallax-free reading; measuring range 150 mm; scale divisions 0.05 mm; graduation 1/20 mm, 1/128 inch; jaw length 40 mm; with depth gauge; accuracy according DIN 862 or equivalent; manufacturer's test certificate, traceable to national standards included in the delivery. Sturdy box: wood, plastic or equivalent.	Piece	40	N	
31	Vernier Depth Gauges	Measuring beam and vernier with clearly engraved scales. Precision ground contact faces. Vernier satin chrome-plated. Measuring range 200 mm; graduation 1/20 mm; scale divisions 0.05 mm; accuracy according DIN 862 or equivalent; Manufacturer's test certificate, traceable to	Piece	40	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		national standards included in the delivery. Sturdy box: wood, plastic or equivalent.				
32	External Micrometer Set	External micrometers with 1/100 graduation; measuring range 0-100 mm (4 micrometers with 0-25 mm, 25-50 mm, 50-75 mm and 75-100mm); min. 3 micrometer standards; precision lapped, carbide-tipped measuring faces; hardened and ground measuring spindle; locking by clamping lever; with ratchet and hand temperature protection; barrel non-reflecting chrome-plated; with clearly engraved, black divisions and numerals; with combined sensitive ratchet for one-hand operation and operation within the bracket; accuracy according DIN 863 or equivalent; Manufacturer's test certificate, traceable to national standards included in the delivery. Sturdy box: wood, plastic or equivalent.	Set	6	N	
33	Steel Rules with Graduations	Length 500 mm; vertical edges ground parallel and precisely squared., flat faces accurately machined; with protective ends at the start and end of the scale; one edge with accurate mm graduations; error limit 0.04 mm; cross-section width min. 30 mm; accuracy according DIN 866 or equivalent; manufacturer's test certificate, traceable to national standards included in the delivery.	Piece	40	N	
34	Straight Edges	Workshop straight edge with graduations on both sides, with chamfer; length 40 mm; made of anodised aluminium alloy, corrosion-resistant; special sub-surface printing of the anodised aluminium ensures a wipe-proof and scratch-proof scale; upper edge with mm graduations; lower edge with inch graduations; accuracy according EC class II or equivalent; manufacturer's test certificate, traceable to national standards included in the delivery.	Piece	40	N	
35	Spring Dividers	With fixed points; sturdy design with long arms, made of tool steel; points and measuring faces ground and hardened; solid spindle with adjusting nut for quick and fine adjustment; annular spring provides constant spring tension; length 200 mm; opening width min. 160 mm;	Piece	40	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
36	Bevel Edge Square	Stock length 200 x 130 mm; with two bevelled straight edges on the long blade; through hardened and stress-relieved; test faces ground and lapped, other faces ground; accuracy according DIN 875/00 or equivalent; right angle tolerance 0.004 mm; shank cross-section 30 x 6 mm; manufacturer's test certificate, traceable to national standards included in the delivery.	Piece	40	N	
37	Stock Square	Stock length 200 x 130 mm; all faces and edges ground; all inspection test faces ground; accuracy according DIN 875/2 or equivalent; right angle tolerance 0.04 mm; shank cross-section 30 x 6 mm; manufacturer's test certificate, traceable to national standards included in the delivery.	Piece	40	N	
38	Try Square	Stock length 200 x 130 mm; all faces and edges ground; all inspection test faces ground; accuracy according DIN 875/2 or equivalent; right angle tolerance 0.04 mm; shank cross-section 30 x 6 mm; manufacturer's test certificate, traceable to national standards included in the delivery.	Piece	40	N	
39	Protractor	Graduated arc diameter x stock length 150 x 200 mm; open semicircular graduated arc with graduation 0-180°; reading 1°; non-glare matt chrome-plated scale; with clamping nut; accuracy to manufacturer's standard, with test certificate, traceable to national standards included in the delivery.	Piece	40	N	
40	Mitre Square	Stock length 200 x 130 mm; with a stop for accurate marking and checking of 45° for 90° corner butt; made of steel; with precision ground reference edges; other faces are precision machined; angular tolerances based on DIN 875/2 or equivalent; manufacturer's test certificate, traceable to national standards included in the delivery. Sturdy box: wood, plastic or equivalent.	Piece	14	N	
41	Setting or Measuring Bevel	Stock length 500 mm; Test faces and other faces precision ground; with screw clamp joint (the two movable stocks can be set to any angle and locked with a wing nut); setting bevel stainless steel.	Piece	14	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
42	Scriber	1 straight and 1 angled point, chrome-plated, point hardness 59 HRC, nylon handle; suitable even for high-tensile steels / materials; overall length appr. 230 mm.	Piece	80	N	
43	Chisel and Taper Pin Punch Set	Flat and cross-cut chisels for metal, and taper pin punches and centre punches with octagonal shanks, through hardened; chisels can be reground many times; head specially annealed to prevent splintering; safety tested to DIN 7255 or equivalent; chrome vanadium steel, painted surface; comes with plastic holder and includes: flat cold chisel 150 mm, flat cold chisel 125 mm, cross-cut cold chisel 125 mm, taper pin punch 150x3 mm, taper pin punch 120x2 mm, centre punch 120x4 mm.	Set	40	N	
44	Mortise Chisel	Made of octagonal steel bar, hardened and tempered; blade uniformly through hardened; can be repeatedly reground without re-hardening; head specially annealed to prevent splintering; safety tested to DIN 7255 or equivalent; chrome vanadium air hardened steel, painted surface; shaft length appr. 125 mm; blade 10x2 mm.	Piece	40	N	
45	Sets of Files	Sets of files with ergonomic file handle; with ergonomic 2-component plastic handles; supplied with 5-piece set of files in a tool roll with one each: flat, 3-square, square, half-round and round file; length without tang 250 mm; Cut 1.	Set	40	N	
46	Sets of Files	Sets of files with ergonomic file handle; with ergonomic 2-component plastic handles; supplied with 5-piece set of files in a tool roll with one each: flat, 3-square, square, half-round and round file; length without tang 250 mm; Cut 2.	Set	40	N	
47	Sets of Files	Sets of files with ergonomic file handle; with ergonomic 2-component plastic handles; supplied with 5-piece set of files in a tool roll with one each: flat, 3-square, square, half-round and round file; length without tang 250 mm; Cut 3.	Set	40	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
48	File Brushes	With bristles of steel wire; bristle length and width 100x25 mm.	Piece	80	N	
49	Wire Hand Scratch Brushes	Curved wooden body with two holes for hanging; smooth steel wire 0.35 mm; length of brush section 140 mm; wire length 25 mm; 6 rows of bristles; overall length approx. 290 mm.	Piece	150	N	
50	Industrial Floor Broom	Wooden head with hole for handle diameter 24 mm; long-life polymer coconut fibre; length 600 mm.	Piece	40	N	
51	Broom Handle Set	Suitable for item 50 (Industrial Floor Broom); wooden handle with round head, sanded smooth; diameter 24 mm; handle of specially stiff and robust hardwood; length appr. 1400 mm; set consists of 10 piece.	Set	5	N	
52	Workbench Hand Brushes	Straight wooden body with rounded edges to the handle; brush area approx 150x40 mm, bristle length 70/60 mm; with polymer coconut fibre; length 280 mm.	Piece	40	N	
53	Workbench Dustpan	Metal, hot dip galvanised, standard model with wooden handle; overall length appr. 420 mm; length and width of dust shovel appr. 230 x 230 mm.	Piece	40	N	
54	Metal Buckets	Metal, galvanised with metal handle and wooden grip; appr. 10-12 litres.	Piece	18	N	
55	Single-Lens Safety Glasses	Individually adjustable over-specs for professional use; with good lateral vision due to panoramic lenses; must be suitable for spectacle wearers; compliance with EN 166 and EN 170 or equivalent.	Piece	250	N	
56	Engineer's Hammer	Weight without handle 300g and handle length 300 mm; with handle protection collar; hammer head drop-forged and ground to size; carefully hardened and tempered; head painted, face and peen bright finished; hammer head to DIN 1041 or equivalent; special tool steel; with bhickory handle ergonomic shape, varnished.	Piece	40	N	
57	Engineer's Hammer	Weight without handle 500g and handle length 320; with handle protection collar; hammer head drop-forged and ground to size; carefully hardened and tempered; head painted, face and peen bright finished; hammer head to	Piece	40	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		DIN 1041 or equivalent; special tool steel; with bhickory handle ergonomic shape, varnished.				
58	Engineer's Hammer	Weight without handle 1000g and handle length 360 mm; with handle protection collar; hammer head drop-forged and ground to size; carefully hardened and tempered; head painted, face and peen bright finished; hammer head to DIN 1041 or equivalent; special tool steel; with bhickory handle ergonomic shape, varnished.	Piece	40	N	
59	Engineer's Hammer	Weight without handle 2000g and handle length 400; with handle protection collar; hammer head drop-forged and ground to size; carefully hardened and tempered; head painted, face and peen bright finished; hammer head to DIN 1041 or equivalent; special tool steel; with bhickory handle ergonomic shape, varnished.	Piece	40	N	
60	Plastic Hammer	With exchangeable inserts; with impact resistant cellidor inserts; sturdy die-cast zinc central piece with handle protection sleeve and impact resistant inserts; with cambered hickory hammer handle; hammer head diameter 32 mm; head length with inserts appr. 95 mm; handle length 280 mm; weight appr. 0.375 kg.	Piece	40	N	
61	Electric Welders's Chipping Hammer	Forged hammer head, hardened and tempered; handle and head painted; with cutting edge, chipping point, and tubular steel handle; special tool steel; weight 500g; handle length 300 mm.	Piece	32	N	
62	Hacksaw Frame	Sturdy hacksaw frame with maximum 750 N (75 kP) blade tension and comfortable hand grip; alternative blade setting at 90° for flush cutting; overall length appr. 425 mm; with bi-metal blade 24 tpi.	Piece	40	N	
63	Hacksaw Blade Set	<b>Suitable for item: Hacksaw Frame;</b> single-sided; bi-metal; 24 tpi; 10 pieces per set.	Set	40	N	
64	"PUK" Hacksaw	For general purpose; overall length 310 mm; with adjustable natural varnished wooden handle; can be clamped at any point on the frame; frame solid nickel-plated steel square bar; with general purpose saw blade	Piece	40	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		(length 150 mm) for metal, aluminium, wood and plastic, tpi 25.				
65	"PUK" Hacksaw Blade Set	<b>Suitable for item: "PUK" Hacksaw;</b> 12 pieces universal; blade thickness 0.4 mm; blade length 150 mm; 25 tpi.	Set	40	N	
66	Hand Vice	Forged steel; wide jaws with prism; reinforced shank with secure hinge guide and enclosed special spring; spindle with trapezoidal thread and strong butterfly nut; overall length appr. 130 mm; jaw width 48 mm; jaw capacity 25 mm.	Piece	40	N	
67	Screwdriver Set	Screwdriver set, 8 pieces for slot-head, Phillips and Pozidriv; multi-component power handle with grip zone optimised for torque and comfort; blade of chrome vanadium steel; supplied with: 1 pc. each slot-head screwdriver size 3.5, 5.5, 7, 8; 1 pc. each screwdriver for Phillips size 1, 2; 1 pc. each Pozidriv screwdriver size 1, 2.	Set	40	N	
68	Open Ended Spanner Set (metric)	Drop-forged; with close tolerance jaw widths; chrome vanadium steel, phosphated / chrome-plated; with oval shank; compliant with DIN 3110 / ISO 3318; supplied with 12 spanners: Size 6x7; 8x9; 10x11; 12x13; 14x15; 16x17; 18x19; 20x22; 21x23; 24x26; 27x32; 30x34 mm.	Set	40	N	
69	Open Ended Spanner Set (inch)	Drop-forged; with close tolerance jaw widths; with easy-grip fluted shaft; optimum flexional resistance, good torque transmission; chrome alloy steel, non-flaking chrome-plated over nickel; smoothed finish; compliance with DIN 3110 / ISO 3318; supplied with 11 spanners: Size 1/4x5/16; 3/8x7/16; 1/2x9/16; 9/16x5/8; 19/32x11/16; 5/8x3/4; 11/16x13/16; 3/4x7/8; 25/32x13/16; 7/8x15/16; 1.1/8x1.5/16 inch.	Set	13	N	
70	Double-Ended Ring Spanners Set (metric)	Drop-forged; straight; with close tolerance jaw widths; with oval shaft; chrome vanadium steel phosphated / chrome-plated; compliance with DIN 837 B / ISO 3318; supplied with 11 spanners: Size 6x7, 8x9, 10x11, 12x13, 14x15, 16x17, 18x19, 20x22, 21x24, 27x32, 30x34.	Set	40	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
71	Clip Holders for Spanners	<b>Suitable for item: Open Ended Spanner Set (metric), for item: Open Ended Spanner Set (inch), and for item: Double-Ended Ring Spanners Set (Metric);</b> made of plastic, self-clamping; spanner sizes 6-34 mm; for 12 sockets.	Piece	92	N	
72	Thread Cutting Set (metric)	Set of HSS taps and dies (3 pieces tap sets), M3-12; with strong sheet metal case with carrying handle and 2 offset catches; each tool is securely stored in its own holder and immediately ready to hand; the taps are raised up vertically when the lid is opened; supplied with 1 each tap set , sizes M3, M4, M5, M6, M8, M10, M12; 1 each die, sizes M3, M4, M5, M6, M8, M10, M12; 1 each jobber drill, sizes 2.5, 3.3, 4.2, 5, 6.8, 8.5, 10.2; 1 each adjustable tap wrench, sizes 1, 2; 1 each die stock, sizes 20x5; 20x7, 25x9, 30x11, 38x14; 1 tap wrench with ratchet, size 85; 1 thread gauge, size M/W; 1 screwdriver, size 3x60.	Set	14	N	
73	Thread Cutting Hand Tap Set (metric)	With tapping drill; HSS; compliance with DIN 352 / DIN 13 / ISO 2 6H; set of three: taper, second, and plug tap; sizes M3-M12 hand taps	Set	14	N	
74	Adjustable Tap Wrench	With hardened jaws and steel grips; for use in confined spaces one steel handle can be unscrewed; strengthened version; with high-quality forged steel body and all-steel handles; type 1 (M1-M10); compliance with DIN 1814.	Set	40	N	
75	Adjustable Tap Wrench	With hardened jaws and steel grips; for use in confined spaces one steel handle can be unscrewed; strengthened version; with high-quality forged steel body and all-steel handles; type 2 (M4-M12); compliance with DIN 1814.	Set	40	N	
76	Adjustable Tap Wrench	With hardened jaws and steel grips; for use in confined spaces one steel handle can be unscrewed; strengthened version; with high-quality forged steel body and all-steel handles; type 3 (M5-M20); compliance with DIN 1814.	Set	13	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
77	Adjustable Tap Wrench	With hardened jaws and steel grips; for use in confined spaces one steel handle can be unscrewed; strengthened version; with high-quality forged steel body and all-steel handles; type 5 (M12-M33); compliance with DIN 1814.	Set	13	N	
78	Die Sets (metric)	With case; HSS; 7 pieces from M3-M12; compliance with EN 22568 and DIN 13 6g.	Set	40	N	
79	Die Stock	For die diameter x height 20x5; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	40	N	
80	Die Stock	For die diameter x height 20x7; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	40	N	
81	Die Stock	For die diameter x height 25x9; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	40	N	
82	Die Stock	For die diameter x height 30x11; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	40	N	
83	Die Stock	For die diameter x height 38x14; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	40	N	
84	Die (Whitworth)	G 1/8; HSS; closed, pre-slit form; with tapered lead chamfer on both sides for easy start to the threading action and clean swarf evacuation in the direction of cutting; 1¼ turns lead chamfer; compliance with EN 24231.	Piece	7	N	
85	Die (Whitworth)	G 1/4; HSS; closed, pre-slit form; with tapered lead chamfer on both sides for easy start to the threading action	Piece	7	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		and clean swarf evacuation in the direction of cutting; 1¼ turns lead chamfer; compliance with EN 24231.				
86	Die (Whitworth)	G 3/8; HSS; closed, pre-slit form; with tapered lead chamfer on both sides for easy start to the threading action and clean swarf evacuation in the direction of cutting; 1¼ turns lead chamfer; compliance with EN 24231.	Piece	7	N	
87	Die (Whitworth)	G 1/2; HSS; closed, pre-slit form; with tapered lead chamfer on both sides for easy start to the threading action and clean swarf evacuation in the direction of cutting; 1¼ turns lead chamfer; compliance with EN 24231.	Piece	7	N	
88	Die (Whitworth)	G 3/4; HSS; closed, pre-slit form; with tapered lead chamfer on both sides for easy start to the threading action and clean swarf evacuation in the direction of cutting; 1¼ turns lead chamfer; compliance with EN 24231.	Piece	7	N	
89	Die (Whitworth)	G 1; HSS; closed, pre-slit form; with tapered lead chamfer on both sides for easy start to the threading action and clean swarf evacuation in the direction of cutting; 1¼ turns lead chamfer; compliance with EN 24231.	Piece	7	N	
90	Die Stock	For die diameter x height 38x10; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	7	N	
91	Die Stock	For die diameter x height 45x14; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	7	N	
92	Die Stock	For die diameter x height 55x16; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	7	N	
93	Die Stock	For die diameter x height 65x18; steel handle can be unscrewed; with 5 screws to clamp the die; die-cast zinc; compliance with EN 22568; for direct mounting of solid and adjustable dies to EN 22568.	Set	7	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
94	"Go" / "No Go" Plug Gauge Set	7 pieces, 1 each "Go" / "No Go" plug; sizes 3, 4, 5, 6, 8, 10, 12 mm all in tolerance class H7; measuring body made of first class gauge steel, hardened, stress-relieved, ground, and lapped; tolerance and dimensions to DIN EN ISO 1938-1, DIN 2245-1 and DIN 7164; in strong wooden box with protective foam cushion.	Set	7	N	
95	Radius Gauges Set	Made of steel; precision concave and convex gauges; each marked with the respective radius; stainless steel; for radius 0.5-13 mm; 0.5 mm increments; 26 blades for internal / external radii.	Set	7	N	
96	Radius Gauges Set	Made of steel; precision concave and convex gauges; flat retaining clip with clamping screws for holding the blades; each marked with the respective radius; stainless steel; radius 1-7 mm: for radius 1-3 mm with 0.25 mm increments and for radius 3-7 mm with 0.5 mm increments; 17 blades for internal / external radii.	Set	7	N	
97	Radius Gauges Set	Made of steel; precision concave and convex gauges; flat retaining clip with clamping screws for holding the blades; each marked with the respective radius; stainless steel; for radius 7.5-15 mm; 0.5 mm increments; 16 blades for internal / external radii.	Set	7	N	
98	Radius Gauges Set	Made of steel; precision concave and convex gauges; flat retaining clip with clamping screws for holding the blades; each marked with the respective radius; stainless steel; radius 15.5-25 mm: for radius 15.5-20 mm with 0.5 mm increments and for radius 20-25 mm with 1.0 mm increments; 15 blades for internal / external radii.	Set	7	N	
99	High-Precision Countersinks Set	HSS; DIN 335 C; 90°; all countersinks have 3 drive flats on the shank for use in a 3-jaw chuck; 5 piece set in a box, sizes: 6.3, 10.4, 12.4, 16.5, 20.5 mm.	Set	7	N	
100	Counterbore Set	HSS; DIN 373; set with 6 counterbores in a box for screws M3-M4-M5-M6-M8-M10; size DM (through hole medium	Set	7	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		quality); counterbore diameter x pilot diameter 1x each size 6.5x3.4, 8x4.5, 10x5.5, 11x6.6, 15x9, 18x11 mm.				
101	Hand Reamer Set	HSS; H7; DIN 206 B; with left-hand helix 7-8° and long taper lead, more than 1/5 of the cutting length; an even number of teeth with irregular spacing for accurately round holes, free of chatter; the cylindrical ground land on the plain cutting section smooths the hole and guides the reamer; supplied with: 6-piece hand reamer set in a box, sizes 3, 4, 5, 6, 8, 10.	Set	7	N	
102	Scribing and Marking Out Plate	In stable ribbed design, of dense, aged special grey cast iron; with scraped surface finish; unmachined faces are enamel painted (RAL 7001 grey); with cast-in support points; length x width 800x500 mm; flatness tolerance 0.018; overall height 100 mm; weight appr. 90 kg; DIN 876/1; with instruction manual in English.	Piece	2	N	
103	Support Frame	<b>Suitable for item: Scribing and Marking Out Plate;</b> sturdy welded structure including levelling fittings at the feet; maximum working height 900 mm (top face of the marking out plate); insert size length x width: 800x500 mm; weight appr. 25 kg; with instruction manual in English.	Piece	2	N	
104	Marking Out Spray	Ready for use, quick drying, will not flake; for marking workpieces in preparation for machining; labelling forgings and castings; 400 ml can; blue colour.	Piece	6	N	
105	Numeral and Letter Punch Set	DIN 7353; made of hard and tough steel with particularly precise machine engraving and depth tolerance; accurately centred; calibrated shank, through hardened; striking head enhancement for safe working; supplied in a plastic case; high quality, burnished surface; normal script 0-9, 10 pieces; for punching into material with a. strength up to 1200 N/qmm, character height 5 mm.	Piece	4	N	
106	Numeral and Letter Punch Set	DIN 7353; made of hard and tough steel with particularly precise machine engraving and depth tolerance; accurately centred; calibrated shank, through hardened; striking head enhancement for safe working; supplied in a	Piece	4	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		plastic case; high quality, burnished surface; normal script A-Z,&, 27 pieces; for punching into material with a strength up to 1200 N/qmm, character height 5 mm.				
107	Moment Screw Clamp	With anti-slip protection; high quality malleable cast iron clamping arms; strong prismatic steel slide beam, knurled, electro-galvanised; smooth running steel spindle, burnished with trapezoidal thread and movable jaw; instant (high speed) adjustment, reliable clamping. DIN 5117; with plastic protective cover on the clamping jaw; jaw capacity 100 mm; cross section of the slide rail 15x5 mm; throat 50 mm.	Piece	20	N	
108	Moment Screw Clamp	With anti-slip protection; high quality malleable cast iron clamping arms; strong prismatic steel slide beam, knurled, electro-galvanised; smooth running steel spindle, burnished with trapezoidal thread and movable jaw; instant (high speed) adjustment, reliable clamping. DIN 5117; with plastic protective cover on the clamping jaw; jaw capacity 200 mm; cross section of the slide rail 27x7 mm; throat 100 mm.	Piece	20	N	
109	Moment Screw Clamp	With anti-slip protection; high quality malleable cast iron clamping arms; strong prismatic steel slide beam, knurled, electro-galvanised; smooth running steel spindle, burnished with trapezoidal thread and movable jaw; instant (high speed) adjustment, reliable clamping. DIN 5117; with plastic protective cover on the clamping jaw; jaw capacity 400 mm; cross section of the slide rail 32x10 mm; throat 175 mm.	Piece	20	N	
110	Moment Screw Clamp	With anti-slip protection; high quality malleable cast iron clamping arms; strong prismatic steel slide beam, knurled, electro-galvanised; smooth running steel spindle, burnished with trapezoidal thread and movable jaw; instant (high speed) adjustment, reliable clamping. DIN 5117; with plastic protective cover on the clamping jaw; jaw capacity 1000 mm; cross section of the slide rail 35x11 mm; throat 120 mm.	Piece	20	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
111	Flat Scraper	Blade of C125 tool steel; varnished wooden handle; DIN 8350 A; blade length 200 mm; blade width 20 mm.	Piece	40	N	
112	Three-Edge Hollow Scraper	Blade made of chrom vanadium steel; varnished wooden handle; DIN 8350 C; blade length 200 mm; blade width 16 mm.	Piece	40	N	
113	Centre Drills Set	Set of 10 centre drills in a case; DIN 333 Type A; content: 1 pc. each in size 0.75, 1, 1.5, 1.6, 2, 2.5, 3, 3.15, 4, 5.	Set	14	N	
114	Jobber Drill Sets	HSS; DIN 338 Type N; h8; drill range 1-13 mm; no. of drills 25; incremental steps of drills 0.5 mm; with assortment case.	Set	16	N	
115	Jobber Drill Sets	HSS; DIN 338 Type N; h8; drill range 1-10 mm; no. of drills 150; 10 x each diameter from 1-6 mm; 5 x each diameter from 6.5-10 mm; incremental steps of drills 0.5 mm; in large assortment case.	Set	8	N	
116	Taper Sheet and Tube Drill Set	HSS; with sharp drill point, pre-drilling not necessary; conically increasing cutting edges and radially relief ground circumference for a paring cut; with scale in the flutes; three drive flats on the shank; set of 3 conical sheet and tube drills and 1 cutting compound in a case for sheet metal 0.1-2 mm, stainless steel 0.1-1 mm, non-ferrous metals 0.1-5 mm, plastics up to 10 mm; cutter diameter 3-30.5 mm; size 3-14, 8-20, 16-30.5.	Set	8	N	
117	Cutting Compound	<b>Suitable to item: Taper Sheet and Tube Drill Set.</b>	Piece	4	N	
118	Cutting Oil	Product based on mineral oil, very well suited for thread tapping, good adherence; high-performance cutting oil, high-viscosity, chlorine-free; 20 liter can.	Piece	3	N	
119	Plastic Oiler	Pressure oiler, of polyethylene, some resistance to acids; white, transparent; capacity 250 ml; to be used <b>for item: Cutting Oil.</b>	Piece	44	N	
120	Hexagon Key L-Wrench Set	In plastic clip; phosphated / nickel-plated; sizes 1.5, 2, 2.5, 3, 4, 5, 6, 8, 10	Set	46	N	
121	Hand Snips	"Berlin type"; stainless steel (INOX); drop-forged; bright finished head and open handles, painted or dipped; made	Piece	13	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		of tool steel, blades induction hardened (HRC 58-60), also for stainless steel V2A, sheet metal up to 1.0 mm; DIN 6438 or similar; cutter length 65 mm, overall length appr. 250 mm; right hand.				
122	Tin Snips	"Pelican type"; stainless steel (INOX); drop-forged; bright finished head and open handles, painted or dipped; made of stainless steel, blades induction hardened (HRC 60), also for stainless steel V2A sheet metal; cutter length 70 mm, overall length appr. 300 mm; right hand.	Piece	13	N	
123	Hole Snips	Stainless steel (INOX); drop-forged; bright finished head, slim, tapered and open handles, painted or dipped; blades induction hardened (HRC 60), also for stainless steel V2A sheet metal; length cutter 45 mm; overall length appr. 250 mm; right-hand.	Piece	13	N	
124	Ideal Snips	Drop-forged; bright finished head and open, painted handles; made of stainless steel (INOX), blades induction hardened (HRC 60), also for stainless steel V2A sheet metal; length cutter 40 mm; overall length appr. 260 mm; right-hand.	Piece	13	N	
125	Pliers Set	Set with 4 pieces; jaws chrome-plated, handles with ergonomically optimised multi-component covering, with non-slip surface; high cutting and gripping performance; water pump pliers, manganese phosphated, polished jaws, plastic coated handles; supplied with 1 combination pliers 180 mm, 1 water pump pliers 250 mm, 1 snipe-nose pliers angled 200 mm, 1 side cutter 160 mm.	Set	40	N	
126	Universal Grip Wrench	Serrated jaws and sturdy spring steel body; span and clamping pressure adjustable with a knurled screw; fully nickel-plated; jaw shape upper straight, lower Vee; jaws of chrome vanadium steel, drop forged; clamping force up to 10,000 N; jaw length 35 mm; jaw capacity 40mm; overall length 250 mm.	Piece	40	N	
127	Heavy-Duty Pincers	Sturdy model, wear resistant; jaws chemically blackened, head bright polished; DIN ISO 9243; special tool steel,	Piece	40	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		drop-forged, and oil-hardened; cutting capability medium hardwire up to 2.2 mm diameter; overall length appr. 210 mm.				
128	Mesh Cutting Pincers	With special slim head and long handles; high strength precision ground cutting edges; induction hardened cutting edges, approx. 64 HRC; plastic coated handles; DIN ISO 9242; special tool steel, drop-forged, and oil-hardened; slim and narrow design for twisting difficult-to-access binding wires; cutting capability medium hardwire up to 3.8 mm diameter; overall length appr. 300 mm.	Piece	13	N	
129	Hinged Pipe Vice	Entirely of steel, unbreakable; hinged design with automatically closing securing hook; drop forged movable jaw; movable jaw and fixed jaw exchangeable; gripping surfaces milled and hardened; strong spindle with adjustable T-bar handle; capacity for pipes up to 3 inch; jaw capacity 90 mm.	Piece	7	N	
130	Revolving Punch Pliers	Strong pressed steel shanks with rotating wheel and lock; with 6 different hollow punches (diameter 2.0, 2.5, 3.0, 3.5, 4.0 and 4.5 mm); ergonomically shaped plastic grips; overall length appr. 250 mm..	Piece	7	N	
131	Hand Pop Riveter Set	Sturdy model with complex lever mechanism; for processing pop rivets (in all materials), for aluminium & copper 3-5 mm, for blind rivets steel 3-4 mm; overall length appr. 255 mm; supplied with an assortment of appr. 4 x 50 aluminium blind rivets in a case (sizes diameter x length: 2.4x5.5, 3.2x6.3, 4.0x6.3, 4.8x6.0 mm).	Set	13	N	
132	Aluminium Blind Rivets Set	Aluminium blind rivet assortment; 400-piece set; 100 each, sizes: 2.4, 3.2, 4.0, 4.8 mm.	Set	20	N	
133	Club Hammer / Sledge Hammer	Drop-forged hammer head; faces hardened and tempered; head painted black, faces bright finished; with forged-on handle protection collar and additional nylon protection sleeve, with shaped hickory handle; DIN 6475; special tool steel; weight without handle 1.5 kg; handle length appr. 280 mm.	Piece	40	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
134	Copper Hammer / Club Hammer	Hammer head of copper bar material, edges broken; with unbreakable 3-component handle (aluminium core, polyamide and rubber components), and additional handle protection sleeve (ergonomic, non-slip, vibration-free, protects the wrist); weight without handle 500g; handle length appr. 300 mm.	Piece	40	N	
135	Dead-Blow Hammer	Strong steel central piece (T-piece) with collet and collar for holding the inserts; inserts made of copper; dead-blow due to additional weights in the hammer body; upon impact, the weights are thrown downwards and inhibit rebounding; with handle of hickory wood; hammer head diameter 24 mm; head length with inserts appr. 80 mm; handle length appr. 265 mm; weight 0.34 kg.	Piece	40	N	
136	Universal Deburrer	With S-blade diameter 3.2 mm; handle with rotating, exchangeable blades; very easy to use, the blade adapts itself automatically to the contours of the workpiece; 2-component handle, with 3 blades (S10, S20, S35); overall length appr. 145 mm.	Piece	20	N	
137	Pipe Wrench	With broad 90° offset jaw; fully forged with captive adjustment nut; special tool steel; quenched and tempered, jaws induction hardened; pipe diameter up to 2 inch; jaw capacity 75 mm; overall length appr. 560 mm.	Piece	20	N	
138	Natural Granite Plate	For measuring and inspection; specially selected natural granite; free of flaws, homogeneous structure; deflection and torsion resistant; absolutely rustproof and resistant to acid, low thermal conductivity; micro-fine surface treatment (diamond lapped); tolerances tighter than recommended limits; ground outside edges, visually true; for static determination of position, contact points (steel ball inserts) are fitted to the underside; harder than hardened steel (Mohs hardness scale 6-7), non-magnetic and electrically non-conductive; accuracy: class 0; DIN 876/0 - precision diamond lapped for inspection; supplied with test certificate / calibration certificate, transport packing; size 630x630 mm, including steel ball inserts; flatness 0.007	Piece	2	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		mm; thickness 70 mm; 3 steel ball inserts; weight appr. 83 kg; with instruction manual in English.				
139	Support Frame	<b>Suitable for item: Natural Granite Plate;</b> sturdy welded construction including levelling fittings; uneven floors can be compensated using height compensation screws; support cabinet, casing of sheet steel, with cupboard (including storage shelf) and / or drawers depending on size, including locking system; paint finish of body RAL 9006 white aluminium, front faces RAL 5011 steel blue; for insert size length x width 630x630 mm; support cabinet height 720mm, width 550 mm; depth 560 mm; load capacity, distributed 500 kg.	Piece	2	N	
140	Vernier Height Gauge	Strong and sturdy base with a lapped standing surface; with measuring beam for fine adjustment, magnifying glass and locking screw; reading 0.02 mm; reading zero and marking scriber are adjusted with reference to the bottom of the base (marking out from "0"); the scriber is carbide tipped and is longitudinally adjustable by 140 mm (e.g. where access is difficult); slim design of the scriber for scribing in narrow slots; ergonomic shape of the foot prevents collisions between the scriber and the hand; marking height 300 mm; Vernier 1/50 mm; error limit 0.06 mm; adjustment range 140 mm; manufacturer's test certificate, traceable to national standards included in the delivery; with English user manual.	Piece	2	N	
141	Locking Tape Measure	Plastic casing with removable belt clip; automatic tape return and stop, with damping effect; sliding end hook; tape measure printed black/red on yellow; with mm/inch graduations; EC class II; band length 3 m.	Piece	110	N	
142	Locking Tape Measure	Plastic casing with removable belt clip; automatic tape return and stop, with damping effect; sliding end hook; tape measure printed black/red on yellow; with mm/inch graduations; EC class II; band length 5 m.	Piece	40	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
143	Sheet Metal Rack	Base frame 1560x600 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 30x30 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.	Piece	2	N	
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.	Piece	2	N	
145	Cordless Drill / Driver	18V; compact, powerful cordless drill with forward/reverse operation; with Electronic Motor Protection (EMP) and Electronic Cell Protection (ECP); LED light to illuminate the working area and battery charge display; multi-stage torque setting for precise screw driving; electronic speed control for precise drilling and screw driving; softgrip; with brushless motor; supplied with 2x 18V 4.0 Ah Li-ion batteries, quick charger (230V, 50Hz), additional handle, sturdy transport case; with soft / hard torque max. 31/60 Nm; 2 speed ranges, 0-600 rpm and 0-19000 rpm; quick clamping chuck, range 1.5-13 mm; twist drill size diameter in steel / wood up to 13/38 mm; weight max. 1.9 kg. With instruction manual in English; CE-marking mandatory; British Standard Power Plug for quick charger.	Piece	13	N	
146	Cordless Hammer Drill	18-V cordless hammer drill with SDS-plus tool mounting; with cell Protection (ECP): protects the battery against overloading, overheating and deep discharge; innovative batteries ensure optimum heat dissipation; efficient	Piece	2	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		maintenance-free EC motor (brushless); high chiselling rate (12kg/hour); overload clutch to protect both user and machine; reversible; kick back control and electronic precision control; supplied with 2 x 18V / 8.0 Ah Li-ion batteries, quick charger (230V, 50Hz), quick-change chuck, depth stop, machine cloth, additional handle, sturdy transport case; twist drill size diameter in steel / wood / concrete up to 13/30/26 mm; hammer rate appr. 4350rpm; impact energy 2.6 J; tool arbor shape SDS-Plus; weight max. 3.7 kg; maximum vibration to EN 13 m/s <sup>2</sup> ; with instruction manual in English; CE-marking mandatory; British Standard Power Plug for quick charger.				
147	Carbide-Tipped Hammer Drill Set	2 cutting edges with SDS-plus shank; sizes 5, 6, 8 (length 110 mm); sizes 6, 8, 10, 12 (length 160 mm); with case.	Set	8	N	
148	Stepped Drill Bit	HSS; 9 drill steps, 2 mm increments, for use in materials with up to 4 mm thickness; with edge breaker (sheet deburrer) at diameter 10 for 1 mm sheet metals; drill step range 4-20 mm; step height 4 mm.	Piece	7	N	
149	Angle Grinder	1500 W, 230V, 50Hz motor and maximum protection function due to additional motor brake (intelligent brake system with appr. 70 % shorter run-down time) and protection switch that can be actuated at various places, which switches the machine off immediately the trigger is released; with electronic speed control; with restart block; spindle thread M14x1.5; speed range 2800-12000 rpm; disc diameter up to 125 mm; cutting depth up to 34 mm; weight not more than 2.6 kg; maximum vibration to EN 13 m/s <sup>2</sup> ; with instruction manual in English; CE-marking mandatory; British Standard Power Plug; supplied with torsion-resistant protective hood, clamping set, additional handle.	Piece	10	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
150	Universal Grinding Discs	<b>Suitable for item: Angle Grinder;</b> rough grinding discs for use on stainless steel, steel and cast iron; disc diameter x disc width 125 x 7 mm; specification A30R-BF.	Piece	200	N	
151	Tool Grinding Machine	Universal use thanks to versatile swivel and adjustment options; many pan and adjustment options for making engraving stylus (cylindrical, centric, conical); for grinding punches, twist drills, electrodes, turning tools, centering tips, etc.; high precision due to robust machine body and vibration-free driven precision grinding spindle; easy handling and operation; index head with 24 locking positions; adjustable puller; grinding disc speed, diamond up to 5000 rpm; grinding speed up to 35 m/s; Speed motor 2750 rpm; tool holder travel 140 mm; tool holder fine adjustment 18 mm; longitudinal fine adjustment 6 mm; adjustable angle vertical/rear side 0–40°; adjustable angle horizontal/conical grinding 0–180°; adjustable angle negative 0–52°; latching setting angle of rotation 22 x 15/180°; clamping range 112 mm; clamping jaw type 385E (5C), DIN 6341; 400V, 50Hz; with instruction manual in English; CE-marking mandatory; British Standard Power Plug; supplied with collets 385E (5C) DIN 6341 diameter 37.5 mm; L = 89 mm; 20 °, sizes diameter 4/6/8/10/12 mm; corundum cup grinding wheel diameter 100 x 50 x bore diameter 20 mm; diamond cup grinding wheel diameter 100 x 50 x bore diameter 20 mm; apparatus for regrinding turning steels, end milling cutters, twist drills, operating tool.	Piece	1	N	
152	Cup Grinding Wheel	<b>Suitable for item: Tool Grinding Machine;</b> material corundum; grain size 80; outer diameter 100 mm; width 51 mm; bore diameter 20 mm; for High Speed Steel (HSS).	Piece	2	N	
153	Cup Grinding Wheel	<b>Suitable for item: Tool Grinding Machine;</b> material diamond; grain size 150; outer diameter 100 mm; width 51 mm; bore diameter 20 mm; for Carbide (HM).	Piece	2	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
154	Universal External Micrometer	With interchangeable anvils; with non-rotating spindle; lapped measuring faces; socket diameter 5×15 mm; steel frame forged and enamelled; quick-change anvils; zeroing by clamping slide sleeves; supplied with: 7 pairs of interchangeable anvils: wedge tip 60°, disc diameter 12.0 mm, flat anvil diameter 6.5 mm, convex anvil < R6, shouldered anvil diameter 2.0 mm, groove measuring anvil diameter 0.75 mm, conical tip 60°; measuring range: 0-25 mm; scale divisions 0.01 mm; DIN 863; including a case and instruction manual in English.	Piece	7	N	
155	Double Vee Blocks	Pair of double Vee blocks with clamp; hardened steel, stress-relieved and precision ground in pairs; flatness and parallelism tolerance 0.01 mm; different depths of Vee-section; 2 support faces; length x width 70x45 mm; for shaft diameter 6-33 mm.	Piece	7	N	
156	Through Hole Machine Tap Set	Consisting of machine taps M3, M4, M5, M6, M8, M10, M12 and tapping drills size 2.5, 3.3, 4.2, 5, 6.8, 8.5, 10.2 in a metal case; when the case is opened, the tools raise up vertically and can easily be selected; DIN 371 and DIN 376.	Set	7	N	
157	Blind Hole Machine Tap Set	Consisting of machine taps M3, M4, M5, M6, M8, M10, M12 and tapping drills size 2.5, 3.3, 4.2, 5, 6.8, 8.5, 10.2 in a metal case; when the case is opened, the tools raise up vertically and can easily be selected; DIN 371 and DIN 376.	Set	7	N	
158	Mechanical Magnetic Measuring Stand	Mechanical magnetic measuring stand with central locking mechanism; all three joints are clamped in a single action; continuously adjustable clamping force with high stability; ball joints enable quick and easy positioning; magnetic base with rotary switch and Vee sole; standard dial indicator mounting for clamping shank diameter 6 mm, diameter 8 mm and dovetail, fine adjustment at the indicator holder; magnetic force appr. 800 N; loading up to 8 kg;	Piece	6	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
159	Dial Indicator	Dimensions to DIN EN ISO 463, issue June 2006; sturdy dial indicators with metal housing, clamping shank diameter 8 mm h6, hardened and ground; outer ring of dial face can be rotated to zero the dial; size 30/58 – linear auxiliary scale for reading the revolutions; graduation 0.1 mm; reading per pointer revolution 10 mm; variation range fe 50 µm; total variation range ftot 65 µm; gauging force 0.8-1.3 N; supplied with a case and manufacturer's test certificate, traceable to national standards.	Piece	6	N	
160	Lever Dial Indicator	High-precision lever dial indicator in handy, robust design; housing and dovetail block are of one piece, which means that mounting is particularly rigid; corrosion protection due to matt chrome-plated housing; 1/1000 reading; supplied with clamping spigot diameter 8 mm; measuring range per direction / body diameter 0.07/40 mm; lever dial indicator contact point length 12.5 mm; scale divisions 0.001 mm; pivot range degrees 2×110°; gauging force 0.2 N; clamping shank diameter h6, 8 mm; DIN 2270; supplied with case.	Piece	6	N	
161	Screw Air Compressor	Compressed air tank inside and outside hot-dip galvanized, 10-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,	Piece	1	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		oil); with instruction manual in English; CE-marking mandatory; British Standard Power Plug				
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.	Piece	1	N	
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	1	N	
164	Leather Gloves	Sturdy cowhide split leather gloves; with rubberised cuff and cotton inner lining on the palm; index finger made entirely of leather; size 10; EN 388:2016.	Piece	200	N	
165	Torque Wrench with Setting Scale - Set	Set with 4 sizes: 1-6 Nm, 2.5-25 Nm, 10-60 Nm, 40-200 Nm; automatic triggering; compact single-arm torque wrench; adjustable by scale and self-triggering; high repeat accuracy; reversible ratchet for left-hand and right-hand tightening; units of measure: Nm; tested to DIN EN ISO 6789; the wrench triggers giving a "signal" (clearly audible acoustic tone and noticeable vibration) and afterwards immediately ready for use again; particularly easy use and accurate setting of the desired torque; accuracy of the displayed value: size 1-6 Nm $\pm 4\%$ , other 3 sizes $\pm 3\%$ ; scale graduation: 1-6 Nm (0.1 Nm), 2.5-25 Nm (0.25 Nm), 10-60 Nm (0.5 Nm), 40-200 Nm (1 Nm); square drive in inch: 1-6 Nm and 2.5-25 Nm (1/4), 10-60 Nm (3/8), 40-200 Nm (1/2); with tool cases or nylon carrying bag included; with manufacturer's test / calibration certificate, traceable to national standards.	Set	3	N	
166	Labelling Machine	With QWERTY keyboard and graphical display; one touch keys; with over 400 symbols; min. 5 fonts; print height up to 15.8 mm for labels with up to 18 mm; supports large character printing; with AC adapter (230V, 50Hz) with	Piece	2	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		British Standard plug included and can also operate on batteries; CE-marking mandatory; comes with English user manual; carrying case included.				
167	Set of Laminated Tapes	<b>Suitable for item: Labelling Machine;</b> laminated Tapes; strong adhesion; water resistant; chemical resistant; abrasion resistant; temperature resistant; fade resistant; with split back, easy to peel and apply; no sticky residue remains when the labels are removed; tape width 12 mm; tape length appr. 8 m; colours: black on white / red / blue / yellow / green / orange or silver.	Set	4	N	
168	Set of Laminated Tapes	<b>Suitable for item: Labelling Machine;</b> laminated Tapes; strong adhesion; water resistant; chemical resistant; abrasion resistant; temperature resistant; fade resistant; with split back, easy to peel and apply; no sticky residue remains when the labels are removed; tape width 18 mm; tape length appr. 8 m; colours: black on white / red / blue / yellow / green / orange or silver.	Set	4	N	
169	Set of Laminated Tapes	<b>Suitable for item: Labelling Machine;</b> laminated Tapes; strong adhesion; water resistant; chemical resistant; abrasion resistant; temperature resistant; fade resistant; with split back, easy to peel and apply; no sticky residue remains when the labels are removed; tape width 12 mm; tape length appr. 8 m; colour: black on white.	Piece	8	N	
170	Set of Laminated Tapes	<b>Suitable for item: Labelling Machine;</b> laminated Tapes; strong adhesion; water resistant; chemical resistant; abrasion resistant; temperature resistant; fade resistant; with split back, easy to peel and apply; no sticky residue remains when the labels are removed; tape width 18 mm; tape length appr. 8 m; colours: black on white.	Piece	8	N	
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	Piece	2	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		with screw attachment; compliance with DIN EN 131; no. of steps 2 x 6; length appr. 1.8 m; for working height of appr. 3 m; load capacity 150 kg.				
172	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 DIN EN 131; no. of steps 2 x 12; length appr. 3.5 m; for working height of appr. 4.8 m; load capacity 150 kg.	Piece	2	N	
173	Transparent Sleeves - Set	Magnetic; hard-wearing document holders of plasticiser-free hard matt film with coloured edge; suitable for documents; all-round magnetic strips permit quick exchange of documents (can be used in portrait and landscape format, ideal for mounting emergency plans or warning signs, machine instructions, operating instructions, etc.); A4 size; colours: red, blue, orange, yellow, grey 10 pieces of each colour).	Set	1	N	
174	Spirit Levels	Aluminium alloy level; with level, vertical and 45° degree measurement; imperial and metric ruler; length appr. 50 cm; protected by rubber at the end cap; strong holding magnetic side to be attached to any iron for easy and hands-free work; features hanging hole for simple storage.	Piece	30	N	
175	Hexagon Screwdrivers Set	Comfortable multi-component plastic T-handle with side drive; blade made of chrome vanadium steel, chrome-plated, with ball point; 6 pieces, sizes 3, 4, 5, 6, 8, 10; blade length 150 mm or above:	Set	45	N	
176	Socket Set (1/2 inch square drive)	Chrome alloy steel / chrome vanadium steel, chrome-plated; with 1/2 inch square drive; 35 pieces; supplied with: hexagon sockets (surface drive), 19 pieces, sizes 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 24, 27, 30, 32, 34; hexagon screwdriver bits, 8 pieces, sizes 4, 5, 6, 7, 8, 10, 12, 14; T-handle; extensions "wobble" fix, 2 pieces	Set	25	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		size 125 and 250; universal joint; ratchet; converter, drive input 7/16 inch - drive output 1/2 inch; adapters, drive input 3/8 inch - drive output 1/2 inch, drive input 1/2 inch - drive output 3/8 inch; with ABS plastic box; drives / accessories to DIN 3122 / 3123, internal / external square drives to DIN 3120, sockets to DIN 3124.				
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 DIN 3122 / 3123, internal / external square drives to DIN 3120, sockets to DIN 3124.	Set	25	N	
178	Circlip Pliers Set	Set of 8 pliers with straight and angled jaws; for internal and external circlips to DIN 5256 C and D & DIN 5254 A and B; forged grip and joint, plastic coated handles; sizes J1, J2, J11, J21, A1, A2, A11, A21; for internal / external circlip diameter 10-25, 19-60 mm; tip diameter for internal / external circlip pliers 1.25 / 1.8 mm; comes with a plastic case.	Set	17	N	
N/A	N/A	<i>Items 179 - 190 not included in this Lot.</i>	N/A	N/A	N/A	N/A
191	Extractor Set	For easy extraction of bearings, plates, gear wheels etc.; with slender extractor legs for confined spaces in 3 clamping depths in a plastic case with foam inlay; can be used as external and internal extractor; 1 each two-leg and	Set	2	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		three-leg cross beams and 3 extractor legs with different depth of reach up to 100 / 200 / 250 mm; jaw capacity 120 mm.				
192	Extractor Set with Sliding Hammer	For extracting and pulling off parts with internal threads (taper pins or dowel pins) and ball bearings. The appropriate adapter or internal extractor is attached to the part to be extracted, which is then pulled off by firm strikes with the sliding hammer. Pin and ball bearing extractor in a plastic case with 10 threaded inserts (M3-M18), 2 adapters for internal extractors and 5 internal extractors (diameter 6-19 mm); adapter for internal extractor M7×M12, M10×M12, hammer mass appr. 0.9 kg; hammer travel appr. 150 mm; internal extractor for diameter mm 6–10, 8–12, 10–14, 12–16, 14–19; suitable for threads M3, M4, M5, M6, M8, M10, M12, M14, M16, M18.	Set	2	N	
193	Internal Extractor Set	Consisting of internal bearing extractor and centre reaction piece; internal bearing extractor with 2-piece jaws and spreader; centre reaction piece of high-quality tool steel, with sturdy spindle, tightening nut, and clamping handle; internal thrust bearing for easy operation of the support brace nut; the sets are supplied in a sturdy plastic case; for bores 12-46 mm.	Set	2	N	
194	Ball Bearing Extractor Set	Extractor set in a plastic case, consisting of one base body with spindle (120 mm long) and 3 each narrow and wide extractor hooks (each 70 mm long) and one base body with spindle (240 mm long) and 4 each narrow and wide extractor hooks (each 156 mm long); for non-destructive extraction of grooved ball bearings from a housing on a shaft by gripping them between inner and outer ball races; suitable for ball bearings to ISO 6000–6020, 6200–6212, 6300–6311, 6403–6408.	Set	2	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
195	Universal Ball Bearing Extractor Set	Extractor set in a plastic case consisting of 1 traverse, 1 spindle, 2 draw bolts and 3 pairs (sizes 69-A and 69-B) / 6 pairs pullers (size 69-C); strong design of special steel, specially shaped pullers for precise seating in the ball bearing; for easy and quick extraction of ball bearings of all types which are seated in a housing on a shaft; clamping range 20-110 mm; suitable for ball bearings to ISO 6004-6013, 6201-6206, 6300-6305.	Set	2	N	
196	Sealing Ring Extractor Set	Slide hammer base unit, extraction lever, and bradawl with 2-component handle; quick and easy extraction of sealing rings using the momentum of the mass on the slide unit; extraction lever has a sturdy blade for gently levering out sealing rings; for removal / extraction of simmerring seals, seals, oil seals, sealing sleeves, sealing rings, bearing seals, others; content: 1 base unit (including a slide hammer), 2 extensions (100 mm and 250 mm), 1 universal extraction lever, 1 bradawl (for easier insertion of the special screws), 1 spare blade for the extraction lever, 50 self-tapping special screws; in plastic case preferable with foam inlay.	Set	2	N	
197	Ball Bearing Insertion and Fitting Kit	Very robust aluminium impact sleeves in combination with 33 extremely impact resistant striking rings for bearing external diameter from 26 - 110 mm and internal diameter from 10 - 50 mm; dead-blow hammer with nylon inserts; supplied in a plastic case; for installation of (roller) bearings, also suitable for fitting of bushes, sealing rings, and pulleys; content: 3 impact sleeves, diameter 25, 40, 60 mm, 1 set striking rings internal diameter 10 mm (external diameter 26, 30, 35 mm), 1 set striking rings internal diameter 12 mm (external diameter 28,32, 37 mm), 1 set striking rings internal diameter 15 mm (external diameter 32, 35, 42 mm), 1 set striking rings internal diameter 17 mm (external diameter 35, 40, 47 mm), 1 set striking rings internal diameter 20 mm (external diameter 42, 47, 52 mm), 1 set striking rings internal diameter 25 mm (external	Set	2	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		diameter 47, 52, 62 mm), 1 set striking rings internal diameter 30 mm (external diameter 55, 62, 72 mm), 1 set striking rings internal diameter 35 mm (external diameter 62, 72, 80 mm), 1 set striking rings internal diameter 40 mm (external diameter 68, 80, 90 mm), 1 set striking rings internal diameter 45 mm (external diameter 75, 85, 100 mm), 1 set striking rings internal diameter 50 mm (external diameter 80, 90, 110 mm); in plastic case preferable with foam inlay.				
198	Bearing separator and Extractor Set	Bearing separator of high-quality tool steel; separator (size 0): quick-release semicircular jaws are symmetrically tensioned by a screw, causes the wedge-shaped jaws to insert themselves between bearings and shaft; extractor (size 0): used in conjunction with the separator to extract bearings from their seating (for this the draw bolts are screwed into the threaded holes in the separation jaws); for the separation of tightly wedged ball bearings, gears, etc., if the gap is too small for normal extraction arms; clamping range 5-60mm; 1 pair of extension bolts size 0/1; in plastic case preferable with foam inlay.	Set	2	N	
199	Round Sheet Metal Punch Set	For metric diameters in a sheet metal case preferable with foam inlay; compliance with DIN EN 60423; 1 each matrix punch and matrix for hole diameter 12.5 (M12x1.5), 16.5 (M16x1.5), 20.5 (M20x1.5), 25.5 (M25x1.5), 32.5 (M32x1.5), 40.5 (M40x1.5), 50.5 (M50x1.5), 63.5 (M63x1.5); 1 draw bolt size 16/70; 4 ball thrust bearing draw bolts size 10/55; 16/70; 20/90 and size 6x30 with ball thrust bearing; 1 step drill diameter 7 - 21 mm.	Set	3	N	
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;	Piece	2	N	

<b>Technical Specifications</b>		<b>Lot 1: Training Equipment for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		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 x Crevice nozzle; 1 x Flat pleated filter, PES; 1 x Filter bag, Fleece; with CE-marking and manual in English.				
201	Key Storage Box	For 64 keys; painted steelbox, lockable; adjustable hook slats numbered; pivoting register; complete with key fobs (pack with 100 pcs. assorted colors)	Piece	6	N	
202	Hand Pallet Truck	Lifting, lowering and neutral position can be operated via one-hand lever; hydraulic pump with hard chromed piston and pressure relief valve; lowering speed infinitely adjustable via sensitive discharge valve; extralight aluminum castors with solid rubber treads and polyurethane tandem fork rollers; robust ball bearings in all wheels and pulleys; steel frame and fork in a very stable and torsion-resistant shell construction; ergonomically shaped drawbar with plastic coating on the handle; load-bearing capacity 2.5 t; load-bearing width 540 mm; fork width 162 mm; fork length 1150 mm; lifting range 85-200 mm; turning radius 1270 mm; with CE-marking.	Piece	1	N	
203	Table Trolley	With two shelves; LxWxH appr. 1000x700x915 mm; wheel diameter 200 mm; with wheel brake; load capacity 500 kg.	Piece	6	N	
204	Extension Cable	Extension cable / cable reel: drum made of hot-dipped galvanized steel; stable zinc coated foot frame that is shock absorbent, and a drum brake to avoid unreeling; coated with insulating layer; ergonomic handle; overheating protection by thermal switch; 3 socket outlets	Piece	6	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		(British Style) 16A, 230V; shock and splash proof; appropriate for industrial use; cable type: heavy rubber-jacket cable H07RN-F 3G2,5 or equivalent; length: 25 m; IP 44; CE-marking.				
205	Grease Gun	4-jaw hydraulic push on connector; steel tube press body; connection thread M10 x 1; push-rod actuation via L-handle; DIN 1283; can be filled with loose grease, fat cartridge or filling device; with high-pressure armored hose 300 mm and 4 baking mouthpieces; Note: Processing of greases up to NLGI 2 is possible.	Piece	6	N	
206	Grease	<b>Suitable for item: Grease Gun;</b> grease cartridge suitable for all 500 cm <sup>3</sup> grease presses; application range from -30 ° C to +120 ° C, permanent lubricated bearings from -30 ° C to +80 ° C; for sliding and rolling bearing lubrication at high loads, water resistant, acid free.	Piece	18	N	
207	Brazing and Soldering Set	Completely equipped soldering case for soft and hard soldering, for burning off, thawing, melting, hardening and heating; for propane/butane gas, flame temperature up to 2000 °C; contents: ergonomic safety handle with economy valve and large valve lever; burner bend with safety cone seal M14 X 1-R-R 3/8" L; liquid regulator 4.0 bar - 8 kg/h (DVGW-tested); hose line 2 m (DVGW-tested); turbo burner diameter 28 mm; point burner diameter 14 mm; soldering torch diameter 22 mm; soft soldering iron 250 g (forged copper) with set-up device; soldering iron attachment with 2 copper tin tips; safety lighter; 50 mm paint torch attachment; torch support; hexagonal spanner; in plastic case; with instruction manual in English.	Piece	3	N	
208	Copper Hard Solder	Size 2 x 500 mm; pack with 25 piece.	Pack	4	N	
209	Brazing Paste	LP 5; 710 °C; DIN EN 1045 - FH 10; 160 gr.	Piece	10	N	
210	Solder Wire	3,0 mm diameter lead free solder wire; EN 29453; 250 gr.	Piece	10	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
211	Re-usable Earplugs Set	Re-usable, washable earplugs consist of thermoplastic rubber (TPR); with 3 fins; SNR value (noise attenuation) 29 dB(A); in storage box with belt clip.	Pair	120	N	
212	Safety Helmets	Light-weight helmet shell of HDPE (high density polyethylene) with three variable ventilation openings; 6-point strap attachment; synthetic leather sweatband; straight form; with rotary catch; DIN EN 397; colour: blue (preferable) or yellow; size 52-61 cm.	Piece	50	N	
213	Sack Truck	Welded tubular steel frame, safety handles of plastic; with steel carrying plate; pneumatic tyres on plastic rims with roller bearings; colour preferred: brilliant blue RAL 5007 powder-coated; dimensions appr.: height 1300 mm, width 580mm, carrying plate length and width 250 mm and 320 mm; wheel diameter: 260 mm; safe working load: 300 kg; weight appr. 15 kg., Ce-marking.	Piece	2	N	
214	Press Tool for Press Fittings	Press tool suitable for installations of steel and copper press fitting sizes up to 35 mm and plastic pipes of up to 40 mm or higher; with LED signal to monitor battery status and the pressing unit; with manual release valve to interrupt the pressing cycle in an emergency situation; battery 12V / 18 V Li-Ion 3 Ah or better; piston force 19 kN or higher; piston stroke 30 mm; battery capacity 40-180 press cycles; maintenance intervals appr. 40,000 presses or 2 years; Kit includes battery, charger (240 V, 50 Hz); carry case; CE-marking; with instruction manual in English, British power plug.	Piece	2	N	
215	Press Jaws Set	Press jaws <b>suitable for item: Press Tool for Press Fittings</b> ; SA-Profile: 12 / 22 / 28 mm; TH-Profile 16 / 20 mm, total 5 pieces.	Set	2	N	
216	Pair of Leather Spats	Heavy Duty Leather Welding Spats; Feet Cover for Welder; Flame Resistant Foot Safety Protection; Wear-resistant, Anti-scald, Flame-resistant, protects feet from spark and slag; Size (appr.): Lengthened legging height 17 inch, feet length 11.8 inch, adjustable velcro fits most all of you. Design: Stitching with fire resistant thread provides	Pair	40	N	

Technical Specifications		Lot 1: Training Equipment for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		spark and abrasion resistance, Rivet reinforced stress points.				
217	Workshop Planner	Stable planning board system with visual frames and open rows to accept job dockets in A4 portrait format.; header contains division strip carrying the legend "name", a time division of e.g. 07:00 - 17:00 hrs. and a "final" inspection", thus creating an overview of the current operations; name labels to be placed on the side also support the clarity and permit optimum arrangement; with 10 rows; size appr. 1120 height x1490 width x 105 depth.	Piece	1	N	
218	Angle Grinder (Diameter 230 mm)	Powerful 230 mm angle grinder with additional run-out brake; Powerful motor (appr. 2400W, 240V, 50Hz) with constant-speed electronics, smooth start-up and inrush current limitation; high protection of the user by vibration control on the main and auxiliary handles, kick-back stop and restart inhibit; Adjustable grasp handle for optimum grinding and cutting; supplied with SDS quick-clamping nut; speed 6.500 rpm; max. disc diameter 230 mm; cutting depth up to 69 mm; weight less than 7 kg; max. vibration to EN: 6.5 m/s <sup>2</sup> ; with restart block; with instruction manual in English; CE-marking mandatory; British Standard Power Plug; supplied with torsion-resistant protective hood, clamping set, additional handle.	Piece	4	N	
219	Universal Grinding Discs	<b>Suitable for item: Angle Grinder (Diameter 230 mm);</b> rough grinding discs for use on stainless steel, steel and cast iron; disc diameter x disc width 230 x 7 mm; specification A30R-BF.	Piece	100	N	

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
1	Electronic Circuits Trainer	<p>Training system for the fundamentals of electrical engineering/electronics. Features: DC voltages: - short-circuit-proof and back-feed protected up to DC 40V, AC 25V, 40W; - DC = <math>\pm 15V</math>, <math>\pm 12V</math> or <math>\pm 5V/1.0 A</math> switchable; - DC = 0...30V/ max. 1A, with LC display, 10mV resolution, adjustable power limitation, potential free, Transformer (protected by polyswitch); - AC = 12V/0.2A; - AC = 12V/0.2A. Function generator with LC display: - short-circuit-proof and back-feed protected up to DC 40V, AC 25V, 20W; Waveforms: sine, triangle, square and logic; - f = 0.1Hz...200kHz; - amplitude: Up = 0...10V; - max. output load: &lt;0.5A. Three-phase current generator: - short-circuit-proof and back-feed protected up to DC 40V, AC 25V, 40W; - phase voltage: 0...10Vrms, adjustable; - line voltage: 0...17.4Vrms, adjustable; - line current: max. 400mA; - frequency: 1...120Hz, adjustable; Experimenting field equipped with 4mm safety jacks arranged in a 19mm grid, surrounded by and electrically connected to four 2mm jacks; Connection of 4mm safety connecting lines possible; Mains connection: 230V AC; 50...60Hz; Pmax. = 75W; 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</p>	Piece	10	Y	<p>[Manufacturer/Brand] [Model] [Offered specifications]<sup>1</sup></p>

<sup>1</sup> Bidder's shall provide a clause-by-clause commentary on the Purchaser's Specifications, demonstrating the Goods' and Services' responsiveness to those Specifications or a statement of deviations 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 "acceptable", "better", "compliant", etc.); any statement made by the Bidder's must be verifiable in the provided catalogues/leaflets ("custom-made" catalogues/leaflets, i.e. literature specifically manufactured for this tender, and only consisting of a picture and some text, and generally appearing unprofessional, will not be accepted).

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		standard labelling with operating instructions and connection possibilities facilitate commissioning by the user; w x h x d: 532 x 297 x 90 mm				
2	Quick Start Guide, laminated	Electronic Circuits Trainer; Fundamentals of electrical engineering/electronics.	Piece	10	N	“ “ “
3	Device Set Electronics	Set of plug-in components for basic experiments in electrical engineering/electronics, with 4mm connectors; incl. A4 size storage board for the plug-in components and 24 safety bridging plugs, front panel imprinted with the circuit symbols of the components; w x h x d: 532 x 297 x 90 mm; Device set composed as follows: 1 film resistor 10 Ω / 2 W; 2 film resistors 22 Ω/2 W; 1 film resistor 33 Ω/ 2 W; 2 film resistors 100 Ω/2W; 1 film resistor 220 Ω/ 2 W; 1 film resistor 330 Ω/ 2 W; 2 film resistors 470 Ω/ 2 W; 1 film resistor 680 Ω/2 W; 3 film resistors 1 kΩ/2 W; 2 film resistors 2.2 kΩ/2 W; 2 film resistors 4.7 kΩ/2 W; 2 film resistors 10 kΩ/2 W; 2 film resistors 22 kΩ/2 W; 2 film resistors 47 kΩ/2 W; 2 film resistors 100 kΩ/2 W; 1 film resistor 1 MΩ/2 W; 1 VDR resistance, 11 V/1 mA; 1 LDR resistance; 1 NTC resistance (6 kΩ); 1 PTC resistance (3,9kΩ); 1 capacitor 100 pF/500 V; 2 capacitors 10 nF/500 V; 1 capacitor 47 nF/500 V; 2 capacitors 0.1 μF/160V; 1 capacitor 0.22 μF/160 V; 2 capacitors 0.47 μF/160 V; 2 capacitors 1 μF/100 V; 2 electrolytic capacitors 10 μF/63V; 1 electrolytic capacitor 100 μF/35V; 1 capacitor 470 μF/35 V; 1 potentiometer linear 1 kW; 1 potentiometer linear 10 kW; 1 coil N = 300; 2 coils N = 900; 1 tape-wound core (1 pair); 1 coil 100 mH; 1 GA-AS light emitting diode, red, without series resistor; 1 Ge diode, 30 mA; 6 Si diodes, 1 A; 1 Zener diode, 3.3 V/130 mA; 1 Zener diode, 10 V/40 mA; 1 transistor NPN, 20 V/100 mA, base left; 1 transistor NPN, 40 V/1 A, base left; 1 transistor NPN,	Set	10	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		40 V/1 A, base right; 1 transistor PNP, 40 V/1 A, base right; 1 unijunction transistor, 35 V/50 mA; 1 MOS field effect transistor, 40 V/50 mA, P channel, gate left; 1 transistor, 25 V/10 mA, N-channel, gate left; 1 transistor, 20 V/10 mA, P-channel, gate left; 1 diac, 33 V/1 mA; 1 thyristor, 3 A; 1 triac, 4 A; 1 toggle switch; 1 lamp, green, 15 V; 1 light source; 1 operational amplifier; 1 relay, DC 12...15V, NOO, 2A; 1 relay, DC 12...15V, NOC, 2A.				
4	<b>Set of optoelectronic components</b>	Set of plug-in components with 4mm connectors; 1 photodiode; 1 phototransistor; 1 solar cell; 1 optical coupler; 4 LEDs (colours: yellow, green, blue, white).	Set	<b>10</b>	N	
5	<b>2mm plug, grey, spacing 5mm</b>	2mm plug, grey, spacing 5mm	Piece	<b>700</b>	N	
6	<b>Set of safety bridging plugs for the electrical engineering/electronic training systems</b>	consisting of: 4 safety bridging plugs, 4mm, 19mm spacing, black; 4 safety bridging plugs, 4mm, 19mm spacing, red; 4 safety bridging plugs, 4mm, 19mm spacing, blue; 12 safety bridging plugs, 4mm, 19mm spacing, grey	Set	<b>10</b>	N	
7	<b>Set of safety connecting lines for the electrical engineering/electronic training systems</b>	consisting of: 1 safety connecting line 4mm/50cm, yellow; 1 safety connecting line 4mm/50cm, green; 2 safety connecting lines 4mm/25cm, red; 2 safety connecting lines 4mm/25cm, blue; 2 safety connecting lines 4mm/25cm, black; 3 safety connecting lines 4mm/25cm, grey	Set	<b>10</b>	N	
8	<b>Student manual, incl. CD-ROM</b>	"Direct Current Technology"; Greyscale print; Contents: 1. Electric circuit; 2. Ohm's law; 3. Electrical resistance; 4. Voltage and current error circuits; 5. Equivalent voltage sources; 6. Interconnection of voltage sources; 7. Electrical energy and power; 8. Efficiency and electrical power; 9. Power, voltage and current matching	Piece	<b>1</b>	N	
9	<b>Instructor's manual, incl. CD-ROM</b>	"Direct Current Technology"; Colour print; Contents same as in student manual, however with solutions	Piece	<b>1</b>	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
10	<b>Student manual, incl. CD-ROM</b>	"Alternating Current Technology";Colour print;Contents:10. Types of current (voltage) and their characteristics;11. Active power of alternating voltages;12. Three-phase AC;13. Capacitor in an AC circuit;14. Coil in an AC circuit;15. Combination of reactive and active resistance;16. Oscillating circuit;17. RLC filter circuit;18. Transformers	Piece	1	N	
11	<b>Instructor's manual, incl. CD-ROM</b>	"Alternating Current Technology";Colour print;Contents same as in student manual,however with solutions	Piece	1	N	
12	<b>Student manual, incl. CD-ROM</b>	"Semiconductor Devices in Electronics";Colour print;Contents:1. Diodes and rectifier circuits;2. Bipolar transistors;3. Unipolar transistors;4. Unijunction transistors (UJT);5. Thyristors	Piece	1	N	
13	<b>Instructor's manual, incl. CD-ROM</b>	"Semiconductor Devices in Electronics";Colour print;Contents same as in student manual,however with solutions	Piece	1	N	
14	<b>Student manual, incl. CD-ROM</b>	"Electronic Circuits";Colour print;Contents:1. Amplifier circuits;2. Operational amplifiers;3. Signal generators;4. Power supply of electronic circuits	Piece	1	N	
15	<b>Instructor's manual, incl. CD-ROM</b>	"Electronic Circuits";Colour print;Contents same as in student manual,however with solutions;	Piece	1	N	
16	<b>Digital Training System</b>	Experimenting Board in A4 format;for teaching the fundamentals of digital technology;All the function groups required for conducting experiments in digital technology are integrated in the training system and supplied with power by a built-in power supply unit. Function groups:1 power supply unit, +5 V DC / 1 A, stabilized and short-circuit proof;1 generator, frequency variably adjustable from 0.1...10kHz, with subsequent frequency divider by 2, 4, 8 and 16;8 bounce-free L/H toggle switches;1 toggle switch, not debounced;1 pushbutton, not debounced;3 AND/NAND gates, 2 inputs each;1 AND/NAND gates, 3 inputs each;6 OR/NOR gates, 2 inputs each;1	Piece	10	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		OR/NOR gates, 3 inputs each;6 EX/OR gates, 2 inputs each;9 inverters;6 JK master-slave flipflops;1 4-bit full adder;1 counter with visual indicators and switchable from hexadecimal to decimal ;1 up/down 4-bit binary counter;2 2-bit buffers with release function;1 monoflop, 10s, variably adjustable and positive or negative inputs;1 7-segment display (2 digits) with integrated decoder, switchable from hexadecimal to decimal;8 LEDs with upstream driver;1 power supply unit, adjustable from 0 ... 5 V;1 ADU 4 bit;1 DAU 4 bit;3 resistors and 2 capacitors for programming RC time modules;1 plug-in position, powered, for additional modules or IC sockets;1 multi-terminal bus bar, +5V and 0V;Mains connection:110 - 240V AC, 50...60Hz;The function groups are connected via 2 mm lines and without predection against accidental contact. 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.				
17	<b>Operating Instructions / Quick Start Guide, laminated</b>	Digital Training System	Piece	<b>10</b>	N	
18	<b>Set of 2mm connecting leads, for Digital Training System</b>	4 connecting leads, 2mm, 7.5 cm long, blue;4 connecting leads, 2mm, 7.5 cm long, yellow;4 connecting leads, 2mm, 7.5 cm long, green;4 connecting leads, 2mm, 15 cm long, black;4 connecting leads, 2mm, 15 cm long, red;4 connecting leads, 2mm, 15 cm long, blue;4 connecting leads, 2mm, 30 cm long, yellow;4 connecting leads, 2mm, 30 cm long, green;4 connecting leads, 2mm, 45 cm long, black;4 connecting leads, 2mm, 45 cm long, blue;2	Set	<b>10</b>	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		connecting plugs 2mm*12mm, black;2 connecting plugs 2mm*12mm, red;4 connecting plugs 2mm*12mm, blue;2 connecting plugs 2mm*12mm, yellow;4 connecting plugs 2mm*12mm, green				
19	<b>Student manual, incl. CD-ROM</b>	"Fundamentals of Digital Technology";Contents:1. Comparison of analog and digital technology;2. Basic logic circuits;3. Basic component combinations in digital technology;4. Logic circuits in practice;5. The laws of Boolean algebra;6. Circuit synthesis;7. Codes and code converters;8. Calculation circuits;9. Flip-flops;10. Counter circuits;11. Shift register;12. Multiplexer / Demultiplexer;13. A/D converter;14. D/A converter	Piece	1	N	
20	<b>Instructor's manual, incl. CD-ROM</b>	"Fundamentals of Digital Technology";Contents identical to student manual,however with solutions and answers	Piece	1	N	
21	<b>Set of overlay masks for "Digital technology"</b>	for the User Manual "Fundamentals of Digital Technology";18 multi-color, graphically designed masks for didactic reduction, adjusted to the experiments described in the manual:	Set	1	N	
22	<b>Plug-in module IC socket</b>	20 pins (Textool lifting socket)	Piece	10	N	
23	<b>Safety Measures Training System</b>	for experiments in the field of electric safety measures. As a low-voltage device, it guarantees optimum safety for the user. Features: - Simulation of an electric system with transformer station, house connection, RCDs, fuses and consumers; - Simulation of a foundation earth electrode with different earthing resistances; - Simulation of an equipotential bonding; - Simulation of a house connection with configuration of the different mains system types by means of bridge plugs; - Integrated power supply: single-phase wall outlet sufficient; Integrated elements: - RCD, 30mA; - Insulation monitor with threshold value adjustment; -	Piece	10	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		Common current circuit breaker, C0, 3A 1pol.; - Isolating transformer with one or two loads (manually operated devices, drilling machines); - Protective low-voltage transformer with one load; - Connectable resistances for fault simulation; - Summation current transformer; - Consumers of the different protection classes: devices with active earthing, devices with double and reinforced insulation, protective low-voltage devices, devices connected to an isolating transformer; - Simulation of a plant, site and company building earth electrode with different resistances; - Simulation of a person's body resistance with different values. An LED indicates any excess over 50V AC touch voltage; - Simulation of ground potential e. g. for measuring the step voltage; 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 standard labelling with operating instructions and connection possibilities facilitate commissioning by the user.				
24	<b>Set of connections</b>	4 measuring leads, 2mm, length 30 cm, yellow;3 measuring leads, 2mm, length 60 cm, black;3 measuring leads, 2mm, length 60 cm, red;1 adapter lead, 2mm/4mm, length 60 cm, black;1 adapter lead, 2mm/4mm, length 60 cm, blue;1 adapter lead, 2mm/4mm, length 60 cm, red;20 connecting plugs, 2mm.	Set	<b>10</b>	N	
25	<b>Student manual (practical experiments), incl. CD-ROM</b>	"Electrical Safety Measures";Contents:1. Introduction;2. Network systems;3. Basic protection and fault protection;4. Fault current protective devices;5. Fault current protective device;6. Protective separation;7. IT network;8. Protection from double or reinforced insulation;9. Protective low voltage and	Piece	<b>1</b>	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		functional low voltage with safe disconnection;10.Step voltage				
26	<b>Instructor's manual, incl. CD-ROM</b>	"Electrical Safety Measures";Structure and contents same as student manual,however with solutions	Piece	1	N	
27	<b>Presentation aids, on CD-ROM</b>	"Electrical Safety Measures"	Piece	1	N	
28	<b>Quick Start Guide, laminated</b>	Safety Measures Training System	Piece	10	N	
29	<b>PV Training Board</b>	Experimenting Board in A4 format;with an integrated measuring interface with LC display and USB connection outputs the electric values U, I and P of the photovoltaic cells. The Board has a variable electronic load for determining the U/I characteristics of the solar cells.;an adjustable simulator of a solar generator simulates the characteristics of a solar module with an idle voltage of 18V and a max. short circuit current of 2.5A. Its output voltage can be used to supply loads or charge controllers. Features: - 6 solar cells; - 6 diodes, connectable as string or bypass diodes; - dimmable artificial light source, rotatable; - simulator of a solar generator; - meter for current, voltage and power; - USB connection; - electronic load, adjustable; Design:w x h x d: 532x 297 x 90 mm	Piece	10	Y	
30	<b>Operating Instructions / Quick Start Guide, laminated</b>	for PV Training Board	Piece	10	N	
31	<b>Off-Grid Charge Training Board</b>	Experimenting Board in A4 format;The charge controller monitors the charging state of the battery and protects it against overload and deep discharge. It works according to the CCCV principle. The operating and charging state of the battery is displayed on the LCD; Features: Charge controller with display; - automatic switching 12/24V; - charging-/discharging	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		current: 10 A; - gassing control; Digital DC power meter indicating U, I and P; Connection facilities for: - solar generator (real solar module or photovoltaic simulator) - Sunclix connectors; - battery - 4mm safety connectors; - DC load - 4mm safety connectors; 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: 266 x 297 x 90 mm				
32	<b>Operating Instructions / Quick Start Guide, laminated</b>	Off-Grid Charge Training Board	Piece	5	N	
33	<b>Series Charge Controller Board</b>	Experimenting Board in A4 format;The charge controller monitors the charging state of the battery and protects it against overload and deep discharge. It works according to the CCCV principle. The operating and charging state of the battery is displayed on the LCD. Features: Series Charge controller: - automatic switching 12/24V; - charging-/discharging current: 6 A; - gassing control; Digital DC power meter indicating U, I and P; Connection facilities for: - solar generator (real solar module or photovoltaic simulator) - Sunclix connectors; - battery - 4mm safety connectors; - DC load - 4mm safety connectors; 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: 266 x 297 x 90 mm;	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
34	<b>Operating Instructions / Quick Start Guide, laminated</b>	Series Charge Controller Board	Piece	5	N	
35	<b>Battery Board</b>	Experimenting Board in A4 format; The Battery Board is provided with a maintenance-free, sealed lead gel battery and an integrated power meter; Features: Battery, rechargeable; - voltage: 12V; - capacity: 7.8Ah; Digital DC power meter indicating U, I and P; Overcurrent protection through two protective switches; All 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. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. w x h x d: 266 x 297 x 90 mm;	Piece	5	Y	
36	<b>Operating Instructions / Quick Start Guide, laminated</b>	Battery Board	Piece	5	N	
37	<b>Low Voltage Load Board</b>	Experimenting Board in A4 format; The Board is mounted with three common consumers of a PV off-grid system for experimental comparison of their power input and energy consumption; Features: Consumers; - LED lamp 12V DC, 1W; - Halogen lamp 12V DC, 20W; - Compact fluorescent lamp 12V DC, 7W; Operating voltage: 12V DC; All 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. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. w x h x d: 266 x 297 x 90 mm	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
38	<b>Operating Instructions / Quick Start Guide, laminated</b>	Low Voltage Load Board	Piece	5	N	
39	<b>Off-Grid DC/AC Inverter Board</b>	Experimenting Board in A4 format; The Board is provided with a galvanically isolated inverter which converts 12V DC voltage into sine-wave AC voltage of 230V/50Hz allowing to operate even sensitive electric devices; A single-phase power meter integrated on the AC side monitors the electric parameters; Features: Inverter; - output voltage: 230V / 50Hz; - output power at 230V/50Hz: 250W; - operating voltage: 12V DC; Power meter, displaying: - voltage; - current;- active, reactive and apparent power; - power factor; - energy consumption, Wh; All 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. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. w x h x d: 266 x 297 x 90 mm	Piece	5	Y	
40	<b>Operating Instructions / Quick Start Guide, laminated</b>	Off-Grid DC/AC Inverter Board	Piece	5	N	
41	<b>Load Board with Bulb Sockets</b>	Experimenting Board in A4 format; 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: 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	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		and connection possibilities facilitate commissioning by the user; Dimensions: 265 x 297 x 85 mm				
42	<b>Set of lamps</b>	for Bulb Socket Board: 3 energy saving lamps, 230V 6W; 3 halogen lamps 230V 28W; 1 LED lamp 230V 6W, E27 compatible.	Set	5	N	
43	<b>DC/AC Inverter Board On-Grid</b>	Experimenting Board in A4 format with a grid-connected inverter operating with a minimum input voltage of 20V DC; Technical features: - Sunclix plug for Dcinput voltage; - 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; - Connection to grid via 4-mm- safety connection-sockets; - 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.	Piece	5	Y	
44	<b>Set of safety connections, 4mm</b>	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.	Set	5	N	
45	<b>Student manual (projects), incl. CD-ROM</b>	"Renewable energies - Basic principles of photovoltaics"; Contents: Investigating PV cells; 1. No-load voltage and short-circuit current with different levels of radiation; 2. Influence of temperature; 3. Influence of contamination on solar modules; 4. Influence of the arrival angle and azimuth angle on	Piece	1	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		the power of a PV cell;5. Wiring solar cells to modules;6. Shading;7. Using bypass diodes;8. Stand-alone PV system with DC system storage battery;9. Stand-alone PV system with storage device and inverter;10. Commissioning a grid feed-in device;11. Feed-in concepts				
46	<b>Instructor's manual (projects), incl. CD-ROM</b>	"Renewable energies - Basic principles of photovoltaics"; Structure and contents as student manual, however with solutions and technical documentation	Piece	1	N	
47	<b>Presentation aids, on CD-ROM</b>	"Renewable energies - Basic principles of photovoltaics"	Piece	1	N	
48	<b>Single and Three Phase Transformer Training System</b>	freely configurable due to the isolated connection of the primary and secondary windings with 4mm safety sockets. The primary side of the transformer is protected against short-circuit and overload by a three-phase load switch. For easy and safe experimenting with the 3-phase transformer, three different loads (R, L and C) are integrated for a nominal voltage of 230V AC. All loads can freely be connected via 4mm safety sockets. The values of the inductive load L and the capacitive load C allow mutual compensation. The 3-phase transformer can also be operated as a 1-phase transformer. Features: Input AC 3x230V 50 ... 60Hz or AC 3x400V 50 ... 60Hz; Overload limited to 110 ... 160mA; Limited rated operating power 65W at 3-ph AC, 400V; Short-circuit protection release at 2.1A; Primary AC 3 x 400V, 50 ... 60Hz or AC 3 x 230V, 50 ... 60Hz; Secondary 3 x (2 x 115V); Rated operating power 100W at 3-ph AC, 400V; 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	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. Dimensions: 532mm x 297mm x 83mm				
49	<b>Student manual, incl. CD-ROM</b>	"Energy technology"; Contents: Test set-up;1. Introduction to transformers;2. Operating characteristics of transformers;3. The autotransformer;4. The 3-phase transformer;5. The benefits of the transformer in power transmission	Piece	1	N	
50	<b>Instructor's manual, incl. CD-ROM</b>	"Energy technology";Contents same as student manual, however with solutions and technical documentation	Piece	1	N	
51	<b>Quick Start Guide, laminated</b>	Single and Three Phase Transformer Training System	Piece	2	N	
52	<b>Set of safety measuring leads, 4 mm</b>	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 50 cm; 2x yellow/green 75 cm	Set	2	N	
53	<b>Control Engineering Trainer</b>	Training system for process-oriented control engineering; Integrated controllers: Two-level controller; Three-level controller; P-controller; I-controller; D-controller; Integrated control systems: Level control; Temperature control; Light control; Motor/generator system; Position control; Step manipulation for three-level controller; Integrated meters: Actual value meter; Setpoint meter; Universal measuring unit; Technical data: Power supply 110...240V AC, 50...60Hz; Signal voltage range - 10V...+10V DC; Central on/off switch; Connection via 2mm plug system or 5mm bridging plugs; 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 standard labelling	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		with operating instructions and connection possibilities facilitate commissioning by the user.				
54	<b>Quick Start Guide, laminated</b>	Control Engineering Trainer	Piece	5	N	
55	<b>Set of 2-mm-connections</b>	4 measuring leads 2mm, length 30 cm, yellow;3 measuring leads 2mm, length 60 cm, black;3 measuring leads 2mm, length 60 cm, red;1 connecting plug, 2mm*12mm, black;1 connecting plug, 2mm*12mm, red;3 connecting plugs, 2mm*12mm, yellow;2 connecting plugs, 2mm*12mm, blue;5 connecting plugs, 2mm*12mm, green	Set	5	N	
56	<b>Manual, incl. CD-ROM</b>	"Control engineering";Edition for trainees / students	Piece	1	N	
57	<b>Manual, incl. CD-ROM</b>	"Control engineering";Edition for the teacher / trainer; Contents same as for student manual,however with solutions	Piece	1	N	
58	<b>Three-phase asynchronous motor, star/delta 692/400V</b>	0.25kW, 50Hz, 1500rpm; - shaft end with coupling; - with integrated thermal switch; All in-/outputs on 2mm or 4mm safety sockets; Terminal block with 4-colour front layout and circuit symbols	Piece	10	Y	
59	<b>Series-wound DC machine</b>	0.3kW, 205V DC, 2000rpm;for operation as a motor or generator; - shaft end with coupling;-with integrated thermal switch;All in-/outputs on 2mm or 4mm safety sockets;Terminal block with 4-colour front layout and circuit symbols	Piece	1	N	
60	<b>Single-phase motor with running capacitor</b>	0.18kW, 230V, 50Hz, 1500rpm; - shaft end with coupling;-with integrated thermal switch;All in-/outputs on 2mm or 4mm safety sockets;Terminal block with 4-colour front layout and circuit symbols	Piece	1	N	
61	<b>Single-phase motor</b>	0.25kW, 230V, 50Hz, 1500rpm;with starting and running capacitor; - shaft end with coupling;-with integrated thermal switch;All in-/outputs on 2mm or 4mm safety sockets;Terminal block with 4-colour front layout and circuit symbols	Piece	1	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
62	<b>Cut-away model - three-phase asynchronous motor 300W</b>	star/delta, 1/4 section;- closed terminal block;- one shaft end without coupling;- mounted on rubber feet	Piece	1	N	
63	<b>Shaft cover, closed</b>	as a protection against contact with the open shaft end while experimenting with a single machine	Piece	10	N	
64	<b>Transparent shaft cover, open</b>	as a protection against contact with the open shaft ends when the experimental machines are mechanically connected to a drive, e. g. servo motor, flywheel etc.;The transparent cover allows observing the motor shaft throughout the complete duration of the experiment.	Piece	5	N	
65	<b>Coupling collar</b>	for mechanical connection of different machines or drives, e. g. motors, flywheels etc.	Piece	5	N	
66	<b>4-pole connection cable, EMC compliant (shielded)</b>	length: approx. 2.5 m; encoded for star operation;with 4 mm safety plug on one end and system plug on the other	Piece	5	N	
67	<b>4-pole connection cable, EMC compliant (shielded)</b>	length: approx. 2.5 m; encoded for delta operation;with 4 mm safety plug on one end and system plug on the other;	Piece	5	N	
68	<b>Transfer system 3 x 230/400V AC</b>	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.; AC gear motor:- 3 x 230V (delta operation)/3 x 400V (star operation); Heavy-duty connectors:- for load circuit or frequency converter;2 detection modules ;- for end position recognition, with 2-wire sensor, M12 connectors and supporting brackets, ;- 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;- 1 system connection SUB D, 25-pin; -	Piece	2	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		separate control current circuits of sensors/actuators for safety-relevant functions				
69	<b>Quick Start Guide, laminated</b>	Transfer systems with AC power drive and separated digital in- and outputs	Piece	2	N	
70	<b>Workpiece carrier pallet</b>	Dimensions: 119x119x15 mm; - Exchange workpiece carrier, screwed for workpieces up to 54 mm in diameter; - Holder for 4-bit ident system; - Holder for mobile data carrier ident system	Piece	2	N	
71	<b>4-bit ident system</b>	Set, 4-fold; Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable	Set	2	N	
72	<b>Training System for Hand-Operated Industrial Switching Devices</b>	consisting of: 1 switch, 3-pole; 1 star-delta reversing switch; 1 star-delta switch; 1 pole-changing switch for Dahlander circuits; 1 pole-changing switch for separate windings; Design: Experimenting Board in DIN A4 format with photorealistic, multi-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.	Piece	5	Y	
73	<b>Operating Instructions / Quick Start Guide, laminated</b>	for Training System for Hand-Operated Industrial Switching Devices	Piece	5	N	
74	<b>Set of safety measuring leads, 4 mm</b>	42 parts consisting of: 2x black 150 cm; 2x black 100 cm; 4x black 75 cm; 4x black 50 cm; 2x red 150 cm; 2x red 100 cm; 4x red 75 cm; 4x red 50 cm; 2x blue 150 cm; 2x blue 100 cm; 4x blue 75 cm; 4x blue 50 cm; 1x yellow/green 150 cm; 1x yellow/green 100 cm; 1x yellow/green 75 cm; 3x yellow/green 50 cm	Set	5	N	
75	<b>Manual (Practical Experiments), incl. CD</b>	Hand-operated switches; Contents: 1.1 Controlling with control switch ON/OFF; 1.2 Controlling with direction or rotation switch; 1.3 Controlling with star/delta switch; 1.4 Controlling with star/delta reversing switch; 1.5	Piece	1	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		Controlling with pole changing switch; 1.6 Controlling with pole changing switch for two separate windings				
76	<b>Manual</b> (Trainer Section), incl. CD	Hand-operated switches; Contents same as in manual Practical Experiments, however with solutions	Piece	1	N	
77	<b>Set of colour transparencies on CD</b>	Hand-operated switches; Cam switches; Load disconnecting switches: definition, function and application; Load disconnecting switches: device structure and switch types; Star-delta switches; Star-delta reversing switches; Pole-changing switches for Dahlander circuits; Pole-changing switches for separate windings; Control and indicating devices; Mushroom-head buttons	Set	1	N	
78	<b>Set of Operating Instructions / Quick Start Guide, laminated: Hand-operated switches</b>	consisting of: Direct switching of three-phase asynchronous motors with control switch ON/OFF; Direct switching of three-phase asynchronous motors with direction of rotation switch; Starting three-phase asynchronous motors with a star-delta switch; Starting three-phase asynchronous motors with a star-delta reversing switch; Starting three-phase asynchronous motors with two speeds via a pole-changing switch; Controlling three-phase asynchronous motors with separate windings via a pole-changing switch	Set	5	N	
79	<b>Contactor, control and installation circuits</b>	consisting of: 2 motor protection switches 0.6...1A with auxiliary switch; 1 impulse switch, 1 NO, 24V coil; 5 main contactors, 3 kW/400 V, 1 NO, 24V coil; 5 auxiliary contact sets, 2 NC, 2NO; 1 time relay, analog, 1 NO/NC, operate lag; 1 time relay, 1 NO/NC, multi-functional; 2 limit switches, 1NC, 1NO; - all components equipped with 4mm safety sockets; 1 storage board: 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 standard labelling	Piece	5	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		with operating instructions and connection possibilities facilitate commissioning by the user.				
80	<b>Training Board for Contactors (mains voltage)</b>	as a training environment for free assembly of contactor components with integrated 3-pole circuit breaker for 400V fusing and 4mm safety sockets for: - 400V supply;- 2 x 3-pole 400V outputs; 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.	Piece	5	Y	
81	<b>Extension Board for Contactors</b>	Experimenting Board in A4 format for contactors, auxiliary contactors and components of electrical enclosures. In- and outputs on 4mm safety sockets for: 14 power distributors ± 24V rd/bl; 32 power distributors as 8 x 4-fold group distributors bk; 4 labels, exchangeable, for free lettering; 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.	Piece	5	N	
82	<b>Operating Instructions / Quick Start Guide, laminated</b>	for Training Board for Contactors / Extension Board	Piece	5	N	
83	<b>Switch Board for Contactor Technology</b>	Experimenting Board in A4 format: 2 control switches, manual / 0 / automatic, 2 NO;2 signal lamps, red and green, 24 V DC;1 emergency-OFF button, 2 NC;4 pushbuttons NO/NC;Connection 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	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		scratch-proof. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user.				
84	<b>Operating Instructions / Quick Start Guide, laminated</b>	for Switch Board for Contactor Technology	Piece	5	N	
85	<b>Set of safety measuring leads, 4mm</b>	42 parts consisting of: 2x black 150 cm; 2x black 100 cm; 4x black 75 cm; 4x black 50 cm; 2x red 150 cm; 2x red 100 cm; 4x red 75 cm; 4x red 50 cm; 2x blue 150 cm; 2x blue 100 cm; 4x blue 75 cm; 4x blue 50 cm; 1x yellow/green 150 cm; 1x yellow/green 100 cm; 1x yellow/green 75 cm; 3x yellow/green 50 cm	Set	5	N	
86	<b>Set of safety measuring leads, 4mm</b>	18 parts consisting of: 6x brown 150 cm; 6x brown 100 cm; 3x brown 75 cm; 3x brown 50 cm	Set	5	N	
87	<b>Signal Lamp Board</b>	Experimenting Board in A4 format with replica of a signalling column with signalling elements in red, yellow, green and blue; 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.	Piece	5	N	
88	<b>Power supply 24 V DC</b>	Experimenting Board in A4 format; Technical data: primary: 230V, secondary: 24V / 4A; 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.	Piece	5	N	
89	<b>Student manual, incl. CD-ROM</b>	"Contactor Circuits"	Piece	5	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
90	<b>Instructor's manual, incl. CD-ROM</b>	"Contactor Circuits" ;Contents as in manual Practical Experiments, however with solutions	Piece	5	N	
91	<b>Set of Operating Instructions / Quick Start Guide, laminated: Contactor circuits</b>	consisting of:- Direct switching of three-phase asynchronous motors; - Delayed switching of three-phase asynchronous motors;- Switching of three-phase asynchronous motors for optional feed-in from two different power supplies;- Changing of the direction of rotation of a three-phase asynchronous motor (reversing control);- Changing of the direction of rotation of a three-phase asynchronous motor (reversing control) with limit switch;- Starting of a three-phase asynchronous motor with a hand-operated star/delta contactor sequence circuit;- Starting of a three-phase asynchronous motor with an automatic star/delta contactor sequence circuit;- Controlling of a three-phase asynchronous motor with current impulse relay - impulse control ON/OFF;- Starting of a three-phase asynchronous motor with a hand-operated star/delta contactor sequence circuit for two directions of rotation;- Starting of a two-speed three-phase asynchronous motor with a contactor controlled pole changing circuit - Dahlander circuit	Set	5	N	
92	<b>Power Electronics Training System</b>	Training system in the principles of power electronics; Characteristics: Power source, switchable;- Short circuit-proof, feedback-protected DC 60V, AC 40V, 60W;3-channel DC source with the setting range: - Settable -40V ...+40V per output;- max. current per output 1.5A;- Common ground 0V;Alternating current source with setting range: - Phase voltage from 0 ... 23Veff;- Max. current per phase 2Aeff;- Common neutral point 0V (neutral conductor N);- Frequency settable in 1Hz increments: 1Hz ... 100 Hz; Switching between the operating modes is performed via a slide switch. Switching is always performed via the centre	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		<p>position "OFF" so as to avoid collisions resulting from arbitrary switching; Safety options: - The currents of the outputs are continuously recorded and the voltage is reset when the thresholds have been exceeded.- The sum voltage of the DC outputs is subject to monitoring and restricted to a maximum value (e.g. 60V DC) if DC restriction is activated. - The safety options are set in the service menu. GATE CONTROL - Actuation MOSFET / Thyristors: - Actuation for 3-channel thyristors, phase angle set via the display;- Actuation for MOSFET 1 ... 4 channels, regime settable via display, amplitude settable via display; Function blocks:- Diode rectifier; - Thyristor rectifier; - MOSFET output stage; Integrated measuring instruments;- 2 multimeters for the measurement of U, I and P;- Potential-free measuring inputs;- Measurement range U: <math>\pm 400\text{mV}</math>, <math>\pm 4\text{V}</math>, <math>\pm 40\text{V}</math>;- Measurement range I: <math>\pm 200\text{mA}</math>, <math>\pm 2\text{A}</math>;- Display of the measured values as rms or arv; Experimenting field: Plug-in area with 4mm safety sockets, arranged in a 19mm grid; 4 sockets are electrically connected to each other. Electrical connections are colour-coded. - Primary operating voltage 115V / 230V AC 50 / 60Hz;- Protection class I, PELV; 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 standard labelling with operating instructions and connection possibilities facilitate commissioning by the user. w x h x d: 532 x 297 x 90 mm</p>				
93	<b>Quick Start Guide, laminated</b>	Power Electronics Training System	Piece	5	N	
94	<b>Direct current compound motor DC</b>	Nominal voltage: 24V DC; Nominal rotation speed: 3000rpm; Eddy-current brake for motor load; All in-	Piece	5	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
	<b>24V/34W, permanently-excited</b>	/outputs on 4mm safety sockets; 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 standard labelling with operating instructions and connection. w x h x d: 133 x 297 x 85 mm				
95	<b>3-phase asynchronous motor AC3 23/40V, 20W</b>	Star/delta AC3 40/23V 50Hz; - Nominal rotation speed: 1250rpm at 50Hz; - Eddy-current brake for motor load; - All in-/outputs on 4mm safety sockets; 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 standard labelling with operating instructions and connection; w x h x d: 133 x 297 x 85 mm	Piece	5	N	
96	<b>3-phase synchronous machine AC3 23/40V, 10W</b>	Star/delta AC3 40/23V 50Hz; - Nominal rotation speed: 1250rpm at 50Hz; - Eddy-current brake for motor load; - All in-/outputs on 4mm safety sockets; 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 standard labelling with operating instructions and connection; w x h x d: 133 x 297 x 85 mm	Piece	5	N	
97	<b>Demonstration set for asynchronous, synchronous and linear motor</b>	to practically examine the different functional principles; - Star/delta AC3 40/23V 50Hz; - All in-/outputs on 4mm safety sockets;with mounting plate, 6 coils, 3 iron cores, magnetic needle, rotors, guide rail for linear motor (1m), accessories; w x h x d: 266 x 297 x 110 mm	Piece	3	N	
98	<b>Set of 4mm safety connecting leads for the</b>	consisting of: 3 safety connecting lead 4mm/100cm, grey; 1 safety connecting lead 4mm/100cm, blue; 1 safety connecting lead 4mm/100cm, black; 3 safety connecting lead 4mm/50cm, brown; 2 safety	Set	5	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
	<b>training systems of power electronics</b>	connecting lead 4mm/50cm, red; 2safety connecting lead 4mm/50cm, blue; 2 safety connecting lead 4mm/25cm, red; 2 safety connecting lead 4mm/25cm, blue; 2 safety connecting lead 4mm/25cm, black; 3 safety connecting lead 4mm/25cm, grey				
99	<b>Set of 4mm safety bridging plugs for the training systems of power electronics</b>	consisting of: 2 safety bridging plugs, 4mm, 19mm spacing, black; 2 safety bridging plugs, 4mm, 19mm spacing, red; 2 safety bridging plugs, 4mm, 19mm spacing, blue; 5 safety bridging plugs, 4mm, 19mm spacing, grey; 3 safety bridging plugs, 4mm, 19mm spacing, grey	Set	5	N	
100	<b>2mm safety measuring lead, 60cm, black</b>	highly flexible test lead with rigid insulating sleeve; 2mm lamella plugs at both ends, stackable	Piece	5	N	
101	<b>2mm safety measuring lead, 60cm, green</b>	highly flexible test lead with rigid insulating sleeve; 2mm lamella plugs at both ends, stackable	Piece	5	N	
102	<b>Reducer adapter 4mm/2mm</b>	for connecting 2mm safety measuring leads with 4mm safety sockets; Colour: black; Dimensions: 41 x 10 x 10 mm	Piece	25	N	
103	<b>Student manual, incl. CD-ROM</b>	"Rectifier circuits in power electronics"	Piece	1	N	
104	<b>Instructor's manual, incl. CD-ROM</b>	"Rectifier circuits in power electronics";Contents same as in student manual,however with solutions	Piece	1	N	
105	<b>Set of front panel overlays "Rectifier circuits in power electronics"</b>	for use with the manual of the same title;12 multi-colour, graphically designed front panel overlays for didactic condensation, pertinent to the experiments described in the manual	Set	5	N	
106	<b>Training System Soft Starter</b>	Experimenting Board in A4 format for the control of 3-phase drives. Smooth start-ups by means of a soft starter. Features:- 3-phase supply, 400V AC;- Control and operating voltage 24V DC;- Max. rated power: 1.5kW at 400V AC;- Setting of starting time and voltage by means of a rotary potentiometer on the Board; - Start and auxiliary contacts; All in- and	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		outputs on 4mm safety sockets; Working principle of the power electronics displayed on the front panel of the Board; 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.				
107	<b>Operating Instructions / Quick Start Guide, laminated</b>	Training System Soft Starter	Piece	5	N	
108	<b>Student manual, incl. CD-ROM</b>	"Soft starters"	Piece	1	N	
109	<b>Instructor's manual, incl. CD-ROM</b>	"Soft starters" ;Structure of the manual and contents as in student manual, however with solutions	Piece	1	N	
110	<b>Flywheel</b>	for simulating inertial masses in start and stop processes; 0.006 kgm <sup>2</sup> , max. 3000 rpm; Couplings on both shaft ends	Piece	1	N	
111	<b>Training system for communication-capable single-phase drive inverter with IOP</b>	consisting of: Frequency inverter SINAMICS G120 (1 AC-230V); Technical data: Intelligent Operator Panel (IOP):- Individual parameter setting;- Commissioning;- Surveillance of parameters during ongoing operation;- Input via 2 function keys and rotary switch;- LCD display; Profinet interface, 2 ports with integrated switch; DRIVE-CLiQ interface; Control and automated control functions: - U/f linear / square-law / programmable;- U/f with Flux Current Control (FCC);- vector control, without encoder;- vector control, with encoder;- closed-loop torque control, without encoder;- closed-loop torque control, with encoder; Software functions: - 6 fixed frequencies;- interconnecting signals with BiCo technology;- positioning ramp down;- slip compensation;- free function blocks for logical and arithmetic operations;- technology controller - PID	Piece	5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		controller;- flying restart / JOG; Brake functions:- DC breaking;- compound breaking;- resistor breaking with integrated brake chopper; Fail-safe stop; Inputs and outputs:- encoder input;- 4 digital inputs;- 1 relay output;- 1 analog input, 0-10V resp. 0-20mA;- 1 analog output, 0-10V resp. 0-20mA; Electrical data:- input voltage/frequency: 200...240V / 47...63Hz;- output voltage/frequency: 0...230V / 0...550Hz;- output power: 550W; mounted on: Experimenting board in DIN A4 format;Technical data: 3-pole main switch; Terminal connections for:- 4 digital inputs, on 4mm safety sockets and switch;- 1 relay output, on 4mm safety sockets;- 1 analog input, 0-10V or 0-20mA, on 4mm safety sockets;- 1 analog output, 0-10V or 0-20mA, on 4mm safety socket; input voltage/frequency: 230V / 50...60Hz; output voltage/frequency: 0...230V / 0...650Hz; output power: max. 550W; Interface for extensions (M12 socket); Design: Experimenting Board in DIN A4 formatwith photorealistic, multi-colour front panel design. A special coating makes the panel surface scratch-proof. Didactic standard labelling with operating instructions and connection possibilities facilitate commissioning by the user.				
112	<b>Set of Operating Instructions / Quick Start Guide, laminated</b>	single-phase drive inverter with IOP	Set	5	N	
113	<b>Operating Instructions / Quick Start Guide, laminated</b>	Frequency Inverter G120 and Software Starter	Piece	5	N	
114	<b>Commissioning software STARTER</b>	on DVD; Languages: English, German, French, Spanish, Italian; System requirements: PG or PC: Pentium III min. 800 MHz (recommended > 1 GHz); Working memory 512 MB (recommended 1 GB); Screen resolution 1024 x 768 pixels, 16-bit color	Piece	1	N	

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		depth; Operating system: Microsoft Internet Explorer V6.0 or later. <b>Suitable for item: Training system for communication-capable single-phase drive inverter with IOP.</b>				
115	<b>Manual collection on DVD</b>	Electronic manuals for drives; Languages: English, German, French, Spanish, Italian	Piece	1	N	
116	<b>Industrial Ethernet connecting cable</b>	with RJ45 plugs;Length: approx. 2.5 m;Industrial fast connectors. Metal plugs	Piece	5	N	
117	<b>Manual, incl. CD (Practical Experiments)</b>	"Drive inverter G120"	Piece	1	N	
118	<b>Manual, incl. CD (Trainer Section)</b>	"Drive inverter G120";Contents same as in manual Practical Experiments,however with solutions	Piece	1	N	
119	<b>Set of colour transparencies on CD</b>	Frequency converter applications	Set	1	N	
120	<b>Set of colour transparencies, on CD</b>	Electromagnetic compatibility	Set	1	N	
121	<b>AC test unit</b>	Measuring without metal contact with the test object; No contact with life parts; No destruction or removal of the insulation; detects from 40-100V AC.	Piece	1	N	
122	<b>Motor fault simulator</b>	for electric motors; Faults to solve: Break in the winding;Turn to turn short;Phase to phase short;Voltage-dependant insulation fault;Frame fault;In-/outputs on 4mm safety sockets;Terminal plate with 4-colour imprinted front ;indicating connections	Piece	5	Y	
123	<b>Manual Practical Experiments, incl. CD-ROM</b>	"Motor fault simulator"	Piece	1	N	
124	<b>Manual Trainer Section, incl. CD-ROM</b>	"Motor fault simulator";Contents same as in manual Practical Experiments,;however with solutions	Piece	1	N	
125	<b>Simulation Software for</b>	Power electronics, Electrical machines and drives; classroom license: 20 user; Features: Library: Passive components; Active components; (Mosfet, IGBT,	Piece	1	Y	

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		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; Electric machines and drives				
126	<b>PLC training system S7-1200 / Touch Panel</b>	Function groups: CPU 1215C with the integrated features:- PROFINET interface;- 14 digital inputs, 4 of which for use as rapid counter inputs 100 kHz;- 10 digital outputs;- 2 analog inputs, 1 analog output;- controlled positioning, analog and digital;- PID controller; Touch Panel KTP700 PN:- 7" colour graphic display with touch function;- additional function keys for free programming;- PROFINET interface; 5-port Profinet switch for Profinet network configuration mounted on: Training Board Automation Technology, Experimenting Board in A4 format, Technical data:- Integrated power supply 24V DC/6.5A;- 14 digital inputs, 10 digital outputs 24V DC;- 24 safety sockets, 4mm, for digital in- and outputs;- 14 simulation push/lock-in switches for digital inputs;- 2 analog inputs, 1 analog output 0...10V DC on 4mm safety sockets;- Simulation field for analog processing with 4mm safety sockets;- System interface SUB-D 25-pin;- AS-i terminals, as 4mm safety sockets and push-in terminals;- HMI Profinet connection at RJ45 socket;- Tophat rail and line-up terminals for mounting and connection of AS-i and Profibus components;- Digital outputs protected against short-circuiting;- Slot (covered), prepared for integration of KTP700 ; - Connecting lines for S7-1215C; Design: Board with	Piece	10	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		photorealistic, multi-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. Within delivery scope:- PROFINET system cable, length: 6 m;- Programming software TIA Portal Basic, single licence; System requirements: Windows 7 (64 bits) or later; For vocational schools, colleges and universities, in-house vocational training departments, non commercial research institutions and non commercial training departments only				
127	<b>Operating Instructions / Quick Start Guide, laminated</b>	for Training Board Automation Technology; suitable for item: PLC training system S7-1200 / Touch Panel.	Piece	<b>10</b>	N	
128	<b>Student manual, incl. CD-ROM</b>	"S7-1200 Basics"	Piece	<b>1</b>	N	
129	<b>Instructor's manual, incl. CD-ROM</b>	"S7-1200 Basics"; Structure of the manual and contents same as in student edition, however with solutions	Piece	<b>1</b>	N	
130	<b>Patch cable set</b>	2 x 0.25m; 2 x 0.5 m	Piece	<b>10</b>	N	
131	<b>Set of industrial ethernet RJ45 connectors</b>	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	<b>5</b>	N	
132	<b>Industrial ethernet line 2 x 2 (spiral quad)</b>	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	<b>5</b>	N	
133	<b>Stripper for industrial ethernet line</b>	for FastConnect plug	Piece	<b>5</b>	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
134	<b>Hybrid interface module for the control of virtual or real processes</b>	Module for process control by automated systems of various manufacturers. Mobile connectivity data connection to mobile end devices, e.g. smartphone, tablet or smart glasses AR via bluetooth interface. Android and IOS system software devices are supported. The scope of functions is complemented by an app with process animations with augmented reality; Technical data:- 2 system interfaces SUB-D, 25-pin;- 16 digital inputs 24V DC;- 16 digital outputs 24V DC;- 4 analog inputs 0-10V DC;- 1 analog output 0-10V DC;- 1 analog output 0-10V DC adjustable through potentiometer ; - 16 LED display for digital inputs;- 16 LED display for digital outputs;- 1 simulation field for analog processing;- 1 Bluetooth interface, with LED display; Design: Board with fotorealistic, four-colour design of the front plate. Colored wiring design acc. to colour coding. The plate surface is scratchproof due to a special coating. Didactic standard marking with operating instructions and connection options facilitate the commissioning by the user; l x w x h: ca 266 x 297 x 90 mm	Piece	10	Y	
135	<b>Quick Start Guide, laminated</b>	Hybrid interface module for the control of virtual or real processes	Piece	10	N	
136	<b>Set of application masks</b>	Fundamentals S7-1500/S7-1200";comprising: robust application masks, multi-color, AR S7-TIA Portal	Set	10	N	
137	<b>Student manual, incl. CD-ROM</b>	"Fundamentals S7-1200"	Piece	1	N	
138	<b>Instructor's manual, incl. CD-ROM</b>	"Fundamentals S7-1200";Contents same as in student manual,however with solutions		1	N	
139	<b>Digital learning assistant "Fundamentals S7-1200"</b>	App with process animations, manuals, datasheets, explanations, assembling and disassembling instructions with augmented reality		1	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
140	<b>Set of application masks</b>	DC transfer system; comprising: 5 robust application masks four-color AR DC transfer system for setting up the experiments given in the manual or for free design of your own experiments: a) Workpiece transport; b) Speed control; c) Extension jog mode; d) Jog mode; e) Electrical commissioning; Set of I/O markers for marking of inputs and outputs	Set	10	N	
141	<b>Mechatronic Sub-System Transfer belt 24V DC</b>	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; 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	Piece	2	Y	
142	<b>Quick Start Guide, laminated</b>	Transfer systems with DC power drive	Piece	2	N	
143	<b>Student manual, incl. CD-ROM</b>	"Transfer system with DC drive"	Piece	1	N	
144	<b>Instructor's manual, incl. CD-ROM</b>	"Transfer system with DC drive";Contents as in student manual,however with solutions	Piece	1	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
145	<b>Presentation aids, CD ROM</b>	"Transfer system with DC drive"	Piece	1	N	
146	<b>Set of item identification for transfer systems</b>	Markings for:- Transfer system;- ET200SP;- RFID;- Stopper set	Piece	2	N	
147	<b>Workpiece carrier pallet</b>	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	Piece	2	N	
148	<b>4-bit ident system</b>	Set, 4-fold;Setup of an ident system based on the magnetic principle with Reed contacts, individually encodable	Set	2	N	
149	<b>Control unit Tab 6 Android 10</b>	Didactic visualisation device for Augmented Reality; applications with integrated operating and display elements; including Android operating system; preconfigured; Configuration facility based on Android Tablet	Piece	12	N	
N/A	N/A	<i>Items 150 – 269 are not included in this Lot.</i>	N/A	N/A	N/A	N/A
270	<b>Training System for safety measures in installation technology, with fault simulator (subsystem 1)</b>	Features: - Circuit breaker (IN: 6 A); - Key switch for release; - Simple change of the mains form via jumper plug; - Simulation of a foundation earthing with different earthing resistances; - Simulation of an outer lightning protector; - Connectors for two probes for earth-resistance measurement; - Simulation of a main equipotential bonding; - Simulation of an additional equipotential bonding in the bathroom; - Simulation of the mains connection to the house with generation of the different mains systems with bridging plugs; - Simulation of the meter with generation of the different mains systems with bridging plugs; - Connection field for subdistributor with generation of the different mains systems with bridging plugs; - Simple error simulation with rotating switches; - Measuring of loop impedance and mains interior resistance; - Low-resistance	Piece	1	Y	

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		connection of protective and equipotential bonding conductors; - Insulation leakage / short circuit for measuring the insulation resistance; Mechanical design: Experimenting Board in A4 format;with photorealistic, multi-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.				
271	<b>Quick Start Guide, laminated</b>	Training System with fault simulator for installation technology	Piece	1	N	
272	<b>Training Board RCD 40/0,3A, selective</b>	For conducting the following experiments: - Effects of the the rated residual current with respect to the disconnection conditions; - Effects of the ground resistance with respect to the use of RCD circuit breakers in a TT system; - Examining possible applications of RCD circuit breakers in IT systems; - Effects and use of circuit breakers Type A, selective; - Measuring of residual currents (AC);Features: - Line circuit breakers, IDN 300 mA; - Potentiometer for simulation of residual currents.	Piece	1	N	
273	<b>Quick Start Guide, laminated</b>	<i>Training Board RCD 40/0,3A, selective</i>	Piece	1	N	
274	<b>Training Board RCD 40A/30mA</b>	For conducting the following experiments: - Effects of the the rated residual current with respect to the disconnection conditions; - Effects of the ground resistance with respect to the use of RCD circuit breakers in a TT system; - Examining possible applications of RCD circuit breakers in IT systems; - Effects and use of circuit breakers, Type A; - Measuring of residual currents (AC); Features: - Line circuit breakers, IDN 30 mA; - Potentiometer for simulation of residual currents.	Piece	1	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
275	<b>Quick Start Guide, laminated</b>	Training Board RCD 40/30mA	Piece	1	N	
276	<b>Training Board RCD 40A 30mA Type B</b>	For conducting the following experiments: - Effects of the the rated residual current with respect to the disconnection conditions; - Effects of the ground resistance with respect to the use of RCD circuit breakers in a TT system; - Examining possible applications of RCD circuit breakers in IT systems; - Effects and use of circuit breakers, Type B; - Measuring of residual currents (AC); - Measuring of residual currents (DC); Features: - Line circuit breakers, IDN 30 mA Type B; - Potentiometer for simulation of residual currents.	Piece	1	N	
277	<b>Quick Start Guide, laminated</b>	Training Board RCD 40/30mA type B	Piece	1	N	
278	<b>Training System Protective Measures; Sub-distribution of the customer's system</b>	For conducting the following experiments: - Getting acquainted with the functionalities of the protective measures in the different mains systems; - Selection of the protective measures and devices according to the requirements of the customer's installation; - Consultation of the customer with regard to safety and availability of the electric installation; - Getting acquainted to the measuring instruments used in the field of protective engineering;- Draw-up of flow charts for the required tests; - Selecting the required measuring instruments and define suitable measuring points; - Properly assessing the measuring values with regard to their precision and security; - Describing, planning and executing initial and repeated tests of the electric installation and write a test protocol;- Communicating with the customer: - on delivery of the system; - during the repeated test; - in the case of a failure / breakdown of the electric installation; - after successful repair; Features: - Subdistributor with: -	Piece	1	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		Line circuit breaker: C 13 A; 3-pole; - Line circuit breaker: B 13 A; 1-pole; - Circuit breaker: B 10 A; 1-pole; - Line circuit breaker: B 10 A; 1-pole; - Measuring points available via standard line-up terminals;- Consumers: - Three-phase consumer: - Imitation of a 5-pole CEE socket with safety sockets; - Lamp operated by a switch with junction box; - Schuko socket; Indication of an earthed socket 3-pole with SI sockets; - heating connection; Indication of a heating connection 3-pole with SI sockets; - Fault simulator: Mechanical design: Experimenting Board in A4 format; with photorealistic, multi-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.				
279	<b>Quick Start Guide, laminated</b>	Training System Protective Measures; Sub-distribution of the customer's system	Piece	1	N	
280	<b>Set of safety connecting plugs, 4 mm</b>	with tap, 24 parts, consisting of: 7x brown; 4x blue; 6x grey; 7x yellow/green	Set	1	N	
281	<b>Set of safety measuring leads, 4 mm</b>	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, 50 cm; 2x yellow/green, 75 cm	Set	1	N	
282	<b>Manual</b> (practical experiments), <b>incl. CD</b>	"Electrical power systems and; protective measures"	Piece	1	N	
283	<b>Manual</b> (trainer section), <b>incl. CD</b>	"Electrical power systems and protective measures"; Contents same as in manual Practical Experiments, however with solutions.	Piece	1	N	
284	<b>Set of colour transparencies, CD</b>	"Electrical power systems and; protective measures"	Set	1	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
285	<b>Set of appliance simulators</b>	for conducting tests in compliance with DIN VDE 0701/0702; The set consists of 10 appliance simulators: - Electric iron; - Immersion heater; - Drill machine; - Computer; - Cable reel; - Electric range; - Coffee machine; - Radio; - Power supply; - Washing machine; The devices correspond to consumers of protection classes I, II and III. Active components in some of the consumers allow demonstrating the difference between active and passive measurements. Faults can be simulated with toggle switches for: - protective conductor resistance; - insulation resistance; - leakage current/equivalent leakage current; - touch current; Set supplied with: Connecting line with appliance coupler, 2m; Connecting line with European coupler, 2m.	Piece	1	N	
286	<b>Set of Operating Instructions / Quick Start Guide, laminated</b>	"Appliance simulators"	Set	1	N	
287	<b>Moulded tray</b>	for experimental boxes;(w x h x d) 693 x 305 x 35 mm;	Piece	1	N	
288	<b>Student manual, incl. CD-ROM</b>	"Testing electric devices according to DIN VDE 0701-0702"	Piece	1	N	
289	<b>Instructor's manual, incl. CD-ROM</b>	"Testing electric devices according to DIN VDE 0701-0702"; Structure and contents as student manual, however with solutions and technical documentation.	Piece	1	N	
290	<b>Presentation aids, incl. CD-ROM</b>	"Testing electric devices according to DIN VDE 0701-0702"	Piece	1	N	
291	<b>Metal grid for mounting mechatronic and pneumatic components</b>	Material: Sheet metal: sendzimir galvanized; Hole size: 5 x 5 mm; 550 x 750 mm	Piece	20	N	
292	<b>Pneumatics component set for exercises and examination for</b>	consisting of: Double-acting cylinder Piston ø 10mm, stroke 40mm; Double-acting cylinder piston ø 10mm, stroke 25mm; Valve terminal with 3x5/3 solenoid directional valves; 5/3 solenoid directional valve; 3/2	Set	10	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
	<b>mechatronics technician</b>	solenoid directional valve; Pressure switch up to 8 bar, 24VDC; Adjustable pressure control valve; Throttle check valve; Proximity switch 24VDC.				
293	<b>Component set for exercises and examination for mechatronics technician</b>	consisting of: signal light 24 V DC 3-fold, capacitive proximity switch, inductive proximity switch, evaluation unit, actuator/sensor distribution systems; 10 pieces T-distributor.	Set	10	N	
294	<b>Component set Switch Cabinet for exercises and examination for mechatronics technician</b>	consisting of: Switch cabinet 800x600x250 mm; Power supply unit 110-230V/DC24V 5A; Terminal block termination plate, connecting bridges; Emergency stop mushroom switch; Switch-disconnector 25A 3phase; Contactor 3 main contacts+2NC+2No and RC element, 24V; Motor protection switch 3x0,11-0,16A/400V + auxiliary c. 1NC+1NO; RCD 2pole/16A/10mA RCD type A; consumables.	Set	10	N	
295	<b>Electric Component set Control Unit for exercises and examination for mechatronics technician</b>	consisting of: Aluminium housing for 18 built-in elements; emergency stop switch; Installation switch 0-1 1NO; illuminated pushbutton red 1NO 24V; illuminated pushbutton white 1NO 24V; indicating lamp white 24V; Indicator light green 24V; control cable YSL-JZ 40 x 0.75 qmm, 3 m; accessories.	Set	10	N	
296	<b>Cable for installation work</b>	Conductor crosssection 1.0 mm <sup>2</sup> , dark blue, 100m	Piece	10	N	
297	<b>Trainer Package CPU 1512C-1 PN (OEM)</b>	consisting of: - S7-1500 CPU 1512C-1 PN, 250 KB / 1 MB; - modules: 32 DI, 32 DO, 5 AI, 2 AO; - SIMATIC Memory Card 24 MB; - 3 x 40-pin front connector; - Ethernet cord RJ45/RJ45, 6m; - mounting rail, 482mm; - SOFTWARE STEP 7 Professional (LAD, FBD, STL), S7-GRAPH, S7-SCL, S7-PLCSIM.	Piece	10	N	
298	<b>Mechanical Kit for exercises and final examination: Linear axis</b>	manufactured according to IHK-PAL specification;- Movement thread as trapezoidal thread TR12x3 designed;- Spindle nut and coupling parts made of brass;- Coupling is covered;- Sensor rail and motor	Piece	10	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		holder made of stainless steel;- All steel parts corrosion protected;double-acting cylinder, piston 10mm, stroke 60mm; throttle check valve; proximity switch 24V DC; contactor 3main contacts +2NC+2NO and RC element; inductive proximity switch; assembly and semi-finished products; standard parts; cable and material for wiring; electro magnet 24V DC operating voltage, 1.5 m connection cable.				
299	<b>Base cabinet for metal mounting grids</b>	prepared for mounting grids wih 550 x 750 mm;- Made of sheet steel and painted in RAL 7035;- Lockable cabinet doors;- 2 swivel castors and 2 fixed castors each, roller bearings and;solid rubber tyres;- dimensions (W x H x D) 700 x 900 x 550 mm;- Approx. weight: 50 kg;-2 Internal shelves made of galvanised sheet steel.	Piece	<b>10</b>	N	
300	<b>Vertical mounting frame with four metal mounting grids</b>	with a surface area of 550mm x 700mm each in the;square hole grid (5*5)mm; total working surface of 1440mm x 1105mm; the frame is equipped with 2 unbraked swivel castors and;2 braked swivel castors and can be locked in any position; 2 swivel castors and 2 fixed castors.	Piece	<b>10</b>	N	
301	<b>Set of dowels 5/5 (100 pcs./ set)</b>	for experimenting on mounting grids (100 pcs./set)	Set	<b>30</b>	N	
302	<b>Set of fastening material for practical experiments on a patchboard</b>	consisting of: 2 Assortment boxes (L x W x H) 190 x 145 x 42 mm with 9 fixed subdivisions;plastic dowels 5x5 mm 100 pcs.;Spax screws 3.5 x 12 mm 100 pcs.;Spax screws 3.5 x 20 mm 100 pcs.;Spax screws 3.5 x 30 mm 100 pcs.;knurled nut M3 100 pcs.;knurled nut M4 100 pcs.;metric screw M3, 20 mm 100 pcs.;metric screw M3, 30 mm 100 pcs.;metric screw M4, 20 mm 100 pcs.;metric screw M4, 30 mm 100 pcs.	Set	<b>10</b>	N	
303	<b>Cable for installation work, Conductor crossection 0.5</b>	Fine-wired copper conductor of bare copper strands in line with conductor class 5 acc. IEC 60228; Core insulation: Based on PVC; length: 250 m/each colour;	Piece	<b>1</b>	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
	<b>mm<sup>2</sup> with wire spool storage rack for min 10 spools</b>	green/yellow; black; blue; dark blue; brown; violet; orange; red; white; grey.				
304	<b>Cable for installation work, Conductor crossection 1.0 mm<sup>2</sup> with wire spool storage rack for min 10 spools</b>	Fine-wired copper conductor of bare copper strands in line with conductor class 5 acc. IEC 60228; Core insulation: Based on PVC; length: 250 m/each colour; green/yellow; black; blue; dark blue; brown; violet; orange; red; white; grey.	Piece	1	N	
305	<b>End sleeves and terminals set</b>	consisting of:- End sleeves uninsulated of electrolytic copper, tinned; Dimensions to DIN 46228, Part 1: 0.75 - 1,0 to 1,5 - 2.5 mm 1000 each; - End sleeves DIN colour range insulated Electrolytic; copper, tinned Dimensions to DIN 46228. Part 4: 0.5 mm 20,000 pcs.; 0.75 mm 1,000 pcs.; 1.0 mm 20,000 pcs.; 1.5 mm 1,000 pcs.; 2.5 mm 1000 pcs.; - Assortment of insulated terminals; Containing: 1000 insulated terminals, press range: 1.5 - 6 mm <sup>2</sup> , box; Ring type: 0.25-1.5 M3 100pcs; 0.25-1.5 M4 100pcs; 0.25-1.5 M5 100pcs; 1.5-2.5 M4 100pcs; 1.5-2.5 M5 100pcs; 1.5-2.5 M6 50pcs; 2.5-6 M4 50pcs; 2.5-6 M5 50pcs; 2.5-6 M6 50pcs; Fork type: 0.25-1.5 M3 100pcs; 0.25-1.5 M4 100pcs; 1.5-2.5 M5 50pcs; 1.5-2.5 M6 50pcs.	Set	5	N	
306	<b>Set of experimental modules</b>	for basic experiments in installation technology; 1 x Schuko socket; 1 x Lamp socket E27 with lamp 60W/230V; 1 x On/off switch 1-pole; 2 x Two-way switch; 1 x Intermediate switch; 2 x Pushbutton switch, blank; 1 x Current surge relay 230V, 1 NO; 1 x Staircase relay 8...230V, 1..30min; 1 x Lamp socket, 3-fold, E14 with lamps 230V/25W; 2 x Junction box; Design: The components are mounted on experimental modules made of transparent Makrolon. In- and outputs available on 4 mm safety sockets.	Set	1	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
307	<b>Moulded tray</b>	Storage board for 10 experimental modules;(l x w x h) 693x305x35 mm	Piece	2	N	
308	<b>Interchangeable grid patchboard</b>	to be hung in A4 experimenting frames; Dimensions approx. 766 x 640 mm (wxh); Material: Sheet metal: sendzimir galvanized; Hole size: 5 x 10 mm.	Piece	1	N	
309	<b>Student manual, incl. CD-ROM</b>	"Installation Technology"	Piece	1	N	
310	<b>Instructor's manual, incl. CD-ROM</b>	"Installation Technology"; Contents and structure same as for student manual, however with solutions and technical documentation.	Piece	1	N	
311	<b>Manual Commissioning and Troubleshooting, incl. CD-ROM</b>	"Installation Technology"	Piece	1	N	
312	<b>Commissioning and Troubleshooting manual, incl. CD-ROM</b>	"Lighting with thermal radiators"	Piece	1	N	
313	<b>Set of safety measuring leads, 4 mm</b>	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, 50 cm; 2x yellow/green, 75 cm.	Set	1	N	
314	<b>Set electro soldering</b>	consisting of: 1 Soldering station 80 W, electrical controlled; with large display for temperature and stepless temperature setting from 150 to 450 °C; 1 stand for iron; 1 de-soldering pump; 1 cleaner for soldering tips; 2 spare soldering tips.	Piece	10	N	
315	<b>Drawer cabinet</b>	Workshop depot (L x W x H) 307 x 155 x 551 mm with 60 compartments	Piece	6	N	
316	<b>Basic set of electronic components</b>	consisting of: 2500 resistors, different types, 10hm - 4.7Mohm, E24; 500 capacitors different types, ceramic, tantal, electrolytic 1nF-100µF; 200 transistors TO-92 NPN, PNP, different types; 100 LEDs, different colours, dimensions, current types; 200 diodes,	Set	2	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		different types N4001-1N4007, 1N5817-1N5819; 200 Zener diodes, different types, 2-39V, 0.5W; set of low voltage regulators, consisting of 20 pieces, 5, 12, 15 V pos. and neg.; set of OpAmps dual in-line, consisting of 20 pieces; set of OpAmps SMD, consisting of 20 pieces; set of logic circuits, TTL consisting of 24 pieces; IC Socket dual in-line 20 pin, 20 pieces; isolated wire, Yv 1 x 0.20 mm <sup>2</sup> , black, 25 m				
317	<b>Lead-free solder wire</b>	Sn99.3 Cu0.7, 250 g, (Ø) 1 mm	Piece	<b>10</b>	N	
318	<b>Prototype PCB</b>	PCB Dimension: 68.58mm x 53.34mm / 2.7" x 2.1"; PCB Thickness: 1.6mm; Material: high quality FR-4	Piece	<b>200</b>	N	
319	<b>Measuring and test instrument for DIN VDE 0100</b>	AC voltage: measuring range: 500 V ;Low resistance measurements: measuring range: 0,01....99,9 Ohm; Insulation resistance measurements: Test voltage range: 50 - 100 - 250 - 500 - 1000 V; Insulation: 10 kOhm - 300 Mohm; Detection of live circuitry: Testing is prevented in case of external voltage > 30 V before; test set-up; Loop impedance measurement: Phase to earth; Line impedance: Phase to neutral; RCD testing: Type A, AC, F, B, B+; Tripping time test (ΔT): Tripping current settings: 10, 30, 100, 300, 500 mA; Earth resistance test (RE): measuring range 0...10kOhm. Phase sequence; Tests in IT systems: insulation monitoring devices; Testing of residual current monitoring devices; Documentation of software; Visualization of the device via PC; Sortimobox; Accumulators and power pack.	Piece	<b>3</b>	N	
320	<b>Measuring adapter</b>	with three 4mm safety measuring cables for easier connection to the training systems equipped with 4m safety connectors.	Piece	<b>3</b>	N	
321	<b>BGV A3 Appliance tester in protective case</b>	Testing according to: DIN VDE 0701-0702: testing of electrical appliances/equipment; DIN VDE 0751 (EN 62353): testing of medical electrical devices, such as hospital bed; German Health and Safety at Work	Piece	<b>1</b>	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		Regulation; Features: Indication and operation via large colour LCD touchscreen; 2 GB memory card for more than 100000 tests; automatic manual and auto-configurable testing procedures; direct test sample / customer entry via touchscreen keypad; measuring result with "pass/fail" indication and acoustic warning signal, if the test has been failed; help function and schematic connecting diagrams; 3 x USB interface for external keyboard, printer and USB stick; 1 x RS 232 interface for barcode scanner/RFID reader/writer and SD card slot; Measurements: protective conductor resistance; insulating resistance; protective conductor current/contact current; functional test with indication of leakage current, mains voltage, load current, effective power, apparent power and measuring time; testing of device connecting cables and extension cables; Delivered with: test lead and 2 GB SD card.				
322	<b>Voltage and continuity tester</b>	DC voltage: 12 - 690 V; AC voltage: 12 - 690 V; Continuity: 0 - 400 kΩ; Phase rotation: 100 - 690 V.	Piece	<b>1</b>	N	
323	<b>Tool Set for Mechatronics acc. to PAL (German Examination Tasks and Teaching Materials Development Office) requirements</b>	caliper gauge min. 135 mm DIN 862; 1 flat angle 100 70 mm; 1 stop angle 100 70 mm; 1 hair angle 100 70 mm; 1 scribe; 1 centre punch; 1 fitter's hammer approx. 300 g DIN 1041; 1 rubber or plastic hammer; 1 hacksaw for metal 300 mm DIN 6473; flat butt file each 150-1 150-3 250-1 DIN 7261; triangular file each 150-1 150-3 DIN 7261; 1 round file each 150-1 150-3 DIN 7261; 1 square file each 150-1 150-3 DIN 7261; 1 half-round file each 150-1 150-3 DIN 7261; needle file H3 flat, triangular, round, square; 1 file brush; 1 triangular scraper; pin punch each 4 and 5 mm DIN 6450; 1 offset screwdriver set with 2.5, 3, 4, 5 mm ISO 2936 for hexagon socket screws; screwdriver set for slotted screws 0.5 3.0, 0.8 4.0; 1.0 5.5, A 1.2 6.5, DIN 5265; 1 screwdriverset for cross-slotted head screws size 0, 1,	Piece	<b>10</b>	N	

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		2 DIN 5262; 2 parallel screw clamps each 40 to 100 mm span; side cutter; 1 pair of combination pliers; 1 pair of telephone pliers, angled DIN 5745 B; 1 wire stripper; 1 cable tie pliers; 1 Crimp tool for wire end ferrules with and without plastic collar, trapezoid crimp; Crimping range: 0.14-6 mm <sup>2</sup> ; 1 cable knife; 1 retaining ring pliers for outer ring range of approx. 3 to 10 mm DIN 5254.				
324	<b>Tool Set for turned contacts type Weidmueller W</b>	Crimping tool for turned contacts, 0.14mm <sup>2</sup> , 4mm <sup>2</sup> - W crimp; Ratchet guarantees precise crimping; Release option in the event of incorrect operation; With stop for exact positioning of the contacts; Removal Tool.	Piece	1	N	
N/A	N/A	<i>Items 325 – 440 are not included in this Lot.</i>	N/A	N/A	N/A	N/A
441	<b>Student workplace</b>	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, 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	Piece	20	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		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 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.				
	<b>Student workplace - continued</b>	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 connector 8-pole Cat.6 double-sidedly pluggable; 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				

Technical Specifications		Lot 2: <i>Specialized Electronics for Industrial Mechatronics</i>				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		arm for profile systems, pivoting and adjustable in height, monitor rest with ball pivot VESA 75/10.				
442	Teacher workplace	<p>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, 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 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</p>	Piece	3	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		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.				
443	<b>Wheeled container</b>	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	3	N	
444	<b>Students' workbench</b>	each consisting of: 1 x Workbench; 2000 x 800 x 840 mm (w x d x h); Worktop plate; 2000 x 800 x 40 mm (w x d x h); solid beech; lengthways interlocked bonded strips; 2 x Drawer mobile cabinets with storage tray; each cabinet 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	Piece	10	Y	

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		weight of the mobile cabinet = 600 kg; 660 x 615 x 750 mm (WxDxH); 1 Power supply unit; each power supply unit consists of: Aluminium trunking System 3HU; made of extruded aluminium sections; - W = 500 mm, D = 160 mm, H = 142 mm; Three-phase current mains field 3/N/PE~50 Hz 400 V 10...16 A; with: 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; 5 laboratory safety receptacles L1-L2-L3-N-PE; Emergency OFF; Mains voltage 1ph AC 50Hz 230V 16A to 4 outlets British Standard; Pressurized air supply with 1 quick-lock coupling NW 5-1/8"; 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. 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 the vice can be rotated by 360° without an additional swivel base; complete with all fastening screws for attachment to the workbench.				
N/A	N/A	Item 445 not included in this Lot.	N/A	N/A	N/A	N/A
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		5	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		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			
<i>N/A</i>	<i>N/A</i>	<i>Items 447 - 453 not included in this Lot.</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>	<i>N/A</i>
454	<b>Student Chair for laboratory and workshop</b>	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 polyurethane foam.	Piece	<b>20</b>	Y	
455	<b>Teacher Chair for laboratory and workshop</b>	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	<b>3</b>	Y	
456	<b>Work Stool</b>	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	<b>20</b>	N	
457	<b>Cable suspension device</b>	movable, with 2 cable combs, each with 29 slots for laboratory cables; with powder coated steel base with 4 casters; w x h x d: 600 x 600 x 1290 mm.	Piece	<b>11</b>	N	
458	<b>Cabinet (Storage)</b>	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	<b>9</b>	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
459	<b>Cabinet for training systems in A4-format</b>	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 = 540, H = 19 mm; Wooden doors with safety glass inlay, 6mm clear.	Piece	9	Y	
460	<b>Power Distribution Cabinet</b>	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	Piece	3	Y	
461	<b>Wall Mount First Aid Steel Cabinet</b>	Industrial First Aid Station acc. DIN 13157	Piece	3	N	
462	<b>Long Wall Board (White Board)</b>	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	3	N	
463	<b>Set of pneumatic hoses</b>	100m pneumatic hose, 6mm, blue; 100m pneumatic hose, 8mm, blue	Set	4	N	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
464	<b>Set of pneumatic accessories</b>	consisting of: 1 spout 26SFKO06MXX; 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	
465	<b>Laboratory compressor</b>	Whisper-quiet, with filter pressure regulator; Voltage/frequency: 230V / 50(60)Hz; Motor: 0,46/0,34 HP/kW; Displacement: 50 l/min; Max. pressure: 8 bar; Tank volume: 15l;w x h x d: 360 x 360 x 580 mm	Piece	3	Y	
466	<b>Set of ring binders</b>	consisting of: -ring binder for printed media with dividers;- ring binder for digital media	Piece	20	N	
467	<b>Digital multimeter</b>	digital multimeter with mechanical protection against incorrect operation, perfectly suitable for training purposes; Features: - AC and DC voltage 0.1mV - 1000V;- AC and DC current 1µA - 10A;-Resistance measurement up to 30MΩ and continuity test;- Frequency 0.1 Hz - 100 kHz;- Capacitance 0.01 nF - 30mF;-Temperature with PT100 or PT1000 probe ; - Diode test and duty cycle;- Autorange mode;- MAX/MIN and Data HOLD;-AutoPowerOFF;Supplied including:-Couple of test leads with 4mm test pin;- Battery 9V;- Protection holster;- User manual and calibration certificate.	Piece	50	Y	
468	<b>30 MHz, 2 CH digital storage oscilloscope 250 MSa/s</b>	of the latest generation with high-resolution color display, backlight, high bandwidth and sampling rate, large internal memory and USB port. Features: High-resolution TFT color display with 800 x 600 pixels and 65536 colors; 20 cm (8") TFT color display; USB port for real time data transmission or reading of internal; VGA output port for external monitor; LAN connection for remote access via network; Saving of measured values and graphics directly onto the USB-stick; Autoset and autoscale function for easy operation; Internal memory of 10k points per channel or 15 waveforms; 20 automatic measurement modes and	Piece	12	Y	

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		FFT function; PASS/FAIL function; Safety: EN 61010-1; CAT II; Supplied with: 2 pcs. BNC cable, Pass/Fail-Adapter, USB cable, software CD, power cable, 2 probes and manual.				
469	<b>Adapter (BNC-plug to 4mm safety plug)</b>	required for connecting safety measuring lines to standard oscilloscopes	Piece	<b>33</b>	Y	
470	<b>PC Measurement Interface</b>	Experimenting Board in A4 format; Display and evaluation of the measuring results by means of a software on a connected PC; Performance parameters:- 4 analog input channels with differential inputs;- 5MHz bandwidth (5.000.000 samples/s);- sampling rate of up to 5MHz per channel; - 16 bit up to 195kHz; - 14 bit up to 3.125MHz; - 12 bit up to 5MHz;- input 1:1: - measuring range: from $\pm 200\text{mV}$ up to $\pm 80\text{V}$ (peak value); - maximum input voltage $\leq 200\text{V AC}$ ; - 2mm safety sockets;- input 10:1: - measuring range: from $\pm 2\text{V}$ up to $\pm 800\text{V}$ (peak value); - maximum input voltage $\leq 600\text{V AC}$ ; - 4mm safety socket;- All inputs protected against accidental touch, 600V, CATIII;- All inputs clearly configurable through 19mm jumper plugs;- 4 measuring device integrated in one unit: - 12 ... 16 bit 4-channel oscilloscope; - Spectrum analyser; - Transient recorder; - Voltmeter (mean value, r.m.s value); - Spectrum analyser with distortion factor calculation; - Comprehensive trigger function;- Fast transient recorder from 0.01s up to 500s sampling time;- high speed USB 2.0 (480Mbit/s);- optional operating voltage: 8 ... 30V DC; 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; - Dimensions 266 x 297 x 85 mm;- Device shape:	Piece	<b>7</b>	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		desk housing; Including: USB cable, software, operating manual; System requirements:- Processor: Pentium processor or faster;- RAM: 512 MB;- Hard disk: 100 MB;- OS: Windows7 / Windows8 / Windows10 (32 or 64 bit);- Disk drive: CD-ROM.				
471	<b>Quick Start Guide, laminated</b>	Application of the PC measurement interfaces	Piece	7	N	
472	<b>Set of jumper plugs for PC measurement interfaces</b>	5 jumper plugs, 2mm, with tap, 19mm grid, black; 5 jumper plugs, 4mm, with handle, 19mm grid, black	Piece	7	N	
473	<b>3 Phase Measuring Instrument</b>	Experimenting board in A4 format; Universal measuring device with oscilloscope function for energy measurements in symmetrical and asymmetrical AC and three-phase power systems. The following basic values are measured by TRMS: current, neutral current (calculated), voltage, frequency, active-/apparent-, fundamental-, harmonics-, non-active-power factors, bimetal current with trailing pointer, mean values of current and voltage and phase angle of voltages. The following values are determined in the field of power analysis: THD_U/I, TDD_I, voltage-/current imbalance (Fortescue), zero displacement, harmonics. Technical data:- Measuring voltage up to 600V AC;- Input current max. 5A;- Colour graphic display;- Digital display of the measured values;- Pointer diagram of currents and voltages;- Observance of the harmonics reactive power;- Bar graph of the harmonic loads;- Oscilloscope function of measuring voltages and currents;- Power supply via 4mm safety sockets;- Consumer connection via 4mm safety sockets;- Ethernet interface TCP/IP;- Integrated webserver for display in a web browser;- Overcurrent protection by integrated 5A fuses; Design: Experimenting board in A4 format with photorealistic,	Piece	8	N	

Technical Specifications		Lot 2: Specialized Electronics for Industrial Mechatronics				
Item No.	Item Name	Specifications	Unit	Quantity	Major Item (Yes / No)	Statement of Compliance (Bidder's Offered Item & Specification)
		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. Dimensions: 133 x 297 x 85 mm				
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	Piece	6	Y	
475	Phase rotation indicator for 3-phase systems	Voltage range: 40 - 700 V; Frequency range: 15 - 400 Hz; Operating time: continuous; Power supply: from unit under test	Piece	6	Y	
476	Voltage and continuity tester	DC voltage: 12 - 690 V; AC voltage: 12 - 690 V; Continuity: 0 - 400 kΩ; Phase rotation: 100 - 690 V	Piece	10	Y	
477	Digital tachometer with built-in laser pointer	Comfortable measuring in either hand; Non-contact RPM and surface speed measurements; 5-digit LCD display; Count range: 1 ... 19 999 rpm; Laser class 2, P < 1 mW; Dimensions: 160 x 58 x 39 mm	Piece	2	N	
N/A	N/A	Items 478 - 479 not included in this Lot.	N/A	N/A	N/A	N/A
480	User Training I	Training of Trainers for the following items: 1. Electronic Circuits Trainer; 16. Digital Training System; 23. Safety Measures Training System; 29. PV Training Board; 31. Off-Grid Charge Training Board; 33. Series Charge Controller Board; 35. Battery Board; 37. Low Voltage Load Board; 39. Off-Grid DC/AC Inverter Board; 41. Load Board with Bulb Sockets; 43. DC/AC Inverter Board On-Grid; 48. Single and Three Phase Transformer Training System; 53. Control Engineering Trainer; 68. Transfer system 3 x 230/400V AC; 72. Training System for Hand-Operated Industrial Switching Devices; 80. Training Board for Contactors (mains voltage); 83. Switch Board for Contactor	Days	25	Y	

<b>Technical Specifications</b>		<b>Lot 2: Specialized Electronics for Industrial Mechatronics</b>				
<b>Item No.</b>	<b>Item Name</b>	<b>Specifications</b>	<b>Unit</b>	<b>Quantity</b>	<b>Major Item (Yes / No)</b>	<b>Statement of Compliance (Bidder's Offered Item &amp; Specification)</b>
		Technology; 92. Power Electronics Training System; 106. Training System Soft Starter; 111. Training system for communication-capable single-phase drive inverter with IOP; 122. Motor fault simulator; 126. PLC training system S7-1200 / Touch Panel; 134. Hybrid interface module for the control of virtual or real processes; 270. Training System for safety measures in installation technology, with fault simulator (subsystem 1); 278. Training System Protective Measures; Sub-distribution of the customer's system. Total days of training required by electronics engineer or technician: minimum 25 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**

## **Table of Clauses**

1. Definitions.....	177
2. Contract Documents .....	178
3. Fraud and Corruption.....	178
4. Interpretation .....	178
5. Language .....	179
6. Joint Venture, Consortium or Association .....	179
7. Eligibility .....	179
8. Notices .....	179
9. Governing Law .....	179
10. Settlement of Disputes.....	179
11. Inspections and Audit by the KfW.....	180
12. Scope of Supply .....	180
13. Delivery and Documents.....	180
14. Supplier's Responsibilities.....	180
15. Contract Price.....	180
16. Terms of Payment and Reimbursement .....	181
17. Taxes and Duties .....	181
18. Performance Security .....	181
19. Copyright .....	182
20. Confidential Information .....	182
21. Subcontracting .....	183
22. Specifications, Standards and Spare Parts .....	183
23. Packing and Documents.....	184
24. Insurance .....	184

---

<b>25. Transportation .....</b>	<b>184</b>
<b>26. Inspections and Tests .....</b>	<b>185</b>
<b>27. Liquidated Damages .....</b>	<b>186</b>
<b>28. Warranty.....</b>	<b>186</b>
<b>29. Patent Indemnity.....</b>	<b>187</b>
<b>30. Limitation of Liability .....</b>	<b>188</b>
<b>31. Change in Laws and Regulations.....</b>	<b>188</b>
<b>32. Force Majeure .....</b>	<b>188</b>
<b>33. Change Orders and Contract Amendments .....</b>	<b>189</b>
<b>34. Extensions of Time.....</b>	<b>189</b>
<b>35. Termination.....</b>	<b>190</b>
<b>36. Assignment.....</b>	<b>191</b>
<b>37. Export Restriction .....</b>	<b>191</b>

## 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;

---

<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 arbitrage 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 of Vocational and Technical 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 of Vocational and Technical 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, etc. The Supplier shall mail the following documents to the Purchaser, with a copy to the Insurance Company:</p>

	<p>(i) Original and <b>three (3)</b> copies of the Supplier's invoice<sup>1</sup> 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);</p> <p>(ii) Original negotiable and <b>two (2)</b> non-negotiable copies (stamped and dated according to the original) of the clean, on-board bill of lading marked "freight prepaid" or equivalent (air waybill, road waybill, FCR, CMR), showing gross and net weights, volume of measurement, marks and identification, name and address of importer of consignee;</p> <p>(iii) Original and <b>three (3)</b> copies of the packing list 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;</p> <p>(iv) Original insurance certificate;</p> <p>(v) Original Manufacturer's or Supplier's warranty certificate;</p> <p>(vi) Original inspection certificate, issued by the nominated inspection agency, and the Supplier's factory inspection report;</p> <p>(vii) Certified certificate of origin: original and <b>two (2)</b> copies; origin to be certified by the Chamber of Commerce in the supplier's country; and</p> <p>(viii) Any other document that may be required in specific cases.</p> <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> <p>(i) Original and <b>three (3)</b> copies of the Supplier's invoice showing Goods' and Related Services' description, quantity, unit price, and total amount;</p> <p>(ii) Original delivery note, railway receipt, or truck receipt;</p> <p>(iii) Original insurance certificate;</p> <p>(iv) Original Manufacturer's or Supplier's warranty certificate;</p> <p>(v) Original inspection certificate, issued by the nominated inspection agency, and the Supplier's factory inspection report;</p> <p>(vi) Certified certificate of origin: original and <b>two (2)</b> copies; origin to be certified by the Chamber of Commerce in the supplier's country; and</p> <p>(vii) Any other document that may be required in specific cases.</p> <p>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.</p>
--	---

<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.).

<b>GC 15.1</b>	<p>The prices charged for the Goods supplied and the related Services performed <b>shall not</b> be adjustable.</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 from abroad:</b></p> <p>Payment of foreign currency portion shall be made in <b>Euro (EUR)</b> in the following manner:</p> <ul style="list-style-type: none"> <li>(i) <b>Advance Payment<sup>2</sup> (optional):</b> Ten (10) percent of the Contract Price 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;</li> <li>(ii) <b>On Delivery:</b> Eighty (80) percent of the Contract Price of the Goods delivered and Related Services provided shall be paid through the payment method stipulated above within sixty (60) days from inspection of the Goods by the Purchaser (typically done after release of the goods from customs), upon (i) submission of documents specified in GC Clause 13, (ii) presentation of the Purchaser's inspection certificate, and (iii) subject to a satisfactory Performance Guarantee; together with this payment the Advance Payment Guarantee shall be released; and</li> <li>(iii) <b>On Acceptance:</b> Ten (10) percent of the Contract Price 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 provisional acceptance 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.</li> </ul> <p><b>Payment for Goods and Services supplied from within the Purchaser's country:</b></p> <p>Payment for Goods and Services supplied from within the Purchaser's country shall be made in <b>EUR</b>, as follows:</p>

<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) <b>Advance Payment<sup>2</sup> (optional):</b> Ten (10) percent of the Contract Price 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;</p> <p>(ii) <b>On Delivery:</b> Eighty (80) percent of the Contract Price of the Goods delivered and Related Services provided shall be paid through the payment method stipulated above within sixty (60) days from provisional acceptance of the Goods by the Purchaser [typically done after delivery to and installation/commissioning/training at the final destination(s)], upon (i) submission of documents specified in GC Clause 13, (ii) presentation of the Purchaser's provisional acceptance certificate [which shall be issued by the Purchaser within fifteen(15) days from the successful distribution/installation/commission/training (whichever is the latter)], and (iii) subject to a satisfactory Performance Guarantee; together with this payment the Advance Payment Guarantee shall be released;</p> <p>(iii) <b>On Final Acceptance:</b> The remaining ten (10) percent of the Contract Price shall be paid to the Supplier within sixty (60) days from the date of the final acceptance certificate (typically issued after completion of the warranty period) for the respective delivery issued by the Purchaser; subject to a satisfactory Performance Guarantee covering the full warranty period, this payment shall be made together with (ii) above.</p>
<b>GC 16.1</b>	<p>Payment to the Supplier of the amounts due in each currency shall be made into the following bank accounts:</p> <p><i>[Insert bank account details at the time of contract signing]</i></p>
<b>GC 16.5</b>	<p><b>GC 16.5 does not apply to this Contract, and no interest payments will be made.</b></p>
<b>GC 16.6</b>	<p>Reimbursement payments shall be made to KfW to the following bank account:</p> <p>Account holder: KfW Entwicklungsbank  Account number: 38 000 000 00  Branch code (BLZ): 500 204 00  Account number (IBAN): DE53 5002 0400 3800 0000 00  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 / 2016 65 298.</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 is awaiting 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 Bond, issued by a reputable bank acceptable to the Purchaser, and in the format provided in the bidding documents.</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-01/MOE-VTT/TVET/KfW 2016 67 211/001/2021-2022</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>Up to <b>Kenya</b> (final destination/s) in an amount equal to 110% of the Contract Price (CIP/EXW value plus all required local services) 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 / 2016 65 298</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 Purchaser to transport the Goods to a specified named place of destination within the Purchaser's country, defined as the Project Site; transport to such</b></p>

	<b>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>
<b>GC 25.2</b>	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>
<b>GC 26.1</b>	The inspections and tests shall be: <b>as specified in Bid Documents Section VII. Schedule of Requirements.</b>
<b>GC 26.2</b>	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>
<b>GC 27.1</b>	The liquidated damage shall be: <b>0.5% per calendar week of the contract price.</b>
<b>GC 27.1</b>	The maximum amount of liquidated damages shall be: <b>10% of the contract price.</b>
<b>GC 28.3</b>	The period of validity of the Warranty shall be: <b>as per GC 28.3 (warranty shall remain valid for twelve (12) months after delivery of the Goods).</b> 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>
<b>GC 28.5 and GC 28.6</b>	The period for repair or replacement shall be: <b>30 days.</b>

## 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..

---

<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.**

---

<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>203</b>
<b>Contract Agreement</b> .....	<b>204</b>
<b>Performance Security</b> .....	<b>206</b>
<b>Advance Payment Security</b> .....	<b>208</b>

## 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:

---

Name and Title of Signatory:

---

Name of Institution:

---

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

---

<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]*

---

<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.]*

---

Place, date

---

Guarantor's authorized signature(s)

---

<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.]*

---

Place, date

---

Guarantor's authorized signature(s)

---

<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.