



TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY (TESDA)

BID DOCUMENTS

Procurement of Learning Equipment and Systems for FY2023 Regional TVET Innovation Centers (RTICs)

TESDA-CO-2024-11

**Sixth Edition
July 2020**

Preface

These Philippine Bidding Documents (PBDs) for the procurement of Goods through Competitive Bidding have been prepared by the Government of the Philippines for use by any branch, constitutional commission or office, agency, department, bureau, office, or instrumentality of the Government of the Philippines, National Government Agencies, including Government-Owned and/or Controlled Corporations, Government Financing Institutions, State Universities and Colleges, and Local Government Unit. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract or Framework Agreement, as the case may be; (ii) the eligibility requirements of Bidders; (iii) the expected contract or Framework Agreement duration, the estimated quantity in the case of procurement of goods, delivery schedule and/or time frame; and (iv) the obligations, duties, and/or functions of the winning bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Goods to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

- a. All the documents listed in the Table of Contents are normally required for the procurement of Goods. However, they should be adapted as necessary to the circumstances of the particular Procurement Project.
- b. Specific details, such as the "*name of the Procuring Entity*" and "*address for bid submission*," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

- d. The cover should be modified as required to identify the Bidding Documents as to the Procurement Project, Project Identification Number, and Procuring Entity, in addition to the date of issue.
- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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Glossary of Acronyms, Terms, and Abbreviations

ABC – Approved Budget for the Contract.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

CDA - Cooperative Development Authority.

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

CIF – Cost Insurance and Freight.

CIP – Carriage and Insurance Paid.

CPI – Consumer Price Index.

DDP – Refers to the quoted price of the Goods, which means “delivered duty paid.”

DTI – Department of Trade and Industry.

EXW – Ex works.

FCA – “Free Carrier” shipping point.

FOB – “Free on Board” shipping point.

Foreign-funded Procurement or Foreign-Assisted Project– Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

Framework Agreement – Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as “Call-Offs,” are made for the duration of the agreement. It is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. (GPPB Resolution No. 27-2019)

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term “related” or “analogous services” shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

GPPB – Government Procurement Policy Board.

INCOTERMS – International Commercial Terms.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports,

seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

Supplier – refers to a citizen, or any corporate body or commercial company duly organized and registered under the laws where it is established, habitually established in business and engaged in the manufacture or sale of the merchandise or performance of the general services covered by his bid. (Item 3.8 of GPPB Resolution No. 13-2019, dated 23 May 2019). Supplier as used in these Bidding Documents may likewise refer to a distributor, manufacturer, contractor, or consultant.

UN – United Nations.

Section I. Invitation to Bid



INVITATION TO BID FOR THE PROCUREMENT OF LEARNING EQUIPMENT AND SYSTEMS FOR FY2023 REGIONAL TVET INNOVATION CENTERS (RTICS)

1. The **Technical Education and Skills Development Authority (TESDA)**, through the **General Appropriations Act (GAA) FY 2023 Continuing Appropriation of Capital Outlay** intends to apply the sum of **Four Hundred Forty-Three Million One Hundred Four Thousand Three Hundred Forty Pesos and 91/100 (P443,104,340.91)** for the **Procurement of Learning Equipment and Systems for for FY2023 Reginal TVET Innovation Centers (RTICs)** being the Approved Budget for the Contract (ABC) to payments under the contract for all items in each lot. Bids received in excess of the ABC for each lot shall be automatically rejected at bid opening.

LOT NO.	TITLE	ABC (in Philippine Peso)
1	Robotics	27,918,481.80
2	Industrial Automation	9,234,123.06
3	Mechatronics	6,252,961.30
4	Industry 4.0 Simulator	31,744,200.93
5	SMART Factory Simulator	46,531,814.46
6	Automatic Production Line Simulator	15,102,882.96
7	Electrical and Electronics Technology	80,342,346.90
8	Alternative Energy Simulator	12,956,096.00
9	Welding Technology	17,917,281.56
10	CNC Machines	43,390,159.72
11	Automotive Simulator	25,413,021.60
12	3D Printing Technology	25,446,952.13
13	Photography and Videography	7,170,405.15
14	IT Equipment	73,334,291.25
15	Sound System	1,599,274.19
16	Closed-circuit Television Units	865,325.90
17	Air Conditioning Units	6,054,478.20
18	Office Furniture	11,830,243.80
TOTAL		443,104,340.91

2. The **TESDA** now invites bids for the above Procurement Project. Delivery of the Goods is required within **one hundred twenty (120)** calendar days from receipt of the winning bidder of the Notice to Proceed. Bidders should have completed, within five (5) years from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using a non-discretionary "*pass/fail*" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines, and to citizens or organizations of a country the laws or regulations of which grant similar rights or privileges to Filipino citizens, pursuant to RA No. 5183.

4. Prospective Bidders may obtain further information from TESDA and inspect the Bidding Documents at the address given below during office hours from **8:00 a.m. to 5:00 p.m. starting 18 July 2024.**
5. A complete set of Bidding Documents may be acquired by interested Bidders beginning **18 July 2024** from the given address and website(s) below and upon payment of the following applicable fees for the Bidding Documents:

Lot No.	ABC (in Philippine Peso)	Cost of Bidding Documents (in Philippine Peso)
1	27,918,481.80	25,000.00
2	9,234,123.06	10,000.00
3	6,252,961.30	10,000.00
4	31,744,200.93	25,000.00
5	46,531,814.46	25,000.00
6	15,102,882.96	25,000.00
7	80,342,346.90	50,000.00
8	12,956,096.00	25,000.00
9	17,917,281.56	25,000.00
10	43,390,159.72	25,000.00
11	25,413,021.60	25,000.00
12	25,446,952.13	5,000.00
13	7,170,405.15	10,000.00
14	73,334,291.25	50,000.00
15	1,599,274.19	5,000.00
16	865,325.90	5,000.00
17	6,054,478.20	10,000.00
18	11,830,243.80	25,000.00

The fees for the Bidding Documents shall be applied for each lot based on the above schedule of fees. The fees for the Bidding Documents shall be applied for each lot based on the above schedule of fees. However, the total amount to be paid by the prospective bidder/s should not exceed **₱50,000.00**

regardless of the number of lots being bid. The Procuring Entity shall allow the bidder to present its proof of payment for the fees in person.

6. The TESDA will hold a Pre-Bid Conference (Face to Face) on **29 July 2024 at 2:00 P.M.** at the Marcela Agoncillo Room, 2nd Floor, TESDA Women's Center, Gate 1, TESDA Complex, Building 2, East Service Road, South Luzon Expressway (SLEX), Fort Bonifacio, Taguig City which shall be open to prospective bidders.

Bidders are advised to send an email request to BAC Secretariat at bacsecretariat@tesda.gov.ph not later than 26 July 2024, together with the following details, in order to attend the Pre-Bid Conference:

- a. Name of Project
- b. Bid Reference
- c. Company Name
- d. Address
- e. Name of Representative [maximum of one (1)]
- f. Contact Nos.
- g. E-mail Address
- h. Scanned or Proof of Identity of the representative (pls. attach)

For the Pre-Bid Conference, bidders are encouraged to send their authorized technical representatives or personnel who are familiar with the bidding requirements and who will prepare the documents for the bidder to minimize errors in the preparation of bids. The bidders' representative shall carefully consider all the discussions during the Pre-bid Conference and be guided by them in the preparation of bids.

7. Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below on or before **13 August 2024 at 9:00 A.M.** Online submission is not yet available. Late bids shall not be accepted.
8. All Bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 14.
9. Bid opening shall be on **13 August 2024 at 10:00 AM** at the Gabriela Silang Room, TESDA Women's Center, Gate 1, TESDA Complex, Building 2, East Service Road, South Luzon Expressway (SLEX), Fort Bonifacio, Taguig City. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

For the Opening of Bids, bidders are required to send their authorized technical representatives or personnel who are familiar with the bidding requirements and who prepared the documents for the bidder. If there are any issues or concerns about the bidder's document(s), the bidder's representative must respond to them during the meeting.

10. The **TESDA** reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in

accordance with Sections 35.6 and 41 of the 2016 revised IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

11. For further information, please refer to:

Ms. ARCADIA CRESELDA P. BALINAS

Head, BAC Secretariat

3rd Floor, Procurement Division

TESDA Administration Building

East Service Road, South Luzon Expressway (SLEX)


Fort Bonifacio, Taguig City 1630

Telefax: (02) 8893-8296

E-mail: bacsecretariat@tesda.gov.ph

12. You may visit <https://www.tesda.gov.ph/About/TESDA/149> for downloading of Bidding Documents.

Date of Issue: 17 July 2024


VIDAL D. VILLANUEVA III
BAC Chairperson/
Deputy Director General
TESD Operations

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, **TESDA** wishes to receive Bids for the **Procurement of Learning Equipment and Systems for FY2023 Regional TVET Innovation Centers (RTICs)** with identification number **TESDA-CO-2024-11**.

The Procurement Project (referred to herein as "Project") is composed of **eighteen (18) lots**, the details of which are described in Section VII (Technical Specifications).

2. Funding Information

2.1. The GOP through the source of funding for **Procurement of Learning Equipment and Systems for FY2023 Regional TVET Innovation Centers (RTICs)** in the amount of **Four Hundred Forty-Three Million One Hundred Four Thousand Three Hundred Forty Pesos and 91/100 (P443,104,340.91)**.

2.2. The source of funding is the FY 2023 Continuing Appropriation of Capital Outlay.

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manuals and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or IB by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have verified and accepted the general requirements of this Project, including other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

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5. Eligible Bidders

- 5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.
- 5.2. Foreign ownership is not allowed to participate in this Project.
- 5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to fifty percent (50%) of the ABC of each lot.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

6. Origin of Goods

There is no restriction on the origin of goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN, subject to Domestic Preference requirements under ITB Clause 18.

7. Subcontracts

- 7.1. The Procuring Entity has prescribed that subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on **29 July 2024 at 10:00 A.M.** Marcela Agoncillo Room, TESDA Women's Center, Gate 1, TESDA Complex, Building 2, East Service Road, South Luzon Expressway (SLEX), Fort Bonifacio, Taguig City as indicated in paragraph 6 of the IB.

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the IB, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.

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- 10.2. The Bidder's SLCC as indicated in **ITB Clause 5.3** should have been completed within five (5) years prior to the deadline for the submission and receipt of bids.
- 10.3. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. Similar to the required authentication above, for Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

11. Documents comprising the Bid: Financial Component

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section VIII (Checklist of Technical and Financial Documents)**.
- 11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.
- 11.3. Any bid exceeding the ABC indicated in paragraph 1 of the IB shall not be accepted.
- 11.4. For Foreign-funded Procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Bid Prices

- 12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:
 - a. For Goods offered from within the Procuring Entity's country:
 - i. The price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable);
 - ii. The cost of all customs duties and sales and other taxes already paid or payable;
 - iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and
 - iv. The price of other (incidental) services, if any, listed in the **BDS**.

- b. For Goods offered from abroad:
 - i. Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.
 - ii. The price of other (incidental) services, if any, as listed in **Section VII (Technical Specifications)**.

13. Bid and Payment Currencies

- 13.1. For Goods that the Bidder will supply from outside the Philippines, the bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies, shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.
- 13.2. Payment of the contract price shall be made in Philippine Pesos.

14. Bid Security

- 14.1. The Bidder shall submit a Bid Securing Declaration¹ or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.
- 14.2. The Bid and bid security shall be valid for one hundred twenty (120) calendar days. Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

15. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

¹ In the case of Framework Agreement, the undertaking shall refer to entering into contract with the Procuring Entity and furnishing of the performance security or the performance securing declaration within ten (10) calendar days from receipt of Notice to Execute Framework Agreement.

As for the sealing and marking of the envelopes, the Bidder may use the following guides:

- Bidders shall enclose their original eligibility and technical documents described in ITB Clause 10 and 11 in one sealed envelope marked "ORIGINAL - TECHNICAL COMPONENT", and the original of their financial component in another sealed envelope marked "ORIGINAL - FINANCIAL COMPONENT", sealing them all in an outer envelope marked "ORIGINAL BID".
- Each copy of the first and second envelopes shall be similarly sealed duly marking the inner envelopes as "COPY NO. – TECHNICAL COMPONENT" and "COPY NO. — FINANCIAL COMPONENT" and the outer envelope as "COPY NO. ", respectively. These envelopes containing the original and the copies shall then be enclosed in one single envelope.
- The original and the number of copies of the Bid as indicated in the Bid Data Sheet (BDS) shall be typed or written in ink and shall be signed by the Bidder or its duly authorized representative/s.
- All envelopes shall:
 - contain the name of the contract to be bid in capital letters;
 - bear the name and address of the Bidder in capital letters;
 - be addressed to the Procuring Entity's BAC;
 - bear the specific identification of this bidding process indicated in the ITB Clause 1; and
 - bear a warning "DO NOT OPEN BEFORE..." the date and time for the opening of bids, in accordance with Paragraph 7 of the Invitation to Bid.
- In the final packaging of the bid, each bidder must submit one (1) copy of the first and second components of its Bid. The Procuring Entity requests two (2) additional hard copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

The duplicates - copies 1 and 2 - must include the same documents as that of the original set of documents. However, if a bidder opts to submit cash as its bid security, copies 1 and 2 need not contain photocopies of the same.

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BIDDER: _____
 BIDDER'S NAME _____
 BIDDER'S ADDRESS _____

ORIGINAL BID

 PROCUREMENT PROJECT TITLE
 BIDDING REFERENCE NUMBER

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
 East Service Road, South Luzon Expressway
 Fort Bonifacio, Taguig City, 1630

DO NOT OPEN BEFORE: _____

BIDDER: _____
 BIDDER'S NAME _____
 BIDDER'S ADDRESS _____

COPY NO. 1

 PROCUREMENT PROJECT TITLE
 BIDDING REFERENCE NUMBER

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
 East Service Road, South Luzon Expressway
 Fort Bonifacio, Taguig City, 1630

DO NOT OPEN BEFORE: _____

BIDDER: _____
 BIDDER'S NAME _____
 BIDDER'S ADDRESS _____

ORIGINAL - TECHNICAL COMPONENT

 PROCUREMENT PROJECT TITLE
 BIDDING REFERENCE NUMBER

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
 East Service Road, South Luzon Expressway
 Fort Bonifacio, Taguig City, 1630

DO NOT OPEN BEFORE: _____

BIDDER: _____
 BIDDER'S NAME _____
 BIDDER'S ADDRESS _____

COPY NO. 1 - TECHNICAL COMPONENT

 PROCUREMENT PROJECT TITLE
 BIDDING REFERENCE NUMBER

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
 East Service Road, South Luzon Expressway
 Fort Bonifacio, Taguig City, 1630

DO NOT OPEN BEFORE: _____

BIDDER: _____
 BIDDER'S NAME _____
 BIDDER'S ADDRESS _____

ORIGINAL - FINANCIAL COMPONENT

 PROCUREMENT PROJECT TITLE
 BIDDING REFERENCE NUMBER

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
 East Service Road, South Luzon Expressway
 Fort Bonifacio, Taguig City, 1630

DO NOT OPEN BEFORE: _____

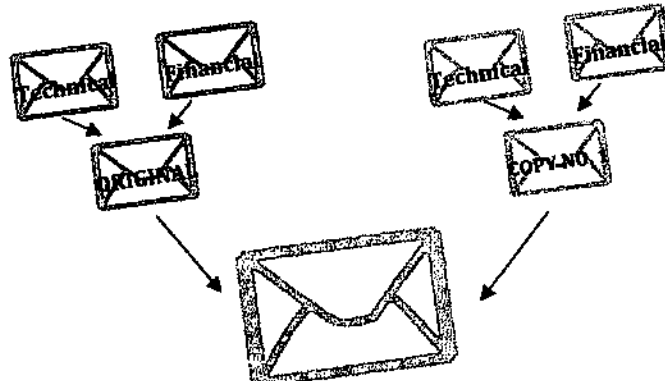
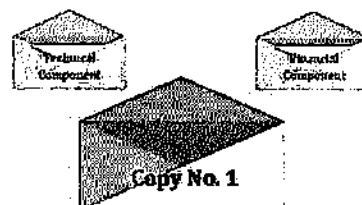
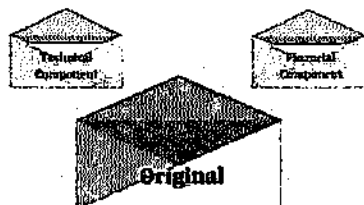
BIDDER: _____
 BIDDER'S NAME _____
 BIDDER'S ADDRESS _____

COPY NO. 1 - FINANCIAL COMPONENT

 PROCUREMENT PROJECT TITLE
 BIDDING REFERENCE NUMBER

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY
 East Service Road, South Luzon Expressway
 Fort Bonifacio, Taguig City, 1630

DO NOT OPEN BEFORE: _____



As for the documents to be placed in of the envelopes, the Bidder may use the following guides:

	TYPE OF DOCUMENT	CLARIFICATION
TECHNICAL COMPONENT ENVELOPE		
	<i>Class "A" Documents</i>	
	<i>Legal Documents</i>	
(a)	Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR;	Regardless of the number of lots in which the bidder intends to participate, it is only required to submit one (1) certified true copy of the original PhilGEPS Registration Certificate.
	<i>Technical Documents</i>	
(b)	Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid	The bidder is only required to submit one (1) statement regardless of the number of lots in which they intend to participate.
(c)	Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents	<ul style="list-style-type: none"> • As long as the bidder complies with the conditions indicated in ITB Clause 5.3 of the Bidding Documents, the bidder may submit one (1) statement for all lots in which they intend to participate. • The bidder is not allowed to submit more than one (1) SLCC in order to fill the aggregate amount equivalent to fifty percent (50%) of the ABC for a specific lot. <p>Only one contract (1) must be submitted, and the contract value must be at least equivalent to fifty percent (50%) of the ABC of the bid lot/s; and completed within five (5) years prior to the deadline for the submission and receipt of bids.</p>

	TYPE OF DOCUMENT	CLARIFICATION
(d)	Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission; <u>or</u> Original copy of Notarized Bid Securing Declaration;	The bidder must submit the bid security for each lot in which they intend to participate.
(e)	Conformity with the Technical Specifications, which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable; <i>(Sections VI and VII of the Bidding Documents)</i>	Section VI requires the bidder to utilize the form regardless of the number of lots in which they intend to participate, and to highlight the lot/s in which they intend to participate. Section VII requires bidders to submit a form for each lot in which they intend to participate.
(f)	Original duly signed Omnibus Sworn Statement (OSS); and if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.	The bidder must submit the OSS for each lot in which they intend to participate.
	<i>Financial Documents</i>	
(g)	The prospective bidder's computation of Net Financial Contracting Capacity (NFCC); <u>or</u> A committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.	In case the bidder will submit its NFCC computation, the bidder is only required to submit one (1) statement regardless of the number of lots in which they intend to participate. In case the bidder will submit a committed Line of Credit, the bidder must submit said document for each lot in which they intend to participate.

	TYPE OF DOCUMENT	CLARIFICATION
	<i>Class "B" Documents</i>	
(h)	If applicable, a duly signed joint venture agreement (JVA) in case the joint venture is already in existence; <u>or</u> duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.	The bidder is only required to submit one (1) JVA regardless of the number of lots in which they intend to participate.
FINANCIAL COMPONENT ENVELOPE		
(a)	Original of duly signed and accomplished Financial Bid Form;	The bidder must submit the Financial Bid Form for each lot in which they intend to participate.
(b)	Original of duly signed and accomplished Price Schedule(s).	The bidder must submit the Price Schedule for each lot in which they intend to participate. If a lot contains more than one (1) item, the bidder must submit individual pricing for each item.

16. Deadline for Submission of Bids

- 16.1. The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the IB.

17. Opening and Preliminary Examination of Bids

- 17.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the IB. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

- 17.2. The preliminary examination of bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

18. Domestic Preference

- 18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

- 19.1. The Procuring BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*," using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of the 2016 revised IRR of RA No. 9184.
- 19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by ITB Clause 15 shall be submitted for each lot or item separately.
- 19.3. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.
- 19.4. The Project shall be awarded as one (1) Project having several items grouped into several lots, which shall be awarded as separate contracts per lot.
- 19.5. Except for bidders submitting a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation, all Bids must include the NFCC computation pursuant to Section 23.4.1.4 of the 2016 revised IRR of RA No. 9184, which must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder. For bidders submitting the committed Line of Credit, it must be at least equal to ten percent (10%) of the ABCs for all the lots or items participated in by the prospective Bidder.

20. Post-Qualification

- 20.1. Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS) and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

- 21.1. The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause																																		
5.3	<p>For this purpose, contracts similar to the Project shall be:</p> <p>1. any contract defined based on the nature of the following lots:</p> <table><tr><th>Lot No.</th><th>Lot Name</th><th>Nature of SLCC</th></tr><tr><td>1</td><td>Robotics</td><td rowspan="6">Contract similar to supply and/or installation/integration of robotics, industrial automation and process controls, IT equipment and/or training equipment</td></tr><tr><td>2</td><td>Industrial Automation</td></tr><tr><td>3</td><td>Mechatronics</td></tr><tr><td>4</td><td>Industry 4.0 Simulator</td></tr><tr><td>5</td><td>SMART Factory Simulator</td></tr><tr><td>6</td><td>Automatic Production Line Simulator</td></tr><tr><td>7</td><td>Electrical and Electronics Technology</td><td rowspan="2">Contract similar to supply and/or installation/integration of electrical and electronics systems and/or training equipment</td></tr><tr><td>8</td><td>Alternative Energy Simulator</td></tr><tr><td>9</td><td>Welding Technology</td><td>Contract similar to the supply and/or installation of welding equipment and/or training equipment</td></tr><tr><td>10</td><td>CNC Machines</td><td>Contract similar to the supply and/or installation of CNC machines and/or training equipment</td></tr><tr><td>11</td><td>Automotive Simulator</td><td>Contract similar to selling of software and/or training equipment</td></tr><tr><td>12</td><td>3D Printing Technology</td><td>Contract similar to the supply and/or installation of 3D printers and/or IT equipment</td></tr></table>	Lot No.	Lot Name	Nature of SLCC	1	Robotics	Contract similar to supply and/or installation/integration of robotics, industrial automation and process controls, IT equipment and/or training equipment	2	Industrial Automation	3	Mechatronics	4	Industry 4.0 Simulator	5	SMART Factory Simulator	6	Automatic Production Line Simulator	7	Electrical and Electronics Technology	Contract similar to supply and/or installation/integration of electrical and electronics systems and/or training equipment	8	Alternative Energy Simulator	9	Welding Technology	Contract similar to the supply and/or installation of welding equipment and/or training equipment	10	CNC Machines	Contract similar to the supply and/or installation of CNC machines and/or training equipment	11	Automotive Simulator	Contract similar to selling of software and/or training equipment	12	3D Printing Technology	Contract similar to the supply and/or installation of 3D printers and/or IT equipment
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ITB Clause			
	13	Photography and Videography	Contract similar to supply and set-up of photography and/or videography equipment, IT equipment, sound system, and video surveillance
	14	IT Equipment	
	15	Sound System	
	16	Closed-circuit Television Units	
	17	Air Conditioning Units	Contract similar to the supply and/or installation of air conditioning system
	18	Office Furniture	Contracts similar to the supply/setup of office furniture
	<p>The foregoing contract/s must be at least equivalent to fifty percent (50%) of the ABC of the bidden lot/s; and</p> <p>2. completed within five (5) years prior to the deadline for the submission and receipt of bids.</p>		
7.1	The Procuring Entity has prescribed that subcontracting is not allowed.		
11.4	Not applicable.		
12.1 (b)	The price of the Goods shall be quoted DDP in the Philippines.		

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14.1	<p>The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts:</p> <table><tr><th>Lot No.</th><th>Title</th><th>Cash, Cashier's/ Manager's Check, Bank Draft/ Guarantee or Irrevocable Letter of Credit (2% of ABC)</th><th>Surety Bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission (5% of ABC)</th></tr><tr><td>1</td><td>Robotics</td><td>P558,369.64</td><td>P 1,395,924.09</td></tr><tr><td>2</td><td>Industrial Automation</td><td>P184,682.46</td><td>P 461,706.15</td></tr><tr><td>3</td><td>Mechatronics</td><td>P125,059.23</td><td>P 312,648.07</td></tr><tr><td>4</td><td>Industry 4.0 Simulator</td><td>P634,884.02</td><td>P 1,587,210.05</td></tr><tr><td>5</td><td>SMART Factory Simulator</td><td>P930,636.29</td><td>P 2,326,590.72</td></tr><tr><td>6</td><td>Automatic Production Line Simulator</td><td>P302,057.66</td><td>P 755,144.15</td></tr><tr><td>7</td><td>Electrical and Electronics Technology</td><td>P1,606,846.94</td><td>P 4,017,117.35</td></tr><tr><td>8</td><td>Alternative Energy Simulator</td><td>P259,121.92</td><td>P 647,804.80</td></tr><tr><td>9</td><td>Welding Technology</td><td>P358,345.63</td><td>P 895,864.08</td></tr><tr><td>10</td><td>CNC Machines</td><td>P867,803.19</td><td>P 2,169,507.99</td></tr><tr><td>11</td><td>Automotive Simulator</td><td>P508,260.43</td><td>P 1,270,651.08</td></tr><tr><td>12</td><td>3D Printing Technology</td><td>P508,939.04</td><td>P 1,272,347.61</td></tr><tr><td>13</td><td>Photography and Videography</td><td>P143,408.10</td><td>P 358,520.26</td></tr><tr><td>14</td><td>IT Equipment</td><td>P1,466,685.83</td><td>P 3,666,714.56</td></tr><tr><td>15</td><td>Sound System</td><td>P31,985.48</td><td>P 79,963.71</td></tr><tr><td>16</td><td>Closed-circuit Television Units</td><td>P17,306.52</td><td>P 43,266.30</td></tr><tr><td>17</td><td>Air Conditioning Units</td><td>P121,089.56</td><td>P 302,723.91</td></tr><tr><td>18</td><td>Office Furniture</td><td>P236,604.88</td><td>P 591,512.19</td></tr></table>	Lot No.	Title	Cash, Cashier's/ Manager's Check, Bank Draft/ Guarantee or Irrevocable Letter of Credit (2% of ABC)	Surety Bond callable upon demand issued by a surety or insurance company duly certified by the Insurance Commission (5% of ABC)	1	Robotics	P558,369.64	P 1,395,924.09	2	Industrial Automation	P184,682.46	P 461,706.15	3	Mechatronics	P125,059.23	P 312,648.07	4	Industry 4.0 Simulator	P634,884.02	P 1,587,210.05	5	SMART Factory Simulator	P930,636.29	P 2,326,590.72	6	Automatic Production Line Simulator	P302,057.66	P 755,144.15	7	Electrical and Electronics Technology	P1,606,846.94	P 4,017,117.35	8	Alternative Energy Simulator	P259,121.92	P 647,804.80	9	Welding Technology	P358,345.63	P 895,864.08	10	CNC Machines	P867,803.19	P 2,169,507.99	11	Automotive Simulator	P508,260.43	P 1,270,651.08	12	3D Printing Technology	P508,939.04	P 1,272,347.61	13	Photography and Videography	P143,408.10	P 358,520.26	14	IT Equipment	P1,466,685.83	P 3,666,714.56	15	Sound System	P31,985.48	P 79,963.71	16	Closed-circuit Television Units	P17,306.52	P 43,266.30	17	Air Conditioning Units	P121,089.56	P 302,723.91	18	Office Furniture	P236,604.88	P 591,512.19
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15	<p>Each Bidder shall submit one copy of the first and second components of its Bid.</p> <p>The Procuring Entity requests two (2) additional hard copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.</p>																																																																												

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19.3	<p>The Project will be awarded by lot, and the items in each lot are listed in Section VII (Technical Specifications) of the Bidding Documents. The details of which are as follows:</p> <table><tr><th>Lot No.</th><th>Lot</th><th>Items</th><th>ABC</th></tr><tr><td>1</td><td>Robotics</td><td>1. Collaborative Robot</td><td>P27,918,481.80</td></tr><tr><td>2</td><td>Industrial Automation</td><td>1. Mobile Robotics 4.0</td><td>P9,234,123.06</td></tr><tr><td>3</td><td>Mechatronics</td><td>1. Programmable Logic Circuit Module 48MR 2. Programmable Logic Circuit Module 80MR 3. Human Machine Interface 4. Variable Frequency Drive 5. Actuator</td><td>P6,252,961.30</td></tr><tr><td>4</td><td>Industry 4.0 Simulator</td><td>1. Industry 4.0 Learning Systems</td><td>P31,744,200.93</td></tr><tr><td>5</td><td>SMART Factory Simulator</td><td>1. SMART Factory Enterprise</td><td>P46,531,814.46</td></tr><tr><td>6</td><td>Automatic Production Line Simulator</td><td>1. Automatic Production Line Trainer</td><td>P15,102,882.96</td></tr><tr><td>7</td><td>Electrical and Electronics Technology</td><td>1. Electronics Package 2. AC/DC Electrical Training 3. Basic Electrical Machines 4. Electrical Control Training 5. Internet of Things 6. Motor Control Trainer</td><td>P80,342,346.90</td></tr><tr><td>8</td><td>Alternative Energy Simulator</td><td>1. Alternative Energy Learning System</td><td>P12,956,096.00</td></tr><tr><td>9</td><td>Welding Technology</td><td>1. Augmented Reality Welding System 2. Advanced Process Welding Machine 3. Sheet Metal Bending Machine</td><td>P17,917,281.56</td></tr><tr><td>10</td><td>CNC Machines</td><td>1. CNC Lathe Comprehensive Training Equipment 2. CNC Lathe Performance Turning Center</td><td>P43,390,159.72</td></tr><tr><td>11</td><td>Automotive Simulator</td><td>1. Automotive Diesel Engine Trainer 2. Automotive Hybrid Engine Trainer 3. Automotive Electric Engine Trainer</td><td>P25,413,021.60</td></tr><tr><td>12</td><td>3D Printing Technology</td><td>1. Metal 3D Printer 2. Fused Deposition Modeling 3D Printer 3. 3D Scanner</td><td>P25,446,952.13</td></tr><tr><td>13</td><td>Photography and Videography</td><td>1. Digital Mirrorless Camera with Video</td><td>P7,170,405.15</td></tr><tr><td>14</td><td>IT Equipment</td><td>1. Desktop Computer for Productivity Application 2. Desktop Computer for Photo and Video Editing 3. Laptop 4. Interactive SMART TV 5. A3 Inkjet Printer 6. A4 Inkjet Printer 7. Network Attached Storage 8. Wireless Router</td><td>P73,334,291.25</td></tr></table>	Lot No.	Lot	Items	ABC	1	Robotics	1. Collaborative Robot	P27,918,481.80	2	Industrial Automation	1. Mobile Robotics 4.0	P9,234,123.06	3	Mechatronics	1. Programmable Logic Circuit Module 48MR 2. Programmable Logic Circuit Module 80MR 3. Human Machine Interface 4. Variable Frequency Drive 5. Actuator	P6,252,961.30	4	Industry 4.0 Simulator	1. Industry 4.0 Learning Systems	P31,744,200.93	5	SMART Factory Simulator	1. SMART Factory Enterprise	P46,531,814.46	6	Automatic Production Line Simulator	1. Automatic Production Line Trainer	P15,102,882.96	7	Electrical and Electronics Technology	1. Electronics Package 2. AC/DC Electrical Training 3. Basic Electrical Machines 4. Electrical Control Training 5. Internet of Things 6. Motor Control Trainer	P80,342,346.90	8	Alternative Energy Simulator	1. Alternative Energy Learning System	P12,956,096.00	9	Welding Technology	1. Augmented Reality Welding System 2. Advanced Process Welding Machine 3. Sheet Metal Bending Machine	P17,917,281.56	10	CNC Machines	1. CNC Lathe Comprehensive Training Equipment 2. CNC Lathe Performance Turning Center	P43,390,159.72	11	Automotive Simulator	1. Automotive Diesel Engine Trainer 2. Automotive Hybrid Engine Trainer 3. Automotive Electric Engine Trainer	P25,413,021.60	12	3D Printing Technology	1. Metal 3D Printer 2. Fused Deposition Modeling 3D Printer 3. 3D Scanner	P25,446,952.13	13	Photography and Videography	1. Digital Mirrorless Camera with Video	P7,170,405.15	14	IT Equipment	1. Desktop Computer for Productivity Application 2. Desktop Computer for Photo and Video Editing 3. Laptop 4. Interactive SMART TV 5. A3 Inkjet Printer 6. A4 Inkjet Printer 7. Network Attached Storage 8. Wireless Router	P73,334,291.25
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ITB Clause			
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15	Sound System	1. Outdoor speaker with mixer amplifier 2. 2.1 Speaker with subwoofer 3. Audio Mixer 4. Wireless Microphone 5. Headphone	P1,599,274.19
16	Closed-circuit Television Units	1. Dome Turret Type 4MP Camera with Audio 2. Bullet Type Camera 2MP	P865,325.90
17	Air Conditioning Units	1. Air Conditioning Unit, 2.5 HP Split Type-Floor Mounted 2. Air Conditioning Unit, 1.5 HP Inverter-Floor Mounted 3. Air Conditioning Unit, 1.5 HP Split Type-Wall Mounted	P6,054,478.20
18	Office Furniture	1. Trainer table, long 2. Foldable Training Table 3. Computer Table 4. Conference Table, 14-seater 5. Executive Chair 6. Gas Lift Chair 7. Chair 8. Gang Chair 9. Reception Desk 10. Locker Cabinet 11. 4-Layer Lateral Filing Cabinet 12. Full Height Glass Sliding Door Cabinet 13. 5 layer open shelf cabinet	P11,830,243.80

20.1	<ul style="list-style-type: none"> • Proof of ongoing/outstanding contract/s as identified in the Statement of Ongoing Contracts Awarded but Not Yet Started Contracts, which shall include a copy of any verifiable document(s) such as but not limited to the following: (a) Notice of Award; (b) Contract/s or Purchase Order/s; and (c) Notice to Proceed. • Proof of completion of the single largest contract as identified in the Statement of Single Largest Completed Contract, which shall include a copy of any verifiable document(s) such as but not limited to the following: (a) Contract/s or Purchase Order/s; (b) corresponding Sales Invoice/s; (c) Official Receipt/Cash Receipt/Collection Receipt; and (d) Certificate of Performance Evaluation (template of which is hereto attached as Annex "A"). • Submission of pieces of evidence such as the following: <ul style="list-style-type: none"> ✓ Brochure/Catalog of the goods offered, indicating the make and model and specification of the item offered. ✓ A technical data sheet can be provided in case the brochure does not contain the full details of the goods offered. ✓ Training proposal indicating the duration, scope of training and the responsibility of the bidder in the training implementation. ✓ Specific test parameters and/or requirements of each item offered as indicated in Section VII. Technical Specifications.
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ITB Clause	
	<ul style="list-style-type: none"> * • Latest Annual Income Tax Returns (BIR Form 1701 or 1702) as filed through the Electronic Filing and Payment System (eFPS). * • Either of the following: <ul style="list-style-type: none"> a. Value Added Tax Returns (Forms 2550M and 2550Q) covering the previous six (6) months prior to the submission and opening of bids as filed thru eFPS; or b. Percentage Tax Returns (Form 2551M) covering the previous six (6) months prior to the submission and opening of bids as filed thru eFPS * Pursuant to BIR Revenue Regulations No. 03-2005 dated 16 February 2005. • A valid and updated PhilGEPS Certificate of Registration (Platinum Membership), as well as an updated list of eligibility documents as specified in Annex "A" of said Certificate of Registration. If the said Certificate of Registration is no longer valid during the post-qualification, the bidder must submit an updated one. • For verification purposes, the documents listed in Annex "A" of the PhilGEPS Certificate of Registration (Platinum Membership) must be submitted. • Documents submitted during post-qualification as part of post-qualification documents must be certified by the authorized representative to be true copy/ies of the original. • The veracity of the subscribed Omnibus Sworn Statement submitted in accordance with Sec. 25.3 of the 2016 IRR of RA 9184 may be subject to verification. If found to be non-compliant, this shall serve as ground for post-disqualification as specified in GPPB Circular No. 01-2008 dated 7 March 2008.
21.2	No additional requirement.

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(Bidder's Client's Company Letterhead)**CERTIFICATE OF PERFORMANCE EVALUATION**

This is to certify that (NAME OF BIDDER) has provided our company/ agency with **Name of Product/s**. Based on our evaluation on timely delivery, compliance to specifications and performance, warranty and after sales service, we give (NAME OF BIDDER) a rating of:

- | | |
|--------------------------|--------------------------|
| <input type="checkbox"/> | EXCELLENT |
| <input type="checkbox"/> | VERY SATISFACTORY |
| <input type="checkbox"/> | SATISFACTORY |
| <input type="checkbox"/> | POOR |

This Certification shall form part of the Technical Documentary Requirements in line with (NAME OF BIDDER) *participation* for the **Procurement of Learning Equipment and Systems for FY2023 Regional TVET Innovation Centers (RTICs)**.

Issued this _____ day of _____ in _____, Philippines.

Name of Company (Bidder's Client)

Signature over Printed Name of
Authorized Representative

Address

E-mail Address

Tel./Fax No.

Section IV. General Conditions of Contract

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract (SCC)**.

2. Advance Payment and Terms of Payment

- 2.1. Advance payment of the contract amount is provided under Annex "D" of the revised 2016 IRR of RA No. 9184.
- 2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the **SCC**.

3. Performance Security

Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than prior to the signing of the Contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR of RA No. 9184.

4. Inspection and Tests

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the **SCC, Section IV (Technical Specifications)** shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

5. Warranty

- 5.1. In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.
- 5.2. The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

6. Liability of the Supplier

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Supplier is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
1	<p>Delivery and Documents –</p> <p>For purposes of the Contract, "EXW," "FOB," "FCA," "CIF," "CIP," "DDP" and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of INCOTERMS published by the International Chamber of Commerce, Paris. The Delivery terms of this Contract shall be as follows:</p> <p><i>[For Goods supplied from abroad]</i> "The delivery terms applicable to the Contract are DDP delivered in the Philippines.</p> <p><i>[For Goods supplied from within the Philippines]</i> "The delivery terms applicable to this Contract are delivered as specified in Section VI. Schedule of Requirements, specifically in the designated Regional TVET Innovation Centers (RTICs). Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination."</p> <p>Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI (Schedule of Requirements).</p> <p>For purposes of this Clause, the Procuring Entity's Representative of the RTICs are the Technical Inspection and Acceptance Committee (TIAC) of the concerned TESDA Technology Institutions (TTIs).</p> <p>A Technical Inspection and Acceptance Committee (TIAC) must be created in each TTI to inspect and verify the delivery of goods for quantity and conformance to agency's technical specifications.</p> <p>The TTI Administrators will use the Inspection and Acceptance Report (IAR), which must be properly signed by the TIAC, as a reference when issuing a Certificate of Acceptance.</p> <p>Incidental Services –</p> <p>The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements:</p> <ol style="list-style-type: none"> 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;

GCC Clause	
	<ul style="list-style-type: none"> 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; e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods, as applicable; and f. delivery of goods to the TTIs delivery address at no additional cost to the Procuring Entity. <p>The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.</p> <p>Spare Parts – Not available.</p>
	<p>Packaging –</p> <p>The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.</p> <p>The packaging, 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 below, and in any subsequent instructions ordered by the Procuring Entity.</p> <p>All items per lot/qualification must be packaged with a label. A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging.</p>

GCC Clause	
	<p>Transportation –</p> <p>Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.</p> <p>Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price.</p> <p>Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure.</p> <p>The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Supplier's risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination.</p> <p>Intellectual Property Rights –</p> <p>The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof.</p>
2.2	Advance payment is not allowed. Payment in favor of the supplier shall only be made upon full delivery and final acceptance of the equipment.
3	Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than prior to the signing of the Contract by both parties, the successful Bidder shall

GCC Clause	
	furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR of RA No. 9184.
4	<p>The test parameters to be used during the inspection of the goods being offered by the bidder will generally be:</p> <ul style="list-style-type: none"> • Goods. The supplied goods will be evaluated in terms of: <ul style="list-style-type: none"> ○ Correctness of actual quantity vis-à-vis quantity indicated in this TOR ○ Compliance of actual goods to the submitted proposal in the post qualification evaluation (this includes accessories indicated in some items) ○ Signs of physical defects, such dents, broken parts, etc. ○ Quality of work for items requiring installation and set-up ○ Functionality and features • Training. The training will be evaluated in terms of: <ul style="list-style-type: none"> ○ Completeness of scope, duration, and arrangement vis-à-vis training proposal submitted in the post qualification evaluation. <p>Specific requirements will be found in Annexes "D1" to "D18" of the Bidding Documents.</p>
5.1	<p>One (1) year on-site warranty for all items except those that are classified as accessories. This also includes replacement of goods found to be defective within 7-days from date of acceptance.</p> <p>Free technical support for items classified as e-learning for the duration of subscription, and at least 1 year for perpetual license applications.</p>
5.2	The effectiveness of the warranty period is from the date of acceptance.

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Section VI. Schedule of Requirements

The delivery schedule expressed in calendar days stipulates hereafter a delivery date which is the date of delivery to the designated delivery address of the Regional TVET Innovation Centers (RTICs) as well as the distribution list attached as Annex B and Annex C.

Lot No.	Description	Delivered Weeks/Months
1	Robotics	Within one hundred twenty (120) calendar days upon receipt of Notice to Proceed
2	Industrial Automation	
3	Mechatronics	
4	Industry 4.0 Simulator	
5	SMART Factory Simulator	
6	Automatic Production Line Simulator	
7	Electrical and Electronics Technology	
8	Alternative Energy Simulator	
9	Welding Technology	
10	CNC Machines	
11	Automotive Simulator	
12	3D Printing Technology	
13	Photography and Videography	
14	IT Equipment	
15	Sound System	
16	Closed-circuit Television Units	
17	Air Conditioning Units	
18	Office Furniture	

A. Scope of work

This project shall cover the following:

- delivery, installation, and commissioning of goods; and
- training of trainers

B. Installation Requirements and Arrangements

- The end-user shall ensure that the installation site for the equipment is ready prior to the delivery of goods. This may include:
 - provision of equipment layout; and/or

- access to source line (power and/or water). Tapping/connection point should not be more than 10 ft away from the location of the equipment to be installed.
- The supplier shall cover for the cost of the following:
 - Electrical system – which may include the following: enclosure/s, protective device(s), conduit and wires (10 ft)
 - Frame/Mounting platform/fixtures
 - Piping system (10 ft), as applicable
 - Provision of special/proprietary tools and/or instruments needed for the installation and/or configuration of the equipment. This tool/ instrument shall be turned over to the end user as part of the equipment package.

C. Training Requirements and Arrangements

The procurement of goods under this project includes two levels of training:

- Level 1: Utilization and maintenance (1~2 days)
The winning bidder per lot will provide training on the familiarization, utilization, and maintenance of each equipment.
- Level 2: Technology-specific training (10 days per lot or 2 weeks)
The winning bidder on the following lots will provide face-to-face or hybrid training, see details below:

Note: Hybrid training should have at least five days face-to-face session

- Lot 1: Robotics
The training should cover design, installation set-up, configuration, programming, and operation. The training should also cover a walk-through of the course and learning materials that come with the package. See the technical specifications of this lot for details.
- Lot 2: Industrial Automation
The training should cover design, installation set-up, configuration, programming, and operation. The training should also cover a walk-through of the course and learning materials that come with the package. See the technical specifications of this lot for details.
- Lot 3: Mechatronics
The training should cover design, installation set-up, configuration and integration of HMI and VFD systems to mechatronics systems. Training should also cover User Interface designing and development.



- Lot 4: Industry 4.0 Simulator
The training should cover design, installation set-up, configuration, programming and operation. The training should also cover a walk through on the course and learning materials that come with the package. See technical specification of this lot for details.
- Lot 5: Smart Factory Simulator
The training should cover design, installation set-up, configuration, programming, and operation. The training should also cover a walk-through of the course and learning materials that come with the package. See the technical specifications of this lot for details.
- Lot 6: Automatic Production Line Simulator
The training should cover design, installation set-up, configuration, programming, and operation. The training should also cover a walk-through of the course and learning materials that come with the package. See the technical specifications of this lot for details.
- Lot 7: Electrical and Electronics Technology
The training should cover design, installation set-up, configuration and troubleshooting of different electrical and electronics systems. The training should also cover a walk through on the course and learning materials that come with the package. See the technical specifications of this lot for details.
- Lot 8: Alternative Energy Simulator
The training should cover design, installation set-up, configuration and troubleshooting of alternative energy systems. The training should also cover a walk through on the course and learning materials that comes with the package. See the technical specifications of this lot for details.
- Lot 9: Welding Technology
The training should cover welding processes aligned with the American Welding Society Standards (AWS).
- Lot 10: CNC Machines
The training should cover installation set-up, configuration, operation, and basic troubleshooting of CNC machines. The training should include at least five machining exercises and should also cover a walk-through of the course and learning materials that come with the package.
- Lot 11: Automotive Simulator
The training should cover the use of the training equipment and a walk though of the course and learning materials that come with the package.



- Lot 12: 3D Printing Technology
The training should cover basic, intermediate, and advanced designing and printing of 3D models using various types of filaments.
- Lot 13: Photography and Videography
The training should cover indoor and outdoor photography and videography.

The training will be held at the institution where the equipment will be delivered.

The receiving institutions will cover the costs of the training venue, snacks, and meals during training while the supplier will cover all other costs such as, but not limited to:

- Honoraria of the trainer.
- Accommodation of the trainer;
- Supplies and materials required for the training;
- Reproduction of the learning materials (maximum of 10 copies).

I hereby commit to comply and deliver all the above requirements in accordance with the above stated schedule.

Name of Company/Bidder	Signature over Printed Name of Authorized Representative	Date
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DELIVERY ADDRESS PER RTIC

Region	Delivery Address
IV-A	Regional Training Center – Batangas (RTC – Batangas), P. Herrera Street, Batangas City
IV-B	Puerto Princesa School of Arts and Trades (PPSAT), Felix Rafols Road, Sta. Monica, Puerto Princesa, Palawan
V	San Francisco Institute of Science and Technology (SFIST), San Francisco, Malilipot, Albay
XII	TESDA SOCCSKSARGEN Manpower Development Center (TSOX), Brgy. Spring, Alabel, Sarangani
CARAGA	Agusan del Sur School of Arts & Trades (ASSAT), Patin-ay Prosperidad, Agusan Del Sur

I hereby commit to comply and deliver all the above requirements in accordance with the above stated schedule.

**Name of
Company/Bidder**

**Signature over Printed Name of
Authorized Representative**

Date



DISTRIBUTION OF ITEMS BY RTIC

(Refer to Annexes D1 to D18 for the technical specifications of each item.
Use the Item Code for referencing.)

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
IV-A	RTC-Batangas	01-001	Robotics	Collaborative Robot	1	set
IV-A	RTC-Batangas	02-001	Industrial Automation	Mobile Robotics 4.0	1	set
IV-A	RTC-Batangas	03-001	Mechatronics	Programmable Logic Circuit Module 48MR	5	unit
IV-A	RTC-Batangas	03-002	Mechatronics	Programmable Logic Circuit Module 80MR	5	unit
IV-A	RTC-Batangas	03-003	Mechatronics	Human Machine Interface	5	unit
IV-A	RTC-Batangas	03-004	Mechatronics	Variable Frequency Drive	5	unit
IV-A	RTC-Batangas	03-005	Mechatronics	Actuator	30	set
IV-A	RTC-Batangas	05-001	SMART Factory Simulator	SMART Factory Enterprise	1	set
IV-A	RTC-Batangas	06-001	Automatic Production Line Simulator	Automatic Production Line Trainer	1	set
IV-A	RTC-Batangas	12-002	3D Printing Technology	Fused Deposition Modeling 3D Printer	1	set
IV-A	RTC-Batangas	12-003	3D Printing Technology	3D Scanner	1	set
IV-A	RTC-Batangas	13-001	Photography and Videography	Digital Mirrorless Camera with Video	1	set
IV-A	RTC-Batangas	14-001	IT Equipment	Desktop Computer for Productivity Application	25	set
IV-A	RTC-Batangas	14-002	IT Equipment	Desktop Computer for Photo and Video Editing	1	set
IV-A	RTC-Batangas	14-003	IT Equipment	Laptop	30	set
IV-A	RTC-Batangas	14-004	IT Equipment	Interactive SMART TV	3	set
IV-A	RTC-Batangas	14-005	IT Equipment	A3 Inkjet Printer	3	set
IV-A	RTC-Batangas	14-006	IT Equipment	A4 Inkjet Printer	3	set
IV-A	RTC-Batangas	14-007	IT Equipment	Network Attached Storage	1	set
IV-A	RTC-Batangas	14-008	IT Equipment	Wireless Router	10	set
IV-A	RTC-Batangas	15-001	Sound System	Outdoor speaker with mixer amplifier	1	set
IV-A	RTC-Batangas	15-002	Sound System	2.1 Speaker with subwoofer	1	set
IV-A	RTC-Batangas	15-003	Sound System	Audio Mixer	1	set

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
IV-A	RTC-Batangas	15-004	Sound System	Wireless Microphone	2	set
IV-A	RTC-Batangas	15-005	Sound System	Headphone	3	set
IV-A	RTC-Batangas	16-001	Closed-circuit Television Units	Dome Turret Type 4MP Camera with Audio	7	set
IV-A	RTC-Batangas	16-002	Closed-circuit Television Units	Bullet Type Camera 2MP	4	set
IV-A	RTC-Batangas	17-001	Air Conditioning Units	Air Conditioning Unit, 2.5 HP Split Type-Floor Mounted	5	set
IV-A	RTC-Batangas	17-002	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Inverter- Floor Mounted	2	set
IV-A	RTC-Batangas	17-003	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Split Type-Wall Mounted	6	set
IV-A	RTC-Batangas	18-001	Office Furniture	Trainer table, long	5	pc
IV-A	RTC-Batangas	18-002	Office Furniture	Foldable Training Table	50	pc
IV-A	RTC-Batangas	18-003	Office Furniture	Computer Table	5	pc
IV-A	RTC-Batangas	18-004	Office Furniture	Conference Table, 14-seater	1	pc
IV-A	RTC-Batangas	18-005	Office Furniture	Executive Chair	15	pc
IV-A	RTC-Batangas	18-006	Office Furniture	Gas Lift Chair	50	pc
IV-A	RTC-Batangas	18-007	Office Furniture	Chair	100	pc
IV-A	RTC-Batangas	18-008	Office Furniture	Gang Chair	1	pc
IV-A	RTC-Batangas	18-009	Office Furniture	Reception Desk	1	pc
IV-A	RTC-Batangas	18-010	Office Furniture	Locker Cabinet	3	pc
IV-A	RTC-Batangas	18-011	Office Furniture	4-Layer Lateral Filing Cabinet	3	pc
IV-A	RTC-Batangas	18-012	Office Furniture	Full Height Glass Sliding Door Cabinet	3	pc
IV-A	RTC-Batangas	18-013	Office Furniture	5 layer open shelf cabinet	3	pc
IV-B	Puerto Princesa School of Arts and Trades	12-002	3D Printing Technology	Fused Deposition Modeling 3D Printer	1	set
IV-B	Puerto Princesa School of Arts and Trades	12-003	3D Printing Technology	3D Scanner	1	set
IV-B	Puerto Princesa School of Arts and Trades	13-001	Photography and Videography	Digital Mirrorless Camera with Video	1	set
IV-B	Puerto Princesa School of Arts and Trades	14-001	IT Equipment	Desktop Computer for Productivity Application	25	set
IV-B	Puerto Princesa School of Arts and Trades	14-002	IT Equipment	Desktop Computer for Photo and Video Editing	1	set
IV-B	Puerto Princesa School of Arts and Trades	14-003	IT Equipment	Laptop	30	set

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
IV-B	Puerto Princesa School of Arts and Trades	14-004	IT Equipment	Interactive SMART TV	3	set
IV-B	Puerto Princesa School of Arts and Trades	14-005	IT Equipment	A3 Inkjet Printer	3	set
IV-B	Puerto Princesa School of Arts and Trades	14-006	IT Equipment	A4 Inkjet Printer	3	set
IV-B	Puerto Princesa School of Arts and Trades	14-007	IT Equipment	Network Attached Storage	1	set
IV-B	Puerto Princesa School of Arts and Trades	14-008	IT Equipment	Wireless Router	10	set
IV-B	Puerto Princesa School of Arts and Trades	15-001	Sound System	Outdoor speaker with mixer amplifier	1	set
IV-B	Puerto Princesa School of Arts and Trades	15-002	Sound System	2.1 Speaker with subwoofer	1	set
IV-B	Puerto Princesa School of Arts and Trades	15-003	Sound System	Audio Mixer	1	set
IV-B	Puerto Princesa School of Arts and Trades	15-004	Sound System	Wireless Microphone	2	set
IV-B	Puerto Princesa School of Arts and Trades	15-005	Sound System	Headphone	3	set
IV-B	Puerto Princesa School of Arts and Trades	16-001	Closed-circuit Television Units	Dome Turret Type 4MP Camera with Audio	7	set
IV-B	Puerto Princesa School of Arts and Trades	16-002	Closed-circuit Television Units	Bullet Type Camera 2MP	4	set
IV-B	Puerto Princesa School of Arts and Trades	17-001	Air Conditioning Units	Air Conditioning Unit, 2.5 HP Split Type-Floor Mounted	5	set
IV-B	Puerto Princesa School of Arts and Trades	17-002	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Inverter- Floor Mounted	2	set
IV-B	Puerto Princesa School of Arts and Trades	17-003	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Split Type-Wall Mounted	6	set
IV-B	Puerto Princesa School of Arts and Trades	18-001	Office Furniture	Trainer table, long	5	pc
IV-B	Puerto Princesa School of Arts and Trades	18-002	Office Furniture	Foldable Training Table	50	pc
IV-B	Puerto Princesa School of Arts and Trades	18-003	Office Furniture	Computer Table	5	pc
IV-B	Puerto Princesa School of Arts and Trades	18-004	Office Furniture	Conference Table, 14-seater	1	pc

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
IV-B	Puerto Princesa School of Arts and Trades	18-005	Office Furniture	Executive Chair	15	pc
IV-B	Puerto Princesa School of Arts and Trades	18-006	Office Furniture	Gas Lift Chair	50	pc
IV-B	Puerto Princesa School of Arts and Trades	18-007	Office Furniture	Chair	100	pc
IV-B	Puerto Princesa School of Arts and Trades	18-008	Office Furniture	Gang Chair	1	pc
IV-B	Puerto Princesa School of Arts and Trades	18-009	Office Furniture	Reception Desk	1	pc
IV-B	Puerto Princesa School of Arts and Trades	18-010	Office Furniture	Locker Cabinet	3	pc
IV-B	Puerto Princesa School of Arts and Trades	18-011	Office Furniture	4-Layer Lateral Filing Cabinet	3	pc
IV-B	Puerto Princesa School of Arts and Trades	18-012	Office Furniture	Full Height Glass Sliding Door Cabinet	3	pc
IV-B	Puerto Princesa School of Arts and Trades	18-013	Office Furniture	5 layer open shelf cabinet	3	pc
V	San Francisco Institute of Science and Technology	07-001	Electrical and Electronics Technology	Electronics Package	1	set
V	San Francisco Institute of Science and Technology	07-002	Electrical and Electronics Technology	AC/DC Electrical Training	1	set
V	San Francisco Institute of Science and Technology	07-003	Electrical and Electronics Technology	Basic Electrical Machines	1	set
V	San Francisco Institute of Science and Technology	07-004	Electrical and Electronics Technology	Electrical Control Training	1	set
V	San Francisco Institute of Science and Technology	07-005	Electrical and Electronics Technology	Internet of Things	1	set
V	San Francisco Institute of Science and Technology	08-001	Alternative Energy Simulator	Alternative Energy Learning System	1	set
V	San Francisco Institute of Science and Technology	07-006	Electrical and Electronics Technology	Motor Control Trainer	1	set
V	San Francisco Institute of Science and Technology	12-002	3D Printing Technology	Fused Deposition Modeling 3D Printer	1	set
V	San Francisco Institute of Science and Technology	12-003	3D Printing Technology	3D Scanner	1	set
V	San Francisco Institute of Science and Technology	13-001	Photography and Videography	Digital Mirrorless Camera with Video	1	set

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
V	San Francisco Institute of Science and Technology	14-001	IT Equipment	Desktop Computer for Productivity Application	25	set
V	San Francisco Institute of Science and Technology	14-002	IT Equipment	Desktop Computer for Photo and Video Editing	1	set
V	San Francisco Institute of Science and Technology	14-003	IT Equipment	Laptop	30	set
V	San Francisco Institute of Science and Technology	14-004	IT Equipment	Interactive SMART TV	3	set
V	San Francisco Institute of Science and Technology	14-005	IT Equipment	A3 Inkjet Printer	3	set
V	San Francisco Institute of Science and Technology	14-006	IT Equipment	A4 Inkjet Printer	3	set
V	San Francisco Institute of Science and Technology	14-007	IT Equipment	Network Attached Storage	1	set
V	San Francisco Institute of Science and Technology	14-008	IT Equipment	Wireless Router	10	set
V	San Francisco Institute of Science and Technology	15-001	Sound System	Outdoor speaker with mixer amplifier	1	set
V	San Francisco Institute of Science and Technology	15-002	Sound System	2.1 Speaker with subwoofer	1	set
V	San Francisco Institute of Science and Technology	15-003	Sound System	Audio Mixer	1	set
V	San Francisco Institute of Science and Technology	15-004	Sound System	Wireless Microphone	2	set
V	San Francisco Institute of Science and Technology	15-005	Sound System	Headphone	3	set
V	San Francisco Institute of Science and Technology	16-001	Closed-circuit Television Units	Dome Turret Type 4MP Camera with Audio	7	set
V	San Francisco Institute of Science and Technology	16-002	Closed-circuit Television Units	Bullet Type Camera 2MP	4	set
V	San Francisco Institute of Science and Technology	17-001	Air Conditioning Units	Air Conditioning Unit, 2.5 HP Split Type- Floor Mounted	5	set
V	San Francisco Institute of Science and Technology	17-002	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Inverter- Floor Mounted	2	set
V	San Francisco Institute of Science and Technology	17-003	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Split Type- Wall Mounted	6	set
V	San Francisco Institute of Science and Technology	18-001	Office Furniture	Trainer table, long	5	pc

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
V	San Francisco Institute of Science and Technology	18-002	Office Furniture	Foldable Training Table	50	pc
V	San Francisco Institute of Science and Technology	18-003	Office Furniture	Computer Table	5	pc
V	San Francisco Institute of Science and Technology	18-004	Office Furniture	Conference Table, 14-seater	1	pc
V	San Francisco Institute of Science and Technology	18-005	Office Furniture	Executive Chair	15	pc
V	San Francisco Institute of Science and Technology	18-006	Office Furniture	Gas Lift Chair	50	pc
V	San Francisco Institute of Science and Technology	18-007	Office Furniture	Chair	100	pc
V	San Francisco Institute of Science and Technology	18-008	Office Furniture	Gang Chair	1	pc
V	San Francisco Institute of Science and Technology	18-009	Office Furniture	Reception Desk	1	pc
V	San Francisco Institute of Science and Technology	18-010	Office Furniture	Locker Cabinet	3	pc
V	San Francisco Institute of Science and Technology	18-011	Office Furniture	4-Layer Lateral Filing Cabinet	3	pc
V	San Francisco Institute of Science and Technology	18-012	Office Furniture	Full Height Glass Sliding Door Cabinet	3	pc
V	San Francisco Institute of Science and Technology	18-013	Office Furniture	5 layer open shelf cabinet	3	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	01-001	Robotics	Collaborative Robot	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	03-001	Mechatronics	Programmable Logic Circuit Module 48MR	5	unit
XII	TESDA SOCCSKSARGEN Manpower Development Center	03-002	Mechatronics	Programmable Logic Circuit Module 80MR	5	unit
XII	TESDA SOCCSKSARGEN Manpower Development Center	03-003	Mechatronics	Human Machine Interface	5	unit



9-1

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
XII	TESDA SOCCSKSARGEN Manpower Development Center	03-004	Mechatronics	Variable Frequency Drive	5	unit
XII	TESDA SOCCSKSARGEN Manpower Development Center	03-005	Mechatronics	Actuator	30	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	04-001	Industry 4.0 Simulator	Industry 4.0 Learning Systems	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	10-001	CNC Machines	CNC Lathe Comprehensive Training Equipment	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	10-002	CNC Machines	CNC Lathe Performance Turning Center	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	12-001	3D Printing Technology	Metal 3D Printer	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	12-002	3D Printing Technology	Fused Deposition Modeling 3D Printer	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	12-003	3D Printing Technology	3D Scanner	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	13-001	Photography and Videography	Digital Mirrorless Camera with Video	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	14-001	IT Equipment	Desktop Computer for Productivity Application	25	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	14-002	IT Equipment	Desktop Computer for Photo and Video Editing	1	set
XII	TESDA SOCCSKSARGEN	14-003	IT Equipment	Laptop	30	set



Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
	Manpower Development Center					
XII	TESDA SOCCSKSARGEN Manpower Development Center	14-004	IT Equipment	Interactive SMART TV	3	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	14-005	IT Equipment	A3 Inkjet Printer	3	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	14-006	IT Equipment	A4 Inkjet Printer	3	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	14-007	IT Equipment	Network Attached Storage	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	14-008	IT Equipment	Wireless Router	10	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	15-001	Sound System	Outdoor speaker with mixer amplifier	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	15-002	Sound System	2.1 Speaker with subwoofer	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	15-003	Sound System	Audio Mixer	1	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	15-004	Sound System	Wireless Microphone	2	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	15-005	Sound System	Headphone	3	set
XII	TESDA SOCCSKSARGEN Manpower	16-001	Closed-circuit Television Units	Dome Turret Type 4MP Camera with Audio	7	set



Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
	Development Center					
XII	TESDA SOCCSKSARGEN Manpower Development Center	16-002	Closed-circuit Television Units	Bullet Type Camera 2MP	4	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	17-001	Air Conditioning Units	Air Conditioning Unit, 2.5 HP Split Type-Floor Mounted	5	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	17-002	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Inverter- Floor Mounted	2	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	17-003	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Split Type-Wall Mounted	6	set
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-001	Office Furniture	Trainer table, long	5	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-002	Office Furniture	Foldable Training Table	50	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-003	Office Furniture	Computer Table	5	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-004	Office Furniture	Conference Table, 14-seater	1	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-005	Office Furniture	Executive Chair	15	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-006	Office Furniture	Gas Lift Chair	50	pc
XII	TESDA SOCCSKSARGEN Manpower	18-007	Office Furniture	Chair	100	pc



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Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
	Development Center					
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-008	Office Furniture	Gang Chair	1	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-009	Office Furniture	Reception Desk	1	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-010	Office Furniture	Locker Cabinet	3	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-011	Office Furniture	4-Layer Lateral Filing Cabinet	3	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-012	Office Furniture	Full Height Glass Sliding Door Cabinet	3	pc
XII	TESDA SOCCSKSARGEN Manpower Development Center	18-013	Office Furniture	5 layer open shelf cabinet	3	pc
CARAGA	Agusan del Sur School of Arts and Trades	06-001	Automatic Production Line Simulator	Automatic Production Line Trainer	1	set
CARAGA	Agusan del Sur School of Arts and Trades	07-006	Electrical and Electronics Technology	Motor Control Trainer	1	set
CARAGA	Agusan del Sur School of Arts and Trades	09-001	Welding Technology	Augmented Reality Welding System	1	set
CARAGA	Agusan del Sur School of Arts and Trades	09-002	Welding Technology	Advanced Process Welding Machine	1	set
CARAGA	Agusan del Sur School of Arts and Trades	09-003	Welding Technology	Sheet Metal Bending Machine	1	unit
CARAGA	Agusan del Sur School of Arts and Trades	10-002	CNC Machines	CNC Lathe Performance Turning Center	1	set
CARAGA	Agusan del Sur School of Arts and Trades	11-001	Automotive Simulator	Automotive Diesel Engine Trainer	1	set
CARAGA	Agusan del Sur School of Arts and Trades	11-002	Automotive Simulator	Automotive Hybrid Engine Trainer	1	set

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
CARAGA	Agusan del Sur School of Arts and Trades	11-003	Automotive Simulator	Automotive Electric Engine Trainer	1	set
CARAGA	Agusan del Sur School of Arts and Trades	12-002	3D Printing Technology	Fused Deposition Modeling 3D Printer	1	set
CARAGA	Agusan del Sur School of Arts and Trades	12-003	3D Printing Technology	3D Scanner	1	set
CARAGA	Agusan del Sur School of Arts and Trades	13-001	Photography and Videography	Digital Mirrorless Camera with Video	1	set
CARAGA	Agusan del Sur School of Arts and Trades	14-001	IT Equipment	Desktop Computer for Productivity Application	25	set
CARAGA	Agusan del Sur School of Arts and Trades	14-002	IT Equipment	Desktop Computer for Photo and Video Editing	1	set
CARAGA	Agusan del Sur School of Arts and Trades	14-003	IT Equipment	Laptop	30	set
CARAGA	Agusan del Sur School of Arts and Trades	14-004	IT Equipment	Interactive SMART TV	3	set
CARAGA	Agusan del Sur School of Arts and Trades	14-005	IT Equipment	A3 Inkjet Printer	3	set
CARAGA	Agusan del Sur School of Arts and Trades	14-006	IT Equipment	A4 Inkjet Printer	3	set
CARAGA	Agusan del Sur School of Arts and Trades	14-007	IT Equipment	Network Attached Storage	1	set
CARAGA	Agusan del Sur School of Arts and Trades	14-008	IT Equipment	Wireless Router	10	set
CARAGA	Agusan del Sur School of Arts and Trades	15-001	Sound System	Outdoor speaker with mixer amplifier	1	set
CARAGA	Agusan del Sur School of Arts and Trades	15-002	Sound System	2.1 Speaker with subwoofer	1	set
CARAGA	Agusan del Sur School of Arts and Trades	15-003	Sound System	Audio Mixer	1	set
CARAGA	Agusan del Sur School of Arts and Trades	15-004	Sound System	Wireless Microphone	2	set
CARAGA	Agusan del Sur School of Arts and Trades	15-005	Sound System	Headphone	2	set
CARAGA	Agusan del Sur School of Arts and Trades	16-001	Closed-circuit Television Units	Dome Turret Type 4MP Camera with Audio	7	set
CARAGA	Agusan del Sur School of Arts and Trades	16-002	Closed-circuit Television Units	Bullet Type Camera 2MP	4	set

Region	TTI Name	Item Code	Lot	Item Name	Qty	Unit
CARAGA	Agusan del Sur School of Arts and Trades	17-001	Air Conditioning Units	Air Conditioning Unit, 2.5 HP Split Type-Floor Mounted	5	set
CARAGA	Agusan del Sur School of Arts and Trades	17-002	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Inverter- Floor Mounted	2	set
CARAGA	Agusan del Sur School of Arts and Trades	17-003	Air Conditioning Units	Air Conditioning Unit, 1.5 HP Split Type-Wall Mounted	6	set
CARAGA	Agusan del Sur School of Arts and Trades	18-001	Office Furniture	Trainer table, long	5	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-002	Office Furniture	Foldable Training Table	50	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-003	Office Furniture	Computer Table	5	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-004	Office Furniture	Conference Table, 14-seater	1	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-005	Office Furniture	Executive Chair	15	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-006	Office Furniture	Gas Lift Chair	50	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-007	Office Furniture	Chair	100	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-008	Office Furniture	Gang Chair	1	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-009	Office Furniture	Reception Desk	1	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-010	Office Furniture	Locker Cabinet	3	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-011	Office Furniture	4-Layer Lateral Filing Cabinet	3	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-012	Office Furniture	Full Height Glass Sliding Door Cabinet	3	pc
CARAGA	Agusan del Sur School of Arts and Trades	18-013	Office Furniture	5 layer open shelf cabinet	3	pc

I hereby commit to comply and deliver all the above requirements in accordance with the above stated schedule.

Name of Company/Bidder

Signature over Printed Name of Authorized Representative

Date



SUMMARY OF DISTRIBUTION OF ITEMS BY RTIC BY LOT

No.	Region	TTI Name	Total (No. of Items per RTIC)	Number of Items per RTIC								
				Lot 1: Robotics	Lot 2: Industrial Automation	Lot 3: Mechatronics	Lot 4: Industry 4.0 Simulator	Lot 5: SMART Factory Simulator	Lot 6: Automatic Production Line Simulator	Lot 7: Electrical and Electronics Technology	Lot 8: Alternative Energy Simulator	Lot 9: Welding Technology
1	IV-A	RTC-Batangas	9	1	1	5		1	1			
2	IV-B	Puerto Princesa School of Arts and Trades	0									
3	V	San Francisco Institute of Science and Technology	7							6	1	
4	XII	TESDA SOCCSKSARGEN Manpower Development Center	7	1		5	1					
5	CARAGA	Agusan del Sur School of Arts and Trades	5						1	1		3
Number of items by lot				21	1	10	1	1	2	7	1	3



ANNEX C1

SUMMARY OF DISTRIBUTION OF ITEMS BY RTIC BY LOT

No.	Region	TTI Name	Total (No. of Items per RTIC)	Number of Items per RTIC								
				Lot 10: CNC Machines	Lot 11: Automotive Simulator	Lot 12: 3D Printing Technology	Lot 13: Photography and Videography	Lot 14: IT Equipment	Lot 15: Sound System	Lot 16: Closed- circuit Television Units	Lot 17: Air Conditioning Units	Lot 18: Office Furniture
1	IV-A	RTC-Batangas	34			2	1	8	5	2	3	13
2	IV-B	Puerto Princesa School of Arts and Trades	34			2	1	8	5	2	3	13
3	V	San Francisco Institute of Science and Technology	34			2	1	8	5	2	3	13
4	XII	TESDA SOCCSKSARGEN Manpower Development Center	37	2		3	1	8	5	2	3	13
5	CARAGA	Agusan del Sur School of Arts and Trades	38	1	3	2	1	8	5	2	3	13
Number of items by lot				3	3	11	5	40	25	10	15	65

Section VII. Technical Specifications

Technical Specifications

Lot 1 : Robotics

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Collaborative Robot	Kindly refer to the technical specifications attached as Annex D1.	2	set			

* Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D1.

Instruction Manual is an instructional book or booklet that is supplied with almost all technologically advanced products such as electrical products.

Datasheet/Specification Sheet/Brochure is a document that summarizes the performance and other characteristics of a product, machine, component that comes along with the product from its release from the manufacturer.

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

Name of Company/Bidder

Signature over Printed Name of
Authorized Representative

Date



ANNEX D1

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
1	Robotics	01-001	Collaborative Robot	Refer to Technical Specification of Item Code 01-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	Yes

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.



Name of Company/Bidder

Signature over Printed Name of Authorized Representative

Date

TECHNICAL SPECIFICATION

Name of The Learning System	Collaborative Robot
Item Code	01-001
Technology Area(s)	Robotics

Description: Collaborative Robots are designed to handle complex tasks with precision and efficiency. It features highly sensitive torque sensors capable of detecting obstructions in the workspace allowing people to work safely alongside the robot. The robot boasts 6-axis articulation, light weight structure, up to 1,700 mm (66.9 in.) reach, and is capable of being mounted in a variety of locations including walls, roofs, and floors.

Features:

- **Master+ Safety:** With 6 high-tech torque sensors, it can detect subtle force changes to provide superior safety
- **Master+ Force Control:** The high-tech torque sensor provides the highest level of force control and compliance control for safe and precise work
- **Master+ Setup:** The Smart Setup function allows quick installation and immediate operation, as it automatically measures inclination angles, tool position and weight
- **Master+ Work Management:** With Workcell Manager, the operator can easily manage complex, difficult workspace.

Applications:

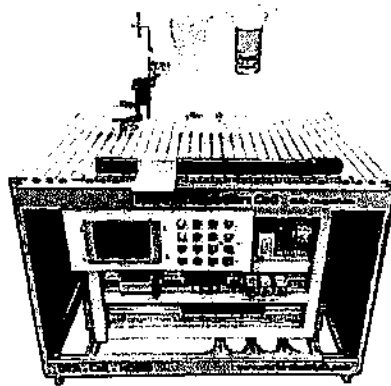
- **Assembly:** Traditional assembly tasks like screw driving and gear assembling
- **Machine Tending:** Feed the CNC machine and load/unload the subject into the pallet
- **Welding:** Welding parts like skilled welder by various paths with certain quality
- **Polishing & Deburring:** Burr removal and surface polishing after processing
- **Gluing & Bonding:** Spraying of consistent amount of adhesive for gluing and bonding
- **Plastic Injection Support:** Detaching item from mold of injection molding machine and loading onto/unloading from pallet
- **Press Forming:** Picking up panel for loading onto/unloading from press machine
- **Service:** Safely and repeatedly performs pre-defined tasks in accordance with user needs in service industries like medical and Food & Beverage

Specification:

- Overall size should not be greater than 2m (width) x 3m (height) to ensure that ingress of the machine will not be an issue
- Material: Aluminum (top plate/inside/side)
- Power: 100-240 VAC, 47-63 Hz



Sample Image:

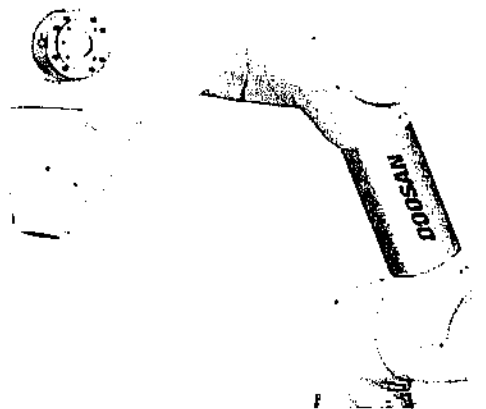


Picture for reference only

Inclusion:

- **Collaborative Robot**
 - Payload: 6 kg (13.3 lb)
 - Reach: 900 mm (45.4 inch)
 - Repeatability: ± 0.03 mm
 - Power Consumption: 370W

Sample Image:

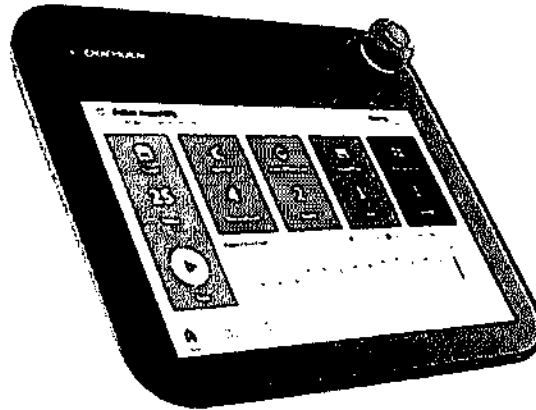


Picture for reference only

- **Teach Pendant**

A teaching device offering tablet PC-like ease of use, and with the inclusion of the DART Platform, it is capable of simple programming as well as configuring various applications.

Sample Image:

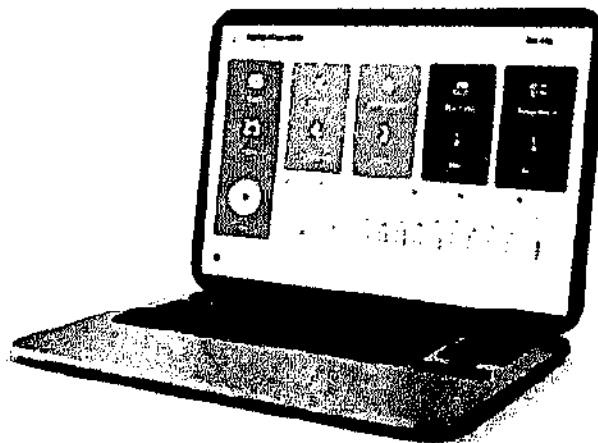


Picture for reference only

- **DART – Platform**

Software that enables intuitive robot teaching along with a wide range of programming actions on a PC

Sample Image:



Picture for reference only

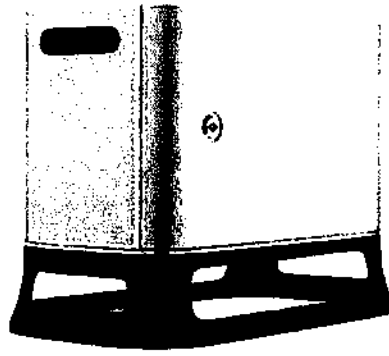
- **Controller**

The solid control platform guarantees stable performance in any field based on real-time control and high-speed communication technology

- Material: Plastic
- Protection Rating: IP30



Sample Image:



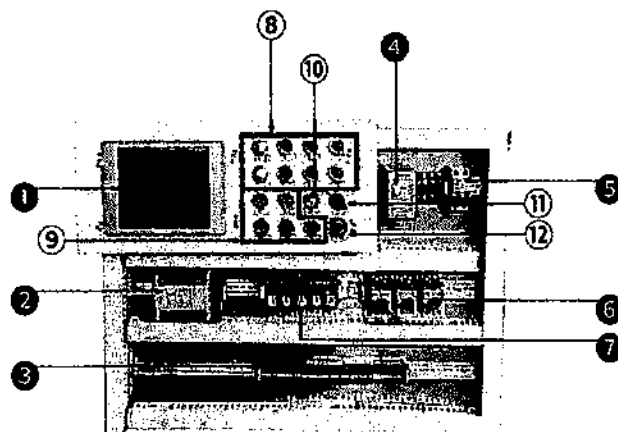
Picture for reference only

- **Electric Sequence Control Panel**

A module that can proceed with each operation and can be linked with a robot.

- Size: 0.9M (W) X 0.9M (D)
- Material: Aluminum (top plate) / Acrylic (part)
- Power: 100 – 240 VAC 47-62 Hz

Sample Image:



① HMI	② PLC	③ Prefabricated terminal stand	④ Power
⑤ Circuit breaker	⑥ Timer relay socket	⑦ Relay socket	
⑧ Lamp	⑨ Switch	⑩ Buzzer	⑪ Selector switch
			⑫ Emergency switch

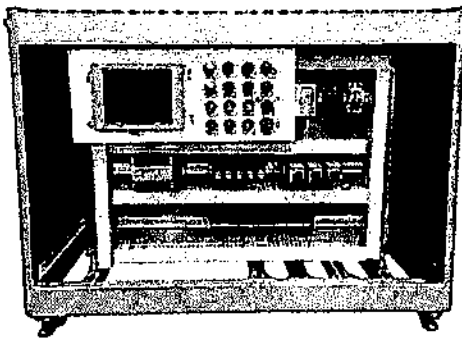
Picture for reference only



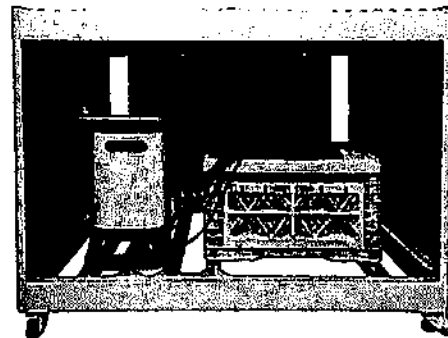
- **Education Cell**

- Overall size: Should not be greater than 2m (width) x 3m (height) to ensure that ingress of the machine will not be an issue
- Material: Aluminum (top plate) / steel (side)
- Power: 100 – 240 VAC, 47-62 Hz

Sample Image:



Front

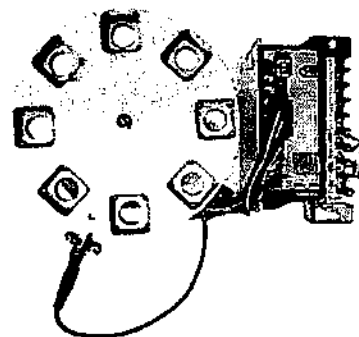
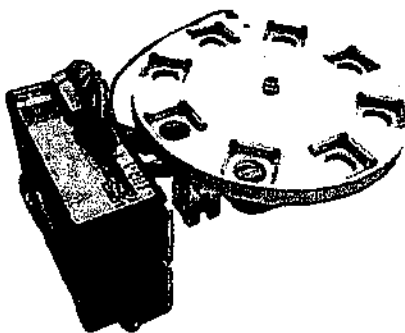


Back

Picture for reference only

- **Index Table Part**

Sample Image:

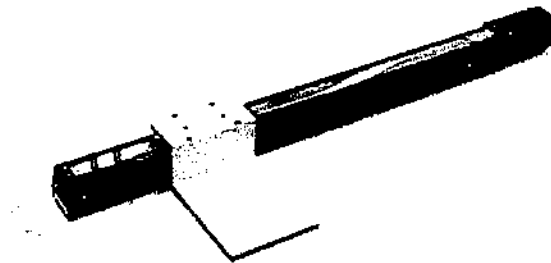


Picture for reference only



- **Gentry Robot Parts**

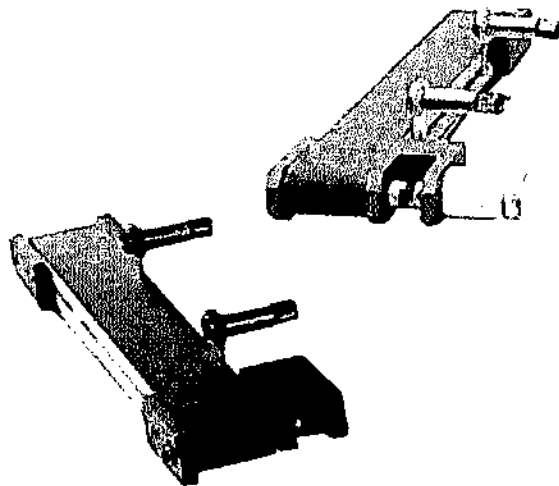
Sample Image:



Picture for reference only

- **Conveyor Belt**
 - DC Motor
 - Sensor (Optical Sensor)
 - Conveyor Belt

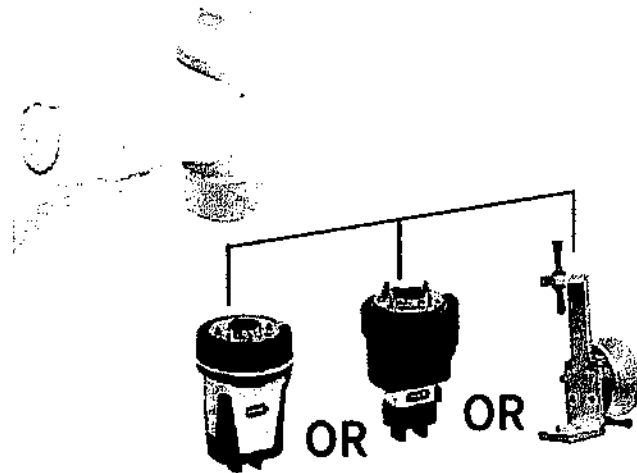
Sample Image:



Picture for reference only

- Gripper

Sample Image:



Picture for reference only

Additional requirements:

- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate of End of Life (EOL) Service from Manufacturer (5 years)

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

Name of Company/Bidder

**Signature over Printed Name of
Authorized Representative**

Date

Technical Specifications

Lot 2 : Industrial Automation

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance *	Make Brand / Model	Reference
1	Mobile Robotics 4.0	Kindly refer to the technical specifications attached as Annex D2.	1	set			

* Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D2.

Instruction Manual is an instructional book or booklet that is supplied with almost all technologically advanced products such as electrical products.

Datasheet/Specification Sheet/Brochure is a document that summarizes the performance and other characteristics of a product, machine, component that comes along with the product from its release from the manufacturer.

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

Name of Company/Bidder

Signature over Printed Name of
Authorized Representative

Date

ANNEX D2

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
2	Industrial Automation	02-001	Mobile Robotics 4.0	Refer to Technical Specification of Item Code 02-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	Yes

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.



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TECHNICAL SPECIFICATION

Name of The Learning System	Mobile Robotics 4.0
Item Code	02-001
Technology Area(s)	Industrial Automation

Required Topics/Lessons:

The training system shall include, but not limited to the following topics/lessons:

- Electrical and electronics circuit connection
- Mechanical assembly of robots
- Advance application in mobile robotics
- Familiarization and application of mechatronics and automation devices
- Application of the internet of things (IOT)
- Industry 4.0
- Programming

Courseware:

- Robotic SIM Professional
- CIROS Studio, single license

Hardware / Specification:

- **Parameters / Data**
 - Height: 325 mm
 - Diameter: 450 mm
 - Total weight (unladen weight): 20 kg
 - Total weight (including 4 rechargeable battery packs): 22.8 kg (approx. 700 g per rechargeable battery pack)
 - Degree of protection: IP 00
 - Battery voltage: 18 V
 - Housing material: Stainless steel, PA6
 - Degrees of freedom: 3 translational in x- and y-direction rotational about the z-axis
- **Control and Interface**
 - Controller: Embedded PC to COM Express specifications, Intel i5, 8th generation, 2.5 GHz frequency, up to 4.2 GHz in turbo mode, 4 physical cores with hyperthreading
 - Integrated UHD Graphics 630
 - Main memory: 8 GB RAM
 - Hard disk: 64 GB SSD
 - Operating system: Linux Ubuntu 18.04 LTS (64 bit)
 - Motor control: microcontroller with 32-bit microprocessor and separate Ethernet interface
 - Drive wheels: 3 x omnidirectional wheels with 120 mm diameter

- Drive wheels: 3 x DC motors, maximum 3,600 rpm, with encoders and gear unit, gear ratio: 32:1
- **Interface**
 - 2 x USB 2.0 (1 x occupied by Access point)
 - 1 x RJ-45 (occupied by Access point)
 - 2 x 12 V WAGO-734-162 (max. 2 A total)
 - 4 x USB 3.0 (1 x occupied by camera)
 - 2 x PCI express slots (Gen3 4 x, extensions)
 - 1x HDMI 2 x Digital I/O connector 1 x analog input connector
 - 1 x relay connector
 - 1 x Wago 721-462 2-pole motor 4, power plug
 - 1 x MPE RM 2.54 2x3-pole motor 4, encoder
 - WLAN to specification, 5 GHz and 2.4 GHz as client or access point in bridge mode
- **Digital inputs/outputs**
 - Inputs: 8
 - Outputs: 8
 - Max. 24VDC
 - Max. 2.A per output
 - Max. 2 A total
 - Analog inputs: 8
 - Analog output: 2
 - WLAN standards: 5 GHz (IEEE 802.11 ac/n/a)
 - 2.4 GHz (IEEE 802.11 b/g/n)
 - Transmission power: CE: max. 23 dBm (5 GHz) max. 20 dBm (2.4 GHz)
 - Power supply: 5 V max. 2 A

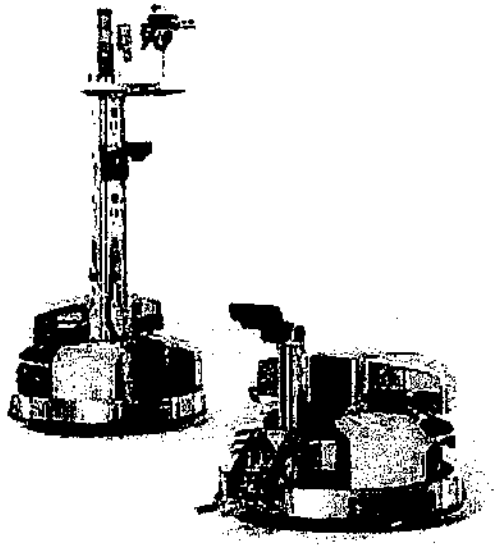
Other Equipment & Accessories:

- Tower
- Segment
- Laser range finder
- Legacy electric gripper
- Forklift
- Electric gripper
- Height adjustment
- Interface box
- Leg signal lamp
- Sensor package

Additional requirements:

- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate of End of Life (EOL) Service from Manufacturer (5 years)

Sample Image:



Picture for reference only

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Date

Technical Specifications

Lot 3

: Mechatronics

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Programmable Logic Circuit Module 48MR	Kindly refer to the technical specifications attached as Annex D3.	10	unit			
2	Programmable Logic Circuit Module 80MR		10	unit			
3	Human Machine Interface		10	unit			
4	Variable Frequency Drive		10	unit			
5	Actuator		60	set			

* Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D3.

Instruction Manual is an instructional book or booklet that is supplied with almost all technologically advanced products such as electrical products.

Datasheet/Specification Sheet/Brochure is a document that summarizes the performance and other characteristics of a product, machine, component that comes along with the product from its release from the manufacturer.


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ANNEX D3

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
3	Mechatronics 	03-001	Programmable Logic Circuit Module 48MR	Number Inputs: 24 Output type: Relay Supply Voltage: 100 -> 240 VAC Input Type: Sink/Source Number of Outputs: 24 Depth: 86mm Length: 182mm Width: 90mm Program Capacity: 64000 Steps Minimum Operating Temperature: 0 degree Celcius Programming Interface: Computer, HMI Programming Language Used: Ladder Logic Output Current: 8A Mounting Type: DIN Rail Maximum Operating Temperature: +50 degrees Celcius Includes TIA portal or GX Works 3 programming software	Equipment	Evaluation of Brochure with picture and/or data sheet and training proposal	- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes

3	Mechatronics	03-002	Programmable Logic Circuit Module 80MR	Number Inputs: 40 Output type: Relay Supply Voltage: 100 -> 240 VAC Input Type: Sink/Source Number of Outputs: 40 Depth: 86mm Length: 285mm Width: 90mm Program Capacity: 64000 Steps Minimum Operating Temperature: 0 degree Celcius Programming Interface: Computer, HMI Programming Language Used: Ladder Logic Output Current: 8A Mounting Type: DIN Rail Maximum Operating Temperature: +50 degrees Celcius Includes TIA portal or GX Works 3 programming software	Equipment	Evaluation of Brochure with picture and/or data sheet and training proposal	- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes
3	Mechatronics	03-003	Human Machine Interface	<ul style="list-style-type: none"> • 7 inch display / TFT Display • 800X480 pixels resolution • Color display • 3 number of ports • Port Type: Ethernet, MPI, Profibus DP, USB • Processor Type: ARM • With backlight • Supply voltage: 24VDC • Dimension: 214x158x63mm • IP Rating: IP20, IP65 • Configurable from WINCC COMFORT V11 	Equipment		- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes

3	Mechatronics	03-004	Variable Frequency Drive	<ul style="list-style-type: none"> • Power rating 2.2KW • Single phase • Current rating 11 AMP • Supply voltage 220-240 VAC • Output frequency 0-550HZ • fieldbus communication type : modbus • With control panel • Mounting type: wall mounting • With accessories: Smart access module 	Equipment	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	Yes
3	Mechatronics	03-005	Actuator	<p>Pneumatic double acting cylinder Piston Diameter: 20mm Stroke length: Maximum 100 mm Cushioning: P flexible cushioning ring/pads on both sides Position sensing: For proximity sensor ISO 6432</p> <p>Accessories:</p> <ul style="list-style-type: none"> • Reed switch <p>Switching output: N/O contact (PNP / NPN) with switching status indication Operating voltage: 5 – 30 V DC Output current: max. 100 mA With mounting system for cylinder diameter: 20 mm</p> <ul style="list-style-type: none"> • 5/2 Way Double Solenoid Valve <p>Pneumatic double solenoid valve Operating pressure: 150 – 800 kPa (1.5 – 8 bar) Electrical connection: via integrated 4mm safety sockets Power supply: 24VDC with LED</p>	Equipment	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	Yes

			<ul style="list-style-type: none"> • 5/2 Way Single Solenoid Valve Pneumatic single solenoid valve Operating pressure: 250 – 800 kPa (2.5 – 8 bar) Electrical connection: via integrated 4mm safety sockets Power supply: 24VDC with LED • Filter Regulator Lubricator Pneumatic Connection: G1/8, G1/4 Pressure: 0.5 - 7 bar Flow rate: 400 - 650 l/min with pressure gauge Grade of filtration: max 40 µm, min 5 µm Condensate drain: MANUAL / AUTOMATIC" 				
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Technical Specifications

Lot 4

: Industry 4.0 Simulator

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Industry 4.0 Learning Systems	Kindly refer to the technical specifications attached as Annex D4.	1	set			

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Datasheet/Specification Sheet/Brochure is a document that summarizes the performance and other characteristics of a product, machine, component that comes along with the product from its release from the manufacturer.

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Signature over Printed Name of Authorized Representative

Date




ANNEX D4

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
4	Industry 4.0 Simulator	04-001	Industry 4.0 Learning Systems	Refer to Technical Specification of Item Code 04-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none">- Checking the conformity with the quantity including parts and accessories- Checking the conformity of hardware vis-a-vis offered specifications- Functionality testing	Yes

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

_____
Name of Company/Bidder_____
Signature over Printed Name of Authorized Representative_____
Date

TECHNICAL SPECIFICATION

Name of the Learning System	Industry 4.0 Learning Systems
Item Code	04-001
Technology Area(s)	Industry 4.0 Simulator

General Description

Represents a networked production system consisting of four pallet transfer systems with different application modules.

Prerequisites for creating the following process sequence after linking and starting a batch size 1 routing:

- The magazine module provides a housing shell
- The quality data collection is performed using the measuring module's analog distance sensors
- The drilling module performs an order-based simulated drilling operation on the front shell
- The output module performs the process end: workpiece output

Application Modules:

- Magazine Application Module (RFID, process Start)
- Analog Measuring Application Module (QS, Statistical Process Control, Analytics)
- Drilling Application Module (CPS, Production Parameters, Variants)
- Output Application Module (Parameter processing, Flexible handling, Logistics)

Supplements:

- Data Analytics and Virtual Reality

Technical Data:

- Operating Pressure: 600 kPA (6 bar)
- Dimensions: approx 1800x1800x1800 mm

Training Content:

- CP Lab Design and Layout
- Sensors/Actuators
- Process Modules
- Conveyor Belt
- Network
- Process and Operations Management Level
- Recording information using intelligent sensors
- Control using PLC
- Communication based on bus technologies



- Binary pallet identification
- RFID identification
- Flexible production, one-off orders
- Quality management and SPC
- Plug & Produce: quick integration of new application modules using cyber-physical systems

Manufacturing Execution System (MES) training content:

- Define and edit order workflows and process plans
- Read orders and update status
- Sort order lines
- Write goods carrier allocations to the order
- Create a material, including workpiece graphics
- Add machines, including power consumption
- Add warehouse data and material buffers
- Add and manage customer data
- Define system layouts with icons
- Generate OEE, SPC and malfunction reports, including graphics

Included Software:

- 1 PC with TFT monitor
- Programming and management software with 6 network licenses, educational license

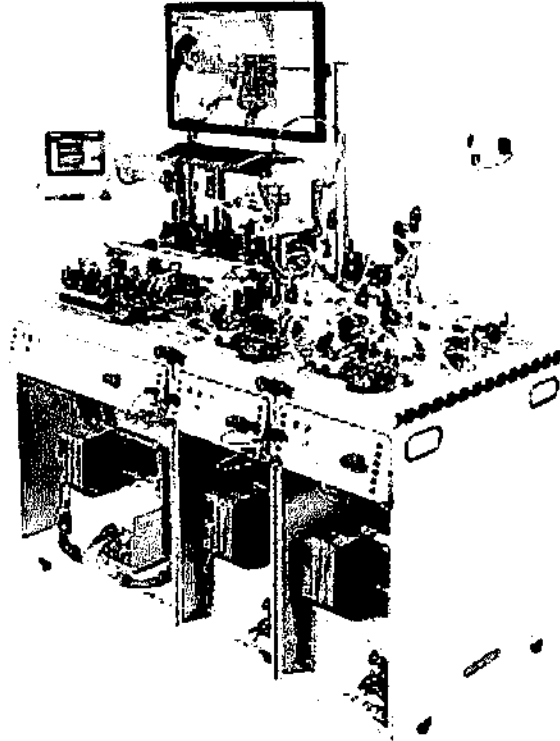
Inclusions:

- Installation and Commissioning
- Technical Instruction
- 2-year warranty

Additional requirements

- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate of End of Life (EOL) Service from Manufacturer (5 years)

Sample Image:



Picture for reference only

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Date

Technical Specifications

Lot 5

: SMART Factory Simulator

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	SMART Factory Enterprise	Kindly refer to the technical specifications attached as Annex D5.	1	set			

* Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.

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Instruction Manual is an instructional book or booklet that is supplied with almost all technologically advanced products such as electrical products.

Datasheet/Specification Sheet/Brochure is a document that summarizes the performance and other characteristics of a product, machine, component that comes along with the product from its release from the manufacturer.

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ANNEX D5

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
5	SMART Factory Simulator	05-001	SMART Factory Enterprise	Refer to Technical Specification of Item Code 05-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none">- Checking the conformity with the quantity including parts and accessories- Checking the conformity of hardware vis-a-vis offered specifications- Functionality testing	Yes

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Date

TECHNICAL SPECIFICATION

Name of The Learning System	Smart Factory Enterprise
Item Code	05-001
Technology Area(s)	Smart Factory Simulator

General Description

MECHATRONICS LEARNING SYSTEM (4 sets)

This system shall consist of a PLC, I/O connector kit, power supply, master control relay module, portable mounting console, student curriculum, and instructor's guide for use with a separately specified Mechatronics Workstation. The minimum specifications for each item are below.

The controller shall be an industrial grade type PLC.

Portable Mounting Console

The portable console shall consist of a sloped, painted, 11-gauge steel panel mounted on a steel base with rubber feet that make it free standing. The PLC, power supply, master control relay and other components shall be mounted to this console and wired together to form a functioning circuit that can be connected to a Mechatronics workstation or training module. The console shall contain raceways to neatly run all wiring in the system. It shall also be designed so that it can be removed without special tools from the Mechatronics workstation.

I/O Connector Kit

To consist of (3) wiring arms with plug-in DB25 connectors on one end and pre-wired to the PLC I/O on the other end. The cables shall carry a total of at least 24 inputs, 16 outputs.

24VDC Power Supply

This power supply shall be mounted on the training console using a DIN rail and wired to the I/O of PLC. It shall be powered by universal AC input, e.g., 220 VAC, 60 Hz, have total current output rating of 5.0 amps. It shall be regulated and have overload protection, an LED power on indicator, and voltage switch. It shall be totally enclosed and include protection for short circuit, overload, over voltage, and over temperature.

Master Control Relay Module

A master control relay shall be mounted to the training console and wired to the PLC so that only the power to the outputs of the PLC are de-energized when the master control relay is de-energized. The reversing motor starter shall use a 3-pole motor contactor with 24 VDC coil, manual override, IEC 60947 rated, and protected terminals. Terminal connections shall be wired to a DIN rail mounted terminal blocks.



Student Curriculum

The student curriculum supplied shall be designed in a skill-based format that focuses on teaching industry-relevant tasks. This curriculum shall be designed for use in a self-directed student-learning environment, which promotes a sense of rapid accomplishment and student motivation. The objectives shall be accomplished by organizing the learning material into a series of learning activity packets, which are further subdivided into three or more segments per packet. All learning materials needed shall be contained in the packets including text material, laboratory equipment activities, and multimedia directions. No external text sources shall be required. The specific cognitive skills taught by each text passage shall be identified next to the passage. Each lab activity shall be identified by the industrial task taught. All activities shall be highly detailed with step-by-step instructions to facilitate a self-directed learning environment. A combination of step-by-step enabling activities and creative, problem-solving activities shall be provided. A self-review of five to ten questions shall be provided after each segment.

The student curriculum shall consist of one (1) set of 12 Learning Activity Packets teaching industrial skills in mechatronics. The curriculum shall teach: machine setup, machine adjustment, machine operation, sequence programming, interfacing to I/O devices, and program design and documentation of a wide variety of mechatronic applications including: Material Inventory Feed, Gauging and Testing, Orientation and Processing, Buffering and Sorting, Robotic Assembly, Assembly Torquing, and Programmable Storage. The curriculum shall also cover the operation, adjustment and control of a wide variety of industrial automation components including: pneumatic and electrical lockout/tagout, master control relay operation, 8 types of electronic sensors, ultrasonic gauging, reversing motor starters, stepper motors, DC PWM motor control, precision ball screw axis drives, clutches, pneumatic screw feed systems, synchronous belt drives, electric motor slides, pneumatic rodless cylinders, rotary actuators, pneumatic brakes, and electrical overloads. The curriculum must be capable of completely self-directed and instructor directed study. All subject content as well as hands-on activities shall be included in the student curriculum. All activities must correlate directly to the hardware supplied, with detailed illustrations and diagrams.

Teacher's Assessment/ Portfolio Guide

The teacher's package shall contain student data sheets, data sheet solutions, self-review answers, quizzes, quiz answers, student skill record sheets, and assessment directions. A quiz shall be provided for each packet. A question shall be provided in each quiz for each cognitive objective taught and correlated as such. All tasks listed in the packet shall be listed on personalized student record sheets. The Instructor's Package shall include methods for both cognitive objective assessment and authentic skill assessment, with all skill assessment criteria explained in detail. Detailed instructions and any supplemental material shall be provided for the teacher to perform live assessment of each student.

Hand Tool Package (1 set)

Include the following:

- 3-Drawer Tool Box
- Digital Multimeter
- Dial Caliper – 6-in.
- Hex Wrench Set – 13 pieces



- Metric Allen Wrench Set – 11 pieces
- Ultrasonic Meter Wrench
- Adjustable Wrench – 8-in. (2)
- Ignition Wrench Set – 20 pieces
- Metric Ignition Wrench Set
- Screwdriver Set – Straight and Phillips
- Flat Blade Screwdriver
- Combination Square – 6-in.
- Tap Handle and Tap
- Die Handle and Die

PLC Programming Software (4 sets)

- This product includes Programming Software for programmable controllers.
- The software shall use ladder logic programming and have all standard programming functions.
- It shall provide both online and offline programming, upload and download of programs, and hardcopy documentation. The software shall be supported with an operation and programming manual.

Pick and Place Feeding Station (1 set)

This station shall include

- (1) Mobile Workstation,
- (1) Operator Station,
- (1) Powered Feed Module,
- (1) Pick and Place Robot,
- (1) Finished Parts Storage Module,
- (1) Parts Set,
- (1) Pneumatic Distribution Module,
- (1) Electrical Distribution Module,
- (1) Digital I/O Interface Module, and
- (1) Electro-Pneumatic Valve Manifold.

These components shall be assembled, wired and tested to perform material feed sequences when interfaced to a separately-specified programmable controller. The components shall meet the below minimum specifications.

Mobile Workstation

This workstation shall be constructed of heavy-duty 18-gauge steel, braced, welded, and powder coat painted. It shall be enclosed on the sides and bottom, contain two shelves that extend the length of the workstation and feature two 2-inch rubber grommet holes on each side. The minimum dimensions shall be 32-in (81 cm) L x 53.25-in (135 cm) H x 14.5-in (37 cm) W. The overall length with the operator station attached shall be 30-in (76 cm). The top work surface shall be 1-inch (2.5 cm) extruded aluminum with slots for mounting. Also supplied shall be four casters, two of which shall be locking, and a quick release station connector set. This connector set shall consist of two connectors that join workstations to each other via a quick release method that requires no tools. All components shall be mounted to the workstation in a manner that permits students to easily reposition or replace them.



Operator Station

This station shall be constructed of heavy-duty 14-gauge steel, silkscreened and painted. The minimum dimensions shall be 4-in (10.0 cm) W x 4.63-in (11.8 cm) H x 13.25-in (33.7 cm) L. It shall be totally enclosed and mounted to the mobile workstation. The operator station shall contain manual electrical pilot devices with industrial quality contacts. These pilot devices shall be mounted to an angled console that is part of the operator station. All devices shall be wired to a compact 14-point digital IO interface module located on top of the operator station enclosure to allow students to take signal measurements. The following pilot devices shall be included: green, flush push button with N.O. contacts and indicator lamp; red, extended push button with N.C. contacts; 3-position selector switch, one position maintained and two sets of N.O. contacts; yellow, flush push button with N.O. contacts and indicator lamp; and emergency stop pushbutton with red mushroom operator, illuminated, maintained actuation, and N.C. contacts. The emergency stop pushbutton shall be hardwired to an electrical circuit that connects via the operator station's digital IO interface module to the workstation's PLC master control relay. A 3-inch yellow decal shall surround the e-stop pushbutton. The operator station shall contain relay circuitry that causes the emergency stop pushbutton, when pressed, to also engage the emergency stop function on other linked workstations. The operator station shall link to other workstations upstream and downstream via two DB9 connector ports. Each port shall include at least 2 inputs and 2 outputs for control handshaking and additional IO for emergency stop functions. The operator station shall also include a main power switch with electrical lockout/ tagout with hasp, lock, and tagout. The main power switch shall include a hydraulic/magnetic circuit breaker with trip free function and 15 Amp rating. The operator station shall also include an inter-station communications link cable with female DB9 connectors on each end.

Electrical Power Module

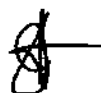
This module shall consist of a 14-gauge steel enclosure mounted flush to the rear section of the workstation, power distribution cable, and (1) power supply cable. The module shall include two electrical power outlets that are interconnected to each other and the power distribution cable. The power distribution cable shall be wired to the main power switch on the operator station. The power supply cable shall be 6-ft (1.82 m) grounded power cord.

Pneumatic Distribution Module

This module shall provide connections for the compressed air supply to various control devices on the workstation. It shall consist of a relieving type pressure regulator; filter; pressure gauge; pneumatic, relieving lockout/ tagout valve with hasp, tagout, and lock; power air distribution unit with Tee fitting connected to female quick-connect fitting, 3 ft (0.91 m) of rubber air hose with male quick connect fitting, and rubber air hose plumbed to pneumatic lockout/ tagout. The air preparation unit and lockout/tagout shall be mounted on top of the workstation at the front, and the power air distribution unit shall be mounted flush with the rear of the workstation.

Digital I/O Interface Module

This module shall be DIN rail mounted on the workstation. It shall have 72 input/output control terminals and 72 separate terminal sets for power to IO. All control and power terminals shall be internally connected to one of three DB25 connectors and connected



to all IO devices on the workstation. The three DB connectors shall connect to plug-in cables.

Electro-Pneumatic Valve Manifold

The valve manifold shall include a 4-station manifold with (1) single-solenoid 24 VDC, 2-position, directional control valve and (3) double-solenoid, 24 VDC, 2-position, detent directional control valves. The manifold shall be connected via push-lock connectors and flexible, polyurethane tubing to all pneumatic devices and the main air preparation unit. The manifold shall be mounted to the top of the workstation and wired to the 72-point digital IO interface module. All valves shall have manual overrides.

Powered Feed Module

This module shall provide a powered material feed sequence that feeds components from an inventory storage unit to the manufacturing process. It shall consist of (1) double-acting pneumatic cylinder, (2) flow control valves, (1) 8-component gravity-fed storage unit, (2) cylinder-mounted Hall-effect sensors, and (1) photo-electric sensor with PNP output, diffused mode, and adjustable position. The unit will consist of aluminum structural components that can be adjusted.

Pick and Place Robot

This pick and place robot shall consist of 2-axis electro-pneumatic manipulator plus gripper. The motion shall be Cartesian. The X axis shall use a rodless cylinder with dual rail linear bearing module, adjustable stroke, 10-inch (25.4 cm) travel, (2) magnetic sensors, (2) flow control valves, and adjustable shock absorber. The Z axis shall use a double-acting cylinder with dual rail linear bearing module, adjustable stroke, 4-inch (10.2 cm) travel, (2) magnetic sensors, and (2) flow control valves. The gripper shall be a vacuum type with vacuum cup, vacuum generator, vacuum switch, pressure regulator, and pressure gauge. The robot shall be supported by an extruded aluminum structure that provides adjustment of the manipulator horizontally and vertically.

Finished Parts Storage Module

This module shall consist of a molded plastic storage container that mount to an extruded aluminum arm. The container shall be able to hold at least 10 completed components. The container shall be removable without use of tools when the station is used in a multi-station application.

Parts Set

The parts set shall consist of directional control valve parts. When combined with parts from other stations, the parts shall be capable of being assembled by an automatic process and result in a working, industrial-quality pneumatic directional control valve that is rated for at least 100 psi/ 690 kPa. The parts set shall include: (8) acrylic valve bodies.

Gauging Station (1 set)

This station shall include

- (1) Mobile Workstation
- (1) Operator Station,
- (1) Traverse Shuttle,
- (1) Ultrasonic Measurement Module,
- (1) Proximity Gauging Module,



- (1) Part Transfer Module,
- (1) Part Reject Module,
- (1) Finished Parts Storage Module,
- (1) Pneumatic Distribution Module,
- (1) Electrical Distribution Module,
- (1) Digital I/O Interface Module and
- (1) Electro-Pneumatic Valve Manifold.

These components shall be assembled, wired and tested to perform a material thickness inspection, part feature presence inspection, and material transfer sequence when interfaced to a separately-specified programmable controller. The components shall meet the below minimum specifications:

Mobile Workstation

This workstation shall be constructed of heavy-duty 18-gauge steel, braced, welded, and powder coat painted. It shall be enclosed on the sides and bottom, contain two shelves that extend the length of the workstation and feature two 2-inch rubber grommet holes on each side. The minimum dimensions shall be 32-in (81 cm) L x 53.25-in (135 cm) H x 14.5-in (37 cm) W. The overall length with the operator station attached shall be 30-in (76 cm). The top work surface shall be 1-inch (2.5 cm) extruded aluminum with slots for mounting. Also supplied shall be four casters, two of which shall be locking, and a quick release station connector set. This connector set shall consist of two connectors that join workstations to each other via a quick release method that requires no tools. All components shall be mounted to the workstation in a manner that permits students to easily reposition or replace them.

Operator Station

This station shall be constructed of heavy-duty 14-gauge steel, silkscreened and painted. The minimum dimensions shall be 4-in (10.0 cm) W x 4.63-in (11.8 cm) H x 13.25-in (33.7 cm) L. It shall be totally enclosed and mounted to the mobile workstation. The operator station shall contain manual electrical pilot devices with industry quality contacts. These pilot devices shall be mounted to an angled console that is part of the operator station. All devices shall be wired to a compact 14-point digital IO interface module located on top of the operator station enclosure to allow students to take signal measurements. The following pilot devices shall be included: green, flush push button with N.O. contacts and indicator lamp; red, extended push button with N.C. contacts; 3-position selector switch, one position maintained and two sets of N.O. contacts; yellow, flush push button with N.O. contacts and indicator lamp; and emergency stop pushbutton with red mushroom operator, illuminated, maintained actuation, and N.C. contacts. The emergency stop pushbutton shall be hardwired to an electrical circuit that connects via the operator station's digital IO interface module to the workstation's PLC master control relay. A 3-inch yellow decal shall surround the e-stop pushbutton. The operator station shall contain relay circuitry that causes the emergency stop pushbutton, when pressed, to also engage the emergency stop function on other linked workstations. The operator station shall link to other workstations upstream and downstream via two DB9 connector ports. Each port shall include at least 2 inputs and 2 outputs for control handshaking and additional IO for emergency stop functions. The operator station shall also include a main power switch with electrical lockout/ tagout with hasp, lock, and tagout. The main power switch shall include a hydraulic/magnetic circuit breaker with trip free function and 15 Amp rating. The operator station shall also



include an inter-station communications link cable with female DB9 connectors on each end.

Electrical Power Module

This module shall consist of a 14-gauge steel enclosure mounted flush to the rear section of the workstation, power distribution cable, and power supply cable. The module shall include two electrical power outlets that are interconnected to each other and the power distribution cable. The power distribution cable shall be wired to the main power switch on the operator station. The power supply cable shall be 6-ft (1.82 m) grounded power cord.

Pneumatic Distribution Module

This module shall provide connections for the compressed air supply to various control devices on the workstation. It shall consist of a relieving type pressure regulator; filter; pressure gauge; pneumatic, relieving lockout/ tagout valve with hasp, tagout, and lock; power air distribution unit with Tee fitting connected to female quick-connect fitting, 3 ft (0.91 m) of rubber air hose with male quick connect fitting, and rubber air hose plumbed to pneumatic lockout/ tagout. The air preparation unit and lockout/tagout shall be mounted on top of the workstation at the front, and the power air distribution unit shall be mounted flush with the rear of the workstation.

Digital I/O Interface Module

This module shall be DIN rail mounted on the workstation. It shall have 72 input/output control terminals and 72 separate terminal sets for power to IO. All control and power terminals shall be internally connected to one of three DB25 connectors and connected to all IO devices on the workstation. The three DB connectors shall connect to plug-in cables.

Electro-Pneumatic Valve Manifold

The valve manifold shall include a 3-station manifold with (2) single-solenoid 24 VDC, 2-position, directional control valves and double-solenoid, 24 VDC, 2-position, detent directional control valve. The manifold shall be connected via push-lock connectors and flexible, polyurethane tubing to all pneumatic devices and the main air preparation unit. The manifold shall be mounted to the top of the workstation and wired to the digital IO interface module. All valves shall have manual overrides.

Traverse Shuttle

The traverse shuttle shall provide linear transport of parts across the width of the workstation. It shall be a D.C. electric motor with precision gearbox reduction unit, powered using a reversing motor starter control. The reversing motor starter shall use (2) 3-pole motor contactors with 24 VDC coils, manual overrides, mechanical interlock, IEC 60947 rated, and protected terminals. The traverse shall consist of two linear guide rods and two precision linear bearings that guide the carriage. The maximum travel shall be 11 inches (27.9 cm) with adjustable stops. Two adjustable position, over-travel limit switches shall be provided. The motor shall drive a precision ball screw through a parallel shaft arrangement that uses a synchronous belt and overrunning clutch. Industrial quality ball bearing modules shall precisely position the ball screw. The carriage shall be designed with fixtures to locate and transport components for the manufacturing process. A single-acting, non-rotating component lift cylinder shall be mounted to the axis. This cylinder shall use a quick exhaust valve.

Ultrasonic Measurement Module

This module shall consist of an ultrasonic sensor that provides a measurement of part thickness. It shall have an adjustable threshold window mode, 50-500 mm sensing range, with 24 VDC output, 3 LED's (for power, status, and error), 0.007-inch accuracy, 50 m.s. response, and 0.020-inch hysteresis. It shall also have a programming input and sync input. An inductive sensor shall trigger the ultrasonic read action. The inductive sensor shall have PNP output and adjustments for horizontal and vertical position.

Proximity Gauging Module

This module shall consist of a photo-electric sensor that performs a part presence inspection process. The sensor shall have PNP output, diffused mode operation with background suppression, visible red LED light source, 3 mm spot, 25 mm sensing distance, and adjustable vertical and horizontal position.

Powered Parts Transfer Module

This module shall provide a powered material transfer sequence that feeds components to either the finished parts storage module or another workstation. It shall consist of a double-acting pneumatic cylinder, (2) flow control valves, 10-component, molded, plastic storage container, and (2) cylinder-mounted magnetic sensors.

Powered Parts Reject Module

This module shall provide a powered material reject sequence that feeds components to a rejected parts storage container. It shall consist of a double-acting pneumatic cylinder, (2) flow control valves, 10-component, molded, plastic storage container, and (2) cylinder-mounted magnetic sensors. The reject container shall be mounted to an extruded aluminum arm.

Finished Parts Storage Module

This module shall consist of a molded plastic storage container that mounts to an extruded aluminum arm. The container shall be able to hold at least 10 completed components. The container shall be removable without use of tools when the station is used in a multi-station application.

Parts Set

The parts set shall consist of (4) acrylic reject directional control valve bodies.

Orientation-Processing Station (1 set)

This station shall include

- (1) Mobile Workstation,
- (1) Operator Station,
- (1) 8-Station Rotary Index Table,
- (1) Pick and Place Pneumatic Robot,
- (1) Fiber Optic Gauging Module,
- (1) Part Transfer Module,
- (1) Finished Part Storage Module,
- (1) Pneumatic Distribution Module;
- (1) Electrical Distribution Module,
- (1) Digital I/O Interface Module and



(1) Electro-Pneumatic Valve Manifold.

These components shall be assembled, wired and tested to perform part orientation inspection, reorientation, and material processing (with separately-specified optional drill module) when interfaced to a separately-specified programmable controller. The components shall meet the below minimum specifications.

Mobile Workstation

This workstation shall be constructed of heavy-duty 18-gauge steel, braced, welded, and powder coat painted. It shall be enclosed on the sides and bottom, contain two shelves that extend the length of the workstation and feature two 2-inch rubber grommet holes on each side. The minimum dimensions shall be 32-in (81 cm) L x 53.25-in (135 cm) H x 14.5-in (37 cm) W. The overall length with the operator station attached shall be 30-in (76 cm). The top work surface shall be 1-inch (2.5 cm) extruded aluminum with slots for mounting. Also supplied shall be four casters, two of which shall be locking, and a quick release station connector set. This connector set shall consist of two connectors that join workstations to each other via a quick release method that requires no tools. All components shall be mounted to the workstation in a manner that permits students to easily reposition or replace them.

Operator Station

This station shall be constructed of heavy-duty 14-gauge steel, silkscreened and painted. The minimum dimensions shall be 4-in (10.0 cm) W x 4.63-in (11.8 cm) H x 13.25-in (33.7 cm) L. It shall be totally enclosed and mounted to the mobile workstation. The operator station shall contain manual electrical pilot devices with industry quality contacts. These pilot devices shall be mounted to an angled console that is part of the operator station. All devices shall be wired to a compact 14-point digital IO interface module located on top of the operator station enclosure to allow students to take signal measurements. The following pilot devices shall be included: green, flush push button with N.O. contacts and indicator lamp; red, extended push button with N.C. contacts; 3-position selector switch, one position maintained and two sets of N.O. contacts; yellow, flush push button with N.O. contacts and indicator lamp; and emergency stop pushbutton with red mushroom operator, illuminated, maintained actuation, and N.C. contacts. The emergency stop pushbutton shall be hardwired to an electrical circuit that connects via the operator station's digital IO interface module to the workstation's PLC master control relay. A 3-inch yellow decal shall surround the e-stop pushbutton. The operator station shall contain relay circuitry that causes the emergency stop pushbutton, when pressed, to also engage the emergency stop function on other linked workstations. The operator station shall link to other workstations upstream and downstream via two DB9 connector ports. Each port shall include at least 2 inputs and 2 outputs for control handshaking and additional IO for emergency stop functions. The operator station shall also include a main power switch with electrical lockout/ tagout with hasp, lock, and tagout. The main power switch shall include a hydraulic/magnetic circuit breaker with trip free function and 15 Amp rating. The operator station shall also include an inter-station communications link cable with female DB9 connectors on each end.

Electrical Power Module

This module shall consist of a 14-gauge steel enclosure mounted flush to the rear section of the workstation, power distribution cable, and power supply cable. The module shall include two electrical power outlets that are interconnected to each other

and the power distribution cable. The power distribution cable shall be wired to the main power switch on the operator station. The power supply cable shall be 6-ft (1.82 m) grounded power cord.

Pneumatic Distribution Module

This module shall provide connections for the compressed air supply to various control devices on the workstation. It shall consist of a relieving type pressure regulator; filter; pressure gauge; pneumatic, relieving lockout/ tagout valve with hasp, tagout, and lock; power air distribution unit with Tee fitting connected to female quick-connect fitting, 3 ft (0.91 m) of rubber air hose with male quick connect fitting, and rubber air hose plumbed to pneumatic lockout/ tagout. The air preparation unit and lockout/tagout shall be mounted on top of the workstation at the front, and the power air distribution unit shall be mounted flush with the rear of the workstation.

Digital I/O Interface Module

This module shall be DIN rail mounted on the workstation. It shall have 72 input/output control terminals and 72 separate terminal sets for power to IO. All control and power terminals shall be internally connected to one of three DB25 connectors and connected to all IO devices on the workstation. The three DB connectors shall connect to plug-in cables.

Electro-Pneumatic Valve Manifold

The valve manifold shall include a 4-station manifold with single-solenoid 24 VDC, 2-position, directional control valve and (3) double-solenoid, 24 VDC, 2-position, detent directional control valves. The manifold shall be connected via push-lock connectors and flexible, polyurethane tubing to all pneumatic devices and the main air preparation unit. The manifold shall be mounted to the top of the workstation and wired to the digital IO interface module. All valves shall have manual overrides.

Rotary Index Table

The rotary index table shall provide positioning of parts at 8 software-programmable positions located 45 degrees apart from each other around the table. The table disk shall consist of painted 11-gauge steel on top of 16-gauge brushed stainless steel and have a minimum diameter of 15 inches (38.1 cm). The table shall be designed with fixtures to locate and transport parts for the manufacturing process. It shall be operated by a motion control system that uses a precision stepper-motor. The stepper motor shall have a resolution of 51,200 steps per revolution and operate in the 12-48 VDC range. The motion control system shall be integrated with the motor. It shall be PC software programmable via RS-485 communications and include the following programming functions: home, limit plus, limit minus, go, stop, pause, jog plus, jog minus, analog in, moving, fault, stall, velocity change, trip on input, trip on position, basic math functions, logical math expressions, and branch and call subroutines. The motion control system shall include (4) 24 VDC discrete I/O, and analog input (0-5 VDC or 4-20 ma). The system shall include Windows-compatible programming software and RS-485 to RS-232 communications cable with serial port. The motion control system shall be connected to the rotary table via a zero-backlash, flexible coupling, precision worm gear right-angle drive, and ball bearing guides. A homing sensor shall be mounted to the table structure. This sensor shall be an inductive type with (2) PNP outputs, cylindrical body, indicator light, and shall be position adjustable. A part present sensor shall be installed at position 1. This sensor shall be a capacitive type with cylindrical body, PNP

output, indicator light, adjustable sensitivity, and adjustable horizontal and vertical position. A part present sensor shall also be installed at position 3. This sensor shall be a capacitive type with cylindrical body, PNP output, indicator light, adjustable sensitivity, and adjustable horizontal and vertical position.

Pick and Place Pneumatic Robot

This pick and place robot shall consist of a 2-axis electro-pneumatic manipulator plus gripper. The motion shall be Cartesian. The Z axis shall use a twin bore double-acting pneumatic cylinder module with adjustable stroke, 0.75-inch (1.9 cm) travel, (2) magnetic sensors, and (2) flow control valves. The rotary axis shall use a rack and pinion pneumatic actuator with adjustable stroke, 180-degree rotation with 45-degree adjustment on each end, (2) magnetic sensors, and (2) flow control valves. The gripper shall be a 2-point curvilinear type with double acting actuator, and (2) flow control valves.

Parts Transfer Module

This module shall provide a powered material transfer sequence that feeds components to either the finished parts storage module or another workstation. It shall consist of double-acting pneumatic cylinder, (2) flow control valves and (2) cylinder-mounted magnetic sensors.

Finished Parts Storage Module

This module shall consist of a molded plastic storage container that mount to an extruded aluminum arm. The container shall be able to hold at least 10 completed components. The container shall be removable without use of tools when the station is used in a multi-station application.

Servo Robot Assembly Station (1 set)

This station shall include:

- (1) Mobile Workstation,
- (1) Operator Station,
- (1) Spool Insertion Module,
- (1) Screw Feed Module,
- (1) Spring/ Knob Feed Module,
- (1) Screw/ Knob Engagement Module,
- (1) Assembly Shuttle Module,
- (1) Finished Parts Storage Module,
- (1) Parts Presentation Module,
- (1) Pneumatic Distribution Module,
- (1) Electrical Distribution Module,
- (1) Digital I/O Interface Module, and
- (1) Electro-Pneumatic Valve Manifold.

These components shall be assembled, wired and tested to perform an assembly sequence when interfaced to a separately-specified programmable controller. The components shall meet the below minimum specifications.



Mobile Workstation

This workstation shall be constructed of heavy-duty 18-gauge steel, braced, welded, and powder coat painted. It shall be enclosed on the sides and bottom, contain two shelves that extend the length of the workstation and feature two 2-inch rubber grommet holes on each side. The minimum dimensions shall be 32" (81 cm) L x 53.25" (135 cm) H x 14.5" (37 cm) W. The overall length with the operator station attached shall be 30" (76 cm). The top work surface shall be 1-inch (2.5 cm) extruded aluminum with slots for mounting. Also supplied shall be four casters, two of which shall be locking, and a quick release station connector set. This connector set shall consist of two connectors that join workstations to each other via a quick release method that requires no tools. All components shall be mounted to the workstation in a manner that permits students to easily reposition or replace them.

Operator Station

This station shall be constructed of heavy-duty 14-gauge steel, silkscreened and painted. The minimum dimensions shall be 4" (10.0 cm) W x 4.63" (11.8 cm) H x 13.25" (33.7 cm) L. It shall be totally enclosed and mounted to the mobile workstation. The operator station shall contain manual electrical pilot devices with industrial quality contacts. These pilot devices shall be mounted to an angled console that is part of the operator station. All devices shall be wired to a compact 14-point digital IO interface module located on top of the operator station enclosure to allow students to take signal measurements. The following pilot devices shall be included: green, flush pushbutton with N.O. contacts and indicator lamp; red, extended push button with N.C. contacts; 3-position selector switch, one position maintained and two sets of N.O. contacts; yellow, flush pushbutton with N.O. contacts and indicator lamp; and emergency stop pushbutton with red mushroom operator, illuminated, maintained actuation, and N.C. contacts. The emergency stop pushbutton shall be hardwired to an electrical circuit that connects via the operator station's digital IO interface module to the workstation's PLC master control relay. A 3-inch yellow decal shall surround the e-stop pushbutton. The operator station shall contain relay circuitry that causes the emergency stop pushbutton, when pressed, to also engage the emergency stop function on other linked workstations. The operator station shall link to other workstations upstream and downstream via two DB9 connector ports. Each port shall include at least 2 inputs and 2 outputs for control handshaking and additional IO for emergency stop functions. The operator station shall also include a main power switch with electrical lockout/ tagout with hasp, lock, and tagout. The main power switch shall include a hydraulic/magnetic circuit breaker with trip free function and 15 Amp rating. The operator station shall also include an inter-station communications link cable with female DB9 connectors on each end.

Electrical Distribution Module

This module shall consist of a 14-gauge steel enclosure mounted flush to the rear section of the workstation, power distribution cable, and (1) power supply cable. The module shall include two electrical power outlets that are interconnected to each other and the power distribution cable. The power distribution cable shall be wired to the main power switch on the operator station. The power supply cable shall be 6-ft (1.82 m) grounded power cord.



Pneumatic Distribution Module

This module shall provide connections for the compressed air supply to various control devices on the workstation. It shall consist of a relieving type pressure regulator; filter; pressure gauge; pneumatic, relieving lockout/ tagout valve with hasp, tagout, and lock; power air distribution unit with Tee fitting connected to female quick-connect fitting, 3 ft (0.91 m) of rubber air hose with male quick connect fitting, and rubber air hose plumbed to pneumatic lockout/ tagout. The air preparation unit and lockout/tagout shall be mounted on top of the workstation at the front, and the power air distribution unit shall be mounted flush with the rear of the workstation.

Digital I/O Interface Module

This module shall be DIN rail mounted on the workstation. It shall have 72 input/output control terminals and 72 separate terminal sets for power to IO. All control and power terminals shall be internally connected to one of three DB25 connectors and connected to all IO devices on the workstation. The three DB connectors shall connect to plug-in cables.

Electro-Pneumatic Valve Manifold

The valve manifold shall include a 6-station manifold with (5) single-solenoid 24 VDC, 2-position, directional control valves and (1) double-solenoid, 24 VDC, 2-position, detent directional control valve. The manifold shall be connected via push-lock connectors and flexible, polyurethane tubing to all pneumatic devices and the main air preparation unit. The manifold shall be mounted to the top of the workstation and wired to the digital IO interface module. All valves shall have manual overrides.

Spool Insertion Module

This module shall provide a powered material feed sequence that can feed one of two types of spools from two inventory storage units to the manufacturing process. It shall consist of (1) single-acting pneumatic cylinder, double-acting pneumatic cylinder, (3) flow control valves, (2) 8-component storage units, (4) cylinder-mounted magnetic sensors, and (2) inductive parts-empty sensors with PNP output. The unit will consist of aluminum structural components that can be adjusted.

Screw Feed Module

This module shall provide pneumatic feeding of screws to the assembly process. It shall consist of (1) flexible, polyurethane, transparent screw feed tube, 36-inches (91.5 cm) long and 0.875-inches (22 mm) diameter, and (1) pressure regulator valve. The module shall also include a screw escapement mechanism and screw queue mechanism that are pneumatic-powered. These mechanisms shall include: (3) single-acting pneumatic cylinders and (1) inductive sensor. This unit will include aluminum structural components that can be adjusted.

Spring/ Knob Feed Module

This module shall provide a material feed device that feeds manual button-type operators and springs from an inventory storage unit to the manufacturing process via a servo robot. It shall consist of gravity feeder and fixtures to interact with the robot.

Screw/ Knob Engagement Module

This module shall perform final assembly of screw, operator, spring, spool and valve body. It shall consist of (1) double-acting pneumatic cylinder, (1) flow control valve, (2)

cylinder-mounted magnetic sensors, and a screw engagement motor. This motor shall be a D.C. motor with foot mount, precision gearbox reduction unit, and friction engagement tool. The motor shall be powered using a motor starter control. The motor starter shall use 3-pole motor contactor with 24 VDC coil, manual override, IEC 60947 rated, and protected terminals.

Assembly Shuttle Module

This module shall provide a powered material handling sequence that transports part assemblies between two assembly positions. It shall consist of (1) double-acting rodless pneumatic cylinder, (2) flow control valves, and (2) cylinder-mounted magnetic sensors. Two powered clamps shall also be provided. These clamps will include fixtures, (2) single-acting pneumatic cylinders, (2) flow control valves, and (2) cylinder-mounted magnetic sensors.

Finished Parts Storage Module

This module shall consist of a molded plastic storage container that mounts to an extruded aluminum arm. The container shall be able to hold at least 10 completed components. The container shall be removable without use of tools when the station is used in a multi-station application.

Parts Presentation Module

This module shall consist of an extruded aluminum structure and fixture for part presentation to the system. The module shall be able to be adjustable vertically and horizontally.

Parts Set

The parts set shall consist of directional control valve parts. When combined with parts from other stations, the parts shall be capable of being assembled by an automatic process and result in a working, industrial-quality pneumatic directional control valve that is rated for at least 100 psi/ 690 kPa. The parts set shall include: (8) 3-way valve spools, (8) 4-way valve spools, (8) manual operators, (8) bolts and (8) spool return springs.

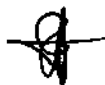
Smart Robot Workcell (1 set)

Components include:

- Robot with Advanced Software and Ethernet IP
- Area Laser Scanner
- Smart Robot Workstation with discrete I/O, pneumatic, Ethernet I/O Interface Panel
- Robot-to-PLC Interface
- Cabling Set
- Gripper Fixture Set
- Quick Connect System; System Configuration and Integration Prep

Robot Arm Integration to Mechatronics (1 set)

- (2) Custom Mounting Brackets with Actuators
- (1) Compressed Air Piping



Single-Station Laser Scanner (1 set)

This product provides safety at the front of the Smart Robot Workcell. For Mechatronics systems with multiple Robot Workcells, customers must have (2) Laser Scanners and (1) Communication Kit.

- Laser Scanner System with one laser scanner
- Mounting Fixture Set
- Cable Set
- Integration Engineering and Programming

Mechatronics HMI Terminal Learning System (1 set)

This system teaches how to use human machine interface (HMI) to control and monitor an automated line.

HMI

- 5.5-in. screen
- 320x240 resolution

*HMI Terminal Module**EtherNet Cable*

- Cat 5E patch cable, 14', gray

Workstation Pedestal Mounting Module

- Rigid, adjustable mounting module allows the HMI to be situated in the optimal position

Student Curriculum

This system shall consist of three (3) Learning Activity Packets containing no less than thirteen (13) industry skills. Topics shall include: HMI construction; HMI configuration; HMI operation; application editing; component identification; The student curriculum supplied shall be designed in a skill-based format that focuses on teaching industry relevant tasks. The objectives shall be accomplished by organizing the learning material into a series of learning activity packets, which are further subdivided into three or more segments per packet. All learning materials needed shall be contained in the packets including text material and laboratory equipment activities. No external text sources shall be required. The specific cognitive skills taught by each text passage shall be identified next to the passage. Each lab activity shall be identified by the industrial task taught. All activities shall be highly detailed with step-by-step instructions to facilitate a self-directed learning environment. A combination of step-by-step enabling activities and creative, problem-solving activities shall be provided. A self-review of five to ten questions shall be provided after each segment. The curriculum must be capable of both self-directed and instructor directed study. All activities must correlate directly to the hardware supplied, with detailed illustrations and diagrams.

Teacher's Assessment Guide

A teacher's assessment guide shall be provided. It shall contain student data sheets, data sheet solutions, self-review answers, quizzes, quiz answers, student skill record sheets, and authentic assessment. A quiz shall be provided for each packet. A question shall be provided in each quiz for each cognitive objective taught. All tasks listed in the

packet shall be listed on personalized student record sheets. The teacher's assessment guide shall include directions for authentic skill assessment.

Mechatronics Smart Device Learning (1 set)

This learning system shall be designed to teach communications between a stack light and other intelligent automation devices using EtherNet/IP in a Smart Factory environment. At minimum, the learning system shall consist of: EtherNet/IP communications I/O module, stack light module, cable set, student curriculum, student reference guide, and instructor's guide. The system shall be fully assembled and wired to mount to a mobile workstation or a table top surface.

Smart Factory Ethernet Learning System (1 set)

This learning system shall be designed to teach EtherNet/IP communications between various intelligent automation devices in various topologies in a Smart Factory environment to efficiently control and monitor an automated manufacturing process. At minimum, the learning system shall consist of: (1) managed EtherNet/IP switch module, (1) unmanaged Ethernet switch module, (1) cable set, (1) student curriculum, student reference guide, and (1) instructor's guide. The system shall be fully assembled and wired to mount to mobile workstations or a table top.

Smart Factory Mechatronics Barcode (1 set)

This learning system teaches learners how barcode readers are used within an automated line to identify components, enter serial numbers in a database, and sort items into groups.

Multi-technology Interactive e-Learning solution with the use of different teaching tools such as text, 3D animation, video, audio and virtual simulation (1 year subscription)

Learning Management System (LMS) Included

- User-friendly Navigation with Skills on/Off Control
- SCORM to Other LMS Systems
- Custom LMS Branding Available. Put your school logo or organization's logo and colors on the LMS home screen.
- Pre-/Post-Course Quizzes. Create a valuable metric to track progress.
- Easy-to-Use Reporting Tools. Customizable reporting tools will help evaluate progress.

Custom Course Set-Up

Choose from thousands of eLearning modules to create an almost innumerable combination of courses that can exactly fit your training needs.

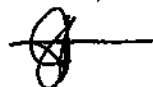
Reduce Training Cost with eAssessment

Distance eLearning eAssessment to quickly reveal strengths and identify weaknesses. Utilize this program to assess individuals, departments, or the entire organization.

eLearning Categories

I. AUTOMATION

1. Ethernet for Mechatronics



2. Mechatronics HMI
3. Mechatronics
4. Mechatronics Profibus
5. Mechatronics Troubleshooting
6. Mechatronics Troubleshooting with PLC
7. Mechatronics – PLC
8. Mechatronics - Ethernet/IP
9. Panel view Operator Interface
10. Mechatronics Simulation (Smart Factory)
11. Mechatronics Simulation
12. Pegasus Robotics Simulation
13. Robotics and Computer Programming
14. Robotics 1
15. Mechatronics CNC Mill
16. Machine Vision Inspection Systems
17. Machine Vision Inspection Systems
18. Mechatronics Troubleshooting System - PLC
19. Mechatronics RF Identification System
20. Mechatronics Barcode Identification
21. Mechatronics RF Identification System
22. Mechatronics RF Identification System- PLC
23. Tabletop Mechatronics
25. Mechatronics HMI
25. Mechatronics Barcode Identification – PLC
26. Mechatronics Barcode Identification – Barcode
27. Table-Top Mechatronics Servo Robot System
28. Table Top Smart Factory RFID/Sensors
29. Mechatronics Barcode Product Identification – PLC Controller
30. Tabletop Smart Factory Ethernet
31. Tabletop Smart Factory Manufacturing Execution System
32. Smart Factory Barcode System
33. Mechatronics RFID
34. Smart Factory Vision Inspection System
35. Smart Factory Visual Communication System
36. Mechatronics System
37. Mechatronics - Professional
38. Smart Factory Sensor System - Pneumatics/Vacuum
39. Smart Factory Sensor System - Ultrasonic
40. Smart Factory Sensor System - Photoeye
41. Smart Factory Device Learning System - Stack Light
42. Smart Factory Sensor System - Electrical Current
43. Smart Factory Sensor System - Analog Position
44. Smart Factory Sensor System - Analog Pressure
45. Tabletop Smart Factory Visual Communications
46. Smart Factory Barcode System – Basic
47. Mechatronics RFID AB L16
48. Smart Factory Ethernet
49. Smart Factory Network Security Learning System
50. Smart Factory Manufacturing Execution System
51. Smart Factory Visual Communications



52. Smart Factory Sensor System – Pneumatics/ Vacuum Advanced
53. Smart Factory Sensor System – Ultrasonic Advanced
54. Smart Factory Sensor System – Photoeye Advanced
55. Smart Factory Device Learning System Stack Light
56. Smart Factory Sensor System – Electrical Current
57. Smart Factory Sensor System – Analog Position
58. Smart Factory Sensor System – Analog Pressure
59. Mechatronics
60. Computer Control 2
61. Principles of Robotics
62. Principles of Factory Automation
63. Principles of Robotics

II. ELECTRONICS

1. DC Electronic Drives
2. Portable Plc
3. Portable Plc Troubleshooting
4. PLC Analog Application
5. PLC ControlNet
6. Mastering Programmable Controllers
7. PLC Statement List
8. PLC Analog
9. PLC Profibus
10. MPC
11. PLC Graph Programming -
12. MPC - i Bus
13. MPC
14. Mastering Programmable Controllers
15. PLC Troubleshooting
16. Programmable Controller
17. Mastering Programmable Controllers
18. Power and Control Electronics
19. AC Motor Drives
20. AC Motor Drive Troubleshooting
21. Electrical Control Systems
22. Variable Frequency AC Drive
23. AC Electronic Drives
24. PLC Motor Control
25. PLC Motor Control
26. Portable PLC Learning System
27. Portable PLC with Troubleshooting
28. PLC Troubleshooting- PLC
29. PLC Troubleshooting
30. Computer Control 1

III. ELECTRICAL

1. Electric Motor Control
2. AC/DC Electrical Systems
3. Electrical Control 1
4. Portable Electric Relay Control Troubleshooting



5. Electric Relay Control
6. AC/DC Electrical Systems
7. Electric Motor Control
8. Electric Motor Control Troubleshooting
9. Electrical Fabrication 1
10. Motor Braking
11. Reduced Voltage Starting
12. Electronic Sensors
13. Electronic Counter
14. SCR Speed Control
15. Electric Wiring System
16. PLC/VFD Wiring System
17. Industrial Soldering
18. Ethernet and Analog Wiring
19. Electrical Power Distribution
20. Electric Motor Control
21. Motor Troubleshooting System
22. Rotating Electric Machines
23. DC Generators
24. Wound Rotor Motor
25. Rotating Electrical Machines

IV. GREEN ENERGY

1. Wind Concepts
2. Turbine Electric Hub Troubleshooting
3. Turbine Generator Control Troubleshooting
4. Turbine Nacelle Troubleshooting
5. Solar Concepts
6. Solar Site Analysis
7. Alternative Energy
8. Solar Thermal Troubleshooting - Open-Loop
9. Solar Thermal Troubleshooting - Closed-Loop
10. Solar Thermal Installation
11. Solar PV Troubleshooting
12. Solar Grid-Tie
13. Data Acquisition
14. Solar Photovoltaic Installation

V. LEAN MANUFACTURING

1. Lean Overview and Workplace Organization
2. Introduction to Lean
3. 5S
4. Total Productive Maintenance
5. Poka-Yoke
6. Lean Theory
7. Lean Process Flow
8. Visual Workplace
9. Standardized Work
10. Kaizen
11. Value Stream Mapping



12. Set-Up Reduction
13. Six Sigma

VI. MACHINING

1. Machine Tools 1
2. Machine Tools 2
3. Machine Tools 3
4. Manual Machine Tools
5. CNC Machine Tools 1
6. CNC Machine Tools 2
7. CNC Machine Tools 3
8. Principles of CNC
9. CNC Control
10. Principles of Turning
11. Principles of Machining Centers
12. Principles of Grinding
13. Principles of Workholding
14. Principles of Coolants and Oils
15. Principles of Gear Manufacturing
16. Principles of Tooling
17. Tooling for Turning
18. Tooling for Machining Centers
19. Tooling for Grinding
20. Tooling for Tapping

VII. MANUFACTURING PROCESS

1. Product Finishing
2. Production Assembly
3. Split Flange Coupling Assembly
4. Electric Torque Wrench Assembly
5. Print Reading 1
6. Welding Technology 1
7. Computer-Aided Design 1
8. Computer Aided Design 2
9. Wiring Harness Assembly
10. Contamination
11. Fasteners
12. Gaskets
13. Stall Bar Assembly
14. Instrumented DC-Electric Torque Wrench Assembly
15. Computer-Aided Manufacturing 1
16. Blueprint Reading
17. AWS Welding Symbols on Blueprints
18. General Dimensioning and Tolerances
19. Geometric Dimensioning and Tolerancing

VIII. MATERIALS

1. Plastic Mold Design
2. Manufacturing Processes 3
3. Structural Engineering 1



4. Structural Engineering 2
5. Surveying
6. Materials Engineering 1
7. Principles of Materials - Ferrous Metals
8. Principles of Materials - Non-Ferrous Metals
9. Principles of Heat Treating
10. Principles of Plastics
11. Principles of Composites
12. Principles of Ceramics

IX. MECHANICAL

1. Vibration Analysis
2. Pump Systems
3. Multiple Pump
4. Turbine Pump
5. Diaphragm Pump
6. Peristaltic Tubing Pump
7. Piston Pump
8. Gear Pump
9. Magnetic Pump
10. Centrifugal Pump
11. Rigging 3
12. Mechanical Drives 4
13. Floor Standing Belt Conveyor
14. Predictive Maintenance Vibration Analysis
15. Roller Pack Machine Tool Axis
16. Plain Bearing Machine Tool Axis
17. Mechatronics Simulation
18. Pippings
19. Central Lubrication
20. Mechanical Systems 1
21. Mechanical Fabrication 2
22. Rigging Systems 1
23. Rigging Systems 2
24. Mechanical Fabrication 1
25. Mechanical Drives 1
26. Portable Mechanical Drives 2
27. Mechanical Drives 2
28. Mechanical Drives 3
29. Laser Shaft Alignment
30. Portable Laser Shaft Alignment
31. Mechanical Systems 2

X. PROCESS CONTROL

1. Temperature Process Control
2. Data Acquisition
3. Analytical Process Control
4. Data Acquisition Systems
5. Process Control
6. Process Control Systems: Ultrasonic Level Measurement and Control



7. Process Control Systems: Differential Pressure Flow Measurement and Control
8. Process Visualization Control 1
9. Pressure Process Control Systems
10. Foundation Fieldbus Process Control 1
11. HART Process Control 1
12. Mastering Programmable Controllers
13. PLC Process Control
14. PLC Process Control 2
15. Process Control Systems

XI. QUALITY ASSURANCE

1. Metrology 1
2. Measurement Tools 1
3. Quality Assurance 1
4. Portable Precision Gauging 1
5. Portable Measurement Tools
6. Inspection Techniques 1
7. Surface Plates
8. Gauge Blocks
9. Test Indicators
10. Height Gauges
11. Bench Comparators
12. Optical Comparators
13. Bore Gauges
14. Air Gauges
15. Specialty Micrometers
16. Miscellaneous Inspection Instruments
17. ISO 9000 and TS 16949
18. Statistical Process Control 1
19. Statistical Process Control 2
20. Quality Control Concepts

XII. SAFETY

1. Safety Practices and Regulations
2. Personal Protective Equipment
3. Hazardous Communication
4. Confined Spaces
5. Lockout/Tagout
6. Accident Response
7. Overhead Crane Safety

XIII. THERMAL

1. Air Conditioning / Heat Pump
2. Steam Systems
3. Thermal Systems 1
4. Environmental Applications
5. Geothermal
6. Geothermal Troubleshooting
7. Geothermal Desuperheater
8. Geothermal Troubleshooting with Desuperheater



9. Geothermal Flush Cart Learning System
10. Thermal Technology 1
11. Thermal Technology 2

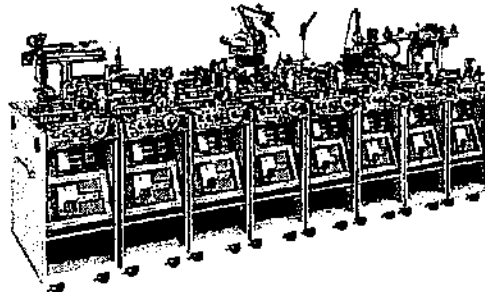
XIV. WORKPLACE EFFECTIVENESS

1. Enterprise Systems 1
2. Principles of Advanced Manufacturing
3. Mathematics 1
4. Trigonometry 1
5. Communication Skills
6. Conflict Resolution
7. Working in Groups

Additional requirements:

- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate of End of Life (EOL) Service from Manufacturer (5 years)

Sample Image:



Picture for reference only

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

Name of Company/Bidder

**Signature over Printed Name of
Authorized Representative**

Date

A handwritten signature in black ink, consisting of a stylized, cursive letter 'S' followed by a horizontal line.

Technical Specifications

Lot 6

: Automatic Production Line Simulator

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Automatic Production Line Trainer	Kindly refer to the technical specifications attached as Annex D6.	2	set			

* Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D6.

Instruction Manual is an instructional book or booklet that is supplied with almost all technologically advanced products such as electrical products.

Datasheet/Specification Sheet/Brochure is a document that summarizes the performance and other characteristics of a product, machine, component that comes along with the product from its release from the manufacturer.

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

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Authorized Representative

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7

ANNEX D6

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
6	Automatic Production Line Simulator	06-001	Automatic Production Line Trainer	Refer to Technical Specification of Item Code 07-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	Yes

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.



Name of Company/Bidder

Signature over Printed Name of Authorized Representative

Date

TECHNICAL SPECIFICATION

Name of The Learning System	Automatic Production Line Trainer
Item Code	06-001
Technology Area(s)	Automatic Production Line Simulator

Description: The equipment simulates an automated production process that requires stamping/boring holes on a workpiece based on material composition and/or workpiece size/height. The system also includes automatic sorting of materials based on set parameters.

Required Topics/Lessons:

The training system shall include, but not limited to the following topics/lessons:

- Mechanical structure disassembly and adjustment
- Automatic detection technology application training
- Pneumatic technology application training
- Programmable controller programming training
- Touch screen technology application training
- Frequency converter technology application training
- Control drive technology application training
- Mechanical system installation and commissioning training
- System maintenance and fault detection training
- System communication technology application training
- Understanding of fingerprint recognition
- Application of Fingerprint Recognition

Technical Description

A. Description of system operation

- Distribution station:
This station holds the workpiece in que and releases it one-by-one into the system either manually or automatically.
- Handling station:
This station is composed of a pick and place system and a guided rail synchronous belt transmission system which transfer the workpiece from distribution station to the succeeding stations. This system can be manual (push of a button) and automatic
- Assembly station:
This is a rotary table which assembles the workpiece based on set instruction. This system can be manual (push of a button) and automatic

- Stamping station:
This simulates a workpiece stamping process. There should be a clamping mechanism, and workpiece presence sensor for safety operation. This system can be manual (push of a button) and automatic (time-based setting)
- Sorting station:
The sorting station will segregate the workpiece based on a given condition. A minimum of two kinds of workpiece can be sorted.

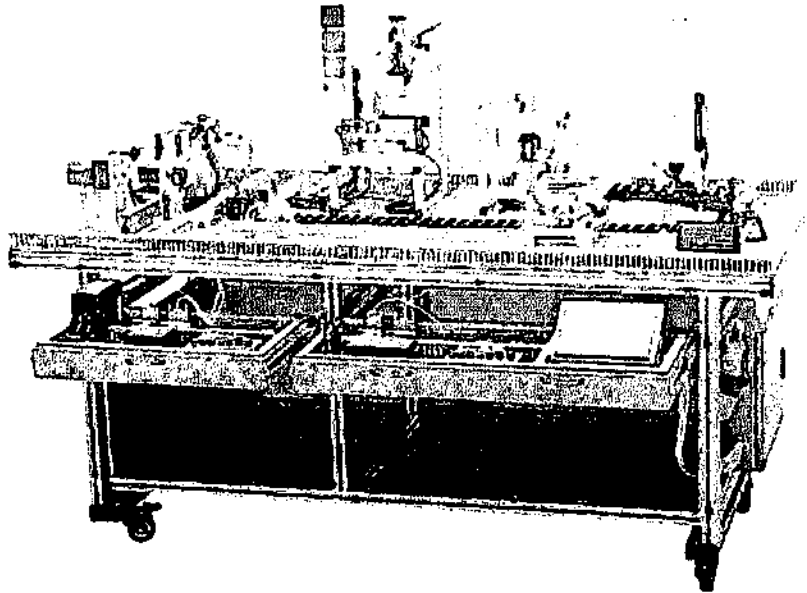
B. General parameters

- Working power supply 220 \pm 10% 60Hz single phase (a transformer should be provided if the system requires other power supply)
 - Protection: short circuit, leakage, grounding, overcurrent, undervoltage, and emergency stop.
 - Security: fingerprint for system power on.
 - Web server and networking: stations should be interconnected via ethernet protocol which allows remote data collection, monitoring and control and accessible via web service.
 - Overall size should not be greater than 2m (width) x 3m (height) to ensure that ingress of the machine will not be an issue
 - One (1) computer station for programming and visualization with the following specs:
 - OS: Windows 11 or higher
 - No. of Cores: 20 cores
 - RAM: 32 GB RAM
 - Storage: 1TB SSD and 2TB HDD
 - Network: 2x 1Gbit LAN, WiFi and Bluetooth port
 - Dual 27~34 inches monitor with 2K resolution or higher and 12:9 or 16:9 image aspect ratio
 - Industry grade table and chair
 - Programmable Logic Controller/s
 - Ethernet and other communication standard
 - Support cloud-based monitoring and control
 - With digital and analog I/Os
 - Expandable centrally and on distributed basis
 - PLC Programming software (2 users), compatible to latest release of Windows
 - Touch screen Human Machine Interface (HMI) 4~6 inches
 - Silent type compressor
- Includes 3 set of workpiece
 - This includes curriculum and instruction to exercises in print and digital format

Additional requirements:

- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate of End of Life (EOL) Service from Manufacturer (5 years)

Sample Image:



Picture for reference only

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

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**Signature over Printed Name of
Authorized Representative**

Date

Technical Specifications

Lot 7

: Electrical and Electronics Technology

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Electronics Package	Kindly refer to the technical specifications attached as Annex D7.	1	set			
2	AC/DC Electrical Training		1	set			
3	Basic Electrical Machines		1	set			
4	Electrical Control Training		1	set			
5	Internet of Things		1	set			
6	Motor Control Trainer		2	set			

* Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D7.

Instruction Manual is an instructional book or booklet that is supplied with almost all technologically advanced products such as electrical products.

Datasheet/Specification Sheet/Brochure is a document that summarizes the performance and other characteristics of a product, machine, component that comes along with the product from its release from the manufacturer.

I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.


Name of Company/Bidder

Signature over Printed Name of Authorized Representative

Date



ANNEX D7

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
7	Electrical and Electronics Technology	07-001	Electronics Package	Refer to Technical Specification of Item Code 07-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	Yes
7	Electrical and Electronics Technology	07-002	AC/DC Electrical Training	Refer to Technical Specification of Item Code 07-002	Learning System		<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	
7	 Electrical and Electronics Technology	07-003	Basic Electrical Machines	Refer to Technical Specification of Item Code 07-003	Learning System		<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	
7	Electrical and Electronics Technology	07-004	Electrical Control Training	Refer to Technical Specification of Item Code 07-004	Learning System		<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
7	Electrical and Electronics Technology	07-005	Internet of Things	Refer to Technical Specification of Item Code 07-005	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	
7	Electrical and Electronics Technology	07-006	Motor Control Trainer	Refer to Technical Specification of Item Code 07-006	Learning System		<ul style="list-style-type: none"> - Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing 	



I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

Name of Company/Bidder

Signature over Printed Name of Authorized Representative

Date

TECHNICAL SPECIFICATION

Name of The Learning System	Electronics Package
Item Code	07-001
Technology Area(s)	Electrical and Electronics Technology

General Description

The equipment is based on the "Electronic Installer of Radio, Television and Communications Equipment", "Debugger of Radio, Television and Communications Equipment", "Installer of Electronic Special Equipment", "Radio Commissioner" and "Semiconductor" issued by the Ministry of Human Resources and Social Security, and the Discrete Devices and Integrated Circuit Assembly and Adjustment. The equipment is suitable for the skills assessment and identification of related jobs in the electronic communications industry and can also be used for the basics and design of electronic technology, microcontroller principles and applications, embedded systems and applications, course teaching training, innovative design, and various electronic technology.

General Parameters

- Power supply: single-phase three-wire AC220V \pm 5% 50Hz/60Hz, 1.5 kW
- Safety protection: leakage protection, overcurrent protection
- Electronic product implementation standards: IPC-A-610 F
- Ambient temperature: -10~50°C
- Relative temperature: \leq 85%
- Overall dimensions: The equipment when installed should not consume more than 6 sqm space and not over 2m for the overall height

Features

- **Learners ability to identify targeted diagnosis and training**
 - Make detailed and complete records of the players' training process and results. Conduct a comprehensive multi-dimensional analysis to form an in-depth diagnostic analysis report to provide guidance for the focus and direction of training in the next stage.
- **System automatic scoring**
 - It can be used for both theoretical examinations and practical operation assessments. It can be automatically scored according to the players' answers.
- **Data hub management**
 - Collect the data generated during the actual operation of the three major instruments and upload it to the server, receive and record data from PCB status collectors, station recorders, player-related information and other data.
- **PCB status collection**
 - It can collect, process and display PCB status information. It relies on advanced lens tube technology to keep the system in a stable state. It can focus on PCB sample data collection and provide high-quality PCB images to be uploaded to the server for competition training and evaluation.


Relevant knowledge and related skills

1. Enable the student to design electronics circuit base on the required size of pcb and copper routing
2. Equip the student to understand the demand on electronics in repair and assembly of commercial and non-commercial products
3. Improve student skills in using electronics tools and measuring instruments
4. Improve the student's quality of soldering technique while working on the circuits and electronic design and assembly
5. Train the student's on the proper use of the testing instruments and other related electronics tools and equipment
6. Improve students' skills in programming of Microcontroller based equipment and other related product

Equipment Package

- **1 set Workbench**
 - 2200 x 1600 x 1950 mm
 - Aluminum frame, L-shape, sheet metal structure
 - Desktop: 25mm thick fireproof high-density fiberboard
 - LED light shed (refined by the cold-coiled process of fine steel plates, with an electrostatically sprayed surface, equipped with creative modern pcs-shaped LED ceiling lights, in the shape of a floating platform, full of science fiction)
 - Tool consumables mesh hanging boards (cooled by fine steel plates)
- **1 set Functional integrated cabinet**
 - Modules:
 - 1 pc Power control module
 - 1 pc AC socket module
 - 1 pc Oscilloscope module
 - 1 pc Function signal generator module
 - 1 pc DC power module
 - 1 set Central controller
 - 1 pc Status light
 - 1 pc Workstation recorder
 - 1 pc PCB status collector
- **1 set Tool cabinet**
 - Cold-rolled steel plate with electrostatic spraying on the surface
 - With universal wheels with brakes
 - Four drawer
- **1 set Training screen**
 - 1570 x 250 x 289 mm
 - Modules:
 - Programmable DC power supply
 - Rated output voltage: CH1/2: 0~36V (CH1/CH2), CH3: 1.8V/2.5V/3.3V/5V, 0~6V, 2A, CH4: USB 5V/2A
 - Minimum resolution 10mV/1mA
 - Output ON/OFF
 - Overvoltage and overcurrent protection

- Shutdown memory
- Keyboard lock, key tone
- Call up preset values with one click
- USB Device, RS-232, Digital I/O interface
- EBTN super black bottom LCD
- Power supply voltage: AC 100V/230V
- Frequency: 50/60Hz
- Programming/ readback accuracy ($25^{\circ}\text{C}\pm 5^{\circ}\text{C}$): voltage $\leq 0.1\%+3\text{mV}$, current $\leq 0.5\%+2\text{mA}$
- Ripple and noise: voltage $\leq 1\text{mVrms}$ (5Hz~1MHz), current $\leq 3\text{mA rms}$
- Temperature coefficient: voltage/current $\leq 300\text{ppm}/^{\circ}\text{C}$
- Supports the Virtual Instrument Architecture (VISA) standard communication interface, supports the host computer to monitor instruments through the VISA interface SDK, and export's fault records, including abnormal operation records such as short circuit and overcurrent. Software screenshots are required when bidding
- Digital Oscilloscope
 - Not less than 120MHz bandwidth, not less than 1GS/s real-time sampling rate
 - Not less than 4 analog channels (non-interleaved: each channel is sampled independently)
 - The storage depth of each channel is not less than 56Mpts (four channels are opened at the same time), and the storage depth supports automatic mode and manual selection
 - Not less than 7-inch WVGA (800×480) TFT LCD screen, no less than 256 levels of grayscale display (supports color temperature display)
 - The waveform capture rate is not less than 600,000wfms/s, and supports trigger output (Trigger Out) to verify the waveform capture rate
 - Vertical deflection coefficient: 1mV/div~20V/div
 - Low noise floor: $<100\mu\text{Vrms}$
 - Time base range 5ns/div~50s/div
 - Supports independent adjustment of the time base of each channel
 - Supports calculation functions such as addition, subtraction, multiplication, division, FFT, advanced operations (supports formula editing), logical operations, etc.
 - Standard trigger types: edge, pulse width, runt, over-amplitude, N edge, delay, timeout, duration, setup/hold, slope, video, pattern
 - Support RS232/UART, I2C, LIN, SPI, CAN full memory hardware decoding
 - Support external network remote control Web control
 - Equipped with standard interfaces: USB Host, USB Device, LAN, EXT Trig, AUX Out (Trig Out/Pass/Fail)
 - Support logic analyzer module
 - Supports the Virtual Instrument Architecture (VISA) standard communication interface, supports the host computer to monitor instruments through the VISA interface SDK, exports monitoring waveform data, intercepts all the instrument screen images, and can upload them as the basis for assessment and scoring, which must be provided when bidding. Software screenshot.



- **Function/Arbitrary Waveform Generator**
 - Output waveform: sine wave, square wave, ramp/ sawtooth wave, pulse wave, harmonic, noise, DC, expression, arbitrary waveform
 - Output frequency range: sine wave: 1 μ Hz~100MHz, square wave: 1 μ Hz~30MHz (optional)
 - Arbitrary wave: 1 μ Hz~20MHz Ramp: 1 μ Hz-20MHz
 - Using DDS technology, dual-channel and other performance independent output
 - Built-in 16th harmonic generator
 - Built-in no less than 7-digit high-precision, wide-band frequency meter, frequency range: 100mHz~200MHz
 - Output amplitude (high resistance): Continuously adjustable output amplitude error between 2mVpp~20Vpp is about $\pm 1\%$
 - Vertical resolution: 16bit, sampling rate: 500MS/s
 - Dual channels independently output point by point at the same time. Maximum arbitrary wave length: 16Mpts
 - Analog digital modulation types: AM, FM, PM, ASK, FSK, PSK, BPSK, QPSK, OSK, DSB-AM, PWM, SUM, QAM
 - Display: not less than 8-inch WVGA (800 \times 480) TFT LCD screen, simultaneously displaying two channels of frequency, amplitude and other information USB Device, USB Host, LAN interface, supporting U disk storage and system upgrades
 - Supports the Virtual Instrument Architecture (VISA) standard communication interface, supports the host computer to monitor the instrument through the VISA interface SDK, exports dual-channel waveform data, intercepts all the instrument screen images, and can upload it as the basis for assessment and scoring. It is required when bidding. Provide software screenshots
- **Central Controller**
 - Embedded into the training screen panel as a training screen module to install the central control system functions:
 - a. Central call system: including the setting and display of work stations/competition items, intuitive display of countdown time, and control of the status of three-color lights according to competition or training status; according to the call mechanism defined by national competition standards, call events include: questions /Medical/Equipment Problems/Go to the Bathroom/Application for Rating/Cancel/Complete, the response time of the main screen after operating the call button shall not exceed 1 second; the number of calls/cancellations/completions will be automatically counted, and all operation records and time nodes will be displayed in a list session , convenient for querying operation records. The call system of the central system and the handheld call board are compatible with each other and can exist at the same time or work independently.
 - b. Central instrument management system: Connects three major instruments (oscilloscope, DC power supply, function signal generator) through the Virtual Instrument Architecture (VISA) standard communication interface, monitors instrument process data in real

time, and supports interception of oscilloscopes and function signal generators. Complete screen images and waveform data, real-time monitoring of the 3-channel status data of the DC power supply and the ability to record fault information. The collected images and data support uploading to the server as a scoring basis for competitions or assessments.

c. PCB status collector function: supports real-time preview of cameras that identify and connect to USB or Ethernet interfaces, supports taking photos and uploading them to the server as a scoring basis for competitions/assessments, and supports image magnification of no less than 20 times.

d. Workstation record management function: Supports real-time preview of cameras that identify and connect to USB or Ethernet interfaces. The image resolution is no less than 1920*1080 pixels. The monitoring scope includes the electronic workbench programming area, training screen panel, and work surface. , student activity area; supports high-definition recording, manages recorded video files in a list, and can directly play the video or turn off the playback; video files support uploading to the server as a scoring process for the assessment; supports student information login and verification, and uploads student information to the server data is associated.

e. Equipment power monitoring function: The central software integrates power control and energy consumption monitoring functions, which can control multimedia power supplies, lighting switches, signal lights and other related hardware accessories in real time, monitor the power supply voltage/current/power and other parameters of the equipment in real time, and record the equipment Use power consumption and duration, voltage/current/power, etc. to display the change curve in real time as a graph.

- Training screen- status light
 - Three-color light function: green light represents running, yellow light represents warning, red light represents stop, and buzzer sounds
- Training screen- station recorder
 - Contains surveillance cameras and recording software to record the action trajectories, programming interfaces and related instrument operation processes within the workstation. The recording software supports real-time preview of the screen and list-based management of recorded videos. The software can play any recorded video. (Provide screenshots of workstation records as a basis)
- Training screen- PCB status collector
 - PCB working data and images can be obtained manually or automatically, and PCB working status and fault phenomena can be recorded in real time. The obtained results can be saved in the form of source files for competition process analysis and post-match traceability, and can also be inserted into Office for report recording. Provide pictures of the PCB status collector embedded in the training screen. Picture requirements: The display picture must be a high-definition original picture.



- **1 set Desktop Computer**
 - Windows 11 or higher
 - Processor: I7, 12th generation
 - Memory: 16G
 - Graphics card: Professional graphics card T 600
 - Hard drive: 500 GB
 - 1 set 2 display screens
 - 21 inches or bigger
 - Interface type: V GA+HDMI interface
 - With MS Office
- **Competition/Training Module**
 - **Maze Module - Hardware Design Questions**
 - **Module Kit**
 - Packaging box + parts box + 63 types of parts + PC B board provide a complete set of spare parts for easy use in design, surveying and assembly projects
 - **Component Programming Kit Board - Programming Test Questions**
 - **Traffic Light Demonstration Module - Programming Test Questions**
 - Intersection traffic light system, intersection traffic flow demonstration system, intersection status monitoring and control system, etc.
 - **Hardware Design Kit**
 - Parts box + 52 types of parts + PCB board provides a complete set of electronic components, which can be used for parts surveying and PCB board assembly during hardware design
 - **Digital Wind Power Module - Troubleshooting Questions**
 - single power supply to positive and negative power supply circuit, speed control circuit, voltage and current AD conversion display circuit, PWM motor drive circuit, generator drive circuit, speed display circuit, etc.
 - **Robotic arm assembly module – Electronic Assembly Test Questions**
 - Microcontroller kit circuit board, robotic arm task circuit board, 6-axis robotic arm, component box, special tools, etc.
 - **Traffic light hardware design module**
 - switch coding, digital tube driver, clock signal, alarm, decoding and other circuits, simulates traffic light control, and has a countdown function
 - **Hardware Design Kit**
 - Parts box + 52 types of parts + PCB board provides a complete set of electronic components, which can be used for parts surveying and PCB board assembly during hardware design
 - **Snake programming module**
 - power management, ARM microcontroller, OLED screen, LCD screen, dot matrix screen, gravity acceleration module, clock module, AD conversion module and other circuits. It uses LED matrix screen, LCD text display and Joystick game joystick to realize greedy Snake eating game
 - **DTMF password lock module**
 - multi-way switch combination encoding, telephone decoding, bistable triggering, analog unlocking and other circuits, and uses DTMF receiving and decoding to realize the password lock function

