



Republic of the Philippine
TARLAC STATE UNIVERSITY
Romulo Blvd., San Vicente, Tarlac City
Tel. No.: (045) 982 4630
Website: www.tsu.edu.ph

Bidding Documents

(This Bidding Documents is in conformance with the Sixth Edition of the Philippine Bidding Documents for the Procurement of Goods)

For the Project

Supply and Delivery of Advanced Manufacturing Equipment for IE and ECE of the College of Engineering and Technology (APP 2023)

**With an Approved Budget for the Contract (ABC) of
Twenty Five Million Pesos (₱ 25,000,000.00)**

Invitation to Bid No. 2023-001
PhilGeps Reference No.: 9208786

July 2020
6th Edition

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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



Republic of the Philippine
TARLAC STATE UNIVERSITY
Romulo Blvd., San Vicente, Tarlac City
Tel. No.: (045) 982 4630
Website: www.tsu.edu.ph

INVITATION TO BID

For the Project

Supply and Delivery of Advanced Manufacturing Equipment for IE and ECE of the College of Engineering and Technology (APP 2023)

Invitation to Bid No. 2023-001

1. The Tarlac State University, through General Appropriations Act intends to apply the sum of Twenty Five Million Pesos (₱ 25,000,000.00) to payments under the contracts for the project: **Supply and Delivery of Advanced Manufacturing Equipment for IE and ECE of the College of Engineering and Technology (APP 2023)**, comprising of the following lots with their corresponding ABCs:

Lot No.	Description	ABC, ₱
1	Upgrading of Electronics Engineering Laboratory	15,000,000.00
2	Three-Station Modular Production System and Robotics System	10,000,000.00

Bids received in excess of the ABC for each lot shall be automatically rejected at bid opening.

2. The Tarlac State University now invites bids for the project: Supply and Delivery of Advanced Manufacturing Equipment for IE and ECE of the College of Engineering and Technology (APP 2023). Delivery of the Goods is required within one hundred twenty (120) calendar days from the receipt of the Notice to Proceed. Bidders must have completed, within the last five (5) years prior to 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) 9184, otherwise known as the “Government Procurement Reform Act”.

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 5183.

4. Interested bidders may obtain further information from **Tarlac State University** and inspect the Bidding Documents at the address given below during Tuesday to Friday from 7:00 A.M. to 6:00 P.M:

BAC Secretariat
Gender and Development Building
Tarlac State University
Romulo Blvd., San Vicente, Tarlac City
Tel. No. (045) 606-8142 – 0998 846 0206
Email: bacsec@tsu.edu.ph

5. A complete set of Bidding Documents may be acquired by interested Bidders from **November 10, 2022 to November 29, 2022** from the aforementioned address upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, as indicated below:

Lot No.	Bidding Documents Fee, ₱
1	12,000.00
2	10,000.00

It may also be downloaded free of charge from the website of the Philippine Government Electronic Procurement System (PhilGEPS) and the website of the Procuring Entity, provided that Bidders shall pay the applicable fee for the Bidding Documents not later than the submission of their bids.

6. The Tarlac State University will hold a Pre-Bid Conference on **November 17, 2022 (3:00 P.M.)** at the Business Center Audio-Visual Room, 2nd Floor, Business Center Bldg., Tarlac State University, Romulo Blvd., San Vicente, Tarlac City and webcasted via Zoom Meeting. Meeting ID: 869 7343 2266, Passcode: 567688, which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat at the address below on or before **November 29, 2022 (2:00 P.M.)**.

BAC Secretariat
Gender and Development Building
Tarlac State University
Romulo Blvd., San Vicente, Tarlac City
Tel. No. (045) 606-8142 / 0998 846 0206
Email: bacsec@tsu.edu.ph

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 **November 29, 2022 at 2:00 P.M.**, at the Business Center Audio-Visual Room, 2nd Floor, Business Center Bldg., Tarlac State University, Romulo Blvd., San Vicente, Tarlac City. Bids will be opened in the presence of the bidders' representatives who choose to attend.
10. The Tarlac State University 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 9184, without thereby incurring any liability to the affected bidder or bidders.
11. For further information, please refer to:

Ms. Jhenna Micah A. Manankil /Mr. Joshua Jonathan Jacinto
BAC Secretariat
Gender and Development Building
Tarlac State University
Romulo Blvd., San Vicente, Tarlac City
Tel. No. (045) 606-8142 / 0998 846 0206
Email: bacsec@tsu.edu.ph

DR. MURPHY P. MOHAMMED
BAC Chairperson

Section II. Instructions to Bidders

1. Scope of Bid

- 1.1. The Tarlac State University wishes to receive Bids for the project: Supply and Delivery of Advanced Manufacturing Equipment for IE and ECE of the College of Engineering and Technology (APP 2023), with identification number **Invitation to Bid No. 2023-001**.
- 1.2. The procurement project (referred to herein as “Project”) is composed of two lots the details of which are described in Section VII. Technical Specifications.

2. Funding Information

- 2.1. The GOP through the source of funding as indicated below for **2023** in the amount of **₱ 25,000,000.00**
- 2.2. The source of funding is the **General Appropriations Act**.

3. Bidding Requirements

- 3.1. 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.
- 3.2. 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.
- 3.3. 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.

5. Eligible Bidders

- 5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.
- 5.2. Foreign ownership limited to those allowed under the rules may participate in this Project.
- 5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder must have a SLCC that is similar to the Project, as described in the **BDS**, with a value, adjusted to current prices using the PSA’s CPI, that is at least equivalent to fifty percent (50 %) of the ABC.
- 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 Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than twenty percent (20%) of the Project.

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 the specified date and time and at the address 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**.

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 e.
- 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 Declaration 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 until March 29, 2023. 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

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

15.2. 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.

15.3. 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.

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 are indicated in **Section VII. Technical Specifications**, and 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 project having several items grouped into two lots that shall be awarded as separate contracts.

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

ITB Clause										
5.3	For this purpose, contracts similar to the Project shall be the supply and delivery of similar goods comprising the Project.									
12	The price of the Goods shall be quoted DDP Tarlac City, Philippines, or the applicable International Commercial Terms (INCOTERMS) for this Project.									
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> <p style="margin-left: 40px;">a. The amount of not less than two percent (2 %) of ABC, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or</p> <p style="margin-left: 40px;">b. The amount of not less than five percent (5 %) of ABC if bid security is in Surety Bond.</p>									
19.3	<p>The ABCs for the lots are:</p> <table border="1" style="margin-left: 40px; width: 100%;"> <thead> <tr> <th style="text-align: center;">Lot No.</th> <th style="text-align: center;">Description</th> <th style="text-align: center;">ABC, ₱</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td>Upgrading of Electronics Engineering Laboratory</td> <td style="text-align: right;">15,000,000.00</td> </tr> <tr> <td style="text-align: center;">2</td> <td>Three-Station Modular Production system and Robotics System</td> <td style="text-align: right;">10,000,000.00</td> </tr> </tbody> </table>	Lot No.	Description	ABC, ₱	1	Upgrading of Electronics Engineering Laboratory	15,000,000.00	2	Three-Station Modular Production system and Robotics System	10,000,000.00
Lot No.	Description	ABC, ₱								
1	Upgrading of Electronics Engineering Laboratory	15,000,000.00								
2	Three-Station Modular Production system and Robotics System	10,000,000.00								
20.1	No further requirements.									
21.1	No further requirements.									

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

6.1. 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.

6.2. 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

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>The delivery terms applicable to this Contract are delivered to Tarlac State University, Romulo Blvd., San Vicente, Tarlac City. Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their 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>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>The outer packaging must be clearly marked on at least four (4) sides as follows:</p> <p>Name of the Procuring Entity Name of the Supplier Contract Description Final Destination Gross weight Any special lifting instructions Any special handling instructions Any relevant HAZCHEM classifications</p> <p>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>
	<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 Suppliers 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>
4	<p>The inspections and tests that will be conducted are: visual and sensory inspection and test.</p>

Section VI. Schedule of Requirements

The delivery date for the Goods covered by the Contract shall be within one hundred twenty (120) calendar days upon receipt of the Notice to Proceed.

Section VII. Technical Specifications

Item No.	Description
Lot No. 1 – Upgrading of Electronics Engineering Laboratory, comprising of the following	
1.	<p>Telecommunications Teaching Simulation Software, Perpetual License, Web Browser Access, Cloud-Based</p> <p>The software uses a block diagram approach in constructing telecommunications experiments, based on a continuously running DSP engine supported by a massive suite of documented analogue and digital experiments.</p> <p>The software can be used by instructors and students to create and simulate laboratory experiments and test hypotheses virtually on and off campus before performing the hands-on laboratory experiments.</p> <p>The Applications can be accessed by students through a URL and logging in a Username and Password.</p> <p>To build experiments, the student can select modules from the Menu and place the modules on available slots and patch inputs and outputs to complete the conceptualized system for the experiment; the student can then perform the experiment, measure, adjust, and view results instantaneously like working with real instruments. The student can Save the experiment and Load it when needed.</p> <p>The functions to set up the experiments are displayed on the screen and no programming or syntax is required.</p> <p>The following building blocks are available for building the experiments: 100 kHz Channel Filters, 3-Input Adder, 60 kHz LPF, Adder, Audio Oscillator, Baseband Channel Filters, Bit Clock Regen, Block Code Encoder, CDMA Decoder, Decision Maker, Delta Modulation Utilities, Delta Demodulation Utilities, Digital Multimeter, Digital Utilities, Dual Analog Switch, Dual Tunable LP, Error Counter, FIR, FM Utilities, Headphone Amp and LPF, Laplace, Laplace Biquad, Line-Code Encoder, Line-Code Decoder, M-Level Encoder, M-Level Decoder, Master Signals, $\Pi/4$-DQPSK, OQPSK, MSK Mod $\Pi/4$-DQPSK, OQPSK, MSK Dem, Multiple Sequences Source Multiplier, Noise Generator, PCM Encoder, PCM Decoder, Phase Shifter, Quadrature Phase Splitter, Sequence Generator, Sequence Generator: Signals & Systems, SONET STS-1 Mux, SONET STS-1 Demux, Speech, Switch, Twin Pulse Generator, Utilities, Var DCV and Amplifiers, VCO, VCO/FSK, Wideband Oscillator, z-Biquad, and z-Transform.</p> <p>The software employs a cloud-based (e.g., Google Server) method to control student access of the licensed software through a username and password. No elaborate setup is required by the student or the instructor. The username and password can be assigned to a group, a class, or to each student.</p> <p>The instructor will be able to monitor the students' utilization of the program via an on-line administration page which can also provide statistics on usage. The license is perpetual.</p>
2.	<p>Advanced Telecommunications Experimenter, Power Source: Multi-voltage plug pack Power Supply: 9 V to 15 V DC, 1 A maximum Protection: Reverse polarity and self-resetting circuit breaker protection above 16 V Absolute Maximum Supply Input: 30 V DC Operating Temperature Range: 10 °C to 30 °C Storage Temperature Range: 5 °C to 40 °C</p>

	<p>Humidity: Up to 90 % RH, non-condensing</p> <p>Accessories: 2 mm stackable patch cords (20 pcs), 2 mm to-BNC coaxial oscilloscope leads (3 pcs), 24-ohm lightweight stereo headphones (1 pc), 3.5 mm male stereo plug, multi-input voltage plug pack with 12 V/1 A output, regulated (tip is positive)</p>
3.	<p>Quadrature Phase Shift Keying (QPSK) and Multi Experiment Board, for laboratory experiments on:</p> <ul style="list-style-type: none"> • QPSK modulation • QPSK demodulation • Noisy bandpass channel • Line-Code Decoding • DPSK modulation and demodulation • FM PLL demodulation
4.	<p>Multi Experiment Board, for experiments on:</p> <ul style="list-style-type: none"> • Analog and digital electronics circuits experiments
5.	<p>Fiber Optics Transmitter and Receiver Experiment Board</p> <ul style="list-style-type: none"> • Includes three independent functional blocks, providing an electrical-optical and optical-electrical interface • Enables a complete optical link for analog or digital signals
	<p>Fiber Optics Couplers and Filters Experiment Board</p> <ul style="list-style-type: none"> • Includes three independent functional blocks • Complete bi-directional and fiber optic links • Optical signal splitting and combining • Fiber optic bi-directional communications • Wave division multiplexing link
6.	<p>Physics of Fiber Experiment Board, for experiments on:</p> <ul style="list-style-type: none"> • Guiding light using total internal reflection • Losses in fiber optic networks • Polarization • Bending losses in fiber optic systems • Connectors <p>Accessories: Laser source (1 pc), Fiber holder stand (1 pc), Slide holder (1 pc), Semicircular Perspex block (1 pc), Screen (1 pc), Clear plastic light guide (1 pc), Clear Perspex slide (1 pc), Green reflective-absorption slide (1 pc), Scattering slide (1 pc), Polarizer slide (1 pc), Polarizer disc (1 pc), Quarter-wave plate slide (1 pc), Stripped optical patch lead (1 pc), Adapted bulkhead connector (1 pc), Spacer (1 pc), Water-drop dispenser (1 pc)</p>
7.	<p>Advanced Electrical, Electronics and Digital Experiment,er,</p> <p>Resistor, 10 ohm, 1 W (1 pc)</p> <p>Resistor, 47 R, ¼ W (1 pc)</p> <p>Current probe (1 set)</p> <p>Resistor, 1 K, ¼ W (1 pc)</p> <p>Resistor, 10 K, ¼ W (3 pcs)</p> <p>Resistor, 270 ohm, ¼ W (1 pc)</p> <p>Resistor, 5.6 K, ¼ W (1 pc)</p> <p>Connecting link (12 pcs)</p> <p>Resistor, 330 K, ¼ W (1 pc)</p> <p>Capacitor, 1 uF, polyester (2 pcs)</p> <p>Resistor, 22 K, ¼ W (1 pc)</p> <p>Resistor, 15 K, ¼ W (1 pc)</p> <p>Choke, 47 mH (1 pc)</p> <p>Resistor, 2.2K, ¼ W (1 pc)</p> <p>Laboratory and curriculum manual (1 set)</p> <p>Power supply carrier with voltage source symbol (2 pcs)</p> <p>Connecting leads (1 set)</p> <p>Baseboard with 4 mm pillars (1 pc)</p>

	Power supply with adaptors (1 set) Storage Box with tray and cover (1 pc)
8.	Three-Phase Systems Trainer, Three-phase motor (1 pc) Tray Lid (1 pc) Deep tray (1 pc) BNC male to dual 4 mm binding post (4 pcs) Three-phase power supply (1 pc) Bulb 12 V, 0.1 A (3 pcs) Resistor, 10 ohm, 1 W (2 pcs) Resistor, 1 k, ½ W (3 pcs) Lamp holder (3 pcs) Lead, green, 320 mm, 4 mm to 4 mm, stackable (2 pcs) Lead, red, 500 mm, 4 mm to 4 mm, stackable (5 pcs) Lead, black, 500 mm, 4 mm to 4 mm, stackable (6 pcs) Lead, yellow, 500 mm, 4 mm to 4 mm, stackable (1 pc) Lead, blue, 500 mm, 4 mm to 4 mm, stackable (1 pc) Capacitor, 33 uF, non-electrolytic (1 pc) Resistor, 2.2 k, ¼ W (1 pc) 25 MHz PC-based oscilloscope and generator pack (1 set)
9.	Transformer Construction and Operation Experimenter, Deep tray (2 pcs) Tray Lid (2 pcs) Crash Foam (6 pcs) Coils and cores activity kit (1 set) Daughter tray foam cutout (1 pc) Daughter tray, 62mm daughter tray (1pc) 7 x 5 metric baseboard with 4 mm pillars (1 pc) Connecting Link (1 pc) AC power supply, 12 V AC, 1.5 A (1 pc) AC voltage source carrier (1 pc) Power supply (1 pc) Power supply carrier with battery symbol (1 pc) Resistor, 100 ohm, 3 W, (1 pc) Resistor, 10 ohm, 3 W (2 pcs) MES Lamp holder (1 pc) MES power LED (1 pc) MES bulb, 6 V, 0.06 A (1 pc) Switch, on/off, metal strip (1 pc) Lenz's law kit (1 set) Compass (1 pc) 400 Turn coil carrier (1 pc) Ferrite rod, 10 mm x 100 mm (1 pc) Alnico rod magnet (1 pc) Shrouded lead, 4 mm, black, stackable (1 pc) Shrouded lead, 4 mm, red, stackable (1 pc) Lead, black, 500 mm, 4 mm to 4 mm, stackable (1 pc) Lead, red, 500 mm, 4 mm to 4 mm, stackable (1 pc)
10.	Advanced Electronics Principles, Power supply (2 pcs) Storage Box with tray and cover (2 pcs) Resistor, 100 ohm, 1 W (1 pc) Capacitor, 1000 uF, 30 V, electrolytic (1pc) Triac (1 pc) Transistor, JGFET (1 pc) Resistor, 1 k, ½ W (3 pcs) Resistor, 10 k, ¼ W (3 pcs) Resistor, 270 ohm, ½ W (1 pc)

	<p>Resistor, 180 ohm, ½ W (1pc) Potentiometer, 250 ohm (1pc) Potentiometer, 10 k (2 pcs) Resistor, 100k, ¼ W (2 pcs) Capacitor, 47 uF, 25 V, electrolytic (1 pc) Thermistor, 4.7 k, NTC, ANSI (1 pc) Lead, red 500 mm, 4 mm to 4 mm, stackable Lead, black, yellow, and blue, 500 mm, 4 mm to 4 mm, stackable Capacitor, 100 uF, 25 V, electrolytic (1 pc) Capacitor, 1 uF, polyester (1 pc) Capacitor, 4.7 uF, 25 V, electrolytic (1 pc) Capacitor, variable, 15-140 pF Capacitor, 0.47 uF, polyester (1 pc) Resistor, 2.2k, ¼ W (1 pc) 7 x 5 metric baseboard with 4 mm pillars (1 pc) AC voltage source carrier (1 pc) Voltmeter, 0 V to 15 V (1 pc) Resistor, 200 k, ¼ W (1 pc) Capacitor, 1 nF, polyester (1 pc) Phototransistor Carrier (1 pc) Photodiode (1 pc) Switch, changeover, toggle (1 pc) Resistor, 500 k, ¼ W (1 pc) Zener diode, 8.2 V (1 pc) Transistor RHF, PNP (1 pc) Transistor LHF, PNP (1 pc)</p>
11.	<p>Multimeter DC Voltage Measuring Range: 200 mV to 600 V Input Impedance: 10 MΩ Max Input Voltage: 600 V DC or 600 V AC RMS AC Voltage Measuring Range: 2 V to 600 V Max Input Voltage: 600 V DC or 600 V AC RMS Frequency Response: 40 Hz – 400 Hz sine wave RMS Resistance: 200 Ω to 200 MΩ Overload protection: 250 V DC or 250 V AC RMS Open Circuit Voltage: below 700 mV</p>
12.	<p>USB-powered PC-Based Oscilloscope Data Acquisition Device, with software, 4-analog channel and built-in function/arbitrary waveform generator, USB connectors and probes, installation CD Technical specifications: Bandwidth: 60 MHz Sampling: 1 GS/s Memory: 4 MS Waveform: Function Generator Input channel: 4 Input ranges: ±50 mV to ±20 V in 9 ranges Overvoltage protection: ±100 V (DC + AC peak) Function Generator: Output waveforms: Sine, square, triangle, DC voltage Output frequency range: DC to 1 MHz Output frequency accuracy: > 1 MHz Spectrum Analyzer: Frequency Range: DC to 60 MHz Display modes: Magnitude, average, peak hold</p>
13.	<p>DC Power Supply, One 0-30 V variable output One 5 V 500 mA output and one 12 V 500 mA output</p>

	<p>Separate digital voltmeter and ammeter Current limiting LED indicator Adjustable current control Overload and short circuit protection Galvanized steel case Polycarbonate front panel Screw on connector for variable output, snap on connectors for fixed outputs Compliant to CE, EN61558, EN55014</p>
14.	<p>Function Generator, Synthesized, DDS Technique and FPGA Chip Design Frequency Range: 0.1 Hz to 3 MHz High Frequency Accuracy: ± 20 ppm High Frequency Stability: ± 20 ppm Maximum Frequency Resolution: 100 mHz Low Distortion Sine Wave: -55 dBc, 0.1 Hz to 200 kHz</p>
	<ul style="list-style-type: none"> • Warranty: 1 year against factory defects, 2 years on workmanship and after-sales service • With laboratory experiment manuals • With Training
<p>Lot No. 2 – Three-Station Modular Production System and Robotics System comprising of the following:</p>	
1.	<p>Distributing/Conveyor Station, consisting of the following:</p> <ol style="list-style-type: none"> 1. Conveyor Module, with the following components: <ol style="list-style-type: none"> 1.1. Fiber-optic cable (diffuse sensor), with the following features: Signal processing (measuring principle) - Red light Coverage range max. - 120 mm Mounting thread - M6 Coating of housing - Nickel-plated Degree of protection - IP65 Switch triggering - Reflex Function on actuation - Polymer fiber optic cable 1.2. Fiber-optic device (diffuse sensor), with the following features: Signal processing (measuring principle) - Red light Switch triggering - Reflex/Interrupt Function on actuation - Sender and receiver Output potential - PNP Coverage range max. - 120 mm Thread for connector - M 8x1 Number of pins, plug connection - 4 Operating status display - Yellow LED Short-circuit strength - Pulsed Type of mounting - Hole Material of housing - PBT-reinforced Voltage type - DC Nominal operating voltage - 24 V Minimum operating voltage - 10 Maximum operating voltage - 30 Maximum idle current - 25 mA Maximum switching frequency - 1000 Hz Degree of protection - IP65 1.3. Fiber-optic cable (light barrier), with the following features: Signal processing (measuring principle) - Red light Switch triggering - Interrupt Function on actuation - Polymer fiber optic cable

	<p>Coverage range max. - 400 mm Mounting thread - M4 Degree of protection - IP65</p> <p>1.4. Fiber-optic device (light barrier), with the following features: Signal processing (measuring principle) - Red light Switch triggering - Reflex/Interrupt Output potential - PNP Coverage range max. - 120 mm Thread for connector - M 8x1 Number of pins, plug connection - 4 Operating status display - Yellow LED Voltage type - DC Nominal operating voltage - 24 V Minimum operating voltage - 10 V Maximum operating voltage – 30 V Maximum idle current - 25 mA Maximum switching frequency - 1000 Hz Degree of protection - IP65</p> <p>1.5. D.C. Rotary Solenoid, with the following features: Angle of rotation – 95° Operating mode - S3 40% Torque - 2.00 Ncm Rated power - 16.2 W Mass inertia - 0.314 x 10 – 6 (kgm²)ft Time constant - 6.5 ms</p> <p>1.6. DC Gear motor, with the following features: Nominal voltage 24 V Nominal current 1.5 A Nominal speed of drive shaft - 65 rpm Reduction stages - 1 Nominal torque - 1 N-m Reversible - Yes Starting torque - 7 N-m</p> <p>1.7. DC motor controller, with the following features: Nominal voltage - 24 V ± 10% Maximum power consumption - 50 mA Continuous motor current - 4 A Control inputs, logic 1 - 10.....24 V Control inputs, logic 0 - 0.....4 V Analog input - 0...10 V , 24 V tolerant Overvoltage protection - Yes CE marking per - Class B interference emission</p> <p>1.8. Mini I/O terminal, with the following features: Operating voltage – 24 V DC Digital I/O, 4DI, 4DO - Maximum 24 V DC, maximum 2 A per output Analog I/O, 2AI, 1AO - 0....10V DC and ± 10V DC Electrical connection - D-Sub HD 15-pin (3-row) Spring clip: 0.14 ... 0.5 mm² Indicators Status LEDs: Blue (power supply), Green (input signal), Orange (output signal)</p> <p>2. Stack Magazine Module, with the following components:</p> <p>2.1. Proximity sensor, with the following features:</p>
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Design - For T-slot
Measuring principle - Reed magnetic
Switch output - with contact, bipolar
Maximum switching frequency - 800 Hz
Maximum output current - 500 mA
Electrical connection - Cable 3-core
Connector exit direction - axial
Cable length - 2.5 m
Mounting type - Clamped in T-slot
Insertable into slot lengthwise
Operating status display - Yellow LED
Protection class - IP65 IP67
Ambient temperature with flexible cable - -5 °C to 60 °C
Tightening torque - 0.2 N-m

2.2. Fiber-optic cable (light barrier), with the following features:

Signal processing (measuring principle) - Red light
Switch triggering - Interrupt
Function on actuation - Polymer fiber optic cable
Coverage range max. - 400 mm
Mounting thread - M4
Degree of protection - IP65

2.3. Fiber-optic device (light barrier), with the following features:

Signal processing (measuring principle) - Red light
Switch triggering - Reflex/Interrupt
Output potential - PNP
Coverage range max. - 120 mm
Thread for connector - M 8x1
Number of pins, plug connection - 4
Operating status display - Yellow LED
Voltage type - DC
Nominal operating voltage - 24 V
Minimum operating voltage - 10 V
Maximum operating voltage - 30 V
Maximum idle current - 25 mA
Maximum switching frequency - 1000 Hz
Degree of protection - IP65

2.4. Standard cylinder, with the following features:

Stroke - 100 mm
Piston diameter - 8 mm
Piston rod thread - M4
Cushioning - P: Flexible cushioning rings/plates at both ends
Assembly position - Any
Piston-rod end - Male thread
Design structure - Piston, Piston rod, Cylinder barrel
Variants - Single-ended piston rod
Working pressure - 1.5 bar to 10 bar
Mode of operation - double-acting
Corrosion resistance classification CRC - 2 - Moderate corrosion stress
Impact energy in end positions - 0.03 J
Theoretical force at 6 bar, return stroke - 22.6 N
Moving mass with 0 mm stroke - 30.2 N
Mounting type - with accessories
Pneumatic connection - M5

2.5. Mini-I/O-Terminal, with the following features:

	<p>Operating voltage - 24 V DC Digital inputs/outputs, 4DI/4DO - Maximum 24 V DC, maximum 2 A per output, maximum 4 A total Analogue inputs/outputs, 2AI/1AO - 0 ... 10 V DC and ± 10 V DC respectively Electrical connection - D-Sub HD 15-pin (3-row), Spring clip: 0.14 ... 0.5 mm Indicators - Status LEDs: Blue (power supply), Green (input signal), Orange (output signal)</p> <p>Operating voltage - 24 V DC Digital inputs/outputs, 4DI/4DO - Maximum 24 V DC, maximum 2 A per output, maximum 4 A total Analogue inputs/outputs, 2AI/1AO - 0 ... 10 V DC and ± 10 V DC respectively Electrical connection - D-Sub HD 15-pin (3-row), Spring clip: 0.14 ... 0.5 mm</p> <p>2.6. One-way flow control valve, with the following features: Valve function - One-way flow control function for exhaust air Pneumatic connection, port 1 - QS-4 Pneumatic connection, port 2 - M5 Adjusting element - Slotted head screw Mounting type - Threaded Standard nominal flow rate in flow control direction - 40 l/min Working pressure - 0.2 to 10 bar</p> <p>3. Sorting Gate/Separator Module, with the following components:</p> <p>3.1. D.C. Rotary Solenoid, with the following features: Angle of rotation - 95° Operating mode - S3 40% Torque - 2.00 N-cm Rated Power - 16.2 W Mass inertia - 0.314×10^{-6} (kgm²)ft Time constant - 6.5 ms</p> <p>4. Interface, with the following features: Type - C interface Operating voltage - 24 V DC Digital inputs/outputs 8DI/8DO - Maximum 24 V DC, maximum 2 A per output, maximum 4 A total Analogue inputs/outputs 4AI/2AO - 0 to 10 V DC or ± 10 V DC Electrical connection – 2 x 15-pin D-Sub HD (3 rows), 1 x 24 pin IEEE 488 socket (SysLink), 1 x 15-pin D-Sub (2 rows) Indicators - Status LEDs: blue (power supply), green (input signals), orange (output signals)</p> <p>5. Computer Cable, with the following features: Type - D-Sub HD connecting cable, crossed Number of wires - 16 Cross section - 0.25 mm² Plug type - D-Sub HD 15-pin (3 rows) Socket type- D-Sub HD-15-pin (3 rows) Power rating - Maximum 2 A per wire</p> <p>6. Supply Regulator Valve, with the following features: Type - diaphragm valve with filter Assembly position - Vertical $\pm 5^\circ$ Standard nominal flow rate - 110 l/min Upstream pressure - 100 to 1000 kPa Operating pressure - 50 to 700 kPa Connection type- Coupling plug for coupling socket G1/8</p>
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	<p>7. Control Panel/Console, with the following features: Function - Control console for Syslink Membrane keyboard: Start pushbutton with LED, stop pushbutton, Reset push button, with LED, 2 flexibly assignable control lamps, 4 mm safety sockets with LED status display for I/O connection, Syslink and Sub-D sockets for connection to PLC on the rear panel</p> <p>8. Programmable Logic Controller (PLC) Main memory - Main memory, Memory card included Interface - 2-port switch, Ethernet, 10 ns bit performance Inputs/outputs - 32 digital inputs (24 V DC), 32 digital inputs (24 V DC/0.5A), 8 analog inputs, 8 U/I/RTD/TC, 16-bit resolution, 4 analog outputs, 4x U/t, 16-bit resolution Mounting system - Size (W x H): - 305 mm x 300 mm, powder-coated, sheet-steel With integrated power supply unit, 110/230 V AC/24 V DC/4 A With 19" module simulation plate with 2 SysLink plug With connector for MPS and control panel With 8 digital inputs and 8 digital outputs and 1 Sub-D 15 Pin plug connection with 4 analog inputs and 2 analog outputs, emergency stop jumper to connect a safety circuit for disconnecting 8 digital outputs.</p> <p>9. PLC Software, with the following programming languages: Statement list (STL) Function diagram (FUN) Ladder diagram (LDR) Structured Text Function Sequence Diagram</p> <p>10. Trolley, with the following features: Height (including rolls unit top edge of trolley) - 750 mm Width - 350 mm Length - 700 mm Material: Aluminum</p> <p>11. Accessories, Profile plate Height adjustment A4 mounting frame A4 mounting profile Assembly board</p>
<p>2.</p>	<p>Handling Station, consisting of the following:</p> <p>1. Pick and Place Module, with the following components:</p> <p>1.1. Pneumatic Linear drive, with the following features: Mode of operation - Double acting Shape - piston Round Sensing type - Magnetic Type of cushioning Internal cushioning ring (non-adjustable) Protection against torsion - Guide Driver principle - Positive-locking (slot) Guide principle - Plain-bearing guide Piston, nominal size – 12 mm X-stroke - X Minimum stroke for X-stroke - 10 mm Maximum stroke for X-stroke - 600 mm</p>

Minimum operating pressure - 2.5 bar
Maximum operating pressure - 8 bar
Minimum ambient temperature - -10 °C
Maximum ambient temperature - 60 °C
Air connection type - Female thread
Connector thread page 1 - M 5
Air connection type connecting thread - Female thread
Connector thread page 2 - M 5
Effective force (approximate) at 6 bar - 68 N
Air consumption at 6 bar/10 mm - 0.0079 l

1.2. Parallel gripper, with the following features:

Mode of operation - Double acting
Gripper function - Parallel
No. of gripper jaws - 2
Drive - 2 cylinders parallel
Type of mounting direct - Thread: Hole
Sensing type - Magnetic
Piston, nominal size - 10
Operating pressure min. - 2 bar
Operating pressure max. - 8 bar
Minimum ambient temperature - 5 °C
Maximum ambient temperature - 60 °C
Air connection type - Female thread
Connector thread - M 3
Material of barrel/housing - Kneaded aluminum alloy
Material of gripper fingers - Stainless high-alloy steel
Material of cover- PA
CT criterion - Free of copper and teflon
Product weight - 0.068 kg
Nominal gripping force, closing - 40 N
Nominal gripping force, opening - 47 N
Nominal time, opening - 22 ms
Nominal time, closing - 31 ms
Air consumption at 6 bar per stroke - 0.0025 l
Medium - Dried air, lubricated or unlubricated
Interchangeability - 0.2 mm
Repetition accuracy - 0.04 mm

1.3. Flat Cylinder, with the following features:

Mode of operation - Double acting
Shape piston - Oval
Shape of piston rod - Round
Sensing type - Magnetic
Type of cushioning - Internal cushioning ring (non-adjustable)
Protection against torsion - Piston shape
Piston, nominal size - 18 mm
Stroke - 80 mm
Piston rod diameter - 8 mm
End of piston rod - Female thread
KK Piston rod thread - M 4
Operating pressure min. - 1 bar
Operating pressure max. - 10 bar
Minimum ambient temperature - -20 °C
Maximum ambient temperature - 80 °C
Bearing cap connection type - Female thread
EE Connecting thread for bearing cap - M 5
Material of cap - Wrought aluminum alloy
Material of seals - FPM, TPE-U(PU)

Material of piston rod - Stainless high-alloy steel
 Material of barrel/housing - Wrought aluminum alloy
 Total weight at 0 mm stroke - 0.107 kg
 Additional weight per 10 mm stroke - 0.013 kg
 Weight of moving load at 0 mm stroke - 0.024 kg
 Weight of moving load per 10 mm stroke 0,004 kg - 0.024 kg
 Air connection type cover cap - Female thread
 EE Connecting thread for end cap - M 5
 Effective force (approximate) at 6 bar, adv. - 153 N
 Effect. force (approximate) at 6 bar, return 1- 23 N
 Maximum Torque - 0.2 Nm
 Air consumpt.at 6 bar per advance - 0.0178 l

1.4. Valve Kit, CPV, with the following features:

Function - Piloted non-return valve
 Type of mounting Hole
 Nominal size non-return 4 mm
 Air connection type 1 Sub-base
 Air connection type 2 Female thread
 Operating pressure min. - 2.5 bar
 Operating pressure max. - 10 bar
 Minimum ambient temperature - -10 °C
 Maximum ambient temperature - 60 °C
 Minimum medium temperature - -10 °C
 Maximum medium temperature - 60 °
 Material of housing - Die-cast zinc
 Material of seals - NBR-Elastomer
 Standard nominal flow rate 1->2(S) max. - 160 l/min
 Standard nominal flow rate 2->1 max. - 220 l/min
 Switch-on time - 20 ms
 Switch-off time - 30 ms
 Medium - Compressed air, filtered

1.5. One way flow control valve, with the following features:

Function - One-way flow control
 Function air supply/exhaust air - Exhaust air
 Function restrictor - Adjustable
 Actuating component - Screw
 Type of mounting - Screw-in
 Nominal size flow control - 1.4 mm
 Nominal size non-return - 1.4 mm C32:C4C32:C47
 Air connection type 1 - Male thread
 Air connection type 2 - Push-in
 Thread for port 1 - M 5
 Nominal size of tubing connection - 2 4
 Operating pressure min. - 0.2 bar
 Operating pressure max. - 10 bar
 Minimum ambient temperature - -10 °C
 Maximum ambient temperature - 60 °C
 Minimum medium temperature - -10 °C
 Maximum medium temperature - 60 °C
 Material of housing - Die-cast zinc
 Material of seals - NBR-Elastomer
 Material of screw-in stud - brass
 Product weight - 0.009 kg
 Standard nom. flow rate 1->2(S) max. - 40 l/min
 Standard nom. flow rate 1->2(S) min - 0 l/min
 Standard nominal flow rate 2->1 max. - 50 l/min

Standard nominal flow rate 2->1 min 0 0 l/min
Medium - Compressed air, filtered 40 µm (may be lubricated)

1.6. Valve Kit, CPV, with the following features:

Signal processing (measuring principle) – red light
Switch triggering – Reflex
Function on actuation – Polymer fiber optic cable
Coverage range max. – 120 mm
Minimum ambient temperature - -40 °C
Maximum ambient temperature – 70 °C
Mounting thread – M 6
Material of housing – brass
Product weight – 0.02 kg
Coating of housing – Nickel-plated
Degree of protection – IP65

1.7. Station link receiver, through beam sensor, with the following features:

Signal processing (measuring principle) – Infrared
Switch triggering – Interrupt
Function on actuation – Receiver
Output potential (el. Output) – PNP
Maximum coverage range - 6000 mm
Minimum ambient temperature - -5 °C
Maximum ambient temperature - 55 °C
Air connection type elec. - Plug
Thread for connector - M 8x1
Number of pins, plug connection - 3
Operating status display - Yellow LED
Short-circuit strength - Pulsed
Protection against incorrect polarity - integrated
Voltage type - DC
Nominal operating voltage - 24 V
Minimum operating voltage - 10 V
Maximum operating voltage - 30 V
Maximum idle current - 25 mA
Maximum switching frequency - 1000 Hz
Degree of protection - IP65

1.8. Station link transmitter, through beam sensor, with the following features:

Signal processing - Infrared
Switch triggering - Interrupt
Function on actuation - sender
Coverage range maximum - 6000 mm
Minimum ambient temperature -5 °C
Maximum ambient temperature - 55 °C
Air connection type elec. - Plug
Thread for connector - M 8 x 1
Number of pins, plug connection - 3
Operating status display - Yellow LED
Short-circuit strength - Pulsed
Protection against incorrect polarity -integrated
Voltage Type - DC
Nominal operating voltage - 24 V
Minimum operating voltage - 10 V
Maximum operating voltage - 30 V
Maximum idle current - 25 mA
Maximum switching frequency - 1000 Hz

	<p>Degree of protection - IP65</p> <p>1.9. Fiber Optic device, Optoelectronic sensor, with the following features</p> <ul style="list-style-type: none"> Signal processing (measuring principle) - red light Switch triggering - Reflex/Interrupt Function on actuation - sender and receiver Output potential (el. output) - PNP Maximum coverage range - 120 mm Minimum ambient temperature - -5 °C Maximum ambient temperature - 55 °C Air connection type elec. - Plug Thread for connector - M 8 x 1 Number of pins, plug connection - 4 Operating status display - Yellow LED Short-circuit strength - Pulsed Protection against incorrect polarity - built-in Type of mounting - Hole Material of housing - PBT-reinforced Product weight - 0.018 kg Voltage Type - DC Nominal operating voltage - 24 V Minimum operating voltage - 10 V Maximum operating voltage - 30 V Maximum idle current - 25 mA Maximum switching frequency - 1000 Hz Degree of protection - IP65 <p>1.10. Solenoid Valve CPV 3/2 way, with the following features:</p> <ul style="list-style-type: none"> Switching function - 3/2-way valve, normally open or normally closed Switching function short code - 2-Mar Direction of flow reversible - No Operating principle - Slide Shape of function component - Piston With exhaust flow control - No Type of regulation - Indirect Control type - Monostable Type of reset - Air spring External auxiliary pilot air - Yes Grid dimension - 10 mm Type of mounting - Screw Number of multiple configurations - 2 Type of multiple configuration - Battery Installation position - Any Nominal size - 4 mm Minimum operating pressure - -0.9 bar Maximum operating pressure - 10 bar Minimum ambient temperature - -5 °C Maximum ambient temperature - 50 °C Minimum medium temperature - -5 °C Maximum medium temperature - 50 °C Minimum pilot pressure - 3 bar Type of connection, air supply - Manifold module Air connection type power port - Female thread Air connection type power port - Female thread Type of connection, exhaust - Manifold module Air connection type auxiliary pilot air supply - Manifold module Air connection type auxiliary pilot air exhaust - Manifold module Type pilot control air - Supply and exhaust:
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External pilot air and air spring, ducted pilot exhaust
Actuation/reset - Single solenoid, air spring return

1.11. Solenoid Valve CPV 5/2 way, with the following features:

Switching function - 5/2-way valve
Switching function short code - 5 working ports, 2 switching position
Direction of flow reversible - No
Operating principle - Slide
Shape of function component - Piston
With exhaust flow control - No
Type of regulation - Indirect
Control type - Monostable
Type of reset - Air spring
External auxiliary pilot air - Yes
Grid dimension - 10 mm
Type of mounting - Screw
Number of multiple configurations - 2
Type of multiple configuration - Battery
Installation position - Any
Nominal size - 4 mm
Minimum operating pressure - -0.9 bar
Maximum operating pressure - 10 bar
Minimum ambient temperature - -5 °C
Maximum ambient temperature - 50 °C
Minimum medium temperature - -5 °C
Maximum medium temperature - 50 °C
Minimum pilot pressure - 3 bar
Type of connection, air supply - Manifold module
Air connection type power port - Female thread
Air connection type power port - Female thread
Type of connection, exhaust - Manifold module
Air connection type auxiliary pilot air supply - Manifold module
Type pilot control air Supply and exhaust - External pilot air and air spring, ducted pilot exhaust
Actuation/reset - Single solenoid, air spring return

1.12. Socket connector cable for sensor and switches (4GD and 3GD), with the following features:

Minimum ambient temperature standard - -40 °C
Maximum ambient temperature standard - 70 °C
Correlation ambient temperature /hours - Fixed cable installation
Minimum ambient temperature screwed-in - -5 °C
Maximum ambient temperature limited - 70 °C
Ambient temperature class, screwed in - Flexible cable installation
Air connection type elec. - Cable/socket
Number of cores - 3
Core cross section - 0.25 mm²
Length of cable - 2500 mm
Diameter of connecting cable - 4.5 mm
Material, cable sheath - TPE-U(PU)
Degree of protection - IP67

1.13. Relays, with the following features:

Relays per module - 1
Relay mount - Soldered
Mount - can be snapped onto 35-mm DIN rail (EN 50 022)
and 32-mm G-rail (EN 50 035)
Temperature range - -25 °C to 60 °C

Rated isolation voltage input/output - 2500 V eff
Dimensions (W x H x D) - 22.5 mm × 67 mm × 60 mm
Housing material - Noryl

1.14. Shock Absorber, with the following features:

Function - shock absorber
Cushioning - self-adjustable
Type of mounting - Thread + lock nut
Mounting thread - M 8 x 1
Piston, nominal size - 5 mm
Stroke - 5 mm
Cushioning work per stroke - 1 J
Cushioning work per hour - 8000 J
Impact speed max. - 2 m/s
Maximum impact force - 200 N
Minimum reset force, advanced position - 0.7 N
Minimum inward thrust, rear end position - 5.5 N
Maximum residual energy - 0.01 J
Piston rod diameter - 2.5 mm
Minimum ambient temperature - -10 °C
Maximum ambient temperature - 80 °C
Reset time, short term - 0.2 s
Permissible tightening torque - 2 Nm
Material of seals NBR, TPE-U(PU)
Material of piston rod - High-alloy steel
Material of barrel/housing - Steel: Brass
CT criterion - Free of copper and teflon
Product weight - 0.009 kg

1.15. Push-in/thread L-fittings, with the following features:

Nominal size connector - 2.4 mm
Nominal size of tubing connection - 4
Mounting/connection thread - M 5
Minimum operating pressure - -0.95 bar
Maximum operating pressure - 10 bar
Minimum ambient temperature - 0 °C
Maximum ambient temperature - 60 °C
Minimum medium temperature - 0 °C
Maximum medium temperature - 60 °C
Material of housing - PBT-reinforced
Product weight - 0.003 kg
Medium - Compressed air, filtered

1.16. Start-up valve filter control valve, with the following features:

Medium - Compressed air
Design - Sintered filter with water separator, diaphragm control valve
Assembly position - Vertical ±5°
Standard nominal flow rate - 750 l/min
Maximum upstream pressure - 1600 kPa
Maximum operating pressure - 1200 kPa
Connection - Coupling plug force coupling socket, QS-plug fitting for plastic tubing PUN 6 x 1

1.17. Proximity sensor, with reed contact and light emitting diode, without mounting kit, with the following features:

Signal processing/type of contact - reed contact
Function on actuation - N/O contact
Switching accuracy (+/-) - 0.1 mm

Minimum ambient temperature standard - -20 °C
 Maximum ambient temperature standard - 70 °C
 Correlation ambient temperature /hours - Fixed cable installation
 Maximum ambient temperature screwed-in - -5 °C
 Ambient temperature class, screwed in - Flexible cable installation
 Air connection type elec. - Cable with plug
 Number of cores - 3
 Core cross section - 0.14 mm²
 Length of cable - 300 mm
 Number of pins, plug connection - 3
 Operating status display - Yellow LED
 Type of mounting slot
 Material of housing - PET-reinforced
 Material, cable sheath - PVC-polymer
 CT criterion - Free of copper and teflon
 Product weight - 0.01 kg
 Voltage type - AC/DC
 Nominal operating voltage - 24 V DC
 Minimum operating voltage - 12 V DC
 Maximum operating voltage - 30 V DC
 Nominal operating voltage - 24 V AC
 Minimum operating voltage - 12 V AC
 Maximum operating voltage - 30 V AC
 Maximum contact rating (DC) - 10 W
 Maximum contact rating (AC) - 10 VA
 Maximum switching frequency - 500 Hz

1.18. I/O terminals, with the following features:

Number of inputs with LED - 8
 Number of outputs with LED - 8
 Number of terminals 0 V - 22
 Number of terminals 24 V - 12
 Connector – Amphenol Tuchel 24-pin, 57 GE series

1.19. Silencer, with the following features:

Air connection type - Male thread
 Connector thread - M 5
 Operating pressure min. - 0 bar
 Operating pressure max. - 10 bar
 Minimum ambient temperature - -10 °C
 Maximum ambient temperature - 70 °C
 Sound pressure level - 70 dB(A)
 Standard nominal flow rate - 90 l/min
 Material of screw-in stud – brass

1.20. Slide module (with a retainer for mounting on a profile plate), with the following features:

Application: - As end slide or segregating slide
 Length - 250 mm
 Standard height - 117 – 200 mm (adjustable)

1.21. Plastic tubing, 4 mm, with the following features:

Nominal size of tubing - 4 mm
 Internal diameter - 2.6 mm
 Outside diameter - 4 mm
 Minimum bending radius - 17 mm
 Minimum operating pressure - -0.95 bar
 Maximum operating pressure at 20°C - 10 bar

	<p>Maximum operating pressure at 30°C - 10 bar Maximum operating pressure at 40°C - 9 bar Maximum operating pressure at 60°C - 7 bar Suitable for vacuum - Yes Minimum ambient temperature - -35 °C Maximum ambient temperature - 60 °C Material of tubing - TPE-U(PU) Product weight per meter - 0.0089 kg/m Color - blue Length – 10 m</p> <p>1.22. Plastic tubing, 6 mm, with the following features: Nominal size of tubing – 6 mm Internal diameter 4 mm Outside diameter 6 mm Minimum bending - 26.5 mm Minimum operating pressure - -0.95 bar Maximum operating pressure at 20°C - 10 bar Maximum operating pressure at 30°C - 10 bar Maximum operating pressure at 40°C - 9 bar Maximum operating pressure at 60°C - 7 bar Minimum ambient temperature - -35 °C Maximum ambient temperature - 60 °C Material of tubing - TPE-U(PU)</p> <p>2. Programmable Logic Controller (PLC), with the following features: Main memory - Main memory, Memory card included Interface - 2-port switch, Ethernet, 10 ns bit performance Inputs/outputs - 32 digital inputs (24 V DC), 32 digital inputs (24 V DC/0.5A), 8 analog inputs, 8 U/I/RTD/TC, 16-bit resolution, 4 analog outputs, 4x U/t, 16-bit resolution Mounting system - Size (W x H): - 305 mm x 300 mm, powder-coated, sheet-steel With integrated power supply unit, 110/230 V AC/24 V DC/4 A With 19" module simulation plate with 2 SysLink plug With connector for MPS and control panel With 8 digital inputs and 8 digital outputs and 1 Sub-D 15 Pin plug connection with 4 analog inputs and 2 analog outputs, emergency stop jumper to connect a safety circuit for disconnecting 8 digital outputs</p> <p>3. PLC Software, with the following programming languages: Statement list (STL) Function diagram (FUN) Ladder diagram (LDR) Structured Text Function Sequence Diagram</p> <p>4. Trolley, with the following features: Material - Aluminum Height (including castors, to bottom edge of profile plate) - 750 mm Width - 350 mm Depth - 700 mm</p> <p>5. Profile plate, with the following features: Material - Aluminum Length x width - 350 x 700 mm Grid Dimension - 50 mm</p>
3.	Processing Station, consisting of the following:

	<ol style="list-style-type: none"> 1. Clamping/ejecting module, with the following features: For mounting on a profile plate An electrical solenoid is used for the drive 2. Drilling module, with the following features: Nominal voltage - 24 V Nominal power output - 50 W Connection - 2-wire cable (min. 0.5 mm) Clamping range of drill chuck – 1 to 6 mm Service life - 200 hours Weight - 400 g Height - 360 mm Working stroke - 100 mm Nominal current DC motor- 0.3 A Nominal current - 0.5 A 3. Gear Motor, with the following features: Nominal voltage - 24 V DC Nominal current - 0.31 A Rated output power - 3.14 W Nominal rotational speed - 3000 rpm Efficiency of transmission - 0.72 Stages of gear box - 2 Reduction gear ratio i:1 - 20,25 Nominal torque - 80 N-cm Weight - 160 g Electrical connection - Cable with cable-end sleeves 4. Rotary indexing table module, with the following features: Number of workpiece positions - 6 Table is driven by a DC geared motor with a series resistor. Diameter - 350 mm Height - 125 mm Nominal Voltage - 24 V Nominal rotational speed - 6 rpm (with series resistor 47) Nominal current - 0.15 A (with series resistor 47) Nominal current - 0.5 A 5. Socket connector cable for sensor and switches, with the following features: Minimum ambient temperature standard - -40 °C Maximum ambient temperature standard - 70 °C Correlation ambient temperature/hours - Fixed cable installation Maximum ambient temperature, screwed-in - -5 °C Maximum ambient temperature, limited - 70 °C Air connection type elec. - Cable/socket Number of cores - 3 Core cross section - 0.25 mm² Length of cable - 2500 mm Diameter of connecting cable - 4.5 mm Material, cable sheath - TPE-U(PU) Degree of protection - IP67 6. Relays, with the following features Relays per module - 1 Relay mount - Soldered Mount - can be snapped onto 35-mm DIN rail (EN 50 022) and 32-mm G-rail (EN 50 035) Temperature range - -24 °C to + 60 °C
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	<p>Rated isolation voltage input/output - 2500 V eff Dimensions (W x H x D) - 22.5 mm x 67 mm x 60 mm Housing material - Noryl CE Compliance – Yes</p> <p>7. Sensor, inductive, with the following features: EU conformity (CE) - CE Note on EU conformity - Electromagnetic compatibility Signal processing/type of contract - Inductive Function on actuation - N/O contact Output potential (el. Output) - PNP Nominal switching distance (sn) - 2.5 mm Minimum actual switching distance (sr) - 2.5 mm Maximum actual switching distance (sr) - 2.75 mm Minimum effective switching distance (su) - 2.03 mm Maximum effective switching distance (su) - 3.03 mm Guaranteed switching distance (sa) - 2.03 mm Reproducibility - 0.125 mm Minimum ambient temperature standard - -25 °C Maximum ambient temperature standard - 85 °C Air connection type elec. - Plug Thread for connector - M 8x1 Number of pins, plug connection - 3 Operating status display - Yellow LED Short-circuit strength - Pulsed Protection against incorrect polarity - integrated Type of mounting - Thread + lock nut Type of installation - Not flush Mounting thread - M 8x1 Material of housing - Stainless high-alloy steel Material, cable sheath - TPE-U (PU) CT criterion - Free of copper and teflon Product weight - 0.02 kg Voltage type - DC Nominal operating voltage - 24 V Minimum operating voltage - 15 V Maximum operating voltage - 34 V</p> <p>8. Sorting gate module, with the following features: Branch module, electrical For mounting on a profile plate An electrical solenoid is used for the drive</p> <p>9. Station link Receiver, through beam sensor, with the following features: EU conformity (CE) - CE Note on EU conformity - Electromagnetic compatibility Signal processing (measuring principle) - Infrared Switch triggering - Interrupt Function on actuation - Receiver Output potential (el. Output) - PNP Coverage range - max. 6000 mm Minimum ambient temperature - -5 °C Maximum ambient temperature - 55 °C Air connection type elec. - Plug Thread for connector - M 8 x 1 Number of pins, plug connection - 3 Operating status display - Yellow LED Short-circuit strength - Pulsed</p>
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	<p>Protection against incorrect polarity - Integrated Voltage Type - DC Nominal operating voltage - 24 V Minimum operating voltage - 10 V Maximum operating voltage - 30 V Maximum Idle current - 25 mA Maximum switching frequency - 1000 Hz Degree of protection - IP65</p> <p>10. Station link transmitter, through beam sensor, with the following features: EU conformity (CE) - CE Note on EU conformity - Electromagnetic compatibility Signal processing (measuring principle) - Infrared Switch triggering - Interrupt Function on actuation - Sender Coverage range - max. 6000 mm Minimum ambient temperature - -5 °C Maximum ambient temperature - 55 °C Air connection type elec. - Plug Thread for connector - M 8x1 Number of pins, plug connection - 3 Operating status display - Yellow LED Short-circuit strength - Pulsed Protection against incorrect polarity - Integrated Voltage Type - DC Nominal operating voltage - 24 V Minimum operating voltage - 10 V Maximum Operating voltage - 30 V Maximum idle current - 25 mA Maximum switching frequency - 1000 Hz Degree of protection - IP65</p> <p>11. Micro Switch, with the following features: EU conformity (CE) - CE Note on EU conformity - Low voltage For semi-rotary drives The switching point may only be exceeded by 0.5mm</p> <p>12. Solenoid actuator (2 pcs), with the following features: Working stroke: 10 mm Voltage: 24V DC Output: 7 W</p> <p>13. Capacitive Sensor, with the following features: Switching voltage - 12—48 V DC Output function - Normally open, positive switching (PNP) Nominal switching distance - 10mm Hysteresis - s20% Maximum output current - 200 mA Reproducible switching point at constant temperature - £0.01mm Maximum switching frequency - 25 Hz No-load current - 20 mA Permissible ambient operating temperature - -10 °C - +50 °C Protection against polarity reversal - Integrated Short-circuit proof - Yes Protection class - IP65 Size - M18</p>
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	<p>Type of mounting - Non flush Emitted interference - Noise immunity tested to EN 500 82-1 Connection cable - 3 Pin</p> <p>14. I/O terminals, with the following features: Number of inputs with - LED 8 Number of outputs with - LED 8A Number of terminals 0V - 22 Number of terminals 24V - 12 Connector - Amphenol-Tuchel 24-pin, 57 GE series</p> <p>15. Programmable Logic Controller (PLC), with the following features: Main memory - Main memory, Memory card included Interface - 2-port switch, Ethernet, 10 ns bit performance Inputs/outputs - 32 digital inputs (24 V DC), 32 digital inputs (24 V DC/0.5A), 8 analog inputs, 8 U/I/RTD/TC, 16-bit resolution, 4 analog outputs, 4x U/t, 16-bit resolution Mounting system - Size (W x H): - 305 mm x 300 mm, powder-coated, sheet-steel With integrated power supply unit, 110/230 V AC/24 V DC/4 A With 19" module simulation plate with 2 SysLink plug With connector for MPS and control panel With 8 digital inputs and 8 digital outputs and 1 Sub-D 15 Pin plug connection with 4 analog inputs and 2 analog outputs, emergency stop jumper to connect a safety circuit for disconnecting 8 digital outputs</p> <p>16. PLC Software, with the following programming languages: Statement list (STL) Function diagram (FUN) Ladder diagram (LDR) Structured Text Function Sequence Diagram</p> <p>17. Trolley, with the following features: Material - Aluminum Height (including castors, to bottom edge of profile plate) - 750 mm Width - 350 mm Depth - 700 mm</p> <p>18. Profile plate, with the following features: Material - Aluminum Length x Width – 350 mm x 700 mm Grid Dimension: 50 mm</p> <p>System Requirements: Windows 7 (64-bit) Professional/Enterprise/Ultimate SP1 Windows 10 (64-bit) Professional/Enterprise 1703</p> <p>System Recommendations: Core i5-6440EQ, 3, 4 GHz 16 GB RAM 1920 x 1080 Pixel SSD, at least 50 GB of free hard drive space</p> <p>The Three-Station Modular Production System must be supplied with the following: Software and documentation supplied on DVD Floating license supplied on USB Stick</p>
4.	Collaborative Robot, with the following features:

	<p>Performance: Repeatability - $\pm 0.1\text{mm} / \pm 0.0039\text{ in}$ (4 mils) Ambient temperature range - $0-50^\circ$ * Power consumption - Min 90 W, Typical 125 W, Max 250 W Collaboration operation - 15 advanced adjustable safety functions</p> <p>Specification: Payload – 3 kg / 6.6 lbs. Reach – 500 mm / 19.7 in. Degrees of freedom - 6 rotating joints Programming - Polyscope graphical user interface on 12 inch</p> <p>Movement:</p> <table border="0" data-bbox="357 672 1364 971"> <thead> <tr> <th>Axis movement robot arm:</th> <th>Working range:</th> <th>Maximum speed:</th> </tr> </thead> <tbody> <tr> <td>Base</td> <td>$\pm 360^\circ$</td> <td>$\pm 180^\circ/\text{Sec.}$</td> </tr> <tr> <td>Shoulder</td> <td>$\pm 360^\circ$</td> <td>$\pm 180^\circ/\text{Sec.}$</td> </tr> <tr> <td>Elbow</td> <td>$\pm 360^\circ$</td> <td>$\pm 180^\circ/\text{Sec.}$</td> </tr> <tr> <td>Wrist 1</td> <td>$\pm 360^\circ$</td> <td>$\pm 180^\circ/\text{Sec.}$</td> </tr> <tr> <td>Wrist 2</td> <td>$\pm 360^\circ$</td> <td>$\pm 180^\circ/\text{Sec.}$</td> </tr> <tr> <td>Wrist 3</td> <td>Infinite</td> <td>$\pm 360^\circ/\text{Sec.}$</td> </tr> <tr> <td>Typical tool</td> <td></td> <td>1 m/Sec./39.4 in/Sec.</td> </tr> </tbody> </table> <p>Features: IP Classification - IP 64 ISO Class Cleanroom - 5 Noise - 70dB(A) Robot Mounting – Any</p> <p>I/O ports: Digital in - 2 Digital out - 2 Analog in - 2 Analog out - 0 I/O power supply in tool: 12 V/24 V 600 mA in tool</p> <p>Physical: Footprint - $\text{Ø } 128\text{mm}$ Materials: Aluminum, PP plastics Tool connector type - M8 Cable length robot arm - 6m / 236 in Weight with cable - 11kg / 24.3 lbs. Reduction gear ratio i:1 - 20,25 Nominal torque - 80 Ncm Gripper Total Stroke: 0-110mm Gripping Force: 3-40NM (Adjustable) Working Temp: 0-60 Degrees Celsius IP Classification: IP54 Weight: 0.78kg</p>	Axis movement robot arm:	Working range:	Maximum speed:	Base	$\pm 360^\circ$	$\pm 180^\circ/\text{Sec.}$	Shoulder	$\pm 360^\circ$	$\pm 180^\circ/\text{Sec.}$	Elbow	$\pm 360^\circ$	$\pm 180^\circ/\text{Sec.}$	Wrist 1	$\pm 360^\circ$	$\pm 180^\circ/\text{Sec.}$	Wrist 2	$\pm 360^\circ$	$\pm 180^\circ/\text{Sec.}$	Wrist 3	Infinite	$\pm 360^\circ/\text{Sec.}$	Typical tool		1 m/Sec./39.4 in/Sec.
Axis movement robot arm:	Working range:	Maximum speed:																							
Base	$\pm 360^\circ$	$\pm 180^\circ/\text{Sec.}$																							
Shoulder	$\pm 360^\circ$	$\pm 180^\circ/\text{Sec.}$																							
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Wrist 2	$\pm 360^\circ$	$\pm 180^\circ/\text{Sec.}$																							
Wrist 3	Infinite	$\pm 360^\circ/\text{Sec.}$																							
Typical tool		1 m/Sec./39.4 in/Sec.																							
	<p>I year warranty With training</p>																								

Note: Bidders must state in the Statement of Compliance 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 Bidders 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 provision of **ITB** Clause 4.

Section VIII. Bid Documents Checklist

This Bid Documents Checklist is provided to guide the Bidder in preparing his/her bid. The checklist may be used by the Bidder to verify if the Bid includes all the prescribed documents.

The Bidder, in submitting the required documents, must use the prescribed forms found in Section X. Bidding Forms. However, should a bidder choose to use a different formatting style for a required document, the bidder must ensure that the substance in the form given in Section X for that particular document is substantially captured in the equivalent document.

A. Eligibility and Technical Documents (<i>Contents of Envelope 1</i>)	
<input type="checkbox"/>	1. Photocopy of valid PhilGEPS Certificate of Registration (Revised and updated in accordance with GPPB Resolution No. 15-2021)
<input type="checkbox"/>	2. Photocopy of valid Certificate of Registration from SEC, DTI, or CDA, whichever is applicable
<input type="checkbox"/>	3. Photocopy of valid Mayor's/Business Permit
<input type="checkbox"/>	4. Photocopy of valid Tax Clearance
<input type="checkbox"/>	5. Statement of all on-going government and private contracts, including contracts awarded but not yet started, if any
<input type="checkbox"/>	6. Statement of Single Largest Completed Contract (SLCC), similar to the contract to be bid, in accordance with ITB Clause 5.3
<input type="checkbox"/>	7. Audited Financial Statements stamped "received" by the BIR or its duly accredited and authorized institutions
<input type="checkbox"/>	8. NFCC computation
<input type="checkbox"/>	9. <i>If applicable</i> , a valid Joint Venture Agreement (JVA), in case the joint venture is already in existence, or 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
<input type="checkbox"/>	10. Bid Securing Declaration or Bid Security, in the form, amount and validity period, as prescribed in ITB Clause 14.1
<input type="checkbox"/>	11. Bidder's Compliance to the Technical Specifications
<input type="checkbox"/>	12. Omnibus Sworn Statement, which shall be duly notarized
A. Financial Documents (<i>Contents of Envelope 2</i>)	
<input type="checkbox"/>	1. Financial Bid Form in the prescribed form
<input type="checkbox"/>	2. Schedule of Prices

Section IX. Bidding Forms

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[Bidder's Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

Statement of Single Largest Completed Contract Similar to the Contract to be Bid

Row 1: Name of Contract Row 2: Location	Contract Price	Row 1: Procuring Entity Row 2: Address Row 3: Contact Person/Tel. No.	Description of Goods	Date of Award	Date Completed

Attached herewith are the following documents: Contract Agreement, Notice of Award, Notice to Proceed, Official Receipt/Invoice, Certificate of Final Inspection, and Certificate of Acceptance, as evidences in support of the foregoing information.

I/We certify that the foregoing information and all of the supporting documents are true and correct.

[Signature]
[Name of Bidder or Authorized Representative]
[Position or Title]

[Bidder's Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

NET FINANCIAL CONTRACTING CAPACITY

Based on our Income Tax Return and Audited Financial Statement for the Fiscal Year [YEAR], duly submitted to the Bureau of Internal Revenue, and which form part of our Bid, the summary of our firm's financial condition is as given below:

		Year [YEAR]
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2-4)	

Based on the aforementioned data and the Value of Outstanding Works from the Statement of All Ongoing Government and Private Contracts, which also form part of our Bid, our Net Financial Contracting Capacity (NFCC) is:

NFCC = [(current asset minus current liabilities) (**15**)] minus [value of all outstanding or uncompleted portions of the projects under ongoing contracts including awarded contracts yet to be started coinciding with the contract to be bid].

NFCC =

I/We certify that the foregoing information and all of the supporting documents are true and correct.

[Signature]
[Name of Bidder or Authorized Representative]
[Position or Title]

Bid-Securing Declaration

Republic of the Philippines
City/Municipality Of _____) S.S.

x-----x

Invitation to Bid [*Insert reference number*]

To: **Tarlac State University**

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid-Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1 (f), of the IRR of RA 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid-Securing Declaration shall cease to be valid on the following circumstances:
 - a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
 - b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and
 - i) I/we failed to timely file a request for reconsideration or
 - ii) I/we filed a waiver to avail of said right;
 - c. I am/we are declared as the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of [*month*] [*year*] at [*place of execution*].

[*Signature*]
[*Name of Bidder's Authorized Representative*]
[*Signatory's legal capacity*]
Affiant

SUBSCRIBED AND SWORN to before me this ___ day of *[month]* *[year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her *[insert type of government identification card used]*, with his/her photograph and signature appearing thereon, with no. _____.

Witness my hand and seal this ___ day of *[month]* *[year]*.

[Name and Signature of Notary Public]

Serial No. of Commission _____

Notary Public for _____ **until** _____

Roll of Attorneys No. _____

PTR No. __, *[date issued]*, *[place issued]*

IBP No. __, *[date issued]*, *[place issued]*

Doc. No. ____

Page No. ____

Book No. ____

Series of ____.

[Bidder's Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

Compliance to the Technical Specifications

Item No.	Description	Bidder's Compliance State "Comply" below if your offer is complying with the specifications, otherwise state "We are offering the same goods with the following specifications [State the complete specifications of the alternative offer]"
Lot No. 1 – Upgrading of Electronics Engineering Laboratory, comprising of the following		
1.	<p>Telecommunications Teaching Simulation Software, Perpetual License, Web Browser Access, Cloud-Based</p> <p>The software uses a block diagram approach in constructing telecommunications experiments, based on a continuously running DSP engine supported by a massive suite of documented analogue and digital experiments.</p> <p>The software can be used by instructors and students to create and simulate laboratory experiments and test hypotheses virtually on and off campus before performing the hands-on laboratory experiments.</p> <p>The Applications can be accessed by students through a URL and logging in a Username and Password.</p> <p>To build experiments, the student can select modules from the Menu and place the modules on available slots and patch inputs and outputs to complete the conceptualized system for the experiment; the student can then perform the experiment, measure, adjust, and view results instantaneously like working with real instruments. The student can Save the experiment and Load it when needed.</p> <p>The functions to set up the experiments are displayed on the screen and no programming or syntax is required.</p> <p>The following building blocks are available for building the experiments: 100 kHz Channel Filters, 3-Input Adder, 60 kHz LPF, Adder, Audio Oscillator, Baseband Channel Filters, Bit Clock Regen, Block Code Encoder, CDMA Decoder, Decision Maker, Delta Modulation Utilities, Delta Demodulation Utilities, Digital Multimeter, Digital Utilities, Dual Analog Switch, Dual Tunable LP, Error Counter, FIR, FM Utilities, Headphone Amp and LPF, Laplace, Laplace Biquad, Line-Code Encoder, Line-Code Decoder, M-Level Encoder, M-Level Decoder, Master Signals, $\Pi/4$-DQPSK, OQPSK, MSK Mod $\Pi/4$-DQPSK, OQPSK, MSK Dem, Multiple Sequences Source Multiplier, Noise Generator, PCM Encoder, PCM Decoder, Phase Shifter, Quadrature Phase Splitter, Sequence Generator, Sequence Generator: Signals & Systems, SONET</p>	

	<p>STS-1 Mux, SONET STS-1 Demux, Speech, Switch, Twin Pulse Generator, Utilities, Var DCV and Amplifiers, VCO, VCO/FSK, Wideband Oscillator, z-Biquad, and z-Transform.</p> <p>The software employs a cloud-based (e.g., Google Server) method to control student access of the licensed software through a username and password. No elaborate setup is required by the student or the instructor. The username and password can be assigned to a group, a class, or to each student.</p> <p>The instructor will be able to monitor the students' utilization of the program via an on-line administration page which can also provide statistics on usage. The license is perpetual.</p>	
2.	<p>Advanced Telecommunications Experimenter, Power Source: Multi-voltage plug pack Power Supply: 9 V to 15 V DC, 1 A maximum Protection: Reverse polarity and self-resetting circuit breaker protection above 16 V Absolute Maximum Supply Input: 30 V DC Operating Temperature Range: 10 °C to 30 °C Storage Temperature Range: 5 °C to 40 °C Humidity: Up to 90 % RH, non-condensing Accessories: 2 mm stackable patch cords (20 pcs), 2 mm to-BNC coaxial oscilloscope leads (3 pcs), 24-ohm lightweight stereo headphones (1 pc), 3.5 mm male stereo plug, multi-input voltage plug pack with 12 V/1 A output, regulated (tip is positive)</p>	
3.	<p>Quadrature Phase Shift Keying (QPSK) and Multi Experiment Board, for laboratory experiments on:</p> <ul style="list-style-type: none"> • QPSK modulation • QPSK demodulation • Noisy bandpass channel • Line-Code Decoding • DPSK modulation and demodulation • FM PLL demodulation 	
4.	<p>Multi Experiment Board, for laboratory experiments on:</p> <ul style="list-style-type: none"> • Analog and digital electronics circuits experiments 	
5.	<p>Fiber Optics Transmitter and Receiver Experiment Board</p> <ul style="list-style-type: none"> • Includes three independent functional blocks, providing an electrical-optical and optical-electrical interface • Enables a complete optical link for analog or digital signals 	
6.	<p>Fiber Optics Couplers and Filters Experiment Board</p> <ul style="list-style-type: none"> • Includes three independent functional blocks • Complete bi-directional and fiber optic links • Optical signal splitting and combining • Fiber optic bi-directional communications • Wave division multiplexing link 	
7.	<p>Physics of Fiber Experiment Board, for experiments on:</p> <ul style="list-style-type: none"> • Guiding light using total internal reflection • Losses in fiber optic networks • Polarization • Bending losses in fiber optic systems • Connectors <p>Accessories: Laser source (1 pc), Fiber holder stand (1 pc), Slide holder (1 pc), Semicircular Perspex block (1 pc), Screen (1 pc), Clear plastic light guide (1 pc), Clear Perspex slide (1 pc), Green reflective-absorption slide (1 pc), Scattering slide (1 pc), Polarizer slide (1 pc), Polarizer disc (1 pc),</p>	

	Quarter-wave plate slide (1 pc), Stripped optical patch lead (1 pc), Adapted bulkhead connector (1 pc), Spacer (1 pc), Water-drop dispenser (1 pc)	
8.	Advanced Electrical, Electronics and Digital Experimenter, Resistor, 10 ohm, 1 W (1 pc) Resistor, 47 R, ¼ W (1 pc) Current probe (1 set) Resistor ,1 K, ¼ W (1 pc) Resistor, 10 K, ¼ W (3 pcs) Resistor, 270 ohm, ¼ W (1 pc) Resistor, 5.6 K, ¼ W (1 pc) Connecting link (12 pcs) Resistor, 330 K, ¼ W (1 pc) Capacitor, 1 uF, polyester (2 pcs) Resistor, 22 K, ¼ W (1 pc) Resistor, 15 K, ¼ W (1 pc) Choke, 47 mH (1 pc) Resistor, 2.2K, ¼ W (1 pc) Laboratory and curriculum manual (1 set) Power supply carrier with voltage source symbol (2 pcs) Connecting leads (1 set) Baseboard with 4 mm pillars (1 pc) Power supply with adaptors (1 set) Storage Box with tray and cover (1 pc)	
9.	Three-Phase Systems Trainer, Three-phase motor (1 pc) Tray Lid (1 pc) Deep tray (1 pc) BNC male to dual 4 mm binding post (4 pcs) Three-phase power supply (1 pc) Bulb 12 V,0.1 A (3 pcs) Resistor, 10 ohm, 1 W (2 pcs) Resistor, 1 k, ½ W (3 pcs) Lamp holder (3 pcs) Lead, green, 320 mm, 4 mm to 4 mm, stackable (2 pcs) Lead, red, 500 mm, 4 mm to 4 mm, stackable (5 pcs) Lead, black, 500 mm, 4 mm to 4 mm, stackable (6 pcs) Lead, yellow, 500 mm, 4 mm to 4 mm, stackable (1 pc) Lead, blue, 500 mm, 4 mm to 4 mm, stackable (1 pc) Capacitor, 33 uF, non-electrolytic (1 pc) Resistor, 2.2 k, ¼ W (1 pc) 25 MHz PC-based oscilloscope and generator pack (1 set)	
10.	Transformer Construction and Operation Experimenter, Deep tray (2 pcs) Tray Lid (2 pcs) Crash Foam (6 pcs) Coils and cores activity kit (1 set) Daughter tray foam cutout (1 pc) Daughter tray, 62mm daughter tray (1pc) 7 x 5 metric baseboard with 4 mm pillars (1 pc) Connecting Link (1 pc) AC power supply, 12 V AC, 1.5 A (1 pc) AC voltage source carrier (1 pc) Power supply (1 pc) Power supply carrier with battery symbol (1 pc) Resistor, 100 ohm, 3 W, (1 pc) Resistor, 10 ohm, 3 W (2 pcs)	

	<p>MES Lamp holder (1 pc) MES power LED (1 pc) MES bulb, 6 V, 0.06 A (1 pc) Switch, on/off, metal strip (1 pc) Lenz's law kit (1 set) Compass (1 pc) 400 Turn coil carrier (1 pc) Ferrite rod, 10 mm x 100 mm (1 pc) Alnico rod magnet (1 pc) Shrouded lead, 4 mm, black, stackable (1 pc) Shrouded lead, 4 mm, red, stackable (1 pc) Lead, black, 500 mm, 4 mm to 4 mm, stackable (1 pc) Lead, red, 500 mm, 4 mm to 4 mm, stackable (1 pc)</p>	
11.	<p>Advanced Electronics Principles, Power supply (2 pcs) Storage Box with tray and cover (2 pcs) Resistor, 100 ohm, 1 W (1 pc) Capacitor, 1000 uF, 30 V, electrolytic (1pc) Triac (1 pc) Transistor, JGFET (1 pc) Resistor, 1 k, ½ W (3 pcs) Resistor, 10 k, ¼ W (3 pcs) Resistor, 270 ohm, ½ W (1 pc) Resistor, 180 ohm, ½ W (1pc) Potentiometer, 250 ohm (1pc) Potentiometer, 10 k (2 pcs) Resistor, 100k, ¼ W (2 pcs) Capacitor, 47 uF, 25 V, electrolytic (1 pc) Thermistor, 4.7 k, NTC, ANSI (1 pc) Lead, red 500 mm, 4 mm to 4 mm, stackable Lead, black, yellow, and blue, 500 mm, 4 mm to 4 mm, stackable Capacitor, 100 uF, 25 V, electrolytic (1 pc) Capacitor, 1 uF, polyester (1 pc) Capacitor. 4.7 uF, 25 V, electrolytic (1 pc) Capacitor, variable, 15-140 pF Capacitor, 0.47 uF, polyester (1 pc) Resistor, 2.2k, ¼ W (1 pc) 7 x 5 metric baseboard with 4 mm pillars (1 pc) AC voltage source carrier (1 pc) Voltmeter, 0 V to 15 V (1 pc) Resistor, 200 k, ¼ W (1 pc) Capacitor, 1 nF, polyester (1 pc) Phototransistor Carrier (1 pc) Photodiode (1 pc) Switch, changeover, toggle (1 pc) Resistor, 500 k, ¼ W (1 pc) Zener diode, 8.2 V (1 pc) Transistor RHF, PNP (1 pc) Transistor LHF, PNP (1 pc)</p>	
12.	<p>Multimeter DC Voltage Measuring Range: 200 mV to 600 V Input Impedance: 10 MΩ Max Input Voltage: 600 V DC or 600 V AC RMS AC Voltage Measuring Range: 2 V to 600 V Max Input Voltage: 600 V DC or 600 V AC RMS Frequency Response: 40 Hz – 400 Hz sine wave RMS Resistance: 200 Ω to 200 MΩ Overload protection: 250 V DC or 250 V AC RMS</p>	

	Open Circuit Voltage: below 700 mV	
13.	<p>USB-powered PC-Based Oscilloscope Data Acquisition Device, with software, 4-analog channel and built-in function/arbitrary waveform generator, USB connectors and probes, installation CD</p> <p>Technical specifications:</p> <p>Bandwidth: 60 MHz</p> <p>Sampling: 1 GS/s</p> <p>Memory: 4 MS</p> <p>Waveform: Function Generator</p> <p>Input channel: 4</p> <p>Input ranges: ± 50 mV to ± 20 V in 9 ranges</p> <p>Overshoot protection: ± 100 V (DC + AC peak)</p> <p>Function Generator:</p> <p>Output waveforms: Sine, square, triangle, DC voltage</p> <p>Output frequency range: DC to 1 MHz</p> <p>Output frequency accuracy: > 1 MHz</p> <p>Spectrum Analyzer:</p> <p>Frequency Range: DC to 60 MHz</p> <p>Display modes: Magnitude, average, peak hold</p>	
14.	<p>DC Power Supply,</p> <p>One 0-30 V variable output</p> <p>One 5 V 500 mA output and one 12 V 500 mA output</p> <p>Separate digital voltmeter and ammeter</p> <p>Current limiting LED indicator</p> <p>Adjustable current control</p> <p>Overload and short circuit protection</p> <p>Galvanized steel case</p> <p>Polycarbonate front panel</p> <p>Screw on connector for variable output, snap on connectors for fixed outputs</p> <p>Compliant to CE, EN61558, EN55014</p>	
15.	<p>Function Generator, Synthesized,</p> <p>DDS Technique and FPGA Chip Design Frequency Range: 0.1 Hz to 3 MHz</p> <p>High Frequency Accuracy: ± 20 ppm</p> <p>High Frequency Stability: ± 20 ppm</p> <p>Max. Frequency Resolution: 100 mHz</p> <p>Low Distortion Sine Wave: -55 dBc, 0.1 Hz to 200 kHz</p>	
	<ul style="list-style-type: none"> • Warranty: 1 year against factory defects, 2 years on workmanship and after-sales service • With laboratory experiment manuals • With Training 	
Lot No. 2 – Three-Station Modular Production System and Robotics System comprising of the following:		
1.	<p>Distributing/Conveyor Station, consisting of the following:</p> <p>1. Conveyor Module, with the following components:</p> <p>1.1. Fiber-optic cable (diffuse sensor), with the following features:</p> <p>Signal processing (measuring principle) - Red light</p> <p>Coverage range max. - 120 mm</p> <p>Mounting thread - M6</p> <p>Coating of housing - Nickel-plated</p> <p>Degree of protection - IP65</p> <p>Switch triggering - Reflex</p> <p>Function on actuation - Polymer fiber optic cable</p>	

- 1.2. Fiber-optic device (diffuse sensor), with the following features:
 Signal processing (measuring principle) - Red light
 Switch triggering - Reflex/Interrupt
 Function on actuation - Sender and receiver
 Output potential - PNP
 Coverage range max. - 120 mm
 Thread for connector - M 8x1
 Number of pins, plug connection - 4
 Operating status display - Yellow LED
 Short-circuit strength - Pulsed
 Type of mounting - Hole
 Material of housing - PBT-reinforced
 Voltage type - DC
 Nominal operating voltage - 24 V
 Minimum operating voltage - 10
 Maximum operating voltage - 30
 Maximum idle current - 25 mA
 Maximum switching frequency - 1000 Hz
 Degree of protection - IP65
- 1.3. Fiber-optic cable (light barrier), with the following features:
 Signal processing (measuring principle) - Red light
 Switch triggering - Interrupt
 Function on actuation - Polymer fiber optic cable
 Coverage range max. - 400 mm
 Mounting thread - M4
 Degree of protection - IP65
- 1.4. Fiber-optic device (light barrier), with the following features:
 Signal processing (measuring principle) - Red light
 Switch triggering - Reflex/Interrupt
 Output potential - PNP
 Coverage range max. - 120 mm
 Thread for connector - M 8x1
 Number of pins, plug connection - 4
 Operating status display - Yellow LED
 Voltage type - DC
 Nominal operating voltage - 24 V
 Minimum operating voltage - 10 V
 Maximum operating voltage – 30 V
 Maximum idle current - 25 mA
 Maximum switching frequency - 1000 Hz
 Degree of protection - IP65
- 1.5. D.C. Rotary Solenoid, with the following features:
 Angle of rotation – 95°
 Operating mode - S3 40%
 Torque - 2.00 Ncm
 Rated power - 16.2 W
 Mass inertia - 0.314 x 10 – 6 (kgm²)ft
 Time constant - 6.5 ms
- 1.6. DC Gear motor, with the following features:
 Nominal voltage 24 V
 Nominal current 1.5 A
 Nominal speed of drive shaft - 65 rpm
 Reduction stages - 1

Nominal torque - 1 N-m
Reversible - Yes
Starting torque - 7 N-m

1.7. DC motor controller, with the following features:

Nominal voltage - 24 V \pm 10%
Maximum power consumption - 50 mA
Continuous motor current - 4 A
Control inputs, logic 1 - 10.....24 V
Control inputs, logic 0 - 0.....4 V
Analog input - 0...10 V , 24 V tolerant
Overvoltage protection - Yes
CE marking per - Class B interference emission

1.8. Mini I/O terminal, with the following features:

Operating voltage – 24 V DC
Digital I/O, 4DI, 4DO - Maximum 24 V DC, maximum 2 A per output
Analog I/O, 2AI, 1AO - 0....10V DC and \pm 10V DC
Electrical connection - D-Sub HD 15-pin (3-row) Spring clip:
0.14 ... 0.5 mm²
Indicators Status LEDs: Blue (power supply), Green (input signal), Orange (output signal)

2. Stack Magazine Module, with the following components:

2.1. Proximity sensor, with the following features:

Design - For T-slot
Measuring principle - Reed magnetic
Switch output - with contact, bipolar
Maximum switching frequency - 800 Hz
Maximum output current - 500 mA
Electrical connection - Cable 3-core
Connector exit direction - axial
Cable length - 2.5 m
Mounting type - Clamped in T-slot
Insertable into slot lengthwise
Operating status display - Yellow LED
Protection class - IP65 IP67
Ambient temperature with flexible cable - -5 oC to 60 °C
Tightening torque - 0.2 N-m

2.2. Fiber-optic cable (light barrier), with the following features:

Signal processing (measuring principle) - Red light
Switch triggering - Interrupt
Function on actuation - Polymer fiber optic cable
Coverage range max. - 400 mm
Mounting thread - M4
Degree of protection - IP65

2.3. Fiber-optic device (light barrier), with the following features:

Signal processing (measuring principle) - Red light
Switch triggering - Reflex/Interrupt
Output potential - PNP
Coverage range max. - 120 mm
Thread for connector - M 8x1
Number of pins, plug connection - 4
Operating status display - Yellow LED

Voltage type - DC
Nominal operating voltage - 24 V
Minimum operating voltage - 10 V
Maximum operating voltage - 30 V
Maximum idle current - 25 mA
Maximum switching frequency - 1000 Hz
Degree of protection - IP65

2.4. Standard cylinder, with the following features:

Stroke - 100 mm
Piston diameter - 8 mm
Piston rod thread - M4
Cushioning - P: Flexible cushioning rings/plates at both ends
Assembly position - Any
Piston-rod end - Male thread
Design structure - Piston, Piston rod, Cylinder barrel
Variants - Single-ended piston rod
Working pressure - 1.5 bar to 10 bar
Mode of operation - double-acting
Corrosion resistance classification CRC - 2 - Moderate corrosion stress
Impact energy in end positions - 0.03 J
Theoretical force at 6 bar, return stroke - 22.6 N
Moving mass with 0 mm stroke - 30.2 N
Mounting type - with accessories
Pneumatic connection - M5

2.5. Mini-I/O-Terminal, with the following features:

Operating voltage - 24 V DC
Digital inputs/outputs, 4DI/4DO - Maximum 24 V DC, maximum 2 A per output, maximum 4 A total
Analogue inputs/outputs, 2AI/1AO - 0 ... 10 V DC and ± 10 V DC respectively
Electrical connection - D-Sub HD 15-pin (3-row), Spring clip: 0.14 ... 0.5 mm
Indicators - Status LEDs: Blue (power supply), Green (input signal), Orange (output signal)
Operating voltage - 24 V DC
Digital inputs/outputs, 4DI/4DO - Maximum 24 V DC, maximum 2 A per output, maximum 4 A total
Analogue inputs/outputs, 2AI/1AO - 0 ... 10 V DC and ± 10 V DC respectively
Electrical connection - D-Sub HD 15-pin (3-row), Spring clip: 0.14 ... 0.5 mm

2.6. One-way flow control valve, with the following features:

Valve function - One-way flow control function for exhaust air
Pneumatic connection, port 1 - QS-4
Pneumatic connection, port 2 - M5
Adjusting element - Slotted head screw
Mounting type - Threaded
Standard nominal flow rate in flow control direction - 40 l/min
Working pressure - 0.2 to 10 bar

3. Sorting Gate/Separator Module, with the following components:

3.1. D.C. Rotary Solenoid, with the following features:

Angle of rotation - 95°
 Operating mode - S3 40%
 Torque - 2.00 N-cm
 Rated Power - 16.2 W
 Mass inertia - 0.314 x 10⁻⁶ (kgm²)ft
 Time constant - 6.5 ms

4. Interface, with the following features:
 - Type - C interface
 - Operating voltage - 24 V DC
 - Digital inputs/outputs 8DI/8DO - Maximum 24 V DC, maximum 2 A per output, maximum 4 A total
 - Analogue inputs/outputs 4AI/2AO - 0 to 10 V DC or ± 10 V DC
 - Electrical connection – 2 x 15-pin D-Sub HD (3 rows), 1 x 24 pin IEEE 488 socket (SysLink), 1 x 15-pin D-Sub (2 rows)
 - Indicators - Status LEDs: blue (power supply), green (input signals), orange (output signals)

5. Computer Cable, with the following features:
 - Type - D-Sub HD connecting cable, crossed
 - Number of wires - 16
 - Cross section - 0.25 mm²
 - Plug type - D-Sub HD 15-pin (3 rows)
 - Socket type- D-Sub HD-15-pin (3 rows)
 - Power rating - Maximum 2 A per wire

6. Supply Regulator Valve, with the following features:
 - Type - diaphragm valve with filter
 - Assembly position - Vertical ±5°
 - Standard nominal flow rate - 110 l/min
 - Upstream pressure - 100 to 1000 kPa
 - Operating pressure - 50 to 700 kPa
 - Connection type- Coupling plug for coupling socket G1/8

7. Control Panel/Console, with the following features:
 - Function - Control console for Syslink
 - Membrane keyboard: Start pushbutton with LED, stop pushbutton, Reset push button, with LED, 2 flexibly assignable control lamps, 4 mm safety sockets with LED status display for I/O connection, Syslink and Sub-D sockets for connection to PLC on the rear panel

8. Programmable Logic Controller (PLC)
 - Main memory - Main memory, Memory card included
 - Interface - 2-port switch, Ethernet, 10 ns bit performance
 - Inputs/outputs - 32 digital inputs (24 V DC), 32 digital outputs (24 V DC/0.5A), 8 analog inputs, 8 U/I/RTD/TC, 16-bit resolution, 4 analog outputs, 4x U/t, 16-bit resolution
 - Mounting system - Size (W x H): - 305 mm x 300 mm, powder-coated, sheet-steel
 - With integrated power supply unit, 110/230 V AC/24 V DC/4 A
 - With 19" module simulation plate with 2 SysLink plug
 - With connector for MPS and control panel
 - With 8 digital inputs and 8 digital outputs and 1 Sub-D 15 Pin plug connection with 4 analog inputs and 2 analog outputs, emergency stop jumper to connect a safety circuit for disconnecting 8 digital outputs.

9. PLC Software, with the following programming languages:
 - Statement list (STL)

	<p>Function diagram (FUN) Ladder diagram (LDR) Structured Text Function Sequence Diagram</p> <p>10. Trolley, with the following features: Height (including rolls unit top edge of trolley) - 750 mm Width - 350 mm Length - 700 mm Material: Aluminum</p> <p>11. Accessories, Profile plate Height adjustment A4 mounting frame A4 mounting profile Assembly board</p>	
<p>2.</p>	<p>Handling Station, consisting of the following:</p> <p>1. Pick and Place Module, with the following components:</p> <p>1.1. Pneumatic Linear drive, with the following features: Mode of operation - Double acting Shape - piston Round Sensing type - Magnetic Type of cushioning Internal cushioning ring (non-adjustable) Protection against torsion - Guide Driver principle - Positive-locking (slot) Guide principle - Plain-bearing guide Piston, nominal size – 12 mm X-stroke - X Minimum stroke for X-stroke - 10 mm Maximum stroke for X-stroke - 600 mm Minimum operating pressure - 2.5 bar Maximum operating pressure - 8 bar Minimum ambient temperature - -10 °C Maximum ambient temperature - 60 °C Air connection type - Female thread Connector thread page 1 - M 5 Air connection type connecting thread - Female thread Connector thread page 2 - M 5 Effective force (approximate) at 6 bar - 68 N Air consumption at 6 bar/10 mm - 0.0079 l</p> <p>1.2. Parallel gripper, with the following features: Mode of operation - Double acting Gripper function - Parallel No. of gripper jaws - 2 Drive - 2 cylinders parallel Type of mounting direct - Thread: Hole Sensing type - Magnetic Piston, nominal size - 10 Operating pressure min. - 2 bar Operating pressure max. - 8 bar Minimum ambient temperature - 5 °C Maximum ambient temperature - 60 °C Air connection type - Female thread Connector thread - M 3</p>	

Material of barrel/housing - Kneaded aluminum alloy
 Material of gripper fingers - Stainless high-alloy steel
 Material of cover- PA
 CT criterion - Free of copper and teflon
 Product weight - 0.068 kg
 Nominal gripping force, closing - 40 N
 Nominal gripping force, opening - 47 N
 Nominal time, opening - 22 ms
 Nominal time, closing - 31 ms
 Air consumption at 6 bar per stroke - 0.0025 l
 Medium - Dried air, lubricated or unlubricated
 Interchangeability - 0.2 mm
 Repetition accuracy - 0.04 mm

1.3. Flat Cylinder, with the following features:

Mode of operation - Double acting
 Shape piston - Oval
 Shape of piston rod - Round
 Sensing type - Magnetic
 Type of cushioning - Internal cushioning ring (non-adjustable)
 Protection against torsion - Piston shape
 Piston, nominal size – 18 mm
 Stroke - 80 mm
 Piston rod diameter - 8 mm
 End of piston rod - Female thread
 KK Piston rod thread - M 4
 Operating pressure min. - 1 bar
 Operating pressure max. - 10 bar
 Minimum ambient temperature - -20 °C
 Maximum ambient temperature - 80 °C
 Bearing cap connection type - Female thread
 EE Connecting thread for bearing cap - M 5
 Material of cap - Wrought aluminum alloy
 Material of seals - FPM, TPE-U(PU)
 Material of piston rod - Stainless high-alloy steel
 Material of barrel/housing - Wrought aluminum alloy
 Total weight at 0 mm stroke - 0.107 kg
 Additional weight per 10 mm stroke - 0.013 kg
 Weight of moving load at 0 mm stroke - 0.024 kg
 Weight of moving load per 10 mm stroke 0,004 kg - 0.024 kg
 Air connection type cover cap - Female thread
 EE Connecting thread for end cap - M 5
 Effective force (approximate) at 6 bar, adv. - 153 N
 Effect. force (approximate) at 6 bar, return 1- 23 N
 Maximum Torque - 0.2 Nm
 Air consumpt.at 6 bar per advance - 0.0178 l

1.4. Valve Kit, CPV, with the following features:

Function - Piloted non-return valve
 Type of mounting Hole
 Nominal size non-return 4 mm
 Air connection type 1 Sub-base
 Air connection type 2 Female thread
 Operating pressure min. - 2.5 bar
 Operating pressure max. - 10 bar
 Minimum ambient temperature - -10 °C
 Maximum ambient temperature - 60 °C
 Minimum medium temperature - -10 °C
 Maximum medium temperature - 60 °C

Material of housing - Die-cast zinc
Material of seals - NBR-Elastomer
Standard nominal flow rate 1->2(S) max. - 160 l/min
Standard nominal flow rate 2->1 max. - 220 l/min
Switch-on time - 20 ms
Switch-off time - 30 ms
Medium - Compressed air, filtered

1.5. One way flow control valve, with the following features:

Function - One-way flow control
Function air supply/exhaust air - Exhaust air
Function restrictor - Adjustable
Actuating component - Screw
Type of mounting - Screw-in
Nominal size flow control - 1.4 mm
Nominal size non-return - 1.4 mm C32:C4C32:C47
Air connection type 1 - Male thread
Air connection type 2 - Push-in
Thread for port 1 - M 5
Nominal size of tubing connection - 2 4
Operating pressure min. - 0.2 bar
Operating pressure max. - 10 bar
Minimum ambient temperature - -10 °C
Maximum ambient temperature - 60 °C
Minimum medium temperature - -10 °C
Maximum medium temperature - 60 °C
Material of housing - Die-cast zinc
Material of seals - NBR-Elastomer
Material of screw-in stud - brass
Product weight - 0.009 kg
Standard nom. flow rate 1->2(S) max. - 40 l/min
Standard nom. flow rate 1->2(S) min - 0 l/min
Standard nominal flow rate 2->1 max. - 50 l/min
Standard nominal flow rate 2->1 min 0 0 l/min
Medium - Compressed air, filtered 40 µm (may be lubricated)

1.6. Valve Kit, CPV, with the following features:

Signal processing (measuring principle) – red light
Switch triggering – Reflex
Function on actuation – Polymer fiber optic cable
Coverage range max. – 120 mm
Minimum ambient temperature - -40 °C
Maximum ambient temperature – 70 °C
Mounting thread – M 6
Material of housing – brass
Product weight – 0.02 kg
Coating of housing – Nickel-plated
Degree of protection – IP65

1.7. Station link receiver, through beam sensor, with the following features:

Signal processing (measuring principle) – Infrared
Switch triggering – Interrupt
Function on actuation – Receiver
Output potential (el. Output) – PNP
Maximum coverage range - 6000 mm
Minimum ambient temperature - -5 °C
Maximum ambient temperature - 55 °C

Air connection type elec. - Plug
 Thread for connector - M 8x1
 Number of pins, plug connection - 3
 Operating status display - Yellow LED
 Short-circuit strength - Pulsed
 Protection against incorrect polarity - integrated
 Voltage type - DC
 Nominal operating voltage - 24 V
 Minimum operating voltage - 10 V
 Maximum operating voltage - 30 V
 Maximum idle current - 25 mA
 Maximum switching frequency - 1000 Hz
 Degree of protection - IP65

1.8. Station link transmitter, through beam sensor, with the following features:

Signal processing - Infrared
 Switch triggering - Interrupt
 Function on actuation - sender
 Coverage range maximum - 6000 mm
 Minimum ambient temperature -5 °C
 Maximum ambient temperature - 55 °C
 Air connection type elec. - Plug
 Thread for connector - M 8 x 1
 Number of pins, plug connection - 3
 Operating status display - Yellow LED
 Short-circuit strength - Pulsed
 Protection against incorrect polarity -integrated
 Voltage Type - DC
 Nominal operating voltage - 24 V
 Minimum operating voltage - 10 V
 Maximum operating voltage - 30 V
 Maximum idle current - 25 mA
 Maximum switching frequency - 1000 Hz
 Degree of protection - IP65

1.9. Fiber Optic device, Optoelectronic sensor, with the following features

Signal processing (measuring principle) - red light
 Switch triggering - Reflex/Interrupt
 Function on actuation - sender and receiver
 Output potential (el. output) - PNP
 Maximum coverage range - 120 mm
 Minimum ambient temperature - -5 °C
 Maximum ambient temperature - 55 °C
 Air connection type elec. - Plug
 Thread for connector - M 8 x 1
 Number of pins, plug connection - 4
 Operating status display - Yellow LED
 Short-circuit strength - Pulsed
 Protection against incorrect polarity - built-in
 Type of mounting - Hole
 Material of housing - PBT-reinforced
 Product weight - 0.018 kg
 Voltage Type - DC
 Nominal operating voltage - 24 V
 Minimum operating voltage - 10 V
 Maximum operating voltage - 30 V

Maximum idle current - 25 mA
Maximum switching frequency - 1000 Hz
Degree of protection - IP65

- 1.10. Solenoid Valve CPV 3/2 way, with the following features:
Switching function - 3/2-way valve, normally open or normally closed
Switching function short code - 2-Mar
Direction of flow reversible - No
Operating principle - Slide
Shape of function component - Piston
With exhaust flow control - No
Type of regulation - Indirect
Control type - Monostable
Type of reset - Air spring
External auxiliary pilot air - Yes
Grid dimension - 10 mm
Type of mounting - Screw
Number of multiple configurations - 2
Type of multiple configuration - Battery
Installation position - Any
Nominal size - 4 mm
Minimum operating pressure - -0.9 bar
Maximum operating pressure - 10 bar
Minimum ambient temperature - -5 °C
Maximum ambient temperature - 50 °C
Minimum medium temperature - -5 °C
Maximum medium temperature - 50 °C
Minimum pilot pressure - 3 bar
Type of connection, air supply - Manifold module
Air connection type power port - Female thread
Air connection type power port - Female thread
Type of connection, exhaust - Manifold module
Air connection type auxiliary pilot air supply - Manifold module
Air connection type auxiliary pilot air exhaust - Manifold module
Type pilot control air - Supply and exhaust:
External pilot air and air spring, ducted pilot exhaust
Actuation/reset - Single solenoid, air spring return
- 1.11. Solenoid Valve CPV 5/2 way, with the following features:
Switching function - 5/2-way valve
Switching function short code - 5 working ports, 2 switching position
Direction of flow reversible - No
Operating principle - Slide
Shape of function component - Piston
With exhaust flow control - No
Type of regulation - Indirect
Control type - Monostable
Type of reset - Air spring
External auxiliary pilot air - Yes
Grid dimension - 10 mm
Type of mounting - Screw
Number of multiple configurations - 2
Type of multiple configuration - Battery
Installation position - Any
Nominal size - 4 mm
Minimum operating pressure - -0.9 bar

Maximum operating pressure - 10 bar
 Minimum ambient temperature -5 °C
 Maximum ambient temperature - 50 °C
 Minimum medium temperature - -5 °C
 Maximum medium temperature - 50 °C
 Minimum pilot pressure - 3 bar
 Type of connection, air supply - Manifold module
 Air connection type power port - Female thread
 Air connection type power port - Female thread
 Type of connection, exhaust - Manifold module
 Air connection type auxiliary pilot air supply - Manifold module
 Type pilot control air Supply and exhaust - External pilot air and air spring, ducted pilot exhaust
 Actuation/reset - Single solenoid, air spring return

1.12. Socket connector cable for sensor and switches (4GD and 3GD), with the following features:

Minimum ambient temperature standard - -40 °C
 Maximum ambient temperature standard - 70 °C
 Correlation ambient temperature /hours - Fixed cable installation
 Minimum ambient temperature screwed-in - -5 °C
 Maximum ambient temperature limited - 70 °C
 Ambient temperature class, screwed in - Flexible cable installation
 Air connection type elec. - Cable/socket
 Number of cores - 3
 Core cross section - 0.25 mm²
 Length of cable - 2500 mm
 Diameter of connecting cable - 4.5 mm
 Material, cable sheath - TPE-U(PU)
 Degree of protection - IP67

1.13. Relays, with the following features:

Relays per module - 1
 Relay mount - Soldered
 Mount - can be snapped onto 35-mm DIN rail (EN 50 022) and 32-mm G-rail (EN 50 035)
 Temperature range - -25 °C to 60 °C
 Rated isolation voltage input/output - 2500 V eff
 Dimensions (W x H x D) - 22.5 mm × 67 mm × 60 mm
 Housing material - Noryl

1.14. Shock Absorber, with the following features:

Function - shock absorber
 Cushioning - self-adjustable
 Type of mounting - Thread + lock nut
 Mounting thread - M 8 x 1
 Piston, nominal size - 5 mm
 Stroke - 5 mm
 Cushioning work per stroke - 1 J
 Cushioning work per hour - 8000 J
 Impact speed max. - 2 m/s
 Maximum impact force - 200 N
 Minimum reset force, advanced position - 0.7 N
 Minimum inward thrust, rear end position - 5.5 N
 Maximum residual energy - 0.01 J
 Piston rod diameter - 2.5 mm
 Minimum ambient temperature - -10 °C

Maximum ambient temperature - 80 °C
 Reset time, short term - 0.2 s
 Permissible tightening torque - 2 Nm
 Material of seals NBR, TPE-U(PU)
 Material of piston rod - High-alloy steel
 Material of barrel/housing - Steel: Brass
 CT criterion - Free of copper and teflon
 Product weight - 0.009 kg

1.15. Push-in/thread L-fittings, with the following features:

Nominal size connector - 2.4 mm
 Nominal size of tubing connection - 4
 Mounting/connection thread - M 5
 Minimum operating pressure - -0.95 bar
 Maximum operating pressure - 10 bar
 Minimum ambient temperature - 0 °C
 Maximum ambient temperature - 60 °C
 Minimum medium temperature - 0 °C
 Maximum medium temperature - 60 °C
 Material of housing - PBT-reinforced
 Product weight - 0.003 kg
 Medium - Compressed air, filtered

1.16. Start-up valve filter control valve, with the following features:

Medium - Compressed air
 Design - Sintered filter with water separator, diaphragm control valve
 Assembly position - Vertical $\pm 5^\circ$
 Standard nominal flow rate - 750 l/min
 Maximum upstream pressure - 1600 kPa
 Maximum operating pressure - 1200 kPa
 Connection - Coupling plug force coupling socket, QS-plug fitting for plastic tubing PUN 6 x 1

1.17. Proximity sensor, with reed contact and light emitting diode, without mounting kit, with the following features:

Signal processing/type of contact - reed contact
 Function on actuation - N/O contact
 Switching accuracy (+/-) - 0.1 mm
 Minimum ambient temperature standard - -20 °C
 Maximum ambient temperature standard - 70 °C
 Correlation ambient temperature /hours - Fixed cable installation
 Maximum ambient temperature screwed-in - -5 °C
 Ambient temperature class, screwed in - Flexible cable installation
 Air connection type elec. - Cable with plug
 Number of cores - 3
 Core cross section - 0.14 mm²
 Length of cable - 300 mm
 Number of pins, plug connection - 3
 Operating status display - Yellow LED
 Type of mounting slot
 Material of housing - PET-reinforced
 Material, cable sheath - PVC-polymer
 CT criterion - Free of copper and teflon
 Product weight - 0.01 kg
 Voltage type - AC/DC
 Nominal operating voltage - 24 V DC

Minimum operating voltage - 12 V DC
Maximum operating voltage - 30 V DC
Nominal operating voltage - 24 V AC
Minimum operating voltage - 12 V AC
Maximum operating voltage - 30 V AC
Maximum contact rating (DC) - 10 W
Maximum contact rating (AC) - 10 VA
Maximum switching frequency - 500 Hz

1.18. I/O terminals, with the following features:

Number of inputs with LED - 8
Number of outputs with LED - 8
Number of terminals 0 V - 22
Number of terminals 24 V - 12
Connector – Amphenol Tuchel 24-pin, 57 GE series

1.19. Silencer, with the following features:

Air connection type - Male thread
Connector thread - M 5
Operating pressure min. - 0 bar
Operating pressure max. - 10 bar
Minimum ambient temperature - -10 °C
Maximum ambient temperature - 70 °C
Sound pressure level - 70 dB(A)
Standard nominal flow rate - 90 l/min
Material of screw-in stud – brass

1.20. Slide module (with a retainer for mounting on a profile plate), with the following features:

Application: - As end slide or segregating slide
Length - 250 mm
Standard height - 117 – 200 mm (adjustable)

1.21. Plastic tubing, 4 mm, with the following features:

Nominal size of tubing - 4 mm
Internal diameter - 2.6 mm
Outside diameter - 4 mm
Minimum bending radius - 17 mm
Minimum operating pressure - -0.95 bar
Maximum operating pressure at 20°C - 10 bar
Maximum operating pressure at 30°C - 10 bar
Maximum operating pressure at 40°C - 9 bar
Maximum operating pressure at 60°C - 7 bar
Suitable for vacuum - Yes
Minimum ambient temperature - -35 °C
Maximum ambient temperature - 60 °C
Material of tubing - TPE-U(PU)
Product weight per meter - 0.0089 kg/m
Color - blue
Length – 10 m

1.22. Plastic tubing, 6 mm, with the following features:

Nominal size of tubing – 6 mm
Internal diameter 4 mm
Outside diameter 6 mm
Minimum bending - 26.5 mm
Minimum operating pressure - -0.95 bar
Maximum operating pressure at 20°C - 10 bar

	<p>Maximum operating pressure at 30°C - 10 bar Maximum operating pressure at 40°C - 9 bar Maximum operating pressure at 60°C - 7 bar Minimum ambient temperature - -35 °C Maximum ambient temperature - 60 °C Material of tubing - TPE-U(PU)</p> <p>2. Programmable Logic Controller (PLC), with the following features: Main memory - Main memory, Memory card included Interface - 2-port switch, Ethernet, 10 ns bit performance Inputs/outputs - 32 digital inputs (24 V DC), 32 digital inputs (24 V DC/0.5A), 8 analog inputs, 8 U/I/RTD/TC, 16-bit resolution, 4 analog outputs, 4x U/t, 16-bit resolution Mounting system - Size (W x H): - 305 mm x 300 mm, powder-coated, sheet-steel With integrated power supply unit, 110/230 V AC/24 V DC/4 A With 19" module simulation plate with 2 SysLink plug With connector for MPS and control panel With 8 digital inputs and 8 digital outputs and 1 Sub-D 15 Pin plug connection with 4 analog inputs and 2 analog outputs, emergency stop jumper to connect a safety circuit for disconnecting 8 digital outputs</p> <p>3. PLC Software, with the following programming languages: Statement list (STL) Function diagram (FUN) Ladder diagram (LDR) Structured Text Function Sequence Diagram</p> <p>4. Trolley, with the following features: Material - Aluminum Height (including castors, to bottom edge of profile plate) - 750 mm Width - 350 mm Depth - 700 mm</p> <p>5. Profile plate, with the following features: Material - Aluminum Length x width - 350 x 700 mm Grid Dimension - 50 mm</p>	
<p>3.</p>	<p>Processing Station, consisting of the following:</p> <p>1. Clamping/ejecting module, with the following features: For mounting on a profile plate An electrical solenoid is used for the drive</p> <p>2. Drilling module, with the following features: Nominal voltage - 24 V Nominal power output - 50 W Connection - 2-wire cable (min. 0.5 mm) Clamping range of drill chuck – 1 to 6 mm Service life - 200 hours Weight - 400 g Height - 360 mm Working stroke - 100 mm Nominal current DC motor- 0.3 A Nominal current - 0.5 A</p> <p>3. Gear Motor, with the following features:</p>	

	<p>Nominal voltage - 24 V DC Nominal current - 0.31 A Rated output power - 3.14 W Nominal rotational speed - 3000 rpm Efficiency of transmission - 0.72 Stages of gear box - 2 Reduction gear ratio i:1 - 20,25 Nominal torque - 80 N-cm Weight - 160 g Electrical connection - Cable with cable-end sleeves</p> <p>4. Rotary indexing table module, with the following features: Number of workpiece positions - 6 Table is driven by a DC geared motor with a series resistor. Diameter - 350 mm Height - 125 mm Nominal Voltage - 24 V Nominal rotational speed - 6 rpm (with series resistor 47) Nominal current - 0.15 A (with series resistor 47) Nominal current - 0.5 A</p> <p>5. Socket connector cable for sensor and switches, with the following features: Minimum ambient temperature standard - -40 °C Maximum ambient temperature standard - 70 °C Correlation ambient temperature/hours - Fixed cable installation Maximum ambient temperature, screwed-in - -5 °C Maximum ambient temperature, limited - 70 °C Air connection type elec. - Cable/socket Number of cores - 3 Core cross section - 0.25 mm² Length of cable - 2500 mm Diameter of connecting cable - 4.5 mm Material, cable sheath - TPE-U(PU) Degree of protection - IP67</p> <p>6. Relays, with the following features Relays per module -1 Relay mount - Soldered Mount - can be snapped onto 35-mm DIN rail (EN 50 022) and 32-mm G-rail (EN 50 035) Temperature range - -24 °C to + 60 °C Rated isolation voltage input/output - 2500 V eff Dimensions (W x H x D) - 22.5 mm x 67 mm x 60 mm Housing material - Noryl CE Compliance – Yes</p> <p>7. Sensor, inductive, with the following features: EU conformity (CE) - CE Note on EU conformity - Electromagnetic compatibility Signal processing/type of contract - Inductive Function on actuation - N/O contact Output potential (el. Output) - PNP Nominal switching distance (sn) - 2.5 mm Minimum actual switching distance (sr) - 2.5 mm Maximum actual switching distance (sr) - 2.75 mm Minimum effective switching distance (su) - 2.03 mm Maximum effective switching distance (su) - 3.03 mm</p>	
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Guaranteed switching distance (sa) - 2.03 mm
 Reproducibility - 0.125 mm
 Minimum ambient temperature standard - -25 °C
 Maximum ambient temperature standard - 85 °C
 Air connection type elec. - Plug
 Thread for connector - M 8x1
 Number of pins, plug connection - 3
 Operating status display - Yellow LED
 Short-circuit strength - Pulsed
 Protection against incorrect polarity - integrated
 Type of mounting - Thread + lock nut
 Type of installation - Not flush
 Mounting thread - M 8x1
 Material of housing - Stainless high-alloy steel
 Material, cable sheath - TPE-U (PU)
 CT criterion - Free of copper and teflon
 Product weight - 0.02 kg
 Voltage type - DC
 Nominal operating voltage - 24 V
 Minimum operating voltage - 15 V
 Maximum operating voltage - 34 V

8. Sorting gate module, with the following features:
- Branch module, electrical
 - For mounting on a profile plate
 - An electrical solenoid is used for the drive

9. Station link Receiver, through beam sensor, with the following features:
- EU conformity (CE) - CE
 - Note on EU conformity - Electromagnetic compatibility
 - Signal processing (measuring principle) - Infrared
 - Switch triggering - Interrupt
 - Function on actuation - Receiver
 - Output potential (el. Output) - PNP
 - Coverage range - max. 6000 mm
 - Minimum ambient temperature - -5 °C
 - Maximum ambient temperature - 55 °C
 - Air connection type elec. - Plug
 - Thread for connector - M 8 x 1
 - Number of pins, plug connection - 3
 - Operating status display - Yellow LED
 - Short-circuit strength - Pulsed
 - Protection against incorrect polarity - Integrated
 - Voltage Type - DC
 - Nominal operating voltage - 24 V
 - Minimum operating voltage - 10 V
 - Maximum operating voltage - 30 V
 - Maximum Idle current - 25 mA
 - Maximum switching frequency - 1000 Hz
 - Degree of protection - IP65

10. Station link transmitter, through beam sensor, with the following features:
- EU conformity (CE) - CE
 - Note on EU conformity - Electromagnetic compatibility
 - Signal processing (measuring principle) - Infrared
 - Switch triggering - Interrupt

Function on actuation - Sender
 Coverage range - max. 6000 mm
 Minimum ambient temperature - -5 °C
 Maximum ambient temperature - 55 °C
 Air connection type elec. - Plug
 Thread for connector - M 8x1
 Number of pins, plug connection - 3
 Operating status display - Yellow LED
 Short-circuit strength - Pulsed
 Protection against incorrect polarity - Integrated
 Voltage Type - DC
 Nominal operating voltage - 24 V
 Minimum operating voltage - 10 V
 Maximum Operating voltage - 30 V
 Maximum idle current - 25 mA
 Maximum switching frequency - 1000 Hz
 Degree of protection - IP65

11. Micro Switch, with the following features:

EU conformity (CE) - CE
 Note on EU conformity - Low voltage
 For semi-rotary drives
 The switching point may only be exceeded by 0.5mm

12. Solenoid actuator (2 pcs), with the following features:

Working stroke: 10 mm
 Voltage: 24V DC
 Output: 7 W

13. Capacitive Sensor, with the following features:

Switching voltage - 12—48 V DC
 Output function - Normally open, positive switching (PNP)
 Nominal switching distance - 10mm
 Hysteresis - s20%
 Maximum output current - 200 mA
 Reproducible switching point at
 constant temperature - ±0.01mm
 Maximum switching frequency - 25 Hz
 No-load current - 20 mA
 Permissible ambient operating temperature - -10 °C - +50 °C
 Protection against polarity reversal - Integrated
 Short-circuit proof - Yes
 Protection class - IP65
 Size - M18
 Type of mounting - Non flush
 Emitted interference - Noise immunity tested to EN 500 82-1
 Connection cable - 3 Pin

14. I/O terminals, with the following features:

Number of inputs with - LED 8
 Number of outputs with - LED 8A
 Number of terminals 0V - 22
 Number of terminals 24V - 12
 Connector - Amphenol-Tuchel 24-pin, 57 GE series

15. Programmable Logic Controller (PLC), with the following features:

Main memory - Main memory, Memory card included
 Interface - 2-port switch, Ethernet, 10 ns bit performance

	<p>Inputs/outputs - 32 digital inputs (24 V DC), 32 digital inputs (24 V DC/0.5A), 8 analog inputs, 8 U/I/RTD/TC, 16-bit resolution, 4 analog outputs, 4x U/t, 16-bit resolution Mounting system - Size (W x H): - 305 mm x 300 mm, powder-coated, sheet-steel With integrated power supply unit, 110/230 V AC/24 V DC/4 A With 19" module simulation plate with 2 SysLink plug With connector for MPS and control panel With 8 digital inputs and 8 digital outputs and 1 Sub-D 15 Pin plug connection with 4 analog inputs and 2 analog outputs, emergency stop jumper to connect a safety circuit for disconnecting 8 digital outputs</p> <p>16. PLC Software, with the following programming languages: Statement list (STL) Function diagram (FUN) Ladder diagram (LDR) Structured Text Function Sequence Diagram</p> <p>17. Trolley, with the following features: Material - Aluminum Height (including castors, to bottom edge of profile plate) - 750 mm Width - 350 mm Depth - 700 mm</p> <p>18. Profile plate, with the following features: Material - Aluminum Length x Width – 350 mm x 700 mm Grid Dimension: 50 mm</p> <p>System Requirements: Windows 7 (64-bit) Professional/Enterprise/Ultimate SP1 Windows 10 (64-bit) Professional/Enterprise 1703</p> <p>System Recommendations: Core i5-6440EQ, 3, 4 GHz 16 GB RAM 1920 x 1080 Pixel SSD, at least 50 GB of free hard drive space</p> <p>The Three-Station Modular Production System must be supplied with the following: Software and documentation supplied on DVD Floating license supplied on USB Stick</p>	
4.	<p>Collaborative Robot, with the following features: Performance: Repeatability - $\pm 0.1\text{mm} / \pm 0.0039\text{ in}$ (4 mils) Ambient temperature range - $0\text{-}50\text{ }^{\circ}\text{*}$ Power consumption - Min 90 W, Typical 125 W, Max 250 W Collaboration operation - 15 advanced adjustable safety functions</p> <p>Specification: Payload – 3 kg / 6.6 lbs. Reach – 500 mm / 19.7 in. Degrees of freedom - 6 rotating joints Programming - Polyscope graphical user interface on 12 inch</p>	

	<p>Movement:</p> <table border="0"> <tr> <td>Axis movement robot arm:</td> <td>Working range:</td> <td>Maximum speed:</td> </tr> <tr> <td>Base</td> <td>±360 °</td> <td>±180 °/Sec.</td> </tr> <tr> <td>Shoulder</td> <td>±360 °</td> <td>±180 °/Sec.</td> </tr> <tr> <td>Elbow</td> <td>±360 °</td> <td>±180 °/Sec.</td> </tr> <tr> <td>Wrist 1</td> <td>±360 °</td> <td>±180 °/Sec.</td> </tr> <tr> <td>Wrist 2</td> <td>±360 °</td> <td>±180 °/Sec.</td> </tr> <tr> <td>Wrist 3</td> <td>Infinite</td> <td>±360 °/Sec.</td> </tr> <tr> <td>Typical tool in/Sec.</td> <td></td> <td>1 m/Sec./39.4</td> </tr> </table> <p>Features:</p> <ul style="list-style-type: none"> IP Classification - IP 64 ISO Class Cleanroom - 5 Noise - 70dB(A) Robot Mounting – Any <p>I/O ports:</p> <ul style="list-style-type: none"> Digital in - 2 Digital out - 2 Analog in - 2 Analog out - 0 I/O power supply in tool: 12 V/24 V 600 mA in tool <p>Physical:</p> <ul style="list-style-type: none"> Footprint - Ø 128mm Materials: Aluminum, PP plastics Tool connector type - M8 Cable length robot arm - 6m / 236 in Weight with cable - 11kg / 24.3 lbs. Reduction gear ratio i:1 - 20,25 Nominal torque - 80 Ncm Gripper Total Stroke: 0-110mm Gripping Force: 3-40NM (Adjustable) Working Temp: 0-60 Degrees Celsius IP Classification: IP54 Weight: 0.78kg 	Axis movement robot arm:	Working range:	Maximum speed:	Base	±360 °	±180 °/Sec.	Shoulder	±360 °	±180 °/Sec.	Elbow	±360 °	±180 °/Sec.	Wrist 1	±360 °	±180 °/Sec.	Wrist 2	±360 °	±180 °/Sec.	Wrist 3	Infinite	±360 °/Sec.	Typical tool in/Sec.		1 m/Sec./39.4	
Axis movement robot arm:	Working range:	Maximum speed:																								
Base	±360 °	±180 °/Sec.																								
Shoulder	±360 °	±180 °/Sec.																								
Elbow	±360 °	±180 °/Sec.																								
Wrist 1	±360 °	±180 °/Sec.																								
Wrist 2	±360 °	±180 °/Sec.																								
Wrist 3	Infinite	±360 °/Sec.																								
Typical tool in/Sec.		1 m/Sec./39.4																								
	<p>I year warranty With training</p>																									

Attached herewith are the manufacturer’s product literature(s) and certification(s) that we are authorized to sell the goods.

We certify that the foregoing information and the supporting documents are true and correct.

[Signature]
 [Name of Authorized Signatory]
 [Position/Title of Authorized Signatory]

Omnibus Sworn Statement

REPUBLIC OF THE PHILIPPINES)
CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, *[Name of Affiant]*, of legal age, *[Civil Status]*, *[Nationality]*, and residing at *[Address of Affiant]*, after having been duly sworn in accordance with law, do hereby depose and state that:

1. **Select one, delete the other:**

- b. *If a sole proprietorship:* I am the sole proprietor or authorized representative of *[Name of Bidder]* with office address at *[address of Bidder]*;
- c. *If a partnership, corporation, cooperative, or joint venture:* I am the duly authorized and designated representative of *[Name of Bidder]* with office address at *[address of Bidder]*;

2. **Select one, delete the other:**

- a. *If a sole proprietorship:* As the owner and sole proprietor, or authorized representative of *[Name of Bidder]*, I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity]*, as shown in the attached *duly notarized Special Power of Attorney*;
- b. *If a partnership, corporation, cooperative, or joint venture:* I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity]*, as shown in the attached *[state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable)]*;

3. *[Name of Bidder]* is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, by itself or by relation, membership, association, affiliation, or controlling interest with another blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. *[Name of Bidder]* is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. **Select one, delete the rest:**

- a. *If a sole proprietorship:* The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;
- b. *If a partnership or cooperative:* None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of

the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

- c. *If a corporation or joint venture:* None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and

8. *[Name of Bidder]* is aware of and has undertaken the following responsibilities as a Bidder:

- a. Carefully examine all of the Bidding Documents;
- b. Acknowledge all conditions, local or otherwise, affecting the implementation of the Contract;
- c. Made an estimate of the facilities available and needed for the contract to be bid, if any; and
- d. Inquire or secure Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.

9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

10. In case advance payment was made or given, failure to perform or deliver any of obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to delivery certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.

IN WITNESS WHEREOF, I have hereunto set my hand this ___ day of ___, 20__ at _____, Philippines.

Bidder's Representative/Authorized Signatory

SUBSCRIBED AND SWORN to before me this ___ day of *[month]* *[year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her *[insert type of government identification card used]*, with his/her photograph and signature appearing thereon, with no. _____ and his/her Community Tax Certificate No. _____ issued on ___ at _____.

Witness my hand and seal this ___ day of *[month]* *[year]*.

NAME OF NOTARY PUBLIC

Serial No. of Commission _____

Notary Public for _____ until _____

Roll of Attorneys No. _____

PTR No. _____ *[date issued]*, *[place issued]*

IBP No. _____ *[date issued]*, *[place issued]*

Doc. No. _____
Page No. _____
Book No. _____
Series of _____

[Bidder's Letterhead]

[Date]

FINANCIAL BID FORM

To: Tarlac State University
Re: Invitation to Bid No.

Having examined the Bidding Documents [*insert if any or delete, if none: including Bid Bulletin Numbers [insert numbers], the receipt of which is hereby duly acknowledged*], we, the undersigned, offer to [*supply/deliver/perform*] [*description of the Goods*] in conformity with the said Bidding Documents for the sum of [*total Bid amount in words and figures*] or such other sums as may be ascertained in accordance with the Schedule of Prices attached herewith and made part of this Bid.

If our Bid is accepted, we commit to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements.

If our Bid is accepted, we undertake to provide a performance security in the form, amounts, and within the times specified in the Bidding Documents.

We agree to abide by this Bid for the Bid Validity Period specified in **ITB** Clause 14.2 and it shall remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal Contract is prepared and executed, this Bid, together with your written acceptance thereof and your Notice of Award, shall be binding upon us.

We understand that you are not bound to accept the Lowest Calculated Bid or any Bid you may receive.

We certify/confirm that we comply with the eligibility requirements as per **ITB** Clause 5 of the Bidding Documents.

We likewise certify/confirm that the undersigned, [*for sole proprietorships, insert: as the owner and sole proprietor or authorized representative of [Bidder], has the full power and authority to participate, submit the bid, and to sign and execute the ensuing contract, on the latter's behalf for the [Name of Project] of the Tarlac State University*] [*for partnerships, corporations, cooperatives, or joint ventures, insert: is granted full power and authority by the [Bidder], to participate, submit the bid, and to sign and execute the ensuing contract on the latter's behalf for [Name of Project] of the Tarlac State University*].

We acknowledge that failure to sign each and every page of this Financial Bid Form, including the attached Schedule of Prices, shall be a ground for the rejection of our bid.

Dated this _____ day of _____ 20_____.

[signature]

[in the capacity of]

Duly authorized to sign Bid for and on behalf of _____

[Bidder's Letterhead]

[Date]

To: Tarlac State University
 Re: Invitation to Bid No.

SCHEDULE OF PRICES

Item No.	Description	Qty.	Unit	Unit Price	Total Price
Lot No. 1 – Upgrading of Electronics Engineering Laboratory, comprising of the following:					
1.	Telecommunications Teaching Simulation Software, Perpetual License, Web Browser Access, Cloud-Based	1	pc		
2.	Advanced Telecommunications Experimenter	5	set		
3.	Quadrature Phase Shift Keying (QPSK) and Multi Experiment Board	5	set		
4.	Multi Experiment Board	5	set		
5.	Fiber Optics Transmitter and Receiver Experiment Board	5	set		
6.	Fiber Optics Couplers and Filters Experiment Board	5	set		
7.	Physics of Fiber Experiment Board	5	set		
8.	Advanced Electrical, Electronics and Digital Experimenter	5	set		
9.	Three-Phase Systems Trainer	5	set		
10.	Transformer Construction and Operation Experimenter	5	set		
11.	Advanced Electronics Principles	5	set		
12.	Multimeter	20	pc		
13.	USB-powered PC-Based Oscilloscope Data Acquisition Device, with software	5	set		
14.	DC Power Supply	10	pc		
15.	Function Generator, Synthesized	10	pc		
Total Bid Price					

[Signature]
 [Name of Authorized Signatory]
 [Position/Title of Authorized Signatory]

[Bidder's Letterhead]

[Date]

To: Tarlac State University
Re: Invitation to Bid No.

SCHEDULE OF PRICES

Item No.	Description	Qty.	Unit	Unit Price	Total Price
Lot No. 2 – Three-Station Modular Production System and Robotics System, comprising of the following:					
1.	Distributing/Conveyor Station	1	set		
2.	Handling Station	1	set		
3.	Processing Station	1	set		
4.	Collaborative Robot	1	pc		
Total Bid Price					

[Signature]

[Name of Authorized Signatory]

[Position/Title of Authorized Signatory]