PHILIPPINE BIDDING DOCUMENTS

(As Harmonized with Development Partners)

Procurement of GOODS

Government of the Republic of the Philippines

Supply and Delivery of Various IT Equipment for the Smart Campus of the University (PR 23-07-355)

(ABC: Php 22,708,300.00)

Sixth Edition
July 2020

Preface

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

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

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

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

a.   All the documents listed in the Table of Contents are normally required for the procurement of Goods. However, they should be adapted as necessary to the circumstances of the Procurement Project.

b.   Specific details, such as the "*name of the Procuring Entity*" and "*address for bid submission*," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.

c.   This Preface and the footnotes or notes in italics included in the Invitation to Bid, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

d.   The cover should be modified as required to identify the Bidding Documents as to the Procurement Project, Project Identification Number, and Procuring Entity, in addition to the date of issue.

e.   Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be

printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.

f.   For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

Table of Contents

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

Notes on the Invitation to Bid

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;

b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;

c. The deadline for the submission and receipt of bids; and

d. Any important bid evaluation criteria (*e.g.*, the application of a margin of preference in bid evaluation).

The IB should be incorporated in the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.

Republic of the Philippines
WESTERN MINDANAO STATE UNIVERSITY
BIDS AND AWARDS COMMITTEE FOR GOODS
Normal Road, Baliwasan Zamboanga City
Telephone: 062-991-7875
www.wmsu.edu.ph

INVITATION TO BID FOR *Supply and Delivery of Various IT Equipment for the Smart Campus of the University (PR 23-07-355)*

1.   The *Western Mindanao State University*, through the *CHED FUND 2023* intends to apply the sum of *Twenty-Two Million Seven Hundred Eight Thousand Three Hundred pesos (Php 22,708,300.00)* being the ABC to payments under the contract for *Supply and Delivery of Various IT Equipment for the Smart Campus of the University (PR 23-07-355)*. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2.   The *Western Mindanao State University* now invites bids for the above Procurement Project. Delivery of the Goods is required by *within Sixty (60) calendar days*. Bidders should have completed, within *reasonable period* from the date of submission and receipt of bids, a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

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

4.   Prospective Bidders may obtain further information from *WMSU- BAC Office* and inspect the Bidding Documents at the address given below during *8:00 AM to 5:00 PM.*

5.   A complete set of Bidding Documents may be acquired by interested Bidders on *September 21 to October 17, 2023 from* the given address and website(s) and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of *Twenty-Five Thousand (25,000.00).* The Procuring Entity shall allow the bidder to present its proof of payment for the fees will be presented in person, by facsimile, or through electronic means.

6.   Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below, on or before *October 17, 2023 at 9:30 AM at the WMSU BAC-Office*. Late bids shall not be accepted.

7.   Bid opening shall be on *October 17, 2023 at 9:30 AM* at the given address. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

8.   The *Western Mindanao 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 No. 9184, without thereby incurring any liability to the affected bidder or bidders.

9.   For further information, please refer to:

Ma. Josefina Mendoza Bacalla
Head Secretariat for GOODS
Western Mindanao State University
Normal Road, Baliwasan
Zamboanga City
Tel. No.: (062)991-7875
Email: bacsecretariate@wmsu.edu.ph

10.   You may visit the following websites:

For downloading of Bidding Documents: *wmsu.edu.ph; PhilGeps Website*

September 21, 2023

DR. JOSELITO D. MADROÑAL
BAC Chairperson for Goods

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

1. Scope of Bid

The Procuring Entity, **Western Mindanao State University** wishes to receive Bids for the **Supply and Delivery of Various IT Equipment for the Smart Campus of the University (PR 23-07-355).**

The Procurement Project (referred to herein as "Project") is composed of **Thirty-Seven (37) item** 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 **CHED FUND 2023** in the amount of **Twenty-Two Million Seven Hundred Eight Thousand Three Hundred pesos (Php 22,708,300.00).**

3. Bidding Requirements

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

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

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

4. Corrupt, Fraudulent, Collusive, and Coercive Practices

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

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to:

a. For the procurement of Non-expendable Supplies and Services: The Bidder must have completed a single contract that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC.

b. For the procurement of Expendable Supplies: The Bidder must have completed a single contract that is similar to this Project, equivalent to at least twenty-five percent (25%) of the ABC.

    c.   For procurement where the Procuring Entity has determined, after the conduct of market research, that imposition of either (a) or (b) will likely result to failure of bidding or monopoly that will defeat the purpose of public bidding: the Bidder should comply with the following requirements: [*Select either failure or monopoly of bidding based on market research conducted*]

        i.   Completed at least two (2) similar contracts, the aggregate amount of which should be equivalent to at least *fifty percent (50%) in the case of non-expendable supplies and services or twenty-five percent (25%) in the case of expendable supplies*] of the ABC for this Project; and

        ii.   The largest of these similar contracts must be equivalent to at least half of the percentage of the ABC as required above.

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:

    a.   Subcontracting is not allowed.

7.2.   Subcontracting of any portion of the Project does not relieve the Supplier of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Supplier's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

8.   Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address ***October 3, 2023 at 9:30 a.m. BAC Office for Goods, 2nd Floor Administration Building, WMSU, Zamboanga City, Philippines*** and/or through videoconferencing/webcasting} as indicated in paragraph 6 of the **IB.**

9.   Clarification and Amendment of Bidding Documents

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

10. Documents comprising the Bid: Eligibility and Technical Components

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

10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within *[state relevant period as provided in paragraph 2 of the IB]* 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).**

12.2.   *[Include if Framework Agreement will be used:]* For Framework Agreement, the following should also apply in addition to Clause 12.1:

    a.   For a single year Framework Agreement, the prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation or escalation on any account. Price schedules required under Clause 12.1 shall be submitted with the bidding documents.

    b.   For a multi-year Framework Agreement, the prices quoted by the Bidder during submission of eligibility documents shall be the ceiling and the price quoted during mini-competition must not exceed the initial price offer. The price quoted during call for mini-competition shall be fixed during the Bidder's performance of that Call-off and not subject to variation or escalation on any account. Price schedules required under Clause 12.1 shall be submitted with the bidding documents.

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:

    a.   Philippine Pesos.

14. Bid Security

14.1.   The Bidder shall submit a Bid Securing Declaration[1] 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 **120 days**. Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

15. Sealing and Marking of Bids

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

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

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

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

16. Deadline for Submission of Bids

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

17. Opening and Preliminary Examination of Bids

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

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

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

18. Domestic Preference

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

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*," using non-discretionary pass/fail criteria.   The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of the 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by **ITB** Clause 15 shall be submitted for each lot or item separately.

19.3. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.

19.4. The Project shall be awarded as follows:

- One Project having several items, which shall be awarded as separate contracts per item.

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

20.2. 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

Notes on the Bid Data Sheet

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

a. Information that specifies and complements provisions of the ITB must be incorporated.

b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

Bid Data Sheet

ITB Clause	
5.3	For this purpose, contracts similar to the Project shall be: **a. _Supply and Delivery of Various IT Equipment's_** b. completed within reasonable period prior to the deadline for the submission and receipt of bids.
7.1	_Not Applicable_
12	The price of the Goods shall be quoted DDP _[state place of destination]_ or the applicable International Commercial Terms (INCOTERMS) for this Project.
14.1	The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts: a. The amount of not less _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
19.3	_1.) Forty (40) unit of PROGRAMMABLE DRONE KIT_ _Specifications:_ _. DIY Quadcopter Drone for STEM education_ _. Includes 2x microbits_ _. Includes WIFI camera_ _. Build, code, and fly features._ _2.) Two (2) unit of EDUCATIONAL ROBOT CAR WITH VISION ROBOTIC ARM_ _Specifications:_ _1. Nano (Technology) Control System_ _. With ROS controller_ _. Able to run mainstream deep learning framework such as TensorFlow, PyTorch, Caffe, Keras, MXNetintelligent analysis_ _. Can implement image recognition, object detection and positioning, post estimation, semantics segmentation,_ _2. Smart Vision Robotic Arm_ _. FPV robotic arm for picking, sorting, and transporting_ _. With 5 Degree of Freedom vision robotic arm_ _. Multi-point navigation transport_ _. Gesture Recognition_ _. Color Recognition, Tracking, and Sorting_ _. Waste Sorting_ _. Voice Control_ _. Follow line to clear obstacles_ _. Grab weight (straight arm): up to 200 g_ _. Grab weight during transporting: up to 500 g_ _. Arm span: at least 410mm_ _. Robotic arm material: aluminum alloy_

3. Depth camera recognition and tracking
. RTAB-VSLAM 3D Mapping and Navigation
. ORBSLAM2 + ORBSLAM3 Mapping
. RGB data and point cloud visualization
. Media pipe development
. Human Body Recognition
. Fingertip detection
. Face detection
. 3D detection
. AI Deep Learning Networking Framework
. KFC object Mapping
. Color/Tag Recognition and Tracking
. Body Motion Control
. ROS Robot APP mapping
.

4. 2D LiDAR for mapping and navigation
. Supports mapping with Gmapping, Hector, Karto, and Cartographer algorithms
. Single-point and Multi-point Navigation
. LiDAR tracking - capable of target tracking
. LiDAR Guarding - alarms when detecting intruder
. RRT exploration mapping
. TEB Path Planning and obstacle avoidance

5. at least 6 microphone array for voice interaction
. Pick-up distance: up to 3.5m
. Far-field sound pick-up, noise reduction recognition
. Voice control navigation
. Voice control on color recognition and tracking, multi-point navigation
. Sound source localization

6. Interconnected Motorcade
. Muti-vehicle Navigation
. Intelligent Formation
. Group control features

7. With LCD touchscreen
. Screen Size: at least 7 inches
. Port: USB/HDMI
. Resolution: 1020 x 600 (HD)

8. Includes accessories
. Expansion board
. Encoder motor driver
. Hall Encoder Geared Motor
. At least 6000mAh Lipo Battery
. Speaker (installed)
. 2A charger
. Card reader
. PS2 wireless handle
. 1 appropriate tool set
. 1 screw bag

3.) Three (3) unit of CODEBOT 4WD

Specifications:

. with ROS Controller , LiDAR and Depth Camera.
. With Remote control joystick
. With Wireless keyboard
. Touch screen
. Voice recognition controller
. Flight case
. Onboard Software:
- Onboard Ubuntu, ROS1 and STM32 driver.
- User can install ROS2 on a new Micro SD card or
replace the original ROS1 on the bundled Micro SD
card.
. Drivers and ROS Packages:
- iOS and Android remote control apps.
- Drivers and Software Installers
- ROS Packages and Source Codes
- STM32 Chassis Source Codes

4.) Sixty (60) unit of ARDUINO MICRO-CONTROLLER TRAINING KIT

The kit Includes the following:
A. Micro-controller Board
Specifications:
. Memory: at least 2kB SRAM, 32kB flash, and 1kB EEPROM
. Processor: at least 16MHz
. Digital I/O: at least 14 pins
. Analog I/O: at least 6 pins
. PWM pins: at least 6
. Built-in LED Pin: at least 13
. Communication: UART, IC2, and SPI
. USB Connector: USB-B
. Replacable chip
. I/O Voltage: 5V

B. Includes one (1) set of 37 sensors (with case)
. 1 x 2 axis Analog Joystick
. 1 x Relay
. 1 x Big sound, big microphone for audio detection
. 1 x Small sound, small microphone for audio detection
. 1 x Tracking, small IR sensor
. 1 x Avoidance, IR sensor
. 1 x Flame
. 1 x Linear hall, hall effect sensor to detect magnetic
. 1 x Touch sensor
. 1 x Digital temperature, thermistor
. 1 x Active buzzer, audio output
. 1 x Passive buzzer, Piezo buzzer
. 1 x RGB LED, Through-hole LED
. 1 x SMD RGB, SMD LED
. 1 x Two-color, through LED
. 1 x Mini two-color
Arduino Micro-controller Training Kit

The kit Includes the following:
A. Micro-controller Board
Specifications:
. Memory: at least 2kB SRAM, 32kB flash, and 1kB EEPROM

. Processor: at least 16MHz
. Digital I/O: at least 14 pins
. Analog I/O: at least 6 pins
. PWM pins: at least 6
. Built-in LED Pin: at least 13
. Communication: UART, IC2, and SPI
. USB Connector: USB-B
. Replacable chip
. I/O Voltage: 5V

B. Includes one (1) set of 37 sensors (with case)
. 1 x 2 axis Analog Joystick
. 1 x Relay
. 1 x Big sound, big microphone for audio detection
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. 1 x Tracking, small IR sensor
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. 1 x Linear hall, hall effect sensor to detect magnetic
. 1 x Touch sensor
. 1 x Digital temperature, thermistor
. 1 x Active buzzer, audio output
. 1 x Passive buzzer, Piezo buzzer
. 1 x RGB LED, Through-hole LED
. 1 x SMD RGB, SMD LED
. 1 x Two-color, through LED
. 1 x Mini two-color
. 1 x Reed switch
. 1 x Mini reed switch
. 1 x Heartbeat
. 1 x 7 color flash, auto flash LED
. 1 x Laser emitter
. 1 x Button, push button
. 1 x Shock
. 1 x Rotary encoders
. 2 x Light cup
. 1 x Ball switch
. 1 x Tilt-switch, mercury
. 1 x Photo-resistor, LDR
. 1 x Temp and humidity
. 1 x Analog hall
. 1 x Hall magnetic
. 1 x 18B20 temp
. 1 x Analog temp, thermistor
. 1 x IR emission
. 1 x IR receiver
. 1 x Tap module
. 1 x Light blocking

C. Includes one (1) compatible turtle robot

5.) Sixty (60) unit of RASPBERRY-PI SINGLE-BOARD COMPUTER TRAINING KIT

The Kit Includes the following:

A. Raspberry-Pi Single-Board Computer

Specifications:
. Memory: at least 8GB
. Processor: 1.5GHz (64-bit)
. 2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE Gigabit Ethernet
. 2 x USB 3.0; 2 x USB 2.0
. 2 x micro HDMI
. 2-lane MIPO DSI display port
. 2-lane MIPI CSI camera port
. 4-pole stereo audio and composite video port
. OpenGL ES 3.0 graphics
. Micro-SD card slot for loading operating system and data storage
. 5V DC via USB-C connector (minimum 3A)
. 5V DC via GPIO header (minimum 3A)

B. Power over Ethernet (PoE) enabled (requires separate PoE HAT)
C. Compatible Power Supply
D. Micro HDMI to Standard HDMI cable (1 m)
E. Kit Case
F. Fan
G. At least 32GB microSD Card
H. One (1) set of Heatsink

6.) Ten (10) unit of 8086 MICROPROCESSOR TRAINING KIT

Specifications:
. Processor: operates at 2.5/5MHz
. ROM: at least 16KB (expandable to 64KB)
. RAM: at least 16KB (expandable to 64KB) of battery backup
. 20 x 2 Alphanumeric LCD Display
. 101 ASCII compatible Keyboard
. 72 I/O Lines
. 3 channel 16 bit Timer/Counter
. PC serial interface using USART
. Interrupt control
. Built-in Power supply (+5V/1.5A, ±12V/250mA)

7.) Thirty (30) unit of DIGITAL OSCILLOSCOPE

Specifications:
. Bandwidth Model: 70 MHz (or higher)
. Real-Time Sampling Rate: up to 1 GSa/s
. Equivalent Time Sampling Rate: up to 50 GSa/s
. Memory Depth: up to 2 Mpts
. Trigger types: Edge, Pulse, Video, Slope, Alternate
*. Waveform math functions: +, -, *, /, FFT*
*. Display: at least 7 inches TFT (800 * 480 resolution)*
. Channels: at least 2
. 6 digital frequency counter
. Screensaver from 1 minute to 5 hours
. Digital filter and waveform recorder function
. Shortcut storage function key
. Interface: USB Host, USB Device (USBTMC), LAN (VXI11), Pass/Fail
. Language: English and supports Multi-language display and embedded online help

. Includes carrying bag
. Includes User Manual
. With Certificate of Calibration

8.) Two Hundred Seventy (270) license of VIRTUAL LABORATORY
INTERACTIVE SIMULATION SOFTWARE FOR PHYSICS
(at least 270 licenses)

Specifications:

. Simulator for tertiary level
. Laboratory Simulation Courses
. Multimedia content for simulations
. Laboratory manuals included
. Laboratory exercises
. Laboratory contents meet international standards
. Libraries of images and videos
. Learning activities are designed to promote problem-solving and critical thinking
. Activities are based on current methodologies, exercises, and techniques
. Guides for teachers and students
. Training (on-site) for all users (5-15 days)
. at least 6 months technical support
. Does not require Internet (offline installation and usage)
. Should be installed in the computer laboratory

Note:
Subjects include Fundamentals of Physics, Optics and Thermodynamics, Electricity and Magnetism, Modern Physics, Biophysics, and other related Physics subjects.

9.) Two Hundred Seventy (270) license of VIRTUAL LABORATORY
INTERACTIVE SIMULATION SOFTWARE FOR CHEMISTRY
(at least 270 licenses)

Specifications:

. Simulator for tertiary level
. Laboratory Simulation Courses
. Multimedia content for simulations
. Laboratory manuals included
. Laboratory exercises
. Laboratory contents meet international standards
. Libraries of images and videos
. Learning activities are designed to promote problem-solving and critical thinking
. Activities are based on current methodologies, exercises, and techniques
. Guides for teachers and students
. Training (on-site) for all users (5-15 days)
. at least 6 months technical support
. Does not require Internet (offline installation and usage)
. Should be installed in the computer laboratory

Note:
Subjects include General Chemistry, Biochemistry, Analytical Chemistry,

Physical Chemistry, Instrumental Chemistry, and other related Chemistry subjects.

10.) Two Hundred Seventy (270) license of VIRTUAL LABORATORY INTERACTIVE SIMULATION SOFTWARE FOR MATHEMATICS
(at least 270 licenses)

Specifications:

. Simulator for tertiary level
. Laboratory Simulation Courses
. Multimedia content for simulations
. Laboratory manuals included
. Laboratory exercises
. Laboratory contents meet international standards
. Libraries of images and videos
. Learning activities are designed to promote problem-solving and critical thinking
. Activities are based on current methodologies, exercises, and techniques
. Guides for teachers and students
. Training (on-site) for all users (5-15 days)
. at least 6 months technical support
. Does not require Internet (offline installation and usage)
. Should be installed in the computer laboratory

Note:
Subjects include Trigonometry, Differential Calculus, Integral Calculus, Differential Equations, College Algebra, Advance Math, and other related Mathematics subjects.

11.) One (1) lot of SUPPLY AND DELIVERY OF VOICE OVER IP TELEPHONY SYSTEM (Digital Phone)

The VOIP System includes the following devices:

A. One (1) Unit Main Unit/Expansion Chassis with Main Processor, Main Software and Power Supply

Specifications:
. 1 Main Unit/Expansion Chassis, Main Processor Board with
- Power Supply
- Main Software
- Operating System: at least NEC SV9000
- Processor: at least 1.86 GHz
- Memory: at least 2GB DDR3
- Storage: at least 500GB SATA HDD
- VoIP Channels: at least 8-VoIP channels built-in (expandable)
- InMail Voice Mail: at least 4-Channel, 2-Hour InMail Voice Mail Built-In (expandable)
- Mobile Extension Licenses: at least 4 Mobile Extension Licenses
- Connectors: Connector for optional VoIP Expansion Daughter Board, EXIF Expansion Board, and InMail SD Expansion cards

. 1 VOIP Gateway Daughter Board with
- 3 Analog Trunks
- 8 Hybrid Extensions Board

24

- 128 maximum channels

B. Ten (10) Units IP Trunk Licenses

C. One (1) Unit Hybrid Phone

Specifications:
. 12 keys Hybrid (4W) Multi-Line Terminal
. Black Color

D. Two (2) Units Router Gateway 1U

Specifications
. CPU: at least Quad-core 1.7GHz
. RAM: at least 1GB
. Flash: at least 16 MB
. Ethernet ports: 5 x Gigabit RJ45
. SFP port: 1 x SFP
. Routing: Up to 1.3 million packets per second
. Line rate: 5 Gbps
. VPN: OpenVPN, L2TP, PPTP
. Firewall: Stateful firewall, NAT, DoS protection
. Traffic shaping and QoS: Queues, policies, classes
. Management: Web interface, CLI, API

E. Ten (10) Units Patch Panel

Specifications:
. Ports: 24
. Connector: RJ45
. Category: 6
. Backplane: Dual IDC, Type 110
. Management: Integrated Cable Management
. Mounting: 1U rack mountable
. LOADED with:
o Patch cords that are 2 meters (7 feet) long and are made of blue Cat6 RJ45 UTP cable. The modular plugs on the ends of the patch cords are also made of Cat6 RJ45.
o Modular Plugs
o with set of accessories to connect all devices
o Mouldings
o UTP Cables

F. Forty-eight (48) Units IP Extension License for Std-SIP Terminal

- license that allows you to use 48 IP extensions on a standard SIP terminal. A SIP terminal is a device that can make and receive SIP calls. SIP is a standard protocol for making and receiving voice calls over IP networks.

12.) One (1) unit of RIBBON SPLICING MACHINE Q102 MASS FUSION SPLICER KIT WITH FC-6RM-C MASS FIBER CLEAVER

Specifications:
. Compact Mass Fusion Splicer with dual built-in Heat Shrink Ovens
. Mass Fiber Cleaver
. Heated Fiber Stripper
. Splice Protection Sleeves

. 12 Cores Fiber Cable Management Tray
. Pair of 250um single fiber holders
. AC Interface/Battery Charger with Power Cord
. Battery Unit
. Cleaning Kit
. High Resolution Touch Screen Display

13.) One (1) unit of FIBER OPTIC TESTER 1310/1550nm 1625 LIVE WITH INTELLIGENT OPTICAL LINK MAPPER OPTICAL TIME DOMAIN REFLECTOMETER (iOLM OTDR)

Specifications:
. wavelengths of light that the tester can use to test the cable: 1310/1550nm 1625
. The term "live" suggests that the tester can perform tests on a cable while it is still in use, without disrupting the signal flow.
. 7-inch outdoor-enhanced touchscreen, 800 x 480 TFT
. Two USB 2.0 ports
. RJ45 LAN 10/100 Mbit/s
. 2 GB internal memory (20 000 OTDR traces, typical)
. Rechargeable lithium-polymer battery
. Power supply AC/DC adapter, input 100-240 VAC, 50-60 Hz, 9-16V
. DCIN 15 Watts minimum
. - 1310 ± 30/1550 ± 30/1625 ± 10
. - ±(0.75 + 0.0025 % x distance + sampling resolution)
. Distance 0.1 to 160 KM
. Pulse width 5 to 20000
. Loss threshold (dB) 0.01
. Loss resolution (dB) 0.001"

14.) One (1) lot of SUPPLY, DELIVERY, INSTALLATION OF GATE KEEPER SYSTEM with SMS TEXT BULK MESSENGER

A. Five (5) units Fully Automatic Flap Turnstile (Dual Core)

Specifications:
. Passing Speed: at least 35-45 people/minute
. Adjustable Lane width
. Working Environment: Indoor and Outdoor
. MCBF(Mean Cycles Between Failure): up to 5 million times
. With anti-tail gate function
. Double protections of Mechanical and infrared anti-pinch function providing more reliable and safer passing.
. Multi alarm modes for illegal intrusion, anti-intrusion, anti-follow, overtime alarm,
. Anti-rush function, Anti-Reverse, Anti-intrusion, Anti-follow.
. With LED indicator light: green and red indicate the passing information.
. External button for normal open and normal close (for group pass)
. With Auto detect and reset function.
. Gate auto open when power is off to meet the fire protection requirements.
. Can be integrated with all kinds of access control systems with RFID Reader, upon receiving the relay switch signal.
. Flap turnstile can be uni-directional or bi-directional control.

B. Twenty (20) Units RFID SCANNERS UHF

Specifications

. NFC Contactless Smart Card Reader
. with complete SDK kit
includes:
. collection of sample codes for device and contactless programming
. demo programs
. smart card drivers
. supports the following latest programming languages - Java, MS Visual Basic.NET 2008, MS Visual C#.NET 2008, MS Visual C++ 6.0, and MS Visual C++.NET 2008.
. Include at least 5 test cards for each RFID scanner
. Supports the existing Operating System

C. One (1) Unit RFID CARD PRINTER

Specifications:
. UHD Dual Sided Retransfer card printer
. Capacity: up to 200 cards input Hopper
. Resolution: 300dpi
. IPSEC Network Security
. Electronic Security Lock
. Can be connected up to 7 retransfer card printers

D. Five (5) Units Computer Desktop (Branded)

Specifications:
. Processor: 18M Cache, up to 4.40 GHz (or higher)
. Motherboard: Truly rated compatible motherboard
. Memory: 16GB (2x8GB) DDR4 or higher
. Storage: 2TB HDD + 512GB SSD
. Power supply: 700Watts Power
. Graphics: 4GB DDR5 or higher
. Display: at least 23-inch LED Monitor (includes bracket)
. Optical Drive: DVD-RW
. Connectivity: LAN and Wi-Fi 802.11 b/g/n
. I/O Ports: at least 4 USB ports (2 front, 2 rear), Audio Jacks, HDMI and VGA
. Accessories: Combo USB keyboard and mouse with pad, speaker , UPS with built-in AVR 720 VA or higher
. With latest licensed OS (64 bit)

E. Five (5) units Monitor

Specifications
. Display Type: LED-backlit
. Size: at least 24 inches
. Panel Type: In-Plane Switching (IPS)
. Native Resolution: Full HD 1920x1080 Resolution
. Refresh Rate: 75Hz
. Aspect Ratio: 16:9
. Connectivity Interfaces: VGA, HDMI
. includes bracket

F. Two (2) Units Outdoor Professional Standalone Access Control Terminal

Specifications
. Log Capacity: at least 50, 000 records
. Fingerprint Capacity: at least 3,000
. Card Capacity: at least 3,000

. Interface: PoE-TCP/IP,RS485, Relay Output (COM, NO, NC), Wiegand Out&In,Door Sensor, Exit Button
. Activation Mode: Fingerprint Touch activation
. Identification Mode: FP, Card, ID+FP, ID+PW, PW+Card
. LCD: 128 x 64 OLED

G. Ten (10) Units U 4500 Fingerprint Reader

Specifications
. Scan capture area: at least 14.6 mm (nom. width at center) 18.1 mm (nom. length)
. Pixel resolution: 512 dpi (average x, y over the scan area)
. 8-bit grayscale (256 levels of gray)
. Reader size (approximate): 65 mm x 36 mm x 15.56 mm
. Compatible with USB 1.0, 1.1 and 2.0

H. Two (2) Units Double Electromagnetic Lock

Specifications
. Holding Force: (600Lbs / 280 Kgs x 2)
. Relock Delay Timer, Buzzer
. Dimension: 180L x 32W x 11H(mm)
. Surface Finish: Zinc plated

I. SMS TEXT BULK MESSENGER (E-enrollment System)

- with Built-in API for system Development PHP,JQUERY integration

15.) One (1) unit of SUPPLY, DELIVERY, INSTALLATION OF INDOOR P3 LED WALL WITH METAL FRAME

Specifications:
. Size: at least 9ft x 12 ft
. No. of Panels: at least 40 pcs
. 1 unit - Video Processor
. 1 set - Cables and Connectors for the whole package
. 1 set - Link Cables for AC and Signal including 4 Main AC Cables
. Pixel Pitch: 3mm or lower (distance between the center of one pixel to the center of the adjacent pixel)
. Mounting: Surface-Mount Device (SMD)
. Display Configuration: 3 in 1 (red, green, and blue - RGB)
. Panel Dimensions: at least (W x H x D) 500mm x 500mm x 65mm
. Panel Physical Resolution: at least (W x H) 128 x 128 pixels
. Lifetime (half brightness): at least 100,000 Hrs (Specifies the estimated lifespan in hours. In this case, the LED wall is expected to operate at a satisfactory brightness level for approximately 100,000 hours before reaching half of its original brightness.)
. Refresh Rate: at least 600-2,000 Hz
. Power Supply that supports the whole LED wall Unit
. Training for MISTO staff in the operation of the Unit
. Warranty: at Least 1 Year

Note: Materials and accessories for the installation are included.

16.) One (1) lot of SUPPLY, DELIVERY, INSTALLATION OF CCTV SET WITH MONITORING SYSTEM

A. One (1) Unit NVR (Network Video Recorder) 64 CH HD 1080

Specifications:
. Supports up to 12 megapixels 64 IP cameras with high-definition (HD) 1080p resolution
. hot-swappable hard drives (HDD) with support for RAID0, RAID1, RAID5, RAID6 and RAID10 configurations
. supports POS (Point of Sale) triggered recording, which means that when a transaction or event occurs at a point of sale location (such as a cash register), the system can automatically start recording video footage.
. supports alarm triggers, which means that when specific events or alarms are activated (such as motion detection or sensor triggers), the system can respond accordingly, such as initiating recording or sending notifications.
. NVR provides both network and Ethernet access, enabling you to connect and manage the system through a network infrastructure.
. Each hard drive (HDD) in the system has a capacity of up to 10 terabytes (10TB)

B. Three (3) Units 2MP 6-inch 23x IP Network PTZ Camera with Joystick

Specifications
. Pan-Tilt-Zoom (PTZ) cameras with a 2-megapixel (2MP) resolution.
. At least 6-inch size and can be controlled remotely to pan, tilt, and zoom.
. At least 23x optical zoom capability for capturing distant objects.
. Powered through Hi-PoE (High Power over Ethernet) or a 24VAC power supply.
. Joystick is included for controlling the camera movements.

C. Forty-eight (48) Units MP IP Bullet Network Camera (4 mm): 2MP IP Bullet Camera

Specifications
. bullet-style IP cameras with a 4-megapixel (4MP) resolution.
. high-quality video at a resolution of 1920 × 1080 pixels and a frame rate of 30fps.
. fixed 4mm lens and support advanced video compression formats (H.265+ and H.264+).
. 24/7 full-time color recording and include features such as behavior analysis and face detection.
. Power-over-Ethernet (PoE) support

D. Seven (7) Units HDD

Specifications
. Capacity: at least 6TB
. RPM: 5400 RPM
. Cache: 64MB

E. Forty-eight (48) Units 30W PoE Injector

Specifications
. Provide power over Ethernet (PoE) to the cameras.
. Input voltage:90Vac~264Vac
. Output 12volts

F. Four (4) Units 55 inch 1080 Full HD TV

Specifications
. Screen Size: at least 55 inches and a Full HD resolution of 1080p.
. 4k UHD
. with brackets for wall mounting.
. smart TV functionality, Bluetooth connectivity, voice control, and wireless connectivity.
. Accessories like an HDMI cord, and remote control are included.

G. Twenty (20) Boxes Cat 6 UTP Cable, Blue (305m/box)

17.) One (1) lot of SUPPLY, DELIVERY, INSTALLATION OF VEHICLE GATE BARRIER

A. Three (3) Units 3M Straight Vehicle Gate Barrier

Specifications
. Boom type: Straight
. Running time: 1 second
. Max Boom length: 3 meters with rubber
. 220V 50Hz
. Left installed
. Remote control included
. With the following features:
. Manual release
. Machine core with compression spring to avoid accidents caused by spring breaking.
. die-casting aluminum alloy motor, precision and good at thermal radiating
. Motor cooling fan
. Double safety limit switches (photoelectricity limit switch/motor memory sensor)
. Reversing on an obstacle
. Auto-closing
. Traffic light interface
. Wire control (switch signal) Remote control (418M
. Double loop detector
. Optional Features:
. Support the INFRARED PHOTOCELL for an anti-bumping function
. RS485 Communication module
. Includes installation and civil works

B. Ten (10) Units Vehicle Loop Detector

Specifications:
. Power Voltage: 220VAC
. Power: 4.5W
. Output relays:240V/5A
. Operating temperature:-20~65°C
. Storage temperature:-40~85°C
. Frequency range:20 kHz to 170 kHz
. Temperature compensation:50°C/ h
. Reaction time: 10ms
. Signal holding time:Unlimited/limited
. SensitivityHigher:0.02%, high:0.05%, low:0.1%, lower:0.5%

. Loop inductance:Total loop plus connection wiring:50?H to 1000?H. Ideal is 100?H to 300?H
. Loop connection wiring: 200 meters long. The total resistance is less than 8Ohm, twisted at least 20 times per meter

18.) Five (5) unit of LAPTOP

Specifications:
. Processor: 8M Cache, 2.4GHz up to 4.5GHz (or higher)
. Memory: at least 8GB DDR4 2666MHz (Upgradable)
. Storage: at least 512GB SSD NVMe M.2 (Upgradable)
. Display: at least 13" FHD
. Graphics: at least 2GB GDDR5 Dedicate Graphics
. Camera: Built-in 720p HD Webcam
. Audio: Two built-in stereo speakers
. Network Interface: Wireless LAN Dual Band, Bluetooth 5.1, Ethernet, Wake-on-LAN ready
. Ports: 2 USB 3.0 or 3.1, 1 USB 2.0, HDMI, audio jacks
. Touchpad: Multi-gesture secure touchpad, supporting two-finger scroll.
. Operating System: Latest licensed OS (64 bit)
. With latest Office application installed
. With laptop bag

19.) Two (2) unit of LAPTOP M2

Specifications:
. Processor: 10-core CPU; 16-core GPU
. Memory: at least 16GB DDR5 (or higher)
. Storage: at least 512GB SSD
. Display: at least 14" LED-backlit display with IPS technology
. Camera: Built-in 1080p HD Webcam
. Network Interface: Wi-fi, Bluetooth
. Adapter/Ports: HDMI, SDXC card slot, 3.5 headphone jack, MagSafe 3, Three Thunderbolt
. Operating System: Latest licensed MacOS
. With a laptop bag

20.) Ten (10) unit of DOT MATRIX PRINTER

Specifications:
. Number of Pins: 24 pins
. Print Direction: Bi-direction
. Print Speed: 10/12 cpi
. Paper Size: 100-257 mm

21.) Two (2) unit of MULTI-MEDIA TABLE TOUCH SCREEN E-PODIUM LED SMART DIGITAL PODIUM

Specifications:
. Display:
o Screen Size: At least 21"
o Resolution: 1920 x 1080
. Touch:
o Touch Technology: Capacitive multi-touch screen
o Touch Points: at least 10 points
. Computer:
o CPU: 9MB Cache, up to 4.1GHz (or higher)

o Motherboard: Highly Rated Compatible Motherboard
o Memory: at least 8GB DDR3
o Storage: at least 128GB SSD
o Graphics: at least 2GB DDR
o Network: Wi-Fi
o Operating System: Licensed Windows OS
. Interfaces: USB, HDMI-compatible Mic, RS232, VGA
. With built-in Speakers
. With at least one Gooseneck Microphone
. Drivers Included
. Includes Writing pen (stylus)
. Adjustable Height
. With castor wheels

22.) One (1) unit of 4K/UHD PROFESSIONAL VIDEO CAMERA CAMCORDER

Specifications:
. UHD 4K up to 60p
. FHD up to 120p
. Effective Sensor Resolution: 4096 x 2160
. Optical zoom: up to 20x
. Digital zoom: up to 10x
. Focal length: 8mm - 180 mm
. Maximum Aperture: f/2.8 to 4.5
. Shutter Speed: 1/60 to 1/8000 sec
. Focus Adjustment: Auto / Manual
. Control Rings: Focus, Zoom, Iris
. With Optical Image Stabilizer (OIS)
. Built-in Microphone Type: Stereo
. Audio Recording
. Display Type: LCD
. Display Screen Size: approx. 3.5"
. Interfaces: HDMI, USB Type-A, USB Micro-B, BNC, 3.5mm Stereo Mic/Line, 3.5mm Stereo Headphone, 2.5 Camera Interface
. Media/Memory Card Slot: Dual Slot: SD/SDHC/SDXC UHS
. Includes Accessories: Battery, AC Adapter, Power Cord, Microphone Holder Kit, Eye Cup, Lens Hood, SD card
. With Carrying Bag

23.) Two (2) unit of 512GB CLASS 3 MICRO SD

Specifications:
. Transfer Speed: up to 170MB/s
. Write Speed: up to 90MB/s
. Compatibility: SDXC and SDXC UHS-I enabled devices
. For capturing 4K UHD video

24.) Two (2) unit of 5600K DAYLIGHT LED VIDEO LIGHT

Specifications:
. With eight (8) built-in special effects mode
. With wireless control (Bluetooth, Proprietary Wireless)
. Bluetooth Wireless Range: up to 30 meters
. Wireless Channels/Groups: at least 32 channels and 16 groups
. Lens Reflector Mount: Bowens S-Type
. High CRI/TLCI Rating: 96/97

. Beam Angle: up to 120°
. Dimming: 0 to 100%
. Accessories: Protection Cover, Power Cord

25.) One (1) unit of CINEMA 3D PROJECTOR FULL HD 1080p THEATER

Specifications:
. Projection Technology: RGB LCD Shutter Projection System
. Native resolution: 1080p
. Lumens: at least 2,400
. 4K PRO-UHD Resolution
. 3D Display Mode: Full HD 3D
. 2D to 3D Conversion
. Focal Length: 22 mm - 46 mm
. Interface: USB Type A, USB Type B, 3.5 mm jack, Wireless

26.) One (1) unit of ELECTRIC HIDDEN CEILING SCREEN

Specifications:
. Type: Ceiling Mount Electric/Motorized Projection Screens
. Screen Size: at least 120"
. Viewing Angle: 180 degrees
. With Control System
. Compatible to all types of Projectors

27.) Seven (7) unit of DOCUMENT CAMERA

Specifications:
. Effective Pixels: at least 2MP (1920 x 1080 pixels) or higher
. Frame Rate: up to 30fps
. Camera Sensor: 1 /2.7 inches CMOS Sensor
. Native Resolution: up to Full HD (1080p)
. Lens Type: Optical Zoom / Focus
. Zoom: up to 10x Digital Zoom, 12x Optical Zoom
. Focus: Automatic (with Focus button)
. Focus adjust Time: less than 2 sec
. Interfaces: VGA, HDMI, USB, Memory SD card, Internal Microphone
. With remote control
. Accessories: USB charger
. Includes the following functions:
o Freeze
o Select Output Source
o Image Brightness Adjustment
o Light Brightness Control
o Auto Detect Aspect Ratio
o Still Image and Video Capture
o Digital Scroll, Pan, and Tilt
o Image File Play or Slideshow (with SD card)
o Split Screen

28.) Sixteen (16) unit of CEILING SPEAKERS (COMPLETE SET)

Specifications:
. Set of Two (2) speakers
. 8-inch, Full-range, In-Ceiling Loudspeaker
. 6W Transformer for use of 70V / 100V Distributed Lines
. Dog-ears for mounting

29.) One (1) unit of POWER AMPLIFIER

Specifications:
. Output Power:
. 4 x 140W at 8 Ohm /4 Ohm
. 2 x 280W at Double Power Mode (8 Ohm /4 Ohm)
. High Impedance: 4 x 125W at 100V/70V lines
. Digital Input / Output: RJ45 x 2 (YDIF IN / OUT)
. Speaker Output: Barrier strip x 4 pairs
. Network: RJ45 x 1
. Control Ports: Remote, Fault Output: Euroblock (3P) x 1

30.) One (1) unit of PORTABLE WIRELESS PA SYSTEM

Specifications:
. Power Output: 190-325 Watts
. Audio Player: Bluetooth, USB player/recorder
. With built-in Class D amplifiers, woofer, and tweeter
. With retractable Handle and rugged wheels
. Can be powered by AC power, Battery or direct DC
. With 4-level Battery Indicator
. Standby Time: up to 7 hours
. Include Wireless Hand held Mic

31.) Eleven (11) unit of HDMI WIRELESS TRANSMITTER TRANSCEIVER EXTENDER

Specifications:
. Includes one (1) Transmitter and one (1) Receiver
. The Transmitter can be switched as a Receiver
. 1 Transmitter can be connected up to four (4) Receivers
. Supports video resolution up to 1080p Full HD @ 60Hz
. With 2 external gain antenna
. Transmission Distance: up to 200 meters
. Accessories: HDMI Cable, User Manual (written in English Language), Power Adapter

32.) Fifty (50) unit of HIGH GAIN WIRELESS DUAL BAND WI-FI USB ADAPTER RECEIVER DONGLE

Specifications:
. Interface: USB 3.0
. Frequency: 2.4 GHz, 5.0 GHz
. Wireless Speed: up to 867Mbps at 5GHz; 400Mbps at 2.4GHz
. With antenna

33.) Twenty-Five (25) unit of HIGH-SPEED HDMI TO HDMI CABLE

Specifications:
. Cable Length: 20 meters
. Video Quality: up to 4K

34.) Two (2) unit of VIEWBOARD INTERACTIVE FLAT PANEL

Specifications:
. Display: 98"

		. *Resolution: Gen 2 4K UHD (3840 x 2160)* . *Touchscreen Technology: Infrared* . *Multi-Touch Points: up to 10* . *With built-in speakers* . *Anti-Glare feature* . *Smartport USB* . *Dedicated camera port* . *HDMI output, multiple HDMI inputs, and multiple USB ports* . *With digital whiteboarding/annotation software* . *OS Support: Android, Mac OS, Windows* *35.) Seventeen (17) unit of ACCESS POINT* *Specifications:* . *2.4GHz Speed: 450 Mbps* . *5GHz Speed: 1300 Mbps* . *PoE Mode: 802.3af PoE/802.3at PoE+* . *Ports: (2) 10/100/1000 Ethernet* . *WiFi Users: at least 200 Users* *36.) Thirty-Five (35) unit of TABLET 8* *Specifications* . *Processor: 8 Core (2C up to 2.0GHz + 6C up to 1.8 GHz)* . *Internal Memory: at least 32GB expandable up to microSD Card 2TB)* . *Display: at least 9" HD (1340x800) IPS* . *Camera: at least 8MP* . *with Anti-fingerprint* . *with speakers* . *Connectivity: Wifi, Bluetooth, USB* . *Operating System: Latest Operating System* . *Battery: at least 5000mAh* *37.) One (1) unit of PROFESSIONAL CAMERA TRIPOD KIT* *Specifications:* . *Material: Aluminum Alloy* . *With Smooth Ball Head* . *At least 75mm Leveling Ball* . *With six-step counterbalance system* . *Supports up to 8 pounds* . *Four-Step Pan and Tilt Drag* . *Two-Stage, Three-Section Tripod Legs* . *With Rubber Feet for Dual Spikes* . *With Carrying Case and Shoulder Strap*
20.2	*All licenses and permits relevant to the Project and the corresponding law requiring it.*
21.2	*All additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity.*

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Supplier, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special 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**.

[Include the following clauses if Framework Agreement will be used:]

2.3.   For a single-year Framework Agreement, prices charged by the Supplier for Goods delivered and/or services performed under a Call-Off shall not vary from the prices quoted by the Supplier in its bid.

2.4.   For multi-year Framework Agreement, prices charged by the Supplier for Goods delivered and/or services performed under a Call-Off shall not vary from the prices quoted by the Supplier during conduct of Mini-Competition.

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.*{[Include if Framework Agreement will be used:] In the case o*f Framework Agreement, the Bidder may opt to furnish the performance security or a Performance Securing Declaration as defined under the Guidelines on the Use of Framework Agreement.}*

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 *{[Include if Framework Agreement will be used:]* or Framework Agreement} 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

Notes on the Special Conditions of Contract

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Goods purchased. In preparing this Section, the following aspects should be checked:

a. Information that complements provisions of the GCC must be incorporated.

b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

Special Conditions of Contract

GCC Clause	
1	*[List here any additional requirements for the completion of this Contract. The following requirements and the corresponding provisions may be deleted, amended, or retained depending on its applicability to this Contract:]*
	Delivery and Documents –
	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:
	[For Goods supplied from abroad, state:] "The delivery terms applicable to the Contract are DDP delivered *[indicate place of destination]*. In accordance with INCOTERMS."
	[For Goods supplied from within the Philippines, state:] "The delivery terms applicable to this Contract are delivered *[indicate place of destination]*. Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination."
	Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI (Schedule of Requirements).
	For purposes of this Clause the Procuring Entity's Representative at the Project Site is ***Mr. Alfredo D. Montero, University Supply Officer***
	Incidental Services –
	The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements:
	a. performance or supervision of on-site assembly and/or start-up of the supplied Goods;
	b. furnishing of tools required for assembly and/or maintenance of the supplied Goods;
	c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;
	d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and
	e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.
	The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

Spare Parts –

The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:

Select appropriate requirements and delete the rest.

a. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and

b. in the event of termination of production of the spare parts:

    i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and

    ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested.

The spare parts and other components required are listed in **Section VI (Schedule of Requirements)** and the cost thereof are included in the contract price.

The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for a period of [*indicate here the time period specified. If not used indicate a time period of three times the warranty period*].

Spare parts or components shall be supplied as promptly as possible, but in any case, within [*insert appropriate time period*] months of placing the order.

Packaging –

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.

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.

The outer packaging must be clearly marked on at least four (4) sides as follows:

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
	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. **Transportation –** 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. 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.
	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. 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. **Intellectual Property Rights –** 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.
2.2	*Not Applicable.*
4	The inspections and tests that will be conducted are: *all the applicable inspections and tests.*

Section VI. Schedule of Requirements

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

Item Number	Description	Quantity	Total	Delivered, Weeks/Months
1.)	PROGRAMMABLE DRONE KIT Specifications: . DIY Quadcopter Drone for STEM education . Includes 2x microbits . Includes WIFI camera . Build, code, and fly features.	Forty (40) unit		
2.)	EDUCATIONAL ROBOT CAR WITH VISION ROBOTIC ARM Specifications: 1. Nano (Technology) Control System . With ROS controller . Able to run mainstream deep learning framework such as TensorFlow, PyTorch, Caffe, Keras, MXNetintelligent analysis . Can implement image recognition, object detection and positioning, post estimation, semantics segmentation, 2. Smart Vision Robotic Arm . FPV robotic arm for picking, sorting, and transporting . With 5 Degree of Freedom vision robotic arm . Multi-point navigation transport . Gesture Recognition . Color Recognition, Tracking, and Sorting . Waste Sorting . Voice Control . Follow line to clear obstacles . Grab weight (straight arm): up to 200 g . Grab weight during	Two (2) unit		

	transporting: up to 500 g . Arm span: at least 410mm . Robotic arm material: aluminum alloy 3. Depth camera recognition and tracking . RTAB-VSLAM 3D Mapping and Navigation . ORBSLAM2 + ORBSLAM3 Mapping . RGB data and point cloud visualization . Media pipe development . Human Body Recognition . Fingertip detection . Face detection . 3D detection . AI Deep Learning Networking Framework . KFC object Mapping . Color/Tag Recognition and Tracking . Body Motion Control . ROS Robot APP mapping . 4. 2D LiDAR for mapping and navigation . Supports mapping with Gmapping, Hector, Karto, and Cartographer algorithms . Single-point and Multi-point Navigation . LiDAR tracking - capable of target tracking . LiDAR Guarding - alarms when detecting intruder . RRT exploration mapping . TEB Path Planning and obstacle avoidance 5. at least 6 microphone array for voice interaction . Pick-up distance: up to 3.5m . Far-field sound pick-up, noise reduction recognition . Voice control navigation . Voice control on color recognition and tracking, multi-point navigation . Sound source localization 6. Interconnected Motorcade . Muti-vehicle Navigation . Intelligent Formation . Group control features			

	7. With LCD touchscreen . Screen Size: at least 7 inches . Port: USB/HDMI . Resolution: 1020 x 600 (HD) 8. Includes accessories . Expansion board . Encoder motor driver . Hall Encoder Geared Motor . At least 6000mAh Lipo Battery . Speaker (installed) . 2A charger . Card reader . PS2 wireless handle . 1 appropriate tool set . 1 screw bag			
3.)	CODEBOT 4WD Specifications: . with ROS Controller , LiDAR and Depth Camera. . With Remote control joystick . With Wireless keyboard . Touch screen . Voice recognition controller . Flight case . Onboard Software: - Onboard Ubuntu, ROS1 and STM32 driver. - User can install ROS2 on a new Micro SD card or replace the original ROS1 on the bundled Micro SD card. . Drivers and ROS Packages: - iOS and Android remote control apps. - Drivers and Software Installers - ROS Packages and Source Codes - STM32 Chassis Source Codes	Three (3) unit		
4.)	ARDUINO MICRO-CONTROLLER TRAINING KIT The kit Includes the following: A. Micro-controller Board	Sixty (60) unit		

	Specifications: . Memory: at least 2kB SRAM, 32kB flash, and 1kB EEPROM . Processor: at least 16MHz . Digital I/O: at least 14 pins . Analog I/O: at least 6 pins . PWM pins: at least 6 . Built-in LED Pin: at least 13 . Communication: UART, IC2, and SPI . USB Connector: USB-B . Replacable chip . I/O Voltage: 5V B. Includes one (1) set of 37 sensors (with case) . 1 x 2 axis Analog Joystick . 1 x Relay . 1 x Big sound, big microphone for audio detection . 1 x Small sound, small microphone for audio detection . 1 x Tracking, small IR sensor . 1 x Avoidance, IR sensor . 1 x Flame . 1 x Linear hall, hall effect sensor to detect magnetic . 1 x Touch sensor . 1 x Digital temperature, thermistor . 1 x Active buzzer, audio output . 1 x Passive buzzer, Piezo buzzer . 1 x RGB LED, Through-hole LED . 1 x SMD RGB, SMD LED . 1 x Two-color, through LED . 1 x Mini two-color Arduino Micro-controller Training Kit The kit Includes the following: A. Micro-controller Board Specifications: . Memory: at least 2kB SRAM, 32kB flash, and 1kB EEPROM . Processor: at least 16MHz . Digital I/O: at least 14 pins . Analog I/O: at least 6 pins . PWM pins: at least 6			

	. Built-in LED Pin: at least 13 . Communication: UART, IC2, and SPI . USB Connector: USB-B . Replacable chip . I/O Voltage: 5V B. Includes one (1) set of 37 sensors (with case) . 1 x 2 axis Analog Joystick . 1 x Relay . 1 x Big sound, big microphone for audio detection . 1 x Small sound, small microphone for audio detection . 1 x Tracking, small IR sensor . 1 x Avoidance, IR sensor . 1 x Flame . 1 x Linear hall, hall effect sensor to detect magnetic . 1 x Touch sensor . 1 x Digital temperature, thermistor . 1 x Active buzzer, audio output . 1 x Passive buzzer, Piezo buzzer . 1 x RGB LED, Through-hole LED . 1 x SMD RGB, SMD LED . 1 x Two-color, through LED . 1 x Mini two-color . 1 x Reed switch . 1 x Mini reed switch . 1 x Heartbeat . 1 x 7 color flash, auto flash LED . 1 x Laser emitter . 1 x Button, push button . 1 x Shock . 1 x Rotary encoders . 2 x Light cup . 1 x Ball switch . 1 x Tilt-switch, mercury . 1 x Photo-resistor, LDR . 1 x Temp and humidity . 1 x Analog hall . 1 x Hall magnetic . 1 x 18B20 temp . 1 x Analog temp, thermistor . 1 x IR emission . 1 x IR receiver . 1 x Tap module . 1 x Light blocking			

	C. Includes one (1) compatible turtle robot			
5.)	RASPBERRY-PI SINGLE-BOARD COMPUTER TRAINING KIT The Kit Includes the following: A. Raspberry-Pi Single-Board Computer Specifications: . Memory: at least 8GB . Processor: 1.5GHz (64-bit) . 2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE Gigabit Ethernet . 2 x USB 3.0; 2 x USB 2.0 . 2 x micro-HDMI . 2-lane MIPO DSI display port . 2-lane MIPI CSI camera port . 4-pole stereo audio and composite video port . OpenGL ES 3.0 graphics . Micro-SD card slot for loading operating system and data storage . 5V DC via USB-C connector (minimum 3A) . 5V DC via GPIO header (minimum 3A) B. Power over Ethernet (PoE) enabled (requires separate PoE HAT) C. Compatible Power Supply D. Micro HDMI to Standard HDMI cable (1 m) E. Kit Case F. Fan G. At least 32GB microSD Card H. One (1) set of Heatsink	Sixty (60) unit		
6.)	8086 MICROPROCESSOR TRAINING KIT Specifications: . Processor: operates at 2.5/5MHz . ROM: at least 16KB (expandable to 64KB) . RAM: at least 16KB (expandable to 64KB) of	Ten (10) unit		

	battery backup . 20 x 2 Alphanumeric LCD Display . 101 ASCII compatible Keyboard . 72 I/O Lines . 3 channel 16 bit Timer/Counter . PC serial interface using USART . Interrupt control . Built-in Power supply (+5V/1.5A, ±12V/250mA)			
7.)	DIGITAL OSCILLOSCOPE Specifications: . Bandwidth Model: 70 MHz (or higher) . Real-Time Sampling Rate: up to 1 GSa/s . Equivalent Time Sampling Rate: up to 50 GSa/s . Memory Depth: up to 2 Mpts . Trigger types: Edge, Pulse, Video, Slope, Alternate . Waveform math functions: +, -, *, /, FFT . Display: at least 7 inches TFT (800 * 480 resolution) . Channels: at least 2 . 6 digital frequency counter . Screensaver from 1 minute to 5 hours . Digital filter and waveform recorder function . Shortcut storage function key . Interface: USB Host, USB Device (USBTMC), LAN (VXI11), Pass/Fail . Language: English and supports Multi-language display and embedded online help . Includes carrying bag . Includes User Manual . With Certificate of Calibration	Thirty (30) unit		
8.)	VIRTUAL LABORATORY INTERACTIVE SIMULATION SOFTWARE FOR PHYSICS (at least 270 licenses)	Two Hundred Seventy (270) license		

	Specifications: . Simulator for tertiary level . Laboratory Simulation Courses . Multimedia content for simulations . Laboratory manuals included . Laboratory exercises . Laboratory contents meet international standards . Libraries of images and videos . Learning activities are designed to promote problem-solving and critical thinking . Activities are based on current methodologies, exercises, and techniques . Guides for teachers and students . Training (on-site) for all users (5-15 days) . at least 6 months technical support . Does not require Internet (offline installation and usage) . Should be installed in the computer laboratory Note: Subjects include Fundamentals of Physics, Optics and Thermodynamics, Electricity and Magnetism, Modern Physics, Biophysics, and other related Physics subjects.			
9.)	VIRTUAL LABORATORY INTERACTIVE SIMULATION SOFTWARE FOR CHEMISTRY (at least 270 licenses) Specifications: . Simulator for tertiary level . Laboratory Simulation Courses . Multimedia content for simulations . Laboratory manuals included	Two Hundred Seventy (270) license		

	. Laboratory exercises . Laboratory contents meet international standards . Libraries of images and videos . Learning activities are designed to promote problem-solving and critical thinking . Activities are based on current methodologies, exercises, and techniques . Guides for teachers and students . Training (on-site) for all users (5-15 days) . at least 6 months technical support . Does not require Internet (offline installation and usage) . Should be installed in the computer laboratory Note: Subjects include General Chemistry, Biochemistry, Analytical Chemistry, Physical Chemistry, Instrumental Chemistry, and other related Chemistry subjects.			
10.)	VIRTUAL LABORATORY INTERACTIVE SIMULATION SOFTWARE FOR MATHEMATICS (at least 270 licenses) Specifications: . Simulator for tertiary level . Laboratory Simulation Courses . Multimedia content for simulations . Laboratory manuals included . Laboratory exercises . Laboratory contents meet international standards . Libraries of images and videos . Learning activities are designed to promote problem-solving and critical thinking	Two Hundred Seventy (270) license		

	. Activities are based on current methodologies, exercises, and techniques . Guides for teachers and students . Training (on-site) for all users (5-15 days) . at least 6 months technical support . Does not require Internet (offline installation and usage) . Should be installed in the computer laboratory Note: Subjects include Trigonometry, Differential Calculus, Integral Calculus, Differential Equations, College Algebra, Advance Math, and other related Mathematics subjects.			
11.)	SUPPLY AND DELIVERY OF VOICE OVER IP TELEPHONY SYSTEM (Digital Phone) The VOIP System includes the following devices: A. One (1) Unit Main Unit/Expansion Chassis with Main Processor, Main Software and Power Supply Specifications: . 1 Main Unit/Expansion Chassis, Main Processor Board with - Power Supply - Main Software - Operating System: at least NEC SV9000 - Processor: at least 1.86 GHz - Memory: at least 2GB DDR3 - Storage: at least 500GB SATA HDD - VoIP Channels: at least 8-VoIP channels built-in (expandable) - InMail Voice Mail: at least 4-Channel, 2-Hour InMail Voice Mail Built-In (expandable)	One (1) lot		

	- Mobile Extension Licenses: at least 4 Mobile Extension Licenses - Connectors: Connector for optional VoIP Expansion Daughter Board, EXIF Expansion Board, and InMail SD Expansion cards . 1 VOIP Gateway Daughter Board with - 3 Analog Trunks - 8 Hybrid Extensions Board - 128 maximum channels B. Ten (10) Units IP Trunk Licenses C. One (1) Unit Hybrid Phone Specifications: . 12 keys Hybrid (4W) Multi-Line Terminal . Black Color D. Two (2) Units Router Gateway 1U Specifications . CPU: at least Quad-core 1.7GHz . RAM: at least 1GB . Flash: at least 16 MB . Ethernet ports: 5 x Gigabit RJ45 . SFP port: 1 x SFP . Routing: Up to 1.3 million packets per second . Line rate: 5 Gbps . VPN: OpenVPN, L2TP, PPTP . Firewall: Stateful firewall, NAT, DoS protection . Traffic shaping and QoS: Queues, policies, classes . Management: Web interface, CLI, API E. Ten (10) Units Patch Panel Specifications: . Ports: 24 . Connector: RJ45 . Category: 6			

	. Backplane: Dual IDC, Type 110 . Management: Integrated Cable Management . Mounting: 1U rack mountable . LOADED with: o Patch cords that are 2 meters (7 feet) long and are made of blue Cat6 RJ45 UTP cable. The modular plugs on the ends of the patch cords are also made of Cat6 RJ45. o Modular Plugs o with set of accessories to connect all devices o Mouldings o UTP Cables F. Forty-eight (48) Units IP Extension License for Std-SIP Terminal - license that allows you to use 48 IP extensions on a standard SIP terminal. A SIP terminal is a device that can make and receive SIP calls. SIP is a standard protocol for making and receiving voice calls over IP networks.			
12.)	RIBBON SPLICING MACHINE Q102 MASS FUSION SPLICER KIT WITH FC-6RM-C MASS FIBER CLEAVER Specifications: . Compact Mass Fusion Splicer with dual built-in Heat Shrink Ovens . Mass Fiber Cleaver . Heated Fiber Stripper . Splice Protection Sleeves . 12 Cores Fiber Cable Management Tray . Pair of 250um single fiber holders . AC Interface/Battery Charger with Power Cord . Battery Unit . Cleaning Kit . High Resolution Touch Screen Display	One (1) unit		

13.)	FIBER OPTIC TESTER 1310/1550nm 1625 LIVE WITH INTELLIGENT OPTICAL LINK MAPPER OPTICAL TIME DOMAIN REFLECTOMETER (iOLM OTDR) Specifications: . wavelengths of light that the tester can use to test the cable: 1310/1550nm 1625 . The term "live" suggests that the tester can perform tests on a cable while it is still in use, without disrupting the signal flow. . 7-inch outdoor-enhanced touchscreen, 800 x 480 TFT . Two USB 2.0 ports . RJ45 LAN 10/100 Mbit/s . 2 GB internal memory (20 000 OTDR traces, typical) . Rechargeable lithium-polymer battery . Power supply AC/DC adapter, input 100-240 VAC, 50-60 Hz, 9-16V . DCIN 15 Watts minimum . - $1310 \pm 30/1550 \pm 30/1625 \pm 10$. - $\pm (0.75 + 0.0025 \% \times$ distance + sampling resolution) . Distance 0.1 to 160 KM . Pulse width 5 to 20000 . Loss threshold (dB) 0.01 . Loss resolution (dB) 0.001"	One (1) unit		
14.)	SUPPLY, DELIVERY, INSTALLATION OF GATE KEEPER SYSTEM with SMS TEXT BULK MESSENGER A. Five (5) units Fully Automatic Flap Turnstile (Dual Core) Specifications: . Passing Speed: at least 35-45 people/minute . Adjustable Lane width . Working Environment: Indoor and Outdoor . MCBF(Mean Cycles Between Failure): up to 5	One (1) lot		

	million times . With anti-tail gate function . Double protections of Mechanical and infrared anti-pinch function providing more reliable and safer passing. . Multi alarm modes for illegal intrusion, anti-intrusion, anti-follow, overtime alarm, . Anti-rush function, Anti-Reverse, Anti-intrusion, Anti-follow. . With LED indicator light: green and red indicate the passing information. . External button for normal open and normal close (for group pass) . With Auto detect and reset function. . Gate auto open when power is off to meet the fire protection requirements. . Can be integrated with all kinds of access control systems with RFID Reader, upon receiving the relay switch signal. . Flap turnstile can be uni-directional or bi-directional control. B. Twenty (20) Units RFID SCANNERS UHF Specifications . NFC Contactless Smart Card Reader . with complete SDK kit includes: . collection of sample codes for device and contactless programming . demo programs . smart card drivers . supports the following latest programming languages - Java, MS Visual Basic.NET 2008, MS Visual C#.NET 2008, MS Visual C++ 6.0, and MS Visual C++.NET 2008. . Include at least 5 test cards for each RFID scanner . Supports the existing			

	Operating System C. One (1) Unit RFID CARD PRINTER Specifications: . UHD Dual Sided Retransfer card printer . Capacity: up to 200 cards input Hopper . Resolution: 300dpi . IPSEC Network Security . Electronic Security Lock . Can be connected up to 7 retransfer card printers D. Five (5) Units Computer Desktop (Branded) Specifications: . Processor: 18M Cache, up to 4.40 GHz (or higher) . Motherboard: Truly rated compatible motherboard . Memory: 16GB (2x8GB) DDR4 or higher . Storage: 2TB HDD + 512GB SSD . Power supply: 700Watts Power . Graphics: 4GB DDR5 or higher . Display: at least 23-inch LED Monitor (includes bracket) . Optical Drive: DVD-RW . Connectivity: LAN and Wi-Fi 802.11 b/g/n . I/O Ports: at least 4 USB ports (2 front, 2 rear), Audio Jacks, HDMI and VGA . Accessories: Combo USB keyboard and mouse with pad, speaker , UPS with built-in AVR 720 VA or higher . With latest licensed OS (64 bit) E. Five (5) units Monitor Specifications . Display Type: LED-backlit . Size: at least 24 inches . Panel Type: In-Plane Switching (IPS) . Native Resolution: Full HD 1920x1080 Resolution			

	. Refresh Rate: 75Hz . Aspect Ratio: 16:9 . Connectivity Interfaces: VGA, HDMI . includes bracket F. Two (2) Units Outdoor Professional Standalone Access Control Terminal Specifications . Log Capacity: at least 50, 000 records . Fingerprint Capacity: at least 3,000 . Card Capacity: at least 3,000 . Interface: PoE-TCP/IP,RS485, Relay Output (COM, NO, NC), Wiegand Out&In,Door Sensor, Exit Button . Activation Mode: Fingerprint Touch activation . Identification Mode: FP, Card, ID+FP, ID+PW, PW+Card . LCD: 128 x 64 OLED G. Ten (10) Units U 4500 Fingerprint Reader Specifications . Scan capture area: at least 14.6 mm (nom. width at center) 18.1 mm (nom. length) . Pixel resolution: 512 dpi (average x, y over the scan area) . 8-bit grayscale (256 levels of gray) . Reader size (approximate): 65 mm x 36 mm x 15.56 mm . Compatible with USB 1.0, 1.1 and 2.0 H. Two (2) Units Double Electromagnetic Lock Specifications . Holding Force: (600Lbs / 280 Kgs x 2) . Relock Delay Timer, Buzzer . Dimension: 180L x 32W x 11H(mm)			

	. Surface Finish: Zinc plated I. SMS TEXT BULK MESSENGER (E-enrollment System) - with Built-in API for system Development PHP, JQUERY integration			
15.)	SUPPLY, DELIVERY, INSTALLATION OF INDOOR P3 LED WALL WITH METAL FRAME Specifications: . Size: at least 9ft x 12 ft . No. of Panels: at least 40 pcs . 1 unit - Video Processor . 1 set - Cables and Connectors for the whole package . 1 set - Link Cables for AC and Signal including 4 Main AC Cables . Pixel Pitch: 3mm or lower (distance between the center of one pixel to the center of the adjacent pixel) . Mounting: Surface-Mount Device (SMD) . Display Configuration: 3 in 1 (red, green, and blue - RGB) . Panel Dimensions: at least (W x H x D) 500mm x 500mm x 65mm . Panel Physical Resolution: at least (W x H) 128 x 128 pixels . Lifetime (half brightness): at least 100,000 Hrs (Specifies the estimated lifespan in hours. In this case, the LED wall is expected to operate at a satisfactory brightness level for approximately 100,000 hours before reaching half of its original brightness.) . Refresh Rate: at least 600-2,000 Hz . Power Supply that supports the whole LED wall Unit . Training for MISTO staff in the operation of the Unit . Warranty: at Least 1 Year	One (1) unit		

	Note: Materials and accessories for the installation are included.			
16.)	SUPPLY, DELIVERY, INSTALLATION OF CCTV SET WITH MONITORING SYSTEM A. One (1) Unit NVR (Network Video Recorder) 64 CH HD 1080 Specifications: . Supports up to 12 megapixels 64 IP cameras with high-definition (HD) 1080p resolution . hot-swappable hard drives (HDD) with support for RAID0, RAID1, RAID5, RAID6 and RAID10 configurations . supports POS (Point of Sale) triggered recording, which means that when a transaction or event occurs at a point-of-sale location (such as a cash register), the system can automatically start recording video footage. . supports alarm triggers, which means that when specific events or alarms are activated (such as motion detection or sensor triggers), the system can respond accordingly, such as initiating recording or sending notifications. . NVR provides both network and Ethernet access, enabling you to connect and manage the system through a network infrastructure. . Each hard drive (HDD) in the system has a capacity of up to 10 terabytes (10TB) B. Three (3) Units 2MP 6-inch 23x IP Network PTZ Camera with Joystick Specifications . Pan-Tilt-Zoom (PTZ) cameras with a 2-megapixel (2MP) resolution.	One (1) lot		

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	. At least 6-inch size and can be controlled remotely to pan, tilt, and zoom. . At least 23x optical zoom capability for capturing distant objects. . Powered through Hi-PoE (High Power over Ethernet) or a 24VAC power supply. . Joystick is included for controlling the camera movements. C. Forty-eight (48) Units MP IP Bullet Network Camera (4 mm): 2MP IP Bullet Camera Specifications . bullet-style IP cameras with a 4-megapixel (4MP) resolution. . high-quality video at a resolution of 1920×1080 pixels and a frame rate of 30fps. . fixed 4mm lens and support advanced video compression formats (H.265+ and H.264+). . 24/7 full-time color recording and include features such as behavior analysis and face detection. . Power-over-Ethernet (PoE) support D. Seven (7) Units HDD Specifications . Capacity: at least 6TB . RPM: 5400 RPM . Cache: 64MB E. Forty-eight (48) Units 30W PoE Injector Specifications . Provide power over Ethernet (PoE) to the cameras. . Input voltage:90Vac~264Vac . Output 12volts F. Four (4) Units 55 inch 1080 Full HD TV Specifications			

	. Screen Size: at least 55 inches and a Full HD resolution of 1080p. . 4k UHD . with brackets for wall mounting. . smart TV functionality, Bluetooth connectivity, voice control, and wireless connectivity. . Accessories like an HDMI cord, and remote control are included. G. Twenty (20) Boxes Cat 6 UTP Cable, Blue (305m/box)			
17.)	SUPPLY, DELIVERY, INSTALLATION OF VEHICLE GATE BARRIER A. Three (3) Units 3M Straight Vehicle Gate Barrier Specifications . Boom type: Straight . Running time: 1 second . Max Boom length: 3 meters with rubber . 220V 50Hz . Left installed . Remote control included . With the following features: . Manual release . Machine core with compression spring to avoid accidents caused by spring breaking. . die-casting aluminum alloy motor, precision and good at thermal radiating . Motor cooling fan . Double safety limit switches (photoelectricity limit switch/motor memory sensor) . Reversing on an obstacle . Auto-closing . Traffic light interface . Wire control (switch signal) Remote control (418M . Double loop detector . Optional Features: . Support the INFRARED PHOTOCELL for an anti-bumping function . RS485 Communication module	One (1) lot		

	. Includes installation and civil works B. Ten (10) Units Vehicle Loop Detector Specifications: . Power Voltage: 220VAC . Power: 4.5W . Output relays:240V/5A . Operating temperature:-20~65°C . Storage temperature:-40~85°C . Frequency range:20 kHz to 170 kHz . Temperature compensation:50°C/ h . Reaction time: 10ms . Signal holding time:Unlimited/limited . SensitivityHigher:0.02%, high:0.05%, low:0.1%, lower:0.5% . Loop inductance:Total loop plus connection wiring:50?H to 1000?H. Ideal is 100?H to 300?H . Loop connection wiring: 200 meters long. The total resistance is less than 80hm, twisted at least 20 times per meter			
18.)	LAPTOP Specifications: . Processor: 8M Cache, 2.4GHz up to 4.5GHz (or higher) . Memory: at least 8GB DDR4 2666MHz (Upgradable) . Storage: at least 512GB SSD NVMe M.2 (Upgradable) . Display: at least 13" FHD . Graphics: at least 2GB GDDR5 Dedicate Graphics . Camera: Built-in 720p HD Webcam . Audio: Two built-in stereo speakers . Network Interface: Wireless LAN Dual Band, Bluetooth 5.1, Ethernet, Wake-on-LAN ready	Five (5) unit		

	. Ports: 2 USB 3.0 or 3.1, 1 USB 2.0, HDMI, audio jacks . Touchpad: Multi-gesture secure touchpad, supporting two-finger scroll. . Operating System: Latest licensed OS (64 bit) . With latest Office application installed . With laptop bag			
19.)	LAPTOP M2 Specifications: . Processor: 10-core CPU; 16-core GPU . Memory: at least 16GB DDR5 (or higher) . Storage: at least 512GB SSD . Display: at least 14" LED-backlit display with IPS technology . Camera: Built-in 1080p HD Webcam . Network Interface: Wi-fi, Bluetooth . Adapter/Ports: HDMI, SDXC card slot, 3.5 headphone jack, MagSafe 3, Three Thunderbolt . Operating System: Latest licensed MacOS . With a laptop bag	Two (2) unit		
20.)	DOT MATRIX PRINTER Specifications: . Number of Pins: 24 pins . Print Direction: Bi-direction . Print Speed: 10/12 cpi . Paper Size: 100-257 mm	Ten (10) unit		
21.)	MULTI-MEDIA TABLE TOUCH SCREEN E-PODIUM LED SMART DIGITAL PODIUM Specifications: . Display: o Screen Size: At least 21" o Resolution: 1920 x 1080 . Touch: o Touch Technology: Capacitive multi-touch screen o Touch Points: at least 10 points	Two (2) unit		

	. Computer: o CPU: 9MB Cache, up to 4.1GHz (or higher) o Motherboard: Highly Rated Compatible Motherboard o Memory: at least 8GB DDR3 o Storage: at least 128GB SSD o Graphics: at least 2GB DDR o Network: Wi-Fi o Operating System: Licensed Windows OS . Interfaces: USB, HDMI-compatible Mic, RS232, VGA . With built-in Speakers . With at least one Gooseneck Microphone . Drivers Included . Includes Writing pen (stylus) . Adjustable Height . With castor wheels			
22.)	4K/UHD PROFESSIONAL VIDEO CAMERA CAMCORDER Specifications: . UHD 4K up to 60p . FHD up to 120p . Effective Sensor Resolution: 4096 x 2160 . Optical zoom: up to 20x . Digital zoom: up to 10x . Focal length: 8mm - 180 mm . Maximum Aperture: f/2.8 to 4.5 . Shutter Speed: 1/60 to 1/8000 sec . Focus Adjustment: Auto / Manual . Control Rings: Focus, Zoom, Iris . With Optical Image Stabilizer (OIS) . Built-in Microphone Type: Stereo . Audio Recording . Display Type: LCD . Display Screen Size: approx. 3.5" . Interfaces: HDMI, USB Type-A, USB Micro-B,	One (1) unit		

	BNC, 3.5mm Stereo Mic/Line, 3.5mm Stereo Headphone, 2.5 Camera Interface . Media/Memory Card Slot: Dual Slot: SD/SDHC/SDXC UHS . Includes Accessories: Battery, AC Adapter, Power Cord, Microphone Holder Kit, Eye Cup, Lens Hood, SD card . With Carrying Bag			
23.)	512GB CLASS 3 MICRO SD Specifications: . Transfer Speed: up to 170MB/s . Write Speed: up to 90MB/s . Compatibility: SDXC and SDXC UHS-I enabled devices . For capturing 4K UHD video	Two (2) unit		
24.)	5600K DAYLIGHT LED VIDEO LIGHT Specifications: . With eight (8) built-in special effects mode . With wireless control (Bluetooth, Proprietary Wireless) . Bluetooth Wireless Range: up to 30 meters . Wireless Channels/Groups: at least 32 channels and 16 groups . Lens Reflector Mount: Bowens S-Type . High CRI/TLCI Rating: 96/97 . Beam Angle: up to 120° . Dimming: 0 to 100% . Accessories: Protection Cover, Power Cord	Two (2) unit		
25.)	CINEMA 3D PROJECTOR FULL HD 1080p THEATER Specifications: . Projection Technology: RGB LCD Shutter Projection	One (1) unit		

	System . Native resolution: 1080p . Lumens: at least 2,400 . 4K PRO-UHD Resolution . 3D Display Mode: Full HD 3D . 2D to 3D Conversion . Focal Length: 22 mm - 46 mm . Interface: USB Type A, USB Type B, 3.5 mm jack, Wireless			
26.)	ELECTRIC HIDDEN CEILING SCREEN Specifications: . Type: Ceiling Mount Electric/Motorized Projection Screens . Screen Size: at least 120" . Viewing Angle: 180 degrees . With Control System . Compatible to all types of Projectors	One (1) unit		
27.)	DOCUMENT CAMERA Specifications: . Effective Pixels: at least 2MP (1920 x 1080 pixels) or higher . Frame Rate: up to 30fps . Camera Sensor: 1 /2.7 inches CMOS Sensor . Native Resolution: up to Full HD (1080p) . Lens Type: Optical Zoom / Focus . Zoom: up to 10x Digital Zoom, 12x Optical Zoom . Focus: Automatic (with Focus button) . Focus adjust Time: less than 2 sec . Interfaces: VGA, HDMI, USB, Memory SD card, Internal Microphone . With remote control . Accessories: USB charger . Includes the following functions: o Freeze o Select Output Source o Image Brightness Adjustment o Light Brightness Control	Seven (7) unit		

	o Auto Detect Aspect Ratio o Still Image and Video Capture o Digital Scroll, Pan, and Tilt o Image File Play or Slideshow (with SD card) o Split Screen			
28.)	CEILING SPEAKERS (COMPLETE SET) Specifications: . Set of Two (2) speakers . 8-inch, Full-range, In-Ceiling Loudspeaker . 6W Transformer for use of 70V / 100V Distributed Lines . Dog-ears for mounting	Sixteen (16) unit		
29.)	POWER AMPLIFIER Specifications: . Output Power: . 4 x 140W at 8 Ohm /4 Ohm . 2 x 280W at Double Power Mode (8 Ohm /4 Ohm) . High Impedance: 4 x 125W at 100V/70V lines . Digital Input / Output: RJ45 x 2 (YDIF IN / OUT) . Speaker Output: Barrier strip x 4 pairs . Network: RJ45 x 1 . Control Ports: Remote, Fault Output: Euroblock (3P) x 1	One (1) unit		
30.)	PORTABLE WIRELESS PA SYSTEM Specifications: . Power Output: 190-325 Watts . Audio Player: Bluetooth, USB player/recorder . With built-in Class D amplifiers, woofer, and tweeter . With retractable Handle and rugged wheels . Can be powered by AC power, Battery or direct DC . With 4-level Battery Indicator . Standby Time: up to 7 hours	One (1) unit		

	. Include Wireless Hand held Mic			
31.)	HDMI WIRELESS TRANSMITTER TRANSCEIVER EXTENDER Specifications: . Includes one (1) Transmitter and one (1) Receiver . The Transmitter can be switched as a Receiver . 1 Transmitter can be connected up to four (4) Receivers . Supports video resolution up to 1080p Full HD @ 60Hz . With 2 external gain antenna . Transmission Distance: up to 200 meters . Accessories: HDMI Cable, User Manual (written in English Language), Power Adapter	Eleven (11) unit		
32.)	HIGH GAIN WIRELESS DUAL BAND WI-FI USB ADAPTER RECEIVER DONGLE Specifications: . Interface: USB 3.0 . Frequency: 2.4 GHz, 5.0 GHz . Wireless Speed: up to 867Mbps at 5GHz; 400Mbps at 2.4GHz . With antenna	Fifty (50) unit		
33.)	HIGH-SPEED HDMI TO HDMI CABLE Specifications: . Cable Length: 20 meters . Video Quality: up to 4K	Twenty-Five (25) unit		
34.)	VIEWBOARD INTERACTIVE FLAT PANEL Specifications: . Display: 98" . Resolution: Gen 2 4K UHD (3840 x 2160) . Touchscreen Technology:	Two (2) unit		

	Infrared . Multi-Touch Points: up to 10 . With built-in speakers . Anti-Glare feature . Smartport USB . Dedicated camera port . HDMI output, multiple HDMI inputs, and multiple USB ports . With digital whiteboarding/annotation software . OS Support: Android, Mac OS, Windows			
35.)	ACCESS POINT Specifications: . 2.4GHz Speed: 450 Mbps . 5GHz Speed: 1300 Mbps . PoE Mode: 802.3af PoE/802.3at PoE+ . Ports: (2) 10/100/1000 Ethernet . WiFi Users: at least 200 Users	Seventeen (17) unit		
36.)	TABLET 8 Specifications . Processor: 8 Core (2C up to 2.0GHz + 6C up to 1.8 GHz) . Internal Memory: at least 32GB expandable up to microSD Card 2TB) . Display: at least 9" HD (1340x800) IPS . Camera: at least 8MP . with Anti-fingerprint . with speakers . Connectivity: Wifi, Bluetooth, USB . Operating System: Latest Operating System . Battery: at least 5000mAh	Thirty-Five (35) unit		
37.)	PROFESSIONAL CAMERA TRIPOD KIT Specifications: . Material: Aluminum Alloy . With Smooth Ball Head . At least 75mm Leveling Ball . With six-step counterbalance system	One (1) unit		

. Supports up to 8 pounds . Four-Step Pan and Tilt Drag . Two-Stage, Three-Section Tripod Legs . With Rubber Feet for Dual Spikes . With Carrying Case and Shoulder Strap			

Section VII. Technical Specifications

Notes for Preparing the Technical Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (*e.g.* production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness , and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "*or at least equivalent*." References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

Technical Specifications

Item	Specification		Statement of Compliance
			[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]
1.)	PROGRAMMABLE DRONE KIT Specifications: . DIY Quadcopter Drone for STEM education . Includes 2x microbits . Includes WIFI camera . Build, code, and fly features.	Forty (40) unit	
2.)	EDUCATIONAL ROBOT CAR WITH VISION ROBOTIC ARM Specifications: 1. Nano (Technology) Control System . With ROS controller . Able to run mainstream deep learning framework such as TensorFlow, PyTorch, Caffe, Keras, MXNetintelligent analysis . Can implement image recognition, object detection and	Two (2) unit	

	positioning, post estimation, semantics segmentation, 2. Smart Vision Robotic Arm . FPV robotic arm for picking, sorting, and transporting . With 5 Degree of Freedom vision robotic arm . Multi-point navigation transport . Gesture Recognition . Color Recognition, Tracking, and Sorting . Waste Sorting . Voice Control . Follow line to clear obstacles . Grab weight (straight arm): up to 200 g . Grab weight during transporting: up to 500 g . Arm span: at least 410mm . Robotic arm material: aluminum alloy 3. Depth camera recognition and tracking . RTAB-VSLAM 3D Mapping and Navigation . ORBSLAM2 + ORBSLAM3 Mapping . RGB data and point cloud visualization . Media pipe development . Human Body Recognition . Fingertip detection . Face detection . 3D detection . AI Deep Learning Networking Framework . KFC object Mapping . Color/Tag Recognition and Tracking . Body Motion Control . ROS Robot APP mapping . 4. 2D LiDAR for mapping and navigation . Supports mapping with Gmapping, Hector, Karto, and Cartographer algorithms . Single-point and Multi-point Navigation . LiDAR tracking - capable of target tracking . LiDAR Guarding - alarms when detecting intruder		

	. RRT exploration mapping . TEB Path Planning and obstacle avoidance 5. at least 6 microphone array for voice interaction . Pick-up distance: up to 3.5m . Far-field sound pick-up, noise reduction recognition . Voice control navigation . Voice control on color recognition and tracking, multi-point navigation . Sound source localization 6. Interconnected Motorcade . Muti-vehicle Navigation . Intelligent Formation . Group control features 7. With LCD touchscreen . Screen Size: at least 7 inches . Port: USB/HDMI . Resolution: 1020 x 600 (HD) 8. Includes accessories . Expansion board . Encoder motor driver . Hall Encoder Geared Motor . At least 6000mAh Lipo Battery . Speaker (installed) . 2A charger . Card reader . PS2 wireless handle . 1 appropriate tool set . 1 screw bag		
3.)	CODEBOT 4WD Specifications: . with ROS Controller , LiDAR and Depth Camera. . With Remote control joystick . With Wireless keyboard . Touch screen . Voice recognition controller . Flight case . Onboard Software: - Onboard Ubuntu, ROS1 and STM32 driver. - User can install ROS2 on a new Micro SD card or replace the original ROS1 on the bundled Micro SD card. . Drivers and ROS Packages: - iOS and Android remote	Three (3) unit	

	control apps. - Drivers and Software Installers - ROS Packages and Source Codes - STM32 Chassis Source Codes		
4.)	ARDUINO MICRO-CONTROLLER TRAINING KIT The kit Includes the following: A. Micro-controller Board Specifications: . Memory: at least 2kB SRAM, 32kB flash, and 1kB EEPROM . Processor: at least 16MHz . Digital I/O: at least 14 pins . Analog I/O: at least 6 pins . PWM pins: at least 6 . Built-in LED Pin: at least 13 . Communication: UART, IC2, and SPI . USB Connector: USB-B . Replacable chip . I/O Voltage: 5V B. Includes one (1) set of 37 sensors (with case) . 1 x 2 axis Analog Joystick . 1 x Relay . 1 x Big sound, big microphone for audio detection . 1 x Small sound, small microphone for audio detection . 1 x Tracking, small IR sensor . 1 x Avoidance, IR sensor . 1 x Flame . 1 x Linear hall, hall effect sensor to detect magnetic . 1 x Touch sensor . 1 x Digital temperature, thermistor . 1 x Active buzzer, audio output . 1 x Passive buzzer, Piezo buzzer . 1 x RGB LED, Through-hole LED . 1 x SMD RGB, SMD LED . 1 x Two-color, through LED . 1 x Mini two-color Arduino Micro-controller Training Kit The kit Includes the following: A. Micro-controller Board Specifications: . Memory: at least 2kB SRAM,	Sixty (60) unit	

	32kB flash, and 1kB EEPROM . Processor: at least 16MHz . Digital I/O: at least 14 pins . Analog I/O: at least 6 pins . PWM pins: at least 6 . Built-in LED Pin: at least 13 . Communication: UART, IC2, and SPI . USB Connector: USB-B . Replacable chip . I/O Voltage: 5V B. Includes one (1) set of 37 sensors (with case) . 1 x 2 axis Analog Joystick . 1 x Relay . 1 x Big sound, big microphone for audio detection . 1 x Small sound, small microphone for audio detection . 1 x Tracking, small IR sensor . 1 x Avoidance, IR sensor . 1 x Flame . 1 x Linear hall, hall effect sensor to detect magnetic . 1 x Touch sensor . 1 x Digital temperature, thermistor . 1 x Active buzzer, audio output . 1 x Passive buzzer, Piezo buzzer . 1 x RGB LED, Through-hole LED . 1 x SMD RGB, SMD LED . 1 x Two-color, through LED . 1 x Mini two-color . 1 x Reed switch . 1 x Mini reed switch . 1 x Heartbeat . 1 x 7 color flash, auto flash LED . 1 x Laser emitter . 1 x Button, push button . 1 x Shock . 1 x Rotary encoders . 2 x Light cup . 1 x Ball switch . 1 x Tilt-switch, mercury . 1 x Photo-resistor, LDR . 1 x Temp and humidity . 1 x Analog hall . 1 x Hall magnetic . 1 x 18B20 temp . 1 x Analog temp, thermistor . 1 x IR emission . 1 x IR receiver . 1 x Tap module		

	. 1 x Light blocking C. Includes one (1) compatible turtle robot		
5.)	RASPBERRY-PI SINGLE-BOARD COMPUTER TRAINING KIT The Kit Includes the following: A. Raspberry-Pi Single-Board Computer Specifications: . Memory: at least 8GB . Processor: 1.5GHz (64-bit) . 2.4 GHz and 5.0 GHz IEEE 802.11ac wireless, Bluetooth 5.0, BLE Gigabit Ethernet . 2 x USB 3.0; 2 x USB 2.0 . 2 x micro-HDMI . 2-lane MIPO DSI display port . 2-lane MIPI CSI camera port . 4-pole stereo audio and composite video port . OpenGL ES 3.0 graphics . Micro-SD card slot for loading operating system and data storage . 5V DC via USB-C connector (minimum 3A) . 5V DC via GPIO header (minimum 3A) B. Power over Ethernet (PoE) enabled (requires separate PoE HAT) C. Compatible Power Supply D. Micro HDMI to Standard HDMI cable (1 m) E. Kit Case F. Fan G. At least 32GB microSD Card H. One (1) set of Heatsink	Sixty (60) unit	
6.)	8086 MICROPROCESSOR TRAINING KIT Specifications: . Processor: operates at 2.5/5MHz . ROM: at least 16KB (expandable to 64KB) . RAM: at least 16KB (expandable to 64KB) of battery backup . 20 x 2 Alphanumeric LCD Display	Ten (10) unit	

	. 101 ASCII compatible Keyboard . 72 I/O Lines . 3 channel 16 bit Timer/Counter . PC serial interface using USART . Interrupt control . Built-in Power supply (+5V/1.5A, ±12V/250mA)		
7.)	DIGITAL OSCILLOSCOPE Specifications: . Bandwidth Model: 70 MHz (or higher) . Real-Time Sampling Rate: up to 1 GSa/s . Equivalent Time Sampling Rate: up to 50 GSa/s . Memory Depth: up to 2 Mpts . Trigger types: Edge, Pulse, Video, Slope, Alternate . Waveform math functions: +, -, *, /, FFT . Display: at least 7 inches TFT (800 * 480 resolution) . Channels: at least 2 . 6 digital frequency counter . Screensaver from 1 minute to 5 hours . Digital filter and waveform recorder function . Shortcut storage function key . Interface: USB Host, USB Device (USBTMC), LAN (VXI11), Pass/Fail . Language: English and supports Multi-language display and embedded online help . Includes carrying bag . Includes User Manual . With Certificate of Calibration	Thirty (30) unit	
8.)	VIRTUAL LABORATORY INTERACTIVE SIMULATION SOFTWARE FOR PHYSICS (at least 270 licenses) Specifications: . Simulator for tertiary level . Laboratory Simulation Courses . Multimedia content for simulations . Laboratory manuals included . Laboratory exercises . Laboratory contents meet	Two Hundred Seventy (270) license	

	international standards . Libraries of images and videos . Learning activities are designed to promote problem-solving and critical thinking . Activities are based on current methodologies, exercises, and techniques . Guides for teachers and students . Training (on-site) for all users (5-15 days) . at least 6 months technical support . Does not require Internet (offline installation and usage) . Should be installed in the computer laboratory Note: Subjects include Fundamentals of Physics, Optics and Thermodynamics, Electricity and Magnetism, Modern Physics, Biophysics, and other related Physics subjects.		
9.)	VIRTUAL LABORATORY INTERACTIVE SIMULATION SOFTWARE FOR CHEMISTRY (at least 270 licenses) Specifications: . Simulator for tertiary level . Laboratory Simulation Courses . Multimedia content for simulations . Laboratory manuals included . Laboratory exercises . Laboratory contents meet international standards . Libraries of images and videos . Learning activities are designed to promote problem-solving and critical thinking . Activities are based on current methodologies, exercises, and techniques . Guides for teachers and students . Training (on-site) for all users (5-15 days) . at least 6 months technical support . Does not require Internet	Two Hundred Seventy (270) license	

	(offline installation and usage) . Should be installed in the computer laboratory Note: Subjects include General Chemistry, Biochemistry, Analytical Chemistry, Physical Chemistry, Instrumental Chemistry, and other related Chemistry subjects.		
10.)	VIRTUAL LABORATORY INTERACTIVE SIMULATION SOFTWARE FOR MATHEMATICS (at least 270 licenses) Specifications: . Simulator for tertiary level . Laboratory Simulation Courses . Multimedia content for simulations . Laboratory manuals included . Laboratory exercises . Laboratory contents meet international standards . Libraries of images and videos . Learning activities are designed to promote problem-solving and critical thinking . Activities are based on current methodologies, exercises, and techniques . Guides for teachers and students . Training (on-site) for all users (5-15 days) . at least 6 months technical support . Does not require Internet (offline installation and usage) . Should be installed in the computer laboratory Note: Subjects include Trigonometry, Differential Calculus, Integral Calculus, Differential Equations, College Algebra, Advance Math, and other related Mathematics subjects.	Two Hundred Seventy (270) license	
11.)	SUPPLY AND DELIVERY OF VOICE OVER IP TELEPHONY SYSTEM	One (1) lot	

| | (Digital Phone)

The VOIP System includes the following devices:

A. One (1) Unit Main Unit/Expansion Chassis with Main Processor, Main Software and Power Supply

Specifications:
. 1 Main Unit/Expansion Chassis, Main Processor Board with
- Power Supply
- Main Software
- Operating System: at least NEC SV9000
- Processor: at least 1.86 GHz
- Memory: at least 2GB DDR3
- Storage: at least 500GB SATA HDD
- VoIP Channels: at least 8-VoIP channels built-in (expandable)
- InMail Voice Mail: at least 4-Channel, 2-Hour InMail Voice Mail Built-In (expandable)
- Mobile Extension Licenses: at least 4 Mobile Extension Licenses
- Connectors: Connector for optional VoIP Expansion Daughter Board, EXIF Expansion Board, and InMail SD Expansion cards

. 1 VOIP Gateway Daughter Board with
- 3 Analog Trunks
- 8 Hybrid Extensions Board
- 128 maximum channels

B. Ten (10) Units IP Trunk Licenses

C. One (1) Unit Hybrid Phone

Specifications:
. 12 keys Hybrid (4W) Multi-Line Terminal
. Black Color

D. Two (2) Units Router Gateway 1U

Specifications | | |

| | . CPU: at least Quad-core 1.7GHz
. RAM: at least 1GB
. Flash: at least 16 MB
. Ethernet ports: 5 x Gigabit RJ45
. SFP port: 1 x SFP
. Routing: Up to 1.3 million packets per second
. Line rate: 5 Gbps
. VPN: OpenVPN, L2TP, PPTP
. Firewall: Stateful firewall, NAT, DoS protection
. Traffic shaping and QoS: Queues, policies, classes
. Management: Web interface, CLI, API

E. Ten (10) Units Patch Panel

Specifications:
. Ports: 24
. Connector: RJ45
. Category: 6
. Backplane: Dual IDC, Type 110
. Management: Integrated Cable Management
. Mounting: 1U rack mountable
. LOADED with:
o Patch cords that are 2 meters (7 feet) long and are made of blue Cat6 RJ45 UTP cable. The modular plugs on the ends of the patch cords are also made of Cat6 RJ45.
o Modular Plugs
o with set of accessories to connect all devices
o Mouldings
o UTP Cables

F. Forty-eight (48) Units IP Extension License for Std-SIP Terminal

- license that allows you to use 48 IP extensions on a standard SIP terminal. A SIP terminal is a device that can make and receive SIP calls. SIP is a standard protocol for making and receiving voice calls over IP networks. | | |

12.)	RIBBON SPLICING MACHINE Q102 MASS FUSION SPLICER KIT WITH FC-6RM-C MASS FIBER CLEAVER Specifications: . Compact Mass Fusion Splicer with dual built-in Heat Shrink Ovens . Mass Fiber Cleaver . Heated Fiber Stripper . Splice Protection Sleeves . 12 Cores Fiber Cable Management Tray . Pair of 250um single fiber holders . AC Interface/Battery Charger with Power Cord . Battery Unit . Cleaning Kit . High Resolution Touch Screen Display	One (1) unit	
13.)	FIBER OPTIC TESTER 1310/1550nm 1625 LIVE WITH INTELLIGENT OPTICAL LINK MAPPER OPTICAL TIME DOMAIN REFLECTOMETER (iOLM OTDR) Specifications: . wavelengths of light that the tester can use to test the cable: 1310/1550nm 1625 . The term "live" suggests that the tester can perform tests on a cable while it is still in use, without disrupting the signal flow. . 7-inch outdoor-enhanced touchscreen, 800 x 480 TFT . Two USB 2.0 ports . RJ45 LAN 10/100 Mbit/s . 2 GB internal memory (20 000 OTDR traces, typical) . Rechargeable lithium-polymer battery . Power supply AC/DC adapter, input 100-240 VAC, 50-60 Hz, 9-16V . DCIN 15 Watts minimum . - 1310 $\pm$ 30/1550 $\pm$ 30/1625 $\pm$ 10 . - $\pm$ (0.75 + 0.0025 % x distance	One (1) unit	

	+ sampling resolution) . Distance 0.1 to 160 KM . Pulse width 5 to 20000 . Loss threshold (dB) 0.01 . Loss resolution (dB) 0.001"		
14.)	SUPPLY, DELIVERY, INSTALLATION OF GATE KEEPER SYSTEM with SMS TEXT BULK MESSENGER A. Five (5) units Fully Automatic Flap Turnstile (Dual Core) Specifications: . Passing Speed: at least 35-45 people/minute . Adjustable Lane width . Working Environment: Indoor and Outdoor . MCBF(Mean Cycles Between Failure): up to 5 million times . With anti-tail gate function . Double protections of Mechanical and infrared anti-pinch function providing more reliable and safer passing. . Multi alarm modes for illegal intrusion, anti-intrusion, anti-follow, overtime alarm, . Anti-rush function, Anti-Reverse, Anti-intrusion, Anti-follow. . With LED indicator light: green and red indicate the passing information. . External button for normal open and normal close (for group pass) . With Auto detect and reset function. . Gate auto open when power is off to meet the fire protection requirements. . Can be integrated with all kinds of access control systems with RFID Reader, upon receiving the relay switch signal. . Flap turnstile can be uni-directional or bi-directional control. B. Twenty (20) Units RFID SCANNERS UHF Specifications	One (1) lot	

	. NFC Contactless Smart Card Reader . with complete SDK kit includes: . collection of sample codes for device and contactless programming . demo programs . smart card drivers . supports the following latest programming languages - Java, MS Visual Basic.NET 2008, MS Visual C#.NET 2008, MS Visual C++ 6.0, and MS Visual C++.NET 2008. . Include at least 5 test cards for each RFID scanner . Supports the existing Operating System C. One (1) Unit RFID CARD PRINTER Specifications: . UHD Dual Sided Retransfer card printer . Capacity: up to 200 cards input Hopper . Resolution: 300dpi . IPSEC Network Security . Electronic Security Lock . Can be connected up to 7 retransfer card printers D. Five (5) Units Computer Desktop (Branded) Specifications: . Processor: 18M Cache, up to 4.40 GHz (or higher) . Motherboard: Truly rated compatible motherboard . Memory: 16GB (2x8GB) DDR4 or higher . Storage: 2TB HDD + 512GB SSD . Power supply: 700Watts Power . Graphics: 4GB DDR5 or higher . Display: at least 23-inch LED Monitor (includes bracket) . Optical Drive: DVD-RW . Connectivity: LAN and Wi-Fi 802.11 b/g/n . I/O Ports: at least 4 USB ports (2 front, 2 rear), Audio Jacks, HDMI and VGA . Accessories: Combo USB		

	keyboard and mouse with pad, speaker , UPS with built-in AVR 720 VA or higher . With latest licensed OS (64 bit) E. Five (5) units Monitor Specifications . Display Type: LED-backlit . Size: at least 24 inches . Panel Type: In-Plane Switching (IPS) . Native Resolution: Full HD 1920x1080 Resolution . Refresh Rate: 75Hz . Aspect Ratio: 16:9 . Connectivity Interfaces: VGA, HDMI . includes bracket F. Two (2) Units Outdoor Professional Standalone Access Control Terminal Specifications . Log Capacity: at least 50, 000 records . Fingerprint Capacity: at least 3,000 . Card Capacity: at least 3,000 . Interface: PoE-TCP/IP,RS485, Relay Output (COM, NO, NC), Wiegand Out&In,Door Sensor, Exit Button . Activation Mode: Fingerprint Touch activation . Identification Mode: FP, Card, ID+FP, ID+PW, PW+Card . LCD: 128 x 64 OLED G. Ten (10) Units U 4500 Fingerprint Reader Specifications . Scan capture area: at least 14.6 mm (nom. width at center) 18.1 mm (nom. length) . Pixel resolution: 512 dpi (average x, y over the scan area) . 8-bit grayscale (256 levels of gray) . Reader size (approximate): 65 mm x 36 mm x 15.56 mm . Compatible with USB 1.0, 1.1 and 2.0		

	H. Two (2) Units Double Electromagnetic Lock Specifications . Holding Force: (600Lbs / 280 Kgs x 2) . Relock Delay Timer, Buzzer . Dimension: 180L x 32W x 11H(mm) . Surface Finish: Zinc plated I. SMS TEXT BULK MESSENGER (E-enrollment System) - with Built-in API for system Development PHP, JQUERY integration		
15.)	SUPPLY, DELIVERY, INSTALLATION OF INDOOR P3 LED WALL WITH METAL FRAME Specifications: . Size: at least 9ft x 12 ft . No. of Panels: at least 40 pcs . 1 unit - Video Processor . 1 set - Cables and Connectors for the whole package . 1 set - Link Cables for AC and Signal including 4 Main AC Cables . Pixel Pitch: 3mm or lower (distance between the center of one pixel to the center of the adjacent pixel) . Mounting: Surface-Mount Device (SMD) . Display Configuration: 3 in 1 (red, green, and blue - RGB) . Panel Dimensions: at least (W x H x D) 500mm x 500mm x 65mm . Panel Physical Resolution: at least (W x H) 128 x 128 pixels . Lifetime (half brightness): at least 100,000 Hrs (Specifies the estimated lifespan in hours. In this case, the LED wall is expected to operate at a satisfactory brightness level for approximately 100,000 hours before reaching half of its original brightness.) . Refresh Rate: at least 600-2,000 Hz	One (1) unit	

	. Power Supply that supports the whole LED wall Unit . Training for MISTO staff in the operation of the Unit . Warranty: at Least 1 Year Note: Materials and accessories for the installation are included.		
16.)	SUPPLY, DELIVERY, INSTALLATION OF CCTV SET WITH MONITORING SYSTEM A. One (1) Unit NVR (Network Video Recorder) 64 CH HD 1080 Specifications: . Supports up to 12 megapixels 64 IP cameras with high-definition (HD) 1080p resolution . hot-swappable hard drives (HDD) with support for RAID0, RAID1, RAID5, RAID6 and RAID10 configurations . supports POS (Point of Sale) triggered recording, which means that when a transaction or event occurs at a point-of-sale location (such as a cash register), the system can automatically start recording video footage. . supports alarm triggers, which means that when specific events or alarms are activated (such as motion detection or sensor triggers), the system can respond accordingly, such as initiating recording or sending notifications. . NVR provides both network and Ethernet access, enabling you to connect and manage the system through a network infrastructure. . Each hard drive (HDD) in the system has a capacity of up to 10 terabytes (10TB) B. Three (3) Units 2MP 6-inch 23x IP Network PTZ Camera with Joystick Specifications . Pan-Tilt-Zoom (PTZ) cameras with a 2-megapixel (2MP) resolution.	One (1) lot	

| | . At least 6-inch size and can be controlled remotely to pan, tilt, and zoom.
. At least 23x optical zoom capability for capturing distant objects.
. Powered through Hi-PoE (High Power over Ethernet) or a 24VAC power supply.
. Joystick is included for controlling the camera movements.

C. Forty-eight (48) Units MP IP Bullet Network Camera (4 mm): 2MP IP Bullet Camera

Specifications
. bullet-style IP cameras with a 4-megapixel (4MP) resolution.
. high-quality video at a resolution of 1920 × 1080 pixels and a frame rate of 30fps.
. fixed 4mm lens and support advanced video compression formats (H.265+ and H.264+).
. 24/7 full-time color recording and include features such as behavior analysis and face detection.
. Power-over-Ethernet (PoE) support

D. Seven (7) Units HDD

Specifications
. Capacity: at least 6TB
. RPM: 5400 RPM
. Cache: 64MB

E. Forty-eight (48) Units 30W PoE Injector

Specifications
. Provide power over Ethernet (PoE) to the cameras.
. Input voltage:90Vac~264Vac
. Output 12volts

F. Four (4) Units 55 inch 1080 Full HD TV

Specifications
. Screen Size: at least 55 inches and a Full HD resolution of 1080p.
. 4k UHD | | |

	. with brackets for wall mounting. . smart TV functionality, Bluetooth connectivity, voice control, and wireless connectivity. . Accessories like an HDMI cord, and remote control are included. G. Twenty (20) Boxes Cat 6 UTP Cable, Blue (305m/box)		
17.)	SUPPLY, DELIVERY, INSTALLATION OF VEHICLE GATE BARRIER A. Three (3) Units 3M Straight Vehicle Gate Barrier Specifications . Boom type: Straight . Running time: 1 second . Max Boom length: 3 meters with rubber . 220V 50Hz . Left installed . Remote control included . With the following features: . Manual release . Machine core with compression spring to avoid accidents caused by spring breaking. . die-casting aluminum alloy motor, precision and good at thermal radiating . Motor cooling fan . Double safety limit switches (photoelectricity limit switch/motor memory sensor) . Reversing on an obstacle . Auto-closing . Traffic light interface . Wire control (switch signal) Remote control (418M . Double loop detector . Optional Features: . Support the INFRARED PHOTOCELL for an anti-bumping function . RS485 Communication module . Includes installation and civil works B. Ten (10) Units Vehicle Loop Detector	One (1) lot	

	Specifications: . Power Voltage: 220VAC . Power: 4.5W . Output relays:240V/5A . Operating temperature:-20~65°C . Storage temperature:-40~85°C . Frequency range:20 kHz to 170 kHz . Temperature compensation:50°C/ h . Reaction time: 10ms . Signal holding time:Unlimited/limited . SensitivityHigher:0.02%, high:0.05%, low:0.1%, lower:0.5% . Loop inductance:Total loop plus connection wiring:50?H to 1000?H. Ideal is 100?H to 300?H . Loop connection wiring: 200 meters long. The total resistance is less than 8Ohm, twisted at least 20 times per meter		
18.)	LAPTOP Specifications: . Processor: 8M Cache, 2.4GHz up to 4.5GHz (or higher) . Memory: at least 8GB DDR4 2666MHz (Upgradable) . Storage: at least 512GB SSD NVMe M.2 (Upgradable) . Display: at least 13" FHD . Graphics: at least 2GB GDDR5 Dedicate Graphics . Camera: Built-in 720p HD Webcam . Audio: Two built-in stereo speakers . Network Interface: Wireless LAN Dual Band, Bluetooth 5.1, Ethernet, Wake-on-LAN ready . Ports: 2 USB 3.0 or 3.1, 1 USB 2.0, HDMI, audio jacks . Touchpad: Multi-gesture secure touchpad, supporting two-finger scroll. . Operating System: Latest licensed OS (64 bit) . With latest Office application installed . With laptop bag	Five (5) unit	

19.)	LAPTOP M2 Specifications: . Processor: 10-core CPU; 16-core GPU . Memory: at least 16GB DDR5 (or higher) . Storage: at least 512GB SSD . Display: at least 14" LED-backlit display with IPS technology . Camera: Built-in 1080p HD Webcam . Network Interface: Wi-fi, Bluetooth . Adapter/Ports: HDMI, SDXC card slot, 3.5 headphone jack, MagSafe 3, Three Thunderbolt . Operating System: Latest licensed MacOS . With a laptop bag	Two (2) unit	
20.)	DOT MATRIX PRINTER Specifications: . Number of Pins: 24 pins . Print Direction: Bi-direction . Print Speed: 10/12 cpi . Paper Size: 100-257 mm	Ten (10) unit	
21.)	MULTI-MEDIA TABLE TOUCH SCREEN E-PODIUM LED SMART DIGITAL PODIUM Specifications: . Display: o Screen Size: At least 21" o Resolution: 1920 x 1080 . Touch: o Touch Technology: Capacitive multi-touch screen o Touch Points: at least 10 points . Computer: o CPU: 9MB Cache, up to 4.1GHz (or higher) o Motherboard: Highly Rated Compatible Motherboard o Memory: at least 8GB DDR3 o Storage: at least 128GB SSD o Graphics: at least 2GB DDR o Network: Wi-Fi o Operating System: Licensed Windows OS . Interfaces: USB, HDMI-compatible Mic, RS232, VGA	Two (2) unit	

	. With built-in Speakers . With at least one Gooseneck Microphone . Drivers Included . Includes Writing pen (stylus) . Adjustable Height . With castor wheels		
22.)	4K/UHD PROFESSIONAL VIDEO CAMERA CAMCORDER Specifications: . UHD 4K up to 60p . FHD up to 120p . Effective Sensor Resolution: 4096 x 2160 . Optical zoom: up to 20x . Digital zoom: up to 10x . Focal length: 8mm - 180 mm . Maximum Aperture: f/2.8 to 4.5 . Shutter Speed: 1/60 to 1/8000 sec . Focus Adjustment: Auto / Manual . Control Rings: Focus, Zoom, Iris . With Optical Image Stabilizer (OIS) . Built-in Microphone Type: Stereo . Audio Recording . Display Type: LCD . Display Screen Size: approx. 3.5" . Interfaces: HDMI, USB Type-A, USB Micro-B, BNC, 3.5mm Stereo Mic/Line, 3.5mm Stereo Headphone, 2.5 Camera Interface . Media/Memory Card Slot: Dual Slot: SD/SDHC/SDXC UHS . Includes Accessories: Battery, AC Adapter, Power Cord, Microphone Holder Kit, Eye Cup, Lens Hood, SD card . With Carrying Bag	One (1) unit	
23.)	512GB CLASS 3 MICRO SD Specifications: . Transfer Speed: up to 170MB/s . Write Speed: up to 90MB/s . Compatibility: SDXC and SDXC UHS-I enabled devices	Two (2) unit	

	. For capturing 4K UHD video	Two (2) unit	
24.)	**5600K DAYLIGHT LED VIDEO LIGHT** Specifications: . With eight (8) built-in special effects mode . With wireless control (Bluetooth, Proprietary Wireless) . Bluetooth Wireless Range: up to 30 meters . Wireless Channels/Groups: at least 32 channels and 16 groups . Lens Reflector Mount: Bowens S-Type . High CRI/TLCI Rating: 96/97 . Beam Angle: up to 120° . Dimming: 0 to 100% . Accessories: Protection Cover, Power Cord	Two (2) unit	
25.)	**CINEMA 3D PROJECTOR FULL HD 1080p THEATER** Specifications: . Projection Technology: RGB LCD Shutter Projection System . Native resolution: 1080p . Lumens: at least 2,400 . 4K PRO-UHD Resolution . 3D Display Mode: Full HD 3D . 2D to 3D Conversion . Focal Length: 22 mm - 46 mm . Interface: USB Type A, USB Type B, 3.5 mm jack, Wireless	One (1) unit	
26.)	**ELECTRIC HIDDEN CEILING SCREEN** Specifications: . Type: Ceiling Mount Electric/Motorized Projection Screens . Screen Size: at least 120" . Viewing Angle: 180 degrees . With Control System . Compatible to all types of Projectors	One (1) unit	
27.)	**DOCUMENT CAMERA** Specifications: . Effective Pixels: at least 2MP (1920 x 1080 pixels) or higher	Seven (7) unit	

	. Frame Rate: up to 30fps . Camera Sensor: 1 /2.7 inches CMOS Sensor . Native Resolution: up to Full HD (1080p) . Lens Type: Optical Zoom / Focus . Zoom: up to 10x Digital Zoom, 12x Optical Zoom . Focus: Automatic (with Focus button) . Focus adjust Time: less than 2 sec . Interfaces: VGA, HDMI, USB, Memory SD card, Internal Microphone . With remote control . Accessories: USB charger . Includes the following functions: o Freeze o Select Output Source o Image Brightness Adjustment o Light Brightness Control o Auto Detect Aspect Ratio o Still Image and Video Capture o Digital Scroll, Pan, and Tilt o Image File Play or Slideshow (with SD card) o Split Screen		
28.)	CEILING SPEAKERS (COMPLETE SET) Specifications: . Set of Two (2) speakers . 8-inch, Full-range, In-Ceiling Loudspeaker . 6W Transformer for use of 70V / 100V Distributed Lines . Dog-ears for mounting	Sixteen (16) unit	
29.)	POWER AMPLIFIER Specifications: . Output Power: . 4 x 140W at 8 Ohm /4 Ohm . 2 x 280W at Double Power Mode (8 Ohm /4 Ohm) . High Impedance: 4 x 125W at 100V/70V lines . Digital Input / Output: RJ45 x 2 (YDIF IN / OUT) . Speaker Output: Barrier strip x 4 pairs . Network: RJ45 x 1	One (1) unit	

	. Control Ports: Remote, Fault Output: Euroblock (3P) x 1		
30.)	PORTABLE WIRELESS PA SYSTEM Specifications: . Power Output: 190-325 Watts . Audio Player: Bluetooth, USB player/recorder . With built-in Class D amplifiers, woofer, and tweeter . With retractable Handle and rugged wheels . Can be powered by AC power, Battery or direct DC . With 4-level Battery Indicator . Standby Time: up to 7 hours . Include Wireless Hand held Mic	One (1) unit	
31.)	HDMI WIRELESS TRANSMITTER TRANSCEIVER EXTENDER Specifications: . Includes one (1) Transmitter and one (1) Receiver . The Transmitter can be switched as a Receiver . 1 Transmitter can be connected up to four (4) Receivers . Supports video resolution up to 1080p Full HD @ 60Hz . With 2 external gain antenna . Transmission Distance: up to 200 meters . Accessories: HDMI Cable, User Manual (written in English Language), Power Adapter	Eleven (11) unit	
32.)	HIGH GAIN WIRELESS DUAL BAND WI-FI USB ADAPTER RECEIVER DONGLE Specifications: . Interface: USB 3.0 . Frequency: 2.4 GHz, 5.0 GHz . Wireless Speed: up to 867Mbps at 5GHz; 400Mbps at 2.4GHz . With antenna	Fifty (50) unit	
33.)	HIGH-SPEED HDMI TO HDMI CABLE Specifications:	Twenty-Five (25) unit	

	. Cable Length: 20 meters . Video Quality: up to 4K		
34.)	VIEWBOARD INTERACTIVE FLAT PANEL Specifications: . Display: 98" . Resolution: Gen 2 4K UHD (3840 x 2160) . Touchscreen Technology: Infrared . Multi-Touch Points: up to 10 . With built-in speakers . Anti-Glare feature . Smartport USB . Dedicated camera port . HDMI output, multiple HDMI inputs, and multiple USB ports . With digital whiteboarding/annotation software . OS Support: Android, Mac OS, Windows	Two (2) unit	
35.)	ACCESS POINT Specifications: . 2.4GHz Speed: 450 Mbps . 5GHz Speed: 1300 Mbps . PoE Mode: 802.3af PoE/802.3at PoE+ . Ports: (2) 10/100/1000 Ethernet . WiFi Users: at least 200 Users	Seventeen (17) unit	
36.)	TABLET 8 Specifications . Processor: 8 Core (2C up to 2.0GHz + 6C up to 1.8 GHz) . Internal Memory: at least 32GB expandable up to microSD Card 2TB) . Display: at least 9" HD (1340x800) IPS . Camera: at least 8MP . with Anti-fingerprint . with speakers . Connectivity: Wifi, Bluetooth, USB . Operating System: Latest Operating System . Battery: at least 5000mAh	Thirty-Five (35) unit	
37.)	PROFESSIONAL CAMERA TRIPOD KIT	One (1) unit	

Specifications: . Material: Aluminum Alloy . With Smooth Ball Head . At least 75mm Leveling Ball . With six-step counterbalance system . Supports up to 8 pounds . Four-Step Pan and Tilt Drag . Two-Stage, Three-Section Tripod Legs . With Rubber Feet for Dual Spikes . With Carrying Case and Shoulder Strap			

Section VIII. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

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The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or

b. Any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary "pass/fail" criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

- [ ] (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) **in accordance with Section 8.5.2 of the IRR**;

Technical Documents

- [ ] (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**
- [ ] (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents; **and**
- [ ] (d) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission **or** Original copy of Notarized Bid Securing Declaration; **and**
- [ ] (e) Conformity with the Technical Specifications, which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable; **and**
- [ ] (f) Original duly signed Omnibus Sworn Statement (OSS) **and** if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

- [ ] (g) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC) **or A** committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.

Class "B" Documents

- [ ] (h) If applicable, a duly signed 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.

II. FINANCIAL COMPONENT ENVELOPE

- [ ] (i) Original of duly signed and accomplished Financial Bid Form; **and**
- [ ] (j) Original of duly signed and accomplished Price Schedule(s).

Other documentary requirements under RA No. 9184 (as applicable)

- [ ] (k) *[For foreign bidders claiming by reason of their country's extension of reciprocal rights to Filipinos]* Certification from the relevant government office of their country stating that Filipinos are allowed to participate in government procurement activities for the same item or product.
- [ ] (l) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.

Republic of the Philippines

gpb

Government Procurement Policy Board