

- New energy vehicle simulation system
  - motor drive board, instrument panel, operation panel, main function board, programming board, and automobile simulation model; the instrument panel indicates the vehicle's operating status, and the dual-CPU system control model truly demonstrates the vehicle's driving process
  - Simulation suite
    - Packing box + wiper + foot pedal + tools + parts box + fault board assembly + additional board kit + troubleshooting components, providing a complete set of spare parts for easy use in design, surveying and assembly projects
- Component programming module
  - microcontrollers board, PWM signal control circuit and sensor
- Pulse oximeter module
  - packaging box + parts box + parts + PCB board, providing a complete set of spare parts for hardware design
- Intelligent three-dimensional garage simulation system
  - embedded microcontrollers, Hall sensor circuit, laser beam sensor circuit, DC motor drive circuit, 5-inch TFT touch screen, RFID Card reader circuit, real-time clock circuit, temperature and humidity acquisition circuit, communication circuit, etc.; the intelligent parking management system software includes parking distribution management system, parking billing system, sound and light alarm system, guardrail protection system, etc.
- Electrocardiograph module
  - microcontroller, power management circuit, ADC conversion circuit, human body electrodes, etc.
  - uses electrodes to contact the human limbs to detect the very weak ECG signals of the human body. After amplification and filtering, it is converted into a visible ECG, which can be viewed through an oscilloscope. Or the display shows the measured ECG results.
- Non-contact infrared thermometer circuit board
  - temperature sensor probe, an infrared receiving device, and an MCU
  - Module:
    - Hardware Design Circuit principal design competition task book
    - Hardware Design PCB Design Competition Task Statement
    - Hardware Design Prototype circuit board installation and debugging competition mission statement
    - Hardware Design Competition Pre-Announcement Documents
    - PCB Best Practice Design Specifications for Electronic Technology Projects (2020 Edition)
- FM radio motherboard
  - microcontrollers, power management circuit, FM receiving circuit, button circuit, PWM circuit, high-speed analog switch circuit and operational amplifier circuit
  - Module:
    - Hardware Design Competition Mission Statement
    - Hardware Design Reference Answers
    - Hardware Design Score Sheet
    - Hardware Design Competition Pre-Announcement Documents



- Taxi meter system circuit board
  - two parts: the vehicle and environment system and the meter system. The environment system simulates the vehicle driving status and environment, such as vehicle mileage, passenger status, operating status and vehicle sensors. The meter system consists of LCD, buzzer and buttons.
  - Module:
    - Embedded Programming Competition Mission Statement
    - Embedded Programming Contestant Project
    - Embedded Programming Reference Answers
    - Embedded Programming Score Sheet
    - Embedded Programming Competition Pre-Announcement Documents
- Programming Task Board
  - power conversion circuit, minimum system circuit, ISP download circuit, USB to TTL circuit, photosensitive module, external memory interface, RGB indicator module, universal IIC interface, three-wire universal sensor interface, Bluetooth interface, temperature and humidity module, Wi-Fi module, 2.4G module, OLED interface module, LCD interface module, camera interface module, infrared receiving module and button module constitute and lead to all I/O ports.
  - Module:
    - Embedded Programming Competition Mission Statement
    - Embedded Programming Contestant Project
    - Embedded Programming Reference Answers
    - Embedded Programming Score Sheet
    - Embedded Programming Competition Pre-Announcement Documents
  - Possible experimental projects
    - OLED /LCD experiment
    - Camera experiment
    - Communication Experiment
    - Temperature and humidity sensor experiment
    - Wi-Fi communication experiment
    - 2.4G communication experiment
    - Infrared receiving experiment
    - Bluetooth communication experiment
    - External expansion memory experiment
    - IIC communication experiment (can connect I IC protocol clock chip, atmospheric pressure sensor and gyroscope, etc.)
    - RGB lantern experiment
    - Serial communication experiment
    - Button detection experiment
- Small vending machine control system
  - small vending machine control board and a small vending machine simulation board
  - Module:
    - Troubleshooting and Repair Competition Task Book
    - Fault finding and repair function confirmation sheet
    - Guidelines for Fault Finding and Maintenance Record Filling
    - Fault finding and repair reference answers
    - Fault Finding and Repair Competition Pre-release Document
    - Small vending machine control system user operation manual

- Small vending machine control software
  - Small vending machine control system PCB data
  - Small vending machine control board chip data manual
- Signal generator circuit board
  - keyboard, decoder, latch, waveform generator, digital tube, etc. It can generate three waveforms: square wave, sine wave, and triangle wave using pure hardware circuits, and the output waveform frequency and bias voltage can be set.
  - Module:
    - Troubleshooting and Repair Competition Task Book
    - Fault finding and repair function confirmation sheet
    - Guidelines for Fault Finding and Maintenance Record Filling
    - Fault finding and repair reference answers
- **Basic analog circuit module package**
  - Single-ended input amplifier circuit, two-stage amplification, limited amplitude adjustment, zero adjustment, and magnification adjustment functions
  - DC regulated power supply, output voltage: 24V,  $\pm 12V$ , +5V
  - DC adjustable regulated power supply, output 0-12VDC
  - Component differential amplifier module circuit board, DC12V single power supply pair of tube
  - Component single tube/negative feedback amplifier module circuit board, DC12V single power supply first level
  - Component emitter follower module circuit board, DC12V single power supply first level
  - Component FET amplifier module circuit board, DC12V single power supply first-level single-junction field effect tube amplifier circuit
  - Component RC series and parallel frequency selective network oscillator module circuit board, DC5V single power supply two levels RC-bridge oscillation amplifier circuit
  - Signal amplification module provides tuned small signal amplification circuit and integrated ceramic frequency selective amplification
  - Component thyristor-controlled rectifier circuit module circuit board, AC12V power supply, field effect transistor trigger pulse adjustment, single-junction transistor dimming and voltage regulation
  - Component OTL power amplifier circuit module circuit board, DC5V single power supply, preamplifier circuit, complementary symmetrical OTL power amplifier circuit, 8 $\Omega$ 0.5W speaker
  - Power amplifier and transmitter module provides linear wideband power amplifier circuits, audio sources and signal transmission circuits
  - Component integrated power amplifier circuit module circuit board has built-in music integrated chip TQ9300, external audio socket, LM741 integrated operational amplifier, TDA2030 power amplifier chip, 8 $\Omega$ 0.5W speaker
  - Component analog computing circuit module circuit board is composed of the integrated operational amplifier chip LM324, which consists of a triangle wave generating circuit, a square wave forming circuit, and an integrated operational amplifier circuit
  - Component transistor switching characteristics, limiter and clamp module circuit boards transistor switching circuit, transistor characteristic test circuit, transistor limiter circuit, transistor clamp circuit



- DC chopper system composes PWM waveform output circuit and six types of chopper circuit diagrams as well as components used to compose the chopper circuit
- Basic analog circuit module supporting teaching resources (electronic version)
  - 16 matching circuit board schematics
  - Instructions for use of 16 matching circuit boards
- Resource Transformation Series Textbooks - Electronic Technology
  - Hardware Design and Troubleshooting
  - Design of DC Stabilized Power Supply Circuit
  - Transistor switch, limiting and clamping circuit design
  - Differential amplifier circuit design Project four thyristor controllable rectifier circuit design
  - Complementary OTL Power Amplifier Circuit Design
  - Single-ended input amplifier circuit design
  - Integrated operational amplifier circuit design
  - Design of RC Bridge Oscillator Circuit
  - DC adjustable voltage stabilized power supply circuit design
  - Audio Power Amplifier Design
- **Basic digital training circuit module package**
  - Logic level display, 16-bit LED
  - Component integrated logic gate circuit module circuit board
  - Component codec circuit module circuit board
  - Component counter circuit module circuit board
  - Component integrated circuit module circuit board, clock pulse signal circuit
  - Component electronic stopwatch circuit module circuit board
  - Components three and a half digit DC digital voltmeter module circuit board
  - Component digital frequency meter circuit module circuit board
  - Components tug of war game machine circuit module circuit board
  - Reversible counting decoding display circuit components
  - Component running water lamp circuit board
  - Component Dual D Flip Flop Circuit Board
  - Components eight-way answering machine circuit board
  - Supporting teaching resources for basic digital circuit modules (electronic version)
    - 13 matching circuit board schematics
    - Instructions for use of 13 matching circuit boards
  - Resource Transformation Series Textbooks - Electronic Technology
    - Hardware Design and Troubleshooting
    - Design of logic level display circuit
    - Logic Circuit Design
    - Encoding and decoding circuit design
    - Double D flip-flop control circuit design
    - Synchronous Adding Counter Circuit Design
    - Design of six-flow water lamp circuit
    - Design of seven or eight-way answering machine circuit
    - Electronic Stopwatch Circuit Design Project 9 Tug of War game machine circuit design Module 3 real question training
    - Elevator control circuit hardware design
    - Maze Controller Hardware Design
    - Digital Voltmeter Circuit Troubleshooting
    - Wind Power System Circuit Troubleshooting



- **Programming basic training module package**
  - LED experiment board
    - RGB tri-color light, 1 white light, 4 red, yellow, blue and green 5mm LEDs each
  - Button module
    - 8-bit independent keyboard, 8-bit switch input
  - Digital tube display experiment
    - 8-bit digital tube
  - 4 x 4 keyboard module
    - 16 tact switches
  - 16 x 16 dot matrix display module
    - Four 8 x 8 dots
  - LCD screen
    - adopt 4-bit data transmission and 8-bit data transmission methods
    - display 16 x 2 characters
  - Dot matrix graphic LCD display module
  - Joystick, digital coding input module
    - Composed of dual-axis button rocker module and 360-degree rotary encoder module
  - DC motor experiment board
    - DC motor, transistor and hall switch
  - Stepper motor experiment board
    - stepper motor and driver IC
  - Weak control and strong experimental board
    - 4 sets of relays, driver IC, bidirectional thyristor and optical coupling
  - RFID radio frequency card experiment board
    - RFID radio frequency card, RFID wireless communication and data reading and writing
  - Infrared transmitting and receiving experimental board
  - Ultrasonic ranging experiment board
    - ultrasonic transmitting and receiving probes, transmitting drive circuit, and receiving circuit
  - Wireless remote control training module
    - wireless receiving module, decoding chip, DIP switch, etc.
  - Wireless remote
    - Push-pull cover mahogany four-button remote control, transmission frequency: 315m (sound surface stabilization frequency) transmission distance: 10- 50M
  - 8x 8 RGB full color dot matrix module
  - OLED display experiment board
    - 1.3 inch, 128 x 64 pixels
  - Environmental measurement experiment board
  - Smart switch experiment board
  - Temperature and humidity test board
  - Gyroscope Gravity Sensing Magnetometer Experiment Board
    - Nine-axis sensor module
  - Color recognition experiment board
    - Color Sensing Identification
  - Touch button experiment board
    - 4-position touch buttons



- Wireless communication experiment board
  - Wifi module + Bluetooth + 2.4GHz tranceiver, 2.4G wireless communication experiment
- Embedded programming adapter board
  - connect several modules or experiment boards with different functions to achieve multiple functions.
- Component Programming Module
- Supporting teaching resources (electronic version)
  - 26 matching circuit board schematics
  - programming software installation and use, program creation, download and debugging tutorials
  - Electronic Technology Project - Embedded System Programming Sample Questions
- Programming basic training module package supporting reference program and instructions for use (electronic version)
  - LED application reference procedures, instructions, phenomena and videos.
  - Digital tube module application reference program, instructions, phenomena and videos.
  - Matrix keyboard module application reference program, instructions, phenomena and videos.
  - Keyboard running water lamp control application reference program, instructions, phenomena and videos.
  - 16 x 16 dot matrix display application reference program, instructions, phenomena and videos.
  - LCD module application reference program, instructions for use, phenomena and videos.
  - Joystick digital coding input module application reference program, instructions, phenomena and videos.
  - OLED display module application reference program, instructions, phenomena and videos.
  - Stepper electric control interface application reference program, instructions, phenomena and videos.
  - Wireless remote control receiving module application reference program, instructions, phenomena and videos.
  - Relay control interface application reference program, instructions, phenomena and videos.
  - Infrared transmitter and receiver module application reference program, instructions for use, phenomena and videos.
  - Ultrasonic module application reference program, instructions, phenomena and videos.
  - 8 × 8 RGB full-color dot matrix application reference program, instructions, phenomena and videos.
  - DC motor control application reference programs, instructions, phenomena and videos.
  - Environmental quality sensor module application reference program, instructions, phenomena and videos.
  - Human body infrared sensing application reference program, instructions, phenomena, and videos.
  - Temperature and humidity sensing module application reference procedures, instructions, phenomena and videos.



- Gyroscope Gravity Sensing Magnetometer Module Application Reference Program, Instructions, Phenomenon and Video.
- Dot matrix graphic LCD module application reference program, instructions, phenomena and videos.
- RFID radio frequency board experiment board application reference program, instructions for use, phenomena and videos.
- Color recognition experiment board application reference procedures, instructions for use, phenomena and videos.
- Touch button experiment board application reference program, instructions, phenomena and videos. Button module application reference program, usage instructions, phenomena and videos.
- Wireless communication experiment board application reference program, instructions, phenomena and videos.
- Resource Transformation Series Textbooks - Electronic Technology
  - Software installation application the second basic chapter
  - LED application
  - Digital tube module application
  - Matrix keyboard module application
  - Keyboard running light module application
  - 16 x 16 dot matrix display application
  - LCD application
  - Joystick digital coding input module application
  - OLED display module application
  - Stepper motor control interface application
  - Wireless remote control receiving module application
  - Relay Control Interface Application
  - Infrared Transmitting and Receiving Application
  - Ultrasonic module application
  - 8 x 8 RGB full color dot matrix module application
  - DC Motor Control Application
  - Environmental Quality Sensor Module Application
  - Human Body Infrared Sensing Module Application
  - Temperature and Humidity Sensing Module Application
  - Gyroscope Gravity Sensing Magnetometer Module Application
  - Embedded Programming Real Questions and Problem-Solving Ideas
- **Electronic technology project training resource package**
  - Equipment instruction manual
    - System introduction
    - Instructions for use
    - Safety Precautions
    - Equipment maintenance
    - Device installation
    - Introduction to main instruments
  - Device Manual (electronic version)
    - Oscilloscope User Manual
    - Function Signal Generator User Manual
    - Programmable DC Stabilized Power Supply Instructions
    - Soldering Station Operating Instructions
    - Hot air desoldering station manual



- **Multimeter Instruction Manual**

- **Instruments and tools**

- 1 set multimeter
  - IP65 protection level, can withstand a 2-meter drop
  - Large-screen LCD display, 6000-count dual-slope A/D converter
  - Full-featured false detection protection, can withstand 6kV lightning pulse voltage impact
  - AC voltage and current peak (Peak) capture (1ms) measurement
  - AC and DC voltage up to 600V and 20A DC current measurement
  - Low pass filter
  - Low voltage measurement
  - Resistance test, continuity test and diode 3V voltage test
  - 60.00mF capacitance measurement
  - True RMS measurement, minimum/maximum peak measurement, relative measurement mode (REL)
  - Manual automatic range optional, automatic backlight, automatic gear memory function
- 1 set 32-bit programmer and cable
- 1 set Smart soldering station
  - Two-in-one soldering iron and air gun, working voltage AC 110-240V 50-60Hz, operating temperature range: 180~480°C/100~500°C
- 1 set Vernier caliper with watch
  - 0-200mm graduation value: 0.02
- 1 set Welding fume extractor
  - Rated voltage: AC230V, Wattage: 22W
- 1 set desktop magnifying glass
  - Lamp desktop 20x white wave, 22W ring fluorescent lamp, lens diameter 127mm, optical lens
- 1 set tool kit
- 1 pc wrist strap tester
  - 9V battery
- 1 pc goggle
- 1 pc calculator
- 2 pcs BNC to alligator clip cable
- 2 pcs BNC cable, 50cm black
- 2 pcs Overlapping plug wire, 50cm, black
- 2 pcs Overlapping plug wire, 1m, green
- 2 pcs Overlapping plug wire, 50cm, red
- 50 pcs Overlapping plug wire, 50cm, red
- 30 pcs Overlapping plug wire, 50cm, black
- 2 pcs Connector Probe socket, 4mm, red
- 2 pcs Connector Probe socket, 4mm, black
- 1 pc USB connection, Type A male plug to type A female port, 1.5m, black
- 6 pcs Large single hook, 10mm x 40mm x 100mm
- 6 pcs saw hook, 10mm x 40mm x 4mm

- **Consumables and Accessories**



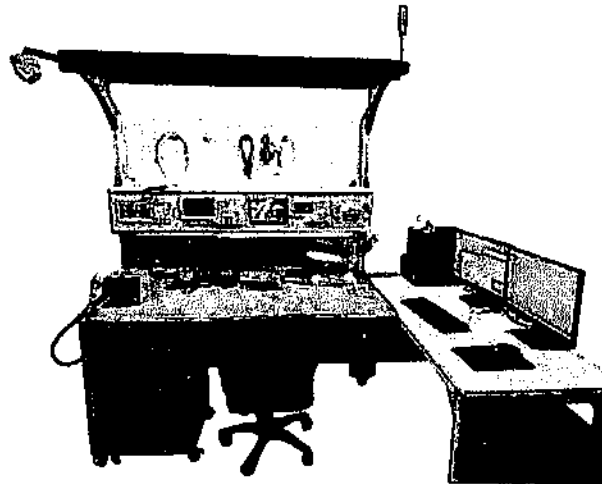


- 1 roll Blue/Single Core Wire Installation Wire, 210m, the outer diameter of the blue belt is between 0.5-0.6mm, the wire core is 0.25mm, and the voltage resistance is 100V
- 1 roll Black/single conductor installation wire, 210m, black leather, outer diameter between 0.5-0.6mm, wire core 0.25mm, voltage resistance 100V
- 1 roll Red/single conductor installation wire, 210m, the outer diameter of the red belt is between 0.5-0.6mm, the wire core is 0.25mm, and the voltage resistance is 100V
- 1 coil tinned copper wire, 0.5mm/100m, outer diameter 0.5mm, length 100m, rated current 3.5A
- 1 roll Tin wire  $\Phi 0.5$ , 55g, melting point  $+217^{\circ}\text{C}$
- 1 pc soldering wire, Width 1.5mm, length 1.5m
- 1 pc No-clean flux pen, package type pen
- 2 pcs Universal board, double-sided, 95 x 115mm
- 1 roll Electrical tape, PVC, 9m, black
- 100 pcs cable ties, 3 x 100mm, white
- 1 set heat shrink tubing kit, colorful set of 780 pcs (boxed)

**Additional requirements:**

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

**Sample Image:**



*Picture for reference only*

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

<hr/> <b>Name of Company/Bidder</b>	<hr/> <b>Signature over Printed Name of Authorized Representative</b>	<hr/> <b>Date</b>
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## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>AC/DC Electrical Training</b>
<b>Item Code</b>	07-002
<b>Technology Area(s)</b>	Electrical and Electronics Technology

### General Description:

One (1) Analog voltmeter shall be built into the instrument console with terminals so that test leads can be connected for making measurements. Range of the scale is from 0-30 volts, AC or DC. The component storage panel shall allow storage and identification of loose components that are included with the trainer. The component work surface shall be a flat surface 20"x17" located on top of the worktable and in front of the instrument console where components can be quickly attached and circuits set up. All loose components shall be mounted on mobile plastic panels with all component leads attached to metal spade-lug terminals which have thumb screw attachment spade-lugs, requiring no tools. The loose component panels shall use a quick connect mounting /release method which permits the component circuits to be set up on the work surface and storage panel.

### Components:

- (1) Digital multimeter
- (1) Knife switch, DPDT
- (1) Push button switch, SPST
- (1) Selector switch, SPST
- (3) Lamp modules, 28V @ .67A
- (2) Resistor modules, 25 ohm
- (1) Resistor module, 10 ohm
- (2) Capacitor modules, 88-106mF
- (1) Relay module, DPDT, 24 VDC
- (1) Solenoid module, 24 VDC
- (1) Buzzer module, 3-20 VDC 3.7kHz
- (1) Fan module, 24 VDC/.11A
- (1) Circuit breaker module, 1A/277 VAC
- (1) Fuse module, 3AFA
- (1) Rheostat module, 1A/0-25 ohm, 25 Watt
- (1) Step down transformer module, 20VA
- (1) Transformer load module 2 separately selectable 220 ohm, 5 Watt loads
- (1) Compass module
- (1) Neon circuit tester, 90-300V



## Required Topics/Lessons (Learning Activity Packets):

### 1. Basic Electrical Circuits

- Fundamentals of Electricity
- Electrical Circuit Components
- Manual Input Devices
- Output Devices

### 2. Electrical Measurements

- Voltage Measurement
- Introduction to Series and Parallel Circuits
- Current Measurement
- Resistance Measurement

### 3. Circuit Analysis

- Power in Series Circuits
- Power in Parallel Circuits
- Circuit Protection Devices

### 4. Inductance and Capacitance

- Electromagnetism
- Inductance
- Capacitance
- Characteristics of Capacitance
- Inductor and Capacitor Application

### 5. Combination Circuits

- Characteristics
- Lighting Circuits
- Voltage Dividers
- Troubleshooting

### 6. Transformers

- Introduction to Transformers
- Sizing a Transformer
- Transformer Types

## Technical Description

### • Lead Set

A patch cord with the following components:

- (10) Spade-to-spade connectors, 24-in length
- (4) Spade to banana, 24-in length

### • Electrical Control Software

Windows-based software which provides a graphical interactive simulator of electrical circuit designs. The software shall contain a library of electrical components including power supplies, resistors, voltmeters, connectors, motors, lights and switches to



enable the user to construct a variety of electrical circuits to teach the concepts of AC/DC electricity. The software shall then permit simulation of the circuits with a 3-D graphical display on screen in real time. It shall be possible to insert faults into the system, change systems parameters, and analyze system performance. Circuit files can be created, saved, and recalled at any time.

- **Supplemental Disk for Electrical Control Software**  
Contain circuit simulation files for use with the electrical control software and the activities in the curriculum.
- **Student Curriculum**  
Shall consist of one (1) set of six Learning Activity Packets. The student curriculum shall contain 47 industry tasks in Electrical Systems including: Ohm's Law calculations, basic components/circuit connections; measurement of circuits, voltage and resistance, sizing and connection of transformers, capacitors and inductors applications, design calculations, etc.
- **Teacher's Assessment/ Portfolio Guide**  
Contain student data sheets, data sheet solutions, self-review answers, quizzes, quiz answers, student skill record sheets and authentic assessment. A quiz shall be provided for each packet. A question shall be provided in each quiz for each cognitive objective taught. All tasks listed in the packet shall be listed on personalized student record sheets. The teacher's assessment guide shall include directions for authentic skill assessment.
- **General parameter**
  - Voltage: 24 volts AC and 12 volts DC
  - Dimension: The equipment when installed should not consume more than 6 sqm space and not over 2m for the overall height.
  - This includes curriculum and instruction to exercises in print and digital format

**Package inclusion:**

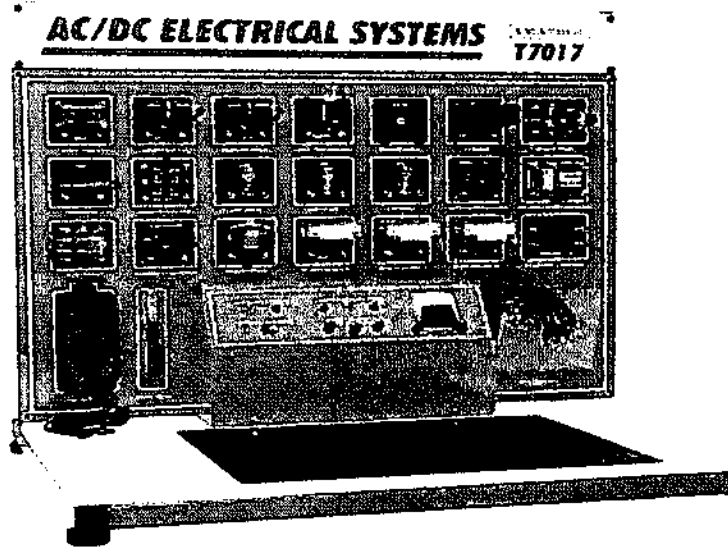
- one (1) base unit with (1) power supply on/off selector switch
- indicator lamp
- AC-DC selector switch and indicator lamps
- circuit breaker
- output terminals for connection to devices
- component work surface
- instrument console with component storage panel

**Additional requirements:**

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



Sample Image:



*Picture for reference only*

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

\_\_\_\_\_  
Name of Company/Bidder

\_\_\_\_\_  
Signature over Printed Name of  
Authorized Representative

\_\_\_\_\_  
Date

A handwritten signature in black ink, consisting of a stylized, cursive script that is difficult to decipher. It appears to be a personal or official signature.

## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Basic Electrical Machines</b>
<b>Item Code</b>	07-003
<b>Technology Area(s)</b>	Electrical and Electronics Technology

### Technical Parameter:

- **Electrical Base Unit**

An integrated test platform to set up and test motor operation. To include: integral power supply, mounting base, instrumentation and safety protection. The power supply shall provide a minimum of:

- Single phase variable AC: 0-140 VAC @ 8 AMPS
- Variable DC: 0-120 VDC @ 8 AMPS
- 3-Phase Fixed 208 VAC: L1, L2, L3, N, Earth connections
- DC field supply adjustable: 0-0.5 AMPS

The safety protection shall include:

- Fused variable DC
- Fused variable DC field
- 3-Phase circuit breaker
- Ground fault interrupter
- Emergency stop push button with key lockout

The mounting base shall be designed to mount (2) industrial quality motors of at least 0.44 KW power rating. It shall also permit mounting of a prony brake and includes:

- (1) Convenience Outlet
- (1) 5-Wire 3-Phase power cord
- (2) Integral motor connectors
- (2) Arrays of 8 binding posts for motor interconnections
- (1) Fused test lead with banana plug
- (1) Coupling spider
- (1) Coupling guard
- (10) Knurled finger nuts
- (1) Motor mounting pad

- **Phototachometer**

Shall consist of an industrial grade photo tachometer: hand-held unit, LED display, record button, memory button. Speed range 1-10000 rpm

- **Prony Brake**

A shaft torque measurement and load device. It shall consist of a formed steel gage unit, Aluminum brake drum with mounting for 5/8-inch motor shafts, balanced pulley,

spring force gauge, load adjustment knob, double set screw locking device, coolant spray bottle. Load range shall be 0-3.05 N-m

- **Patch Cord Kit**  
15 stackable banana jack types: (10) 12in/30.5cm and (5) 24in/61cm
- **Handheld Analog Multimeter**  
Clamp-on type with analog scale, voltage range of 0-600 VAC, current range of 0 - 300 AC Amps.
- **Handheld Digital Multimeter**  
Voltage range of 0-600 VAC & VDC, current range of 0 - 10 AC & DC Amps, Ohmic Range to 20 Megohms, Diode Check, Battery check
- **AC Multipurpose Single Phase Motor**  
A 1/3 HP, NEMA 56 Frame machine rated at 115VAC/60Hz, 1725 RPM. Start and run windings accessible through a multi-pin connector. Shall be configurable to capacitor start, permanent capacitor, and capacitor start/capacitor run type motors. To include:
  - Single end shaft for safety
  - Special shaft end to accommodate tachometer
  - Complete with coupling and legend plate
  - Split Phase Motor
- **Split Phase Motor**  
A 1/3 HP, NEMA 56 Frame machine rated at 115VAC/60Hz, 1725 RPM. All windings will be accessible through a multi-pin connector. To include:
  - Single end shaft for safety
  - Special shaft end to accommodate tachometer
  - Complete with coupling and legend plate
- **DC Motor/generator**  
A 1/3 HP, NEMA 56 Frame machine rated at 1750 RPM, configurable to series wound, shunt wound, compound wound motor or generator. To include:
  - Single end shaft for safety
  - Special shaft end to accommodate tachometer
  - Complete with coupling and legend plate
- **3 Phase Induction Motor**  
A 1/3 HP, NEMA 56 Frame machine rated at 208 Volts, 3PH. Windings accessible through a multi-pin connector. To include:
  - Single end shaft for safety
  - Special shaft end to accommodate tachometer
  - Complete with coupling and legend plate
- **Student Curriculum**  
The student curriculum shall consist of (1) set of modules with 60 skills in electric motors. The topics covered shall include connection, reversing, operation, applications, selections, performance measurement, and performance analysis of: DC motors, split-phase AC motors, cap-start AC motors, permanent capacitor



AC motors, 2-capacitor AC motors, and 3-phase AC motors.

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

- **Teacher's Assessment/ Portfolio Guides**

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

**Required Topics/Lessons:**

1. DC Series Motors

- Introduction to Electric Motors
- Electric Motor Safety
- DC Series Motor Operation
- Reversing a DC Series Motor

2. DC Shunt And Compound Motors

- Self-Excited DC Shunt Motor Operation
- Separately-Excited DC Shunt Motor Operation
- DC Compound Motor Operation

3. Motor Speed and Torque

- Motor Speed Measurement
- Motor Torque and Speed Calculations
- Motor Torque Measurement

4. Motor Performance

- Motor Power and Efficiency
- DC Motor Performance Testing
- DC Motor Performance Analysis





## 5. Split-Phase AC Motors

- Characteristics of Alternating Current
- Split-Phase Motor Operation
- Split-Phase Motor Characteristics

## 6. Capacitor-Start AC Motors

- Power in AC Circuits
- Power Factor
- Capacitor-Start Motor Operation
- Capacitor-Start Motor Characteristics
- Bleeder Resistor Application

## 7. Permanent-Capacitor and Two-Capacitor Motors

- Permanent-Capacitor Motor Operation
- Permanent-Capacitor Motor Characteristics
- Two-Capacitor Motor Operation
- Two-Capacitor Motor Characteristics

## 8. Three-Phase AC Induction Motors

- Three-Phase Induction Motor Operation
- Three-Phase Motor Characteristics
- Three-Phase Motor Configurations
- Reversing A Three-Phase Induction Motor

## 9. Troubleshooting DC Motors

- DC Motor Failures
- DC Electric Motor Armature Testing
- Testing DC Motor Field Winding Failures
- Troubleshooting DC

## 10. Troubleshooting AC Motors

- AC Motor Failures
- Testing Single-Phase AC Motors
- Testing Three-Phase AC Motors
- Troubleshooting AC Motors

### **General parameter:**

- Dimension: The equipment when installed should not consume more than 6 sqm space and not over 2m for the overall height.
- This includes curriculum and instruction to exercises in print and digital format

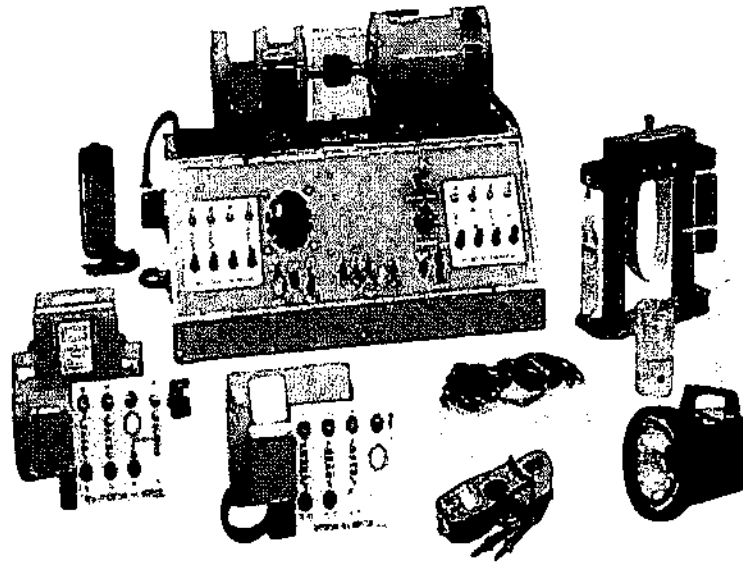
### **Accessories:**

- (1) Allen Wrench Set
- (1) Dead Blow Hammer

### **Additional requirements:**

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

**Sample Image:**



*Picture for reference only*

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

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**Name of Company/Bidder**

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**Signature over Printed Name of  
Authorized Representative**

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**Date**

A handwritten signature in black ink, consisting of a stylized, cursive script.

## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Electrical Control Training</b>
<b>Item Code</b>	07-004
<b>Technology Area(s)</b>	Electrical and Electronics Technology

### Technical Description:

- **Electrical Relay Control Training Console**

The training system shall have an angled console with all components rigidly mounted on the front panel for ease of inventory tracking. The panel is to be 18 gauge painted steel with the name and part number of each component clearly silk-screened.

- **Control Components**

Each component's terminals shall be wired to plug-in jacks on the front of the panel, which are overlaid with a silk-screened schematic symbol of the component. The pneumatic and electrical components shall be arranged in such a manner to enable automated control circuits to be connected and operated. The components shall include the following:

- (3) DPDT relays
- (1) Timer relay DPDT
- (2) Pushbuttons
- Selector switch, 3-position
- (2) Double-acting cylinders
- (4) Limit switches
- (2) Solenoid operator valves, 4-way
- (2) Indicator lights

- **Lead Set**

A set of (25) stackable electrical connecting leads shall be supplied to enable circuits to be connected.

- **Power Supply**

A 24VDC 2.4AMP power supply shall be integrated into the base of the Electrical Relay Control Trainer, which provides power to all components on the trainer.

- **Student Curriculum**

Shall include one set of 3 modules containing at least 31 skills in electrical relay control. The topics shall include: logic elements, ladder diagrams, electro-pneumatic solenoid valves, relay operation, relay application, limit switch operation, limit switch applications, time-delay relays, multiple cylinder control, and machine modes of operation.

The student curriculum shall be designed in a skill-based format that focuses on teaching industry-relevant tasks. The objectives shall be accomplished by organizing the learning



material into a series of learning activity packets, which are further subdivided into three or more segments per packet. All learning materials needed shall be contained in the packets including text material, laboratory equipment activities, and multimedia directions. No external text sources shall be required. The specific cognitive skills taught by each text passage shall be identified next to the passage. Each lab activity shall be identified by the industrial task taught. All activities shall be highly detailed with step-by-step instructions to facilitate a self-directed learning environment. A combination of step-by-step enabling activities and creative, problem-solving activities shall be provided. A self-review of five to ten questions shall be provided after each segment. The curriculum must be capable of both self-directed and instructor directed study. All activities must correlate directly to the hardware supplied, with detailed illustrations and diagrams.

- **Teacher's Assessment Guide**

A teacher's assessment guide shall be provided. It shall contain student data sheets, data sheet solutions, self-review answers, quizzes, quiz answers, student skill record sheets, and authentic assessment.

A quiz shall be provided for each packet. A question shall be provided in each quiz for each cognitive objective taught. All tasks listed in the packet shall be listed on personalized student record sheets. The teacher's assessment guide shall include directions for authentic skill assessment.

**Required Topics/Lessons:**

- 1 Control Logic
  - Logic Elements (And, Or)
  - Logic Elements (Not, Nor, Nand)
  - Ladder Diagrams
  - Electro-Pneumatic Solenoid Valve
- 3 Timers and Advanced Systems
  - Time-Delay Relays
  - Time-Delay Relay Applications
  - Multiple Cylinder Control
  - Machine Modes of Operation
- 2 Sequencing Control
  - Relay Operation
  - Relay Applications
  - Limit Switch Operation
  - Limit Switch Applications

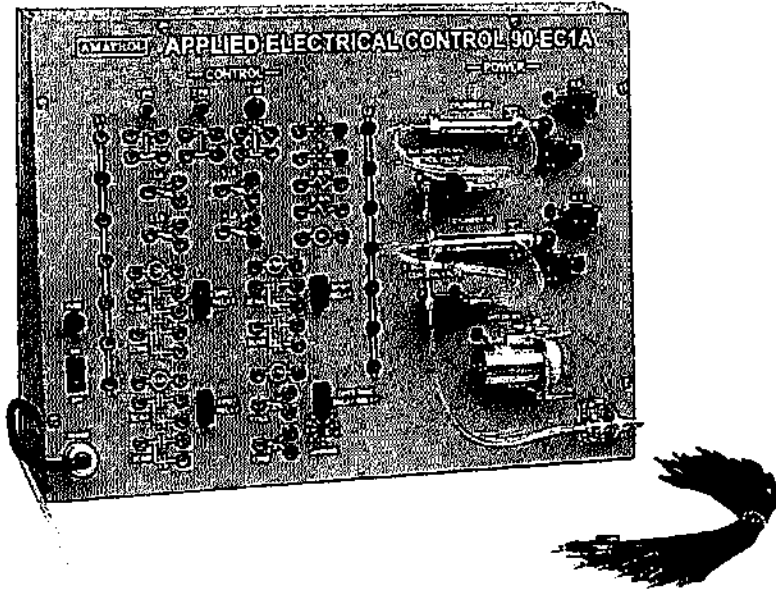
**General parameter:**

- Dimension: The equipment when installed should not consume more than 6 sqm space and not over 2m for the overall height.
- This includes curriculum and instruction to exercises in print and digital format

**Additional requirements:**

- Certificate of authority to sell from the manufacturer or local distributor/reseller
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Sample Image:



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Authorized Representative**

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**Date**

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## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Internet of Things</b>
<b>Item Code</b>	07-005
<b>Technology Area(s)</b>	Electrical and Electronics Technology

### Technical Description:

#### A. Composition of the equipment

- Platform  
*Equipped with an aluminum frame, fireproof panel, high-strength electrical box, etc.*
- Power monitoring and alarm module  
*Equipped with override trip protection, short-circuit detection protection and alarm indication function*
- Safety plug terminal module  
*Equipped with a high insulation safety socket and high-strength safety plug. Can distinguish various specification socket and plug from strong and weak current, to ensure the safety of operating personnel*
- System master control device  
*Equipped with core master control real device of intelligent building and embedded ARM system bus network I.O.T system, to complete the application in wiring, programming, configuration, integration, commissioning, operation, diagnosis and secondary design, etc.*
- System load simulation components  
*Equipped with the required analog input and output load, etc.*
- Programming development software  
*Equipped with I.O.T network technology related development software, source code and communication protocol is completely open*

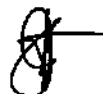
#### B. General Parameters:

- Power input: single phase and three wires /AC220V/60Hz
- Safety Protection: Grounding/leakage (action current  $\leq 30\text{mA}$ )/ overvoltage/ overload/ short circuit, scam protection
- AC power output: two route isolation
- DC power output: DC5V/2.5A, DC12V/2A, DC24V/1.5
- Adjustable DC power output: DC0-30V/2A
- Dimension: The equipment when installed should not consume more than 6 sqm space and not over 2m for the overall height
- This includes curriculum and instruction to exercises in print and digital format



## **Required Topics/Lessons:**

1. System wiring plugging, programming, commissioning, operation, maintenance and repair
2. High-definition coaxial video signal and hard disk recorder connection
3. High-speed dome camera, infrared gun-type camera and monitor and hard disk recorder connection and monitoring
4. Through hard disk recorder control high-speed dome camera PTZ movement and lens action
5. Through hard disk recorder set and adjust the high-speed dome camera PTZ presetting and cruise
6. Dynamic monitoring screen changes and automatic recording of peripheral alarm
7. Passive infrared intrusion detector, active infrared detectors, sound and light alarm and hard disk recorder connection and setting
8. Video monitoring system and the surrounding security system linkage
9. LAN monitoring of network video surveillance management software
10. LonMaker software installation and Plug-in registration
11. Connection of light illumination switch, halogen lamp and the DDC control module and Event Scheduler function module schedule programming
12. Connection of light sensor, LED light and DDC control module and analog input and output programming of Universal Input function module
13. Connection of passive infrared detectors, fluorescent lamp and DDC control module and delay programming of Universal Input function module
14. Connection of triple scene button, fluorescent tube and DDC control module and digital logic programming of State Machine function module
15. Connection of emergency switch and DDC control module and analog logic programming of Analog Function module
16. Light intensity sensor detection training based on CAN bus and GSM communication
17. Air quality sensor detection training based on CAN bus and GSM communication
18. Air temperature and humidity sensor testing and training based on CAN bus and GSM communication
19. Soil temperature and humidity sensor testing and training based on CAN bus and GSM communication
20. Carbon dioxide sensor testing and training based on CAN bus and GSM communication
21. PM2.5 detection training based on CAN bus and GSM communication
22. Weight sensor detection training based on CAN bus and GSM communication
23. Flame sensor detection training based on CAN bus and GSM communication
24. Human pyroelectric sensor detection training based on CAN bus and GSM communication
25. Security detection training based on CAN bus and GSM communication
26. Electric curtain control training based on CAN bus and GSM communication
27. Lighting control training based on CAN bus and GSM communication
28. Air valve control training based on CAN bus and GSM communication
29. Water valve control training based on CAN bus and GSM communication
30. Plant watering control training based on CAN bus and GSM communication
31. Fish feeding control training based on CAN bus and GSM communication
32. Air purifier control training based on CAN bus and GSM communication
33. Cold and warm fan control training based on CAN bus and GSM communication
34. LCD monitor control training based on CAN bus and GSM communication
35. Electric lock control training based on CAN bus and GSM communication
36. Infrared learning and control training based on WiFi communication
37. PC monitoring training based on CAN bus



38. Android monitoring training based on GSM communication
39. Intelligent household monitoring training based on WiFi communication
40. Integrated monitoring software through the video interface server connect hard disk recorder and monitor screen in real-time
41. Integrated monitoring software through the DDE interface server connect DDC host module and monitor data in real-time
42. Integrated monitoring software through the Internet of Things interface server connect the CAN bus and monitor data in real-time
43. Comprehensive integrated monitoring and management training of SAS, BAS and IOT
44. Integrated system based on intelligent building integrated monitoring software.

**Other Equipment and Accessories:**

- 1 set aluminum bracket
- 1 set fireproof board
- 1 pc electrical box
- 1 pc protective barrier
- 1 pc LCD
- 1 pc detection actuator
- 3 pcs 2P air switch
- 2 pcs leakage protection module
- 1 pc alarm module
- 1 pc self-reset button
- 1 pc emergency switch
- 1 pc AC220V guide rail 3-plug module
- 1 pc AC220V guide rail 2-plug module
- 1 pc DC0-30V adjustable switch power
- 1 pc adjustable potentiometer
- 1 pc DC digital voltage ammeter
- 1 pc four-layer alarm light
- 1 pc 10A safety plug terminal
- 1 pc 5A safety plug terminal
- 1 pc hard disk recorder
- 1 pc SATA hard disk
- 1 unit LCD monitor
- 1 unit high speed dome camera
- 1 unit infrared camera
- 3 pcs self-lock button with DC24V green indicator light
- 2 pc relay switching circuit board
- 1 pc DC12V buzzer
- 1 license video monitoring management software
- 1 license video monitoring wireless client software
- 1 pc host monitor module
- 1 pc LON network adapter
- 3 pcs self-reset button with DC24V red indicator light
- 4 pcs DC24V yellow indicator light
- 10 pcs relay switching circuit board
- 1 pc potentiometer
- 1 pc DC voltage adjustment conversion circuit board





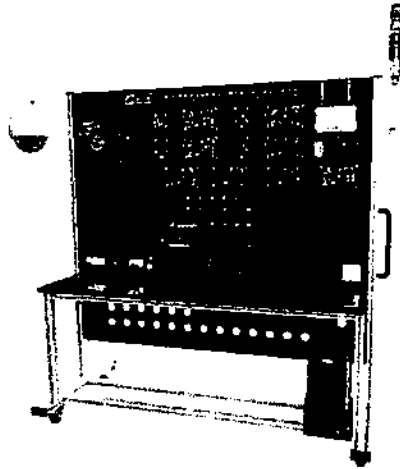
- 1 pc DC voltage input transmission digital tube
- 1 pc DDC program software plug-in program
- 8 pcs embed host board
- 1 pc AC electric, water valve, and air valve module
- 1 pc illuminous sensor and electric curtain module
- 1 pc PM2.5 air quality sensor module
- 1 pc air, earth, temperature, and humidity sensor and plant irrigation module
- 1 pc pyroelectric sensor module
- 1 pc pet feed and weighing module
- 1 pc fire and carbon dioxide sensor module
- 1 pc security and access control module
- 1 pc CAN communication adapter
- 1 pc WiFi directional infrared controller
- 1 unit wireless router
- 1 pc USB wireless network card
- 1 pc GSM module
- 1 pc WiFi touchscreen terminal
- 1 pc self-lock button with DC6.3V green indicator light
- 2 pcs self-reset button with DC6.3V red indicator light
- 7 pcs DC6.3V yellow indicator light
- 1 pc DC6.3V green indicator light
- 1 pc DC6.3V red indicator light
- 1 unit PM2.5 detector simulator
- 1 pc carbon dioxide sensor simulator
- 1 unit pressure transmit simulator
- 1 unit air conditioner, air purifier, and TV simulator
- 1 set infrared remote
- 1 license ARM emulator

**Additional requirement:**

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




**Sample Image:**



*Picture for reference only*

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

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**Date**

## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Motor Control Trainer</b>
<b>Item Code</b>	07-006
<b>Technology Area(s)</b>	Electrical and Electronics Technology

### Technical Description:

#### A. Electro Mechanic Component Board

The board enables the students to perform experiments with components normally used in industrial electrical environments. The components on the front panel can be wired together through 2 mm terminals for what concerns the low voltage controls, and through 4 mm safety terminals for the connections to the mains or for further applications. All the components are identified through clear synoptic diagrams showing their types and symbols. On the rear side of the board, there are switches to allow for the introduction of faults by the teacher.

- Components
  - 1 power supply, 24 VAC
  - 1 bipolar switch, 1 -0 -2
  - 1 thermal relay with auxiliary contacts
  - 2 timers
  - 5 push-buttons
  - 5 signaling lamps
  - 5 contactors with 5 auxiliary contacts each
  - Power supply: single-phase from mains.
- Experiments
  - Single-pole control auxiliaries
  - Contactor
  - Logic operators
  - Contactor self-supply
  - Interlock between contactors
  - Sequentially controlled contactors
  - Exclusive-OR operator
  - Static timer
  - Pulse generator

#### B. Dissectible Electrical Machines

The system is a complete set of components and modules suitable for assembling the rotating electric machines, both for direct current and for alternating current. Students can perform a critical and well analyzed assembly, in order to understand the production techniques before performing practical tests of the operating characteristics. The system is supplied at low voltages in order to prevent the risk of accidents.

- Components and Modules
  - power supply module
  - measurement module
  - loads and rheostat module
  - adapter bracket



- locking and rotating device
  - parallel board
  - pole changing module
  - electromagnetic brake
  - star/delta starter
  - starting and synchronization
  - base plate
  - supports with bearing
  - coupling joints
  - flexible coupling
  - electronic speed transducer
  - assembling screws
  - wrenches
  - DC stator
  - AC stator
  - rotor with commutator
  - brush holder with 6 brushes
  - cage rotor
  - ring rotor
- Applications:
    - Assembly, operation and tests on electric machines and, in particular
    - Study of the magnetic field
    - Principles of the electromagnetic induction
    - Separately shunt, series and compound excited dc motors
    - Separately shunt, series and compound excited dc generator
    - Induction motors: three-phase slip ring and squirrel cage, single-phase repulsion and with capacitor
    - Dahlander connection
    - Synchronous three-phase motor, induction regulator and phase shifter, alternator, universal motor
- General Parameter
    - Output (AC): 24 V/14 A, 42V/10A, 3 phase
    - Output (DC): 32 V/14 A, 42 V/10 A, 0 – 40 V/5 A, 0 – 8 V/12 A, 3 phase
    - Speed measurement range: 0- 4000 rpm at 50Hz; 0-6000 rpm at 60Hz
    - Communication: Modbus RTU RS485
    - Encoder resolution: 5 pulses / revolution

### **C. Electric Machines Lab Simulator**

The software can improve students' didactic experience in electric machines.

- Required Topics/Lessons
  - Analysis of magnetic fields and fluxes
  - Advanced experiments on characterization of machines
  - Efficiency analysis
  - Mechanical assembly
  - Wiring, tests and measurements



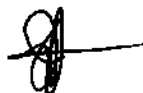
- Features
  - Effective guide for student  
*Possibility to access learning topics, with theory, instructions and experiment proposals. The software includes a virtual version*
  - Automatic Validation of Students' Tasks  
*The software automatically verifies if the student completed successfully each task in order to allow him/her to go ahead with the next one*
  - Tracking of students' progress  
*The teacher can verify the students' progress any time consulting the specific summary in the software or exporting it to a spreadsheet*

#### **D. Multidisciplinary Laboratory and Multi-technology Engineering Design and Simulation Software**

- Libraries and modules  
This software contains libraries and modules for:
  - Life-time usage on stand-alone and Local Area Network.
  - Interactive lab exercise  
*These exercises include simple schematic that can be simulated and animated in order to be analyzed*  
*Teachers can also modify these exercises and create ones*
  - Online remote access licensing  
*Users can prepare and simulate courses and homework from home, school, or workplace*
  - Teach ware  
*This software offers guides, lectures, animations, and lab notes for all levels of discipline*
  - Workflow  
*Allows teachers to create and sequence content to evaluate student's knowledge retention*
  - Configuration tools  
*Allows users to create and configure valves, cylinders, motors etc. to obtain components which are graphically compliant with requirements and real technical performance*
  - Create and customize your own symbols, libraries and templates
  - Component sizing  
*Provides calculation worksheets specific to each category of pneumatic, hydraulic and electrical components which include calculation tool necessary for component sizing*
  - Adjustable component simulation parameters  
*This includes parameters such as applied loads, dimensions angles, internal leakages, force, torque, etc.*
  - Dynamic, Realistic and Visual Simulation  
*Accurately reproduce the system's behavior in a dynamic and visual way. During simulation, components are animated and lines and wires are color-coded according to their state*
  - Virtual System  
*Using the electrical, PLC libraries and SFC/GRAFSET module, the student simply links sensors, switches, lights, conveyors, etc., in order to make the virtual systems operate according to teacher's instructions*



- 3D Editing and Animations  
*Includes a 3D editor for creating and importing 3D parts in STEP, STL and IGES. It is possible to visualize, simulate and animate them simultaneously with the technologies that drive the system*
- Mechanical Links  
*Mechanical bodies can be linked to fluid power actuators to simulate and animate their effects*
- Cross-section Animation  
*Users can build cross-section animated views and link them to the simulation results in order to produce synchronized animations*
- System behavior analysis  
*Learners can monitor and visualize simulation variables during simulation*
- Troubleshooting Modules
- Circuit Modification during Simulation  
*Provides tools for disconnecting wires and pipes during simulation to isolate parts of a circuits, perform measurements and repair or replace components to fix suspected failures*
- Diagnostic Tools  
*Provides extensive diagnostic tools allowing to detect inconsistencies or errors such as non-compliance with ISO standards, free connectors, redundant or overlapping lines, etc.*
- Interfaces to programmable logic controllers and equipment
- Manufacturers' Catalogues  
*Offering teachers and students an extensive library with thousands of preconfigured components that reproduce real world functions*
- CAN Bus Links to Operate Virtual Machines
- PLC Export
- Block Diagram  
*It is possible to create a graphical environment for component and system modeling using predefined function blocks  
It can also be used to create and test complete control loops*
- Sequential function charts
- HMI and Control Panels  
*User can easily create animated shapes that reproduce the behavior of the equipment they represent*
- Electrical Controls  
*Interacts with all components from other libraries so as to create electrically controlled systems*
- Electro technical  
*Offers wide array of components to create AC and DC electrical circuits, from basic to advanced uses. It supports IEC and NEMA standards. Motor soft starters and VFD's are available*
- Electro technical One-line  
*Enables the design of diagrams for all voltage levels in a typical one-line representation of networks for power generation, transmission and distribution*
- Digital Electronics  
*Includes standard devices such as inverters, logic gates, flip-flop, counters, shift registers, comparators, switches, LEDs, 7-bar display, decoders, multiplexers, etc.*

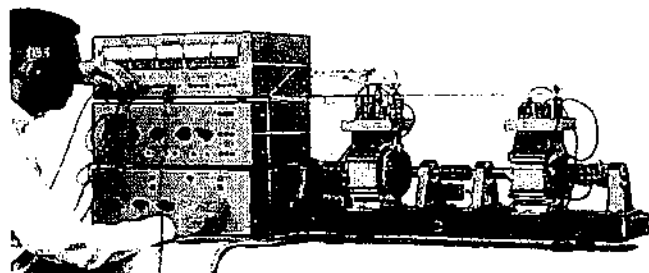
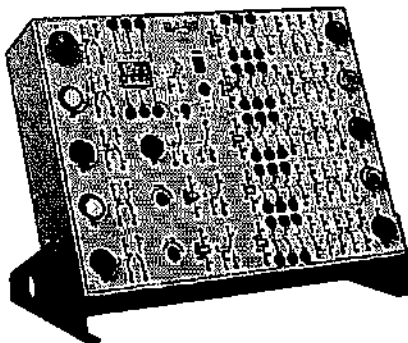


- Programmable logic controller  
*Offers PLC logic libraries for different brands of PLC such as Allen Bradley, Siemens, Mitsubishi and other IEC standard PLCs*
  - Pneumatics  
*Includes all the symbols necessary to create pneumatic, electro-pneumatic and logic systems*
  - Hydraulics  
*Offers all component symbols required to create mobile and industrial hydraulic systems and functions which covers from basic up to Advanced and Proportional Electro-hydraulics*
- Dimension: The equipment when installed should not consume more than 6 sqm space and not over 2m for the overall height.
  - This includes curriculum and instruction to exercises in print and digital format

**Additional requirement:**

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

**Sample Image:**



*Picture for reference only*

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

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**Signature over Printed Name of Authorized Representative**

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**Date**

# Technical Specifications

**Lot 8 : Alternative Energy Simulator**

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Alternative Energy Learning System	Kindly refer to the technical specifications attached as <b>Annex D8.</b>	1	set			

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

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D8.

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

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

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Name of Company/Bidder

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\_\_\_\_\_  
Date





**ANNEX D8**

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
8	Alternative Energy Simulator	08-001	Alternative Energy Learning System	Refer to Technical Specification of Item Code 08-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	Yes



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Date

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## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Alternative Energy Learning System</b>
<b>Item Code</b>	08-001
<b>Technology Area(s)</b>	Alternative Energy Simulator

### Technical Description:

#### A. Solar/Wind Energy Advanced Trainer

Modular trainer for the theoretical and practical study of the electrical installations with photovoltaic solar energy and wind energy. With the solar/wind advanced trainer it is possible to perform experiments to determine the characteristics of a wind generator and a photovoltaic panel, study their off-grid operation with a battery charge regulator and their on-grid operation with the connection to the mains network. The complete system is supplied with a sunlight simulation module for indoor use.

The trainer is supplied with software that is able to communicate with the main components of the modular system using Modbus RTU protocol, in order to perform data acquisition and processing.

- **Training Objectives**

- Study of wind turbines
  - Identification of wind turbine components
  - Operating the wind turbine breaker
  - Calculating wind power
  - Measuring wind turbine electrical power
  - Study of wind turbine with load
- Study of off-grid wind systems
  - Dimensioning of an off-grid wind system
  - Battery regulating and charging
  - Supplying DC load with wind power stored in a battery
  - Supplying AC load with wind power and a battery
  - Calculating the system autonomy with different loads
- Study of on-grid wind systems
  - Measuring the electricity produced by the wind generator, delivered/taken from the mains grid, and the loading of AC lamps
  - Calculating the efficiency of the complete on-grid wind energy system
  - Investigating the response of a wind system to a mains failure
  - Energy balance
  - Measuring solar radiation: Changing the inclination and azimuth of the solar panel
  - Investigating the PV module response to shadow formation
  - Recording the characteristics of the solar modules: Solar Panel Voltage-Irradiation Curve, Solar Panel Current-Irradiation Curve (calculating the inner resistance of the solar panel), Obtaining the solar panel current-voltage curve,

Measurement of the voltage and current of the photovoltaic module with overload

- Off grid system:

*Measuring the generated power of a PV system and battery charging Using Solar Panel and Battery to supply a DC Load*

*Design and testing of a standalone PV system in direct storage operation and 230VAC*

- On grid system:

*Measuring the electricity delivered to the mains grid*

*Measuring the electricity produced by the solar panel, delivered/taken from the mains grid, and the loading of AC lamps*

*Determining the efficiency of the grid connected inverter*

*Investigating the response of a PV system to a mains failure*

- **Technical Specification**

- Three phase rectifier bridge module

- DC load module

- It includes four separate instruments to measure all fundamental parameter

It includes a 20W dichroic lamp and 3W LED lamps, with independent switches.

- Load management modules with three independent single-phase outputs for the dynamic study of different load types

- Network monitor module used to measure electrical parameters in a single-phase circuit

- Circuit breaker module

- Fixed single phase power source rated at mains voltage with auxiliary 12 VDC fixed regulated voltage output to power measurement modules

- 100Ah/12v battery with battery protection module

- Motor/generator group for the simulation of a wind turbine. Composed of a brushless motor and a three-phase permanent magnet generator

- Control module for brushless motor drive

- Off-grid inverter module, with pure sine wave output at mains voltage

- Wind turbine charge controller with brake system

- Multifunction measurement module for wind applications

- It includes four separate instruments to measure all fundamental parameters for the study of a wind-system.

- Electronic charge regulation module, with LCD display, MPPT tracking and energy monitor

- Active DC load used in the renewable energy laboratories configurable as constant resistance or constant current

- Inclined photovoltaic panel, 90W, 12V, complete with a cell for measuring the solar irradiation and a temperature sensor

- A Grid-tie inverter with output at mains voltage, 12V, 100W

- Multifunction measurement module: solar irradiation (up to 1000 W/m<sup>2</sup>), solar panel temperature (up to 400°C), 2 DC power meters (65Vdc, 20Adc, 1000W) and 1 AC power meter (512 VAC, 20Aac, 1000W)

- On-grid inverter module, with sinusoidal output at mains voltage, 3ph-12V. Average power: 300 W
- Sun simulator consisting of halogen lamps to provide energy to the photovoltaic module for indoor use
- Three level frame

## **B. Multidisciplinary Laboratory and Multi-Technology Engineering Design and Simulation Software**

- Libraries and Modules
  - Life-time usage on stand-alone and Local Area Network
  - Interactive lab exercise
    - These exercises include simple schematic that can be simulated and animated in order to be analyzed
    - Teachers can also modify these exercises and create ones
  - Online remote access licensing
    - Users can prepare and simulate your courses and homework from home, school, or workplace
  - Teach ware
    - This software offers guides, lectures, animations, and lab notes for all levels of discipline
  - Workflow
    - Allows teachers to create and sequence content to evaluate student's knowledge retention
  - Configuration tools
    - Allows you to create and configure valves, cylinders, motors etc. to obtain components which are graphically compliant with your requirements and respectful of real technical performance
  - Create and customize your own symbols, libraries and templates
  - Component sizing
    - Provides calculation worksheets specific to each category of pneumatic, hydraulic and electrical components which include calculation tool necessary for component sizing
  - Adjustable component simulation parameters
    - This includes parameters such as applied loads, dimensions angles, internal leakages, force, torque, etc.
  - Dynamic, Realistic and Visual Simulation
    - Accurately reproduce the system's behavior in a dynamic and visual way. During simulation, components are animated and lines and wires are color-coded according to their state
  - Virtual System
    - Using the electrical, PLC libraries and SFC/GRAFNET module, the student simply links sensors, switches, lights, conveyors, etc., in order to make the virtual systems operate according to teacher's instructions
  - 3D Editing and Animations
    - Includes a 3D editor for creating and importing 3D parts in STEP, STL and IGES. It is possible to visualize, simulate and animate them simultaneously with the technologies that drive the system

- Mechanical Links
  - Mechanical bodies can be linked to fluid power actuators to simulate and animate their effects
- Cross-section Animation
  - Users can build cross-section animated views and link them to the simulation results in order to produce synchronized animations
- System behavior analysis
  - Users can monitor and visualize simulation variables during simulation
- Troubleshooting modules
- Circuit modification during simulation
  - Provides tools for disconnecting wires and pipes during simulation to isolate parts of a circuits, perform measurements and repair or replace components to fix suspected failures.
- Diagnostic Tools
  - Provides extensive diagnostic tools allowing to detect inconsistencies or errors such as non-compliance with ISO standards, free connectors, redundant or overlapping lines, etc.
- Interfaces to programmable logic controllers and equipment
- Manufacturers' Catalogues
  - Offering teachers and students an extensive library with thousands of preconfigured components that reproduce real world functions
- CAN Bus Links to Operate Virtual Machines
- PLC Export
- Block Diagram
  - It is possible to create a graphical environment for component and system modeling using predefined function blocks
  - It can also be used to create and test complete control loops
- Sequential function charts
- HMI and Control Panels
  - Users can easily create animated shapes that reproduce the behavior of the equipment they represent.
- Electrical Controls
  - Interacts with all components from other libraries so as to create electrically controlled systems.
- Electro technical
  - Offers wide array of components to create AC and DC electrical circuits, from basic to advanced uses. It supports IEC and NEMA standards. Motor soft starters and VFD's are available
- Electro technical One-line
  - Enables the design of diagrams for all voltage levels in a typical one-line representation of networks for power generation, transmission and distribution.
- Digital Electronics
  - Includes standard devices such as inverters, logic gates, flip-flop, counters, shift registers, comparators, switches, LEDs, 7-bar display, decoders, multiplexers, etc.

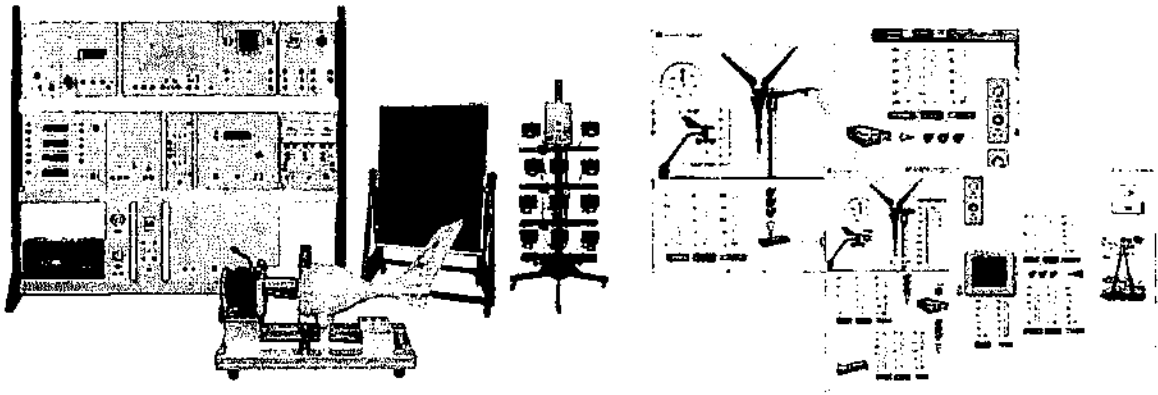


- Programmable logic controller
  - Offers PLC logic libraries for different brands of PLC such as Allen Bradley, Siemens, Mitsubishi and other IEC standard PLCs
- Pneumatics
  - Includes all the symbols necessary to create pneumatic, electro-pneumatic and logic systems
- Hydraulics
  - Offers all component symbols required to create mobile and industrial hydraulic systems and functions which covers from basic up to Advanced and Proportional Electro-hydraulics.

**Additional requirement:**

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

**Sample Image:**



*Picture for reference only*

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

<b>Name of Company/Bidder</b>	<b>Signature over Printed Name of Authorized Representative</b>	<b>Date</b>
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# Technical Specifications

**Lot 9 : Welding Technology**

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Augmented Reality Welding System	Kindly refer to the technical specifications attached as Annex D9.	1	set			
2	Advanced Process Welding Machine		1	set			
3	Sheet Metal Bending Machine		1	unit			

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

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D9.

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

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


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<b>Name of Company/Bidder</b>	<b>Signature over Printed Name of Authorized Representative</b>	<b>Date</b>
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## ANNEX D9

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
9	Welding Technology	09-001	Augmented Reality Welding System	refer to Technical Specification of Item Code 09-001	Learning System		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	Yes
9	 Welding Technology	09-002	Advanced Process Welding Machine	refer to Technical Specification of Item Code 09-001	Equipment	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	Yes



9	Welding Technology	09-003	Sheet Metal Bending Machine	<p>Box and pan brake Manual Bending angle: 0 - 135° Length: 48" Thickness: 16-20 gauge Beam lift max: 1.75" Box Depth: 4" With stand Includes 16 fingers with sizes 2" - 4" Power: 220V/60Hz/1Ph or 220V/60Hz/3Ph With english manual</p> <p>Additional Requirements: Certificate of authority to sell from the manufacturer or local distributor/reseller Certificate of End of Life (EOL) Service from Manufacturer (5 years)</p>	Equipment	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	Yes
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I hereby certify that the statement of compliance to the foregoing technical specifications are true and correct, otherwise, if found to be false either during bid evaluation or post-qualification, the same shall give rise to automatic disqualification of our bid.

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Name of Company/Bidder

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Signature over Printed Name of Authorized Representative

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Date

## TECHNICAL SPECIFICATION

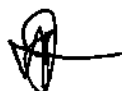
<b>Name of The Learning System</b>	<b>Augmented Reality Welding System</b>
<b>Item Code</b>	09-001
<b>Technology Area(s)</b>	Welding Technology

### Technical Description:

- Processes: GMAW (MIG/MAG) & FCAW G/S, SMAW (MMA Electrode), GTAW (TIG)
- Positions: PA, PB, PC, PD, PF/PG, PE, PH/PJ, HL045/JL045 - 1F, 2F, 3F, 4F, 1G, 2G, 3G, 4G, 5G, 5F, 6G, 6F
- Joints: Overlapped plate, V-Butt plate, T-Angled plate to plate, V-Butt pipe, T-Angled pipe to plate
- Real Welding Torches

### Required Topics/Lessons:

- Voltage Selection
- Intensity (Amperage) Selection
- Shielding Gas Selection
- Wire Speed Selection
- Coupon Material Selection: carbon steel, stainless steel, aluminum
- Gas Composition:
  - Carbon Steel
    - GMAW: Argon - Co<sup>2</sup>, CO<sup>2</sup>
    - GTAW: Argon
    - FCAW: Argon - Co<sup>2</sup>, CO<sup>2</sup>
  - Aluminum
    - GMAW: Argon
    - GTAW: Argon
  - Stainless steel
    - GMAW: Argon - O<sup>2</sup>
    - GTAW: Argon
- Coupon Thickness Selection: 3mm, 6mm, 10mm
- Electrode Stick/Filler Rod Diameter Selection:
  - GMAW:
    - carbon and stainless steel: 0.8mm 1mm 1.2 mm
    - aluminum: 1mm 1.2mm
  - SMAW:
    - carbon and stainless steel: 2.5 mm 3.25mm 4mm
  - GTAW:
    - carbon steel, stainless steel and aluminium: 2mm 2.4 mm 3.2 mm
- Welding Pattern/Weave: Straight, Triangle, Convex, Circle, Zigzag Push/ Drag



- Defects Analyzed: Porosity, spatter, slag inclusion
- Report Features: CTWD, Travel Speed, Work Angle, Travel Angle, Trajectory, Voltage, Wire feed Speed, Technical Parameters, Equipment Settings

#### **Features:**

- LMS Application:
  - STUDENTS ACCESS: Visualize contents, progress, take tests, live chat
  - LIVE CHAT: for teachers and students
  - SHAREVIEW: Teachers can see what the students see in real time in their laptop, either within the same classroom
- Remote Training/Distance Learning  
*Synchronous and asynchronous options. Teachers can monitor students from different training centers online, seeing in real time their progress and the welders' point of view while welding*
- Students Personalized Profile: practices report and progression
- Possibility to try different settings during the exercise and their effects in the welding bead
- Vision technology: Augmented Reality
- Possibility to connect the unit to a robotic arm
- Piece can be manipulated separately
- Real environment during simulation
- Remote maintenance
- Analysis module
- On-screen help guides

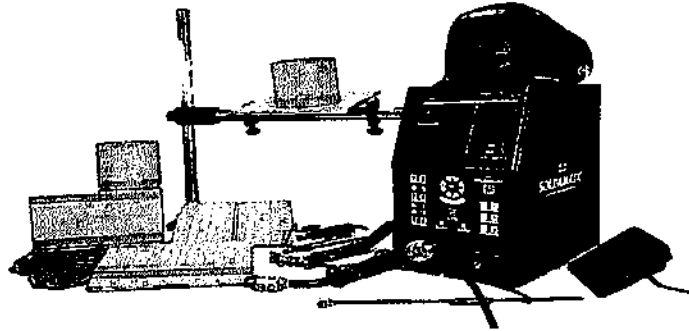
Power Supply: 240V

Overall size should not be greater than 2m (width) x 3m (height) to ensure that ingress of the machine will not be an issue.

#### **Accessories:**

- AR welding mask
- welding torches
- filler rod
- welding gloves
- workstand
- flight case
- GTAW (TIG) pedal

**Sample Image:**



*Picture for reference only*

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

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**Name of Company/Bidder**

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**Signature over Printed Name of  
Authorized Representative**

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**Date**

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## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Advanced Process Welding Machine</b>
<b>Item Code</b>	09-002
<b>Technology Area(s)</b>	Welding Technology

### Welding Procedures:

#### 1. MIG/MAG Welding

- Standard arc
- Pulsed arc
- Positional welding
- One-know Operation
  - User can set wire feed speed, welding current, material thickness remote control, special welding torches or robot, and industrial bus interfaces, optionally
- Arc length (welding voltage) can be adjusted for the welding task in hand by +/- 9.9 V
- Arc dynamics (choke effect)
  - This function can be used to adjust the arc between a narrow, hard arc with deep penetration (positive values) and a wide and soft arc (negative values).
- The program toggles between the main program and the reduced main program. This function is used for thin sheet welding to reduce the heat input in a controlled manner or for positional welding without the need for weaving.
- Non-latched Mode
- Special, non-latched
- Spot Welding
- Latched Mode
- Latched with changing welding method
- Latched Special
- Special latched with changing welding method by tapping
- Special latched with changing welding method
- Heat-reduced, low-spatter short arc for high dimensional stability welding and brazing of thin metal sheets with excellent gap-bridging.
- Heat-reduced, directionally-stable and powerful arc with deep fusion penetration for the upper power range.
- Short arc with perfect weld modelling capabilities for effortless gap bridging, especially for root welding.
- The alternating current welding process makes MIG aluminum welding even easier in manual and automated modes. Clean weld seams with no traces of powder on the thinnest metal sheets, even with AIM alloys.
- Welding process with active wire control for stable and uniform penetration characteristics and perfect arc length stability, even in difficult applications and positional welding.

- The MIG welding torch trigger is essentially used to start and stop the welding process.
- 2. TIG Welding**
- Automatic cut-out
    - Once the fault periods have elapsed, the automatic cut-out stops the welding process when it has been triggered during ignition or during welding.
  - Non-latched mode
  - Special, non-latched
  - Latched mode
  - Latched special
  - Arc ignition
    - The arc ignites through contact with the workpiece.
- 3. MMA Welding**
- Hotstart
    - Ensures a secure igniting of the arc and a sufficient heating to the still cold parent metal at the beginning of the welding process.
  - Antistick
    - Prevents the electrode from annealing.
- 4. Air Arc Gouging**
- An arc burns between a carbon electrode and the workpiece, heating the workpiece until it is molten. At the same time, the molten metal is blown out with compressed air. Special electrode holders with a compressed-air connection and carbon electrodes are required for gouging.

**General Parameters:**

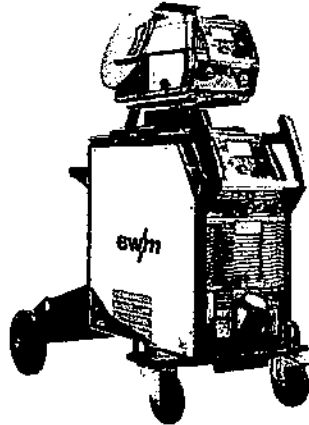
- Setting range for welding current: 5 A - 400 A
- Duty cycle 40 °C: 400 A / 80 %, 370 A / 100 %
- Open circuit voltage: 82 V
- Mains voltage: 3 x 220V
- Mains tolerances: -25 % up to +20 %
- Mains frequency: 60 Hz
- Power consumption Pi: 28 W
- Cooling capacity at 1 l/min.: 1500 W
- Pump pressure: 3.5 bar
- Tank capacity: 8 l
- Protection classification: IP23
- EMC class: A
- Dimensions (L x B x H): 1150 mm x 678 mm x 972 mm - 45.3 inch x 26.7 inch x 38.3 inch
- Standards: IEC 60974-1, -2 and -10 CL.
- Separate wire feeder
- Individually configurable programs for each welding task
- Adjustable start and end-crater functions
- LED information bar: indicates the current operating status
- Energy-saving due to high efficiency and standby function
- Connection capability for remote control and function torch
- Easy, tool-free change of welding polarity
- Insulated wire space

- IP23 spray water protected
- 1500W cooling capacity, high-performance centrifugal pump and 8L coolant tank
- Overall size should not be greater than 2m (width) x 3m (height) to ensure that ingress of the machine will not be an issue.

**Additional requirement:**

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

**Sample Image:**



*Picture for reference only*

# Technical Specifications

**Lot 10 : CNC Machines**

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	CNC Lathe Comprehensive Training Equipment	Kindly refer to the technical specifications attached as Annex D10.	1	set			
2	CNC Lathe Performance Turning Center		2	set			

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

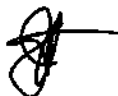
All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D10.

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

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

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

<b>Name of Company/Bidder</b>	<b>Signature over Printed Name of Authorized Representative</b>	<b>Date</b>
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**ANNEX D10**

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
10	Welding Machines	10-001	CNC Lathe Comprehensive Training Equipment	Refer to Technical Specification of Item Code 10-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes
10	Welding Machines	10-002	CNC Lathe Performance Turning Center	Refer to Technical Specification of Item Code 10-002	Learning System		- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes



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

\_\_\_\_\_  
Name of Company/Bidder

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Signature over Printed Name of Authorized Representative

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Date

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## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>CNC Lathe Comprehensive Training Equipment</b>
<b>Item Code</b>	10-001
<b>Technology Area(s)</b>	CNC Machines

**Description:** This equipment generates faults through hardware circuits. Through the process training of fault analysis, fault diagnosis, line inspection and fault point determination, it can train NC machine tool maintenance ability of students.

### Technical Description:

#### A. Electric control unit

- consists of NC system, feed drive, spindle unit, PMC unit, control circuit of tool post, cooling control circuit, interface unit, protection circuit, power circuit, etc.
- connected with numerical control machine functional parts for real electrical commissioning and maintenance training
- connected with electrical installation training unit to complete the commissioning of NC machine functional parts
- Power supply: Three phase five wire AC 220V±10% 60Hz
- Numerical control console: 800×600×1800mm
- Leakage protection, leakage initiating current ≤30mA
- Lack of phase automatic protection and overload protection

#### B. Electrical installation training unit

- consists of PMC unit, tool post control circuit, lubrication control circuit, cooling control circuit, interface unit, protection circuit, and power circuit
- uses mesh plate structure through the cable interface
- connected with electrical control unit
- Power supply: Three phase five wire AC 220V±10% 60Hz
- Numerical control console: 800×600×1800mm
- Leakage protection, leakage initiating current ≤30mA
- Lack of phase automatic protection and overload protection

#### C. CNC machine functional parts unit

- typical dual-axis precise cross slider, in a structure as same as the mechanism in a real machine
- designed for the training on CNC lathe mechanical assembly and disassembly mainly on the transmission parts, such as ball screw lead, linear rail, shaft coupler, servo motor, etc.
- simulate the real lathe in mechanical assembly and disassembly training
- integrates transmission parts onto the cross slider
- high-rigidity cast-iron construction
- the rail is a linear rail, fixed in the same way as a real lathe in a same pressure block structure
- the bearing is an angular contact bearing
- modular structure with slide wheels for free movement



- use for the high-accuracy detection technologies training, assembly and connection skills training with CNC lathe
- Power supply: Three phase five wire AC 220V±10% 60Hz
- Numerical control console: 800×600×1400mm
- Lead screw range: 280 mm
- Lead screw parameter (Diameter mm/Screw pitch mm): 16/05

**Required Topics/Lessons:**

- Programming and operation training of NC machine tool
- Programming and operation of NC machine tool
- Electrical part training of NC machine tool
- Learning of electrical composition of NC machine tool
- Learning of electrical control and PMC of NC machine tool
- Learning of spindle and feed shaft control
- Control circuit installation training of NC machine tool
- Reading and drawing electrical schematic diagram and assembly diagram
- Parameter settings of spindle, feed shaft, system and servo drive
- Data backup
- Basic function commissioning of spindle, feed shaft, tool post, lubrication and cooling modules
- Fault diagnosis and maintenance of NC machine tool
- The whole machine commissioning of NC machine tool
- Geometric accuracy detection of NC machine tool
- Travel limit parameters setting training
- Zero-return parameters setting training
- Pitch compensation setting training
- Ball screw lead, shaft coupler assembly & disassembly, linear rail assembly & disassembly training
- Cross slider mechanical installation and detection
- Check parallelism between rail slider surface and nut seat surface
- Check rail parallelism and straightness
- Cross slider verticality detection

**Other Equipment and Accessories:**

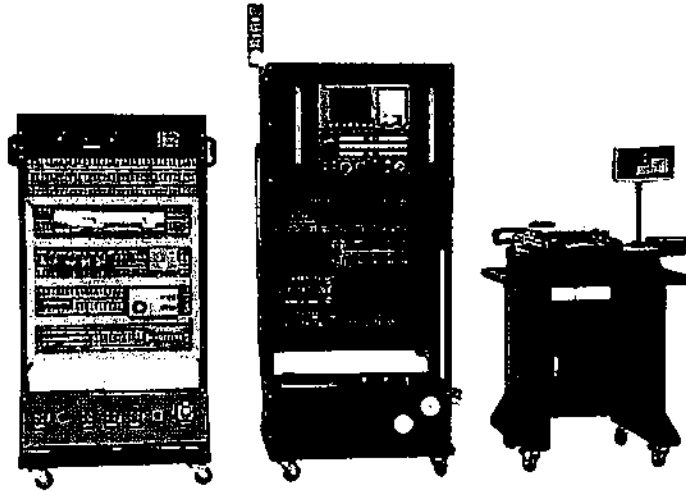
- 1 set training platform
- 1 set numerical control system
- 1 set spindle drive unit
- 1 set feed driver
- 1 set cooling motor - 3 phase asynchronous
- 1 set tool post - 4 position
- 1 set electronic handwheel - manual pulse generator
- 1 set optical encoder - incremental
- 1 set spindle motor - 3 phase asynchronous
- 1 set cross slider

Space requirement: Height should not be greater than 2.5m and width/length should not be greater than 4m (so that there will be no issue during ingress)

**Other requirements:**

- Proof of extensive local service support (provide an organizational chart of the existing service staff, including certification from manufacturer)
- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate to conduct after-sales service and supply of spare parts from the manufacturer.

**Sample Image:**



*Picture for reference only*

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

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**Name of Company/Bidder**

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**Signature over Printed Name of  
Authorized Representative**

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**Date**

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## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>CNC Lathe Performance Turning Center</b>
<b>Item Code</b>	10-002
<b>Technology Area(s)</b>	CNC Machines

### Technical Specifications:

Control: Industrial control with 10.4" LCD screen

Travel X axis: 180 mm (7")

Travel Y axis: 225 mm (8.85")

Turret type: 8 position for ½" shank external tools

Tool holder: 4 boring for ¾" shank diameter

Swing over bed: 203 mm (8")

Servo motor: 350W brushless AC type for X, Y, and Z axis, 6000 rpm

Spindle: 3000 rpm, 2 hp, air-cooled

Chuck: 4"

Jaws: 3 self-centering

Flood Coolant: 10-gallon tank, 1/8 hp pump, 1500 rpm, adjustable flow valve, M-code controlled

Power Requirements: 220 VAC, 20 A

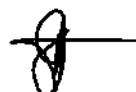
Space Requirement: Height should not be greater than 2.5m and width/length should not be greater than 4m (so that there will be no issue during ingress)

### Others:

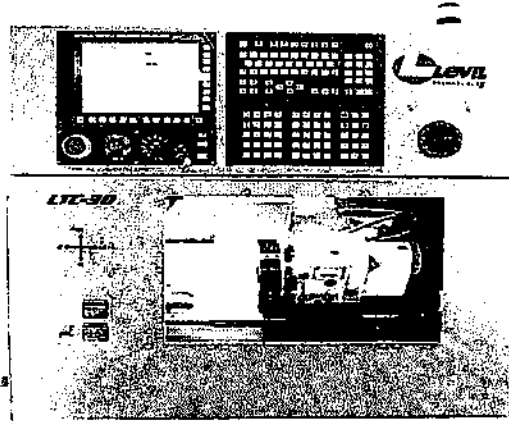
- Laptop with necessary application for design and control management
- Turning Certification Cart
- Turret coolant system
- Stainless steel enclosure
- Direct drive on all axes
- MDI unit and standard operator panel
- FOV/SOV controls and panel-mounted MPG
- Aluminum stand with leveling casters
- Safety magnetic door sensor for safety

### Other requirements:

- Compressor
- Machine Tooling
- Proof of extensive local service support (provide an organizational chart of the existing service staff, including certification from manufacturer)
- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate to conduct after-sales service and supply of spare parts from the manufacturer.



**Sample Image:**



*Picture for reference only*

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

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**Name of Company/Bidder**

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**Signature over Printed Name of  
Authorized Representative**

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**Date**

# Technical Specifications

**Lot 11 : Automotive simulator**

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Automotive Diesel Engine Trainer	Kindly refer to the technical specifications attached as Annex D11.	1	set			
2	Automotive Hybrid Engine Trainer		1	set			
3	Automotive Electric Engine Trainer		1	set			

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

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D11.

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

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

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

<b>Name of Company/Bidder</b>	<b>Signature over Printed Name of Authorized Representative</b>	<b>Date</b>
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# ANNEX D11

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
11	Automotive Simulator	11-001	Automotive Diesel Engine Trainer	Refer to Technical Specification of Item Code 11-001	Learning System	Evaluation of Brochure with picture and/or data sheet and training proposal	- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes
11	Automotive Simulator	11-002	Automotive Hybrid Engine Trainer	Refer to Technical Specification of Item Code 11-002	Learning System		- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes
11	Automotive Simulator	11-003	Automotive Electric Engine Trainer	Refer to Technical Specification of Item Code 11-003	Learning System		- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes



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

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Date



## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Automotive Diesel Engine Trainer</b>
<b>Item Code</b>	11-001
<b>Technology Area(s)</b>	Automotive Simulator

### General Description:

The engine test bed is specially designed for teaching diagnosis, tune up, fault finding and troubleshooting. The engine is mounted on a strong tubular steel frame.

### Technical Description:

- **Engine**

- The engine can be provided with a matched transmission and shifting mechanism with the following components:
  1. Cooling system including water pump/fan and radiator
  2. Fuel system including fuel pump and fuel tank
  3. Lubrication system including oil filter
  4. Exhaust manifold with silencer (muffler)
  5. Air filter
  6. Starter motor
  7. Electrical system including the alternator with voltage regulator
- Engine type: Fuel System Common Rail Direct Injection (CRDi) Intercooled with Variable Geometry Turbo (VGT)
- Number of Cylinders: 4 in-line
- Number of Valve: 16 valve single overhead camshaft
- Cylinder Capacity: approx. 2.0 Liters (1991cc)
- Bore x Stroke: 83.0 x 92.0 mm / 3.27 x 3.62 in
- Compression Ratio: 17.3: 1
- Maximum torque N · m: 305 Nm @ 1800 – 2500 Rpm
- Maximum Power: 110 Kw @ 3800 Rpm
- Oil capacity: 5.7 liter

- **Modular Frame**

- Cross braced heavy duty welded tubular steel frame
- Rear guard tube can be easily removed to increase work access space around the engine or to accommodate the connection of the dynamometer
- Rubber engine mounts are incorporated into the frame in order to reduce vibration
- The frame is mounted on hard rubber or nylon wheels for mobility, two wheels have locking mechanisms for stability during operation
- A 10-liter fuel tank and a 12 Volt battery are mounted to the frame



- All wiring is neatly routed next to frame members for operational safety
- Safety guard is provided to the needs for rotating objects
- **Standard Instrumentation and Control System**
  - Each test bed is provided with an instrumentation panel to control engine operation.
  - A throttle control is provided to set engine speed.
  - The instrument panel includes the following:
    1. key ignition switch
    2. operational light
    3. ampere meter
    4. oil pressure gauge
    5. water temperature gauge
    6. preheater indicator
- **Cooling System**
  - Water radiator matched the engine size
  - A radiator guard is provided for safety to prevent accidents from the radiator fan
  - The cooling system has a thermostat and a water temperature gauge for monitoring the engine during operation.
- **Electrical System**
  - 12 Volt battery
  - The engine has an alternator and a voltage regulator to allow the battery to be recharged during operation
  - An ampere gauge monitors the alternator output and charging during operation
  - A fuse has been installed to protect the wiring harness, engine and instrumentation
- **Fuel System**
  - 10-liter fuel tank that is connected to the fuel filter and fuel injection system.
- **Air Intake and Exhaust System**
  - Each engine is provided with a matched exhaust system including exhaust manifold with silencer (muffler). The air intake is also provided with an air cleaner for use during operation
- **Electrical Test Point**
  - All wiring connections to the ECU input and outputs are brought out to an electrical panel with terminals for each pin. This facilitates testing and monitoring of the engine and ECU. (For Common Rail Direct Injection Diesel Engine)
- **Electronic Fault System**
  - At least 10 electronic faults are provided to introduce problems for troubleshooting exercises



## **Instructional Materials**

- English
- Workshop manual covering repair and maintenance aspects for the engine and transmission.

## **Required Topics/Lessons:**

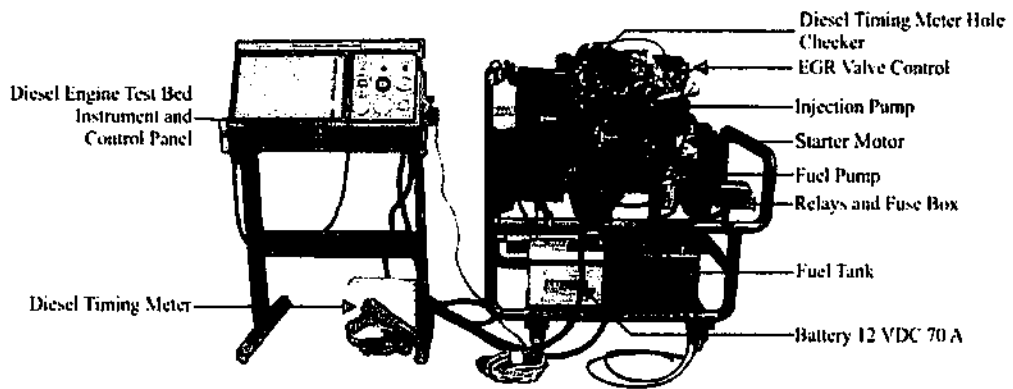
1. Familiarization with Diesel Engine Components: Cooling system, Fuel System, starting and charging system
2. Operate Diesel Engine in normal operation and observe the conditions
3. Understand the function of cooling system and working principles of cooling system
4. Understand the function of radiator
5. Understand the function of lubrication system
6. Observe and work with the lubrication system.
7. Understand the function of glow plug and analyze the trouble symptoms on glow plug
8. Observe and work with charging system
9. Troubleshoot a charging circuit
10. Understand the fuel system components in diesel engines
11. Observe and work with diesel engine fuel system
12. Understand the work principles of injection pump and the effect of injection timing
13. Adjust the injection timing on a diesel engine for advance and retard injection timing
14. Understand the function and work principle of diesel injector/ nozzle function
15. Observe and work with diesel injector/nozzle fuel circuit
16. Understand the work principles of intercooler
17. Observe and work with intercooler system
18. Understand the function and work principles of turbocharger.
19. Understand the function and work principles of EGR (Exhaust Gas Recirculation)

Overall size should not be greater than 2m (width) x 3m (height) to ensure that ingress of the machine will not be an issue.

## **Additional requirements:**

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

**Sample Image:**



*Picture for reference only*

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

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**Name of Company/Bidder**

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**Signature over Printed Name of Authorized Representative**

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**Date**

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## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Automotive Hybrid Engine Trainer</b>
<b>Item Code</b>	11-002
<b>Technology Area(s)</b>	Automotive Simulator

### Technical Description:

- 50 users for one (1) year
- Realistic Simulation of Hybrid Vehicle System with Real Time Layout
- Graphic System Presentation of Hybrid Vehicle components with components location and identification like in the real vehicle.
- Realistic Troubleshooting Exercises with Error Answer Feedback featuring electrical test points and electronic interactive fault simulator system.
- Realistic simulation of Hybrid Vehicle System with:
  - Real Time Results
  - Modular Panel Results
  - Modular Panel Graphic System Presentation of Hybrid Vehicle components
- Comprehensive Courseware for both Teacher and Student. Experiments Manuals consisting of the following:
  - Installation and Maintenance Guide of the trainer
  - Health and safety guidance
  - Background theory in Hybrid Vehicle System circuits and components
  - Task objectives
  - Practical Task step by step instruction
  - Question with Answer sheets
  - Student Job sheets

### Features:

- Mechanical and electrical power flow mimic
- Dashboard display with speed, RPM, ECO monitor (fuel) and temperature displays
- Brake and accelerator pedals
- Gear shift control and park push button
- Ignition Key and power push buttons
- Road simulation with gradient selector switch
- Controls to adjust external, internal, cabin and coolant temperatures
- Terminals to make DC and AC circuit measurements
- Hybrid transaxle panel featuring a planetary gear set working modes and the relationship between RPM, MG1, MG2 and the engine
- Scan tool to display diagnostic codes
- Manual or automatic fault insertion

## Learning Objectives:

- Identify the operation and components of hybrid systems in a vehicle
- Series, parallel system and series-parallel
- Identify the function of a hybrid transaxle and brake system
- Identify the operation and construction of synchronous generator and electric motor used in hybrid system vehicle
- Recognize different storage devices and technologies
- Hybrid engine
- Identify the function of speed sensor used in hybrid system vehicle
- Identify the function of Inverter and converter assembly used in hybrid system vehicle
- Identify the function of HV ECU used in hybrid system vehicle
- Module power-control
- Safety
- Routine maintenance and repairs
- Troubleshoot faults in electrical system of a hybrid vehicle

## Required Topics/Lessons:

- Automotive Essentials  
This must include at least 1000 lessons and quizzes with the following lessons:
  1. Tools
  2. Maintenance
  3. Periodic Check up
  4. Physics
  5. Sustainability
  6. Safety and Environment
  7. Engines
  8. Transmission and Clutch
  9. Cooling Systems
  10. Lubrication
  11. Gasoline System
  12. Diesel Systems
- Electric Drive  
A. This must include at least 100 lessons and quizzes with the following lessons:
  1. Basic Electrical
  2. Starting and Charging Systems
  3. Electronics
  4. Networks
  5. Introduction to Electric Drive
  6. Working on Hybrid Vehicles
  7. Categories of Electric Drive
  8. Components
  9. Electric Motors
  10. Hybrid Systems
  11. HV Charging System
  12. Safety Systems
  13. Battery Management System

- B. Must show duration of the lesson
  - C. Includes LMS
  - D. Includes simulator
  - E. Updated weekly
  - F. Mobile device access
  - G. Must be online with 99.9% uptime
  - H. Must include text-to-speech
- **Engine Management Simulator**  
This must include at least 50 faults with the following tools during fault finding:
    1. Oscilloscope
    2. Multimeter
    3. Diagnostic System
    4. Breakout Box
    5. Fuel pressure gauge
    6. Jump Starter
    7. Replace parts
    8. Replace wires
    9. Invoice
- **Learning Management System**  
This must include the following:
    - A. Browser-based drag & drop
    - B. Authoring tool
    - C. Text-to-speech feature
    - D. Mobile device access
    - E. Must be online with 99.9% uptime
    - F. Must show progress of the student on his lessons
    - G. Data can be downloaded into a spreadsheet file.
- **Customized Modules**  
This must include the following:
    - A. Ability to create own module
    - B. HTML5
    - C. SCORM-compliant
    - D. Text-to-speech option
    - E. Can upload image files
    - F. Can import websites
    - G. Can have at least 4 different question types (Multiple Choice, Multiple Response, Numerical Open Question, Text Open Question)

Overall size should not be greater than 2m (width) x 3m (height) to ensure that ingress of the machine will not be an issue.

**Accessories:**

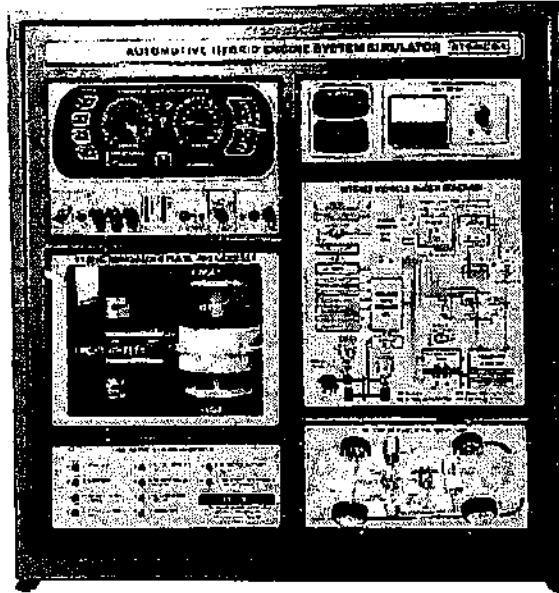
1. Experiments Manual
2. Test Lead and Jumper cables



**Additional requirements:**

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

**Sample Image:**



*Picture for reference only*

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

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**Name of Company/Bidder**

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**Signature over Printed Name of  
Authorized Representative**

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**Date**



## TECHNICAL SPECIFICATION

<b>Name of The Learning System</b>	<b>Automotive Electric Engine Trainer</b>
<b>Item Code</b>	11-003
<b>Technology Area(s)</b>	Automotive Simulator

### Technical Description:

- Realistic Simulation of Electrical Vehicle System with Real Time Results and Modular Panel Layout
- Graphic System Presentation of Electrical Vehicle components with components location and identification like in the real vehicle
- Realistic Troubleshooting Exercises with Error Answer Feedback featuring electrical test points and electronic interactive fault simulator system
- Electrical Vehicle schematic panel that shows clearly the complete electrical wiring with test points
- Comprehensive Courseware for both Teacher and Student. Experiments Manuals consisting of the following:
  - Installation and Maintenance Guide of the trainer
  - Health and safety guidance
  - Background theory in Electrical Vehicle System circuits and components
  - Task objectives
  - Practical Task step by step instruction
  - Question with Answer sheets
  - Student Job sheets.

### System and Components:

- Power control panel
- Interactive Fault Panel and Fault Troubleshooting Answer Panel
- Dashboard and Instrument Panel
- Electric Motor and Drive Train Simulator
- Scan Tool and Voltmeter
- Electric Vehicle Block Diagram
- Electric Vehicle Principle Mechanical and Electrical Power Flow

### Required Topics/Lessons:

- Familiarization of Electric Vehicle System Simulator
- Understand how to operate the immobilizer key and start stop
- Observe the battery level and EV battery temperature
- Observe the parking brake and gear shift control
- Observe the road gradient and gear shift control
- Observe A/C ON-OFF, ambient air temperature selector, and A/C temperature set point
- Observe the accelerator and brake pedal
- Observe the vehicle speed, electric motor and drive train simulator panel
- Observe the mechanical, electrical power flow panel

- Observe the battery level on charging mode
- Troubleshooting and Electrical measurement

Overall size should not be greater than 2m (width) x 3m (height) to ensure that ingress of the machine will not be an issue.

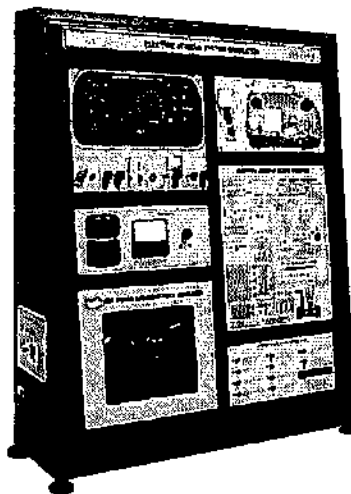
**Accessories:**

1. Experiments Manual
2. Test Lead and Jumper cables

**Additional requirements:**

- Certificate of authority to sell from the manufacturer or local distributor/reseller
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**Sample Image:**



*Picture for reference only*

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<b>Name of Company/Bidder</b>	<b>Signature over Printed Name of Authorized Representative</b>	<b>Date</b>
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# Technical Specifications

**Lot 12 : 3D Printing Technology**

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Metal 3D Printer	Kindly refer to the technical specifications attached as <b>Annex D12.</b>	1	set			
2	Fused Deposition Modeling 3D Printer		5	set			
3	3D Scanner		5	set			

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

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D12.

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

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

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Name of Company/Bidder

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Signature over Printed Name of Authorized Representative

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Date



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**ANNEX D12**

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
12	3D Printing Technology	12-001	Metal 3D Printer	Refer to Technical Specification of Item Code 12-001	Equipment	Evaluation of Brochure with picture and/or data sheet and training proposal	- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes
12	3D Printing Technology	12-002	Fused Deposition Modeling 3D Printer	Refer to Technical Specification of Item Code 12-002	Equipment		- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes
12	3D Printing Technology	12-003	3D Scanner	Refer to Technical Specification of Item Code 12-003	Equipment		- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	Yes



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

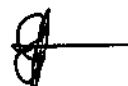
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**Name of Company/Bidder**                      **Signature over Printed Name of Authorized Representative**                      **Date**

## TECHNICAL SPECIFICATION

<b>Name of The Equipment</b>	<b>Metal 3D Printer</b>
<b>Item Code</b>	12-001
<b>Technology Area(s)</b>	3D Printing Technology

### Technical Specification

- **Print technology:** Metal Fused Filament Fabrication (MFFF) with capability to print metal materials and ceramic release
- **Build volume:** at least 300 x 210 x 180 mm
- **Material Compatibility:** Compatible with stainless steel, Tool Steel, High Purity Copper (99.8%), Inconel, Ceramic release
- **Print Head:** Dual Extrusion Print head Two nozzles — Metal material and release material
- **Nozzle diameter:** 0.4mm
- **Print Head Technology:** Dual extruder
- **Layer resolution:** Compatible up to 50 micron or better
- **Certification:** ISO/IEC 27001
- **Enclosure:** Fully enclosed system with heated print chamber
- **Heated bed:** must be able to reach at least 100 degree celsius or higher
- **Printer should be able to connect to a printer management system that can track the users, print times, print consumption and other statistics**
- **Bed leveling should be an automatic leveling system**
- **Connectivity:** Wifi, Ethernet, LAN, USB Drive Connectivity
- **Power Requirements:** 110-240VAC, 60Hz, Single-phase
- **File type:** STL
- **Includes separate unit of Laboratory Sintering Furnace capable of reaching at least 1300C and is carbon free retort**
  - **Size Capacity:** 140mm ID x 300mm L and can accommodate batch processing
- **All metal materials from printing system are able to be sintered in furnace**
- **Gas Type:** Argon and Mixes gas, locally available - Open source non-proprietary
- **Includes separate unit of debinding station using Oxalic Acid Fluid or equivalent with work envelop of At least 300 x 200 x 200 mm**
- **Safety Management must include High vapor shut off and Low fluid level shut off**
- **Wash fluid must be locally available - Open source non-proprietary**
- **Includes slicing software (perpetual license) with template of material parameters readily available for debinding and sintering process**
- **Software Security:** Two-factor authentication, org admin access, single sign-on
- **Metal 3D printer, debinding station and sintering furnace should be the same brand and can be operated using one software for compatibility**
- **Different layer settings do not require any nozzle change**
- **Different metal materials do not require any nozzle change**
- **Offer must include training certification from the manufacturer for the end-user to become Certified Additive Expert in Metal 3D Printing. Attached certification curriculum.**



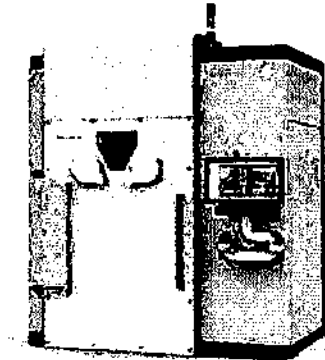
**Additional requirements:**

- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate of End of Life (EOL) Service from the Manufacturer and/or Supplier for 5 years
- Proof of certified trainer issued by the manufacturer

**Package inclusion:**

- 1 unit debinder
- 1 unit sintering furnace
- 1 spool each metal material - stainless steel and tool steel
- 1 set of external exhaust and gas handling for furnace
- 1 set of gas and fluid

**Sample Image:**



*Picture for reference only*

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

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**Name of Company/Bidder**

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**Signature over Printed Name of  
Authorized Representative**

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**Date**

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## TECHNICAL SPECIFICATION

<b>Name of The Equipment</b>	<b>Fused Deposition Modeling 3D Printer</b>
<b>Item Code</b>	12-002
<b>Technology Area(s)</b>	3D Printing Technology

### Technical Specification

Nozzle temperature	At least 260 degree celsius
Printing size	At least 200 x 200 x 250 mm or larger
Maximum printing speed	250mm/s
Leveling	Auto-levelling
Extruder	Single; Nozzle size: 0.4mm
Motherboard	32 bit silent motherboard or equivalent
Data transmission	SD card and USB/Type C USB
Language	English
Others	Touchscreen
Accessories	<ul style="list-style-type: none"> <li>• Extruder cleaning kit</li> <li>• 4 spool PLA</li> <li>• 2 spool ABS</li> <li>• 2 spool PETG</li> </ul>
Other Requirements	<ul style="list-style-type: none"> <li>• Certificate of authority to sell from the manufacturer or local distributor/reseller</li> <li>• Certificate of End of Life (EOL) Service from the Manufacturer and/or Supplier for 5 years</li> </ul>

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Authorized Representative

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## TECHNICAL SPECIFICATION

<b>Name of The Equipment</b>	<b>3D Scanner</b>
<b>Item Code</b>	12-003
<b>Technology Area(s)</b>	3D Printing Technology

### Technical Specification

- Handheld 3D Scanner for medium to large object with built-in touchscreen interface
- 3D point accuracy up to 0.1mm
- 3D resolution up to 0.6mm or better
- Field of View: 280 x 360mm to 490 x 650mm
- Data processing algorithms: Geometry and textured based
- Ability to capture texture, light source: white LED
- Texture resolution: 2.3mp
- 3D Reconstruction rate: 16fps or equivalent
- Data acquisition speed : at least 3mln points /sec or higher
- Built-in onboard screen, touchscreen interface
- System requirements: Intel core i7 or i9, 64+GB RAM NVIDIA GPU with 8+GB VRAM Complete accessories
- 3D Formats: OBJ, PLY, STL, etc
- User's Manual (English)
- Certificate of authority to sell from the manufacturer or local distributor/reseller
- Certificate of End of Life (EOL) Service from the Manufacturer and/or Supplier for 5 Years
- Training certificate provided by manufacturer to certified trainer (see section 6 of the bidding document for details)

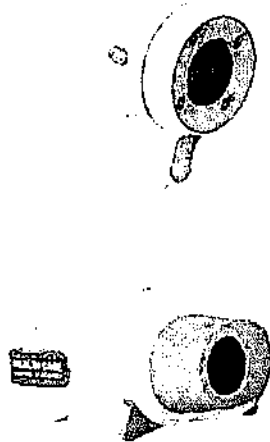
### Package inclusions:

- 1 Unit Battery
- 1 Unit Hard Case
- 1 Set USB Kit
- 1 Set Licensed 3D Scanning Software





**Sample Image:**



*Picture for reference only*

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**Name of Company/Bidder**

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**Signature over Printed Name of  
Authorized Representative**

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**Date**

# Technical Specifications

**Lot 13**

**: Photography and Videography**

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Digital Mirrorless Camera with Video	Kindly refer to the technical specifications attached as <b>Annex D13.</b>	5	set			

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All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D13.

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

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

<b>Name of Company/Bidder</b>	<b>Signature over Printed Name of Authorized Representative</b>	<b>Date</b>
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**ANNEX D13**

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
13	Photography and Videography	13-001	Digital Mirrorless Camera with Video	Refer to Technical Specification of Item Code 13-001	Equipment	Evaluation of Brochure with picture and/or data sheet and training proposal	<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> </ul>	Yes

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

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Name of Company/Bidder

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Signature over Printed Name of Authorized Representative

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Date

## TECHNICAL SPECIFICATION

<b>Name of the Learning System</b>	<b>Digital Mirrorless Camera with Video</b>
<b>Item Code</b>	13-001
<b>Technology Area(s)</b>	Photography and Videography

### Mirrorless Camera (1 unit)

#### Specification

- 45MP Full-Frame CMOS Sensor
- 8K - 8192 x 4320 video resolution
- Sensor-Shift 5-Axis Image Stabilization
- 12 fps Mech. Shutter, 20 fps E. Shutter
- Dual Pixel CMOS AF II with 1053 Points
- 3.2" Vari-Angle Touchscreen LCD
- 5760k dot Electronic viewfinder
- Weather Sealed Body
- Dual memory slot
- Movie format: MP4
- Image format: JPG, RAW
- Terminal: USB type C, Microphone, Headphone, Video terminal
- Image stabilizer: 5 axis in-body both for stills and video

#### Accessories (1 set per body)

- Battery (3 sets, 1 standard accessory plus 2 backup battery)
- Battery grip with wireless file transmitter
- High speed memory card with at least 128GB capacity (3pcs)
- AC power adapter/battery charger
- Cable to connect camera to computer
- Cable to connect camera to display device/monitor
- Hot-shoe mounted microphone with noise filter
- Headphone
- Wireless remote control
- Shoulder strap
- Hot shoe cover
- Utility software
- Owner's manual

#### Lenses (1 set per lens)

- Prime lens#1
  - 50mm, aperture f1.2~f1.8
    - includes:
      - Lens hood
      - UV and skylight filter
      - Polarizing filter
      - Protective gear/bag



- Prime lens#2
  - 85mm, aperture f1.2~f1.8
    - includes:
      - Lens hood
      - UV and skylight filter
      - Polarizing filter
      - Protective gear/bag
- Standard zoom lens#1
  - Focal length 24mm-70mm
  - aperture range of f2.8~f22
    - includes:
      - Lens hood
      - UV and skylight filter
      - Polarizing filter
      - Neutral density filter
      - Protective gear/bag
- Ultra-wide zoom
  - Focal length 11mm-24 mm or equivalent, wherein the equivalence should not be greater than 135 mm (example 50mm~135mm)
  - aperture f4
    - includes:
      - Lens hood
      - UV and skylight filter
      - Polarizing filter
      - Neutral density filter
      - Protective gear/bag

#### **High-speed Flash (1 set)**

- Hot-shoe mount
- TTL
- Can be tilted and can rotated
- Wireless Master/Slave TTL functionality
- Supports high-speed flash sync and multi-flash lighting
- Zoom range 24-105mm
- Weather resistant
- Runs on AA batteries

#### **Flash accessories**

- Rechargeable battery (2 sets per flash, total number of batteries depends on the number of batteries required by the flash)
- Smart battery charger at least 4 simultaneous charging (4pcs)
- Color filter with honeycomb and barndoor (1 set per flash)

#### *Note:*

- Lenses compatible with the mirrorless camera
- Lenses with focal lengths 100mm and above requires image stabilization, unless camera body has a built-in image stabilization feature
- Lenses and flash should be of the same brand with the body



**Camera Tripod (1 pc)**

- Aluminum
- Height: 1.5-2 ft (folded), 4-6 ft (extended)
- Quick release flip-lock legs
- Ball head with easy locking mechanism
- Supports low angle photography (inverted camera set-up)
- Supports 22 kg load
- No load weight: 1~1.5kg
- Rubber/no-slip footing
- Includes tripod bag

**Hardcase (1 pc)**

- ABS Plastic
- Waterproof
- Trolley type
- With foam divider
- With key lock/padlock
- Can contain 1 set of camera body, lenses and accessories

**Additional Requirements:**

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

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

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**Name of Company/Bidder**

\_\_\_\_\_  
**Signature over Printed Name of  
Authorized Representative**

\_\_\_\_\_  
**Date**



# Technical Specifications

Lot 14

: IT Equipment

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Desktop Computer for Productivity Application	Kindly refer to the technical specifications attached as Annex D14.	125	set			
2	Desktop Computer for Photo and Video Editing		5	set			
3	Laptop		150	set			
4	Interactive SMART TV		15	set			
5	A3 Inkjet Printer		15	set			
6	A4 Inkjet Printer		15	set			
7	Network Attached Storage		5	set			
8	Wireless Router		50	set			

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

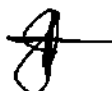
Datasheet/Specification Sheet/Brochure is a document that summarizes the performance and other characteristics of a product, machine, component that comes along with the product from its release from the manufacturer.

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Date



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**ANNEX D14**

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
14	IT Equipment	14-001	Desktop Computer for Productivity Application	<ul style="list-style-type: none"> <li>- OS: Windows 11 or higher</li> <li>- Core i7 11th Gen or higher</li> <li>- 8GB DDR4 or faster</li> <li>- 1TB HDD, 2GB dedicated graphics</li> <li>- 220VAC 60Hz compliant</li> <li>- 21.5 inch monitor FHD</li> <li>- With Mouse and Keyboard</li> <li>- With MS Office</li> </ul>	Equipment		<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> <li>- 24 hr burn-in test</li> </ul>	Yes
14	IT Equipment	14-002	Desktop Computer for Photo and Video Editing	<ul style="list-style-type: none"> <li>- M2 Chip or higher</li> <li>- IOS newest version</li> <li>- 8-core CPU</li> <li>- 10-core GPU or higher</li> <li>- 2TB storage or higher</li> <li>- 24-inch 4.5K Retina Display or better</li> <li>- 16GB memory or higher</li> <li>- Wireless and wired ethernet</li> <li>- 220VAC 60Hz compliant</li> </ul> <p>Includes:</p> <ul style="list-style-type: none"> <li>- Final Cut Pro</li> <li>- Logic Pro</li> <li>- Magic keyboard with touch ID</li> <li>- Magic mouse</li> </ul> <p>Additional Requirements:</p> <p>Certificate of authority to sell from the manufacturer or local distributor/reseller</p> <p>Certificate of End of Life (EOL) Service from Manufacturer (5 years)</p>	Equipment	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> <li>- 24 hr burn-in test</li> </ul>	Yes
14	IT Equipment	14-003	Laptop	<p>Processor &amp; Chipset: 16 cores 32 threads</p> <p>RAM Memory: 32 GB DDR5 4800 MHz</p> <p>Solid State Drive (SSD): 2TB + 2TB M.2 NVMe PCIe 4.0 Performance RAID0 SSD</p> <p>Screen Size: 15-16 inch</p> <p>Type &amp; Capacity: 90WHrs, 4S1P, 4-cell Li-ion battery</p> <p>Battery Timing: Up to 8 Hours</p> <p>Power Supply: Wattage ø6.0, 240W AC</p>	Equipment		<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> <li>- 24 hr burn-in test</li> </ul>	Yes



Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
				Adapter Output: 20V DC, 12A, 240W Input: 100~240V AC 50/60Hz universal  with licensed OS (Windows 11 or higher) with licensed Microsoft Office 2019 or higher				
14	IT Equipment	14-004	Interactive SMART TV	75" LED Touchscreen 4K Ultra HD Connectivity: Wi-Fi, LAN 3 HDMI Ports and USB HDMI, Audio, Headphone output 200 PQI (Picture Quality Index), 3200 HDR (High Dynamic Range) AC 110V-240V 50/60Hz Includes Operation Manual, Remote Control, Base Stand with HDMI cable, 5 meters built-in camera and mic (optional)  Additional Requirements: Certificate of authority to sell from the manufacturer or local distributor/reseller Certificate of End of Life (EOL) Service from Manufacturer (5 years)	Equipment	Evaluation of Brochure with picture and/or data sheet	- Checking of specification and quantity (offered vs. actual) - Check package completeness - Functionality test - 24 hr burn-in test	Yes
14	IT Equipment	14-005	A3 Inkjet Printer	<ul style="list-style-type: none"> <li>• print, scan, copy, fax</li> <li>• wide format inkjet printer</li> <li>• Tank type ink system</li> <li>• 1200 x 4800 dpi print resolution</li> <li>• print width 291mm, 297mm (borderless)</li> <li>• 250 or above sheets input tray</li> <li>• 100 sheets output tray</li> <li>• LCD touch screen</li> <li>• LAN and WiFi Connectivity</li> <li>• Supports mobile device direct print and full duplex printing</li> </ul>	Equipment		- Checking of specification and quantity (offered vs. actual) - Check package completeness - Functionality test	Yes

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
14	IT Equipment	14-006	A4 Inkjet Printer	<ul style="list-style-type: none"> <li>• With Print, Scan, Copy, Fax features</li> <li>• Tank type ink system</li> <li>• Supports A4 and Legal Paper sizes</li> <li>• Approximately 15 page per minute (Black)</li> <li>• Can scan documents over network environment</li> <li>• Photo Quality</li> <li>• WiFi Connectivity</li> <li>• Support full duplex printing</li> </ul>	Equipment	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> </ul>	Yes
14	IT Equipment	14-007	Network Attached Storage	<ul style="list-style-type: none"> <li>- Dual Core Processor or higher</li> <li>- 6GB RAM or higher</li> <li>- 4 Bays or more</li> <li>- Hot swappable HD</li> <li>- 2 built in M.2 SSD</li> <li>- 2x GbE LAN</li> <li>- 2 USB port</li> <li>- Windows and Mac Compatible</li> </ul> <p>Includes:</p> <ul style="list-style-type: none"> <li>- 4x8TB NAS HD</li> <li>- 220V 60Hz Power supply</li> <li>- Management Software/OS</li> </ul>	Tool		<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> <li>- 24 hr burn-in test</li> </ul>	Yes

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
14	IT Equipment	14-008	Wireless Router	Dual band 2.4 and 5 GHz Networks Standard: 802.11b, 802.11a, 802.11n, 802.11ac, 802.11g 3000-7200 Mbps 6 x Gigabit Ethernet LAN Ports 1 x Gigabit Ethernet WAN Port 2 x USB 3.0 Ports Google Assistant Integration Amazon Alexa Integration -Adaptor/Charger 220 - 240v 60Hz	Equipment	Evaluation of Brochure with picture and/or data sheet	- Checking of specification and quantity (offered vs. actual) - Check package completeness - Functionality test - 24 hr burn-in test	Yes



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Name of Company/Bidder

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Signature over Printed Name of Authorized Representative

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Date

# Technical Specifications

**Lot 15**

**: Sound System**

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Outdoor speaker with mixer amplifier	Kindly refer to the technical specifications attached as Annex D15.	5	set			
2	2.1 Speaker with subwoofer		5	set			
3	Audio Mixer		5	set			
4	Wireless Microphone		10	set			
5	Headphone		14	set			

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# ANNEX D15

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
15	Sound System	15-001	Outdoor speaker with mixer amplifier	<ul style="list-style-type: none"> <li>- 8-channel mixer with 2 x 325-350 watts amplified output, bluetooth, USB, Stereo Rec. Phone jack, graphic equalizer, FX and Reverb</li> <li>- 1 pair 2-way bass reflex passive speaker 12" x 500 watts, 8 ohms, plastic molded, 45Hz~20Khz</li> </ul>	Equipment		<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> </ul>	Yes
15	Sound System	15-002	2.1 Speaker with subwoofer	<ul style="list-style-type: none"> <li>- 2 satellite speaker, 1 Subwoofer</li> <li>- Total power 40 Watts or higher</li> <li>- 3.5 Jack, USB and Bluetooth connection</li> </ul>	Equipment	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> </ul>	Yes

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
15	Sound System	15-003	Audio Mixer	<ul style="list-style-type: none"> <li>- Type: Analog amplified (710 watts + 710 watts 4 ohms)</li> <li>- Channels: 12</li> <li>- Equalizer: 3 Band (High, MID, Low), reverb, gain and balance control per channel</li> <li>- Input: 4 x 1/4", 2 x stereo RCA, 1 x 1/8" (stereo Line)</li> <li>- Output: (Main) 2 x SpeakON-1/4" combo, (main stereo line) 2 x 1/4", (aux 1, aux2, stereo out) 2 x 1/4", (record out) 1 x stereo RCA</li> <li>- USB support/player</li> <li>- AC 220 - 240v 60Hz</li> </ul>	Equipment	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> </ul>	Yes

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
15	Sound System	15-004	Wireless Microphone	<ul style="list-style-type: none"> <li>- 4 Channel UHF receiver</li> <li>- 2 pieces handheld wireless microphone</li> <li>- 2 Lapel Mic with Wireless Transmitter (clip type)</li> <li>- Range: at least 250 feet line of sight</li> <li>- AF/RF led indicator</li> <li>- XLR port</li> <li>- Volume and echo control per channel</li> <li>- AC 220 - 240v 60Hz</li> </ul> <p>Includes:</p> <ul style="list-style-type: none"> <li>- 4 pieces, 1m long receiver to mixer cable (XLR)</li> </ul>	Equipment	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> </ul>	Yes
15	Sound System	15-005	Headphone	<ul style="list-style-type: none"> <li>- Over the ear type</li> <li>- Hi-Res</li> <li>- Bluetooth 5.0 or higher</li> <li>- Active Noise Cancellation controlled through App</li> <li>- 40mm driver</li> <li>- At Least 60Hr playtime</li> <li>- 2 Microphones with AI Algorithm</li> </ul>	Equipment		<ul style="list-style-type: none"> <li>- Checking of specification and quantity (offered vs. actual)</li> <li>- Check package completeness</li> <li>- Functionality test</li> </ul>	Yes



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Name of Company/Bidder

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Signature over Printed Name of Authorized Representative

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Date

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# Technical Specifications

Lot 16

: Closed-circuit Television Units

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Dome Turret Type 4MP Camera with Audio	Kindly refer to the technical specifications attached as Annex D16.	35	set			
2	Bullet Type Camera 2MP		20	set			

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<b>Name of Company/Bidder</b>	<b>Signature over Printed Name of Authorized Representative</b>	<b>Date</b>
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**ANNEX D16**

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
16	Closed-circuit Television Units	16-001	Dome Turret Type 4MP Camera with Audio	1/2.8" Progressive Scan CMOS H.265+/H.265/H.264+/H.264/MJPEG Color: 0.002 lux @(F1.4, AGC ON), 0 lux with IR 25fps/30fps(1920×1080) VCA functions; 3 streams 3D DNR; BLC; ICR; EXIR; DC12V&PoE Built-in micro SD/SDHC/SDXC slot Connect cloud service	Equipment		- Checking of specification and quantity (offered vs. actual) - Check package completeness - Functionality test - 24 hr burn-in test	Yes
16	Closed-circuit Television Units	16-002	Bullet Type Camera 2MP	1/2.8" Progressive Scan CMOS H.265+/H.265/H.264+/H.264/MJPEG Color: 0.002 lux @(F1.4, AGC ON), 0 lux with IR 25fps/30fps(1920×1080) VCA functions; 3 streams 3D DNR; BLC; ICR; EXIR; DC12V&PoE Built-in micro SD/SDHC/SDXC slot Connect cloud service Built-in microphone and speaker, Audio/Alarm I/O	Equipment	Evaluation of Brochure with picture and/or data sheet	- Checking of specification and quantity (offered vs. actual) - Check package completeness - Functionality test - 24 hr burn-in test	Yes



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\_\_\_\_\_  
Name of Company/Bidder

\_\_\_\_\_  
Signature over Printed Name of Authorized Representative

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Date

# Technical Specifications

Lot 17

: Air Conditioning Units

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Air Conditioning Unit, 2.5 HP Split Type- Floor Mounted	Kindly refer to the technical specifications attached as Annex D17.	25	set			
2	Air Conditioning Unit, 1.5 HP Inverter- Floor Mounted		10	set			
3	Air Conditioning Unit, 1.5 HP Split Type- Wall Mounted		30	set			

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**ANNEX D17**

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
17	Video Editing Equipment	17-001	Air Conditioning Unit, 2.5 HP Split Type- Floor Mounted	<ul style="list-style-type: none"> <li>• 2.5 hp</li> <li>• Split Type (Floor Mounted)</li> <li>• Inverter</li> <li>• Power Consumption: 200-2200W</li> <li>• Max Cooling Capacity: 20,500 kJ/h</li> <li>• Indoor Noise Level (Lo): 38-43 dB(A)</li> <li>• Indoor Air Flow (Hi): 635-700 cfm</li> <li>• Power Supply: 220-240 volts, 60 Hz, 1 phase</li> <li>• supply, delivery, installation and commissioning</li> </ul>	Equipment		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	Yes
17	 Video Editing Equipment	17-002	Air Conditioning Unit, 1.5 HP Inverter- Floor Mounted	<ul style="list-style-type: none"> <li>• 1.5 hp</li> <li>• Split Type (Floor Mounted)</li> <li>• Inverter</li> <li>• Power Consumption: 0.82 kW - 1.12 kW</li> <li>• Rated Capacity: 3.5 kW (Cool); 4.5 kW (Heat)</li> <li>• Indoor Noise Level: 29-40 dBA</li> <li>• Indoor Air Flow: 106-153 (Cool); 123-178 (Heat)</li> <li>• Power Supply: 220-240 volts, 60 Hz, 1 phase</li> <li>• supply, delivery, installation and commissioning</li> </ul>	Equipment	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	

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Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
17	Video Editing Equipment	17-003	Air Conditioning Unit, 1.5 HP Split Type- Wall Mounted	<ul style="list-style-type: none"> <li>• 1.5 hp</li> <li>• Split Type (Wall Mounted)</li> <li>• Inverter</li> <li>• Power Consumption: 160-1890W</li> <li>• Max Cooling Capacity: 14,298 kJ/h</li> <li>• Indoor Noise Level (Lo): 31 dB(A)</li> <li>• Indoor Air Flow (Hi): 600 m3/h</li> <li>• Power Supply: 220-240 volts, 60 Hz, 1 phase</li> <li>• WiFi IOTS</li> <li>• supply, delivery, installation and commissioning</li> </ul>	Equipment	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	Yes

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



\_\_\_\_\_  
Name of Company/Bidder

\_\_\_\_\_  
Signature over Printed Name of Authorized Representative

\_\_\_\_\_  
Date

d

# Technical Specifications

Lot 18

: Teaching and presentation equipment

No.	Item	Minimum Agency Specifications Unless Otherwise Specified	Qty	Unit	Statement of Compliance*	Make Brand / Model	Reference
1	Trainer table, long	Kindly refer to the technical specifications attached as Annex D18.	25	pc			
2	Foldable Training Table		250	pc			
3	Computer Table		25	pc			
4	Conference Table, 14-seater		5	pc			
5	Executive Chair		75	pc			
6	Gas Lift Chair		250	pc			
7	Chair		500	pc			
8	Gang Chair		5	pc			
9	Reception Desk		5	pc			
10	Locker Cabinet		15	pc			
11	4-Layer Lateral Filing Cabinet		15	pc			
12	Full Height Glass Sliding Door Cabinet		15	pc			
13	5 layer open shelf cabinet		15	pc			

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

All tools, equipment, gadgets and electrically operated instruments should have Standard Manufacturers Manual and/or Datasheet/Specification Sheet/Brochure as indicated in Annex D18.

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


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

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


\_\_\_\_\_  
Name of Company/Bidder

\_\_\_\_\_  
Signature over Printed Name of Authorized Representative


\_\_\_\_\_  
Date



**ANNEX D18**

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
18	Office Furniture 	18-001	Trainer table, long	2 layer folding table 140x60x75 cm Steel frame black Wood top mahogany, 1 Inch thick With 4-adjustable feet, double spring design	Furniture	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A

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Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
18	Office Furniture	18-002	Foldable Training Table	MDF top and modesty, Color: customized, flat edge Steel frame, Color: Gray Size: 140cm L x 50cm W x75cm H Two-layer With 4 caster wheels	Furniture	Evaluation of Brochure with picture and/or data sheet	- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	N/A
18	 Office Furniture	18-003	Computer Table	<ul style="list-style-type: none"> <li>• Dimension (LxW): 1200 x 600 mm</li> <li>• Material: MFC Worktop in Laminate Finish</li> <li>• Adjustable height: 2-lifting column for height in 700-1180mm, 2mm thick Rectangular steel tube, 4-preset LED memory controller</li> <li>• Motor: Single motor, 90-230V, speed in at least 20mm/s</li> <li>• 4-hidden movable wheels</li> <li>• Steel Legs in Powder Coat Finish</li> </ul>	Furniture		- Checking the conformity with the quantity including parts and accessories - Checking the conformity of hardware vis-a-vis offered specifications - Functionality testing	N/A

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Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
18	Office Furniture	18-004	Conference Table, 14-seater	<ul style="list-style-type: none"> <li>• 14 pax Conference Table</li> <li>• Main Table: 3600mm L x 1200mm W x 750mm H</li> <li>• Finish: E1 standard, beech color</li> <li>• Top: 50mm thick board</li> <li>• Sidings in 2mm PVC edge band</li> <li>• Boat-shaped top</li> <li>• Wire management (optional)</li> <li>• With mid laminate accent</li> <li>• Metal legs</li> <li>• Adjustable feet leveler</li> </ul>	Furniture	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A
18	Office Furniture	18-005	Executive Chair	<ul style="list-style-type: none"> <li>• High back chair with armrest</li> <li>• Material: Polyurethane Upholstered seat and back</li> <li>• Armrest and starbase</li> <li>• Gas Lift: 75mm - 85mm</li> <li>• Caster Type: Polypropylene Plastic</li> <li>• Chair Seating Capacity: 120- 130kgs</li> <li>• Tilt-Lock Function</li> <li>• Pneumatic Height Adjustment</li> <li>• 360° Swivel Function</li> </ul>	Furniture		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A
18	Office Furniture	18-006	Gas Lift Chair	<ul style="list-style-type: none"> <li>• Midback chair with armrest</li> <li>• Material: Fabric seat and mesh back</li> <li>• Armrest and starbase</li> <li>• Gas Lift: 75mm - 85mm</li> <li>• Caster Type: Polypropylene Plastic</li> <li>• Chair Seating Capacity: 120- 130kgs</li> <li>• Tilt-Lock Function</li> <li>• Pneumatic Height Adjustment</li> <li>• 360° Swivel Function</li> </ul>	Furniture		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A
18	Office Furniture	18-007	Chair	<ul style="list-style-type: none"> <li>• Monoblock Chair</li> <li>• Material: High Grade Plastic</li> <li>• Stackable</li> <li>• Color: White</li> <li>• Seat Width: 383 mm</li> <li>• Seat Height: 446 mm</li> <li>• Thickness: 45 mm</li> <li>• Seat Depth: 330 - 400 mm</li> <li>• Backrest Height: 800 - 900 mm</li> </ul>	Furniture		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A



Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
18	Office Furniture	18-008	Gang Chair	<ul style="list-style-type: none"> <li>• 5-seater</li> <li>• L290*W62*H76 (cm)</li> <li>• Seat Width: 46CM</li> <li>• Gross Weight: 26 KG</li> <li>• Weight-bearing: 150KG per seat</li> <li>• Backrest height: 52 cm</li> <li>• Gray</li> <li>• Materials: Arm and leg frames are steel with chrome plated finish, beam section steel, powder coated</li> <li>• Perforated seat design</li> </ul>	Furniture	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A
18	Office Furniture	18-009	Reception Desk	Refer to Technical Specification of Item Code 18-009	Furniture		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A
18	Office Furniture	18-010	Locker Cabinet	<ul style="list-style-type: none"> <li>• 9-door locker</li> <li>• 3-Layer Utility Cabinet</li> <li>• Material: Steel Metal</li> <li>• Color: Powder coated Light Gray</li> <li>• Dimension: W900-1000 x D400-500 x H1850-2000 mm</li> <li>• Gauge: 22mm</li> <li>• with hasp provision for padlock and built-in locking mechanism</li> </ul>	Furniture		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A
18	Office Furniture	18-011	4-Layer Lateral Filing Cabinet	Dimension: W 900mm x D 450mm x H 1331 mm 4 drawer lateral cabinet Central lock Material: Steel A4/F4 File Storage Color: White drawers and brown/bronze sides	Furniture		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A
18	Office Furniture	18-012	Full Height Glass Sliding Door Cabinet	<ul style="list-style-type: none"> <li>• Steel Cabinet with Glass Sliding Door</li> <li>Width: 450 cm (outer side of the cabinet)</li> <li>Depth: 90 cm +-10% (outer side of the cabinet)</li> <li>Height: 185 cm +- 10% (from floor to top edge of the cabinet)</li> <li>• A4 /F4 file storage</li> <li>• 4 adjustable shelves, 5 levels</li> </ul>	Furniture		<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A

Lot No.	Lot	Code	Item	Agency Specification	Classification	Test Procedure (Post Evaluation)	Test Procedure (Inspection and Acceptance)	English Manual
				<ul style="list-style-type: none"> <li>Centralized Locking Mechanism</li> <li>Color: Textured Light Grey</li> </ul>				
18	Office Furniture	18-013	5 layer open shelf cabinet	Dimension: 1800(H) x 900(W) x 400(D) mm 5 Layer open shelf, adjustable shelf 0.6mm thickness Steel material Textured light gray	Furniture	Evaluation of Brochure with picture and/or data sheet	<ul style="list-style-type: none"> <li>- Checking the conformity with the quantity including parts and accessories</li> <li>- Checking the conformity of hardware vis-a-vis offered specifications</li> <li>- Functionality testing</li> </ul>	N/A

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

\_\_\_\_\_  
Name of Company/Bidder

\_\_\_\_\_  
Signature over Printed Name of Authorized Representative

\_\_\_\_\_  
Date

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## ***Section VIII. Checklist of Technical and Financial Documents***

# 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; (*Sections VI and VII of the Bidding Documents*) **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.

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

- (i) *[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.
- (j) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.

**II. FINANCIAL COMPONENT ENVELOPE**

- (a) Original of duly signed and accomplished Financial Bid Form; **and**
- (b) Original of duly signed and accomplished Price Schedule(s).

**STATEMENT OF (i) ONGOING CONTRACTS (ii) AWARDED BUT NOT YET STARTED CONTRACTS**

This is to certify that \_\_\_\_\_ (company) \_\_\_\_\_ has the following ongoing and awarded but not yet started contracts:

Contracting Party	Name of Contract	Date and Status of the Contract	Kind of Goods	Amount of Contract	Value of Outstanding Contracts	Date of Delivery	Purchase Order Number/s or Date of Contract/s

\_\_\_\_\_  
Name and Signature of  
Authorized Representative

\_\_\_\_\_  
Date

**\*Instructions:**

a) State all ongoing contracts including those awarded but not yet started (government and private contracts which may be similar or not similar to the project called for bidding) as of:

i. The day before the deadline of submission of bids.

b) If there is no ongoing contract including awarded but not yet started as of the aforementioned period, state none or equivalent term.

c) The total amount of the ongoing and awarded but not yet started contracts should be consistent with those used in the Net Financial Contracting Capacity (NFCC) in case an NFCC is submitted as an eligibility document.

d) "Name of Contract". Indicate here the Nature/ Scope of the Contract for easier tracking of the entries/ representations

**STATEMENT OF SINGLE LARGEST COMPLETED CONTRACT SIMILAR TO THE CONTRACT TO BE BID**

*This is to certify that \_\_\_\_\_ (company) \_\_\_\_\_ has the following completed contracts within five (5) years prior to the date of submission and receipt of bids, a contract similar to the Project*

Contracting Party	Name of Contract	Date of the Contract	Kind of Goods	Amount of Contract	Date of Delivery	Please submit any of the following attachment: a. Copy/ies of Contract/s or Purchase Order/s; <u>OR</u> b. Copy/ies of corresponding Sales Invoice/s; <u>OR</u> c. Copy/ies of Official Receipt/Cash Receipt/Collection Receipt; <u>OR</u> d. Certificate of Performance Evaluation

\_\_\_\_\_  
Name and Signature of  
Authorized Representative

\_\_\_\_\_  
Date

**\* Instructions:**

- a) *Cut-off date as of:*  
    (i) *Up to the day before the deadline of submission of bids.*
- b) *In the column under "Dates" indicate the dates of Delivery/ End-user's Acceptance and Official Receipt.*
- c) *"Name of Contract". Indicate here the Nature/ Scope of the Contract for the Procuring Entity to determine the relevance of the entry with the Procurement at hand.*

## Bid Securing Declaration Form

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REPUBLIC OF THE PHILIPPINES)  
CITY OF \_\_\_\_\_ ) S.S.

### **BID SECURING DECLARATION** **Invitation to Bid: [Insert Reference number]**

To: [Insert name and address of the Procuring Entity]

I/We<sup>2</sup>, the undersigned, declare that:

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

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<sup>2</sup> Select one and delete the other. Adopt the same instruction for similar terms throughout the document.



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

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert Signatory's Legal Capacity]  
Affiant

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

Witness my hand and seal this \_\_\_\_ day of [month] [year].

**NAME OF NOTARY PUBLIC**

Serial No. of Commission \_\_\_\_\_

Notary Public for \_\_\_\_\_ until \_\_\_\_\_

Roll of Attorneys No. \_\_\_\_\_

PTR No. \_\_\_\_\_ [date issued], [place issued]

IBP No. \_\_\_\_\_ [date issued], [place issued]

Doc. No. \_\_\_\_\_

Page No. \_\_\_\_\_

Book No. \_\_\_\_\_

Series of \_\_\_\_\_

\*The identification card shall be at least one of the acceptable proofs of identity as identified under the provisions of the 2014 Rules on Notarial Practice

"Sec. 12. Competent Evidence of Identity— The phrase "competent evidence of identity" refers to the identification of an individual based on:

At least one current identification document issued by an official agency bearing the photograph and signature of the individual, such as but not limited to, passport, driver license, Professional Regulations Commission ID, National Bureau of Investigation clearance, police clearance, postal ID, voter's ID, Barangay certification, Government Service and Insurance System (GSIS) e-card, Social Security System (SSS) card, Philhealth card, senior citizen card, Overseas Workers Welfare Administration (OWWA) ID, OFW ID, seaman's book, alien certificate of registration/immigrant certificate of registration, government office ID, certification from the National Council for the Welfare of Disabled Persons (NCWDP), Department of Social Welfare and Development (DSWD) certification:

The Board Resolution or Secretary's Certificate referring to the said Board Resolution designating the bidder's authorized representative and signatory need not specifically indicate the particular project where such authority is given provided that the said authority covers activities by TESDA.

## OMNIBUS SWORN STATEMENT (REVISED)

[shall be submitted with the Bid]

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REPUBLIC OF THE PHILIPPINES )  
CITY/MUNICIPALITY OF \_\_\_\_\_ ) S.S.

### AFFIDAVIT

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

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

*[If a sole proprietorship:]* I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

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

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

*[If a sole proprietorship:]* As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

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

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

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;
5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;
6. *[Select one, delete the rest:]*

*[If a sole proprietorship:]* The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

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

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

7. [Name of Bidder] complies with existing labor laws and standards; and
8. [Name of Bidder] is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:
  - a. Carefully examining all of the Bidding Documents;
  - b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
  - c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
  - d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the [Name of the Project].
9. [Name of Bidder] did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.
10. **In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through**

**misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.**

**IN WITNESS WHEREOF**, I have hereunto set my hand this \_\_ day of \_\_, 20\_\_ at \_\_\_\_\_, Philippines.

**[Insert NAME OF BIDDER OR ITS  
AUTHORIZED REPRESENTATIVE]  
[Insert signatory's legal capacity]  
Affiant**

**[Jurat]**

**[Format shall be based on the latest Rules on Notarial Practice]**

*\*The identification card shall be at least one of the acceptable proofs of identity as identified under the provisions of the 2014 Rules on Notarial Practice*

*"Sec. 12. Competent Evidence of Identity — The phrase "competent evidence of identity" refers to the identification of an individual based on:*

*At least one current identification document issued by an official agency bearing the photograph and signature of the individual such as but not limited to, passport, driver's license, Professional Regulations Commission ID, National Bureau of Investigation clearance, police clearance, postal ID, voter's ID, Barangay certification, Government Service and Insurance System (GSIS) e-card, Social Security System (SSS) card, Philhealth card, senior citizen card, Overseas Workers Welfare Administration (OWWA) ID, OFW ID, seaman's book, alien certificate of registration/immigrant certificate of registration, government office ID, certification from the National Council for the Welfare of Disabled Persons (NCWDP), Department of Social Welfare and Development (DSWD) certification;*

*The Board Resolution or Secretary's Certificate referring to the said Board Resolution designating the bidder's authorized representative and signatory need not specifically indicate the particular project where such authority is given provided that the said authority covers activities by TESDA.*

## JOINT VENTURE AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

This JOINT VENTURE AGREEMENT (hereinafter referred to as the "Agreement"), entered into this \_\_\_\_\_ day \_\_\_\_\_ of 20\_\_ at \_\_\_\_\_ City, Philippines by and among:

\_\_\_\_\_, a domestic corporation duly organized, registered and existing under and by virtue of the laws of the Republic of the Philippines, with office address at \_\_\_\_\_, represented by its \_\_\_\_\_, hereinafter referred to as "\_\_\_\_\_";

- and -

\_\_\_\_\_, a domestic corporation duly organized, registered and existing under and by virtue of the laws of the Republic of the Philippines, with office address at \_\_\_\_\_, represented by its \_\_\_\_\_, hereinafter referred to as "\_\_\_\_\_";

- and -

\_\_\_\_\_ a foreign corporation organized and existing under and by virtue of the laws of \_\_\_\_\_, represented by its \_\_\_\_\_, hereinafter referred to as "\_\_\_\_\_";

(Henceforth collectively referred to as the "Parties")

### WITNESSETH: That

**WHEREAS**, the Technical Education and Skills Development Authority (TESDA) has recently published an Invitation to Apply for Eligibility and to Bid for the Supply and Delivery of \_\_\_\_\_ for the \_\_\_\_\_;

**WHEREAS**, the parties have agreed to pool their resources together to form the "\_\_\_\_\_ Joint Venture", hereinafter referred to as the Joint Venture, under the laws of the Philippines, for the purpose of participating in the abovementioned procurement of TESDA-CO;

NOW, THEREFORE, for and in consideration of the foregoing premises and the covenants hereto set forth, the Parties have agreed as follows:

**ARTICLE I  
ORGANIZATION OF THE JOINT VENTURE**

SECTION 1. Formation — The Parties do hereby agree and bind themselves to establish, form and organize a Joint Venture pursuant to the laws of the Republic of the Philippines, in order for the JV to carry on the purposes and objectives for which it is created;

SECTION 2. Name — The name and style under which the JV shall be conducted is “ \_\_\_\_\_”;

SECTION 3. Principal Place of Business — The JV shall maintain its principal place of business at \_\_\_\_\_;

SECTION 4. Preparation and Documentation — The Parties shall secure and/or execute such certifications, documents, deeds and instruments as may be required by the laws of the Republic of the Philippines for the realization of the JV and in compliance with the Project. Further, they shall do all other acts and things requisite for the continuation of the JV pursuant to applicable laws;

SECTION 5. The Joint Venture shall be represented by the \_\_\_\_\_ in all biddings, related procurement transactions and other official dealings that it shall enter into with the TESDA-CO and third parties, such transactions to include, among others, the submission of eligibility documents, bids, registration documents obtaining bonds, performing the principal contract in the event that the contract is awarded in favor of the Joint Venture, receipt of payment for goods delivered, and similar and related activities.

SECTION 6. The period of the Joint Venture shall begin upon execution of this Agreement and shall continue until the complete performance of its contractual obligations to TESDA-CO, as described in Article II hereof, or upon its termination for material breach of any term or condition of this Agreement, by service of a written statement in English on the other Party, not less than 90 days prior to the intended date termination

**ARTICLE II  
PURPOSE**

SECTION 1. The primary purpose of the Joint Venture is to participate in the public bidding to be conducted by the TESDA-CO Bids and Awards Committee for the supply and delivery of \_\_\_\_\_ for the \_\_\_\_\_.

SECTION 2. If the above-described contract/s is/are awarded to the Joint Venture, the Joint Venture shall undertake the performance thereof to TESDA-CO, and such other incidental activities necessary for the completion of its contractual obligations.

**ARTICLE III  
SOLIDARY LIABILITY OF THE PARTIES**

SECTION 1. In the performance of the contract/s that may be awarded to the Joint Venture by the TESDA-CO, and all other related activities/obligations, as described in Article II hereof, - the Parties bind themselves jointly and solidarily, in the concept of solidarily debtors, subject to the right of reimbursement, as provided in the relevant provisions of the Civil Code of the Philippines.

**ARTICLE IV  
CONTRIBUTION AND OTHER ARRANGEMENTS**

SECTION 1. Contribution — The Parties shall contribute the amount of \_\_\_\_\_ (Php \_\_\_\_\_) to support the financial requirements of the Joint Venture, in the following proportion:

A.	-	P .00
B.	-	<u>P .00</u>
TOTAL		P .00

Additional contributions to the Joint Venture shall be made as may be required for contract implementation. In addition, shall contribute any labor and contract management requirements.

SECTION 2. Profit Sharing — The share of the Parties to the JV from any profit derived or obtained from the implementation and execution of the Project shall be distributed pro rata to each, in accordance with the contribution and resources each has provided to the JV;

SECTION 3. Liquidation and Distributions — Any sum remaining after deducting from the total of all moneys or benefits received for the performance of the contract, all costs incurred by the JV after award of the contract for the Project pursuant to the accounting practices established for the JV, shall be distributed in accordance with the relative balances in the accounts of each Party pursuant to Sec.1 of this Article upon completion, final accounting, termination and liquidation of the JV. In the event of liquidation and termination of JV, and after taking into account the shares of the Parties in all income, gain, deductions, expenses, and losses, should the account of a Party contain a negative balance, such Party shall contribute cash to the JV sufficient to restore the said balance to zero;

SECTION 4. Sharing of Burden of a Net Loss — In case a net loss is incurred, additional contributions shall be made by the Parties in accordance with their respective shares.

**ARTICLE V  
MISCELLANEOUS PROVISIONS**

**SECTION 1.** The provisions of the Instructions to Bidders, Supplemental Bid Bulletin, and other bidding documents issued by the TESDA-CO in relation to the contract described in Article II hereof, shall be deemed incorporated in this Agreement and made an integral part thereof.

**SECTION 2.** This Agreement shall be binding upon and inure to the benefit of the Parties and their respective-successors and assigns.

**SECTION 3.** The Parties herein are duly represented by their authorized officers.

**SECTION 4. Governing Law -** This Agreement shall be governed by and construed according to the laws of the Republic of the Philippines. Venue of any court action arising from this Agreement shall be exclusively laid before the proper court of the Philippines.

**IN WITNESS WHEREOF,** the parties have set their hands and affixed their signatures on the date and place first above-stated.

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Signed in the Presence of:

\_\_\_\_\_  
\_\_\_\_\_



**ACKNOWLEDGMENT**

REPUBLIC OF THE PHILIPPINES                    )  
CITY/MUNICIPALITY OF \_\_\_\_\_ ) S.S.  
PROVINCE OF (in the case of Municipality)

BEFORE ME, a Notary Public for and in the City/Municipality of \_\_\_\_\_ (indicate also the Province in the case of Municipality \_\_\_\_\_, this \_\_\_\_\_ day of \_\_\_\_\_ month & year) \_\_\_\_\_ personally appeared the following:

Name	ID Name, Number and Validity Date
------	-----------------------------------

Known to me and to me known to be the same persons who executed the foregoing instrument and they acknowledge to me that the same is their free and voluntary act and deed and that of the corporation(s) they represent.

This instrument refers to a Joint Venture Agreement consisting of \_\_\_\_\_ pages, including the page on which this Acknowledgement is written, and signed by the parties and their instrumental witnesses.

WITNESS MY HAND AND NOTARIAL SEAL on the place and on the date first above written.

**NAME OF NOTARY PUBLIC**  
Serial No. of Commission \_\_\_\_\_  
Notary Public for \_\_\_\_\_ until \_\_\_\_\_  
Roll of Attorneys No. \_\_\_\_\_  
PTR No. \_\_\_\_\_ [ date issued], [place issued]  
IBP No. \_\_\_\_\_, [ date issued], [place issued]

Doc. No. \_\_\_\_\_  
Page No. \_\_\_\_\_  
Book No. \_\_\_\_\_  
Series of \_\_\_\_\_.

Note:

"Sec. 12. Competent Evidence of Identity — The phrase "competent evidence of identity" refers to the identification of an individual based on:

At least one current identification document issued by an official agency bearing the photograph and signature of the individual such as but not limited to, passport, driver's license, Professional Regulations Commission ID, National Bureau of Investigation clearance, police clearance, postal ID, voter's ID, Barangay certification, Government Service and Insurance System (GSIS) e-card, Social Security System (SSS) card, Philhealth card, senior citizen card, Overseas Workers Welfare Administration (OWWA) ID, OFW ID, seaman's book, alien certificate of registration/immigrant certificate of registration, government office ID, certification from the National Council for the Welfare of Disabled Persons (NCWDP), Department of Social Welfare and Development (DSWD) certification.

**Bid Form for the Procurement of Goods**  
*[shall be submitted with the Bid]*

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**BID FORM**

Date : \_\_\_\_\_  
Project Identification No. : \_\_\_\_\_

To: *[name and address of Procuring Entity]*

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers *[insert numbers]*, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to *[supply/deliver/perform]* *[description of the Goods]* in conformity with the said PBDs for the sum of *[total Bid amount in words and figures]* or the total calculated bid price, as evaluated and corrected for computational errors, and other bid modifications in accordance with the Price Schedules attached herewith and made part of this Bid. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties]*, which are itemized herein or in the Price Schedules,

If our Bid is accepted, we undertake:

- a. to deliver the goods in accordance with the delivery schedule specified in the Schedule of Requirements of the Philippine Bidding Documents (PBDs);
- b. to provide a performance security in the form, amounts, and within the times prescribed in the PBDs;
- c. to abide by the Bid Validity Period specified in the PBDs and it shall remain binding upon us at any time before the expiration of that period.

*[Insert this paragraph if Foreign-Assisted Project with the Development Partner:*

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Name and address of agent  
Amount and Purpose of  
Currency Commission or gratuity

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

*(if none, state "None")*

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

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

We certify/confirm that we comply with the eligibility requirements pursuant to the PBDs.

The undersigned is authorized to submit the bid on behalf of *[name of the bidder]* as evidenced by the attached *[state the written authority]*.

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

Name: \_\_\_\_\_

Legal capacity: \_\_\_\_\_

Signature: \_\_\_\_\_

Duly authorized to sign the Bid for and behalf of: \_\_\_\_\_

Date: \_\_\_\_\_

**Price Schedule for Goods Offered from Abroad**  
*[shall be submitted with the Bid if bidder is offering goods from Abroad]*

**For Goods Offered from Abroad**

Name of Bidder \_\_\_\_\_ Project ID No. \_\_\_\_\_ Page \_\_\_ of \_\_\_

1	2	3	4	5	6	7	8	9
Item	Description	Country of origin	Quantity	Unit price CIF port of entry (specify port) or CIF named place (specify border point or place of destination)	Total CIF or CIF price per item (col. 4 x 5)	Unit Price Delivered Duty Unpaid (DDU)	Unit price Delivered Duty Paid (DDP)	Total Price delivered DDP (col 4 x 8)

Name: \_\_\_\_\_

Legal Capacity: \_\_\_\_\_

Signature: \_\_\_\_\_

Duly authorized to sign the Bid for and behalf of: \_\_\_\_\_

**Price Schedule for Goods Offered from Within the Philippines**  
*[shall be submitted with the Bid if bidder is offering goods from within the Philippines]*

**For Goods Offered from Within the Philippines**

Name of Bidder \_\_\_\_\_ Project ID No. \_\_\_\_\_ Page \_\_\_ of \_\_\_

1	2	3	4	5	6	7	8	9	10
Item	Description	Country of origin	Quantity	Unit price EXW per item	Transportation and all other costs incidental to delivery, per item	Sales and other taxes payable if Contract is awarded, per item	Cost of Incidental Services, if applicable, per item	Total Price, per unit (col 5+6+7+8)	Total Price delivered Final Destination (col 9) x (col 4)

Name: \_\_\_\_\_

Legal Capacity: \_\_\_\_\_

Signature: \_\_\_\_\_

Duly authorized to sign the Bid for and behalf of: \_\_\_\_\_

## Performance Securing Declaration (Revised)

*[if used as an alternative performance security but it is not required to be submitted with the Bid, as it shall be submitted within ten (10) days after receiving the Notice of Award]*

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REPUBLIC OF THE PHILIPPINES)  
CITY OF \_\_\_\_\_ ) S.S.

### PERFORMANCE SECURING DECLARATION

Invitation to Bid: [Insert Reference Number indicated in the Bidding Documents]  
To: [Insert name and address of the Procuring Entity]

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, to guarantee the faithful performance by the supplier/distributor/manufacturer/contractor/consultant of its obligations under the Contract, I/we shall submit a Performance Securing Declaration within a maximum period of ten (10) calendar days from the receipt of the Notice of Award prior to the signing of the Contract.
2. I/We accept that: I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of one (1) year for the first offense, or two (2) years for the second offense, upon receipt of your Blacklisting Order if I/We have violated my/our obligations under the Contract;
3. I/We understand that this Performance Securing Declaration shall cease to be valid upon:
  - a. issuance by the Procuring Entity of the Certificate of Final Acceptance, subject to the following conditions:
    - i. Procuring Entity has no claims filed against the contract awardee;
    - ii. It has no claims for labor and materials filed against the contractor; and
    - iii. Other terms of the contract; or
  - b. replacement by the winning bidder of the submitted PSD with a performance security in any of the prescribed forms under Section 39.2 of the 2016 revised IRR of RA No. 9184 as required by the end-user.

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

*[Insert NAME OF BIDDER OR ITS  
AUTHORIZED REPRESENTATIVE]*

*[Insert signatory's legal capacity]*

Affiant

**[Jurat]**

*[Format shall be based on the latest Rules on Notarial Practice]*

**Contract Agreement Form for the Procurement of Goods (Revised)**  
*[Not required to be submitted with the Bid, but it shall be submitted within ten (10) days after receiving the Notice of Award]*

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**CONTRACT AGREEMENT**

THIS AGREEMENT made the \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_ between [name of PROCURING ENTITY] of the Philippines (hereinafter called "the Entity") of the one part and [name of Supplier] of [city and country of Supplier] (hereinafter called "the Supplier") of the other part;

WHEREAS, the Entity invited Bids for certain goods and ancillary services, particularly [brief description of goods and services] and has accepted a Bid by the Supplier for the supply of those goods and services in the sum of *[contract price in words and figures in specified currency]* (hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents as required by the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184 shall be deemed to form and be read and construed as integral part of this Agreement, *viz.*:
  - i. Philippine Bidding Documents (PBDs);
    - i. Schedule of Requirements;
    - ii. Technical Specifications;
    - iii. General and Special Conditions of Contract; and
    - iv. Supplemental or Bid Bulletins, if any
  - ii. Winning bidder's bid, including the Eligibility requirements, Technical and Financial Proposals, and all other documents or statements submitted;  
  
Bid form, including all the documents/statements contained in the Bidder's bidding envelopes, as annexes, and all other documents submitted (e.g., Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;
  - iii. Performance Security;
  - iv. Notice of Award of Contract; and the Bidder's conforme thereto; and
  - v. Other contract documents that may be required by existing laws and/or the Procuring Entity concerned in the PBDs. **Winning bidder agrees that additional contract documents or information prescribed by the GPPB that are subsequently required for submission after the contract execution, such as the Notice to**

**Proceed, Variation Orders, and Warranty Security, shall likewise form part of the Contract.**

3. In consideration for the sum of *[total contract price in words and figures]* or such other sums as may be ascertained, *[Named of the bidder]* agrees to *[state the object of the contract]* in accordance with his/her/its Bid.
4. The *[Name of the procuring entity]* agrees to pay the above-mentioned sum in accordance with the terms of the Bidding.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of the Republic of the Philippines on the day and year first above written.

*[Insert Name and Signature]*

*[Insert Name and Signature]*

*[Insert Signatory's Legal Capacity]*

*[Insert Signatory's Legal Capacity]*

for:

for:

*[Insert Procuring Entity]*

*[Insert Name of Supplier]*

**Acknowledgment**

*[Format shall be based on the latest Rules on Notarial Practice]*



Republic of the Philippines



Government Procurement Policy Board