

# **ANNEX D**

## ***Updated Technical Specifications Compliance Form***

# TECHNICAL SPECIFICATIONS

## Lot A

Bidders must indicate whether the goods and equipment offered are “Compliant” or “Non-Compliant” to the corresponding specifications prescribed by BCDA using this form.

<b>SUPPLY, DELIVERY, AND INSTALLATION OF GOODS (FURNITURE AND EQUIPMENT)nk FOR THE NATIONAL ACADEMY OF SPORTS (NAS) – PHASE 1 AT NEW CLARK CITY</b>					
<b>TECHNICAL SPECIFICATIONS COMPLIANCE FORM</b>					
LOT	ITEM	UNIT	SPECIFICATIONS	COMPLIANCE	
				Compliant	Non-Compliant
A1.1	1	Unit	<p><b>500kVA/400kW Stand by Generator Set</b></p> <p><b>QUALIFICATIONS OF THE BIDDER</b></p> <ul style="list-style-type: none"> <li>● The bidder must be an accredited distributor / partner.</li> <li>● The brand must have at least 10 years of existence in the market.</li> <li>● The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> </ul> <p>1) ENGINE-GENERATOR SET</p> <p>A. Factory-assembled and -tested, engine-generator set.</p> <p>B. Mounting Frame: Maintain alignment of mounted components without depending on concrete foundation; and have lifting attachments.</p> <p style="padding-left: 20px;">a. Rigging Diagram: Inscribed on metal plate permanently attached to mounting frame to indicate location and lifting capacity of each lifting attachment and generator-set center of gravity.</p> <p>C. Capacities and Characteristics:</p> <p style="padding-left: 20px;">a. Power Output Ratings: 1 unit of 500kVA (400KW), 400V, 3Phase, 60Hz Standby rated</p> <p style="padding-left: 20px;">b. Output Connections: Three-phase, four wire</p> <p style="padding-left: 20px;">c. Nameplates: For each major system component to identify manufacturer's name and address, and model and serial number of component.</p> <p>D. Generator-Set Performance:</p> <p style="padding-left: 20px;">a. Steady-State Voltage Operational Bandwidth: 3 percent of rated output voltage from no load to full load.</p> <p style="padding-left: 20px;">b. Transient Voltage Performance: Not more than 20 percent variation for 50 percent step-load increase or decrease. Voltage shall recover and remain within the steady-state operating band within three seconds</p> <p style="padding-left: 20px;">c. Steady-State Frequency Operational Bandwidth: 0.5 percent of rated frequency from no load to full load</p>		

			<ul style="list-style-type: none"> <li>d. Steady-State Frequency Stability: When system is operating at any constant load within the rated load, there shall be no random speed variations outside the steady-state operational band and no hunting or surging of speed</li> <li>e. Transient Frequency Performance: Less than 5 percent variation for 50 percent step-load increase or decrease. Frequency shall recover and remain within the steady-state operating band within five seconds</li> <li>f. Output Waveform: At no load, harmonic content measured line to line or line to neutral shall not exceed 5 percent total and 3 percent for single harmonics. Telephone influence factor, determined according to NEMA MG 1, shall not exceed 50 percent</li> <li>g. Sustained Short-Circuit Current: For a 3-phase, bolted short circuit at system output terminals, system shall supply a minimum of 250 percent of rated full load current for not less than 10 seconds and then clear the fault automatically, without damage to generator system components</li> <li>h. Start Time: Comply with NFPA 110, Type 10, system requirements.</li> </ul> <p>2) ENGINE</p> <ul style="list-style-type: none"> <li>A. Fuel: Fuel oil, Grade DF-2</li> <li>B. Rated Engine Speed: 1800 rpm</li> <li>C. Maximum Piston Speed for Four-Cycle Engines: 2250 fpm (11.4 m/s)</li> <li>D. Lubrication System: The following items are mounted on engine or skid: <ul style="list-style-type: none"> <li>a. Filter and Strainer: Rated to remove 90 percent of particles 5 micrometers and smaller while passing full flow</li> <li>b. Thermostatic Control Valve: Control flow in system to maintain optimum oil temperature. Unit shall be capable of full flow and is designed to be fail-safe</li> <li>c. Crankcase Drain: Arranged for complete gravity drainage to an easily removable container with no disassembly and without use of pumps, siphons, special tools, or appliances.</li> </ul> </li> <li>E. Engine Fuel System: <ul style="list-style-type: none"> <li>a. Main Fuel Pump: Mounted on engine. Pump ensures adequate primary fuel flow under starting and load conditions.</li> <li>b. Relief-Bypass Valve: Automatically regulates pressure in fuel line and returns excess fuel to source.</li> </ul> </li> <li>F. Coolant Jacket Heater: Electric-immersion type, factory installed in coolant jacket system. Comply with NFPA 110 requirements for Level 1 equipment for heater capacity.</li> <li>G. Governor: Adjustable isochronous, with speed sensing.</li> </ul>		
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		<p>H. Muffler/Silencer: Critical type, sized as recommended by engine manufacturer and selected with exhaust piping system to not exceed engine manufacturer's engine backpressure requirements.</p> <ul style="list-style-type: none"> <li>a. Minimum sound attenuation of 25 dB at 500 Hz.</li> <li>b. Sound level measured at a distance of 10 feet (3 m) from exhaust discharge after installation is complete shall be 85 dBA or less.</li> </ul> <p>I. Air-Intake Filter: Heavy-duty, engine-mounted air cleaner with replaceable dry-filter element and "blocked filter" indicator.</p> <p>J. Starting System: 24-V electric, with negative ground.</p> <ul style="list-style-type: none"> <li>a. Components: Sized so they will not be damaged during a full engine cranking cycle with ambient temperature at maximum.</li> <li>b. Cranking Motor: Heavy-duty unit that automatically engages and releases from engine flywheel without binding.</li> <li>c. Cranking Cycle: As required by NFPA 110 for system level specified</li> <li>d. Battery: Adequate capacity within ambient temperature range to provide specified cranking cycle at least three times without recharging.</li> <li>e. Battery Cable: Size as recommended by engine manufacturer for cable length indicated. Include required interconnecting conductors and connection accessories.</li> <li>f. Battery Compartment: Factory fabricated of metal with acid-resistant finish and thermal insulation. Thermostatically controlled heater shall be arranged to maintain battery above 10 deg C regardless of external ambient temperature within range. Include accessories required to support and fasten batteries in place.</li> <li>g. Battery-Charging Alternator: Factory mounted on engine with solid-state voltage regulation and 35-A minimum continuous rating</li> <li>h. Battery Charger: Current-limiting, automatic-equalizing and float-charging type. <ul style="list-style-type: none"> <li>i. Operation: Equalizing-charging rate of 10 A shall be initiated automatically after battery has lost charge until an adjustable equalizing voltage is achieved at battery terminals. Unit shall then be automatically switched to a lower float-charging mode and shall continue to operate in that mode until battery is discharged again.</li> <li>ii. Automatic Temperature Compensation: Adjust float and equalize voltages for variations in ambient temperature from minus 40 deg C to plus 60 deg C to prevent overcharging at high temperatures and undercharging at low temperatures.</li> </ul> </li> </ul>		
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- iii. Automatic Voltage Regulation: Maintain constant output voltage regardless of input voltage variations up to plus or minus 10 percent.
- iv. Ammeter and Voltmeter: Flush mounted in door. Meters shall indicate charging rates.
- v. Safety Functions: Sense abnormally low battery voltage and close contacts providing low battery voltage indication on control and monitoring panel. Sense high battery voltage and loss of ac input or dc output of battery charger. Either condition shall close contacts that provide a battery-charger malfunction indication at system control and monitoring panel.
- vi. Enclosure and Mounting: NEMA 250, Type 1, wall-mounted cabinet.

### 3) FUEL OIL STORAGE

- A. Comply with NFPA 30.
- B. Day Tank: Freestanding, factory-fabricated fuel tank assembly, with integral, float controlled transfer pump and the following features:
  - a. Containment: Integral rupture basin with a capacity of 150 percent of nominal capacity of day tank.
    - i. Leak Detector: Locate in rupture basin and connect to provide audible and visual alarm in the event of day-tank leak.
  - b. Tank Capacity: As indicated in the drawings (to provide 8 hours capacity).
  - c. Pump Capacity: Exceeds maximum flow of fuel drawn by engine-mounted fuel supply pump at 110 percent of rated capacity, including fuel returned from engine.
  - d. Low-Level Alarm Sensor: Liquid-level device operates alarm contacts at 25 percent of normal fuel level.
  - e. High-Level Alarm Sensor: Liquid-level device operates alarm and redundant fuel shutoff contacts at midpoint between overflow level and 100 percent of normal fuel level.
  - f. Piping Connections: Factory-installed fuel supply and return lines from tank to engine; local fuel fill, vent line, overflow line; and tank drain line with shutoff valve.
  - g. Redundant High-Level Fuel Shutoff: Actuated by high-level alarm sensor in day tank to operate a separate motor device that disconnects day-tank pump motor. Sensor shall signal solenoid valve, located in fuel suction line between fuel storage tank and day tank, to close. Both actions shall remain in shutoff state until manually reset. Shutoff action shall

initiate an alarm signal to control panel but shall not shut down engine-generator set.

4) CONTROL AND MONITORING

- A. Automatic Starting System Sequence of Operation: When mode-selector switch on the control and monitoring panel is in the automatic position, remote-control contacts in one or more separate automatic transfer switches initiate starting and stopping of generator set. When mode-selector switch is switched to the on position, generator set starts. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.
- B. Manual Starting System Sequence of Operation: Switching on-off switch on the generator control panel to the on position starts generator set. The off position of same switch initiates generator-set shutdown. When generator set is running, specified system or equipment failures or derangements automatically shut down generator set and initiate alarms. Operation of a remote emergency-stop switch also shuts down generator set.
- C. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common control and monitoring panel mounted on the generator set. Mounting method shall isolate the control panel from generator-set vibration.
- D. Configuration: Operating and safety indications, protective devices, basic system controls, and engine gages shall be grouped in a common wall-mounted control and monitoring panel.
- E. Configuration: Operating and safety indications, protective devices, basic system controls, engine gages, instrument transformers, generator disconnect switch or circuit breaker, and other indicated components shall be grouped in a combination control and power panel. Control and monitoring section of panel shall be isolated from power sections by steel barriers. Panel features shall include the following:
  - a. Wall-Mounting Cabinet Construction: Rigid, self-supporting steel unit complying with NEMA ICS 6. Power bus shall be copper.
  - b. Switchboard Construction: Freestanding unit complying with Division 16 Section "Switchboards."
  - c. Switchgear Construction: Freestanding unit complying with Division 16 Section "Switchgear."
  - d. Current and Potential Transformers: Instrument accuracy class.
- F. Indicating and Protective Devices and Controls: As required by NFPA 110 for Level 2 system, and the following:
  - a. AC voltmeter

			<ul style="list-style-type: none"> <li>b. AC ammeter</li> <li>c. AC frequency meter</li> <li>d. DC voltmeter (alternator battery charging)</li> <li>e. Engine-coolant temperature gauge</li> <li>f. Engine lubricating-oil pressure gauge</li> <li>g. Running-time meter</li> <li>h. Ammeter-voltmeter, phase-selector switch (es)</li> <li>i. Generator-voltage adjusting rheostat</li> <li>j. Start-stop switch</li> <li>k. Over speed shutdown device</li> <li>l. Coolant high-temperature shutdown device</li> <li>m. Coolant low-level shutdown device</li> <li>n. Oil low-pressure shutdown device</li> <li>o. Fuel tank derangement alarm</li> <li>p. Fuel tank high-level shutdown of fuel supply alarm</li> <li>q. Generator overload</li> </ul> <p>G. Supporting Items: Include sensors, transducers, terminals, relays, and other devices and include wiring required to support specified items. Locate sensors and other supporting items on engine or generator, unless otherwise indicated</p> <p>H. Common Remote Audible Alarm: Comply with NFPA 110 requirements for Level 1 systems. Include necessary contacts and terminals in control and monitoring panel</p> <ul style="list-style-type: none"> <li>a. Over crank shutdown</li> <li>b. Coolant low-temperature alarm</li> <li>c. Control switch not in auto position</li> <li>d. Battery-charger malfunction alarm</li> <li>e. Battery low-voltage alarm</li> </ul> <p>I. Common Remote Audible Alarm: Signal the occurrence of any events listed below without differentiating between event types. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset</p> <ul style="list-style-type: none"> <li>a. Engine high-temperature shutdown</li> <li>b. Lube-oil, low-pressure shutdown</li> <li>c. Over speed shutdown</li> <li>d. Remote emergency-stop shutdown</li> <li>e. Engine high-temperature pre alarm</li> <li>f. Lube-oil, low-pressure pre alarm</li> <li>g. Fuel tank, low-fuel level</li> <li>h. Low coolant level</li> </ul> <p>J. Remote Alarm Annunciator: Comply with NFPA 99. An LED labeled with proper alarm conditions shall identify each alarm event and a common audible signal shall sound for each alarm condition. Silencing switch in face of panel shall silence signal without altering visual indication. Connect so that after an alarm is silenced, clearing of initiating condition will reactivate alarm until silencing switch is reset. Cabinet and faceplate are surface- or flush-mounting type to suit mounting conditions indicated</p>		
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		<p>K. Remote Emergency-Stop Switch: Flush; wall mounted, unless otherwise indicated; and labeled. Push button shall be protected from accidental operation.</p> <p>5) GENERATOR OVERCURRENT AND FAULT PROTECTION</p> <p>A. Generator Circuit Breaker: Insulated-case, electronic-trip type; 100 percent rated</p> <ul style="list-style-type: none"> <li>a. Tripping Characteristics: Adjustable long-time and short-time delay and instantaneous</li> <li>b. Trip Settings: Selected to coordinate with generator thermal damage curve</li> <li>c. Shunt Trip: Connected to trip breaker when generator set is shut down by other protective devices</li> <li>d. Mounting: Adjacent to or integrated with control and monitoring panel</li> </ul> <p>B. Generator Disconnect Switch: Molded-case type, 100 percent rated</p> <ul style="list-style-type: none"> <li>a. Rating: Matched to generator output rating</li> <li>b. Shunt Trip: Connected to trip switch when signaled by generator protector or by other protective devices</li> </ul> <p>C. Generator Protector: Microprocessor-based unit shall continuously monitor current level in each phase of generator output, integrate generator heating effect over time, and predict when thermal damage of alternator will occur. When signaled by generator protector or other generator-set protective devices, a shunt-trip device in the generator disconnect switch shall open the switch to disconnect the generator from load circuits. Protector shall perform the following functions:</p> <ul style="list-style-type: none"> <li>a. Initiates a generator overload alarm when generator has operated at an overload equivalent to 110 percent of full-rated load for 60 seconds. Indication for this alarm is integrated with other generator-set malfunction alarms.</li> <li>b. Under single or three-phase fault conditions, regulates generator to 300 percent of rated full-load current for up to 10 seconds</li> <li>c. As overcurrent heating effect on the generator approaches the thermal damage point of the unit, protector switches the excitation system off, opens the generator disconnect device, and shuts down the generator set</li> <li>d. Senses clearing of a fault by other overcurrent devices and controls recovery of rated voltage to avoid overshoot</li> </ul> <p>6) GENERATOR, EXCITER, AND VOLTAGE REGULATOR</p> <p>A. Comply with NEMA MG 1</p> <p>B. Drive: Generator shaft shall be directly connected to engine shaft. Exciter shall be rotated integrally with generator rotor</p>		
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			<p>equipment mounting and leveling bolt that acts as blocking during installation</p> <p>b. Outside Spring Diameter: Not less than 80 percent of compressed height of the spring at rated load</p> <p>c. Minimum Additional Travel: 50 percent of required deflection at rated load</p> <p>d. Lateral Stiffness: More than 80 percent of rated vertical stiffness</p> <p>e. Overload Capacity: Support 200 percent of rated load, fully compressed, without deformation or failure.</p> <p>9) FINISHES</p> <p>A. Indoor and Outdoor Enclosures and Components: Manufacturer's standard finish over corrosion-resistant pretreatment and compatible primer.</p> <p>10) SOURCE QUALITY CONTROL</p> <p>A. Project-Specific Equipment Tests: Before shipment, factory test engine-generator set and other system components and accessories manufactured specifically for this Project. Perform tests at rated load and power factor. Include the following tests:</p> <p>a. Test components and accessories furnished with installed unit that are not identical to those on tested prototype to demonstrate compatibility and reliability.</p> <p>b. Full load run</p> <p>c. Maximum power</p> <p>d. Voltage regulation</p> <p>e. Transient and steady-state governing</p> <p>f. Single-step load pickup</p> <p>g. Safety shutdown</p> <p>h. Provide 14 days' advance notice of tests and opportunity for observation of tests by Owner's representative</p> <p>i. Report factory test results within 10 days of completion of test.</p> <p>11) PERMIT</p> <p>A. Secure all necessary permits from LGU</p> <p>Warranty: 2 years against factory defect</p>		
A1.2	1	Unit	<p><b>MEDIUM VOLTAGE SWITCH GEAR</b></p> <p>QUALIFICATION OF THE BIDDER</p> <ul style="list-style-type: none"> <li>• The brand must have at least 10 years of existence in the market.</li> <li>• The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> </ul>	1	

		<p>1) MANUFACTURED UNITS</p> <p><b>A.</b> Description: Factory assembled and tested, and complying with IEEE C37.20.1</p> <p><b>B.</b> Ratings: Suitable for application in 3-phase, 60-Hz, solidly grounded-neutral system</p> <p><b>C.</b> System Voltage: 13.8kV nominal; 15 kV maximum</p> <p><b>D.</b> The brand must have at least 5 years of existence in the market.</p> <p>2) VACUUM CIRCUIT-BREAKER SWITCHGEAR</p> <p><b>A.</b> Nominal Interrupting-Capacity Class: 750 MVA.</p> <p><b>B.</b> Ratings:</p> <ul style="list-style-type: none"> <li><b>a.</b> Main-Bus Rating: 1200 A, continuous</li> </ul> <p><b>C.</b> Circuit Breakers: Three-pole, single-throw, electrically operated, drawout-mounting units using three individual, vacuum-sealed interrupter modules and including the following features:</p> <ul style="list-style-type: none"> <li><b>a.</b> Designed to operate at rated voltage to interrupt fault current within its rating within five cycles of trip initiation. For systems with X/R ratio of 17 or less, transient voltage during interruption shall not exceed twice the rated line-to ground voltage of the system</li> <li><b>b.</b> Contact-Wear Indicator: Readily accessible to field maintenance personnel</li> <li><b>c.</b> Minimum of six Type A and six Type B spare contacts</li> <li><b>d.</b> Interchangeability: Circuit breakers are interchangeable with vacuum circuit breakers of same current and interrupting ratings</li> <li><b>e.</b> Internal sulfur hexafluoride pressure is not to exceed 2.5 bars during normal operation <ul style="list-style-type: none"> <li><b>i.</b> Current Rating of Main Circuit Breaker: 630 A</li> <li><b>ii.</b> Continuous Current Rating of Feeder Circuit Breaker: 630 A</li> </ul> </li> <li><b>f.</b> Operating Mechanism: Electrically charged, mechanically and electrically trip-free, stored-energy operated <ul style="list-style-type: none"> <li><b>i.</b> Closing speed of moving contacts to be independent of both control and operator</li> <li><b>ii.</b> Design mechanism to permit manual charging and slow closing of contacts for inspection or adjustment <ul style="list-style-type: none"> <li><b>(a)</b> Control Power: 48-V dc for closing and tripping</li> <li><b>(b)</b> Control Power: 240-V ac for closing and tripping</li> </ul> </li> <li><b>iii.</b> Provide shunt trip capability independent of overcurrent trip</li> </ul> </li> </ul> <p><b>D.</b> Test Accessories: Relay and meter test plugs</p> <p><b>E.</b> Low-DC-Voltage Alarm: Switchgear shall have a monitor for dc control power voltage with a remote alarm located where</p>		
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indicated. Alarm shall sound if voltage falls to an adjustable value to indicate an impending battery failure. Factory set alarm value at 80 percent of full-charge voltage

- F.** Grounding and Testing Device: Suitable for phasing out, testing, and grounding switch gear bus or feeder if device is installed in place of circuit breaker. Include the following:
  - a.** Portable Grounding and Testing Device: Interchangeable with drawout- mounting medium-voltage circuit breakers to provide interlocked electrical access to either bus or feeder; electrically operated
  - b.** System control cabinet permanently mounted near switchgear
  - c.** Control-Cabinet Coupler Cable: Of adequate length to connect device inserted in any switchgear cubicle and control cabinet
  - d.** Permanent Control Power Wiring: From control cabinet to power source
  - e.** Protective Cover: Fabricated of heavy-duty plastic and fitted to device
  - f.** Approval of Grounding and Testing Device System: Obtain approval of final system design from utility company and agency designated by Owner to handle future maintenance of medium-voltage switchgear
- G.** Circuit-Breaker Test Cabinet: Separately mounted and containing push buttons for circuit-breaker closing and tripping, control relay, fuses, and secondary coupler with cable approximately 108 inches (2740 mm) long. Include a set of secondary devices for operating circuit breaker if removed from switchgear and moved near test cabinet. Include provision for storage of test and maintenance accessories in cabinet
- H.** Remote-Tripping Device: Wall-mounting emergency control station to open circuit breakers; located in red cast-metal box with break-glass operation
- I.** The brand must have at least 5 years of existence in the market

### 3) FABRICATION

- A.** Indoor NEMA 2: not less than US gauge 12 (2.657mm)
- B.** Finish: Manufacturer's standard gray finish over rust-inhibiting primer on phosphatizing-treated metal surfaces
- C.** Bus Transition Unit: Arranged to suit bus and adjacent units
- D.** Incoming-Line Unit: Arranged to suit incoming line
- E.** Outgoing Feeder Units: Arranged to suit distribution feeders
- F.** Auxiliary Compartments: Arranged to suit house meters, relays, controls, and auxiliary equipment; isolated from medium-voltage components
- G.** Key Interlocks: Arranged to effect interlocking schemes indicated

			<p>H. Provisions for Future Key Interlocks: Mountings and hardware required for future installation of locks, where indicated.</p> <p>4) COMPONENTS</p> <p>A. Main Bus: Copper, silver plated at connection points; full length of switchgear</p> <ul style="list-style-type: none"> <li>a. Ground Bus: Copper, tin plated; minimum size 6 by 50mm; full length of switchgear</li> </ul> <p>B. Bus Insulation: Covered with flame-retardant insulation</p> <p>C. Instrument Transformers: Comply with IEEE C57.13</p> <ul style="list-style-type: none"> <li>a. Potential Transformers: Secondary voltage rating of 230 V and NEMA accuracy class of 0.3 with burdens of W, X, and Y</li> <li>b. Current Transformers: Burden and accuracy class suitable for connected relays, meters, and instruments</li> </ul> <p>D. Multifunction Digital-Metering Monitor: Microprocessor-based unit suitable for three or four-wire systems, listed and labelled by an NRTL, and with the following features:</p> <ul style="list-style-type: none"> <li>a. Inputs from sensors or 5-A current-transformer secondaries, and potential terminals rated to 600 V</li> <li>b. Switch-selectable digital display with the following features: <ul style="list-style-type: none"> <li>i. Phase Currents, Each Phase: Plus or minus 1 percent</li> <li>ii. Phase-to-Phase Voltages, Three Phase: Plus or minus 1 percent</li> <li>iii. Phase-to-Neutral Voltages, Three Phase: Plus or minus 1 percent</li> <li>iv. Three-Phase Real Power: Plus or minus 2 percent</li> <li>v. Three-Phase Reactive Power: Plus or minus 2 percent</li> <li>vi. Power Factor: Plus or minus 2 percent</li> <li>vii. Frequency: Plus or minus 0.5 percent</li> <li>viii. Integrated Demand, with Demand Interval Selectable from 5 to 60 Minutes: Plus or minus 2 percent</li> <li>ix. Accumulated energy, in megawatt hours (joules), plus or minus 2 percent; stored values unaffected by power outages for up to 72 hours</li> </ul> </li> <li>c. Mounting: Display and control unit that is flush or semiflush mounted in instrument compartment door</li> </ul> <p>E. Analog Instruments: Rectangular, 4-1/2 inches (115 mm) square, 1 percent accuracy, semiflush mounting, with antiparallax 250-degree scale and external zero adjustment, and complying with ANSI C39.1</p> <ul style="list-style-type: none"> <li>a. Voltmeters: Cover an expanded scale range of normal voltage plus 10 percent</li> </ul>		
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			<ul style="list-style-type: none"> <li>b. Voltmeter Selector Switch: Rotary type with off position to provide readings of phase-to-phase and phase-to-neutral voltages</li> <li>c. Ammeters: Cover an expanded scale range of bus rating plus 10 percent</li> <li>d. Ammeter Selector Switch: Permits current reading in each phase and keeps current-transformer secondary circuits closed in off position</li> <li>e. Locate meter and selector switch on circuit-breaker compartment door for indicated feeder circuits only</li> <li>f. Watt-Hour Meters: Flush- or semiflush-mounting type, 5 A, 120 V, 3 phase, 3 wire; with 3 elements, 15-minute indicating demand register, and provision for testing and adding pulse initiation</li> <li>g. Recording Demand Meter: Usable as totalizing relay or indicating and recording maximum demand meter with 15-minute interval <ul style="list-style-type: none"> <li>i. Operation: Counts and records a succession of pulses entering two channels</li> <li>ii. Housing: Drawout, back-connected case arranged for semiflush mounting</li> </ul> </li> <li>F. Relays: Comply with IEEE C37.90, integrated digital type; with test blocks and plugs</li> <li>G. Surge Arresters: Distribution class, metal-oxide-varistor type. Comply with NEMA LA 1 <ul style="list-style-type: none"> <li>a. Install in cable termination compartments in each phase of circuit</li> <li>b. Coordinate rating with circuit voltage</li> </ul> </li> <li>H. Control Power Supply: DC battery system</li> <li>I. Control Power Supply: Control power transformer supplies 120-V control circuits through secondary disconnect devices. Include the following features: <ul style="list-style-type: none"> <li>a. Dry-type transformers, in separate compartments for units larger than 3 kVA, including primary and secondary fuses</li> <li>b. Two control power transformers in separate compartments with necessary interlocking relays; each transformer connected to line side of associated main circuit breaker <ul style="list-style-type: none"> <li>i. Secondary windings connected through relay(s) to control bus to affect an automatic transfer scheme</li> <li>ii. Secondary windings connected through an internal automatic transfer switch to switchgear control power bus</li> </ul> </li> <li>c. Control Power Fuses: Primary and secondary fuses provide current limiting and overload protection</li> </ul> </li> <li>J. Control Wiring: Factory installed, complete with bundling, lacing, and protection; and complying with the following: <ul style="list-style-type: none"> <li>a. Flexible conductors for No. 8 AWG and smaller, for conductors across hinges, and for conductors for interconnections between shipping units.</li> </ul> </li> </ul>		
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b. Conductors sized according to PEC for duty required.

5) CONTROL BATTERY SYSTEM

- A. System Requirements: Battery shall have number of cells and ampere-hour capacity based on an initial specific gravity of 1.210 at 25 deg C with electrolyte at normal level and minimum ambient temperature of 13 deg C. Cycle battery before shipment to guarantee rated capacity on installation. Arrange battery to operate ungrounded
- B. Battery: Lead-calcium type in sealed, clear plastic or glass containers, complete with electrolyte, fully charged and arranged for shipment with electrolyte in cells. Limit weight of each container to not more than 70 lb (32 kg) and cells per container to not more than 3. System batteries shall be suitable for service at an ambient temperature ranging from minus 18 to 25 deg C. Limit variation of current output to 0.8 percent for each degree below 25 deg C down to minus 8 deg C
- C. Rack: Two-step rack with electrical connections between battery cells and between rows of cells; include two flexible connectors with bolted-type terminals for output leads. Rate battery rack, cell supports, and anchorage for seismic requirements
- D. Accessories:
  - a. Set of socket wrenches and other tools required for battery maintenance
  - b. Wall-mounting, non-metallic storage rack fitted to store above items
  - c. Set of cell numerals
- E. Charger: Static-type silicon rectifier equipped with automatic regulation and provision for manual and automatic adjustment of charging rate. Unit shall automatically maintain output voltage within 0.5 percent from no load to rated charger output current, with ac input-voltage variation of plus or minus 10 percent and input frequency variation of plus or minus 3 Hz. Other features of charger include the following:
  - a. DC ammeter
  - b. DC Voltmeter: Maximum error of 5 percent at full-charge voltage; operates with toggle switch to select between battery and charger voltages
  - c. Ground Indication: Two appropriately labelled lights to indicate circuit ground, connected in series between negative and positive terminals, with midpoint junction connected to ground by normally open push-button contact
  - d. Capacity: Sufficient to supply steady load, float-charge battery between 2.20 and 2.25 V per cell and equalizing charge at 2.33 V per cell
  - e. Charging-Rate Switch: Manually operated switch provides for transferring to higher charging rate.

Charger operates automatically after switch operation until manually reset

- f. AC power supply is 120 V, 60 Hz, subject to plus or minus 10 percent variation in voltage and plus or minus 3-Hz variation in frequency. After loss of ac power supply for any interval, charger automatically resumes charging battery. Charger regulates rate of charge to prevent damage due to overload and to prevent fuses or circuit breakers from opening
- g. Protective Feature: Current-limiting device or circuit, which limits output current to rating of charger but does not disconnect charger from either battery or ac supply; to protect charger from damage due to overload, including short circuit on output terminals
- h. Electrical Filtering: Reduces charger's audible noise to less than 26 dB

#### 6) IDENTIFICATION

- A. Materials: Refer to Division 16 Section "Electrical Identification." Identify units, devices, controls, and wiring
- B. Mimic Bus: Continuous mimic bus applied to front of switchgear, arranged in single line diagram format, using symbols and lettered designations consistent with approved final mimic-bus diagram
  - a. Mimic-bus segments coordinated with devices in switchgear sections to which applied, to produce a concise visual presentation of principal switchgear components and connections
  - b. Medium: Painted graphics, as approved
  - c. Color: Contrasting with factory-finish background;

#### 7) SOURCE QUALITY CONTROL

- A. Before shipment of equipment, perform the following tests and prepare test reports:
  - a. Production tests on circuit breakers according to ANSI C37.09
  - b. Production tests on completed switchgear assembly according to IEEE C37.20.2
- B. Assemble switchgear and equipment in manufacturer's plant and perform the following:
  - a. Functional tests of all relays, instruments, meters, and control devices by application of secondary three-phase voltage to voltage circuits and injection of current in current transformer secondary circuits
  - b. Functional test of all control and trip circuits. Connect test devices into circuits to simulate operation of controlled remote equipment such as circuit breaker trip coils, close coils, and auxiliary contacts. Test proper operation of relay targets
- C. Prepare equipment for shipment



			<p>a. Provide suitable crating, blocking, and supports so equipment will withstand expected domestic shipping and handling shocks and vibration</p> <p>b. Weatherproof equipment for shipment. Close connection openings to prevent entrance of foreign material during shipment and storage</p> <p>8) FACTORY FINISHES</p> <p>A. Finish: Manufacturer's standard color finish applied to equipment before shipping</p> <p>Warranty: 1 year against factory defect</p>		
A1.3	1	Unit	<p><b>500kVA PAD MOUNTED TRANSFORMER</b></p> <p>QUALIFICATION OF THE BIDDER</p> <ul style="list-style-type: none"> <li>● The brand must have at least 10 years of existence in the market.</li> <li>● The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> </ul> <p>A. Liquid-filled Secondary Distribution Transformers: ANSI C57.12.00; 3-phase, self-cooled transformer, dead front construction, loop feed; frequency, 60 Hz</p> <p>B. Capacity: 500kVA, 3Ø, 13.8kV primary voltage-400Y/230Volts secondary, 60 Hz</p> <p>C. Primary Voltage: Primary voltage shall be wye connected. Provide two each 2.5% percent full capacity above normal and full capacity below normal primary taps, with externally-operated tap change</p> <p>D. Secondary Voltage: 400 volts</p> <p>E. Impedance: 5.75 %± ANSI tolerance</p> <p>F. Sound Level: 58 db ave</p> <p>G. BIL: 150 kV</p> <p>H. Cooling and Temperature Rise: ANSI C57.12.00; Class OA. 65°C</p> <p>I. Liquid: Contain less-flammable biodegradable fluid with no detectable level of PCB, less than 1PPM at the time of manufacture</p> <p>J. Accessories: ANSI C57.12.00 standard accessories and magnetic dial-type liquid level gauge, dial-type thermometer with alarm contact, stainless steel diagrammatic nameplate on side of unit, 1-inch upper filter press and filling plug, 1-inch drain valve with sampling device, vacuum-pressure gauge, pressure relief valve, six (6) 200A HV bushing wells, six (6) load break inserts (Dead front), three (3) 27 kV elbow arrester 35 kV interface, three (3) fused Bayonet no isolation link and three (3) oil immersed partial range current limiting fuse, 4 position T-blade switch, elbow connectors for XLPE</p> <p>K. Windings: Copper</p>	1	

		<p>L. Primary Terminations: Air-filled compartment. Bushings shall be porcelain or cast resin epoxy side mounted on opposite side of transformer from secondary bushings</p> <p>M. Secondary Terminations: or bussed to switchgear as indicated on the one-line diagrams. Bushings shall be porcelain or cast resin epoxy side mounted on opposite side of transformer from primary bushings</p> <p>N. Other Accessories: Secondary current transformers to IEEE C57.13</p> <p>O. Finish: Tank cleaned in phosphatized solution, coated with rust-inhibiting primer, followed with baked enamel finish. Finish shall have a minimum dry film thickness of 3 mils. Color shall be ANSI 70, light gray</p> <p>P. Factory Tests and Reports: Provide certified test reports to the Contractor on each unit for the following:</p> <ol style="list-style-type: none"> <li>a. Winding resistance test report</li> <li>b. Ratio, polarity, and phase measurements Test Report</li> <li>c. No-load, full-load loss tests</li> <li>d. Exciting current, impedance, X/R ratio</li> <li>e. Applied and induced potential tests. All tests per IEEE C57.12.90</li> <li>f. Core loss and Copper loss Test (at least 3 different loading/efficiency)</li> <li>g. Sound Level Test Report</li> <li>h. Factory-Installed Nameplates: Temporary tape labels</li> <li>i. Field-Installed Nameplates: Laminated plastic with engraved letters on each unit</li> </ol> <p>Warranty: 1 year against factory defect</p>		
A1.4		<p><b>500 GPM FIRE PUMP</b></p> <p>QUALIFICATION OF THE BIDDER</p> <ul style="list-style-type: none"> <li>● The brand must have at least 10 years of existence in the market.</li> <li>● The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> </ul> <p>A. Flow Rate = 500 gallons per minute  B. Total Dynamic Head = 289 FT.  C. BHP = 75 Horsepower  D. Voltage = 400 V  E. Phase = 3 P  F. Hertz = 60 Hz  G. Electrically and mechanically interlocked  H. With complete controller &amp; accessories</p> <p>1) GENERAL REQUIREMENTS FOR CENTRIFUGAL FIRE PUMPS</p> <p>A. Description: Factory-assembled and -tested fire-pump and driver unit.</p>	1	

			<p>B. Base: Fabricated and attached to fire-pump and driver unit with reinforcement to resist movement of pump during seismic events when base is anchored to building substrate.</p> <p>C. Finish: Red paint applied to factory-assembled and -tested unit before shipping.</p> <p><b>2) HORIZONTALLY MOUNTED, MULTI-STAGE SPLIT-CASE FIRE PUMPS (BY OTHERS)</b></p> <p><b>A. Manufacturers:</b> Subject to compliance with requirements, provide available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>a. Provide packaged type fire pumps and jockey pump system, all assembled on a common base-plate. All components shall be FM approved listed where applicable, and in accordance with the following specifications.</li> <li>b. Refer to Schedule for duty. Provide horizontal multi stage, split-case centrifugal pump, hydrostatically tested to twice the maximum working pressure. Provide ductile iron casing and cover with cast iron motor bracket, bronze impeller and wearing ring, and bronze shaft sleeve. Connected to a 3,600 rpm (max), solid shaft, open drip proof type motor.</li> <li>c. Provide pumping unit complete with the following accessories: <ul style="list-style-type: none"> <li>i. One (1) concentric increaser, attached to the fire pump discharge complete with 20 mm automatic air release valve and 20 mm circulation relief valve set approximately 10% above operative discharge pressure</li> <li>ii. One (1) FM approved and labelled fire pump control panel, and with a circuit breaker interrupting capacity amperes RMS symmetrical of two (2) complete with pressure switch suitable for 350 psi range</li> </ul> </li> </ul> <p><b>B. Standard:</b> FM approved, for split-case pumps for fire service</p> <ul style="list-style-type: none"> <li>a. Number of Stages: Two</li> <li>b. Casing: Axially split case, cast iron with ASME B16.1 pipe-flange connections</li> <li>c. Impeller: Cast bronze, statically and dynamically balanced, and keyed to shaft</li> <li>d. Wear Rings: Replaceable bronze</li> <li>e. Shaft and Sleeve: Steel shaft with bronze sleeve. <ul style="list-style-type: none"> <li>i. Shaft Bearings: Grease-lubricated ball bearings in cast-iron housing</li> <li>ii. Seals: Stuffing box with minimum of four rings of graphite-impregnated braided yarn and bronze packing gland</li> </ul> </li> <li>f. Mounting: Pump and driver shafts are horizontal, with pump and driver on same base</li> </ul>		
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		<ul style="list-style-type: none"> <li>vii. Exposed Parts Finish: chrome plated</li> <li>viii. Escutcheon Plate Marking: Equivalent to "FIRE PUMP TEST."</li> <li>f. Manifold: <ul style="list-style-type: none"> <li>i. Test Connections: Comply with FM approved except provide outlets without clappers instead of inlets</li> <li>ii. Body: Exposed type, brass, with number of outlets required by NFPA 20</li> <li>iii. Escutcheon Plate: Brass or bronze; round</li> <li>iv. Hose Valves: FM approved, bronze, with outlet threaded according to NFPA 1963 and matching local fire-department threads. Include caps and chains</li> <li>v. Exposed Parts Finish: chrome plated</li> <li>vi. Escutcheon Plate Marking: Equivalent to "FIRE PUMP TEST."</li> </ul> </li> </ul> <p>4) FLOWMETER SYSTEMS</p> <ul style="list-style-type: none"> <li>A. Description: FM-Approved, fire-pump flow meter system with capability to indicate flow to not less than 175 percent of fire-pump rated capacity</li> <li>B. Pressure Rating: 350 psig (2413 kPa)</li> <li>C. Sensor: Annubar probe, orifice plate, or venturi unless otherwise indicated. Sensor size shall match pipe, tubing, flow meter, and fittings</li> <li>D. Permanently Mounted Flowmeter: Compatible with flow sensor; with dial not less than 4- 1/2 inches (115 mm) in diameter. Include bracket or device for wall mounting <ul style="list-style-type: none"> <li>a. Tubing Package: NPS 1/8 or NPS 1/4 (DN 6 or DN 10) soft copper tubing with copper or brass fittings and valves</li> </ul> </li> <li>E. Portable Flowmeter: Compatible with flow sensor; with dial not less than 4-1/2 inches (115 mm) in diameter and with two 12-foot- (3.7-m-) long hoses in carrying case</li> </ul> <p>5) SOURCE QUALITY CONTROL</p> <ul style="list-style-type: none"> <li>A. Testing: Test and inspect fire pumps according to FM approved requirements for "Operation Test" and "Manufacturing and Production Tests." <ul style="list-style-type: none"> <li>a. Verification of Performance: Rate fire pumps according to FM approved</li> </ul> </li> <li>B. Fire pumps will be considered defective if they do not pass tests and inspections</li> <li>C. Prepare test and inspection reports</li> </ul> <p>Warranty: 1 year against factory defect</p>		
A1.5		<p><b>26GPM JOCKEY PUMP</b></p> <p>QUALIFICATION OF THE BIDDER</p> <ul style="list-style-type: none"> <li>• The brand must have at least 10 years of existence in the market.</li> </ul>	1	

		<ul style="list-style-type: none"> <li>● The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> </ul> <p>A. Flow Rate = 26 gallons per minute</p> <p>B. Total Dynamic Head = 312 FT.</p> <p>C. BHP = 5 Horsepower</p> <p>D. Voltage = 400 V</p> <p>E. Phase = 3 P</p> <p>F. Hertz = 60 Hz.</p> <p>G. With complete controller &amp; accessories</p> <p>H. The brand must have at least 5 years of existence in the market</p> <p>1) VERTICAL IN-LINE, PRESSURE-MAINTENANCE PUMPS (BY OTHERS)</p> <p>A. Description: Factory-assembled and -tested, vertical, multistage, open-line-shaft turbine pump as defined in HI 2.1-2.2 and HI 2.3; with pump motor mounted above pump head</p> <p>B. Pump Construction:</p> <ul style="list-style-type: none"> <li>a. Pump Head: Cast iron, for surface discharge, with flange except connections may be threaded in sizes in which flanges are not available</li> <li>b. Pump Head Seal: Stuffing box and stuffing</li> <li>c. Line Shaft: Stainless steel or steel, with corrosion-resistant shaft sleeves</li> <li>d. Line Shaft Bearings: Rubber sleeve, water lubricated</li> <li>e. Line Shaft: Steel</li> <li>f. Line Shaft Bearings: Corrosion resistant, oil lubricated</li> <li>g. Impeller Shaft: Monel metal or stainless steel</li> <li>h. Bowl Section: Multiple cast-iron bowls with closed-type bronze or stainless-steel impellers</li> <li>i. Column Pipe: ASTM A 53/A 53M, Schedule 40, galvanized-steel pipe with threaded ends and cast-iron or steel fittings, in sections 10 feet (3 m) or less, with strainer of cast or fabricated bronze or stainless steel at bottom</li> </ul> <p>C. Motor: Single speed with permanently lubricated ball bearings. Comply with requirements in Division 15 Section "Common Motor Requirements for Fire Suppression Equipment."</p> <ul style="list-style-type: none"> <li>a. Power Cord: Factory-connected to motor for field connection to controller and at least 10 feet (3 m) long</li> </ul> <p>D. Base: Cast iron or steel with hole for electrical cable</p> <p>E. Nameplate: Permanently attached to pump and indicating capacity and characteristics</p> <p>F. Capacities and Characteristics: Refer to Equipment Schedule</p> <p>2) MOTORS</p> <p>A. Comply with NEMA designation, temperature rating, service factor, enclosure type, and efficiency requirements for motors</p>		
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			<p>specified in Division 15 Section "Common Motor Requirements for Fire Suppression Equipment."</p> <ul style="list-style-type: none"> <li>a. Motor Sizes: Minimum size as indicated; if not indicated, large enough so driven load will not require motor to operate in service factor range above 1.0</li> <li>b. Electrical Devices, and Wiring: Comply with requirements for electrical devices and connections specified in Division 16 Sections</li> </ul> <p>Warranty: 1 year against factory defect</p>	
A1.6	1	Set	<p><b>Multi-Sport Gym - Constant Pressure System Booster Pump (Triplex with Individual VFD)</b></p> <p>QUALIFICATION OF THE BIDDER</p> <ul style="list-style-type: none"> <li>• The brand must have at least 10 years of existence in the market</li> <li>• The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> </ul> <ul style="list-style-type: none"> <li>A. Vertical In-Line Multistage Pump</li> <li>B. Flow Rate = 100 gallons per minute</li> <li>C. Total Dynamic Head = 170 FT.</li> <li>D. BHP = 7.5 Horsepower</li> <li>E. Voltage = 400 V</li> <li>F. Phase = 3</li> <li>G. Hertz = 60 Hz.</li> <li>H. With complete controller &amp; accessories</li> </ul> <p>1) WATER PUMPS</p> <p>A. General:</p> <ul style="list-style-type: none"> <li>a. Pumps shall be so selected that the operating duty point is within 5% of the maximum efficiency point. The pump casing so selected shall have ample space to take an impeller one size larger than that capable of performing the operating duty</li> <li>b. The pump shall have a speed of not more than 1500 rpm unless otherwise approved by the MEEPF CONSULTANT. All pumps and motors shall be of minimum vibration and noise level during operation. Vibration isolators shall be provided for all pump sets</li> <li>c. Facilities shall be provided to prevent starting of pumps when the water tank is at low water level. An indicator for this low water level alarm shall be provided and interfaced with the electronics system</li> <li>d. Facilities to select which pump to be duty pump and standby pump automatically shall be provided and be interchangeable</li> <li>e. Leakage from pump gland shall be drained to the nearest floor waste</li> </ul>	1

			<ul style="list-style-type: none"> <li>f. Pump curves for all pumps offered shall be submitted. All curve indicating excessive shutoff head will not be approved</li> <li>g. Each pump shall be provided with a gate valve at suction and discharge, approved check valve at discharge, approved strainer at suction, flexible connections at pump suction and discharge, eccentric reducer at suction, concentric reducer at discharge, pressure gauges at suction and discharge, circulation relief valve and automatic air relief valve</li> <li>h. Appropriate vibration isolation mountings shall be provided for each pump sets</li> <li>i. Supply and install a control panel on 16 swg drip proof metal cubicle enclosing the control switchgear and other electrical and control components for each pumping installation. All sensors shall be connected to a separate extra-low voltage termination compartment within the control panel</li> <li>j. Power supply to all sensors and external devices associated to the control and monitoring of the pumps and tanks shall be taken from the pump control panel.</li> </ul> <p>B. Pumps:</p> <ul style="list-style-type: none"> <li>a. Pumps shall be of capacities as shown on the drawings</li> <li>b. Pumps shall be horizontal end suction, single inlet centrifugal pumps with variable speed control. Pumps shall be complete with mechanical seals with its faces of tungsten carbide against tungsten carbide. The pump shaft shall be of 316 stainless steel, spline type, while the impellers, intermediate chambers and outer sleeve shall be of 304 stainless steel or bronze. The cast iron parts in contact with water shall be electro-coated with primer so as to prevent the formation of rust.</li> <li>c. Each pump shall be checked and regulated for proper differential pressure, voltage and amperage draw. This data shall be noted on a permanent tag or label and fastened to the pump for owner / client reference</li> <li>d. Pressure Rating: Refer to Section 15140 "Domestic Water Pipng"</li> </ul> <p>C. Floatless Type Level Switch in Water Tanks:</p> <ul style="list-style-type: none"> <li>a. Supply and install floatless type switch probes in the water tanks as indicated below and shown on the drawings. <ul style="list-style-type: none"> <li>i. Main RC Water Tanks at Underground Level <ol style="list-style-type: none"> <li>1. High level alarm (over-flow);</li> <li>2. Low level alarm;</li> <li>3. Low level cut-out of booster pumps;</li> <li>4. Earthing probe</li> </ol> </li> </ul> </li> <li>b. Each probe shall be of the correct length for the particular application and tank location. Electrodes</li> </ul>		
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shall be of polished stainless steel 20 mm OD.  
Electrode holders shall be weatherproof in all respect.

- c. The earthing probes shall be connected and wired to the building earth systems of the building.
  - d. Each set of electrodes shall be installed inside a 230 mm diameter PVC pipe acting as a wave barrier.
  - e. The level switch set shall operate with a stepped down voltage at 24V maximum. Stepped down transformers shall be provided for each set of control probes and shall be installed inside centralised control cubicles inside pump room.
  - f. Mechanical steel stuffing boxes shall be used.
- D. Control of Duty / Standby Pumps:
- a. Operation of the duty and standby pumps shall be carried out by the following method:
    - i. Automatically by means of pressure sensor (i.e. pressure switches);
    - ii. Manually by means of a local start/stop push buttons on pump local motor control panel and emergency stop switch.
    - iii. The pressure switch shall be installed next to the manual release valve. When the pressure drops to the pre-determined level, a signal will be sent to the pump local motor control panel to start the pump.
    - iv. Automatic controls shall be operated by electronic, floatless type level switches.
- E. Pump Indicator:
- a. The following audible and visible indication shall be provided at the pump local control panels as applicable:
    - i. Red "overflow level" indicator with buzzer for the associated water tanks;
    - ii. Amber "extra high water level" indicator for the associated water tank;
    - iii. Amber "high water level" indicator;
    - iv. Amber "low water level" indicator;
    - v. Red "pump trip" indicator for each pump;
    - vi. Green "pump on" indicator for each pump;
    - vii. "Pump electrical supply healthy" indicator for each pump;
    - viii. Amber "remote/local" status indicator.
- 2) DOMESTIC BOOSTER PUMP SETS (VARIABLE SPEED DRIVE)
- A. The fully automatic domestic water booster set with variable speed controller shall be of robust design, supplied ready for connection. Booster pumps and pressure tanks shall be mounted on a vibration absorbing mild steel baseplate. Each set shall comprise of the following:
- a. Triplex type approved pattern vertical multi stage pumps.

		<ul style="list-style-type: none"> <li>b. One (1) set pressure tank with rubber bag</li> <li>c. One set factory assembled pre-wired fully automatic control cubicle (variable speed controller) in weather-proof mild steel enamel finished steel enclosure</li> <li>d. Associate pipework including control valves, water hammer absorbers, check valves, flexible connectors, pressure regulating valves, located in the common pump delivery pipe etc.</li> <li>e. Vibration-absorbing baseplate</li> <li>f. Pressure gauges, pressure switches, and safety valves, etc.</li> <li>g. Thermal relay, indicator lamp, fuse magnetic controller auxiliary relay, alternative relay, terminal board</li> <li>h. 70% pump efficiency.</li> </ul> <p>B. Only one pump is in operation at a time, the other one on standby. The pumps are changed over after each cycle by an automatic device. But the second pump will be automatically switched on when the water pressure drops down to the minimum set pressure and then the two pumps are in parallel operation with one in variable speed and the other at full load. Dry running protection should also be provided</p> <p>C. Pressure tank shall be of stainless steel cylindrical pre-changed pressure vessel with epoxy or polypropylene anti-corrosion lining in the internal surface. A rubber bag shall be fitted for separation of the water nitrogen gas. Externally treated in synthetic enamel. An approved type valve shall be fitted for pre-pressure adjustment. Baseplate is manufactured in heavy gauge fabricated mild steel, zinc plate finish</p> <p>D. All pipings, flexible connectors, gate valve and non-return valves shall be as described in the Pipework, Fitting and Valve Section</p> <p>E. The following accessories shall be provided;</p> <ul style="list-style-type: none"> <li>a. One (1) no. pressure gauge with syphon pipes and isolating valves in the pressure tank air chamber.</li> <li>b. Three (3) nos. adjustable pressure switches for incoming and outgoing pressure adjustable individually and low water pressure (no flow) cut-out of booster pumps</li> <li>c. One (1) no. bronze drain cock at the bottom of the pressure tank</li> <li>d. One (1) no. 25mm diaphragm type safety valve at the air chamber of pressure tank.</li> </ul> <p>A test certificate for the performance and test pressure of the tank issued by the manufacturer must be submitted</p> <p>Warranty: 1 year against factory defect</p>		
A1.7		<p><b>ACADEMIC/ADMIN BUILDING - CONSTANT PRESSURE SYSTEM BOOSTER PUMP (TRIPLEX WITH INDIVIDUAL VFD)</b></p> <p>QUALIFICATION OF THE BIDDER</p>		

			<ul style="list-style-type: none"> <li>● The brand must have at least 10 years of existence in the market.</li> <li>● The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> </ul> <p>A. Vertical In-line Multi-Stage Pump  B. Flow Rate = 100 gallons per minute  C. Total Dynamic Head = 150 FT.  D. BHP = 7.5 Horsepower  E. Voltage = 400 V  F. Phase = 3  G. Hertz = 60 Hz.  H. The brand must have at least 5 years of existence in the market  I. With complete controller &amp; accessories</p> <p>1) WATER PUMPS  A. General:</p> <ol style="list-style-type: none"> <li>a. Pumps shall be so selected that the operating duty point is within 5% of the maximum efficiency point. The pump casing so selected shall have ample space to take an impeller one size larger than that capable of performing the operating duty</li> <li>b. The pump shall have a speed of not more than 1500 rpm unless otherwise approved by the MEEPF CONSULTANT. All pumps and motors shall be of minimum vibration and noise level during operation. Vibration isolators shall be provided for all pump sets</li> <li>c. Facilities shall be provided to prevent starting of pumps when the water tank is at low water level. An indicator for this low water level alarm shall be provided and interfaced with the electronics system</li> <li>d. Facilities to select which pump to be duty pump and standby pump automatically shall be provided and be interchangeable</li> <li>e. Leakage from pump gland shall be drained to the nearest floor waste</li> <li>f. Pump curves for all pumps offered shall be submitted. All curve indicating excessive shutoff head will not be approved</li> <li>g. Each pump shall be provided with a gate valve at suction and discharge, approved check valve at discharge, approved strainer at suction, flexible connections at pump suction and discharge, eccentric reducer at suction, concentric reducer at discharge, pressure gauges at suction and discharge, circulation relief valve and automatic air relief valve</li> <li>h. Appropriate vibration isolation mountings shall be provided for each pump sets</li> <li>i. Supply and install a control panel on 16 swg drip proof metal cubicle enclosing the control switchgear and other electrical and control components for each</li> </ol>		
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pumping installation. All sensors shall be connected to a separate extra-low voltage termination compartment within the control panel

- j. Power supply to all sensors and external devices associated to the control and monitoring of the pumps and tanks shall be taken from the pump control panel.

B. Pumps:

- a. Pumps shall be of capacities as shown on the drawings
- b. Pumps shall be horizontal end suction, single inlet centrifugal pumps with variable speed control. Pumps shall be complete with mechanical seals with its faces of tungsten carbide against tungsten carbide. The pump shaft shall be of 316 stainless steel, spline type, while the impellers, intermediate chambers and outer sleeve shall be of 304 stainless steel or bronze. The cast iron parts in contact with water shall be electro-coated with primer so as to prevent the formation of rust
- c. Each pump shall be checked and regulated for proper differential pressure, voltage and amperage draw. This data shall be noted on a permanent tag or label and fastened to the pump for owner / client reference
- d. Pressure Rating: Refer to Section 15140 "Domestic Water Piping"

C. Floatless Type Level Switch in Water Tanks:

- a. Supply and install float less type switch probes in the water tanks as indicated below and shown on the drawings
  - i. Main RC Water Tanks at Underground Level
    - 1. High level alarm (over-flow);
    - 2. Low level alarm;
    - 3. Low level cut-out of booster pumps;
    - 4. Earthing probe
- b. Each probe shall be of the correct length for the particular application and tank location. Electrodes shall be of polished stainless steel 20 mm OD. Electrode holders shall be weatherproof in all respect.
- c. The earthing probes shall be connected and wired to the building earth systems of the building
- d. Each set of electrodes shall be installed inside a 230 mm diameter PVC pipe acting as a wave barrier
- e. The level switch set shall operate with a stepped down voltage at 24V maximum. Stepped down transformers shall be provided for each set of control probes and shall be installed inside centralised control cubicles inside pump room
- f. Mechanical steel stuffing boxes shall be used

D. Control of Duty / Standby Pumps:

- a. Operation of the duty and standby pumps shall be carried out by the following method:

- i. Automatically by means of pressure sensor (i.e. pressure switches);
- ii. Manually by means of a local start/stop push buttons on pump local motor control panel and emergency stop switch
- iii. The pressure switch shall be installed next to the manual release valve. When the pressure drops to the pre-determined level, a signal will be sent to the pump local motor control panel to start the pump
- iv. Automatic controls shall be operated by electronic, floatless type level switches.

E. Pump Indicator:

- a. The following audible and visible indication shall be provided at the pump local control panels as applicable:
  - i. Red "overflow level" indicator with buzzer for the associated water tanks;
  - ii. Amber "extra high water level" indicator for the associated water tank;
  - iii. Amber "high water level" indicator;
  - iv. Amber "low water level" indicator;
  - v. Red "pump trip" indicator for each pump;
  - vi. Green "pump on" indicator for each pump;
  - vii. "Pump electrical supply healthy" indicator for each pump;
  - viii. Amber "remote/local" status indicator

2) DOMESTIC BOOSTER PUMP SETS (VARIABLE SPEED DRIVE)

- A. The fully automatic domestic water booster set with variable speed controller shall be of robust design, supplied ready for connection. Booster pumps and pressure tanks shall be mounted on a vibration absorbing mild steel baseplate. Each set shall comprise of the following:
  - a. Triplex type approved pattern vertical multi stage pumps
  - b. One (1) set pressure tank with rubber bag
  - c. One set factory assembled pre-wired fully automatic control cubicle (variable speed controller) in weather-proof mild steel enamel finished steel enclosure
  - d. Associate pipework including control valves, water hammer absorbers, check valves, flexible connectors, pressure regulating valves, located in the common pump delivery pipe etc
  - e. Vibration-absorbing baseplate
  - f. Pressure gauges, pressure switches, and safety valves, etc.
  - g. Thermal relay, indicator lamp, fuse magnetic controller auxiliary relay, alternative relay, terminal board
  - h. 70% pump efficiency.

		<p>B. Only one pump is in operation at a time, the other one on standby. The pumps are changed over after each cycle by an automatic device. But the second pump will be automatically switched on when the water pressure drops down to the minimum set pressure and then the two pumps are in parallel operation with one in variable speed and the other at full load. Dry running protection should also be provided.</p> <p>C. Pressure tank shall be of stainless steel cylindrical pre-changed pressure vessel with epoxy or polypropylene anti-corrosion lining in the internal surface. A rubber bag shall be fitted for separation of the water nitrogen gas. Externally treated in synthetic enamel. An approved type valve shall be fitted for pre-pressure adjustment. Baseplate is manufactured in heavy gauge fabricated mild steel, zinc plate finish.</p> <p>D. All pipings, flexible connectors, gate valve and non-return valves shall be as described in the Pipework, Fitting and Valve Section.</p> <p style="padding-left: 40px;">a. The following accessories shall be provided;</p> <p style="padding-left: 80px;">i. One (1) no. pressure gauge with syphon pipes and isolating valves in the pressure tank air chamber</p> <p style="padding-left: 80px;">ii. Three (3) nos. adjustable pressure switches for incoming and outgoing pressure adjustable individually and low water pressure (no flow) cut-out of booster pumps</p> <p style="padding-left: 80px;">iii. One (1) no. bronze drain cock at the bottom of the pressure tank</p> <p style="padding-left: 80px;">iv. One (1) no. 25mm diaphragm type safety valve at the air chamber of pressure tank.</p> <p style="padding-left: 80px;">A test certificate for the performance and test pressure of the tank issued by the manufacturer must be submitted</p> <p>Warranty: 1 year against factory defect</p>		
A1.8		<p><b>LANDSCAPE - CONSTANT PRESSURE SYSTEM BOOSTER PUMP</b></p> <p>QUALIFICATION OF THE BIDDER</p> <ul style="list-style-type: none"> <li>● The brand must have at least 10 years of existence in the market.</li> <li>● The Bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> </ul> <p>A. Vertical In-Line Multistage Pump</p> <p>B. Flow Rate = 75 gallons per minute</p> <p>C. Total Dynamic Head = 260 FT.</p> <p>D. BHP = 10 Horsepower</p> <p>E. Voltage = 400 V</p> <p>F. Phase = 3</p> <p>G. Hertz = 60 Hz.</p> <p>H. The brand must have at least 5 years of existence in the market.</p> <p>I. With complete controller &amp; accessories</p>		

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|  |  | <p>1) LEVEL PROBES IN TANKS</p> <p>A. The Sub-Contractor shall supply and install level probes in water tanks as indicated below and shown on the Drawings</p> <ol style="list-style-type: none"> <li>a. Underground water tank:             <ol style="list-style-type: none"> <li>i. High level alarm (overflow)</li> <li>ii. Low level alarm</li> <li>iii. Low water level cut-out for the transfer water pumps</li> <li>iv. Earthing probe</li> <li>v. Additional probe (refer to Schematic Diagram)</li> </ol> </li> <li>b. Each probe shall be of the correct length for its particular application and tank location. Electrodes shall be of polished stainless steel 20mm O.D. Electrode holders shall be weather-proof in all respect</li> <li>c. The earthing probes shall be connected and wired to the building earth systems of the building</li> <li>d. Each set of electrodes shall be installed inside a Ø 250 diameter PVC pipe acting as a wave barrier</li> <li>e. The level switch set shall operate with a stepped down voltage at 24V maximum. Stepped down transformers shall be provided of control probes and shall be installed inside control cubicles.</li> </ol> <p>2) ANTI-VORTEX PLATES</p> <p>A. Anti-vortex plates shall be installed at the end of the pump suction tanks as shown on Drawings.</p> <p>3) ANTI-VIBRATION MOUNTINGS</p> <p>A. Anti-vibration mountings shall be inertia base, springs, neoprene pads or rubber-inshear isolators, with the specified static deflection and selected to provide isolating efficiency of not less than 95%.</p> <p>4) TANK FITTINGS</p> <p>A. Outlet, inlet, overflow and rain pipes connected to reinforced cement concrete water tanks shall be:</p> <ol style="list-style-type: none"> <li>a. Screwed joint tank ferrules for the use in nominal pipe sizes up to 50mm and flanged joint for use in nominal pipe sizes over 50mm.</li> </ol> <p>B. Overflow pipes shall be:</p> <ol style="list-style-type: none"> <li>a. With minimum internal diameter larger than the internal diameter of inlet pipes.</li> <li>b. Dipped down inside tanks so as to terminate in a position maximum 150mm above bottom of tanks.</li> <li>c. Provided with metal hinged flaps at outlets, and wire mesh screen, to prevent vermin and insects entering.</li> <li>d. Discharging in conspicuous position.</li> </ol> <p>C. Float valves or flow switches shall shut off the supply when the water level is 10 cm below the invert level of overflow pipes.</p> <p>D. Invert level of inlet pipes shall be minimum 10 cm above the top overflow pipes.</p> |  |  |
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		<p>E. Vent pipes at the top of tanks shall be bent to the required shape and be fitted with wire mesh screen to prevent vermin and insects entering.</p> <p>F. Unless otherwise specified, all overflows, vents, silencing pipe and drain pipes shall be galvanized steel pipes medium grade and pipe fittings shall be the same as described in "Pipework" Section.</p> <p><b>5) FLEXIBLE PUMP CONNECTORS</b></p> <p>A. Flexible connections at inlets and outlets of pumps shall be of twin sphere neoprene rubber impregnated fabric reinforcement, below shape with flanged ends. The flexible connectors shall be designed for excellent vibration and noise protection. Isolated tension members shall be provided to prevent excessive elongation. Flexible connections shall be suitable for the specified working fluid and specified working pressure and temperature.</p> <p><b>6) STRAINERS</b></p> <p>A. Provide Spirax Limited pipeline strainers with stainless steel screens according to the following:</p> <ul style="list-style-type: none"> <li>a. Pipe Schedule:</li> <li>b. Steel: Up to 50mm, Type Y, IT Cast Iron Model and 0.76mm 20 mesh</li> <li>c. Steel: 65mm to 150mm, Type Y, IF Standard for Water Model and 3mm</li> </ul> <p>B. Supply one extra set of strainer screens and install after systems have been thoroughly cleaned.</p> <p>C. Equip each strainer 40 mm and smaller in size, with plugged blow off tappings.</p> <p>D. Equip each strainer 50 mm and larger in size, with blow off tapping. Provide blow off piping complete with capped shut off valve. Terminate in downward vertical position. Size blow off piping and valve the same size as the blow off tapping.</p> <p>E. Ensure that each strainer can be isolated from piping systems with isolating valves on each side of strainer, and which are not more than 3 metres away from strainer.</p> <p>F. Provide strainers in the following locations:</p> <ul style="list-style-type: none"> <li>a. At the suction side of each domestic water pump</li> <li>b. Immediately upstream of each pressure reducing valve</li> <li>c. Where shown on Detail Drawings</li> </ul> <p><b>7) RECIRCULATING PUMP</b></p> <ul style="list-style-type: none"> <li>A. Max. Working Pressure: 125 psi</li> <li>B. RPM: 3250</li> <li>C. Stainless Steel Cartridge</li> <li>D. Ceramic Shaft</li> <li>E. IFC Model with integrated check valve</li> </ul> <p>Warranty: 1 year against factory defect</p>		
A1.9		<p><b>SUMP PUMP - 250GPM DUPLEX, NON-CLOG SUBMERSIBLE, QUICK DISCONNECT PUMP</b></p>		



**QUALIFICATION OF THE BIDDER**

- The brand must have at least 10 years of existence in the market.
- The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region

- A. Non-clog Submersible, Quick Disconnect Pump
- B. Flow Rate = 250 gallons per minute
- C. Total Dynamic Head = 70 FT.
- D. BHP = 15 Horsepower
- E. Voltage = 400 V
- F. Phase = 3
- G. Hertz = 60 Hz.
- H. With complete controller & accessories

1) SUBMERSIBLE SUMP PUMPS

- A. Submersible, Quick-Disconnect, Double-Seal Sump Pumps:
  - a. Description: Factory-assembled and -tested sump-pump unit with guide-rail supports.
  - b. Pump type: Submersible, end-suction, single-stage, close-coupled, overhung impeller, centrifugal sump pump as defined in HI 1.1-1.2 and HI 1.3.
  - c. Pump Casing: Cast iron, with open inlet, and discharge fittings for connection to guide-rail support.
  - d. Impeller: Statically and dynamically balanced, stainless steel, nonclog, open, or semi open design for solids handling, and keyed and secured to shaft.
  - e. Pump and Motor Shaft: Stainless steel, with factory-sealed, grease-lubricated ball bearings.
  - f. Seals: Mechanical.
  - g. Moisture-Sensing Probe: Internal moisture sensor and moisture alarm.
  - h. Motor: Hermetically sealed, capacitor-start type; with built-in overload protection; lifting eye or lug; and three-conductor, waterproof power cable of length required and with grounding plug and cable-sealing assembly for connection at pump
  - i. Motor Housing Fluid: Oil
  - j. Controls:
    - i. Enclosure: NEMA 3R
    - ii. Switch Type: Pedestal-mounted float switch with float rods and rod buttons
    - iii. Automatic Alternator: Start pumps on successive cycles and start multiple pumps if one cannot handle load
    - iv. Float Guides: Pipe or other restraint for floats and rods in basins of depth greater than 60 inches (1500 mm)
    - v. High-Water Alarm: Cover-mounted, compression-probe alarm, with electric bell;

			<p>120-V ac, with transformer and contacts for remote alarm bell.</p> <p>k. Controls:</p> <ul style="list-style-type: none"> <li>i. Enclosure: NEMA 250, wall-mounted</li> <li>ii. Switch Type: Mechanical-float type, in NEMA 250, Type 6 enclosures with mounting rod and electric cables</li> <li>iii. Automatic Alternator: Start pumps on successive cycles and start multiple pumps if one cannot handle load</li> <li>iv. High-Water Alarm: Rod-mounted, NEMA 250, Type 6 enclosure with mechanical-float switch matching control and electric bell; 120-V ac, with transformer and contacts for remote alarm bell.</li> </ul> <p>l. Control-Interface Features:</p> <ul style="list-style-type: none"> <li>i. Remote Alarm Contacts: For remote alarm interface</li> <li>ii. Auxiliary contacts in pump controls for interface to building automation system and capable of providing the following: <ul style="list-style-type: none"> <li>1. On-off status of pump</li> <li>2. Alarm status</li> </ul> </li> </ul> <p>m. Guide-Rail Supports:</p> <ul style="list-style-type: none"> <li>i. Standard: SWPA's "Submersible Sump Pumping Systems (SWPA) Handbook."</li> <li>ii. Guide Rails: Vertical pipes or structural members, made of galvanized steel or other corrosion-resistant metal, attached to baseplate and basin sidewall or cover</li> <li>iii. Baseplate: Corrosion-resistant metal plate, attached to basin floor, supporting guide rails and stationary elbow</li> <li>iv. Pump Yoke: Motor-mounted or casing-mounted yokes or other attachments for aligning pump during connection of flanges</li> <li>v. Movable Elbow: Pump discharge-elbow fitting with flange, seal, and positioning device</li> <li>vi. Stationary Elbow: Fixed discharge-elbow fitting with flange that mates to movable-elbow flange and support attached to baseplate</li> <li>vii. Lifting Cable: Stainless steel; attached to pump and cover at manhole</li> </ul> <p>Warranty: 1 year against factory defect</p>		
A1.10	1	unit	<b>SEWAGE TREATMENT PLANT (MULTI-STAGE BIOLOGICAL PROCESS INCORPORATING BIOLOGICAL NUTRIENT REMOVAL (BNR) OR OTHER BEST PRACTICE TO REMOVE NITROGEN, PHOSPHORUS AND OTHER IMPURITIES FROM THE EFFLUENT)</b>		

**PERFORMANCE SPECIFICATIONS AND PARAMETERS**

A. The WINNING BIDDER shall supply and install the Sewage Treatment Plant, designed to meet the following:

- o DPWH Standard Specification (Blue Book);
- o National Building Code;
- o Fire Code of the Philippines; and
- o specification and parameters described below:

1) DESIGN CRITERIA

A. Process

a. The proposed treatment method will be a multi-stage biological process incorporating biological nutrient removal (BNR), considering technologies with lower unit energy consumption and reduced sludge production, or other best practice process to remove nitrogen, phosphorus, and other impurities from the effluent. Preferred BNR technologies are as follows: Fixed-Bed Biofilm Activated Sludge (FBAS), Moving Bed Biofilm Reactor (MBBR), or Membrane Aerated Biofilm Reactor (MABR).

b. Influent Characteristics

<b>Particular</b>	<b>STP</b>
Average Daily Flow, m <sup>3</sup> /day	120
Peak Hour Flow, m <sup>3</sup> /hr	5

B. Sewage Characteristics

The pollutant loading from each building or facility will conform to the specified maximum permissible parameters before discharge to the sewerage system

<b>Parameter</b>	<b>Maximum Permissible</b>
BOD	300 mg/L
COD	400 mg/L
TSS	200 mg/L
TKN	35 mg/L
NH <sub>3</sub>	26 mgN/L
Total Phosphorus	8 mgP/L

Fecal Coliform

1x10<sup>7</sup>/100 mL

C. Effluent Characteristics

Effluent from the wastewater treatment shall conform with the standards required under existing laws rules and regulations and shall be atleast Water Body Class C as specified in the Water Quality Guidelines and General Effluent Standards of 2016 as specified under Administrative Order 2016-08 issued by the Department of Environment and Natural Resources. The key parameters are presented below:

PARAMETER	MAXIMUM PERMISSIBLE
Ammonia	0.5 mg/L
BOD	50 mg/L
Boron	3 mg/L
Chloride	450 mg/L
COD	100 mg/L
Color	150 TCU
Cyanide as Free Cyanide	0.2 mg/L
Fluoride	2 mg/L
Nitrate as NO <sub>3</sub> -N	14 mg/L
pH	6.0-9.5
Phosphate	1 mg/L
Selenium	0.04 mg/L
Sulfate	550 mg/L
Surfactants (MBAS)	15 mg/L
Temperature Change	3 oC change
TSS	100 mg/L
Oil and Grease	5 mg/L
Dissolved Oxygen (Minimum 5 mg/L)	

The characteristics and the aforementioned parameters are subject to change pursuant to any updates and/or revisions issued by DENR

			<p>D. Sewage Treatment Plant Area and Volume</p> <p>The total space allocated for the proposed STP is approximately 150 m<sup>2</sup> with a 6.5 m depth from finish ground line. Proposed location of the STP is shown in the Site Plan</p> <p>E. Content of Proposals</p> <p>All proposals shall include, but not limited to, the following items:</p> <ol style="list-style-type: none"> <li>a. The characteristics and the aforementioned parameters are subject to change pursuant to any updates and/or revisions issued by DENR.</li> </ol> <p>F. Sewage Treatment Plant Area and Volume</p> <ol style="list-style-type: none"> <li>a. The total space allocated for the proposed STP is approximately 150 m<sup>2</sup> with a 6.5 m depth from finish ground line. Proposed location of the STP is shown in the Site Plan.</li> <li>b. Content of Proposals <p>All proposals shall include, but not limited to, the following items:</p> <ol style="list-style-type: none"> <li>i. Catalogs/brochures showing the Technical data of equipment, such as weights, physical dimensions and performance characteristics.</li> <li>ii. Plant layout showing the arrangement and dimensions of all equipment mounting.</li> <li>iii. Process flow diagram of Sewage Treatment Plant interrelated with other trades within the institutional/commercial complex.</li> <li>iv. Control and instrumentation diagrams of proposed Sewage Treatment Plant.</li> <li>v. Testing and commissioning procedures, as well as, operation and maintenance manuals for the start-up, operation, and maintenance of STP.</li> <li>vi. Complete list of chemicals to be used in the proposed Sewage Treatment Plant. Chemicals needed for the Sewage Treatment Plant must be available in the local market.</li> <li>vii. A full breakdown of plant operating and maintenance cost table on a monthly basis; assuming that the plant is treating 100%, 75%, 50% and 25% of the design flows, and also expressed as a cost per cubic meter of effluent treated.</li> <li>viii. Equipment parts list indicating the source of supply and recommended spare parts</li> <li>ix. Details of proposed installation and commissioning schedule within the framework of the Owner's schedule as in this document.</li> </ol> </li> </ol>		
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- x. Company profile showing the Contractor's background and experience including a list of past and present Sewage Treatment Plant projects done in the last five years.
- xi. Propose future facilities treatment and space requirements within the allocated space to comply with DAO2016-08 Section 11.0 Paragraph 2, No effluent shall cause the quality of the receiving water body to fall below the prescribed WQG in accordance with its Classification.

G. Compliance with DENR-EMB

- a. The complete system shall meet the requirement of the Department of Environment and Natural Resources - Environmental Management Bureau (DENR-EMB) on the quality of the effluent and all other requirements. The contractor shall obtain permit to construct and the final permit to operate the Sewage Treatment Plant.
- b. The Contractor must also obtain the discharge permit from DENR-EMB

H. Schedule of Operation

- a. Contractors are advised to consider in their proposal the commissioning, operation and maintenance (from start-up until the full capacity is utilized) starting from the acceptance of the works
- b. Design Parameters
  - i. Odourless
  - ii. Aesthetically pleasing
  - iii. Flood protected

I. Sewage Treatment Plant Component

- a. Pre-treatment: Screening and disposal
- b. Wastewater flows under gravity or is pumped (by others) to the inlet of the WWTP. Screening must be provided to remove rag and other material that has the potential to block the plant's pumps. Screening with a maximum 6mm mesh size in two dimensions is required. An automatic system for cleaning the screen and delivering the screening to a suitable storage container for disposal shall be included. In the event of failure of the automated cleaning system, the screen shall be designed to facilitate manual cleaning. A bypass shall be included to accommodate 100% of the flow. The container for storage of rag shall be provided by the Contractor

J. Grit Removal Facilities

			<ul style="list-style-type: none"> <li>a. Grit removal shall follow fine screening and storm separation and seized to handle peak design flow.</li> <li>b. The following grit removal systems can be considered for the WWTP</li> <li>c. Process selection is subject to specific site requirements: <ul style="list-style-type: none"> <li>i. Vortex flow separator;</li> <li>ii. Detritus tanks;</li> <li>iii. Settling channels; or</li> <li>iv. Aerated grit basins</li> </ul> </li> <li>d. The contractor shall provide mechanical grit removal together with grit withdrawal facilities and grit classifier and washer.</li> <li>e. Each mechanical grit removal unit shall have less than 50mm head loss. The design shall be capable of removing grit from raw unscreened sewage and depositing grit into the grit classifiers.</li> <li>f. All equipment shall be shipped in one piece, with pre-mounted components and provided with enclosures to prevent odour and vector nuisance. All wetted parts and screen bars shall be SS 316L as a minimum.</li> <li>g. Liquors from the dewatering compactors shall be returned to the flow by gravity or pumped if necessary. The liquors shall be returned upstream of the screens.</li> <li>h. The conditioning and cleaning of screened material and grit is undertaken such that no visual fecal matter and that the screenings are in a suitable condition for road transport and ultimate offsite disposal.</li> <li>i. The Contractor shall provide suitably sized and an appropriate number of skips at least 1 skips per units for coarse screenings, fine screenings and grit chamber to facilitate the collection and transfer of screenings and grit from site. The Contractor shall undertake skip transfer frequently, and dispose waste materials generated daily or as directed by the Employer. The Contractor shall ensure that the management of skips is appropriate to the amount of waste anticipated</li> <li>j. The skips as a minimum are required to be covered in order to reduce the potential level of odor generation on site and prevent the collection of water in them.</li> <li>k. Penstocks shall be provided upstream and downstream of the grit chambers, so that each of them can be isolated during maintenance servicing</li> </ul> <p>K. Fat, Oil and Grease (FOG) Removal System</p> <ul style="list-style-type: none"> <li>a. FOG removal is typically combined with grit and screenings removal system.</li> </ul>		
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			<ul style="list-style-type: none"> <li>b. Mechanical emulsified oil and grease removal unit shall be provided if the FOG concentration of the influent wastewater is excessively high. It may be provided to protect downstream equipment / processes where: <ul style="list-style-type: none"> <li>i. Lamella plate settlers are used at downstream processes.</li> <li>ii. Influent FOG concentration is high (e.g. &gt; 100 mg/L on average)</li> </ul> </li> <li>c. The design capacity shall be able to treat the design peak flow.</li> <li>d. FOG separation by diffused air is preferred.</li> <li>e. Effective FOG removal mechanism shall be provided. Removed FOG can be sent to sludge holding tanks for further treatment in anaerobic digesters), where applicable, unless inhibitory substances exist.</li> <li>f. The removal of emulsified oils and greases shall be performed before the equalization tank to minimize the build-up of oil and grease in the equalization tank.</li> <li>g. The collected emulsified oils and grease shall be mixed with the sludge for treatment and handling.</li> <li>h. To protect downstream processes, emulsified oils and grease shall be removed prior to any biological treatment.</li> <li>i. Oil and grease levels entering the sewage are anticipated to be highly variable in concentration and will consist of free oil and grease as well as emulsified oil and grease</li> </ul> <p>L. Wastewater treatment</p> <ul style="list-style-type: none"> <li>a. The Fixed Bed Activated Sludge (FBAS) treatment technology is the preferred technology as secondary biological treatment process. However, other similar technologies can be offered as long as that it will have a better CAPEX and OPEX compared to FBAS technology. The offered technology will be designed and installed to meet the requirements of this Performance Specification, especially the effluent quality standard.</li> <li>b. Wastewater treatment will remove the required amount of BOD, ammonia, nitrogen, phosphorus, and other impurities to ensure the effluent quality specified in DENR Class C is met. The wastewater treatment plant is required to comply with both nitrogen and phosphorus removal requirements by denitrification in the anoxic zones of the activated sludge system.</li> <li>c. Secondary treatment of the WWTP can be a combination of attached growth (fixed film), suspended growth, hybrid biological processes, or other innovative treatment technology designed to</li> </ul>		
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consistently meet the performance and effluent requirements. Proposed technologies shall have proven records to work in previous projects undertaken. BCDA has the option to inspect previous projects performance for confirmation. Any false representation in the bid shall be ground for disqualification by the Bidder.

- d. Consistent with the requirement for optimized design, the contractor shall be responsible for setting the optimum hydraulic profile, the optimum number of modules/trains and the optimum dimensions of the different components based on optimum design parameters such that the effluent quality is met at minimum life-cycle cost of the plant.
- e. Each aeration tank shall be provided with online monitors for DO, MLSS, TSS, pH, and temperature.
- f. The design shall include means of draining down all basins or tanks one at a time for maintenance purposes. All sewage removed during a drain down shall be returned to a point in the process where the load can be evenly distributed to the basins in service to prevent shock loading. The draining facilities shall be capable of draining a basin fully within forty-eight (48) hours.

M. Final Sedimentation

- a. This is required to produce a clear effluent and to ensure that the total suspended solids meets the discharge standard.

Table 1. Final Sedimentation Technologies

<b>SECONDARY TREATMENT TECHNOLOGIES</b>	<b>SOLIDS SEPARATION (TYPICAL)</b>
Fixed-Bed Biofilm Activated Sludge (FBAS)	Secondary Clarifier, Disc Filter
Moving Bed Biofilm Reactor (MBBR)	DAF, high rate filter, Secondary Clarifier
Integrated Fixed Film Activated Sludge (IFAS)	Secondary Clarifier
Advance Oxidation Process	Discharge Filter

N. Secondary Clarifier

- a. For biological treatment processes, the secondary clarifier shall be designed using values of design parameters that are consistent with the design of the aeration tank, especially the sludge retention time and

the mixed liquor suspended solids. The sizing must consider also the costs of sludge storage, dewatering and disposal. In short, the design of the secondary clarifier should consider the life-cycle costs of the upstream and downstream components.

O. Disc Filter

- a. For biological treatment processes, disc filters shall be fully enclosed, free-standing units or may be semi-submerged units located in a covered tank. The filter will consist of a series of rotating discs which will be partially submerged in the plant flow through the disc filter tank. Each disc filter unit will be sized for ADWF and have capacity for peak flows. Level monitoring using ultrasonic level gauges is preferred but alternate means of level detection will be considered.
- b. The backwash operation will use treated wastewater. Each unit will be equipped with a dedicated backwash pump (if necessary, i.e. assuming that recycled waste water pressure is below a required pressure) per filter and sprayed on the non-submerged portion of the filter elements. Backwashed sludge will be discharged to the sludge holding tank.

P. Disinfection

- a. Disinfection may be required to reduce pathogens prior to release to the environment. The Contractor shall demonstrate their proposed method of disinfection control, to ensure that overdosing is not a risk, and that downstream ecology is not adversely affected. The Contractor shall state the pathogen log removal offered by the supplied wastewater treatment plan. For biological treatment processes, disinfection shall be included as a final step in the treatment process.
- b. UV disinfection shall be provided as required to meet the overall pathogen reduction specified in the effluent discharge requirements and/ or reuse requirements.
- c. Chlorination disinfection and UV are required, with UV taking precedence.

Q. Effluent Discharge

- a. After treatment, the effluent shall discharge by gravity from the contact tank above the maximum flood level. Discharge of final effluent from the wastewater treatment plant to water bodies shall comply with current applicable DENR and other relevant national standards.

R. Sludge Management

- a. Sludge will be collected in a holding tank where it will be kept in aerated and agitated condition using diffused aeration system. Sludge dewatering shall be accomplished by mechanical means and will not occur in sludge drying beds or lagoons. Dewatered sludge shall

be transferred to covered skips or similar and the Contractor will be responsible for conveyance off-site to an approved disposal location

- b. The Contractor will be responsible for conveyance offsite to an approved disposal location.

2) Buildings

- A. All buildings such as administration/laboratory, air blowers building, chemical building and dewatering facility building shall follow the Philippine Building Code. All buildings shall be provided with proper lighting, ventilation, air conditioning, noise barriers, etc. that may be required for the smooth operation of the building.
- B. Piping and Valves
  - a. Materials for pipelines shall be resistant to corrosive attack and mechanically satisfactory for the duty.
  - b. Preferred pipe materials are as follows:
    - i. Sewage transmission
    - ii. Reinforced concrete
    - iii. Sewage network HDPE
  - c. Pipe pressure ratings shall be determined according to test and working pressure requirements for the design flow at the end of the concession period.
  - d. All valves required for operation of the utility infrastructure shall be provided by the Contractor and where applicable integrated with the SCADA system. Such valves will include isolating valves, air valves, washout valves, and pressure regulating valves
- C. Duty and standby equipment items shall be equipped with an isolating valve at the feed and outlet to enable removal for off-line maintenance.
- D. Monitoring Devices
  - a. pH and DO probe with indicators shall be installed at the equalization tank and aeration tanks for monitoring purposes.

3) Sewage Treatment Plant Equipment

A. General

- a. Under this section, mechanical equipment will include the furnishing, installation, and testing under operational conditions, of all items required by the STP. Insofar as possible and practicable, equipment items will be standard units of reputable manufacturers regularly engaged in the design, fabrication and testing of their product preferably from the United States of America, Japan, Europe, Israel, Singapore and the like. These specifications stipulate that the contractor shall engage the services of competent personnel to test the installed equipment and to acquaint and train the treatment plant personnel on operation and maintenance procedures. Country of origin is a matter of preference. Others of similar quality and reliability may be considered,

especially if they are licensed manufacturers from preferred source.

- b. Unless otherwise specified, contractors shall provide two sets of electro-mechanical equipment with one set normally operating and the second set serving as stand-by.

4) Equipment

- A. Lift Pumps: Furnish and install at least two (2) sets of Lift Pumps with adequate capacity to handle the daily sewage flow. Each lift pump shall have the capacity equivalent to average flow.

Pump casing, shaft, impeller, bearing, housing, pump pedestal, and motor pedestal will be fabricated of materials suitable to handle wastewater and resistant to corrosive environment. Lift pumps shall originate preferably from the United States of America, Japan, Europe, Israel, Singapore and the like and should be factory assembled. Country of origin is a matter of preference. Others of similar quality and reliability may be considered, especially if they are licensed manufacturers from preferred source.

- B. Bar screen: The influent box shall be furnished with a removable stainless steel bar screen and the necessary fasteners for connecting to the plant influent box.
- C. Aeration system: Furnish and install a complete aeration system designed to provide adequate aeration for the daily design sewage flow. The aeration equipment shall consist of removable components or sub-assemblies made of corrosion-resistant material for easy maintenance and shall be equipped with a regulating valve for adjusting or shutting off air flow.
- D. Air Supply System: For biological treatment processes, the air requirement of the plant shall be supplied thru three (3) rotary positive displacement blowers of identical capacities. The capacity of each blower shall be fifty percent (50%) of the total air requirement at the ultimate design flow.

Each blower shall be provided with an inlet filter, silencer regulator to vary the air output, a weighted type air relief valve and shut-off valve. Blower shall originate preferably from the United States of America, Japan, Europe, Israel, Singapore and the like. Country of origin is a matter of preference. Others of similar quality and reliability may be considered, especially if they are licensed manufacturers from preferred source.

- E. Secondary Clarifiers: For biological treatment processes, secondary clarifiers must be designed to produce an effluent TSS concentration not greater than 100 mg/L to effectively

			<p>reduce total phosphorus to below 1.0 mg/L. Sidewater depth should be designed such that the clarifier can be operated with minimal upflow velocity through the sludge blanket. Clarifier shall be equipped with automatic scraping and desludging devices. Flow distribution channel/chamber shall be provided for flow isolation or to equalize the flow distribution.</p> <p>For shorter detention time for settling sludge and to accommodate in-tank flocculation chamber, circular clarifiers are preferred. Lamella plate clarifiers may also be used provided it has a higher efficiency than the circular clarifiers</p> <p>F. Chlorination: Furnish and install an automatic chlorinator capable of delivering the required dosage of solution in a variable sewage flow condition. The equipment shall be equipped with discharge tubing, motor, sensor/transmitters, chlorine solution tanks and chlorine residual analyzers for chlorine residual monitoring.</p> <p>G. Test Kit: Furnish with the plant a portable test kit to include the necessary equipment and chemical reagents to determine dissolved oxygen, settleable solids, relative stability and hydrogen ion concentrations (pH). The kit shall be provided with instructions/manual for performing the analysis. The equipment and reagents shall be completely contained in a portable container with a hinged cover and carrying handle.</p> <p>5) Motors</p> <p>A. General Requirements</p> <ol style="list-style-type: none"> <li>a. Motors shall be furnished with driven equipment to assure proper coordination of motor and control characteristics with requirements of driven equipment. Contractor is responsible for proper correlation of horsepower, starting torque, other characteristics of electrical equipment with requirement of driven equipment.</li> <li>b. All necessary accessories essential to the proper operation of the motor and the driven equipment shall be provided</li> </ol> <p>B. Miscellaneous Metal Works</p> <ol style="list-style-type: none"> <li>a. Miscellaneous metalwork including pipe handrails, grating supports, ladders, rung, seat angles, guards, stop gates and guides, weir plates, launders and through, pipe hangers and supports, anchor bolts, and all required anchors and appurtenances, shall be stainless steel 316.</li> </ol> <p>C. General Conditions</p> <ol style="list-style-type: none"> <li>a. All sections under this Division shall be subject to the requirements of the Department of Environment and</li> </ol>		
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Natural Resources and Environmental Management Bureau.

- b. The term Contractor in these Specifications shall mean the Contractor for the Sewage Treatment Plant.

D. General Description

- a. The work to be done shall consist of the design, supply and installation, complete in all details, of the Sewage Treatment Plant Works, at the subject premises, and all work and materials incidental to the work that are expressly stated to be done by others.
- b. All work shall be in accordance with the governing Codes and Regulations and with these Specifications, except where same shall conflict with existing codes, etc., in which latter shall then govern.
- c. The requirements with regards to materials and workmanship specify the required standards for the furnishing of all labor, materials and appliances necessary for the complete installation of the work specified herein and indicated on the drawings. These specifications are intended to provide a broad outline of the required installation, but are not intended to include all details of design, supply and installation.
- d. The Contractor shall adopt his proprietary technique to guarantee the safety and performance of the system in accordance with the concepts and criteria set by these Specifications. The Contractor must be experienced in Sewage Treatment Plant works.
- e. No consideration will be granted for any alleged misunderstanding on the quality of materials to be furnished or work to be done, it being understood that the submission of a proposal is an Agreement to all items and conditions referred to immediately place an order as soon as the project is awarded to him. Any exceptions, omission or substitutions shall be presented in writing with the Contractor's Bid.
- f. The Contractor, before commencing work, shall examine the proposed location of the STP and all adjoining areas on which this work is in any way dependent for perfect workmanship according to the intent of these specifications and shall report to the Owner's representative any condition which will prevent the Contractor from performing first class work. No waiver of responsibility for defective work will be considered unless notice has been filed at the time the Contractor submits his proposal.

E. Work Included

Under this Division of the Specifications, provide all materials and equipment and perform all the work necessary for the complete execution of all Sewage Treatment Plant (STP) works as herein specified, except as otherwise but not be limited to the following principal items of work:

			<ul style="list-style-type: none"> <li>a. Furnishing, delivery to the project site and installation of complete Sewage Treatment Plant including all equipment, valves, and piping, motor and controls and all accessories necessary to complete the system.</li> <li>b. Preparation of installation drawings and design calculations of the above STP including selection of mechanical equipment capacities, design of tank dimensions, piping and all accessories to comply with the concepts and criteria set by these Specifications.</li> <li>c. Electrical Controls of the above systems including motor control center, remote control switches, motor controllers and starters, wires and cables, conduits and other required accessories.</li> <li>d. Sanitary sewer connection of effluent pipe from STP to the main sanitary sewer system.</li> <li>e. Corrosion protection and painting of all equipment and piping including all exposed and embedded materials.</li> <li>f. Interim Operations and Maintenance, and Complete testing and commissioning of the entire Sewage Treatment Plant, satisfying dry and wet conditions, including supply of all instruments for operating and testing the various systems and submission of reports.</li> <li>g. Full instruction after completing the job to the maintenance personnel regarding operation and maintenance of the entire installation. Provide complete printed/typewritten instruction booklets (hardbound) covering maintenance, operation and adjustments of each piece of equipment and list of spare parts for each piece of equipment.</li> <li>h. If anything has been omitted in any item of work or materials usually furnished, which are necessary for the completion of the STP Work as outlined herein before, then such items must be and are hereby included in this Division of the Work.</li> <li>i. Acquisition of Authority for Discharge Permit, and Permit to Operate from DENR.</li> <li>j. Prepare Environmental Impact Assessment (EIA) and other documentary requirements and facilitate the application until issuance of Environmental Compliance Certificate.</li> <li>k. Coordinate and facilitate service application to Shin Clark Power Holdings Incorporated for Primary or Secondary metering and costs for any specialty voltages, frequencies, DC (if required) that should include the necessary transformers, rectifiers, inverter/converter for a stable operation.</li> <li>l. Coordinate and facilitate water service application with Primewater Tahal PAVI MGS Corporation.</li> <li>m. The Contractor shall prepare all plans, applications, permits, etc., and shall complete all tests, forms, etc., required by all rules, regulations, etc. of all the Government Authorities having jurisdiction and such</li> </ul>		
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shall be completed by personnel of proper caliber, in particular engineers, where so required

F. Codes, Inspections, Permits and Fees

- a. The work under this Contract is to be installed according to the latest applicable codes, ordinances and requirements of the following:
  - i. National Plumbing Code of the Philippines
  - ii. Sanitation Code of the Philippines
  - iii. Department of Health
  - iv. Department of Agriculture
  - v. Effluent Regulations of 1990 – Environmental Management Bureau (EMB) formerly National Pollution Control Commission (NPCC)
  - vi. Rules and Regulations of the EMB for Domestic and Industrial Wastewater Disposal (Section 6g of Presidential Decree No. 984, otherwise known as the National Pollution Control Decree of 1976)
  - vii. DENR Administrative Order (DAO) 2016-08
  - viii. DENR Administrative Order (DAO) 2021-19
  - ix. NCC Design Standards and Guidelines
  - x. NCC Minimum Performance Standards and Specifications for Water and Wastewater Infrastructure

The Contractor's bid shall be deemed to include all costs to comply with the various code, inspections, permits and fees

Nothing contained in this Specification shall be construed as to conflict with National and Local Ordinances or Laws governing the installation of Sewage Treatment Plant Work and all such laws and ordinances are hereby made part of this Specification. The Contractor is required to meet the requirements hereof.

- b. Codes and Standards of following organizations other than mentioned above are referenced in this Specification. The Contractor's price shall be deemed to include compliance with the following:
  - i. American National Standards Institute (ANSI)
  - ii. American Society for Testing and Materials (ASTM)
  - iii. American Water Works Association (AWWA)
  - iv. International Organization for Standardization (ISO)
  - v. National Electrical Manufacturers Association (NEMA)
  - vi. Underwriters' Laboratories (UL)
  - vii. Uniform Plumbing Code by IAPMO
  - viii. U.S. Federal Specifications (FS)
- c. All construction permits and fees required for this work shall be obtained by and at the expense of the



Contractor. The Contractor shall furnish the Architect, the Engineer and the Owner final certificates of inspection and approval from the proper government authorities after the completion of the work.

6) Record Drawings

- A. The Contractor shall, during the progress of work keep record of all deviations of the actual installation from that shown in the approved Installation Drawings.
- B. Upon completion of work, the Contractor shall submit two (2) copies of the as-built drawings, signed and dry-sealed by the Contractor's registered sanitary engineer, indicating the work as actually and finally installed, including new information not originally shown in the approved Installation Drawings, to the Engineer for approval as to conformance with these Specifications and compliance with pertinent Code provisions. The Contractor shall also submit two (2) sets of operating and maintenance instructions, equipment and parts lists for approval.
- C. After such approvals, the Contractor shall submit the as-built originals (sepia) and two (2) sets of prints to the Owner, as well as three (3) sets of operating and maintenance instructions, equipment and part lists, including addresses of manufacturers or suppliers of major equipment and materials.
- D. Approval of the as-built drawings by the Engineer shall be a requirement for final acceptance of the completed works and for final payment.

7) Installation Drawings and other Submittals

- A. The Contractor shall prepare and submit for approval the following:
  - a. Dimensional layout drawings of the Sewage Treatment Plant and its auxiliary equipment, pumping and piping systems, concrete tanks, control system and other systems which are complete in nature, or which require close coordination with other work of this trade and/or the work of other trades.
  - b. Calculation of sewage treatment processes, equipment sizing and selections, and other processes involved in the preparation of proposed construction of the Sewage Treatment Plant.
  - c. Dimensional drawings of all concrete tanks and other structures required in the review of structural design.
  - d. Electrical control components to include MCC's, starters, breakers, wires, etc.
  - e. Complete control schematic and wiring diagrams for all equipment.
  - f. Manufacturer's catalog sheets, marked as necessary to indicate materials or equipment being furnished for the following:
    - i. Pumps, blowers and other STP equipment complete with ratings and dimensions

			<ul style="list-style-type: none"> <li>ii. Controls, magnetic starters, pressure switches, valves, etc.</li> <li>iii. Valves: Gate, check and pressure reducing valve</li> <li>iv. Pipes and fittings</li> <li>v. Flexible couplings</li> <li>vi. Riser supports, hangers and sleeves</li> <li>g. Marked sets of piping drawings showing mark number and exact location of hangers, anchors, guides and sway braces, and approximate location of random hangers.</li> <li>h. Details of all anchors, guides and sway braces.</li> <li>i. List of miscellaneous materials proposed, including pipe, fittings, valves, etc., and manhole accessories, identifying manufacturer and type</li> <li>j. Field test reports</li> <li>k. Such other drawings as the Engineer may require</li> <li>B. All drawings should be signed and dry sealed by the Contractor's Registered Sanitary Engineer, Structural Engineer and other Professional Engineers concerned.</li> <li>C. All drawings, etc., shall be submitted sufficiently in advance of field requirements to allow ample time for checking and no extension of the contract time will be granted this Contractor, by reason of his failure in this respect.</li> <li>D. All submittals shall be complete and shall contain all required information and details.</li> </ul> <p>8) Coordination</p> <ul style="list-style-type: none"> <li>A. Coordinate schedule of installation with works of other trades.</li> <li>B. Systems provided shall be complete and operable, and shall include required accessories, fastenings and supports.</li> <li>C. All equipment shall be installed in strict accordance with manufacturer's recommendation.</li> <li>D. Coordinate and facilitate with the necessary stakeholders and Government agencies for the implementation and operation of the Project.</li> </ul> <p>9) Guarantee</p> <ul style="list-style-type: none"> <li>A. The Contractor shall guarantee the Sewage Treatment Plant's complete and successful operation against defects on the equipment and defects in workmanship for a period of two (2) years from date of completion of the Contract certified by the Architect. Said warranty shall include repair works and labor.</li> <li>B. The Contractor shall guarantee the performance of the STP for one (1) year in terms of complying with the required effluent characteristics as stated in Section 3.4 Effluent Characteristics.</li> <li>C. All equipment furnished and installed shall be new and free of defects in design materials and workmanship. The Contractor shall replace, without additional cost to the Owner, any defective material or equipment within two (2) years after final acceptance of the plant.</li> </ul>		
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			<p>D. Replacement of defective components, labor to trouble-shoot or repair of the systems shall be furnished by the Contractors at no charge to the Owner during the guarantee period.</p> <p>E. The Contractor shall indemnify and save harmless the Owner and the Engineer from and against all liability for damages arising from injuries or disabilities to persons or damage to property occasioned by any act or omissions of Contractor or any of his Sub-Contractors, including any and all expenses, legal or otherwise which may be incurred by the Owner or the Engineer, in the defense of any claim, action or suit.</p> <p>10) Workmanship</p> <p>A. The work throughout shall be executed in the best and most thorough manner to the satisfaction of the Architect and the Engineer who will jointly interpret the meaning of the Drawings and Specifications and shall have power to reject any work and materials which in their judgment are not in full accordance therewith.</p> <p>B. The Contractor shall assume full responsibility for the design, supply, installation, testing, commissioning and hand-over of Sewage Treatment Plant and guarantee its satisfactory performance.</p>		
			The Bidder is required to submit <b>Product Brochures</b> or other related/equivalent documents containing the description of all the items under this lot.		

**Bidder's Authorized Representative:**

\_\_\_\_\_  
Signature over Printed Name

\_\_\_\_\_  
Principal Bidder / Supplier

**1. Technical Specification for Lot B**

Bidders must indicate whether the goods and equipment offered are “Compliant” or “Non-Compliant” to the corresponding specifications prescribed by BCDA using this form.

<b>SUPPLY, DELIVERY AND INSTALLATION OF GOODS AND EQUIPMENT FOR THE NATIONAL ACADEMY OF SPORTS (NAS) - PHASE 1 AT NEW CLARK CITY</b>					
<b>TECHNICAL SPECIFICATIONS COMPLIANCE FORM</b>					
			<b>SPECIFICATIONS</b>	<b>COMPLIANCE</b>	
				<b>Compliant</b>	<b>Non-compliant</b>
<b>SUPPLY, DELIVERY AND INSTALLATION OF ICT EQUIPMENT</b>					
<b>LOT</b>	<b>ITEMS</b>	<b>UNIT</b>			
		<b>LS</b>	<b>Project Management</b>		
			BCDA shall require the Winning Bidder to have at least three (1) certified project manager. A project manager to act as the project lead and oversee the entire project, and the other two to assist and act as backup in the case of leave or resignation of the project lead.		
			The three (1) project manager must hold a non-expired Project Management Professional (PMP) certification and must be a regular employee (not project-base) by the Winning Bidder for at least a year.		
			<b>Trainings</b>		
			The Winning Bidder must provide comprehensive hours training on design, configuration, administration and troubleshooting for at least 11 (11) IT personnel designated by BCDA.		
			The training must be conducted by certified engineer/instructor.		
			All cost relative to the conduct of the training must be at the expense of the Winning Bidder, including transportation, food, accommodation and training materials of the participants.		
			<b>Technical Support Services</b>		
			BCDA requires that an adequate technical support be provided after project completion. Details are discussed in the next subsections.		
			Remote Helpdesk - This service is provided for one (1) year from the acceptance of the project. The Technical Support Team should be available to answer technical questions and troubleshoot problems relating to the solutions provided from 8:30 a.m. to 5:30 p.m., Monday through Friday, excluding holidays.		

			On-site Support (1 year) all offered components		
			Forty Eight (48) days 8x5 Onsite Support consumable in one year		
			Response time - The Winning Bidder must provide four (4) hour response time upon receipt of call/notice by acknowledging that there is a problem and a resolution must be drawn up by them. A ticket number must be automatically generated assigned to the case, this shall also be provided to the person who raised the case.		
			Support Procedure - Winning Bidder must provide a procedure on support and problem escalation.		
			All cost relative to the requirement for Technical Support Services shall be at the expense of the Winning Bidder.		
<b>B1.1</b>	<b>4</b>	<b>Nos</b>	<b>External Hard Drive</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Storage: at least 4TB Connectivity: SuperSpeed USB 3.0 port (required for USB 3.0 transfer speeds or backwards compatible with USB 2.0 ports at USB 2.0 transfer speeds.)  Inclusions: 1) 18-inch USB 3.0 cable 2) Quick start guide 3) Warranty: 3 years limited warranty  <b>Warranty: 3 years replacement (no onsite)</b>		
<b>B1.2</b>	<b>8</b>	<b>Nos</b>	<b>27-inch Screen Extended Display</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Picture/Display - LCD panel type - VA LCD Backlight type Panel Size: 27 inch / 68.6 cm Display Screen Coating Anti-Glare, 3H, Haze 25% W-LED system Effective viewing area: 597.9 (H) x 336.3 (V) - at a 1800R curvature*  Aspect ratio: 16:09 Optimum resolution: 1920 x 1080 @ 60 Hz  Pixel Density: 82 PPI  Response time (typical): 4 ms (Gray to Gray)*		

Brightness: 250 cd/m<sup>2</sup>

Contrast ratio (typical): 3000:01:00

SmartContrast: 20,000,000:1

Viewing angle: 178° (H) / 178° (V)  
@ C/R > 10

Pixel pitch: 0.311 x 0.311 mm

Flicker-free: Yes

Picture enhancement: SmartImage game

Color gamut (typical): NTSC 102%\*, sRGB 128%\*

Display colors: 16.7 M

Scanning Frequency: 30 - 83 kHz (H) / 50 - 76 Hz (V)  
Srgb: Yes

AMD FreeSync™ technology: Yes

LowBlue Mode: Yes

Connectivity: Signal Input

VGA (Analog )

HDMI (digital, HDCP)

Sync Input

Sync on Green

Audio (In/Out)

HDMI audio out

Convenience

User convenience

Power On/Off

Menu

Brightness

Input

SmartImage Game

Other convenience

Kensington lock

VESA mount (100x100mm)

Plug & Play Compatibility

DDC/CI

Mac OS X

sRGB

Windows 10 / 8.1 / 8 / 7

Stand

Tilt

-5/20 degree

Power

On mode

34.47 W (typ.)

Standby mode

< 0.5 W (typ.)

Off mode

			<p>&lt; 0.3 W (typ.)  Power LED indicator  Operation - White  Standby mode- White (blinking)  Power supply  External  100-240VAC, 50-60Hz  WARRANTY: 3 years parts and labor, (no onsite)  TRAININGS  None</p>		
<b>B1.3</b>	<b>10</b>	<b>Nos</b>	<b>Standard Desktop Printer</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>FUNCTIONS  Print, copy, scan  MULTITASKING SUPPORTED  No  FIRST PAGE OUT (READY)  Black: As fast as 15 sec [3]  DUTY CYCLE (MONTHLY, A4)  Up to 1000 pages  RECOMMENDED MONTHLY PAGE VOLUME  50 to 100  PRINT TECHNOLOGY  Thermal Inkjet  PRINTER DRIVERS INCLUDED  PCL 3 GUI  PRINT QUALITY BLACK (BEST)  Black: Up to 1200 x 1200 rendered dpi Color: Up to 4800 x 1200 optimized dpi color (when printing from a computer on selected photo papers and 1200 input dpi)  DISPLAY  None  NUMBER OF PRINT CARTRIDGES  2 (1 each black, tri-color)  PRINT LANGUAGES  PCL 3 GUI  AUTOMATIC PAPER SENSOR  No  WIRELESS CAPABILITY  No  CONNECTIVITY, STANDARD  1 Hi-Speed USB 2.0  MINIMUM SYSTEM REQUIREMENTS  Windows 10, 7: 1 GHz 32-bit (x86) or 64-bit (x64) processor,  2 GB available hard disk space, Internet connection, USB port, Internet Explorer  COMPATIBLE OPERATING SYSTEMS  Windows 10, 7  MOBILE PRINTING CAPABILITY  Mobile Print Capability not supported  MEMORY, STANDARD  Integrated memory  MAXIMUM MEMORY</p>		

Integrated memory  
PAPER HANDLING INPUT, STANDARD  
60-sheet input tray  
PAPER HANDLING OUTPUT, STANDARD  
25-sheet output tray  
DUPLEX PRINTING  
Manual (driver support provided)  
MEDIA SIZES SUPPORTED  
A4; B5; A6; DL envelope  
MEDIA SIZES, CUSTOM  
89 x 127 to 215 x 279 mm  
MEDIA TYPES  
Plain paper, Photo paper, Brochure paper  
MEDIA WEIGHTS, RECOMMENDED  
75 g/m<sup>2</sup>  
BORDERLESS PRINTING  
No  
SCANNER TYPE  
Flatbed  
SCAN FILE FORMAT  
JPEG, TIFF, PDF, BMP, PNG  
SCAN RESOLUTION, OPTICAL  
Up to 1200 dpi  
BIT DEPTH  
24-bit  
SCAN SIZE, MAXIMUM  
216 x 297 mm  
DIGITAL SENDING STANDARD FEATURES  
No  
SCAN INPUT MODES  
Front-panel scan  
COPY RESOLUTION (BLACK TEXT)  
Up to 600 x 300 dpi  
COPY RESOLUTION (COLOR TEXT AND GRAPHICS)  
Up to 600 x 300 dpi  
COPIES, MAXIMUM  
Up to 9 copies  
POWER  
Input voltage: 100 to 240 VAC (+/- 10%), 50/60 Hz (+/- 3 Hz).  
Input voltage: 200 to 240 VAC (+/- 10%), 50/60 Hz (+/- 3Hz)  
(China & India). Not dual voltage, power supply varies by part  
number with # Option code identifier.  
POWER CONSUMPTION  
0.05 watts (Off), 1.83 watts (Ready), 0.83 watt (Sleep), 0.05  
watts (Auto-off) [2]  
ECOLABELS  
CECP; SEPA  
RECOMMENDED OPERATING HUMIDITY RANGE  
20 to 80% RH  
MINIMUM DIMENSIONS (W X D X H)  
425.2 x 304.1 x 149.1 mm 16.47 x 11.97 x 5.87 in [1]  
MAXIMUM DIMENSIONS (W X D X H)  
425.2 x 304.1 x 149.1 mm 16.47 x 11.97 x 5.87 in [1]  
WEIGHT  
3.42 kg 7.55 lb  
PACKAGE WEIGHT  
4.45 kg 9.87 lb  
CABLE INCLUDED  
AP EM only: Yes 1.5 m (USB) cable; AMS/EMEA: No, please  
purchase (USB) cable separately



			SOFTWARE INCLUDED WW: Printer Software, available online; MANUFACTURER WARRANTY		
			One-year limited hardware warranty; 24-hour, 7 days a week support		
<b>B1.4</b>	<b>10</b>	<b>Nos</b>	<b>(3 in 1) : Printer, Scanner, Copier -- High speed and Legal Size Scanner</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement		
			<b>FUNCTIONS</b> Print, Copy, Scan, Fax FIRST PAGE OUT BLACK (A4, READY) As fast as 11.8 sec FIRST PAGE OUT BLACK (A4, SLEEP) As fast as 13.4 sec PRINT SPEED BLACK (ISO, A4) Normal: Up to 16 ppm Measured using ISO/IEC 24734, excludes first set of test documents. PRINT SPEED COLOR (ISO, A4) Up to 16 ppm Measured using ISO/IEC 24734, excludes first set of test documents. FIRST PAGE OUT (READY) Black: As fast as 11.8 sec Measured using ISO/IEC 17629. FIRST PAGE OUT (SLEEP) Black: As fast as 13.4 sec Measured using ISO/IEC 17629. FIRST COPY OUT As fast as 12.2 sec FIRST COPY OUT (SLEEP) As fast as 12.3 sec DUTY CYCLE (MONTHLY, A4) Up to 30,000 pages RECOMMENDED MONTHLY PAGE VOLUME 150 to 1500 PRINT TECHNOLOGY Laser PRINT QUALITY BLACK (BEST) Up to 600 x 600 dpi PRINT QUALITY COLOR (BEST) Up to 600 x 600 dpi PRINT LANGUAGES		

PCL6; PCL5c; postscript level 3 emulation; PWG raster; PDF; PCLm; PCLm-S; URF

#### DISPLAY

2-Line LCD

#### PROCESSOR SPEED

800 MHz

#### AUTOMATIC PAPER SENSOR

No

#### DUPLEX PRINTING

Manual (driver support provided)

#### MOBILE PRINTING CAPABILITY

ePrint; Apple AirPrint™; Mobile Apps; Mopria™ Certified; Wi-Fi® Direct Printing

#### WIRELESS CAPABILITY

Built-in 802.11 b/g/n; authentication via WEP, WPA/WPA2, or 802.1X; encryption via AES or TKIP; WPS; Wi-Fi Direct

#### CONNECTIVITY, STANDARD

Hi-Speed USB 2.0 port; built-in Fast Ethernet 10/100 Base-TX network port, 802.11n 2.4/5GHz wireless, Fax port

#### MINIMUM SYSTEM REQUIREMENTS

Windows® 10, 8.1, 8, 7: 32-bit or 64-bit, 2 GB available hard disk space, CD-ROM/DVD drive or Internet connection, USB port, Internet Explorer. Windows Vista®: (32-bit), 2 GB available hard disk space, CD-ROM/DVD drive or Internet connection, USB port, Internet Explorer 8. Windows® XP SP3 or higher (32-bit only): any Intel® Pentium® II, Celeron® or 233 MHz compatible processor, 850 MB available hard disk space, CD-ROM/DVD drive or Internet connection, USB port, Internet Explorer 8. Windows Server support is provided via the command line installer and supports Win Server 2008 R2 and higher. Apple® macOS Sierra (v10.12) macOS High Sierra (v10.13) macOS Mojave (v10.14) macOS Catalina(v10.15); 200MB HD; Internet required for download; USB

#### COMPATIBLE OPERATING SYSTEMS

Windows® 10, 8.1, 8, 7: 32-bit or 64-bit, 2 GB available hard disk space, Internet connection, USB port, Internet Explorer. Windows Vista®: (32-bit only), 2 GB available hard disk space, Internet connection, USB port, Internet Explorer 8. Windows® XP SP3 or higher (32-bit only): any Intel® Pentium® II, Celeron® or 233 MHz compatible processor, 850 MB available hard disk space, Internet connection, USB port, Internet Explorer 8. Windows Server support is provided via the command line installer and supports Win Server 2008 R2 and higher. Apple® macOS Sierra (v10.12) macOS High Sierra (v10.13) macOS Mojave (v10.14) macOS Catalina(v10.15); 200MB HD; Internet required for download; USB. Linux

#### MEMORY

256 MB DDR, 128 MB Flash

#### MEMORY, MAXIMUM

256 MB DDR, 128 MB Flash

#### PAPER HANDLING INPUT, STANDARD

150-sheet input tray

**PAPER HANDLING OUTPUT, STANDARD**

100-sheet output bin

**MAXIMUM OUTPUT CAPACITY (SHEETS)**

Up to 100 sheets (10 mm stack height)

**DUPLEX PRINTING**

Manual (driver support provided)

**MEDIA SIZES SUPPORTED**

Letter(216 x 280); Legal(216 x 356); Executive(184 x 267); Oficio 8.5x13(216 x 330); 4 x 6(102 x 152); 5 x 8(127 x 203); A4(210 x 299); A5(148 x 210); A6(105x148); B5(JIS)(182 x 257); B6(JIS)(128 x 182); 10x15cm(100 x 150); Oficio 216x340mm(216 x 340); 16K 195x270mm(195x270); 16K 184x260mm(184x260); 16K 197x273mm(197x273); Postcard(JIS)(100 x 147); Double Postcard(JIS)(147 x 200); Envelope #10(105 x 241); Envelope Monarch(98 x 191); Envelope B5(176 x 250); Envelope C5(162 x 229); Envelope DL(110 x 220); A5-R(210 x 148)

**MEDIA SIZES, CUSTOM**

76 x 127 to 216 x 356 mm

**MEDIA TYPES**

Paper (bond, brochure, colored, glossy, heavy, letterhead, light, photo, plain, preprinted, prepunched, recycled, rough), transparencies, labels, envelopes, cardstock

**MEDIA WEIGHT, SUPPORTED**

60 to 163 g/m<sup>2</sup> (Uncoated/Matte, recommended), however up to 175 g/m<sup>2</sup> Postcards and 200 g/m<sup>2</sup> is allowed in the driver; 60 to 163 g/m<sup>2</sup> (Coated/Glossy, recommended), however up to 175 g/m<sup>2</sup> Postcards and 220 g/m<sup>2</sup> is allowed in the driver.

**MEDIA WEIGHTS, SUPPORTED ADF**

70 to 90 g/m<sup>2</sup>

**SCANNER TYPE**

Flatbed, ADF

**SCAN FILE FORMAT**

JPG, RAW (BMP), PNG, TIFF, PDF

**SCAN RESOLUTION, OPTICAL**

Up to 300 dpi (color and mono, ADF); Up to 1200 dpi (color and mono, flatbed)

**SCAN SIZE (ADF), MAXIMUM**

215.9 x 355.6 mm

**SCAN SIZE (ADF), MINIMUM**

148.5 x 210 mm

**SCAN SPEED (NORMAL, A4)**

Up to 15.0 ppm (B/W); 8 ppm (Color)

**DUPLEX ADF SCANNING**

No

**AUTOMATIC DOCUMENT FEEDER CAPACITY**

Standard, 35 sheets

**FILE FORMAT SUPPORTED**

PDF; JPG

**SCAN INPUT MODES**

Front-panel copy, fax; Scan software; and user application via TWAIN or WIA

**COPY SPEED (NORMAL)**

Black: Up to 16 ppm Color: Up to 16 ppm [8]

**COPY RESOLUTION (BLACK TEXT)**

Up to 600 x 600 dpi

**COPY RESOLUTION (COLOR TEXT AND GRAPHICS)**

			<p>Up to 600 x 600 dpi  COPY REDUCE / ENLARGE SETTINGS  25 to 400%  COPIES, MAXIMUM  Up to 99 copies  FAXING  Yes  FAX TRANSMISSION SPEED  33.6 kbps (maximum); 14.4 kbps (default)  FAX MEMORY  Up to 1300 pages  FAX RESOLUTION BLACK (BEST)  Up to 300 x 300 dpi  FAX SPEED DIALS, MAXIMUM NUMBER  Up to 120 numbers  FAX BROADCAST LOCATIONS  119  POWER  110-volt input voltage: 110 to 127 VAC (+/- 10%), 50 Hz (+/- 3 Hz), 60 Hz (+/- 3 Hz); 220-volt input voltage: 220 to 240 VAC (+/- 10%), 50 Hz (+/- 3 Hz), 60 Hz (+/- 3 Hz)(Not dual voltage, product varies by part number with # Option code identifier).  Not dual voltage, power supply varies by part number with # Option code identifier.  ECOLABELS  EPEAT® Silver; ENERGY STAR® qualified  BLUE ANGEL COMPLIANT  Yes, Blue Angel DE-UZ 205—only ensured when using Original HP supplies  CABLE INCLUDED  Yes, 1 USB; Yes, 1 phone cord.  SOFTWARE INCLUDED  No CD, Downloadable Software</p>		
			<p>MANUFACTURER WARRANTY  One-year limited hardware warranty; 24-hour, 7 days a week support</p>		
<b>B1.5</b>	<b>4</b>	<b>Nos</b>	<b>3 in 1 High End Printer</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p><b>FUNCTIONS</b>  Print, Scan, Copy, and Wireless: Yes  Print speed: Black A4: 21 ppm (ISO); Color A4: 21 ppm (ISO)  Print quality: Black &amp; Color (best): Up to 600 x 600 dpi  Print size: Paper (bond, brochure, colored, glossy, heavy, letterhead, light, photo, plain, preprinted, prepunched, recycled, rough), transparencies, labels, envelopes, cardstock; Max custom: 216 x 356 mm  Scanner: ADF: 215.9 x 355.6 mm (legal) / Flatbed: 215.9 x 297 mm ; Up to 1200 x 1200 dpi (Flatbed)</p>		

			<p>Digital scanning: Scan to email; scan to folder; scan to USB drive</p> <p>Display: 2.7" colour graphic touch screen with 3 button at left side (Home, Help, Back)</p> <p>Copy speed: Black A4: Up to 21 cpm (ISO); Color: Up to 21 cpm (ISO)</p> <p>Connectivity: Hi-Speed USB 2.0 port; built-in Fast Ethernet 10/100/1000 Base-TX network port, 802.11n 2.4/5GHz wireless, Front Host USB"</p> <p>Paper Handling: 250-sheet input tray, 50 sheet ADF, 150-sheet output tray</p> <p>Duplex: No</p> <p>Mobile Printing: ePrint; Apple AirPrint™; Mopria™-certified; Wireless Direct Printing; Mobile Apps</p> <p>Memory: 256 MB DDR, 256 MB Flash</p> <p>Duty Cycle: Up to 40,000 pages; Recommended monthly volume: 150 to 2,500pages</p> <p>Printer Management: Yes</p>		
			<p>WARRANTY</p> <p>High-End Printer: 3 years return to bench</p>		
			<p>TRAININGS</p> <p>None</p>		
<b>B1.6</b>	<b>1</b>	<b>Nos</b>	<b>ID Printer</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>TYPE</p> <p>Double-sided printer</p> <p>PRINT MODE</p> <p>300dpi colour dye sublimation, monochrome thermal printing and rewritable technology.</p> <p>PRINT SPEED</p> <p>&gt;100 cards per hour for colour; 7 seconds per card for monochrome.</p> <p>VISUAL SECURITY</p> <p>Option to print a HoloKote® security watermark across the card surface. When used with HoloPatch® cards, one area of the HoloKote watermark is highlighted as a high visibility security seal.</p> <p>CARD ENCODING OPTIONS</p> <p>Magnetic stripe encoding: HiCo and LoCo encoder ISO 7811. Smart card encoding: Contact chip, MIFARE, DESFire and iClass.</p> <p>INTERFACES</p> <p>USB rev1.1 (USB 2.0 compatible), Ethernet.</p> <p>SOFTWARE DRIVERS</p>		

			<p>Windows 2000 Professional (SP4), XP, Vista, 7, 8, 8.1 &amp; 10 (32/64 bit compatible), Server 2003 R2 SP2, 2008 (32/64 bit compatible) and Mac OS X.</p> <p>CARD CAPACITY 100-card feeder, 30-card stacker.</p> <p>PRINTER WEIGHT 12 lbs (5.5kg).</p> <p>POWER SOURCE External power supply 100-240V 50-60Hz autoranging</p>		
			WARRANTY: 3 years (no onsite)		
			TRAININGS		
			None		
<b>B1.7</b>	<b>2</b>	<b>Nos</b>	<b>Standard Scanner</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Scanner Type: Flatbed</p> <p>Scanner Element: Colour Contact Image Sensor (CIS)</p> <p>Light Source: 3-colour (RGB) LED</p> <p>Optical Resolution: 4800 x 4800dpi</p> <p>Selectable Resolution: 25 – 19200dpi</p> <p>Scan Bit Depth:</p> <p>Greyscale: 16-bit input 8-bit output</p> <p>Colour: 48-bit input (16-bit for each colour)</p> <p>Win: 48-bit*3 or 24-bit output (16-bit or 8-bit for each colour)</p> <p>Mac: 24-bit output (8-bit for each colour)</p> <p>Preview Speed: Approx. 7 secs</p> <p>Scan Speed:</p> <p>Colour, A4 (300dpi): Approx. 8 secs</p> <p>Colour, 4 x 6" (300dpi): Approx 4 secs</p> <p>Scan Speed (Reflective):</p> <p>Greyscale, B&amp;W: 8.2msec/line (4800dpi) 4.3msec/line (2400dpi) 2.2msec/line (1200dpi) 1.3msec/line (600dpi) 1.7msec/line (300dpi)</p> <p>Colour: 25.4msec/line (4800dpi) 14.8msec/line (2400dpi) 6.6msec/line (1200dpi) 3.8msec/line (600dpi) 1.7msec/line (300dpi)</p> <p>Maximum Document Size: A4 / Letter</p> <p>System Requirements:</p> <p>Windows: Windows 10 / 8.1 / 7 SP1</p> <p>Mac: Mac OS 10.12 ~10.13, Mac OS X v10.11.6</p> <p>Scanner Buttons (EZ buttons): 5 buttons (PDF x 2, AUTOSCAN, COPY, SEND)</p> <p>Interface: USB 2.0 High-Speed Type-C</p> <p>Power Supply: via USB port</p> <p>Power Consumption:</p> <p>Maximum during operation: Approx. 4.5W</p>		

			Stand-by: Approx. 0.3W Environment Regulation: RoHS (EU, China), WEEE (EU) Eco-label: Energy Star Weight: Approx 1.7kg		
			WARRANTY		
			1 year parts and service (no onsite)		
			TRAININGS		
			None		
<b>B1.8</b>	<b>4</b>	<b>Nos</b>	<b>55" Smartboard</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Specifications Diagonal Screen Size (in): 54.6 Active Area H x V (mm): 1209.6 x 680.4 Panel Technology: ADS Resolution: 3840 x 2160 Brightness (cd/m2): 350 Contrast Ratio: 1200:1 Viewing Angle H/V (deg): 178/178 Response Time: 8 ms Operation Hours: 18hrs x 7 days MTBF: 50,000 hrs Operating System: Android 8.0 DDR: 4GB Memory (eMMC): 32GB External Storage: TF (MicroSD) Input: HDMI 2.0, USB3.0, USB2.0, LAN RJ45 Ethernet 10/100Mbps Output: HDMI 2.0, Audio-Out 3.5 mm jack OPS Type Compatible: Yes Touch: IR-HE 20 point multi touch Wi-Fi: 2.4G/5G IEEE802.11 b/g/n 2T*2R Bluetooth: Option OPS/SDM Slot: OPS Slot Power Management: Yes Cloud CMS: Yes Panel Orientation: Landscape Built-in Speaker: 8w x 2 Power Supply: AC 90V-264V@50Hz/@60Hz		
			WARRANTY		
			3 years parts and labor (no onsite)		
			TRAININGS		
			None		
<b>B1.9</b>	<b>30</b>	<b>Nos</b>	<b>DESKTOP CONFIG- STANDARD</b>		
			<b>Qualification of the Bidder</b>		

		The brand must have at least 10 years of existence in the market.	
		The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region	
		The bidder must be a Gold Partner of the Brand offered as solution to the requirement	
		<ul style="list-style-type: none"> <li>· Category <ul style="list-style-type: none"> <li>o Branded and Brand New</li> </ul> </li> <li>· Processor <ul style="list-style-type: none"> <li>o 10th Gen, 8 cores, 16 threads 16MB Cache up to 4.30 GHz frequency or higher</li> </ul> </li> <li>· Form Type <ul style="list-style-type: none"> <li>o Small Form Factor</li> </ul> </li> <li>· Memory (RAM) <ul style="list-style-type: none"> <li>o 16 GB or Higher</li> </ul> </li> <li>· Storage <ul style="list-style-type: none"> <li>o 256GB M.2 SSD + 1TB 7200RPM HDD or higher</li> </ul> </li> <li>· Video Controller <ul style="list-style-type: none"> <li>o Integrated Graphics or higher</li> </ul> </li> <li>· Keyboard/mouse <ul style="list-style-type: none"> <li>o USB Keyboard and USB optical mouse</li> </ul> </li> <li>· Networking <ul style="list-style-type: none"> <li>o Onboard Gigabit Ethernet Controller</li> </ul> </li> <li>· Standard I/O Ports <ul style="list-style-type: none"> <li>o Headphone/microphone combo</li> <li>o Two (2) SuperSpeed USB Type-A 10Gbps signaling rate</li> <li>o Three (3) SuperSpeed USB Type-A 5Gbps signaling rate</li> <li>o Four (4) USB Type-A 480Mbps signaling rate</li> <li>o Audio-out</li> <li>o Power connector</li> <li>o RJ45</li> <li>o HDMI</li> <li>o DisplayPort</li> </ul> </li> <li>· Power Supply Wattage <ul style="list-style-type: none"> <li>o 180 Watts internal power supply</li> </ul> </li> <li>· Software <ul style="list-style-type: none"> <li>o Windows 10 Professional</li> </ul> </li> <li>· Warranty (parts and service) <ul style="list-style-type: none"> <li>o At least three (3) years Parts, Labor and Onsite.</li> </ul> </li> <li>· Monitor <ul style="list-style-type: none"> <li>o 23.8 Inches Display Size</li> <li>o FHD (1920x1080) Resolution</li> <li>o Anti-glare Screen</li> <li>o Low blue light mode</li> <li>o IPS Display</li> </ul> </li> </ul>	



			o 5ms GTG Response Ratio		
			. Others		
			o The unit models being offered are current and not in "End of Life" as reflected in the current product line found in the manufacturer's official website / brochure.		
			o The unit models being offered will have product parts available and serviceable for at least five (5) years.		
			All the components in the product being offered conform to international standards and factory installed with corresponding part number and verifiable via web.		
			Warranty (parts and service)		
			o At least three (3) years Parts, Labor and Onsite.		
<b>B1.1</b>	<b>22</b>	<b>Nos</b>	<b>DESKTOP - MID</b>		
<b>0</b>			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement		
			. Category		
			o Branded and Brand New		
			. Processor		
			o 10th Gen, 8 cores, 16 threads 16MB Cache up to 4.80 GHz frequency or higher		
			. Form Type		
			o Small Form Factor		
			. Memory (RAM)		
			o 16 GB or Higher		
			. Storage		
			o 256GB M.2 SSD + 1TB 7200RPM HDD or higher		
			. Video Controller		
			o 4GB dedicated		
			. Keyboard/mouse		
			o USB Keyboard and USB optical mouse		
			. Networking		
			o Onboard Gigabit Ethernet Controller		
			. Standard I/O Ports		
			o Headphone/microphone combo		
			o Two (2) SuperSpeed USB Type-A 10Gbps signaling rate		
			o Three (3) SuperSpeed USB Type-A 5Gbps signaling rate		
			o Four (4) USB Type-A 480Mbps signaling rate		
			o Audio-out		
			o Power connector		
			o RJ45		
			o HDMI		

		<ul style="list-style-type: none"> <li>o DisplayPort</li> <li>· Power Supply Wattage</li> <li>o 180 Watts internal power supply</li> <li>· Software</li> <li>o Windows 10 Professional</li> </ul> <p>Warranty (parts and service)</p> <ul style="list-style-type: none"> <li>o At least three (3) years Parts, Labor and Onsite.</li> <li>· Monitor</li> <li>o 23.8 Inches Display Size</li> <li>o FHD (1920x1080) Resolution</li> <li>o Anti-glare Screen</li> <li>o Low blue light mode</li> <li>o IPS Display</li> <li>o 5ms GTG Response Ratio</li> </ul>		
		<ul style="list-style-type: none"> <li>· <b>Others</b></li> </ul>		
		<ul style="list-style-type: none"> <li>o The unit models being offered are current and not in “End of Life” as reflected in the current product line found in the manufacturer’s official website / brochure.</li> </ul>		
		<ul style="list-style-type: none"> <li>o The unit models being offered will have product parts available and serviceable for at least five (5) years.</li> </ul>		
		All the components in the product being offered conform to international standards and factory installed with corresponding part number and verifiable via web.		
<b>B1.1</b>	<b>2</b>	<b>Nos</b>	<b>DESKTOP - HIGH END</b>	
<b>1</b>			<b>Qualification of the Bidder</b>	
			The brand must have at least 10 years of existence in the market.	
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region	
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement	
			27-inch 5k Retina display, true tone technology Dual core Intel i5, with turbo boost up to 3.6GHz Facetime HD Camera simultaneously supports full time native resolution on the built-in display at million colors 512GB SSD Intel Iris plus /Graphics 640 8GB (2 x4GB) 2666MHz DDR4; four So-DIMM slots Keyboard and mouse Mac OS 10/100/1000 Base T- gigabit Ethernet 802.11 ac wifi with Bluetooth 5.0 wireless technology 3.5mm headphone jack; SDXC card slot; Four (4) USB A-ports; 2 thunderbolt 3 (USB-C) with support for -Display port -Thunderbolt (uo to 40Gbps)	

			-USB 3.1Gen2 (up to 10Gbps) -Thunderbolt 2, HDMI, DVI and VGA supported using adapters (sold separately) Kensington lock slot Stereo speakers; Microphone; Studio-quality three-mic array with high signal-to-noise ratio and directional beamforming; 3.5mm headphone jack One 1-year limited warranty		
<b>B1.1 2</b>	<b>1</b>	<b>Ls</b>	<b>ACCESSORIES FOR THE DESKTOPS</b>		
	<b>55</b>		<b>WEBCAM</b>		
			Resolution: 1080P Lens Type: Full HD Glass Lens Viewing Angle : 70 Degrees Focus type: Fixed Focus; Range 60cm and beyond Output Format : MJPEG Compatibility: Win 7/8/8.1 and 10 or later; Compatible with Social and Video calling software for Windows, Mac OS 10.6 or later, Linux OS 2.6 or later, Chrome OS 6.0 or later, Android v6.0 or later		
	<b>55</b>		<b>UPS</b>		
			Capacity : 650/390 Unit Net Wt.: 9.7 lb or 4.4 Kg Online Input Voltage range: 162-290VAC, Single phase On Line Frequency: 50Hz/60hz autosensing Output Voltage : 220VAC/230VAC/240VAC, single phase Battery type : 12V x 7 ah x 1 Typical recharge time : 4 hrs to 90% Battery Runtime - 120W load: 10 minutes		
	<b>55</b>		<b>External Speakers:</b>		
			Total watts: 25W; Subwoofer : 15W Satellites 2 x 5 W 3.5 mm input; headphoe jack x 1 Warranty : 1 year limited warranty <b>REQUIREMENTS FOR THE BIDDER</b> The winning bidder must be an authorized reseller and of the product being proposed Maintenance and Support: 1 certified engineer, for 3 months upon implementation (on-site support)		
			<b>WARRANTY</b> For 1.1 and 1.2 only : Desktops: 3 years on parts, services and NBD onsite (CPU) Monitor: 3 years, parts and services Speakers: 1 year UPS: 2 years Webcam: 1 year		
			<b>Qualification of the Bidder</b> The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
<b>B1.1 3</b>	<b>50</b>	<b>Nos</b>	<b>LAPTOP - MID</b>		
			<b>Qualification of the Bidder</b>		

			The brand must have at least 10 years of existence in the market.
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement
			<ul style="list-style-type: none"> <li>· Category <ul style="list-style-type: none"> <li>o Branded and Brand New</li> </ul> </li> <li>· Processor <ul style="list-style-type: none"> <li>o 11th Gen, 4 cores, 8 threads 12M Cache with up to 4.70GHz frequency or higher</li> </ul> </li> <li>· Display <ul style="list-style-type: none"> <li>o 14 Inches (1920x1080)</li> </ul> </li> <li>· Camera <ul style="list-style-type: none"> <li>o Integrated HD 720p</li> </ul> </li> <li>· Memory (RAM) <ul style="list-style-type: none"> <li>o 16 GB or Higher</li> </ul> </li> <li>· Storage <ul style="list-style-type: none"> <li>o 1TB M.2 SSD or higher</li> </ul> </li> <li>· Video Controller <ul style="list-style-type: none"> <li>o Integrated Graphics or higher</li> </ul> </li> <li>· Networking <ul style="list-style-type: none"> <li>o Onboard Gigabit Ethernet Controller</li> <li>o Wi-Fi and Bluetooth 5</li> </ul> </li> <li>· Standard I/O Ports <ul style="list-style-type: none"> <li>o Two (2) SuperSpeed USB Type-A 5Gbps signaling rate</li> <li>o SuperSpeed USB Type-C 10Gbps signaling rate (USB Power Delivery, DisplayPort 1.4)</li> <li>o Headphone/microphone combo</li> <li>o HDMI</li> <li>o AC Power</li> </ul> </li> <li>· Battery <ul style="list-style-type: none"> <li>o 3-cell, 45Wh Polymer</li> </ul> </li> <li>· Power <ul style="list-style-type: none"> <li>o 45 Watt AC Adapter</li> </ul> </li> <li>· Software <ul style="list-style-type: none"> <li>o Windows 10 Professional</li> </ul> </li> </ul> <p>Warranty (parts and service)</p> <ul style="list-style-type: none"> <li>o At least three (3) years</li> </ul>
			<ul style="list-style-type: none"> <li>· Others</li> </ul>
			<ul style="list-style-type: none"> <li>o The unit models being offered are current and not in "End of Life" as reflected in the current product line found in the manufacturer's official website / brochure.</li> </ul>
			<ul style="list-style-type: none"> <li>o The unit models being offered will have product parts available and serviceable for at least five (5) years.</li> </ul>

			o All the components in the product being offered conform to international standards and factory installed with corresponding part number and verifiable via web.		
<b>B1.1</b>	<b>4</b>	<b>Nos</b>	<b>LAPTOP - HIGH END</b>		
			<b>Bidder Qualification</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement		
			<p>Laptop 13" Display (silver or space gray color)  8 cores GPU 16Core Neural Enigne  720p Facetime HD Camera  13.3" (Diagonal) LED-backlit display with IPS technology; 500 Nits  Mac OS  8GB (1x8GB), Unified  Backlit Magoc keyboard with:  -65 (U.S.) or 66 (ISO) keys including 4 arrow keys in an inverted T-arrangement  -Touch Bar  -Touch ID sensor  -Ambient light sensor  2 x Thunderbolt; USB 4 ports w/ support for:</p> <ul style="list-style-type: none"> <li>- Charging</li> <li>- Display port</li> <li>- Thunderbolt 3 (up to 40 Gps)</li> <li>- USB 4 (up to 40 Gbps)</li> <li>- USB 3.1 Gen 2 (up to 10 Bps)</li> </ul> <p>512GB SSD  802.11ax Eifi 6 Wireless network + B 5.0  Lithium polymer battery; 61W USB-C power adapter  Stereo speakers w/ high dynamic range  Wide stereo sound  Support for Dolby atmos playback  Studio quality with three-mic array with high ignal-to-noise ratio and directional beamforming  3.5mm headphone jack  1 year carry-in service to any available autorized service center</p>		
			Maintenance and Support: 1 certified engineer, for 3 months upon implementation (on-site support)		
			<b>WARRANTY</b> Laptops: 3years on parts, service and on-site NBD for 1.1 and 1.2		



**SUPPLY, DELIVERY AND INSTALLATION OF NETWORK INFRASTRUCTURE**

			<b>PROJECT MANAGEMENT</b>		
			BCDA shall require the Winning Bidder to have at least three (3) certified project managers. A project manager to act as the project lead and oversee the entire project, and the other two to assist and act as backup in the case of leave or resignation of the project lead.		
			The three (3) project managers must hold a non-expired Project Management Professional (PMP) certification and must be a regular employee (not project-base) by the Winning Bidder for at least a year.		
			<p><b>TRAININGS</b></p> <p>The Winning Bidder must provide comprehensive hours training on design, configuration, administration and troubleshooting for at least eleven (11) IT personnel</p> <p>The Winning Bidder must provide an official training with certification for ITIL.</p> <p>The training must be conducted by certified engineer/instructor.</p> <p>All cost relative to the conduct of the training must be at the expense of the Winning Bidder, including transportation, food, accommodation and training materials of the participants.</p>		
			<b>TECHNICAL SUPPORT SERVICES</b>		
			BCDA requires that an adequate technical support be provided after project completion. Details are discussed in the next subsections.		
			<p><b>Remote Helpdesk</b> - This service is provided for one (1) year from the acceptance of the project. The Technical Support Team should be available to answer technical questions and troubleshoot problems relating to the solutions provided from 8:30 a.m. to 5:30 p.m., Monday through Friday, excluding holidays.</p> <p>On-site Support (1 year) all offered components</p> <p>Forty Eight days (8x6) Onsite Support consumable in one year</p>		
			<b>Response time</b> - The Winning Bidder must provide four-hour response time upon receipt of call/notice by acknowledging that there is a problem and a resolution must be drawn up by them. A ticket number must be automatically generated assigned to the case, this shall also be provided to the person who raised the case.		
			<b>Support Procedure</b> - Winning Bidder must provide a procedure on support and problem escalation		
			All cost ret relative to the provision of technical support service is borne by the winning bidder.		
B2.1	1	SET	<b>DATA CENTER FACILITY</b>		
			<b>A. CIVIL WORKS</b>		

		<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Supply and Installation of CHB Wall Partitions for 2-Hrs Fire Rating</li> <li>· Supply and Installation of Anti-Static Vinyl Tiles</li> <li>· Supply and Installation of Acoustic Ceiling Boards</li> <li>· Painting and Other Related Works</li> <li>· 2hrs Fire Rated Door with wired glass (for viewing)</li> <li>· LED Lightings w/ complete wirings and devices</li> <li>· Emergency Lightings w/ complete wirings and devices</li> <li>· Supply and Installation 30-Ampere Twist Lock Outlets with Complete wiring</li> </ul>			
	<b>3</b>	<b>units</b>	<b>B. AIR CONDITIONING UNIT</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· With Remote Control</li> <li>· Powerful and faster cooling stylish</li> <li>· Intelligent Appearance</li> <li>· Auto Restart</li> <li>· Auto clean and dehumidifying</li> <li>· Self diagnosis</li> <li>· 7 horsepower</li> <li>· Floor mounted</li> </ul>		
	<b>2</b>	<b>units</b>	<b>C. UNINTERRUPTABLE POWER SUPPLY</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Must meet the following performance specifications:</p> <p>UPS Capacity: 30kVA Modular UPS (parallel configuration)  Battery runtime: 15min at full load  Power module Capacity 50kVA/50kW to 30-50kVA  Hot swap modules: power module, bypass module and energy control module  Input and output system: 3ph + N + PE  Rated Voltage: 380, 400 and 415Vac  AC Input Voltage Range 138-485Vac (305-485Vac for 100% load; 138-305Vac for 110%-100% load)  Output power factor: 1  Battery Rated Voltage: 360-528Vdc (VRLA,the number of batteries can be selected from 30 to 44; 40 batteries in default)</p>		



			<ul style="list-style-type: none"> <li>· Communication: snmp, and dry contact</li> <li>Pre warning notification for capacity: Early warning of capacitor life</li> <li>Pre warning notification for fan/s: Real-time monitoring of the rotational speed, fault warning in advance</li> <li>Redundant Control modules: The control module consists of two energy control modules (ECMs) in active/standby mode</li> </ul>		
<b>B</b>	<b>1</b>	<b>unit</b>	<b>D. KVM SWITCH</b>		
			<p>Must meet the following performance specification:</p> <ul style="list-style-type: none"> <li>• Integrated LCD display, keyboard, mouse and switch</li> <li>• 18.5 inch LED energy-saving display</li> <li>• Scissors feet ultra-thin keyboard</li> <li>• The machine adapts the towline type protective design and signal cable design to avoid losses caused by repeated pumping</li> <li>• Overall 1U height, suitable for standard cabinet installation</li> <li>• No need for software installation, can be operated directly from the computer</li> <li>• Automatic power protection design. When device is not in use automatically enters in protected mode</li> </ul>		
<b>B</b>	<b>1</b>	<b>unit</b>	<b>E. FIRE SUPPRESSION SYSTEM</b>		
			<p>Must meet the following performance specifications (FM200 or Novec):</p> <ul style="list-style-type: none"> <li>· Colorless and non-toxic gas, suitable for normally occupied area, where there is any chance of presence of human present</li> <li>· Perfectly suited to protect high value assets areas like telecommunication room, control rooms etc</li> <li>· Electrically non-conductive and contains no particle or residue, which makes it suitable for using in electrical and control rooms, data centers</li> <li>· Suitable for Class A , Class B and Class C fire</li> <li>· Extinguish fires rapidly; As discharge time is less than 10 second, it mixes in the environment and make free radical to react with fire products and extinguish fire quickly</li> <li>· Modes of Operation: Automatic Operation Remote Manual Operation Local Manual Operation</li> </ul>		
<b>B</b>	<b>1</b>	<b>unit</b>	<b>F. ENVIRONMENTAL MONITORING SYSTEM</b>		
			Qualification of the Bidder		
			The brand must have at least 10 years of existence in the market.		

			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Must have Main EMS device with 8x sensor input ports &amp; 2x expansion ports</li> <li>· Must have I/O module 8x input or output ports (dry contact)</li> <li>· Must have Expansion EMS Device with 8x Sensors Input Ports &amp; 2x Expansion Ports</li> <li>· Must have Smoke sensor for black rack cabinets (dry contact)</li> <li>· Must have Spot type Float Sensor (Dry Contact)</li> <li>· Must have Extension kit for Float Sensor with 5M active sensing cable</li> <li>· Must have Rope type water sensor with 20M active sensing cable</li> <li>· Must have Datacenter Central Management (DCM) Server software with license for 100 readings</li> </ul>		
<b>B</b>	<b>11</b>	<b>units</b>	<b>G. DATA RACK CABINET</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· W=800mm, D=1150mm, H= 2050mm (42U), black color, loading capacity:1500kgs</li> <li>· locking removable side panels, front door: Curved perforated , rear door: double perforated split doors</li> <li>· Top cover with cable entry, easy installation &amp; uninstallation.closed bottom with cable entry</li> <li>· earth grounding /cage nuts included, caster wheel, levelling feet</li> </ul>		
<b>B</b>	<b>8</b>	<b>units</b>	<b>H. POWER DISTRIBUTION UNIT</b>		
			Must meet the following performance specifications:		
			· Power outlet consist of 10way C13 compliant receptacles and shall be vertical mounted.		
			· Must have 2 meters cord length with black powdered coated finish		
			· The vertical power outlet have minimum 15A and 220 input volts.		
			· Capable to mount directly to the rack or cabinet using cage nut.		

<b>B</b>	<b>1</b>	<b>lot</b>	<b>I. INTER-RACK CABLING</b>		
			The brand must have at least 10 years of existence in the market.		
<b>B</b>	<b>8</b>	<b>roll</b>	<b>UTP CAT6 CABLE</b>		
			The brand must have at least 10 years of existence in the market.		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· 24AWG solid bare copper conductors, non-plenum, Polyolefin insulation, twisted pairs, central spline, rip cord, PVC jacket</li> <li>· NEC/(UL) Specification: CM</li> <li>· CEC/C(UL) Specification: CM</li> <li>· IEC Specification: 11801 Category 6</li> <li>· EU RoHS Compliant (Y/N): Y</li> <li>· TIA Specification: 568 C .2 Category 6</li> <li>· Suitable applications: Premise horizontal Cable, gigabit ethernet, 1000-Base Tx</li> </ul>		
<b>B</b>	<b>11</b>	<b>units</b>	<b>UTP PATCH PANEL</b>		
			Must meet the following performance specifications:		
			· Modular design, compatible with Shielded or Unshielded solution		
			<ul style="list-style-type: none"> <li>· Max. Capacity: 24 connectors</li> <li>· Front Connection: Flush</li> <li>· Termination Area: Rear</li> <li>· Material: Steel</li> <li>· Must include 1pc generic horizontal cable manager per patchpanel</li> </ul>		
<b>B</b>	<b>96</b>	<b>units</b>	<b>INFORMATION OUTLET</b>		
			Must meet the following performance specifications:		

			<ul style="list-style-type: none"> <li>· Related Parts: Compatible with Faceplates, Adapters, Boxes and Patch Panels</li> <li>· Wiring Scheme: T568A/B</li> <li>· Plug/Jack Compatibility: RJ45, RJ11</li> <li>· Comes with a T-bar to secure 110 type termination in the rear of the outlet</li> <li>· Requires need for rapid termination tool for ease of termination</li> <li>· Color Black</li> <li>· Suitability - indoor</li> <li>· Safety listing: ACA, Bi - national standard listed</li> </ul>		
B	96	units	<b>UTP PATCH CORD</b>		
			The solution proposed must have at least 10 years of existence in the market.		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Stranded conductors improve Flexibility</li> <li>· Improved strain relief and a flexible boot for optimum protection in high-density installations</li> <li>· Exceeds TIA and ISO transmission and mechanical performance requirements</li> <li>· Patchpanel patchcord must be 2meters in length and light blue in color compliant to TIA-606 color shade</li> <li>· Workstation patchcord must be 3meters in length and light blue in color compliant to TIA-606 color shade</li> </ul>		
			<b>REQUIREMENTS FOR BIDDER</b>		
			The winning bidder must have at least 2 certified data center professionals to ensure that the winning bidder is capable of implementing this project.		
			Warranty: 1 year		
			<b>TRAININGS</b>		
			DCF Training with Certification from Certified CDCP Trainor		
			Knowledge transfer		

			<b>DATA CENTER INFRA</b>		
<b>B2.2</b>	<b>3</b>	<b>units</b>	<b>TRADITIONAL VIRTUALIZATION</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The Traditional Visturalization node must have the following minimum Specifications:		
			Form Factor: 1U rack server		
			Processors: One Intel® Xeon® Scalable processors, with 32 cores and 2.3GHz or higher each CPU		
			Memory: 24 DDR4 DIMM slots, Supports RDIMM /LRDIMM, with minimum of 512GB configured		
			Drive bays: Must support up to 8 x 2.5-inch SAS/SATA/NVMe (HDD/SSD) max 122.8 TB		
			Storage: 2 x 480GB SSD		
			Storage Controller: Must have atleast 8 SAS ports with data transfer rate of 12Gb/s. Must support 12Gbps/6Gbps SAS and 6Gbps SATA HDD and SSD		
			Network ports: Must have atleast 2 x Gigabit NIC Ports Base T, 2 x 10GBE ports SFP+, & 2 x 16Gb FC HBA		
			PSU: Must have Hot Plug Redundant Power Supply		
			Supports mobile application to securely retrieve critical health data and easily perform bare-metal server configuration tasks via Bluetooth/Wi-Fi. Compatible with IOS and Android.		
			Able to support the following Operating Systems:		
			•VMware ESXi		
			•Citrix		
			•Microsoft Windows Server		
			•Red Hat Enterprise Linux		
			•Ubuntu Server		
			Able to support the following security features:		
			• TPM 1.2/2.0		
			• Cryptographically signed firmware		
			• Secure Boot		
			• System Lockdown		
			• Secure erase		
			Must include server warranty of 3-years 24x7 Onsite support.		
			The Traditional Visturalization Storage must have the following minimum Specifications:		
			Form Factor: 2U Rack		
			Drive Bays: 24 x 2.5" drive bays		
			Processor: Dual-core Intel Xeon		
			Dual Controller with System Memory of 8Gb per Controller.		
			Max raw capacity up to 3PB with expansion.		
			Supports FC, iSCSI, SAS, and simultaneous multiprotocol FC/iSCSI.		
			Max 16Gb FC ports: 8 per array (support auto-negotiate to 8Gb)		

			Storage: 8 x 2.4TB 10K RPM SAS 12Gbps 512e 2.5in Hot-plug Hard Drive		
			Supports auto-tiering up to 3 primary tiers.		
			Supports RAID 0, 1, 5, 6, 10, 50 with any combination of RAID levels can exist in a single array.		
			Able to reduce rebuild times when drive failures occur.		
			Active by default on all volumes and operates at full performance across all features.		
			Snapshots: 1024 max snapshots per array.		
			Supports asynchronous block via FC or iSCSI and target/source relationships may be one-to-many or many-to-one.		
			Supports self-encrypting drives in HDD formats, full disk encryption based on AES-256, and Drives certified to FIPS 140-2 Level 2		
			Supported host OS:		
			•Windows		
			•RHEL		
			•SLES		
			•VMware		
			Supports virtualization integration with:		
			•VMware vSphere		
			•vCenter		
			•Microsoft Hyper-V		
			•Xen Desktop		
			Power Supply: Redundant 580W Power Supplies.		
			Must include server warranty of 3-years 24x7 Onsite support.		
			The Traditional Virtualization must have the following hypervisor specifications:		
			Three (3) Perpetual Licenses for Hypervisor with atleast three (3) years support subscription		
			1x Centralized Virtualization Platform Manager with Three (3) years support subscription		
			Should be able to migrate VMs between hosts with no disruption to services.		
			Should be able to support a maximum of 768 vCPU and 24TB RAM.		
			Should be able to support 96 hosts per cluster.		
			Should automatically restarts VMs after encountering physical machine failure.		
			Should support movement of VM files from one data storage location to another with no disruption to users or loss of service		
<b>B2.3</b>	<b>1</b>	<b>unit</b>	<b>NETWORK ATTACHED STORAGE (NAS)</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		

			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>The Repository must have the following minimum specifications:</p> <p>Form Factor: 3U rack server</p> <p>HDD Bays: Must support up to 40 x 3.5inch HDD bays</p> <p>Processors: Intel Xeon Processor with 8-core and up to 2.7GHz</p> <p>Memory: Can Support up to 64GB, maximum of 64GB configured</p> <p>Storage: Must have atleast total of 100TB usable capacity. Must support single volume size up to 200TB.</p> <p>Network Interface Card: Must have at least 2x 10GB SFP+ and 4x 1GB Base T NIC ports</p> <p>PSU: Must have Redundant Power Supply</p>		
			<p>Must support the following file systems:</p> <ul style="list-style-type: none"> <li>• BTRFS</li> <li>• Ext4</li> <li>• Ext3</li> <li>• FAT</li> <li>• NTFS</li> <li>• HFS+</li> <li>• exFAT</li> </ul>		
			Must include 5-year warranty.		
<b>B2.4</b>	<b>1</b>	<b>unit</b>	<b>ACTIVE DIRECTORY SERVER</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Form Factor: Rack Server</p> <p>Drive Bays: Up to 10 x 2.5" SAS/SATA (HDD/SSD) with up to 8 NVMe SSD max 76.8TB or up to 10 NVMe drives max 64TB, or up to 4 x 3.5" SAS/SATA HDD max 64TB.</p> <p>CPU: Intel Xeon Processor, 8-Cores or Higher</p> <p>Memory: 16Gb Memory</p> <p>Storage: 600Gb usable capacity or Higher</p> <p>RAID Controller:</p> <p>8-port 12Gbps Hardware RAID controller</p> <p>Able to support RAID levels 0, 1, 5, 6, 10, &amp; 50.</p> <p>Can supports real-time RAID monitoring and hardware inventory</p> <p>I/O &amp; Ports:</p> <p>Dual Port 1Gb LOM</p> <p>Power Supply: 550W Power Supplies or Higher.</p> <p>Supports Integration with third-party consoles.</p> <p>Supports Connection for third-party consoles.</p> <p>Supported Operating System:</p> <p>Windows Server with Hyper-V</p> <p>RHEL</p>		

			<p>SLES          Ubuntu Server          Citrix XenServer          VMware ESXi          Able to support the following security features:          TPM 1.2/2.0 optional          Secure Boot          Silicon Root of Trust          Cryptographically signed firmware          System Lockdown          System Erase</p>		
			Must include server warranty of 3-years 24x7 Onsite support.		
			The proposed solution must have the necessary software license/s to ensure the operability of the solution		
		LS	<b>On Site Support 3 months for Network and Switches</b>		
			Maintenance and Support: 1 certified engineer, for 3 months upon implementation (on-site support)		
			<b>REQUIREMENTS FOR BIDDER</b>		
			Servers: The winning bidder must have at least 5 certified systems engineer for the product being offered to ensure that the winning bidder is capable of implementing the project.		
			Storage: The winning bidder must have at least 5 certified engineers for the product being offered to ensure that the winning bidder is capable of implementing this project.		
			Back-up: The winning bidder must have at least 3 certified engineers for the product being offered to ensure that the winning bidder is capable of implementing this project.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Warranty: 3 years		
			<b>TRAININGS</b>		
			Knowledge Transfer		
			Virtualization software training or any server and storage related to the provided solution		
B2.5	2	units	<b>INTERNET ROUTER</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<ul style="list-style-type: none"> <li>· Must at least support forwarding performance of 1 Gbps</li> <li>· Must at least have the ff. ports:             <ul style="list-style-type: none"> <li>o 2x GE Combo WAN ports</li> <li>o 8x GE LAN ports which can be configured as WAN</li> </ul> </li> <li>· Must support multi-core processors and non-blocking switching structure</li> <li>· Must support fault detection and determination in milliseconds, minimizing service interruption time</li> </ul>		



			<ul style="list-style-type: none"> <li>· Must support Built-in firewall, IPS, URL filtering, and multiple VPN technologies, providing comprehensive security protection capabilities</li> <li>· Must support built-in SD-WAN solution</li> <li>· Must support traffic steering based on bandwidth and link quality</li> <li>· Must at least support memory of 2 GB</li> <li>· Must support 1U form factor</li> <li>· Must have built-in fan modules</li> <li>· Must at least support operating temperature of 0 ° C to 45 ° C</li> <li>· Must support the ff. features and protocols: <ul style="list-style-type: none"> <li>o DHCP server/client/relay</li> <li>o PPPoE server/client</li> <li>o NAT</li> <li>o IEEE 802.1Q</li> <li>o IEEE 802.3</li> <li>o VLAN management</li> <li>o MAC management</li> <li>o Routing policies</li> <li>o Static routes</li> <li>o RIP, RIPng</li> <li>o OSPF, OSPFv3</li> <li>o IS-IS, IS-ISv6</li> <li>o BGP, BGP4+</li> <li>o MPLS</li> <li>o ACL</li> <li>o SNMP v1/v2c/v3</li> <li>o Web-based network management</li> <li>o RMON</li> </ul> </li> </ul>		
			<b>REQUIREMENTS FOR BIDDER</b>		
			The winning bidder must have the following certifications from the product being offered to ensure that the winning bidder is capable of implementing the project:		
			At least 3 certified network professionals, at least 2 certified internetwork professionals, and at least 2 certified internetwork expert for routing and switching.		
			Warranty: 3 years		
			<b>TRAININGS</b>		
			Knowledge Transfer		
			Official network certification training or any related network training		
B2.6	2	units	<b>CORE SWITCH</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		

		<p>Must support maximum of 96 x 100GE, 96 x 40GE, 160 x 25GE or 192 x 10GE ports</p> <p>Must support operating temperature of 0°C to +45°C</p> <p>Must support relative humidity of 5% to 90% (non-condensing)</p> <p>Must at least include dual AC power supplies</p> <p>Must at least include the ff. interface cards:</p> <p>48-Port 10GE SFP+ interface card</p> <p>12-port 40GE QSFP+ interface card</p> <p>Must at least include two switch fabric unit</p> <p>Must include guide rails</p> <p>Must include AP licenses with quantity equal or more than the quantity of proposed APs in this TOR</p> <p>Must support the ff. Layer 2 functions:</p> <p>≥ 1M MAC address entries</p> <p>Switching capacity ≥ 19.0 Tbps</p> <p>Forwarding performance ≥14,200 Mpps</p> <p>≥ 4K VLANs</p> <p>IEEE 802.1d</p> <p>Automatic learning and aging of MAC addresses</p> <p>IEEE 802.1w</p> <p>IEEE 802.1s</p> <p>Must support the ff. Layer 3 functions:</p> <p>RIP and RIPng</p> <p>OSPF and OSPFv3</p> <p>IS-IS and IS-ISv6</p> <p>BGP and BGP4+</p> <p>Must support the ff. multicast features:</p> <p>Multicast traffic control</p> <p>IGMPv1/v2/v3 snooping</p> <p>Must support multicast ACL</p> <p>Must support the ff. security features:</p> <p>MACsec</p> <p>NAC</p> <p>IEEE 802.1X/MAC address/DHCP snooping-triggered authentication</p> <p>1K CPU hardware queues</p> <p>RMON</p> <p>DoS attack defense, TCP SYN flood attacks, UDP flood attacks</p> <p>Must support the ff. features for reliability:</p> <p>LACP and E-Trunk</p> <p>VRRP and BFD-VRRP</p> <p>High-speed Self Recovery</p> <p>Must support the ff. integrated WLAN AC features:</p> <p>WLAN terminal location</p> <p>Locating of interference sources</p> <p>Spectrum analysis function</p> <p>2.4G &amp; 5G load balancing</p> <p>≥ 10K managed APs</p> <p>Sets the AP access control mode</p> <p>Adjustable priority of traffic on wired interfaces of APs</p> <p>802.1x, portal and MAC address authentication</p> <p>Dual-link load balancing for CAPWAP tunnels</p> <p>Sets RF interference monitoring and avoidance</p> <p>Automatically selects channels and power when APs go online</p>		

			<p>Rate limiting of upstream and downstream traffic on the air interface based on users</p> <p>Configuration through NETCONF</p> <p>Must support the ff. features for management and maintenance:</p> <p>SNMPv1/v2/v3</p> <p>Hot patches</p> <p>Streaming Telemetry</p> <p>Console port login, Telnet, SSH</p>		
B2.7	11	units	<b>ACCESS SWITCH -ADMIN AND ACAD BLDG</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Must have the following switches:</p> <p>5 units of 48x10/100/1000BASE-T PoE+, 4 SFP+</p> <p>3 units of 24x10/100/1000BASE-T PoE+, 4 SFP+</p> <p>3 units of 48x10/100/1000BASE-T, 4 SFP+</p> <p>Must have operating temperature of -5°C to +45°C, storage temperature of -40°C to +70°C and relative humidity of 5% to 90% (non-condensing).</p> <p>Number of MAC address entries ≥ 16K</p> <p>Must support switching capacity below:</p> <p>At least 176 Gbps for 48 ports</p> <p>At least 128 Gbps for 24 ports</p> <p>PoE switches must at least support PoE power of 380W with built-in AC power module.</p> <p>Must support the ff. Layer 2 functions:</p> <p>≥ 4K VLANs</p> <p>IEEE 802.1d</p> <p>learning and aging of MAC addresses</p> <p>IEEE 802.1w</p> <p>IEEE 802.1s</p> <p>Must support the ff. Layer 3 functions:</p> <p>≥ 4K FIBv4 entries</p> <p>≥ 1K FIBv6 entries</p> <p>Static routes</p> <p>RIP v1/2 and RIPng</p> <p>OSPF and OSPFv3</p>		
			<p>Must support the ff. security features:</p> <p>MFF</p> <p>AAA authentication and RADIUS authentication</p> <p>SSH V2.0/HTTPS</p>		
			<p>Must support the ff. management and maintenance features:</p> <p>EFM</p> <p>CFM</p> <p>Y.1731</p> <p>SNMPv1/v2c/v3</p> <p>RMON</p> <p>Must support ring protection protocol, RRPP.</p>		
B2.8	3	units	<b>ACCESS SWITCH - MULTI SPORT 48P PoE SWITCH</b>		
			<b>Qualification of the Bidder</b>		

			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Must have the following switches: 1 units of 48x10/100/1000BASE-T PoE+, 4 SFP+ 2 units of 24x10/100/1000BASE-T PoE+, 4 SFP+ Must have operating temperature of -5°C to +45°C, storage temperature of -40°C to +70°C and relative humidity of 5% to 90% (non-condensing). Number of MAC address entries ≥ 16K Must support switching capacity below: At least 176 Gbps for 48 ports At least 128 Gbps for 24 ports PoE switches must at least support PoE power of 380W with built-in AC power module. Must support the ff. Layer 2 functions: ≥ 4K VLANs IEEE 802.1d learning and aging of MAC addresses IEEE 802.1w IEEE 802.1s Must support the ff. Layer 3 functions: ≥ 4K FIBv4 entries ≥ 1K FIBv6 entries Static routes RIP v1/2 and RIPng OSPF and OSPFv3 Must support the ff. security features: MFF AAA authentication and RADIUS authentication SSH V2.0/HTTPS Must support the ff. management and maintenance features: EFM CFM Y.1731 SNMPv1/v2c/v3 RMON Must support ring protection protocol, RRPP.		
<b>B2.9</b>	<b>1</b>	<b>unit</b>	<b>MANAGEMENT SWITCH (24-port Switch)</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Must support fixed ports of Twenty-Four 10/100/1000Base-T ports and four 10GE SFP+ ports Must have operating temperature of -5°C to +45°C, storage temperature of -40°C to +70°C and relative humidity of 5% to 90% (non-condensing). Number of MAC address entries ≥ 16K		

			<p>Must at least support switching capacity of 128 Gbps</p> <p>Must support the ff. Layer 2 functions:</p> <ul style="list-style-type: none"> <li>≥ 4K VLANs</li> <li>IEEE 802.1d</li> <li>learning and aging of MAC addresses</li> <li>IEEE 802.1w</li> <li>IEEE 802.1s</li> </ul> <p>Must support the ff. Layer 3 functions:</p> <ul style="list-style-type: none"> <li>≥ 4K FIBv4 entries</li> <li>≥ 1K FIBv6 entries</li> <li>Static routes</li> <li>RIP v1/2 and RIPng</li> <li>OSPF and OSPFv3</li> </ul> <p>Must support the ff. security features:</p> <ul style="list-style-type: none"> <li>MFF</li> <li>AAA authentication and RADIUS authentication</li> <li>SSH V2.0/HTTPS</li> </ul> <p>Must support the ff. management and maintenance features:</p> <ul style="list-style-type: none"> <li>EFM</li> <li>CFM</li> <li>Y.1731</li> <li>SNMPv1/v2c/v3</li> <li>RMON</li> </ul> <p>Must support ring protection protocol, RRPP.</p>		
			<b>REQUIREMENTS FOR BIDDER</b>		
			The winning bidder must have the following certifications from the product being offered to ensure that the winning bidder is capable of implementing the project:		
			At least 3 certified network professionals, at least 2 certified internetwork professionals, and at least 2 certified internetwork expert for routing and switching.		
		Ls	<b>On Site Support 3 months for Server &amp; Storage</b>		
			Maintenance and Support: 1 certified engineer, for 3 months upon implementation (on-site support)		
			Warranty: 3 years		
			<b>TRAININGS</b>		
			Knowledge Transfer		
			Official network certification training or any related network training		
B2.10	2	units	<b>SERVER SWITCH</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<ul style="list-style-type: none"> <li>• Must at least support switching capacity of 3.6 Tbps</li> <li>• Must at least support forwarding performance of 940 Mpps</li> <li>• Must support front-to-back or back-to-front airflow.</li> </ul>		

		<ul style="list-style-type: none"> <li>· Must at least support the ff. interfaces: <ul style="list-style-type: none"> <li>o 6x 100G QSFP28</li> <li>o 48x 25G SFP28</li> </ul> </li> <li>· Must support access, trunk, and hybrid interfaces to VLANs</li> <li>· Must support QinQ</li> <li>· Must support M-LAG technology</li> <li>· Must support DLDLP.</li> <li>· Must support static, dynamic, and blackhole MAC address entries.</li> <li>· Must support IPv4 routing protocols, such as RIP, OSPF, IS-IS, and BGP.</li> <li>· Must support IPv6 routing protocols, such as RIPng, OSPFv3, IS-ISv6, and BGP4+.</li> <li>· Must support IP packet fragmentation and reassembly</li> <li>· Must support BFD for OSPF, BGP, IS-IS, and static route.</li> <li>· Must support IPv6 ND and PMTU discovery.</li> <li>· Must support queue scheduling modes such as PQ, DRR, PQ+DRR.</li> <li>· Must support ACL</li> <li>· Must support multicast traffic suppression</li> <li>· Must support traffic shaping.</li> <li>· Must support VRRP, VRRP load balancing, and BFD for VRRP.</li> <li>· Must support hardware-based BFD</li> <li>· Must support IGMP, PIM-SM, and MBGP</li> <li>· Must support MUX VLAN</li> <li>· Must support defense against DoS, ARP, and ICMP attacks.</li> <li>· Must support port isolation, port security, and sticky MAC</li> <li>· Must support bindings of IP addresses, MAC addresses, port numbers, and VLAN IDs.</li> <li>· Must support RMON</li> <li>· Must support AAA, RADIUS, and HWTACACS authentication.</li> <li>· Must support IGMP snooping.</li> <li>· Must support IGMP proxy.</li> <li>· Must support ERSPAN+</li> <li>· Must support Telemetry.</li> <li>· Must support SNMPv1/v2/v3, Telnet, and SSH.</li> <li>· Must support network-wide path detection.</li> <li>· Must support statistics on the buffer microburst status</li> <li>· Must support BootROM upgrade and remote upgrade.</li> <li>· Must support zero touch provisioning</li> <li>· Must support NetStream.</li> </ul>		
		<b>REQUIREMENTS FOR BIDDER</b>		
		The winning bidder must have the following certifications from the product being offered to ensure that the winning bidder is capable of implementing the project:		
		At least 3 certified network professionals, at least 2 certified internetwork professionals, and at least 2 certified internetwork expert for routing and switching.		
		Warranty: 3 years		
		<b>TRAININGS</b>		
		Knowledge Transfer		

			Official network certification training or any related network training		
B2.11	6	Nos	<b>OUTDOOR ACCESS POINT</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<ul style="list-style-type: none"> <li>· Must support 5 GHz radio, 802.11ax 4x4 MU-MIMO.</li> <li>· Must support 2.4 GHz radio 802.11ax 4x4 MU-MIMO.</li> <li>· Must support total spatial streams: ≥ 8; device rate: ≥ 5 Gbps</li> <li>· Must at least have 1 x 5 GE, 1x GE and 1x 10GE SFP+</li> <li>· Must support Bluetooth 5.0</li> <li>· Must at least have antenna gain of 2.4GHz: 10dBi and 5GHz: 11dBi.</li> <li>· Must support maximum of 1024 number of users.</li> <li>· Must support IP68 dustproof and waterproof grade.</li> <li>· Must at least support 6 kA or 6 kV surge protection on Ethernet ports</li> <li>· Must support built-in smart antennas</li> <li>· Must support operating temperature of –40°C to +65°C</li> <li>· Must support the ff. WLAN features: <ul style="list-style-type: none"> <li>o Beamforming</li> <li>o Priority mapping and scheduling</li> <li>o SSID hiding</li> <li>o 802.11k and 802.11v smart roaming</li> </ul> </li> <li>· Must support the ff. network features: <ul style="list-style-type: none"> <li>o IPv4/IPv6 Access control lists (ACLs)</li> <li>o Link Layer Discovery Protocol (LLDP)</li> <li>o SSID-based VLAN assignment</li> <li>o IEEE 802.1q</li> <li>o IEEE 802.3ab</li> <li>o DHCP client</li> </ul> </li> <li>· Must support the QoS and Security features: <ul style="list-style-type: none"> <li>o Queue mapping and scheduling</li> <li>o User-based bandwidth limiting</li> <li>o 802.1x authentication</li> <li>o MAC-address authentication</li> <li>o Portal authentication</li> <li>o Rogue device detection and countermeasure</li> <li>o WPA/WPA2/WPA3 authentication</li> </ul> </li> <li>o Must be powered by PoE injector with the following specifications: <ul style="list-style-type: none"> <li>i. Rated output voltage: 56V</li> <li>ii. Rated output current: 1.61A</li> </ul> </li> </ul>		

B2.12	2	Nos	<b>POINT TO POINT ACCESS POINT</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<ul style="list-style-type: none"> <li>· Must support 5 GHz radio, 802.11ax 4x4 MU-MIMO.</li> <li>· Must support 2.4 GHz radio 802.11ax 4x4 MU-MIMO.</li> <li>· Must support total spatial streams: <math>\geq 8</math>; device rate: <math>\geq 5</math> Gbps</li> <li>· Must at least have 1 x 5 GE, 1x GE and 1x 10GE SFP+</li> <li>· Must support Bluetooth 5.0</li> <li>· Must support maximum of 1024 number of users.</li> <li>· Must support IP68 dustproof and waterproof grade.</li> <li>· Must at least support 6 kA or 6 kV surge protection on Ethernet ports</li> <li>· Must support operating temperature of <math>-40^{\circ}\text{C}</math> to <math>+65^{\circ}\text{C}</math></li> <li>· Must support the ff. WLAN features: <ul style="list-style-type: none"> <li>o Beamforming</li> <li>o Priority mapping and scheduling</li> <li>o SSID hiding</li> <li>o 802.11k and 802.11v smart roaming</li> </ul> </li> <li>· Must support the ff. network features: <ul style="list-style-type: none"> <li>o IPv4/IPv6 Access control lists (ACLs)</li> <li>o Link Layer Discovery Protocol (LLDP)</li> <li>o SSID-based VLAN assignment</li> <li>o IEEE 802.1q</li> <li>o IEEE 802.3ab</li> <li>o DHCP client</li> </ul> </li> <li>· Must support the QoS and Security features: <ul style="list-style-type: none"> <li>o Queue mapping and scheduling</li> <li>o User-based bandwidth limiting</li> <li>o 802.1x authentication</li> <li>o MAC-address authentication</li> <li>o Portal authentication</li> <li>o Rogue device detection and countermeasure</li> <li>o WPA/WPA2/WPA3 authentication</li> </ul> </li> <li>o Must be powered by PoE injector with the following specifications: <ul style="list-style-type: none"> <li>i. Rated output voltage: 56V</li> </ul> </li> </ul>		



			ii. Rated output current: 1.61A		
B2.13	2	Nos	<b>Directional Antenna 500m</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Must have an external antenna with the ff. specifications: Frequency (MHz): 2300-2700 Gain (dBi): 18 Coverage distance: 500 m Maximum input power of the AP: 30 dBm RSSI: -70 dBm, regardless of the local EIRP limit. Downlink rate of a single STA: 10 Mbit/s Horizontal lobe width (degrees): 60 Vertical lobe width (degrees): 7 Standing wave ratio (SWR) ≤ 1.5 Polarization: Cross polarization Connector: N-female x 4 The brand of the proposed solution must have at least 10 years of existence in the market.		
			<b>REQUIREMENTS FOR BIDDER</b>		
			The winning bidder must have the following certifications from the product being offered to ensure that the winning bidder is capable of implementing the project:		
			At least 3 certified network professionals, at least 2 certified internetwork professionals, and at least 2 certified internetwork expert for routing and switching.		
			At least 1 certified network associates, at least 7 certified internetwork associates, and at least 4 certified internetwork professionals for WLAN.		
			Warranty: 3 years		
			<b>TRAININGS</b>		
			Knowledge Transfer		
			Official network certification training or any related network training		
			<b>DOOR ACCESS SYSTEM</b>		
B2.12	4	units	<b>A. Door Access</b>		
			The brand of the proposed solution must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Must meet the following performance specifications: · Resolution: 120 x 160 · Frame Rate: 25 fps		

			<ul style="list-style-type: none"> <li>· Type: Touch Screen</li> <li>· Pixel : 2MP</li> <li>· Lens: Dual</li> <li>· Fast temperature measurement mode: Detects face and takes temperature without identity authentication</li> <li>· Multiple authentication modes are available: card and temperature, face and temperature, card and face and temperature, etc</li> <li>· Face mask wearing alert: If the recognizing face does not wear a mask, the device will prompt a voice reminder. At the same time, the authentication or attendance is valid</li> <li>· Face mask wearing alert: If the recognizing face does not wear a mask, the device will prompt a voice reminder. At the same time, the authentication or attendance is valid</li> <li>· Face mask wearing alert: If the recognizing face does not wear a mask, the device will prompt a voice reminder. At the same time, the authentication or attendance is valid</li> <li>· Triggers voice prompt when detecting abnormal temperature</li> <li>· Configurable door status (open/close) when detecting abnormal temperature</li> <li>· Transmits online and offline temperature information to the client software via TCP/IP communication and saves the data on the client software</li> <li>· Face recognition duration &lt; 0.2 s/User; face recognition accuracy rate ≥ 99%</li> <li>· 6000 face capacity, 6000 card capacity, and 100,000 event capacity</li> <li>· Must have supporting floorstand brackets</li> </ul>		
			Warranty: 1 year		
			<b>TRAININGS</b>		
			Knowledge transfer		
<b>B2.15</b>	<b>1</b>	<b>Ls</b>	<b>CABLING</b>		
<b>B</b>	<b>110</b>	<b>rolls</b>	<b>A. UTP Cat6 Cable</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· 24 AWG solid bare copper conductors, non-plenum, Polyolefin insulation, twisted pairs, central spline, rip cord, PVC jacket</li> <li>· NEC/(UL) Specification: CM</li> <li>· CEC/C(UL) Specification: CM</li> <li>· IEC Specification: 11801 Category 6</li> <li>· EU RoHS Compliant (Y/N): Y</li> <li>· TIA Specification: 568 C .2 Category 6</li> <li>· Suitable applications: Premise horizontal Cable, gigabit ethernet, 1000-Base Tx</li> </ul>		

			The brand of the proposed solution must have at least 10 years of existence in the market.		
<b>B</b>	<b>23</b>	<b>units</b>	<b>B. UTP Patchpanel</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Modular design, compatible with Shielded or Unshielded solution</li> <li>· Max. Capacity: 24 connectors</li> <li>· Front Connection: Flush</li> <li>· Termination Area: Rear</li> <li>· Material: Steel</li> <li>· Must include 1pc generic horizontal cable manager per patchpanel</li> </ul>		
<b>B</b>	<b>55 2</b>	<b>units</b>	<b>C. Information Outlet</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Related Parts: Compatible with Faceplates, Adapters, Boxes and Patch Panels</li> <li>· Wiring Scheme: T568A/B</li> <li>· Plug/Jack Compatibility: RJ45, RJ11</li> <li>· Comes with a T-bar to secure 110 type termination in the rear of the outlet</li> <li>· Requires need for rapid termination tool for ease of termination</li> <li>· Color Black</li> <li>· Suitability - indoor</li> <li>· Safety listing: ACA, Bi - national standard listed</li> </ul>		
<b>B</b>	<b>62</b>	<b>units</b>	<b>C. Pop-Up Stainless Steel Square Module</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Available in simplex, duplex, triplex configuration</li> <li>· Must include information outlet for each module</li> </ul>		
<b>B</b>	<b>18 7</b>	<b>units</b>	<b>D. Faceplate</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Max. Capacity: 1-port</li> <li>· Front Connection: Flush</li> <li>· Material: Plastic</li> <li>· Suitability - indoor</li> <li>· Safety listing: Bi-national Standard Listed</li> </ul>		

			<ul style="list-style-type: none"> <li>· must include cat6 information outlet</li> </ul>		
<b>B</b>	<b>76 2</b>	<b>units</b>	<b>E. UTP Patchcord</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Stranded conductors improve Flexibility</li> <li>· Improved strain relief and a flexible boot for optimum protection in high-density installations</li> <li>· Exceeds TIA and ISO transmission and mechanical performance requirements</li> <li>· Patchpanel patchcord must be 2meters in length and light blue in color compliant to TIA-606 color shade</li> <li>· Workstation patchcord must be 3meters in length and light blue in color compliant to TIA-606 color shade</li> </ul>		
<b>B</b>	<b>14 2</b>	<b>units</b>	<b>F. Modular Connector</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Plug housing: polycarbonate, UL 94V0-2 Rated</li> <li>· Conductor Type: solid; stranded</li> <li>· UL specification: UL1863</li> <li>· EIA Specification: EIA - 364</li> <li>· EU RoHS Compliant</li> <li>· Must have external boots</li> </ul>		
<b>B</b>	<b>7</b>	<b>units</b>	<b>G. Data Cabinet (3ft)</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Compatible with metric ETSI and 19 inch international standard</li> <li>· W=600mm, D=600mm, H=21RU</li> <li>· Front tough glass with spring and lock</li> <li>· Removable side panels</li> <li>· Rear Solid Metal Door</li> <li>· The lock is rotary lock</li> <li>· Top Cover with cable entry and easy installation</li> <li>· Closed bottom with cable entry, Earth grounding, Cage nuts, Double Top-mounted Fan</li> </ul>		
<b>B</b>	<b>7</b>	<b>units</b>	<b>H. Power Distribution Unit</b>		
			<p>The brand must have at least 10 years of existence in the market.</p> <p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Shall have 6way C13 output ports</li> <li>· Shall be horizontally mounted</li> <li>· Power cord must be 2meters in length</li> </ul>		

			<ul style="list-style-type: none"> <li>· Shall have a 10A ampere capacity and 220v input volts</li> <li>· Capable to mount directly to the rack or cabinet using cage nut</li> </ul>		
<b>B</b>	<b>7</b>	<b>units</b>	<b>I. Uninterruptable Power Supply</b>		
			The brand must have at least 10 years of existence in the market.		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Must have LCD multi-languare color display</li> <li>· Must have unity output power factor</li> <li>· Top-leve on on-line double conversion UPS for mission critical applications</li> <li>· Must be 2000va/2000w</li> <li>· Rated Frequency 50hz/60hz</li> <li>· Input wiring: C20</li> <li>· Output Receptacles: IEC60320-C13 x 6, IEC60320-C19 x 1</li> <li>· Waveform (On Battery): Sinewave</li> </ul>		
<b>B</b>	<b>1200</b>	<b>meters</b>	<b>J. Fiber Optic Cable (12core – OM3)</b>		
			The brand must have at least 10 years of existence in the market.		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Suitable applications: high degree of flexibility suitable for backbone, horizontal, inner and inter-building installation.</li> <li>· Excellent flame retardant performance for indoor application</li> <li>· 12core optical fibers, 900micron PVC tight buffer</li> <li>· Outdoor jacket material: PVC</li> <li>· NEC/(UL) specification: OFNR</li> <li>· CEC/C(UL) specification: OFN</li> <li>· EU RoHS compliant</li> </ul>		
<b>B</b>	<b>9</b>	<b>units</b>	<b>K. Fiber Patch Panel</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Fiber Patch Panel, that can accommodate SC duplex adapter and SC connectors</li> <li>· Fiber Patch Panel should be modular-type that can fit 2 fiber frames and can terminate upto 48-fiber in 1RU</li> <li>· Typically used in Server rooms, Network rooms, Data Centres and Small offices</li> <li>· Can be mounted directly on any 19" rack or cabinet</li> <li>· Must have 12-fiber SC duplex adapter as Load</li> </ul>		
<b>B</b>	<b>144</b>	<b>units</b>	<b>L. Fiber Connector - Pigtail (SC – OM3)</b>		
			<p>Must meet the following performance specifications:</p> <ul style="list-style-type: none"> <li>· Must have SC type Connector</li> <li>· Optical Characteristic : OM3</li> </ul>		

			<ul style="list-style-type: none"> <li>· Telecommunication Standards: TIA-568.3-D</li> <li>· Connector Standards: IEC 61754, TIA 604</li> <li>· Flame Rating: PVC jacket: OFNR rating</li> </ul>		
<b>B</b>	<b>53</b>	<b>units</b>	<b>M. Fiber Patchcord</b>		
			<p>Must meet the following performance specifications:</p> <p>32pcs Patchcords</p> <ul style="list-style-type: none"> <li>· Conforms Standard: TIA/EIA 568 C.3</li> <li>· Fiber type: OM3</li> <li>· Connector 1: SC - LC</li> <li>· Cable Construction: duplex</li> </ul> <p>17pcs Patchcords</p> <ul style="list-style-type: none"> <li>· Conforms Standard: TIA/EIA 568 C.3</li> <li>· Fiber type: OM3</li> <li>· Connector: LC - LC</li> <li>· Cable Construction: duplex</li> </ul> <p>4pcs Patchcords</p> <ul style="list-style-type: none"> <li>· Conforms Standard: TIA/EIA 568 C.3</li> <li>· Fiber type: Single mode</li> <li>· Connector 1: LC - LC</li> <li>· Cable Construction: duplex</li> </ul>		
			<b>REQUIREMENTS FOR BIDDERS</b>		
			The winning bidder must have at least 2 certified data center professionals to ensure that the winning bidder is capable of implementing this project.		
			Must offer a single brand for the the SCS components (cables, outlets, panels, cords and pop-up box)		
			Warranty: Cabling: 20 years		
			Others: 1 year		
			<b>TRAININGS</b>		
			DCF Training with Certification from Certified CDCP Trainor		
<b>B2.16</b>	<b>1</b>	<b>units</b>	<b>Firewall</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		

B	4	units	<b>+ 10G SFP Transciever</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Hardware Specification (2 set)</p> <ul style="list-style-type: none"> <li>a. 1 set appliance with license , 1 set appliance without license(for HA setup)</li> <li>b. 8 port 1G Copper</li> <li>c. 2 port 10G Fiber SR</li> </ul>		
			<p>Performance Specifications</p> <ul style="list-style-type: none"> <li>a. The proposed firewalls shall support at least 80 Gbps of Firewall Throughput.</li> <li>b. The proposed firewalls shall support at least 37 Gbps of Firewall IMIX Throughput.</li> <li>c. The proposed firewalls shall support at least 35 Gbps of IPS Throughput.</li> <li>d. The proposed firewalls shall support at least 8 Gbps of Threat Protection Throughput.</li> <li>e. The proposed firewalls shall support at least 17 million concurrent sessions.</li> <li>f. The proposed firewalls shall support at least 450,000 new connections/sec.</li> <li>g. The proposed firewalls shall support at least 16 Gbps of IPsec VPN Throughput.</li> </ul>		
			<p>General Management</p> <ul style="list-style-type: none"> <li>a. The proposed firewalls shall be purpose-built and shall have streamlined user interface and firewall rule management for large rule sets with grouping with at-a-glance rule feature and enforcement indicators.</li> <li>b. The proposed firewalls shall have Two-factor authentication (One-time-password) support for administrator access, user portal, IPsec and SSL VPN</li> <li>c. The proposed firewalls shall have advanced troubleshooting tools in GUI (e.g. Packet Capture)</li> <li>d. The proposed firewalls shall have High Availability (HA) support in clustering two devices in active-active or active-passive mode with plug-and-play Quick HA setup</li> <li>e. The proposed firewalls shall have full command-line-interface (CLI) accessible from GUI</li> <li>f. The proposed firewalls shall have automated firmware update notification with easy automated update process and roll-back features.</li> <li>g. The proposed firewalls shall have self-service user portal</li> <li>h. The proposed firewalls shall have configuration change tracking</li> </ul>		

		<ul style="list-style-type: none"> <li>i. The proposed firewalls shall support SNMPv3 and Netflow</li> <li>j. The proposed firewalls shall support Central Management via Cloud-based Unified Console</li> <li>k. The proposed firewalls shall support API for 3rd party integration</li> <li>l. The proposed firewalls shall have remote access option from the firewall vendor support.</li> <li>m. The proposed firewalls shall have Cloud-based license management via Licensing Portal</li> <li>n. The solution provider must have at least 5 certified engineer of the proposed product.</li> </ul>	
		<p>Central Firewall Management</p> <ul style="list-style-type: none"> <li>a. The proposed firewalls shall include a centralized management and shall be a Cloud-based management and reporting for multiple firewalls, provides group policy management and a single console for all IT security products of the same brand.</li> <li>b. The proposed central firewall management shall support Group policy management which allows objects, settings, and policies to be modified once and automatically synchronized to all firewalls in the group</li> <li>c. The proposed central firewall management shall have Task Manager for providing a full historical audit trail and status monitoring of group policy changes</li> <li>d. The proposed central firewall management shall have Backup Firmware Management which stores the last five configuration backup files for each firewall with one that can be pinned for permanent storage and easy access</li> <li>e. The proposed central firewall management shall support firmware updates which offer one-click firmware updates to be applied to any device</li> <li>f. The proposed central firewall management shall support Zero-touch deployment which enables the initial configuration to be performed in Cloud-based management and then exported for loading onto the device from a flash drive at startup, automatically connecting the device back to the central firewall management.</li> </ul>	
		<p>Firewall, Networking &amp; Routing</p> <ul style="list-style-type: none"> <li>a. The proposed firewalls shall have Packet processing architecture that provides extreme levels of visibility, protection, and performance through stream-based packet processing</li> <li>b. The proposed firewall shall support DPI Engine that provides stream scanning protection for IPS, AV, Web, App Control, and TLS Inspection in a single high-performance engine</li> <li>c. The proposed firewalls shall support Network Flow FastPath which delivers policy-driven and intelligent acceleration of trusted traffic automatically</li> <li>d. The proposed firewalls shall be able to enforce policy across zones, networks, or by service type</li> <li>e. The proposed firewalls shall have Default zones for LAN, WAN, DMZ, LOCAL, VPN and WiFi</li> <li>f. The proposed firewalls shall support Custom zones on LAN or DMZ</li> <li>g. The proposed firewalls shall support Customizable NAT policies with IP masquerading and full object support to redirect or forward multiple services in a single rule with a convenient NAT rule wizard to quickly and easily create complex NAT rules in just a few clicks</li> <li>h. The proposed firewalls shall support Flood protection: DoS, DDoS and portscan blocking</li> </ul>	



		<ul style="list-style-type: none"> <li>i. The proposed firewalls shall support Country blocking by Geo-IP</li> <li>j. The proposed firewalls shall support Upstream proxy support</li> <li>k. The proposed firewalls shall support Protocol independent multicast routing with IGMP snooping</li> <li>l. The proposed firewalls shall support Bridging with STP support and ARP broadcast forwarding</li> <li>m. The proposed firewalls shall have VLAN DHCP support and tagging</li> <li>n. The proposed firewalls shall have VLAN bridge support</li> <li>o. The proposed firewalls shall have WAN link balancing: multiple Internet connections, auto-link health check, automatic failover, automatic and weighted balancing, and granular multipath rules</li> <li>p. The proposed firewalls shall support 802.3ad interface link aggregation</li> <li>q. The proposed firewalls shall support Dynamic DNS (DDNS)</li> <li>r. The proposed firewalls shall have IPv6 Ready Logo Program Approval Certification</li> </ul>		
		<p>SD-WAN</p> <ul style="list-style-type: none"> <li>a. The proposed firewalls shall have SDWAN feature</li> <li>b. The proposed firewalls SDWAN feature shall have Support for multiple WAN link options including VDSL, DSL, cable, and 3G/4G/LTE cellular with essential monitoring, balancing, failover and fail-back</li> <li>c. The proposed firewalls SDWAN feature shall support Application path selection and routing, which is used to ensure quality and minimize latency for mission-critical applications such as VoIP</li> <li>d. The proposed firewalls SDWAN feature shall support application identification that comes with the sharing of application control information between managed endpoints of the same brand which added clarity and reliability of identifying applications.</li> <li>e. The proposed firewalls SDWAN feature shall support application routing over preferred links via firewall rules or policy-based routing</li> <li>f. The proposed firewalls SDWAN feature shall support flexible, and zero-touch or low-touch deployment</li> <li>g. The proposed firewalls SDWAN feature shall have Robust VPN support including IPsec and SSL VPN</li> <li>h. The proposed firewalls SDWAN feature shall have Centralized VPN orchestration</li> <li>i. The proposed firewalls SDWAN feature shall support Unique Remote Ethernet Device Layer 2 tunnel with routing</li> </ul>		
		<p>Base Traffic Shaping &amp; Quotas</p> <ul style="list-style-type: none"> <li>a. The proposed firewalls shall support Flexible network or user based traffic shaping (QoS) (enhanced Web and App traffic shaping options included with the Web Protection subscription)"</li> <li>b. The proposed firewalls shall support Set user-based traffic quotas on upload/download or total traffic and cyclical or non-cyclical</li> <li>c. The proposed firewalls shall support Real-time VoIP optimization</li> </ul>		
		<p>Authentication</p> <ul style="list-style-type: none"> <li>a. The proposed firewalls shall support the sharing of currently logged in Active Directory user ID between the managed</li> </ul>		

		<p>endpoints of the same brand without an agent on the AD server or client.</p> <p>b. The proposed firewalls shall support Authentication via: Active Directory, eDirectory, RADIUS, LDAP and TACACS+</p> <p>c. The proposed firewalls shall support Server authentication agents for Active Directory SSO, Transparent authentication and Thin Client Authentication.</p> <p>d. The proposed firewalls shall support Single sign-on for Active directory, eDirectory, RADIUS Accounting</p> <p>e. The proposed firewalls shall support Client authentication agents for Windows, Mac OS X, Linux 32/64</p> <p>f. The proposed firewalls shall support Browser SSO authentication: Transparent, proxy authentication (NTLM) and Kerberos</p> <p>g. The proposed firewalls shall support Authentication certificates for iOS and Android</p> <p>h. The proposed firewalls shall support Authentication services for IPSec, SSL, L2TP, PPTP</p> <p>i. The proposed firewalls shall have Google Chromebook authentication support for environments with Active Directory and Google G Suite</p> <p>j. The proposed firewalls shall support API-based authentication</p>	
		<p>User Self-Serve Portal</p> <p>a. The proposed firewalls shall have a self-serve portal to Download SSL remote access client (Windows) and configuration files (other OS)</p> <p>b. The proposed firewalls shall have a self-serve portal for Hotspot access information</p> <p>c. The proposed firewalls shall have a self-serve portal for Changing user name and password</p> <p>d. The proposed firewalls shall have a self-serve portal to View personal internet usage</p>	
		<p>Base VPN Options</p> <p>a. The proposed firewalls shall support Site-to-site VPN: SSL, IPSec, 256-bit AES/3DES, PFS, RSA, X.509 certificates, pre-shared key</p> <p>b. The proposed firewalls shall support Remote Ethernet Device (RED) site-to-site VPN tunnel (robust and light-weight)</p> <p>c. The proposed firewalls shall support L2TP and PPTP</p> <p>d. The proposed firewalls shall have Remote access: SSL, IPsec, iPhone/iPad/ Cisco/Android VPN client support</p>	
		<p>VPN Client</p> <p>a. The proposed firewalls VPN client shall support Authentication: Pre-Shared Key (PSK), PKI (X.509), Token and XAUTH</p> <p>b. The proposed firewalls VPN client shall be able to enable the connection of FW and Endpoint security and Monitoring of the health status of the managed Endpoints for remote connected users</p> <p>c. The proposed firewalls VPN client shall support Intelligent split-tunneling for optimum traffic routing</p> <p>d. The proposed firewalls shall have Client-monitor for graphical overview of connection status</p> <p>e. The VPN client shall have Mac and Windows Support</p>	

		Network Protection Subscription		
		<p>Intrusion Prevention (IPS)</p> <p>a. The proposed firewalls shall have High-performance, next-gen IPS deep packet inspection engine with selective IPS patterns that can be applied on a firewall rule basis for maximum performance and protection</p> <p>b. The proposed firewalls shall have Thousands of signatures</p> <p>c. The proposed firewall shall have Support for custom IPS signatures</p> <p>d. The proposed firewalls shall have IPS Policy Smart Filters which enable dynamic policies that automatically update as new patterns are added</p>		
		<p>ATP and Endpoint Health monitoring</p> <p>a. The proposed firewalls shall have Advanced Threat Protection (detect and block network traffic attempting to contact command and control servers using multi-layered DNS, AFC, and firewall)</p> <p>b. The proposed firewalls shall have automated policies that can limit access to network resources or completely isolate compromised systems until they are cleaned</p> <p>c. The proposed firewalls shall have Lateral Movement Protection to further isolates compromised systems by having healthy managed endpoints, of the same brand, reject all traffic from unhealthy endpoints preventing the movement of threats even on the same broadcast domain</p>		
		<p>Clientless VPN</p> <p>a. The proposed firewalls shall support Unique encrypted HTML5 self-service portal with support for RDP, HTTP, HTTPS, SSH, Telnet, and VNC</p> <p>Web Protection Subscription</p>		
		<p>Web Protection and Control</p> <p>b. The proposed firewalls Web Protection and Control shall support Fully transparent proxy for anti-malware and web-filtering</p> <p>c. The proposed firewalls Web Protection and Control shall have Enhanced Advanced Threat Protection</p> <p>d. The proposed firewalls shall have URL Filter database with millions of sites across 92 categories backed by OEM Labs</p> <p>e. The proposed firewalls Web Protection and Control shall have Advanced web malware protection with JavaScript emulation</p> <p>f. The proposed firewalls Web Protection and Control shall have Live Protection real-time in-the-cloud lookups for the latest threat intelligence</p> <p>g. The proposed firewalls Web Protection and Control shall have Second independent malware detection engine for dual-scanning</p> <p>h. The proposed firewalls Web Protection and Control shall have High performance web content caching</p>		

		<p>i. The proposed firewalls Web Protection and Control shall support Forced caching for Managed Endpoint (of the same brand) updates</p> <p>j. The proposed firewalls Web Protection and Control shall support SafeSearch enforcement (DNS-based) for major search engines per policy (user/group)</p> <p>k. The proposed firewalls Web Protection and Control shall support Web keyword monitoring and enforcement to log, report or block web content matching keyword lists with the option to upload customs lists</p> <p>l. The proposed firewalls shall support Web policy override option to temporarily allow access to blocked sites or categories that are fully customizable and manageable by select users</p> <p>m. The proposed firewalls Web Protection and Control shall support User/Group policy enforcement on Google Chromebooks</p>		
		<p>Cloud Application Visibility</p> <p>a. The proposed firewalls shall support Control Center widget which displays amount of data uploaded and downloaded to cloud applications categorized as new, sanctioned, unsanctioned or tolerated</p> <p>b. The proposed firewalls shall be able to Discover Shadow IT at a glance</p> <p>c. The proposed firewalls shall be capable to Drill down to obtain details on users, traffic, and data</p> <p>d. The proposed firewalls shall support One-click access to traffic shaping policies</p> <p>e. The proposed firewalls shall be capable to Filter cloud application usage by category or volume</p> <p>f. The proposed firewalls shall be able to provide Detailed customizable cloud application usage report for full historical reporting</p>		
		<p>Application Protection and Control</p> <p>a. The proposed firewalls shall be able to automatically identify, classify, and control all unknown Windows and Mac applications on the network by sharing information between managed endpoints of the same brand.</p> <p>b. The proposed firewalls shall support Signature-based application control with patterns for thousands of applications</p> <p>c. The proposed firewalls shall support Cloud Application Visibility and Control to discover Shadow IT</p> <p>d. The proposed firewalls shall support App Control Smart Filters that enable dynamic policies which automatically update as new patterns are added</p> <p>e. The proposed firewalls shall support Micro app discovery and control</p> <p>f. The proposed firewalls shall support Application control based on category, characteristics (e.g., bandwidth and productivity consuming), technology (e.g. P2P), and risk level</p>		
		<p>Web &amp; App Traffic Shaping</p> <p>a. The proposed firewalls shall support Custom traffic shaping (QoS) options by web category or application to limit or guarantee upload/download or total traffic priority and bitrate individually or shared</p>		
		<p>Zero-Day Protection Subscription</p> <p>a. Dynamic Sandbox Analysis</p> <p>b. Dynamic Sandbox Analysis shall support Full integration into your security solution dashboard</p>		

		<p>c. Dynamic Sandbox Analysis shall be able to Inspect executables and documents containing executable content (including .exe, .com, and .dll, .doc, .docx, docm, and .rtf and PDF) and archives containing any of the file types listed above (including ZIP, BZIP, GZIP, RAR, TAR, LHA/LZH, 7Z, Microsoft Cabinet)</p> <p>d. Dynamic Sandbox Analysis shall be able to Detect sandbox evasion behavior</p> <p>e. Dynamic Sandbox Analysis shall support Machine Learning technology with Deep Learning scans all dropped executable files</p> <p>f. Dynamic Sandbox Analysis shall include exploit prevention and Anti-ransomware Protection technology from endpoint security</p> <p>g. Dynamic Sandbox Analysis shall be able to provide In-depth malicious file reports and dashboard file release capability</p> <p>h. Dynamic Sandbox Analysis shall be able to provide Optional data center selection and flexible user and group policy options on file type, exclusions, and actions on analysis</p> <p>i. Dynamic Sandbox Analysis shall Support one-time download links</p>		
		<p>Threat Intelligence Analysis</p> <p>a. All files containing active code downloaded via the web or coming into the firewall as email attachments such as executables and documents containing executable content (including .exe, .com, and .dll, .doc, .docx, docm, and .rtf and PDF) and archives containing any of the file types listed above (including ZIP, BZIP, GZIP, RAR, TAR, LHA/LZH, 7Z, Microsoft Cabinet) are automatically sent for Threat Intelligence Analysis</p> <p>b. Files are checked against massive threat intelligence database and subjected to multiple machine learning models to identify new and unknown malware</p> <p>c. Threat Intelligence Analysis shall be able to provide Extensive reporting including a dashboard widget for analyzed files, a detailed list of the files that have been analyzed and the analysis results, and a detailed report outlining the outcome of each machine learning model.</p>		
		<p>Reporting</p> <p>a. Central Firewall Reporting</p> <p>b. The proposed firewall must have a centralized management that shall have Pre-defined reports with flexible customization options</p> <p>c. The proposed firewall with centralized management shall be able to provide Report dashboard which has an at-a-glance view of events for at least the past 24 hours</p> <p>d. The proposed firewall with centralized management shall be able to Easily identify network activities, trends, and potential attacks</p> <p>e. The proposed firewall with centralized management shall have Easy backup of logs with quick retrieval for audit needs</p>		
		<p>Warranty and Support and Subscription</p> <p>a. The proposed solution shall have 24/7 support, feature updates, advanced replacement hardware warranty for term</p> <p>b. The proposed solution shall have Machine Learning and Sandboxing File Analysis, reporting</p> <p>c. The proposed solution shall have TLS and DPI engine, Web Security and Control, Application Control, reporting</p> <p>d. The proposed solution must have Networking, Unlimited Remote Access VPN, Site-to-Site VPN, reporting</p>		

			e. The Proposed solution shall provide thee (3) years corrective / Remedial Maintenance and Annual health check visit from the date of acceptance.		
B2.18		set	<b>ENDPOINT SECURITY AND SERVER PROTECTION (Servers: 6)</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
	109	lics	<b>ENDPOINT SECURITY</b>		
	6	lics	<b>Server protection + annual maintenance (Endpoint + Server)</b>		
			<p>Integrated Management</p> <p>Must have a unified console for managing multiple products. Advanced Endpoint Protection, Server Security, Mobile Control. All settings for these products must be configured from a Central Dashboard without the need to access additional consoles.</p> <p>Multi-factor Authentication (MFA)</p> <p>Must provide an additional layer of security, other than password. (i.e. Google Authenticator and Manufacturer Authenticator).</p>		
			<p><b>REQUIREMENTS FOR BIDDER</b></p> <p>Windows, Mac and Linux machines must be managed from one management console.</p> <p>The solution must support Windows Server, Linux, Public Cloud (Microsoft Azure, Amazon AWS, and Google Cloud Platform).</p> <p>Role-base Management (RBAC)</p> <p>Must have the capability to allow the separation of estate management to different administrator login.</p> <p>Microsoft AD Synchronization</p> <p>Must have the capability to only allow outbound synchronization of Users/Groups from the local Active Directory servers to the Cloud Dashboard for policy management.</p> <p>Policies</p> <p>Selected policies should be able to be applied to either users or devices.</p> <p>Policies must be able to be disabled automatically based on a scheduled time and date.</p> <p>Enhanced Tamper Protection</p> <p>The endpoint solution must have the capability to monitor or stop local administrative users or malicious processes to disable the endpoint protection:</p> <p>Advanced Deep Learning Mechanism</p> <p>Must have advanced form of machine learning that detects/block both known and unknown threats without relying on a virus definition updates.</p> <p>Exploit Prevention/Mitigation on the following known exploits</p> <p>Must have the ability to deny attackers using different exploitation techniques to take advantage of any software vulnerabilities to delivery malware</p> <p>Anti-ransomware Protection</p>		

			<p>Must have the ability to track computers and processes attempting to modify/encrypt documents and other files.          Must have the ability for the encrypted files to be rolled back to a pre-encrypted state.          Root Cause Analysis          Must have the capability to identify what happened, where a breach originated, what files were impacted, and provides guidance on how to strengthen an organization's security posture.          Advanced System Clean          Must have the capability to trigger a deep clean upon any active detection from exploit or ransomware detection. Uniquely examines the whole system not only removing malware, but also removing the traces left behind on your system, such as other files and registry keys.</p>		
			<p>Endpoint Protection Features          Must have Download Reputation          Must have Web Control / URL Category Blocking          Must have Peripheral Control (e.g. USB)          Must have Application Control          Must have a Pre-execution Behavior Analysis (HIPS)          Must be able to block Potentially Unwanted Application (PUA)          Must have Data Loss Prevention          Synchronized Security          Must be able to automatically isolate infected endpoints on the public and local area networks.          Must be able to identify all apps on the network.          Must be able to link threats to individual users and computers.          Additional Features for Server Protection          Must be able to lock down your server with a single click, securing servers in a safe state and preventing unauthorized applications from running.          Must be able to protect Windows, Linux, and UNIX system          Must be able to defend your data from malware without sacrificing server performance.          Must include Malicious Traffic Detection, which monitors for traffic associated with malware, enabling early detection and removal.          Must be able to give you the broadest protection for your servers and data, including from zero-day attacks          Must be able to manage the connections between applications and the associated files, such as DLLs, data files and scripts.</p>		
<b>B2.20</b>	<b>1</b>	<b>unit</b>	<b>Virtual Firewall</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Virtual Appliance Specification</p> <ul style="list-style-type: none"> <li>a. 8 Core</li> <li>b. 16 RAM</li> <li>c. Up to 800 total weighted users</li> </ul>		
			General Management		

		<p>a. The proposed firewalls shall be purpose-built and shall have streamlined user interface and firewall rule management for large rule sets with grouping with at-a-glance rule feature and enforcement indicators.</p> <p>b. The proposed firewalls shall have Two-factor authentication (One-time-password) support for administrator access, user portal, IPsec and SSL VPN</p> <p>c. The proposed firewalls shall have advanced troubleshooting tools in GUI (e.g. Packet Capture)</p> <p>d. The proposed firewalls shall have full command-line-interface (CLI) accessible from GUI</p> <p>e. The proposed firewalls shall have automated firmware update notification with easy automated update process and roll-back features.</p> <p>f. The proposed firewalls shall have self-service user portal</p> <p>g. The proposed firewalls shall have configuration change tracking</p> <p>h. The proposed firewalls shall support SNMPv3 and Netflow</p> <p>i. The proposed firewalls shall support Central Management via Cloud-based Unified Console</p> <p>j. The proposed firewalls shall support API for 3rd party integration</p> <p>k. The proposed firewalls shall have remote access option from the firewall vendor support.</p> <p>l. The proposed firewalls shall have Cloud-based license management via Licensing Portal</p> <p>m. The solution provider must have at least 5 certified engineer of the proposed product.</p>		
		<p>Central Firewall Management</p> <p>a. The proposed firewalls shall include a centralized management and shall be a Cloud-based management and reporting for multiple firewalls, provides group policy management and a single console for all IT security products of the same brand.</p> <p>b. The proposed central firewall management shall support Group policy management which allows objects, settings, and policies to be modified once and automatically synchronized to all firewalls in the group</p> <p>c. The proposed central firewall management shall have Task Manager for providing a full historical audit trail and status monitoring of group policy changes</p> <p>d. The proposed central firewall management shall have Backup Firmware Management which stores the last five configuration backup files for each firewall with one that can be pinned for permanent storage and easy access</p> <p>e. The proposed central firewall management shall support firmware updates which offer one-click firmware updates to be applied to any device</p> <p>f. The proposed central firewall management shall support Zero-touch deployment which enables the initial configuration to be performed in Cloud-based management and then exported for loading onto the device from a flash drive at startup, automatically connecting the device back to the central firewall management.</p>		
		<p>Firewall, Networking &amp; Routing</p> <p>a. The proposed firewalls shall have Packet processing architecture that provides extreme levels of visibility, protection, and performance through stream-based packet processing</p>		



		<p>b. The proposed firewall shall support DPI Engine that provides stream scanning protection for IPS, AV, Web, App Control, and TLS Inspection in a single high-performance engine</p> <p>c. The proposed firewalls shall support Network Flow FastPath which delivers policy-driven and intelligent acceleration of trusted traffic automatically</p> <p>d. The proposed firewalls shall be able to enforce policy across zones, networks, or by service type</p> <p>e. The proposed firewalls shall have Default zones for LAN, WAN, DMZ, LOCAL, VPN and WiFi</p> <p>f. The proposed firewalls shall support Custom zones on LAN or DMZ</p> <p>g. The proposed firewalls shall support Customizable NAT policies with IP masquerading and full object support to redirect or forward multiple services in a single rule with a convenient NAT rule wizard to quickly and easily create complex NAT rules in just a few clicks</p> <p>h. The proposed firewalls shall support Flood protection: DoS, DDoS and portscan blocking</p> <p>i. The proposed firewalls shall support Country blocking by Geo-IP</p> <p>j. The proposed firewalls shall support Upstream proxy support</p> <p>k. The proposed firewalls shall support Protocol independent multicast routing with IGMP snooping</p> <p>l. The proposed firewalls shall support Bridging with STP support and ARP broadcast forwarding</p> <p>m. The proposed firewalls shall have VLAN DHCP support and tagging</p> <p>n. The proposed firewalls shall have VLAN bridge support</p> <p>o. The proposed firewalls shall have WAN link balancing: multiple Internet connections, auto-link health check, automatic failover, automatic and weighted balancing, and granular multipath rules</p> <p>p. The proposed firewalls shall support 802.3ad interface link aggregation</p> <p>q. The proposed firewalls shall support Dynamic DNS (DDNS)</p> <p>r. The proposed firewalls shall have IPv6 Ready Logo Program Approval Certification</p>		
		<p>Base Traffic Shaping &amp; Quotas</p> <p>a. The proposed firewalls shall support Flexible network or user based traffic shaping (QoS) (enhanced Web and App traffic shaping options included with the Web Protection subscription)"</p> <p>b. The proposed firewalls shall support Set user-based traffic quotas on upload/download or total traffic and cyclical or non-cyclical</p> <p>c. The proposed firewalls shall support Real-time VoIP optimization</p>		
		<p>Authentication</p> <p>a. The proposed firewalls shall support the sharing of currently logged in Active Directory user ID between the managed endpoints of the same brand without an agent on the AD server or client.</p> <p>b. The proposed firewalls shall support Authentication via: Active Directory, eDirectory, RADIUS, LDAP and TACACS+</p> <p>c. The proposed firewalls shall support Server authentication agents for Active Directory SSO, Transparent authentication and Thin Client Authentication.</p>		

		<p>d. The proposed firewalls shall support Single sign-on for Active directory, eDirectory, RADIUS Accounting</p> <p>e. The proposed firewalls shall support Client authentication agents for Windows, Mac OS X, Linux 32/64</p> <p>f. The proposed firewalls shall support Browser SSO authentication: Transparent, proxy authentication (NTLM) and Kerberos</p> <p>g. The proposed firewalls shall support Authentication certificates for iOS and Android</p> <p>h. The proposed firewalls shall support Authentication services for IPSec, SSL, L2TP, PPTP</p> <p>i. The proposed firewalls shall have Google Chromebook authentication support for environments with Active Directory and Google G Suite</p> <p>j. The proposed firewalls shall support API-based authentication</p>		
		<p>Base VPN Options</p> <p>a. The proposed firewalls shall support Site-to-site VPN: SSL, IPSec, 256-bit AES/3DES, PFS, RSA, X.509 certificates, pre-shared key</p> <p>b. The proposed firewalls shall support Remote Ethernet Device (RED) site-to-site VPN tunnel (robust and light-weight)</p> <p>c. The proposed firewalls shall support L2TP and PPTP</p> <p>d. The proposed firewalls shall have Remote access: SSL, IPsec, iPhone/iPad/ Cisco/Android VPN client support</p>		
		<p>VPN Client</p> <p>a. The proposed firewalls VPN client shall support Authentication: Pre-Shared Key (PSK), PKI (X.509), Token and XAUTH</p> <p>b. The proposed firewalls VPN client shall be able to enable the connection of FW and Endpoint security and Monitoring of the health status of the managed Endpoints for remote connected users</p> <p>c. The proposed firewalls VPN client shall support Intelligent split-tunneling for optimum traffic routing</p> <p>d. The proposed firewalls shall have Client-monitor for graphical overview of connection status</p> <p>e. The VPN client shall have Mac and Windows Support</p>		
		<p>Network Protection Subscription</p> <p>Intrusion Prevention (IPS)</p> <p>a. The proposed firewalls shall have High-performance, next-gen IPS deep packet inspection engine with selective IPS patterns that can be applied on a firewall rule basis for maximum performance and protection</p> <p>b. The proposed firewalls shall have Thousands of signatures</p> <p>c. The proposed firewall shall have Support for custom IPS signatures</p> <p>d. The proposed firewalls shall have IPS Policy Smart Filters which enable dynamic policies that automatically update as new patterns are added</p>		
		<p>ATP and Endpoint Health monitoring</p> <p>a. The proposed firewalls shall have Advanced Threat Protection (detect and block network traffic attempting to contact command and control servers using multi-layered DNS, AFC, and firewall)</p>		

			<p>b. The proposed firewalls shall have automated policies that can limit access to network resources or completely isolate compromised systems until they are cleaned</p> <p>c. The proposed firewalls shall have Lateral Movement Protection to further isolates compromised systems by having healthy managed endpoints, of the same brand, reject all traffic from unhealthy endpoints preventing the movement of threats even on the same broadcast domain</p>		
			<p>Reporting</p> <p>a. Central Firewall Reporting</p> <p>b. The proposed firewall must have a centralized management that shall have Pre-defined reports with flexible customization options</p> <p>c. The proposed firewall with centralized management shall be able to provide Report dashboard which has an at-a-glance view of events for at least the past 24 hours</p> <p>d. The proposed firewall with centralized management shall be able to Easily identify network activities, trends, and potential attacks</p> <p>e. The proposed firewall with centralized management shall have Easy backup of logs with quick retrieval for audit needs</p>		
			Warranty and Support and Subscription		
			a. The proposed solution shall have 24/7 support, feature updates, advanced replacement hardware warranty for term		
			b. The proposed solution must have Networking, Unlimited Remote Access VPN, Site-to-Site VPN, reporting		
			c. The Proposed solution shall provide thee (3) years corrective / Remedial Maintenance and Annual health check visit from the date of acceptance.		
			.		
<b>B2.21</b>	<b>1</b>	<b>unit</b>	<b>Virtual Web Application Firewall</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<p>Virtual Specification</p> <p>General Feature</p> <p>A. The proposed solution must have the following feature:</p> <p>a. Server Load Balancing (SLB) for TCP/UDP based protocols</p> <p>b. TLS (SSL) Offload supporting TLS 1.0, 1.1, 1.2, 1.3 and SSL v3</p> <p>c. Layer 7 Content Switching</p> <p>d. Transparent caching for HTTP/HTTPS</p> <p>e. Optimized compression of static and dynamic HTTP/HTTPS content</p> <p>f. IPv6 support for addressing and features</p> <p>g. Support for Direct Server Return (DSR) configurations</p> <p>h. VLAN Trunking (802.1Q)</p>		

		<ul style="list-style-type: none"> <li>i. Link interface bonding (802.3ad)</li> <li>j. HTTP/2 Layer 7 Proxy</li> <li>k. Up to 1000 Virtual and 1000 Real Servers</li> </ul>	
		<p>Performance</p> <ul style="list-style-type: none"> <li>A. The proposed WAF shall support Load Balancer throughput up to 3 Gbps</li> <li>B. The proposed WAF shall support Max servers/ Virtual Cluster up to 1,000</li> <li>C. The proposed WAF shall support Minimum 3,000,000 L4 concurrent connections</li> <li>D. The proposed WAF shall support SSL TPS 4,000</li> <li>E. The proposed WAF shall support TCP/IP Multiplexing</li> <li>F. The proposed WAF shall support Scheduling and Balancing Methods such as: <ul style="list-style-type: none"> <li>a. Round Robin</li> <li>b. SDN Adaptive</li> <li>c. Weighted Round Robin</li> <li>d. Least Connection</li> <li>e. Weighted Least Connection</li> <li>f. Agent-based Adaptive</li> <li>g. Chained Failover (Fixed Weighting)</li> <li>h. Source-IP Hash</li> <li>i. Layer 7 Content Switching</li> <li>j. Global Server Load Balancing (GSLB)</li> </ul> </li> <li>G. The proposed WAF shall support Session Persistence Methods such as: <ul style="list-style-type: none"> <li>a. Source IP (L4)</li> <li>b. TLS (SSL) SessionID (L4)</li> <li>c. HTTP/HTTPS Browser-session (L7)</li> <li>d. HTTP/HTTPS WebClient-session (L7)</li> <li>e. RDP Login ID (L7)</li> <li>f. Port Following for mixed HTTP/HTTPS sessions</li> </ul> </li> <li>H. The proposed WAF shall support Health-check Mechanism such as: <ul style="list-style-type: none"> <li>a. Aggregated health checks</li> <li>b. ICMP health checking</li> <li>c. Layer 7 checking against any target server port</li> <li>d. Stateful Failover</li> <li>e. Scale-out Clustering</li> <li>f. Aggregated health checks</li> </ul> </li> </ul>	
		<p>Web Application Firewall (WAF)</p> <ul style="list-style-type: none"> <li>A. The proposed WAF shall support Real Time Application threat mitigation</li> <li>B. The proposed WAF shall support Daily rule updates</li> <li>C. The proposed WAF shall support Can mitigate Cross Site Scripting, SQL Injection, Cookie tampering, Dataloss prevention, PCI-DSS Section 6.6 Compliance</li> </ul>	
		<p>Security</p> <ul style="list-style-type: none"> <li>A. The proposed WAF shall support SNORT-Rule Compatible L7 Intrusion Prevention System (IPS)</li> </ul>	

		<p>D. The proposed WAF shall support Permit /Deny Access Control Lists</p> <p>E. The proposed WAF shall support IP address filtering</p> <p>F. The proposed WAF shall support 3DDoS mitigation, including L7 rate based attacks</p> <p>G. The proposed WAF shall support IPSec VPN to Azure, AWS and vCloud Air public clouds</p> <p>H. The proposed WAF shall support Configurable TLS (1.0, 1.1, 1.2, 1.3) and SSL (2.0, 3.0)</p> <p>I. The proposed WAF shall support Support for EV (Extended Validation) certificates</p> <p>J. The proposed WAF shall support Server Name Identification (SNI) support</p> <p>K. The proposed WAF shall support Multi-domain authentication &amp; SSO</p> <p>L. The proposed WAF shall support RADIUS,Active Directory, SAML &amp; LDAP</p> <p>M. The proposed WAF shall support X.509 client certificate authentication</p> <p>N. The proposed WAF shall support Two factor authentication</p>	
		<p>Health Checking &amp; High Availability</p> <p>A. The proposed WAF shall support Aggregated health checks</p> <p>B. The proposed WAF shall support ICMP health checking</p> <p>C. The proposed WAF shall support Layer 7 checking against any target server port</p> <p>D. The proposed WAF shall support Active/Hot Standby configurations for High Availability Stateful Failover</p> <p>E. The proposed WAF shall support Scale-out Clustering</p> <p>F. The proposed WAF shall support Support Global Server Load Balancing (GSLB)</p>	
		<p>Administration</p> <p>A. The proposed WAF shall support Flexible administration Options such as:</p> <ul style="list-style-type: none"> <li>a. Web User Interface (WUI)</li> <li>b. SSH</li> <li>c. RESTful and PowerShell APIs</li> <li>d. VMware vRealize Orchestrator</li> <li>e. Change Auditing</li> <li>f. Context based help (WUI)</li> <li>g. Real time display of performance and availability</li> <li>h. Application templates</li> <li>i. Automated configuration backup</li> <li>j. Connection draining</li> <li>k. Diagnostic shell with in-line tcp dump</li> <li>l. SNMP support</li> </ul>	
		<p>Centralized Management</p> <p>A. The proposed WAF shall support Centralized management and orchestration</p> <p>B. The proposed WAF shall support Included with Enterprise support subscription, and Enterprise Plus support subscription</p> <p>C. The proposed WAF shall support LoadMaster configuration management</p>	

			<p>D. The proposed WAF shall support Automated LoadMaster backups</p> <p>E. The proposed WAF shall support Centralized &amp; scheduled firmware updates</p> <p>F. The proposed WAF shall support LoadMaster logfile consolidation</p> <p>G. The proposed WAF shall support Performance management</p> <p>H. The proposed WAF shall support 3rd party load balancer support</p> <p>Support Subscriptions</p> <p>A. The proposed WAF shall support 24x7 Customer Support</p> <p>B. The proposed WAF shall support Software Updates</p> <p>C. The proposed WAF shall support Security Patches</p> <p>D. The proposed WAF shall support Web Application Firewall (WAF) with rule updates</p> <p>E. The proposed WAF shall support GSLB with IP Reputation</p> <p>F. The Proposed WAF shall provide thee (3) years corrective / Remedial Maintenance and Annual health check visit from the date of acceptance.</p>		
B2.22	100	lics	<b>Mobile Device Management</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			General Requirement		
			· Must support the following devices:		
			o Android 7.x or later		
			o iOS 12.x or later		
			o Windows 10 version 1803 or later (desktop OS)		
			o macOS 10.14 (Mojave) or later		
			o Chrome OS 77 or later		
			Admin User Interface		
			· Must have an easy-to-use cloud-hosted management console.		
			· Must have a flexible Dashboard with different user-selectable widgets and filter mechanism.		
			· The management console must have role-based access.		
			· Must support the following push notification services:		
			o APN		
			o GCM		
			o Baidu		
			o WNS		
			· The management console must have a customizable administrator user interface.		
			Self-Service Portal		
			· Must have a self-service portal that has the following capabilities:		

- o Register new device
  - o Device wipe
  - o Device lock
  - o Device locate
  - o Passcode reset for Device, App Protection (Android), Application Container (iOS, Android)
  - o Trigger device check-in
  - o Decommission device (incl. corporate wipe on iOS, Samsung, LG, Sony, and Windows 10 Mobile)
  - o Delete decommissioned device from inventory
  - o Monitor device status and compliance information
  - o Show acceptable use policy with new device registration
  - o Display post-enrollment message
  - o Control registration by OS type
  - o Configure maximum number of devices per user
  - o Company-specific configuration of commands available to users
  - o Customizable branding
- User Directory and Management
- Must have comprehensive password policies.
  - Must be capable of Active Directory integration.
- Device Compliance Enforcement Rules
- Must have the following Device Compliance Enforcement Rules:
- o Group assignment or ownership-based compliance rules
  - o Compliance violations analytics
  - o Device under management
  - o Jailbreak or rooting detection
  - o Encryption required
  - o Passcode required
  - o Minimum OS version required
  - o Maximum OS version allowed
  - o Last synchronization of the device
  - o Last synchronization of the MDM app
  - o Blacklisted apps
  - o Whitelisted apps
  - o Mandatory apps
  - o Block installation from unknown sources (side-loading)
  - o Data roaming setting
  - o USB debugging setting
  - o MDM client version
  - o Malware detection (classical AV plus machine learning)
  - o System Integrity Protection required
  - o Firewall required (macOS)
  - o Suspicious apps detection
  - o Side-loaded apps detection
  - o Unmanaged configuration profile detection
  - o Potentially unwanted apps detection
  - o Last malware scan
  - o Locate app-enabled Compliance rule templates for HIPAA and PCI Administrator guidance to resolve compliance issues
  - o Man-in-the-middle attack detection
- Security
- Must have the following security features:
- o Encrypted connection to the cloud-based management console
  - o Encrypted communication with devices

- o Control email access by compliance state (Exchange gateway, Office 365 access control)
  - o 2FA device authentication at the Exchange gateway (password, certificate)
  - o Define allowed email clients at the Exchange gateway
  - o Control network access by compliance (Generic NAC interface, Sophos UTM or Wireless, Cisco ISE, Check Point)
  - o USSD code protection (e.g., \*#2314#)
  - o Text message phishing detection
  - o Protection from malicious websites (web filtering)
  - o Protect corporate apps with additional authentication (App Protection)
  - o Web productivity filtering by 14 categories + allow/deny lists by IP address, DNS name, and IP range
  - o Manage and store passwords using KeePass format
- Inventory
- Must have the capability to create device groups.
  - Must have a user-oriented device view.
  - Must be able to automatically transfer unique device ID (IMEI, MEID, UDID) and further device data.
  - Must have automatic OS version detection.
  - Must have automatic device model resolution into a user-friendly name.
  - Must be able to use the actual device name for device inventory.
  - Must have a marker for company-owned and privately-owned devices.
  - Must have customer-defined device properties with template support.
  - Must have the capability to import/export device information.
  - Must have savable extended filters for devices.
- Provisioning / Device Enrollment
- Must have the following provisioning/device enrollment capabilities:
    - o Device management (MDM) enrollment
    - o Container-only Management enrollment
    - o Device enrollment wizard for admins
    - o Device enrollment by emails
    - o Online registration from the device
    - o Bulk provisioning (by email)
    - o Apple Configurator deployment
    - o Apple DEP enrollment (Device Enrollment Program)
    - o Android Zero-touch device enrollment
    - o Samsung Knox Mobile Enrollment
    - o Admin enrollment w/o installed app (no iTunes account required)
    - o Definition of standard rollout packages for personal or corporate devices
    - o Automatic assignment of initial policies and groups based on user directory group membership
    - o Enrollment using provisioning package files (\*.ppkg)
- Task Management
- Must be able to generate scheduled tasks.
  - Must be able to generate tasks for a single device or group of devices.
  - Must have detailed status tracking for each task.
  - Must have intelligent strategies for task repetition.



#### Reporting

- Must have the capability to export inventory using applied filters.
- Must have the capability to export all reports as XLS or CSV.
- Must have the following reports available:
  - o A compliance log of all administrator activities
  - o A detailed Alert log
  - o Malware reports
  - o Compliance violation reports
  - o Device reports
  - o App reports
  - o Certificate reports

#### MDM App Functionality

- Must have the capability to create an Enterprise App Store.
- Must be able to show compliance violations (including help for the end-user to fix reported compliance issues).
- Must be able to show server messages.
- Must be able to show technical contact.
- Must have the capability to trigger device synchronization.
- Must be able to show privacy information.

#### Application Management

- Must have the capability to install apps (with or without user interaction, including managed apps on iOS).
- Must have the capability to uninstall apps (with or without user interaction).
- Must be able to list all installed apps.
- Must be able to support Apple Volume Purchasing Program (VPP).
- Must have the capability to Allow/forbid the installation of apps.
- Must have the capability to Block app uninstallation.
- Must have the capability to configure company apps (managed settings) remotely.
- Must have the capability to block specific apps from running (app blocker).
- Must be able to manage and configure Microsoft Office 365 apps.

#### Device Security

- Must have the following device security features:
  - o Jailbreak (iOS)/Rooting (Android) detection
  - o Tamper detection
  - o Anti-theft protection: Remote wipe
  - o Anti-theft protection: Remote lock
  - o Anti-theft protection: Device
  - o Enforce password strength and complexity
  - o Inactivity time (time in minutes until a password is required)
  - o Maximum number of attempts until the device will be reset
  - o Minimum password length
  - o Password history
  - o Password expiration time
  - o Minimum length of lower/upper case, non-letter or symbol characters in the passcode
  - o Passcode reset (unlock)/administrator defines new passcode
  - o Activation lock bypass
  - o Activation of storage encryption
  - o Access to the memory card can be prohibited

- o Activation/deactivation of device data encryption
- o Block installation from unknown sources (sideloading)
- o Block Wi-Fi
- o Block Bluetooth
- o Block data transfer via Bluetooth
- o Block data transfer via NFC
- o Block USB connections
- o Block camera
- o Protection of settings against modification/removal by the user
- o Allow/forbid the use of the iTunes Store / Google Play / Windows Store
- o Allow/forbid the use of Browser
- o Allow/forbid explicit content
- o Allow/forbid camera on the lock screen
- o Allow/forbid 3rd party app usage of email
- o Allow/forbid iCloud auto-sync
- o Allow/forbid manual Wi-Fi configuration
- o Allow/forbid to send crash data to Apple / Google / Samsung / Microsoft (Telemetry)
- o Allow/forbid certificates from untrusted sources
- o Allow/forbid WiFi auto-connect
- o Allow/forbid shared photostream
- o Allow/forbid Apple Wallet/Passbook on the lock screen
- o Allow/forbid device act as a hotspot
- o Allow/forbid recent contacts to sync
- o Allow/forbid Siri (iOS) or Cortana (Microsoft)
- o Allow/forbid Siri to query content from the web
- o Allow/forbid "Open with..." functionality to share data between managed and unmanaged apps
- o Allow/forbid fingerprint reader (Touch ID) to unlock the device
- o Allow/forbid account modification
- o Allow/forbid modification of cellular data usage per app
- o Allow/forbid Control Center on the lock screen
- o Allow/forbid Notification Center on the lock screen
- o Allow/forbid Today view on the lock screen
- o Allow/forbid over-the-air PKI updates
- o Allow/forbid find my friends modification
- o Allow/forbid host pairing
- o Allow/forbid iris scan authentication
- o Prevent email forwarding
- o S/MIME enforcement
- o Support for SCEP certificate provisioning (incl. auto-renew)
- o Allow/forbid AirDrop
- o Allow/forbid single app mode (app lock or kiosk mode)
- o Allow/forbid iBooks store
- o Allow/forbid explicit sexual content in the iBooks store
- o Allow/forbid iMessage
- o Allow/forbid the user to reset the device
- o Allow/forbid device unenrollment from MDM management
- o Allow/forbid the user to create screenshots
- o Allow/forbid the user to use copy/paste
- o Filter access to web sites (blacklisting) or whitelist web sites with bookmarks
- o Delay or block OS upgrade
- o Allow/forbid password auto-fill
- o Allow/forbid password sharing
- o Allow/forbid password proximity requests

- o Configure Device Guard settings
- Device Configuration
- Must have the following device configuration settings:
    - o Microsoft Exchange settings for email
    - o IMAP or POP settings for email
    - o LDAP, CardDAV and CalDAV settings
    - o Configuration of access points
    - o Proxy settings
    - o Wi-Fi settings
    - o VPN settings
    - o Install root certificates
    - o Install client certificates
    - o Per-app VPN
    - o Single sign-on (SSO) for 3rd party apps (app protection) and company webpages
    - o Distribution of bookmarks (Web Clips)
    - o Force iOS update on supervised devices (and display pending iOS updates)
    - o Configure the iOS lock screen and home screen
    - o Automatically receive Wi-Fi and VPN settings from Sophos UTM appliances
    - o Managed domains
    - o Firewall configuration
    - o Kernel Extension policy
    - o Kiosk Mode
    - o App permissions
    - o Enable iOS Lost Mode
    - o Configure Google Accounts
    - o Android enterprise: Configure password policy (workspace)
    - o Android enterprise: Configure password policy (device)
    - o Android enterprise: Configure restrictions
    - o Android enterprise: Configure Wi-Fi
    - o Android enterprise: Configure app protection
    - o Android enterprise: Configure app control
    - o Android enterprise: Configure app permissions
    - o Android enterprise: Configure Exchange
    - o Android enterprise: Install the root certificate
    - o Android enterprise: Install a client certificate
    - o Android enterprise: Install client certificate via SCEP
    - o Samsung Knox: Container handling (create, lock, decommission)
    - o Samsung Knox: Configure restrictions
    - o Samsung Knox: Configure Exchange
    - o Samsung Knox: Manage container password
    - o Samsung Knox: Allow/block data and file sync between Knox Workspace and personal area
    - o Samsung Knox: Allow/block Iris scan authentication for Knox Workspace
    - o Configure devices to use AirPrint printers
- Device Information
- Must be able to show the following device information:
    - o Internal memory utilization (free/used)
    - o Battery charge level
    - o IMSI (unique identification number) of SIM card
    - o Currently used cellular network
    - o Roaming mode
    - o OS version

- o List of installed profiles
- o List of installed certificates
- o Malware detected on device
  - Must have the capability to do remote screen sharing (via TeamViewer or AirPlay device)
- Secure Email
  - Must have an email app that's fully-featured, secure, and containerized personal information management (PIM) app for Android and iOS that lets you isolate information like business email, calendars, and contacts from private data on the mobile device.
  - Email app must have the following features:
    - o Sync email with Microsoft Exchange or any other ActiveSync compatible email service.
    - o Geo-fencing / Time-fencing / Wi-Fi fencing
    - o Control cut and copy
    - o Control screenshot
    - o Show event details
    - o Export contacts to device
    - o Define out of office message in the email app
    - o Unified calendar view
    - o Anti-phishing protection for links in emails
- Corporate Browser
  - Must have a Corporate Browser feature for secure access to intranets or corporate websites.
  - Corporate Browser feature must have the following capabilities:
    - o Browsing restricted to predefined corporate domains
    - o Preconfigured corporate bookmarks
    - o Password manager
    - o Client or user certificates to authenticate against corporate websites
    - o Root certificates
    - o Restricted cut, copy, and paste
- Content Management
  - Must have a containerized mobile Content Management app for iOS and Android that provides a secure way to manage, distribute, and edit business documents and view web content.
  - Must have the capability to edit Office format documents without leaving the container environment to ensure encrypted content remains secure.
  - Must be able to store documents securely with AES-256 encryption.
  - Must support the following storage providers:
    - o Dropbox
    - o Google Drive
    - o Microsoft OneDrive personal and business
    - o Box
    - o Telekom MagentaCloud
    - o Egnyte
    - o OwnCloud
    - o WebDAV (for example Windows Server, Strato Hi-Drive, etc.)
  - Must have the capability to control data leaving the container (e.g., restrict copy and paste, open with, etc.)
  - Must have the following capabilities:
    - o Geo-fencing / Time-fencing / Wi-Fi fencing
    - o Lock container access on non-compliant devices

		<ul style="list-style-type: none"> <li>o Request call home based on time or by unlocking count</li> <li>o Edit or create Word, Excel, PowerPoint, and text format files</li> <li>o Annotate PDF files</li> <li>o Fill PDF forms</li> <li>o View Sophos SafeGuard format password-protected HTML5 files</li> <li>o Share documents as password-protected HTML5 files</li> <li>o Anti-phishing protection for links in documents</li> <li>o View with Secure Workspace access to encrypted documents from other apps</li> <li>o Unlock app via a fingerprint reader</li> <li>o View, manage and create Zip and 7z compressed archives</li> <li>o Manage and store passwords securely using KeePass format</li> </ul> <p><b>Telecom Cost Control</b></p> <ul style="list-style-type: none"> <li>· Must have a Telecom Expense Management (TEM) feature that can monitor cellular data usage of individual devices.</li> <li>· Must have the following capabilities: <ul style="list-style-type: none"> <li>o Disable data while roaming</li> <li>o Disable voice while roaming</li> <li>o Control sync while roaming</li> <li>o Configure APN or Carrier settings</li> <li>o Define data usage upper limit per device</li> <li>o Compare data usage against limit</li> <li>o Per app network usage rules</li> </ul> </li> </ul>		
		<b>REQUIREMENTS FOR BIDDER</b>		
		<p>Network Protection: The winning bidder must have at least 2 certified architects of the product being offered to ensure that the winning bidder is capable of implementing the project.</p> <p>Endpoint Security and Server Protection: The winning bidder must have at least 4 certified architects of the product being offered to ensure that the winning bidder is capable of implementing the project.</p> <p>Cloud Web Application Firewall: The winning bidder must have at least 4 certified technical professional of the product being offered to ensure that the winning bidder is capable of implementing the project</p> <p>The brand of the proposed solution/s must have at least 10 years of existence in the market.</p> <p>The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</p>		
		<p><b>SUPPORT</b></p> <p>Maintenance and Support: 1 certified engineer, for 3 months upon implementation (on-site support)</p> <p><b>WARRANTY</b></p> <p>Network Protection: Based on Subscription</p> <p>Endpoint Security and Server Protection: Based on Subscription</p> <p>Cloud Web Application Firewall: 3 years</p> <p><b>TRAININGS</b></p> <p>Network and Endpoint Training with certification related to the solution</p>		

			<p><b>IP TELEPHONY AND UNIFIED COMMUNICATIONS</b></p> <p>Must be an IP based extension protocol that allows Proprietary and/or 3rd party SIP based devices to be connected and used within the main system.</p> <p>The breakdown of Telephony System and other Active Component on each site must be:</p> <p>Main Office:</p>		
<b>B2.23</b>	<b>2</b>	<b>units</b>	<p><b>IPPBX (Appliance) with ISDN port</b></p> <ul style="list-style-type: none"> <li>· Support E1 T1 J1 network</li> <li>· Gigabit Network port with integrated POE+ support</li> <li>· 1 Ghz quad core cortex A9 processor</li> <li>· 1 GB RAM 32 GB Flash Memory</li> <li>· Support 2000 Sip user account</li> <li>· Integrated LDAP and XML phonebooks</li> <li>· Quickly setup and provision endpoints using the Auto-Discovery and Zero Config feature within the product's web user interface</li> </ul>		
			<p>The brand of the proposed solution must have at least 10 years of existence in the market.</p>		
			<p>The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</p>		
<b>B2.24</b>	<b>1</b>	<b>unit</b>	<p><b>High Availability</b></p> <p><b>Qualification of the Bidder</b></p> <p>The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</p> <ul style="list-style-type: none"> <li>· Connects and constantly monitors two IPPBX together for high availability</li> <li>· Smart failover solution that automatically switches to a hot-standby secondary IPPBX if the primary one fails</li> <li>· Up to 14 LED indicators showing real-time status of all of the telecom lines, network links, auxiliary devices, etc</li> <li>· Gratuitous ARP forces SIP endpoints to refresh the MAC address of the new IPPBX without interruptions</li> <li>· Fast 10 to 50 second system switching time depending on the number of registered endpoints</li> </ul> <p>The brand of the proposed solution must have at least 10 years of existence in the market.</p>		
<b>B2.25</b>	<b>9</b>	<b>units</b>	<p><b>Executive Phone</b></p> <p><b>Qualification of the Bidder</b></p> <p>The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</p> <ul style="list-style-type: none"> <li>· Supports 2 SIP accounts and 4 multi-purpose line keys</li> <li>· Includes built-in dual-band WiFi support</li> <li>· Swappable faceplate to allow for easy logo customization</li> </ul>		

			<ul style="list-style-type: none"> <li>HD audio supporting all major codecs, including wideband codecs G.722 and Opus</li> </ul> <p>The brand of the proposed solution must have at least 10 years of existence in the market.</p>		
<b>B2.26</b>	<b>17</b>	<b>units</b>	<b>Manager's Phone</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<ul style="list-style-type: none"> <li>8 lines, 8 dual-color line keys (with 4 SIP accounts), 4 XML programmable context sensitive soft keys</li> </ul>		
			<ul style="list-style-type: none"> <li>32 digitally programmable &amp; customizable BLF/fast dial keys</li> </ul>		
			<ul style="list-style-type: none"> <li>HD wideband audio, full duplex speakerphone with advanced acoustic echo cancellation</li> </ul>		
			<ul style="list-style-type: none"> <li>5-way audio conferencing for easy conference calls</li> </ul>		
			<ul style="list-style-type: none"> <li>Dual-switched Gigabit. integrated PoE</li> </ul>		
			The brand of the proposed solution must have at least 10 years of existence in the market.		
<b>B2.27</b>	<b>1</b>	<b>unit</b>	<b>Operator Phone</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<ul style="list-style-type: none"> <li>4.3 inch (480X272) colored screen LCD</li> </ul>		
			<ul style="list-style-type: none"> <li>Support 4 lines 4 Sip account</li> </ul>		
			<ul style="list-style-type: none"> <li>Dual Gigabit ports with Integrated POE</li> </ul>		
			<ul style="list-style-type: none"> <li>Integrated Bluetooth for use with Bluetooth headset</li> </ul>		
			<ul style="list-style-type: none"> <li>HD audio speaker and handset</li> </ul>		
			The brand of the proposed solution must have at least 10 years of existence in the market.		
	<b>1</b>	<b>unit</b>	<b>Extension Module</b>		
			<ul style="list-style-type: none"> <li>128x384 Backlit LCD display</li> </ul>		
			<ul style="list-style-type: none"> <li>20 programmable dual-color buttons</li> </ul>		
			<ul style="list-style-type: none"> <li>2 pages per module for total of 40 contact</li> </ul>		

			<ul style="list-style-type: none"> <li>· BLF (Busy Lamp Field) for speed dial</li> </ul>		
			<ul style="list-style-type: none"> <li>· Daisy-chain up to 4 modules for up to 160 contacts/extensions</li> </ul>		
<b>B2.28</b>	<b>6</b>	<b>units</b>	<b>Conference Phone</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<ul style="list-style-type: none"> <li>· 6 lines, 6 SIP accounts, 7-way voice conferencing</li> <li>· Runs Android 4.4 and offers access to the Google Play Store</li> <li>· Bluetooth to support syncing of headsets and mobile devices</li> <li>· Built-in 7-way conference bridge</li> <li>· 4.3" (800x480) capacitive touch screen for easy use</li> <li>· Auto-sensing Gigabit port, built-in PoE support</li> </ul>		
<b>B2.29</b>	<b>1</b>	<b>unit</b>	<b>E1/T1 Gateway</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			<ul style="list-style-type: none"> <li>· Software configurable E1/T1/ J1 ports, support PRI, SS7, MFC R2</li> <li>· Dual Gigabit auto- sensing RJ45 network ports with integrated NAT router</li> <li>· Supports a wide- range of voice codecs, including Opus, G.722, G.729, iLBC, and more</li> <li>· TLS and SRTP security encryption technology to protect calls and accounts</li> <li>· Automated provisioning by HTTP/TFTP with XML config files</li> </ul>		
			<ul style="list-style-type: none"> <li>· <b>Supports T.38 Fax for creating Fax-over-IP</b></li> </ul>		
			<p>Must be a versatile system capable of handling at least 2,000 end points for flexible capacity requirements without having multiple management system.</p> <p>The system must be capable of having an app-based mobile phone capable of connecting through internet and will be considered as local extensions. System should include this mobile app extension without requiring any license.</p> <p>At any rate there shall be no system replacement (rip and replace) as the system upgrades and expands from a SOHO to SME to LE capacity configuration.</p> <p>System Upgrade must be based on Rack and Stack technology (rack mountable) with direct Gigabit LAN connections.</p> <p>Total networked site manifesting a single system image and single management portal</p>		



		<ul style="list-style-type: none"> <li>· At any rate, capacity and phase of the upgrade, the System must always be managed from a single system management interface.</li> <li>· All the system applications must be managed from only one admin portal interface.</li> <li>· The management portal is web based for easy access anywhere.</li> <li>· The management portal must be secure and provide different user access level.</li> <li>· The system must be capable of providing a paging system</li> </ul> <p>Non-hard disk-based processing allows for a longer Mean Time Before Failure (MTBF). The Dial-tone of the system should reside in the Solid State Technology and not on Hard disk based platform for more reliability and resiliency.</p> <p>Must be Appliance base Data Rack Grade (19") mountable.</p> <p>System is provided with a dual network/LAN connection and able to configure as Routing or switch mode function.</p> <p>On the unavailability of commercial power, an analogue trunk is automatically relayed to a pre-designated analog extension</p> <p>There should be no single point of failure for the system. There shall be no system backplanes and common highways that at any time may be a single point of failure.</p> <p>The system should NOT utilize backplane technology or modular architecture to ensure no single point of failure.</p> <p>In the need of back-up power supply, a system commercial power back up should be data center grade UPS and not vehicle type back up battery.</p> <p>N+1 Redundancy design allows for a redundancy coverage of the whole system with just a single appliance without the need for a full 100% component duplication.</p> <p>Appliance should support High Availability and Automatic failover (Hardware Base)</p> <p>Main System even the Back up or redundancy units should not have licensed and make use of the primary system license to avoid double charging/ billing of unnecessary unused licenses.</p> <p>The system must be capable of providing a paging system.</p> <p>A built-in auto-attendant in the system avoids unnecessary use of external servers and unnecessary use of analog or ISDN or IP resources.</p> <p>Built in auto-attendant must be capable of Multi level AVR</p> <p>Must work with Active Directory or LDAP</p> <p>IP Phones must have High Definition Audio Quality</p>	
	LS	<b>IP TELEPHONY PROVIDER (On Site Support 3 months for Server &amp; Storage)</b>	
		Must be represented by a Country Manager and/or a Technical engineer. Local Support with Certification for .	
		There must be existing installation/deployment in the Philippines on the following Scenario. <ul style="list-style-type: none"> <li>a. Single Network Deployment</li> <li>b. Multi Site Deployment for Future Expansion</li> </ul>	

			<p>The Winning Bidder must Present Project Completion as supported documents on the following Deployment.</p> <p>a. Single Office/Network Deployment</p> <p>b. Multi Site Deployment for Future Expansion</p> <p>The brand must be a seasoned player in the telephony industry and has undergone several telephony technologies.</p>		
			<p><b>LICENSE</b></p> <p>There should be NO System licenses in all components/hardware regardless of site.</p> <p>NO System licenses in using Peer/Registered SIP Trunk From Main System to Remote Offices</p> <p>NO System licenses in terms of (user licenses, trunk licenses, inter-pbx licenses, application licenses) should be one-time purchase/payment. No annual licenses to be renewed.</p> <p>No Licenses should be required in all unified communications module if additional SIP Account / Extension will be added</p>		
			<p><b>SCOPE OF WORK AND ACTIVITIES</b></p> <p>Setup and configuration of all hardware involved</p> <p>Onsite Configuration Nationwide</p> <p>-Main Office</p> <p>Conduct Technical Training</p> <p>“Telephony System Admin”</p> <p>Conduct Orientation to User “Handset Functionality”</p> <p>The bidder must be a Certified Partner for the product being offered</p> <p>Certification issued by the Manufacturer of the proposed hardware endorsing the bidder to “Bid, Sell, Support and Maintain the product being offered”.</p>		
			<p><b>WARRANTY</b></p> <p>1 Year warranty for all IP telephony products including:</p> <ul style="list-style-type: none"> <li>• Unified communication module</li> <li>• IP Phones</li> <li>• Operator Phones &amp; Ext module</li> <li>• E1/T1 Gateway</li> <li>• Audio Conferencing device</li> </ul>		
			<p><b>SUPPORT</b></p> <p>Maintenance and Support: 1 certified engineer, for 3 months upon implementation (on-site support)</p>		
			<p><b>TRAININGS</b></p> <p>Official network certification training or any related network training</p>		
<b>B</b>		<b>Ls</b>	<b>PROFESSIONAL SERVICES, PROJECT MANAGEMENT AND IMPLEMENTATION SERVICES</b>		

<b>SUPPLY, DELIVERY AND INSTALLATION OF AUDIO-VISUAL EQUIPMENT</b>					
<b>B3.1</b>	<b>10</b>	<b>Nos</b>	<b>SMART LED TV 50"</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		

			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement		
			Dimensions: 24.8 x 95.6 x 64.6 cm Resolution: 3840 x 2160 X4 Master Engine Pro II Direct LED 4K HDR YouTube / Netflix Google Assistant Auto POver: 10W + 10W Original Surround 3 HDMI Ports 2 USB Ports Bluetooth Built-in Wi-Fi Wireless LAN Ethernet LAN Wattage: 88 watts		
			Voltage: 110-220 Volts  With related and compatible accessories included: (i.e.)  Floor Stand TV Wall Mount Bracket HDMI Cable Invisible Connection Remote Controller TV Camera Customizable Frame USB Power Cable Remote Control Holder Electronics TV Cable Organizer		
			<b>2 Year Manufacturers Warranty</b>		
<b>B3.2</b>	<b>30</b>	<b>Nos</b>	<b>SMART LED TV 65"</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement		
			Weight: 21.81 kg Dimensions: 28.19 x 144.034 x 87.12 cm PICTURE QLED Technology with 100% Color Volume Real 4K Resolution		

			<p>Quantum Processor Lite with 4K Upscaling  Quantum HDR  Supreme UHD Dimming  Dual LED  SOUND  Virtual Object Tracking Sound  Adaptive Sound  Q-Symphony Lite  SMART  Smart TV  Bixby on TV  Ambient Mode  Multi View  Tap View  SmartThings App Support  Google Duo App  STYLE  3-Side Bezel Less Design  Stylish Slim Design (Air Slim)  OTHERS  Super Ultrawide Gameview  Gamebar  Native Refresh Rate (60hz)  Wireless LAN Built-In (WiFi)  HDMI (3 ports)  USB (1 port)  With related and compatible accessories included:  (i.e.)  Floor Stand  TV Wall Mount Bracket  HDMI Cable  Invisible Connection  Remote Controller  TV Camera  Customizable Frame  USB Power Cable  Remote Control Holder  Electronics TV Cable Organizer</p>		
			<b>2 Year Manufacturer Warranty</b>		
<b>B3.</b>	<b>10</b>	<b>Nos</b>	<b>SMART LED TV 43"</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement		
			<p>Weight: 7.2 kg  Dimensions: 21.64 x 96.66 x 61.9 cm  HIGH QUALITY PICTURE &amp; SOUND  4K HDR  4K Colour Engine  Hexa Chroma Drive  HDR 10 + Signal Support</p>		

			<p>HDR 10  Super Bright Panel  Backlight Dimming  dbx-tv  SMART FEATURES  Android TV – P / 9.0  Google Assistant built-in  Chromecast built-in  Bluetooth Audio Link  Internet Apps  Media Player  USB HDD Recording  Wireless LAN Built-In  Bluetooth® 4.2 (2 ways) (Audio/Game Pad/Headphone)  3 HDMI Terminals (HDMI2.1[ARC, ALLM])  2 USB Terminals  Hbb TV  DDR Memory – 2.0 GB  Flash Memory – 16.0 GB</p> <p>With related and compatible accessories included:  (i.e.)  Floor Stand  TV Wall Mount Bracket  HDMI Cable  Invisible Connection  Remote Controller  TV Camera  Customizable Frame  USB Power Cable  Remote Control Holder  Electronics TV Cable Organizer</p>		
			<b>2 Years Manufacturer Warranty</b>		
<b>B3.4</b>	<b>10</b>	<b>Nos</b>	<b>SMART LED TV 32"</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement		
			Weight: 3.45 kg Dimensions: 7.31 x 48.1 x 18.22 cm SYSTEM Operating System: Google Android 8.0 Oreo Random Access Memory: 1.5GB Internal Memory: 8GB Graphics Processing Unit/GPU: Mali470 Dual Core Total CPU Cores: Hexa Core PICTURE Dynamic Contrast (DCC): ff/ECO/Brightness+ Natural Light Technology Backlight Adjustable		

			<p>Picture Mode: Standard/Smart HDR/Sport/Movie/Dynamic  Dynamic Noise Reduction: Low, Middle, High, Auto, Off  Adaptive Deinterlacing  <b>PANEL SPECIFICATION</b>  Backlight Unit: Direct LED  Display Resolution: 1366 x 768  Viewing Angle: 178°/178°  Color: 16.7 Million 8(bit)  Refresh Rate: 60Hz  <b>SOUND</b>  Speakers: Integrated Speaker Box (Bottom Side)  Audio Power Output: 5W x 2  Smart Volume  Smart Sound:  Standard/Movie/Music/Voice/Game/Stadium/Personal  Sound Control: 5 Band Adjustable Frequency  Dolby Audio: Yes (MS12 config D)  Sound Features: Desk top/Wall mount (Dolby Audio)  <b>BASIC INFORMATION</b>  AV System: PAL, NTSC  Power Supply: AC 200V-240V 50/60Hz  Power Consumption-TV on: 50W  Power Consumption-Standby: &lt;0.5W  With related and compatible accessories included:  (i.e.)  Floor Stand  TV Wall Mount Bracket  HDMI Cable  Invisible Connection  Remote Controller  TV Camera  Customizable Frame  USB Power Cable  Remote Control Holder  Electronics TV Cable Organizer</p>		
			<b>2 Years Manufacturer Warranty</b>		
<b>B3.6</b>	<b>20</b>	<b>Set</b>	<b>AUDIO SYSTEM</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			The bidder must be a Gold Partner of the Brand offered as solution to the requirement		
			System - 3Way 5Speaker Tweeter Unit - 2"x2 Mid Unit: 3"x2 Woofer Unit - 8" Impedance (TW/Mid/Woofer) - 8Ω / 4Ω / 6Ω USB (2 input) Optical input Guitar input - 1EA (Φ6.3) Mic input - 1EA (Φ6.3) Bluetooth (4.0) With accessories included		

			<b>12 months Manufacturer Warranty</b>		
<b>B3.7</b>	<b>1</b>	<b>Set</b>	<b>BROADCAST SYSTEM</b>		
			<b>Qualification of the Bidder</b>		
			The brand must have at least 10 years of existence in the market.		
			2/3/4G wireless IP network Playback format: MP3 Transmission mode: TCP/IP/UPD/SIP Input: RJ45 Application Fields: Radio Station Fm Transmitter Function: Remote Audio Output Power: 10-2000W Support: Multiple IP Audio Certification: ISO 30 units of Speaker With accessories included		
			<b>12 months Manufacturer Warranty</b>		
<b>B3.8</b>	<b>20</b>	<b>Set</b>	<b>AV INTEGRATION UNIT</b>		
			<b>Qualification of the Bidder</b>		
			(2) RJ-45 ports, allowing for connection to other discussion system components (7) Euroblock connectors for audio and control options (6) Euroblock connectors for LED power and general-purpose input/output (GPIO) includes a mic input, speaker output, headphone output, control input (Talk On, Vol. Up, Vol. Down, Channel Select), LED status output, and GPIO plug-and-play functionality 24-bit/48k - Hz uncompressed digital audio for natural-sounding voice reproduction 12-band feedback suppressor that enables higher volume levels Dynamic Range: 106 d - B, A-weighted - Frequency Response: 20 Hz to 20 k - Hz (+1.0, -2.0 d - B) Audio Sampling: 24-bit / 48 kHz Signal-to-Noise: 86 d - B, A-weighted - Headroom: 20 d - B Phantom Power: DC +48 V Power Requirement: DC +48 V Power Consumption: 3.4 W Operation Temperature: 32 °F to 104 °F (0 °C to 40 °C) Operation Humidity: 25% - 85% Dimensions (W x H x D): 4.57" x 0.98" x 6.81" (116 x 25 x 173mm) Net Weight: 16.2 oz. (460 g) Connectors: 2x RJ-45 39-pin With accessories included		

			<b>12 months Manufacturer Warranty</b>		
<b>B3.9</b>	<b>40</b>	<b>Set</b>	<b>WHITE BOARD</b>		
			<b>Qualification of the Bidder</b>		
			Product Type: Whiteboard - wall mountable Size: 72 in x 48 in Surface: Melamine Frame Color: Aluminum Frame Material: Aluminum Features: Dry erase, scratch-resistant, stain-resistant, ghosting-resistant, Interlocking Fastener System, Command Picture Hanging Strips, Magnetic		
<b>B3.10</b>	<b>30</b>	<b>Set</b>	<b>SILVER SCREEN FOR PROJECTOR</b>		
			Product Type: Projection screen - motorized Placing / Mounting: Ceiling mountable, wall mountable Package Content: Wall control switch, mounting hardware Image Diagonal Size: 120" (120.1 in) Image Width: 105 in Image Height: 59 in Screen Surface: MaxWhite FG Aspect Ratio: 16:09 Gain: 1.1x Viewing Angle: 160° Features: Mildew-resistant, washable, black backing, flame retardant, fiberglass backing, tubular motor Miscellaneous: Features: Moisture-resistant, aluminum enclosure Compliant Standards: Plug and Play, GOST, CB, FCC, ETL, GREENGUARD, ISO 9001:2008, NFPA 701 With accessories included		
			<b>12 months Manufacturer Warranty</b>		
<b>B3.11</b>	<b>30</b>	<b>Set</b>	<b>WIRELESS PROJECTOR</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Exceptional image quality Horizontal and Vertical Keystone correction Lightweight & ultra-slim form factor Free iProjection app Split screen capability Projection Technology: RGB liquid crystal shutter projection system Brightness*2: White Light Output (Normal): 3,000lm Colour Light Output: (Normal / Eco): 3,000lm / 1,900lm Connectivity:		



		<p>Network: Wireless LAN; In-built  Analog Input: D-Sub 15 pin; 1(Blue) Composite; RCA x 1  Digital Input: HDMI; 1(MHL)  Audio Input: Stereo Mini Jack: 1  Network I/O: USB Type A: 1 (For USB memory, USB Document Camera, Firmware Update) USB Type B: 1 (For USB Display, mouse, K/B, Control, Firmware update)  Contrast Ratio:  Auto Iris: 10,000:1  Wireless Specifications:  Supported Speed for Each Mode: IEEE 802.11b: 11 Mbps; IEEE 802.11g: 54 Mbps; IEEE 802.11n: 130 Mbps  Wireless LAN Security: Quick Mode: WPA2-PSK; Advanced Mode: WPA2-PSK, WPA/WPA2-PSK  Supported Connection Mode: Infrastructure, Access Point  Screen Size (Projected Distance):  Standard Size: 60" screen 1.35 – 1.62m  Zoom : Wide:30" – 300" (0.67 – 6.81m)  Zoom : Tele:30" – 300" (0.80 – 8.18m)  Operating Temperature:  Operating Temperature:5°C – 40°C &lt; 41°F - 104°F&gt; (0 m / 0 ft to 2,286m / 7,500ft)  5°C – 35°C &lt; 41°F - 95°F&gt; (over 2,286m / 7,500ft) (20% – 80% humidity, No condensation)  Operating Altitude:  Operating Altitude:0m – 3,000m (0ft – 9,843 ft) (over 1,500m / 4,921ft: with high altitude mode)  Start-Up Period:  Start-Up Period:About 7.2 seconds, Warm-up period: 30 seconds  Cool Down Period:  Cool Down Period:Instant off  Internal Speaker(s):  Sound Output:Monaural: 1W X 1  Direct Power On/Off:  Direct Power On/Off:Yes/Yes  Dimension Excluding Feet (W x H x D):  Dimension Excluding Feet (W x H x D):292mm x 44mm x 213mm  Fan Noise:  Fan Noise (Normal / Eco):39 dB / 30Db  With accessories included</p>		
		<b>3 years Manufacturer Warranty</b>		
		The Bidder is required to submit <b>Product Brochures</b> or other related/equivalent documents containing the description of all the items under this lot.		

# TECHNICAL SPECIFICATIONS

## Lot C

Bidders must indicate whether the goods and equipment offered are “Compliant” or “Non-Compliant” to the corresponding specifications prescribed by BCDA using this form.

<b>SUPPLY, DELIVERY AND INSTALLATION OF GOODS AND EQUIPMENT FOR THE NATIONAL ACADEMY OF SPORTS (NAS) - PHASE 1 AT NEW CLARK CITY</b>					
<b>TECHNICAL SPECIFICATIONS COMPLIANCE FORM</b>					
LOT	ITEMS	UNIT	SPECIFICATIONS	COMPLIANCE	
				Compliant	Non-compliant
<b>SUPPLY, DELIVERY AND INSTALLATION OF SPORTS EQUIPMENT</b>					
<b>BASKETBALL &amp; VOLLEYBALL</b>					
C1.1	1	pair	<p><b>BASKETBALL BACKSTOP</b></p> <p>QUALIFICATION OF THE BIDDER</p> <ul style="list-style-type: none"> <li>• The bidder must have an accredited distributorship from the manufacturer</li> <li>• The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> <li>• The proposed solution is manufactured by an International Sports Federation (ISF)-recognized company</li> <li>• The brand must have a market existence of at least 10 years</li> </ul> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. Complete portable backstop</li> <li>2. 325 cm projection</li> <li>3. spring assisted mechanism with DSF 1-step setup system</li> <li>4. Tempered glass backboard (FIBA Dimensions)</li> <li>5. 180 degree multi directional breakaway ring</li> <li>6. anti-whip net</li> <li>7. safety padding to front, siders and backboard and neck</li> <li>8. floor connector set and floor hook</li> <li>9. FIBA World Cup standards</li> <li>10. FIBA Approved</li> <li>11. Warranty Period: in accordance with the manufacturer’s warranty period, not less than 12 months</li> </ol>		

C1.2	1	Set	<p><b>BASKETBALL SCOREBOARD WITH CONTROLLER</b></p> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. The proposed solution is manufactured by an ISF- recognized company</li> <li>2. Transmission: Radio (868 MHz) wireless</li> <li>3. Readability: 110m, angle &gt; 160 deg</li> <li>4. Dimensions: 3100mm x 1150mm, 90mm thick</li> <li>5. Weight: 57kg</li> <li>6. Power Suply: 230V, 50-60Hz</li> <li>7. Score: 2 x3 Red LED Digits (25cm); Period: 1 Green LED Digits (20cm)</li> <li>8. Ball Possession: 2 Red LED Arrows</li> <li>9. Timer/Rest Period: 4 White LED Digits (25cm) + Blinking points</li> <li>10. Team Foul: 2x3 Yellow LED Digits (20cm)</li> <li>11. Timeout: 2x3 Green LED Digits</li> <li>12. FIBA Approved</li> <li>13. Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months</li> </ol>		
C1.3	1	pair	<p><b>BASKETBALL SHOTCLOCK WITH CONTROLLER</b></p> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. The proposed solution is manufactured by an ISF- recognized company</li> <li>2. Digit Height: 25cm and 16cm</li> <li>3. 2 display unites with integrated horn</li> <li>4. main timer repeater (4 Yellow LED Digits) + shotclock countdown (2 red LED digits)</li> <li>5. transmission radio-operated, must match the digital scoreboard</li> <li>6. installation behind basketball backcourt (with supplied brackets)</li> <li>7. brackets included</li> <li>8. FIBA Approved</li> <li>9. Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months</li> </ol>		
C1.4	6	Nos	<p><b>TABLETOP SCOREBOARD (DIGITAL)</b></p> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. Readability: 35m</li> <li>2. Max Digits height: 9cm</li> <li>3. Weight: 5.5 kg</li> <li>4. High Brightness SMD LED</li> </ol>		

			<ol style="list-style-type: none"> <li>5. Angle view: 160 deg</li> <li>6. Power Supply: 230V (mains or battery)</li> <li>7. Limited Warranty: in accordance with the manufacturer's warranty period, not less than 12 months</li> </ol>		
<b>C1.5</b>	<b>1</b>	<b>Set</b>	<p><b>PROFESSIONAL VOLLEYBALL SET</b></p> <p>QUALIFICATION OF THE BIDDER</p> <ul style="list-style-type: none"> <li>• The brand must have a market existence of at least 10 years</li> <li>• The bidder must have an accredited distributorship from the manufacturer</li> <li>• The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region</li> <li>• The proposed solution is manufactured by an International Sports Federation (ISF)-recognized company</li> </ul> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. The proposed solution is manufactured by an ISF- recognized company</li> <li>2. official volleyball uprights: weight: 44kg/pair</li> <li>3. official safety pads, weight: 6.8kg/set</li> <li>4. official referee stand, weight: 80kg/set</li> <li>5. ground sleeves: weight: 7kg/pair</li> <li>6. antennae pocket, weight: 0.3kg/pair</li> <li>7. official volleyball net: weight: 5kg/pc</li> <li>8. official volleyball antennae: 1kg/pair</li> <li>9. with official FIVB Net</li> <li>10. Warranty: in accordance with the manufacturer's warranty period, not less than 12 months</li> </ol>		
<b>C1.6</b>	<b>2</b>	<b>Nos</b>	<p><b>LONG TABLE</b></p> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. metal legs</li> <li>2. foldadable</li> <li>3. 2.4 meters long x 0.6 meter</li> <li>4. Warranty: in accordance with the manufacturer's warranty period, not less than 12 months</li> </ol>		
<b>C1.7</b>	<b>8</b>	<b>Nos</b>	<p><b>SPORTS TEAM BENCHES</b></p> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. Luxury comfortable leather seats</li> <li>2. High grade aluminum material</li> </ol>		

			<ol style="list-style-type: none"> <li>3. Electrostatic epoxy powder painting, environmental protection, anti-acid, anti-wet</li> <li>4. Professional competition, training, sports center, gymnasium, community, club, universities, school etc.</li> <li>5. 12 seat capacity</li> <li>6. Warranty: in accordance with the manufacturer's warranty period, not less than 12 months</li> </ol>		
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## HANDBALL / FUTSAL

<b>C1.8</b>	<b>1</b>	<b>pair</b>	<p><b>HANDBALL GOAL</b></p> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. IHF Approved</li> <li>2. freestanding</li> <li>3. Tecton, 300 x 200cm</li> <li>4. aluminum square posts and crossbar 80 x 80mm</li> <li>5. wall thickness 2mm</li> <li>6. rounded corners, slide profile with net hooks</li> <li>7. bottom posts filled with plastic floor protectors</li> <li>8. foldable net supports for free hanging net suspension and fixed collapsible floor bracket</li> <li>9. net support depth 100cm at the top, 150cm at the bottom</li> <li>10. knocked down for site assembly</li> <li>11. Warranty: in accordance with the manufacturer's warranty period, not less than 12 months</li> </ol>		
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## BADMINTON

<b>C1.9</b>	<b>5</b>	<b>Sets</b>	<p><b>MOVABLE BADMINTON POST AND NET</b></p> <p>TECHNICAL SPECIFICATIONS</p> <ol style="list-style-type: none"> <li>1. BWF Approved</li> <li>2. the post is seamless steel pipe, the base is solid steel</li> <li>3. weight: 180kg</li> <li>4. height: 155cm</li> <li>5. Post diameter: 4.2cm</li> <li>6. Base: 53cmx33cmx20.5cm</li> <li>7. Net specification: 6.10mx0.76m(BWF Standard)</li> </ol>		
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			8. Mesh size: 1.8cmx1.8cm 9. Material: Nylon 12. Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.10</b>	<b>5</b>	<b>Nos</b>	<b>BADMINTON UMPIRE CHAIR</b>  TECHNICAL SPECIFICATIONS 1. LxWxHtxSeat hight: 1000x800x1850x1530mm 2. comprised of three parts: base, supports and seats 3. high quality square pipe welding 4. Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.11</b>	<b>5</b>	<b>Nos</b>	<b>BADMINTON SCOREBOARD</b>  WXH - 600x2000 mm consists of base, post and flip type score card <b>Warranty:</b> in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.12</b>	<b>5</b>	<b>Nos</b>	<b>BADMINTON FEEDER</b>  10mph - 90mph speed 1.2 - 1.4sec per shuttle 200 shuttlecock capacity capable of multiple badminton strokes 58x53x49cm Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months  The brand of the proposed solution must have at least 5 years of existence in the market.		
<b>GYMNASTICS</b>					
<b>C1.13</b>	<b>2</b>	<b>Set</b>	<b>Balance Beam for Training (adjustable)</b>  length 500cm, top width is 10cm, and height is 16cm, covered with special fiber leather and hygroscopic material for better damping effect height adjustment scope is 70cm-125cm,with each increment of 5cm  The metal part of the brackets is welded with oval tubes for safety and stability.		

			features: special rubber damping system increases overall flexibility of the beam, the handle can quickly adjust height of beam, fast and solid locking, and foam end block to maximize the protection of athletes from injury		
			it consists of beam and main legs		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.14</b>	<b>1</b>	<b>Set</b>	<b>TRAMPOLINE</b>		
			main frame welded by special oval tube of 6.5cmx3.5cm. The size is 520cmx305cmx115cm		
			mesh size is 426cmx213cm and the material is nylon		
			spring part is 8 large springs and 110 middle springs		
			spring part is equipped with special protective pad		
			size of auxiliary bed is 175cmx260cmx115cm		
			suited for professional competition and training		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.15</b>	<b>2</b>	<b>Nos</b>	<b>CHALK STAND</b>		
			specification: 90cm		
			material: the bottom seat is stamped and formed from a high quality metal plate		
			powder box body is molded by glass fiber reinforced plastic at high temperature		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>TABLE TENNIS</b>					
<b>C1.16</b>	<b>4</b>	<b>Nos</b>	<b>SCOREBOARD FOR TABLE TENNIS</b>		
			bench type, mainly consists of frame and scoreboard.		
			frame of the scoreboard is made with plastic parts.		
			scorekeeper is made with dark blue PVC board, divided into 2 groups		
			52 pcs for each group		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.17</b>	<b>4</b>	<b>Nos</b>	<b>TABLE TENNIS BALL FEEDER</b>		

			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			The proposed solution is manufactured by an ISF-recognized company		
			holds 100 balls and shoots 90 balls per minute		
			wireless remote control		
			memory, frequency +/-, oscillation +/-, topspin +/-, backspin +/-		
			dimensions 19 x 11 inches		
			compatible with all standard size table tennis tables		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.18</b>	<b>60</b>	<b>Nos</b>	<b>TABLE TENNIS COURT FENCE</b>		
			length 1.4mx0.75m		
			(30pcs/court)(7mx14m)		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.19</b>	<b>6</b>	<b>Nos</b>	<b>TABLE TENNIS TABLE</b>		
			special 25mm competition tabletop. Playing surface in latest coating technique for even ball bounce		
			metal frame - 50mm		
			transport system-4 wheels on each half		
			stable, powdered-coated metal undercarriage		
			double anti-tilting device		
			low storage space		
			foldable		
			ITTF Standards		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.20</b>	<b>6</b>	<b>Sets</b>	<b>TABLE TENNIS NET AND POST</b>		
			micro vertical adjustment system		
			solid metal body		
			large 14mm mounting screws, allow the net to be easily and securely mounted to the table for use		
			net is made of cotton-steel yarn for long-lasting qualities		
			ITTF Standards		



			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>ATHLETICS</b>					
<b>C1.21</b>	<b>30</b>	<b>Nos</b>	<b>COMPETITION HURDLES</b>		
			manufactured from high-grade aluminum profiles,		
			wooden upper crossbars are made of high quality, durable and extremely flexible wood.		
			extension is made of square pipe with internal counterweights		
			weight is moved depending on height by means of star knob screw		
			height adjustment by pressure springs according to regulations in 6 heights: approx. 1.067m - 0.991m - 0.914m - 0.838m - 0.762m and 0.685m		
			upper crossbar: top quality wood, 70x15mm.		
			suitable for all competitions		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.22</b>	<b>8</b>	<b>Nos</b>	<b>STARTING BLOCK</b>		
			made of aluminum		
			parts are extruded.		
			block is fixed to the ground with spikes		
			the steps are covered with rubber and are height adjustable		
			IAAF certified		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>WEIGHTLIFTING</b>					
<b>C1.23</b>	<b>4</b>	<b>Nos</b>	<b>High-power Treadmill (regular commercial treadmill)</b>		
			Assembled Dimensions (LxWxH): 82" x 36" x56"		
			Weight: 193kg (425lbs)		
			Max User Weight: 400lbs (181kg)		
			Belt: Seigling E8 multi-ply polyester belt		
			Running surface width: 22"		
			Motor: 4hp (8.0hp Peak) AC motor		
			Speed Range (mph): 0.5 - 14mph (0.8 - 23 km/h) in 0.1 increments		

			Step Up Height: 8"		
			Hadrails: 16"		
			Incline: 15%		
			Rollers: 3.5 inch / 9 centimeter diameter, precision-crowned, front and back		
			Contact heart rate: Yes		
			Telemetry: Yes		
			Lower Side Rail material: Plastic		
			End caps: Plastic		
			Console: LED Display, membrane buttons, optional attachable TV, 4 numbers of workout, displays Speed Time Distance HR Calories Incline Resistance		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.24</b>	<b>2</b>	<b>Nos</b>	<b>MANUAL CURVED TREADMILL</b>		
			Weight: 280lb/127kg;		
			Length: 69.9in/177.5 cm		
			Width: 32.8in/83.3cm		
			Height: 64in/162.6cm		
			Max User Weight: 350 lb / 158.8 kg		
			Steel Frame & Handrails + Corrosion-resistant Hardware		
			Motor-free treadmill / indoor running machine		
			Built-in handle and transport wheels		
			Uses no electricity - low carbon foot print		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.25</b>	<b>3</b>	<b>Nos</b>	<b>INDOOR CYCLING BIKE</b>		
			Height: 47.2" (120cm)		
			Length: 52" (132cm)		
			Weight: 112lbs (51kg)		
			Max User Weight: 330lbs (150kg)		
			Frame: Steel		
			Pedals: Dual-sided SPD & toe cage		
			Handlebar Design: Ergo-formed, multi position, soft PVC w/vertical & horizontal adjustments		
			Saddle: Unisex padded sport saddle w/vertical & horizontal adjustments		

			Accessory Holder: Dual, integrated on handlebar		
			Transport Wheels: Yes, 3		
			Drive System: Poly-V belt		
			Resistance System: Magnetic Via Lever		
			Flywheel: Rear, aluminum, evenly-weighted		
			Q-Factor: 155mm/ 6.2		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.26</b>	<b>3</b>	<b>Nos</b>	<b>AIR POWERED FUNCTIONAL TRAINER</b>		
			Width: 96"		
			Depth: 31"		
			Weight: 143lbs (65kg)		
			Height Arms up: 101"		
			Resistance/Handle: 50lbs (22kg)		
			Cable length- both handles together: 70" / 1778 mm		
			Cable length- single handle: 140" / 3556 mm		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.27</b>	<b>3</b>	<b>Nos</b>	<b>FUNCTIONAL TRAINER ACCESSORIES</b>		
			Lat/Back Strap: 2' long from handles to d-ring 4' from handle to handle		
			Ankle Cinch Strap: 4 1/2" wide nylon and thick neoprene padding, with a steel D-ring to accomodate up to a 44" waist		
			Chop Bar: 3', made of a knurled lightweight Aluminum tubing		
			Thigh Cinch Strap: made of 4 1/2" wide nylon and thick neoprene padding		
			Resistance/Handle: 50lbs (22kg)		
			Triceps Rope: 3' long x 1" diameter PolyPropylene rope		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.28</b>	<b>1</b>	<b>Nos</b>	<b>COMPRESSOR</b>		
			Quiet 220V 50H-BLK		
			Supports 6 machines International Electric System		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.29</b>	<b>1</b>	<b>Nos</b>	<b>BASE JAMMER</b>		

			Size (L x W x H): 79" x 66" x 83" (202 cm x 167 cm x 212 cm)		
			Machine Weight: 370 lb (168 kg)		
			Starting Resistance: 8 lbs (3.6 kg)		
			Standard Weight Horns: 6		
			Max User Weight: 300 lb (136 kg)		
			Frame Description: 11-gauge steel frame ensures maximum structural integrity; Each frame receives an electrostatic powder coat finish to ensure maximum adhesion and durability		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.30</b>	<b>4</b>	<b>Nos</b>	<b>ATHLETIC POWER RACK</b>		
			Size (L x W x H): 76.8" x 65.5" x 97.5" (195.1cm x 166cm x 248cm)		
			Machine Weight: 515lb (234kg)		
			Max User Weight: 350lb (159kg)		
			Max Training Weight: 675lb (306kg)		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.31</b>	<b>4</b>	<b>Nos</b>	<b>WEIGHTLIFTING PLATFORM</b>		
			For serious weight training facility		
			Platforms clearly define training areas		
			offer stable training surface		
			protect existing flooring and help to dampen sound		
			Insert size varies by rack; 8cm thickness for outstanding durability and reduced noise		
			Steel tube side frames and gusseted corners provide structural integrity and a finished look		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.32</b>	<b>4</b>	<b>Nos</b>	<b>MULTI-ADJUSTABLE BENCH</b>		
			Size (L x W x H): 53" x 32" x 45"		
			Machine Weight: 125 lbs (57 kg)		
			Vertical height from floor to Seat Pad: 17" (43.2 cm) at the flat position		
			Seat Pad Size (at the widest point of the contoured sides): 11" x 17" (27.9 x 43.2 cm)		
			Back Pad Size (at the widest point of the contoured sides): 11" x 32" (27.9 x 81.3 cm)		
			Max User Weight: 500 lbs (227 kg)		
			Adjustments: Spring assisted seat adjustments		

			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.33</b>	<b>2</b>	<b>Nos</b>	<b>FLAT OLYMPIC BENCH WITH WEIGHT STORAGE</b>		
			Size (L x W x H): 49" x 51" x 51"		
			Machine Weight: 150 lbs (68 kg)		
			Vertical height from floor to Seat Pad: 17" (43.2 cm) at the flat position		
			Vertical height from floor to Top Bar Support: 38.5" (97.8cm)		
			Vertical height from floor to Bottom Bar Support; 32" (81.3 cm)		
			Head Pad Size (at the widest point of the contoured sides): 10" x 9" (25.4 x 22.8 cm)		
			Back Pad Size (at the widest point of the contoured sides): 11" x 36" (27.9 x 91.4 cm)		
			Max User Weight: 500 lbs (227 kg)		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.34</b>	<b>2</b>	<b>Sets</b>	<b>RUBBER DUMBBELL SET WITH URETHANE HANDLES AND RETURN RACK</b>		
			2.5kg-25kg		
			(2.5kg increments) / 10 pairs		
			Weight 275kg total with rack		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.35</b>	<b>1</b>	<b>Nos</b>	<b>PLATE-LOADED ISO LATERAL SHOULDER PRESS MACHINE</b>		
			Size (L x W x H): 52" x 60" x 73"		
			Standard Weight horns: 8		
			Machine Weight: 350 lb (158.8 kg)		
			Starting Resistance: 10lbs (4.5kg) per workarm		
			Frame Description: 11-gauge steel frame ensures maximum structural integrity: each frame receives an electrostatic powder coat finish to ensure maximum adhesion and durability		
			Separate weight horns engage independent diverging motions for equal strength development and muscle stimulation variety		
			The Back pad is angled 40 degrees for stabilization and to eliminate hyperextension of the spine		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		

<b>C1.36</b>	<b>1</b>	<b>Nos</b>	<b>PLATE-LOADED ISO LATERAL WIDE CHEST</b>		
			Size (L x W x H) 77" x 45" x 75"		
			Machine Weight: 305 lb (138.3 kg)		
			Frame Description: 11-gauge steel frame ensures maximum structural integrity		
			Each frame receives an electrostatic powder coat finish to ensure maximum adhesion and durability		
			Starting Resistance: 2lbs (.09kg)		
			Separate weight horns engage independent diverging and converging motions for equal development and muscle stimulation variety		
			Machine offers a higher degree of converging motion and the decline press and accommodates larger exerciser		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.37</b>	<b>1</b>	<b>Nos</b>	<b>ADJUSTABLE PULLEY OUTRIGGER</b>		
			Assembled Dimensions: 28.5 in x 142 in x 94 in (73 cm x 361 cm x 239 cm)		
			Weight: 720 lbs (327 kg)		
			Weight in stack: 190lbs (95kg)		
			Cables: 7x19 strand construction, lubricated, nylon-coated cable meets U.S. military specifications		
			Cushioning: Contoured cushions utilize a molded foam for superior comfort and durability		
			Frame Description: 11-gauge steel frame ensures maximum structural integrity; Standard rubber feet protect base of the frame and prevent the machine from slipping; Each frame receives an electrostatic powder coat finish to ensure maximum adhesion and durability		
			Hand Grips: Grips retained with aluminum collars, preventing them from slipping during use; Hand grips are a durable urethane composite		
			Instructional Placards: Easy-to-follow instructions illustrate proper use and muscles trained		
			Pulleys: 4-1/2" (11 cm) and 6" (15 cm) diameter fiberglass-impregnated nylon pulleys feature sealed bearings		
			Weight Plates And Guide Rods: 7/16" (11 mm) diameter weight selector pin magnetically locks in place and is connected to stack to prevent loss; Solid-steel weight plates. Top weight plate is fitted with self-lubricating bushings		

			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.38</b>	<b>1</b>	<b>Nos</b>	<b>HIP AND GLUTE MACHINE</b>		
			Size (L x W x H): 65" x 39" x 72"		
			Recommended Live Area: 94" x 39" x 72"		
			Machine Weight: 515 lb (234 kg)Weight Stack(s): 295 lb (138 kg)		
			Max User Weight: 300 lb (136 kg)		
			Cables: 7x19 strand construction, lubricated, nylon-coated cable meets U.S. military specifications		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.39</b>	<b>1</b>	<b>Nos</b>	<b>PLATE-LOADED LINEAR HACK SQUAT</b>		
			Size (L x W x H): 84" x 61 " x 54" (213 cm x 155 cm x 137 cm)		
			Recommended Live Area: 94" x 39" x 72"		
			Machine Weight: 410 lbs (186 kg)		
			Starting Resistance: 60 lbs (27.2 kg)		
			Standard Weight Horns: 2		
			Max User Weight: 300 lb (136 kg)		
			Frame Description: 11-gauge steel frame ensures maximum structural integrity; Each frame receives an electrostatic powder coat finish to ensure maximum adhesion and durability		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.40</b>	<b>1</b>	<b>Nos</b>	<b>PLATE -LOADED ISO LATERAL LEG EXTENSION</b>		
			Size (L x W x H): 47" x 64" x 51"		
			Max User Weight: 350 lb (158.8 kg)		

			Starting Resistance: 4lbs (1.8kg) per work arm		
			Max weight capacity: 5 - 45lbs (4 - 25kg) plates / rod		
			Separate weight horns engage independent diverging motions for equal strength development and muscle stimulation		
			Two Resistance loading positions provide dual strength curves depending on exercise goals		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.41</b>	<b>1</b>	<b>Nos</b>	<b>PLATE-LOADED ISO LEG CURL</b>		
			Size (L x W x H): 67" x 57" x 40"		
			Machine Weight: 285 lb (130 kg)		
			Max User Weight: 350 lb (158 kg)		
			Frame Description: 11-gauge steel frame ensures maximum structural integrity. Each frame receives an electrostatic powder coat finish to ensure maximum adhesion and durability		
			separate weight horns engage independent diverging and converging motions for equal strength development and muscle stimulation		
			divergent angle hip and chest pads help reduce lower-back tension		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.42</b>	<b>12</b>	<b>Sets</b>	<b>Olympic Bumper Plates</b>		
			Black Bumper Plates 2pcs x 20kg; 15kg; 10kg; 5kg; 2.5kg, (5 pairs/set) IWF Standards		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.43</b>	<b>12</b>	<b>Sets</b>	<b>Olympic Bar with locks</b>		
			22mm, chrome bushing, Mens 20kg x 4pcs and Womens 15kg x 8pcs - with lock, IWF Standards		



			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.44</b>	<b>4</b>	<b>Sets</b>	<b>Rubber Olympic Disc Set</b>		
			Set 107.5kg Total (2 x 20kg; 15kg; 10kg; 5kg; 2.5kg; 1.25kg)		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.45</b>	<b>2</b>	<b>Nos</b>	<b>MEDICINE BALL</b>		
			(1x1kg;2kg;3kg;4kg;5kg)		
			Hollow interior for more bouncing and dropping		
			Weight: 1kg-5kg (5pcs)		
			Textured rubber surface for improved grip		
			Oversized numbering for easy weight identification		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.46</b>	<b>4</b>	<b>Nos</b>	<b>SUSPENSION TRAINER</b>		
			Features equalizer loop, locking loop, barrel lock adjusters, padded triangles, antimicrobial handles and adjustable foot cradles.		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.47</b>	<b>3</b>	<b>Sets</b>	<b>KETTLEBELL WITH CHROME HANDLE SET</b>		
			60kg Total (1x 20kg; 16kg; 12kg; 8kg; 4kg)		
			Black Rubber Cover		
			Chrome Handles		
			5pcs total		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		

<b>C1.48</b>	<b>1</b>	<b>Nos</b>	<b>WALL MOUNTED GYM TRAINER</b>		
			Digital		
			wall-mounted		
			electronically operated		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.50</b>	<b>5</b>	<b>Nos</b>	<b>Velocity Based Tracker</b>		
			Linear Positional Transducer with Horizontal Displacement Sampling Rate of 50hz (downsampled from 115200Hz)" Rechargeable 2.6Ah Li Polymer battery Battery life = 28 hours continuous use" Weight – 900g Dimensions – 115 x 85 x 85mm" Tether Length 3m Max Velocity 7m/s Angle Range -15° – 50°+"		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.51</b>	<b>4</b>	<b>Nos</b>	<b>Open Trapbar</b>		
			1850mm X 206mm x 596mm (L x W x H) Sleeve length 36 cm Stainless sleeves 46 to 48mm diameter Nickel Plated handles with knurlings. 25kg weight		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.52</b>	<b>6</b>	<b>Sets</b>	<b>Plyo Boxes</b>		
			4 Boxes Material: PVC + foam Surface dimension: 36" x 30" Product Height: 6" / 12" / 18" / 24" Weight capacity: 350 lbs		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.53</b>	<b>1</b>	<b>Sets</b>	<b>1080 Sprint</b>		

			<p>Continuous resistance range 0-150N  Maximum resistance in both directions: &lt; 300N during maximum 10s and &lt; 450N during 3s  Maximum speed 14 m/s (46 ft/s)  Length of line 90m (295ft)  Line type: 130 kg (286 lbs), 1.7 mm (0.067") diameter  Motor 1.5kW  Weight: 29 kg (63 lbs)  Recorded frequency of force, speed and power: 111 samples per second  Tablet with touch screen interface or laptop  Operating system: Windows 7 or 8  Dimensions (LxWxH): 1004x330x216 mm (39.5x13.0x8.5")</p>		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.54</b>	<b>4</b>	<b>Nos</b>	<b>Slide Board</b>		
			55lbs 48 × 24 × 2 in		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.55</b>	<b>1</b>	<b>Sets</b>	<b>Contact Grid</b>		
			<p>The data allows calculation of Jump height, stiffness, power etc.  Width 870mm  Range 3-40m  Resolution &lt; 2ms  Combine with Laser and DSU Kit to measure both contact times and stride length.  6 lbs  40 × 4 × 4 in</p>		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.56</b>	<b>1</b>	<b>Sets</b>	<b>Dual Force Plates</b>		
			<p>605 x 360 x 070  13kg  Li-ion 6000mA.h 3.75V  Stainless Steel (303) / Aircraft Aluminium (L168)  Standard Wi-Fi Direct  ≈100m clear-view  0 – 20 kN  150% max range  Beam Load Cell</p>		

			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C1.57</b>	<b>1</b>	<b>Sets</b>	<b>Seated Calf Raise Machine</b>		
			55"L x 27"W x 48"H		
			Hold down grips on both back and thigh pads for support and stability.		
			Oversize 8" foam rollers pop-pin adjust both vertically and horizontally for a proper fit.		
			Main frame is constructed of 2" x 3", 11-gauge heavy steel, perfect for commercial use		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>TAEKWANDO &amp; JUDO</b>					
<b>1</b>	<b>247</b>	<b>Nos</b>	<b>PUZZLE MATS</b>		
			Total area TKD: 190sqm		
			Total Area Judo: 175 sqm		
			1 set = 16 sqft		
			oft, textured EVA foam is free of Toxic phthalates		
<b>1</b>	<b>6</b>	<b>Nos</b>	<b>JUDO LANDING MATS</b>		
			Dimensions: length 18000mm×width 18000mm×height 50mm		
			Material: outer jacket is made of judo leather, inner tube is made of XPE, compressed sponge, fiberboard bonding structure		
			Gross weight: 2950Kg		
<b>1</b>	<b>4</b>	<b>Nos</b>	<b>COMMERCIAL AIR COOLER</b>		
			100-liter water capacity		
			8000 m³/h airflow		
			912x570x1334mm		
			With remote controller		
<b>1</b>	<b>3</b>	<b>Nos</b>	<b>SLAM BALL</b>		
			(1x5kg;10kg;15kg;20kg)		
			Textured surface offers improved grip		
			Will not roll or bounce once slammed		
			An unstable deadweight that will push you		
			4 balls total		

**SUPPLY, DELIVERY AND INSTALLATION OF FITNESS TESTING & MONITORING EQUIPMENT**

<b>C2.1</b>	<b>1</b>	<b>Set</b>	<b>BIOELECTRICAL IMPEDANCE ANALYZER</b>		
			A. Bioelectrical Impedance Analysis Measurements - Bioelectrical Impedance(Z) : 10 Impedance measurements are taken by using two (2) different frequencies (20kHz, 100kHz) in each of the 5 body segments (right arm, left arm, trunk, right leg, left leg)		
			B. Electrode Method - 8-Point Tactile Electrode Method		
			C. Technology - Direct Segmental Multi-frequency Bioelectrical Impedance Analysis Method, DSM-BIA Type		
			D. Body Composition Calculation		
			E. Outputs (LCD Screen) - Weight, Body Fat (Percent Body Fat), Muscle (Skeletal Muscle Mass), BMI		
			F. Applied Rating Current - 100 uA		
			G. Power Consumption - DC 6V (1.5V AA Battery 4 each)		
			H. Display Type - Customized LCD		
			I. Storage Environment – -4 ~ 158°F, 10 ~ 95% RH, 50 ~ 106 kPa (no condensation)		
			J. Dimensions - 12.2 (W) x 14 (L) x 2.3 (H): inch		
			K. Equipment Weight - 5.9 lbs (2.7 kg)		
			L. Total Test Time - 8 seconds		
			M. Operational Environment - 50 ~ 104°F, 30 ~ 75% RH, 70 ~ 106 kPa		
			N. User Weight Range - 22 ~ 330 lbs (10 ~ 150 kg)		
			O. Height Range - 1 ft. 7.7 in. ~ 9 ft. 10.1 in. (50-300 cm)		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C2.2</b>	<b>6</b>	<b>Sets</b>	<b>TIMING GATES</b>		
			A. Weight 169g, battery included		
			B. Dimensions 75 x 103 x 48 mm		

			C. Operating temperature 0° C/+45°C		
			D. Minimum resolution 0.125 ms		
			E. Delay with respect to the event 1 ms		
			F. Optical range 12 m		
			G. Radio module Multi-Frequency Transceiver 433-434MHz		
			H. Radio transmission 10 mW		
			I. Impulse transmission accuracy ±0.4 ms		
			J. Radio transmission range Approx. 150 meters		
			K. Processing unit 16-bit microprocessor		
			L. Time base 8 MHz quartz, stability ±30ppm between 0°C and +45°C		
			M. Power supply Internal lithium ion battery, external power supply 5VDC		
			N. Battery life > 10 hours		
			O. Connections MICRO USB type B connector for charging and connecting to a PC Jack connector for external input connection or double photocells.		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C2.3</b>	<b>1</b>	<b>Set</b>	<b>SUPER TREADMILL</b>		
			Applications: endurance training walking and running, stress device for performance testing, gait analysis and gait training.		
			Control: via UserTerminal MCU5 with keyboard and display, integrated interface or via optional remote control		
			Running surface: L: 170 cm (5ft 6.9") B: 65 cm (2ft 1.6")		
			Special sizes available at extra charge access height: 23 cm (9.06") - shock load reduction for the joints - running belt with slip resistant surface - reinforced running belt with profiled surface, 5 mm thick - max. permissible load: 200 kg (440 lbs) - optional 300 kg (660 lbs) at extra charge		
			Speed range: 0...40.0 km/h (0...11.1 m/s) (0...24.8 mph)		

			special speed available at extra charge: 0...45 km/h (0...27.8 mph)		
			Acceleration: 7 acceleration / deceleration levels between 131 s and 3 s from 0 to max. or from max. to 0; equals 0.084... 3.70 m/s <sup>2</sup> programmable via para control PC software		
			Elevation: 0...28 % (0...15.6°) motorized adjustment (-28 %...+28 % when using optional reverse belt rotation		
			Running direction: switch for reversing running belt direction at extra charge. max. permissible reverse speed 5 km/h (3.1 mph) if no safety-harness with fall-stop prevention system is used.		
			Motor system: 4.3 kW (5.8 PS) 3-phase AC motor, maintenance free and brushless; 20 years warranty on main drive motor. For high-performance applications we recommend models with a running surface min. 190/65 cm.		
			Power transmission: frequency inverter, poly-V-belt, very quiet operation		
			Safety systems: CE0123; medical device directive 93/42/EEC + 2007/47/EC; MDD; machinery directive 2006/42/EC; IEC 60601-1; EN 60601-1-2 (EMC approved); EN 60601-1-6; EN 62304; EN 62353; ISO 20957-1; EN 957-6; EN 14971; EN ISO 13485; emergency-off safety stop switch (mushroom push button for drive system power-off); emergency stop switch (safety lanyard with actuator, pull cord and clip); potential equalization bolt; transformer for potential-isolation from the mains.		
			Earth leakage current < 0.2 mA		
			Ambient condition: temperature: +10...+40 °C (-30...+50 °C on request) humidity: 30...70 % (up to 100 % on request) air pressure: 700...1060 hPa; 3,000 m (~10,000 ft) max. altitude without pressurization		
			Display (resolutions): 6 LCD displays, 4 LEDs for operation modes, 20 LEDs for display of units & profile no, steps, etc. speed (0.1 km/h or m/s or m/min or mph), time (00:00) in hours, minutes & seconds, elevation (0.1 % or degrees) distance (1 m...999.9 km or miles), METS (1 MET) program step/number, energy (1 kJ/kcal), fitness index (1) power (1 Watt), heart rate (1 bpm / beat per minute)		
			Heart rate monitoring: POLAR wireless transmitter, 1 channel receiver; ECG-accurate measurement; automatic control of speed and elevation according to programmed target heart rate		
			Handrails: steel tube handrails ø 60 mm on both sides, over 1/3 of treadmill length with front-handrail crossbar other handrail designs at extra charge		
			Voltage supply: 400 Volt AC 3~/N/PE 50/60 Hz 15-16A fuse; dedicated circuit, line and protection		

			Size of frame: L: 230 cm (7ft 6.6") B: 105 cm (3ft 5.3") H: 145 cm (4ft 9.1")		
			Net weight: device approx. 380 kg (838 lbs)		
			Gross weight: device approx. 530...580 kg (1166...1276 lbs)		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C2.4</b>	<b>15</b>	<b>Sensors</b>	<b>PHYSIOLOGICAL MONITORING SYSTEM</b>		
			Bluetooth Connectivity to receiver or external sensors		
			802.15.4 Connectivity		
			Heart Rate 0 – 240 BPM ( $\pm 1$ BPM)		
			Breathing Rate 0 – 120 BPM ( $\pm 1$ BPM)		
			Device Temperature 10 – 60°C ( $\pm 2$ °C)		
			Position/posture $\pm 180^\circ$ (Laying, standing)		
			Activity in VMU (Stationary, walk, run)		
			3 axis Acceleration to 16g		
			Red / Orange / Green subject status indication		
			Transmit and/or Logging Modes		
			250Hz ECG Transmission & Logging		
			100Hz Accelerometer Logging		
			USB connectivity for data download & charging		
			Up to 500+ hours data storage		
			Internal algorithms for: <ul style="list-style-type: none"> <li>o Estimated core temperature</li> <li>o Jump Test</li> <li>o Dash Test</li> <li>o Fall detection</li> <li>o Heart Rate Variability</li> <li>o Human Real Data</li> </ul>		



			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C2.5</b>	<b>30</b>	<b>Sets</b>	<b>HEART RATE MONITORS (SENSOR)</b>		
			<u>Compatibility:</u> iOS mobile devices with iOS 13 or later; Android mobile devices with Bluetooth 4.0 capability and Android 7 or later; Huawei mobile devices with Huawei AppGallery and Huawei Mobile Services installed.		
			<u>Updates:</u> Via mobile phone using Polar Beat app or Polar Flow app.		
			Memory: One training session		
			<u>Battery life</u> 400 hours with Bluetooth Low Energy and 5 kHz transmission active		
			Battery type: CR 2025		
			Connector size: 34x65x10 mm		
			Weight: Connector 21 g (0.74 oz), strap 39 g (1.38 oz)		
			<u>Materials:</u> Connector: ABS, ABS + GF, PC, Stainless steel. Strap: 38% Polyamide, 29% Polyurethane, 20% Elastane, 13% Polyester, Silicone prints.		
			Water resistance: 30 m (Suitable for swimming)		
			Operating temperature: -10 °C to +50 °C / 14 °F to 122 °F		
			Connectivity: ANT+, Bluetooth Low Energy, 5 kHz		
			Available in sizes: XS-S: 51-66 cm M-XXL: 65-93 cm		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C2.6</b>	<b>1</b>	<b>Set</b>	<b>CYCLE ERGOMETER</b>		
			Type: Sports, perfect fit		
			Handlebar: Racing handlebar		
			Stem: Adjustable, horizontal 200 mm, vertical 500-910 mm		

			Seatpost: Adjustable, horizontal 200 mm, vertical 530-940 mm		
			Saddle: Racing		
			BB: 68/107 mm		
			Crank Steel: 172.5 mm		
			Pedals: 9/16", combi SPD		
			RESISTANCE: System - Pendulum, Flywheel: 20 kg		
			DISPLAY: RPM-Yes, HR - ANT+, bluetooth smart, Time-Yes, Speed-Yes, Distance-Yes, Watt-Yes		
			Connectivity: RS232: Yes, Usb: Yes		
			Weight & Measurements: Max user weight 180 kg		
			Length (mm): 1405-1630 mm		
			Width (mm): 640 mm		
			Height (mm): 1265 mm at display, 1240 mm at saddle		
			Weight (kg): 77 kg		
			Power Requirements: 220V (12V, 5,0A)		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C2.7</b>	<b>10</b>	<b>Nos</b>	<b>HIGH RESOLUTION CAMERA</b>		
			A. Body Type – VR/Action Camera		
			B. Sensor – 12 Megapixels, CMOS		
			C. Image – Digital, Hypersmooth 2.0, RAW		
			D. Optics & Focus – Digital Zoom		
			E. Screen/Viewfinder – Fixed LCD, 2 Inch Screen Size, Touch Screen		
			F. Videography Features – H.264, H.265 Format, Multiple Microphones		

			G. Storage/Connectivity – USB 3.0, USB Charging, Microphone Port, Wireless (WiFi + Bluetooth)		
			H. Physical Specs– Environmentally Sealed, Waterproof, Shockproof, Built in Battery, 1220mAh Lithium-ion, 126 grams, 66x49x28mm		
			I. Other Features – Timelapse Recording, Built in GPS		
			Warranty Period: in accordance with the manufacturer’s warranty period, not less than 12 months		
<b>C2.8</b>	<b>10</b>	<b>Nos</b>	<b>REFRACTOMETER FOR URINE SPECIFIC GRAVITY</b>		
			Portable, economic design with rubber grip, 0-18% brix scale, +0.1% accuracy		
			Warranty Period: in accordance with the manufacturer’s warranty period, not less than 12 months		
<b>C2.9</b>	<b>5</b>	<b>Nos</b>	<b>STRENGTH DYNAMOMETER</b>		
			Portable, 50kg capacity		
			Warranty Period: in accordance with the manufacturer’s warranty period, not less than 12 months		
<b>C2.10</b>	<b>5</b>	<b>Nos</b>	<b>SIT AND REACH BOX</b>		
			Storage and Transport: The Baseline Sit n’ Reach Testing Box measures 30” x 2” x 13” weighing only 14 lbs. , making the item easy to store when not in use or compact enough to travel with.		
			Warranty Period: in accordance with the manufacturer’s warranty period, not less than 12 months		
<b>C2.11</b>	<b>10</b>	<b>Nos</b>	<b>GONIOMETER</b>		
			portable protactor like devices used to measure joint angles		
			Warranty Period: in accordance with the manufacturer’s warranty period, not less than 12 months		
<b>C2.12</b>	<b>5</b>	<b>Nos</b>	<b>VERTEC</b>		
			Measures in ½-inch increments		
			Steel frame construction		
			Color-coded vanes for easy reading of measurements		

			Provides you with an accurate measurement of vertical jump		
			Allows you adjust height of vanes to measure		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C2.13</b>	<b>3</b>	<b>Nos</b>	<b>FIELD SPEAKER - TROLLEY TYPE</b>		
			10 inch*1+tweeter*1, MDF+plastic, With MP3/SD/USB TWS Functions & With FM Radio & Karaoke function with 2 mic jacks input, giftbox packing,with Bluetooth function, woofer with light.		
			With remote control		
			One Wireless microphone		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C2.14</b>	<b>5</b>	<b>Nos</b>	<b>Weighing Scale - Eye Level Beam Type with Stadiometer</b>		
			Capacity: 450 lb x 4 oz , 200 kg x 100 g, or 440 lb x 4 oz / 200 kg x 100 g		
			Height Measurement Range (on select models): 24-84 in / 60-212 cm		
			Height Graduation (on select models): 0.125 in / 0.1 cm		
			Platform Size: 14.75 in x 10.75 in / 37.5 cm x 27.3 cm		
			Overall Width: 17.5 in / 44.5 cm		
			Overall Height: 58.25 in / 148 cm		
			Overall Depth (without wheels): 20.5 in / 52 cm		
			Overall Depth (with wheels): 23.25 in / 59 cm		
			Construction: Mild steel with powder coat paint finish		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
	<b>5</b>	<b>Nos</b>	<b>BLOOD LACTATE ANALYZER</b>		
			Portable devices that analyzes blood lactate		

LOT	ITEMS	UNIT	SPECIFICATIONS	COMPLIANCE	
				Compliant	Non-compliant
<b>SUPPLY, DELIVERY AND INSTALLATION OF PHYSICAL THERAPY &amp; REHABILITATION EQUIPMENT</b>					
<b>GAIT TRAINING &amp; ANALYSIS AND BIOMECHANICS</b>					
C3.1	1	Set	<b>ANTI-GRAVITY TREADMILL</b>		
			• Fits individuals from 4'8" (142 cm) to 6'4" (193 cm); 18.5" (47 cm) hip width, 58" (147 cm) hip circumference.		
			PERFORMANCE		
			• User weight capacity: 85 - 400 pounds (181.4 kg)		
			• Body Weight Range Adjustment:		
			o Up to 320 lbs (145.2 kg) 20% – 100% of user's body weight		
			o >320 lbs (145.2 kg) 35% - 100% of user's body weight		
			• Running surface area:		
			- 20 inches (51 cm) wide		
			- 58 inches (147 cm) long		
			• Speed range:		
			- Forward M320/F320 0 – 12 mph (19.3 km/hr)		
			- Reverse M320/F320 3 mph (4.8 km/hr)		
			• Elevation: M320/F320 0 - 15%		
			DIMENSIONS		
			• Length: 84 inches (213 cm)		
			• Width: 38 inches (96.5 cm)		
			• Height: 74 inches (188 cm)		
			• Weight: 750 pounds (340 kg), approximately		

			• Step-up height: 8" (20 cm)		
			RECOMMENDED ROOM DIMENSIONS		
			• Provide a footprint at least 12ft (3.66 meters) long by 8ft (2.44 meters) wide for		
			adequate spacing around the machine		
			• A minimum 8 foot (2.44 meters) ceiling height is recommended		
			ELECTRICAL		
			• Power Requirements: 220 VAC 20A, 50/60 Hertz, NEMA 6-20R receptacle		
			• Locate the front of the system within 10ft (3.05 meters) of the electrical outlet.		
			ENVIRONMENTAL		
			Operating Conditions:		
			• Ambient Temperature: 55°F to +84°F (+13°C to +29°C)		
			• Relative Humidity: 20 to 95%		
			Transportation & Storage Conditions:		
			• Temperature Range: 0°F to +120°F (0°C to +49°C)		
			• Relative Humidity: 20 to 95%		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.2</b>	<b>1</b>	<b>Set</b>	<b>OVERHEAD / CEILING-MOUNTED TRACK AND HARNESS</b>		
			Ceiling-Mounted Track System with Different Harness Sizes		
			Four different design options including Straight, J-Shaped, U-Shaped, and Oval designs.		
			Length:		
			-straight track: 7.5ft and 10ft segment		
			-curved track: 6ft and 8ft lengths.		

			Tracks can be installed on virtually any type of ceiling regardless of height.		
			Can safely accommodate weight up to 500lbs		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>PT MODALITY CART</b>					
<b>C3.3</b>	<b>2</b>	<b>Nos</b>	<b>THERAPEUTIC ULTRASOUND</b>		
			Mains voltage: 100 - 240 Volt		
			Frequency: 50/60 Hz		
			Max. power input: 100 VA		
			Patient leakage current: typically, 1 $\mu$ A		
			Idem single fault condition: typically, 2 $\mu$ A		
			Main Unit Dimensions stand alone: 24 x 32 x 12 cm (w x d x h)		
			Dimensions on inclination foot: 24 x 30.5 x 18.2 cm (w x d x h)		
			Dimensions on Vacotron: 24 x 30.5 x 21.6 cm (w x d x h)		
			Weight 2 kg		
			Weight including optional battery 3 kg		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.4</b>	<b>2</b>	<b>Nos</b>	<b>PORTABLE ELECTROTHERAPY MACHINE</b>		
			2-channel electrostimulator with a clearly legible LCD screen		
			65 Programs		
			●● 12 Sport		
			●● 8 Fitness, Beauty & Wellness		
			●● 16 Pain (TENS)		

			●● 9 Prevention		
			●● 11 Rehabilitation		
			●● 3 Incontinence		
			●● 6 Free programs		
			PROGRAMMABLE: 6 free memory positions to create customized programs		
			PRESET PROGRAMS; 59 specific programs for functional rehabilitation and pain		
			FAST MENU: makes navigation faster		
			SYNCRO-STIM: increase the intensity of the 2 channels simultaneously using only one button.		
			BACKLIT DISPLAY: the clearly legible LCD display contributes to optimal usability and ease-of-operation		
			BATTERY OPERATED		
			<b>Standard accessories included:</b>		
			Carrying bag		
			2 Cables for electrode connection		
			4 Self-adhesive square electrodes (50x50mm)		
			4 Self-adhesive rectangular electrodes (50x90mm)		
			Charger		
			User manual		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.5</b>	<b>2</b>	<b>Nos</b>	<b>SHOCKWAVE</b>		
			Dosage / Energy settings: 60 mJ to 180 mJ in steps of 10 and 180 mJ - 185mJ (at 16 Hz maximum 120 mJ and at 22 Hz maximum 90 mJ).		



			In comparison with a pressure-driven unit this is: 1 / 2 / 3 and 5 Bar.		
			Save and update: on SD cards Handpiece: Ergonomic, anodised aluminium housing.		
			Dimensions device: length 35 cm, width 25 cm, height 14 cm Dimensions handpiece: length 23 cm, 5 cm diameter		
			Weight device appr. 2,7 kg		
			Weight handpiece: appr. 0.85 kg (with cable) Service life: minimum of 2,000,000 shots		
			Applicators: 6 mm, 15 mm and 25 mm diameter, with a minimum life time of 150,000 shots		
			Electrical connection: 100 – 240 VAC / 50-60Hz 2.5A		
			Approvals: IEC/ EN 60601-1		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.6</b>	<b>2</b>	<b>Nos</b>	<b>PORTABLE PERCUSSION MASSAGE GUN</b>		
			portable percussion massage gun		
			Powered by a long-lasting lithium ion battery		
			cordless		
			Quiet Glide technology		
			Weight: 2.5 lbs		
			Battery Life: Up to 3 hours		
			Battery Type: Lithium ion		
			Speed: Up to 3,200 percussions per minute		
			Interchangeable heads: 5		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>RECOVERY EQUIPMENT</b>					

<b>C3.7</b>	<b>2</b>	<b>Sets</b>	<b>THERMAL REGULATED PNEUMATIC COMPRESSION</b>		
			Three settings of cyclical pneumatic (air) compression		
			-High (5 to 75 mm Hg) Approximately 2 to 3 minutes of inflation and 1 minute of deflation.		
			-Medium (5 to 50 mm Hg) Approximately 2 to 3 minutes of inflation and 1 minute of deflation.		
			-Low (5 to 15 mm Hg) Approximately 4 to 5 minutes of inflation and 1 minute of deflation.		
			ADJUSTABLE SET-POINT COLD: between 35°F to 50°F		
			DIGITAL TIMER & PRESET PROTOCOLS: upto 90minutes		
			Dimensions: 7.5" W x 16" L x 7.75" H (19cm W x 40.6cm L x 19.7cm H)		
			Weight: (Empty) 7.3 lbs (3.3kg)		
			Hose Connections: 1 port		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.8</b>	<b>1</b>	<b>Set</b>	<b>INFLATABLE ICE BATH SYSTEM</b>		
			Portable and Inflatable Mobile Pool with water capacity of 170 liters		
			Equipped with portable fast cooling machine		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>TRACTION AND SPINE AREA</b>					
<b>C3.9</b>	<b>1</b>	<b>Nos</b>	<b>CERVICAL AND LUMBAR MECHANICAL TRACTION MACHINE</b>		
			Form of therapy: Static, Intermittent, Pro- and Regressive, Cyclic		
			Traction force: 15 - 900 N / 1.5 - 90 kg / 3.4 - 202 Lbs		
			Traction force / base force hold time: 1 sec. - 1 hour (1 sec. intervals) Repeats (intermittent and cyclic): 1 - 100		
			Steps hold time (pro- and regressive): 1 sec.- 5 min. (1 sec. intervals)		

			Steps (pro- and regressive): 1 - 25 Speed (change of traction force): 1 - 50 N/sec. (1 N intervals) 0.1 - 5.0 kg/sec. 0.2 - 11.2 Lbs/sec.		
			Treatment time: 1 sec. - 150 min.		
			Programmable favorites: 100+		
			Clinical protocols: Yes (3)		
			Sequential programming: Yes (up to 5 forms of therapy)		
			Safety control for traction force above: 200 N / 20 kg / 45.2 Lbs		
			Touch screen: 4.3 inch, full colour, capacitive		
			Mains voltage: 100 - 240 V (50/60 Hz)		
			Max. power consumption: 50 VA		
			Dimensions: 30 x 34 x 22 cm		
			Weight: 10 kg		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.10</b>	<b>1</b>	<b>Nos</b>	<b>TRACTION BED</b>		
			Safe working load and lifting capacity of 240Kg		
			Integral rolling top design to provide effective application of traction forces		
			Adjustable height mount for traction machine with offset positioning for changing angle of traction application		
			Adjustable angle backrest from horizontal to +80°		
			Adjustable angle head/foot section from -25° to +75°		
			Head section includes breathing hole and plug		
			Power assisted backrest and foot sections incorporate anti-trap design		
			Choice of hydraulic or electric height elevation		

			Excellent height range from 50cm to 101cm		
			Retractable wheel design with adjustable foot for stability on uneven surfaces		
			Fixation point for optional cervical traction accessory		
			Purpose made precision bearings on all pivot points		
			Hand switch fitted as standard on electric models		
			Standard width 70cm upholstery		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		

### **FUNCTIONAL AND EXERCISE EQUIPMENT**

<b>C3.11</b>	<b>1</b>	<b>Nos</b>	<b>PARALLEL BARS</b>		
			7 ft. Platform Mounted Parallel Bars		
			Width Range: 18" - 28"		
			Height Range: 26" - 39"		
			CLI-3-2007 Shipping : 2 packages - 1 package weighing 103 lbs. measuring 97" x 41" x 6" and 1 package weighing 110 lbs. measuring 86" x 10" x 9"		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.12</b>	<b>1</b>	<b>Set</b>	<b>MEDICINE BALLS (ALL SIZES)</b>		
			Physioball, Ø 85 mm		
			Physioball, Ø 95 mm		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.13</b>	<b>1</b>	<b>Set</b>	<b>VINYL COATED DUMBBELL</b>		
			Dumb-bell, 1 kg, set of 2 Dumb-bell, 2 kg, set of 2		

			Dumb-bell, 3 kg, set of 2		
			Dumb-bell, 4 kg, set of 2		
			Dumb-bell, 5 kg, set of 2		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.14</b>	<b>1</b>	<b>Set</b>	<b>CUFF WEIGHTS</b>		
			Wristlet 3,5 kg		
			Wristlet 5,0 kg		
			Wristlet 0,5 kg		
			Wristlet 1,0 kg		
			Wristlet 2,0 kg		
			Wristlet 3,0 kg		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.15</b>	<b>1</b>	<b>Set</b>	<b>RESISTANCE BANDS</b>		
			Rep exercise band level 1 peach 5,5 m		
			Rep exercise band level 2 orange 5,5 m		
			Rep exercise band level 3 green 5,5 m		
			Rep exercise band level 4 blue 5,5 m		
			Rep exercise band level 5 purple 5,5 m		
			Rep exercise band level 1 peach 45 m		
			Rep exercise band level 2 orange 45 m		
			Rep exercise band level 3 green 45 m		
			Rep exercise band level 4 blue 45 m		

			Rep exercise band level 5 purple 45 m		
			Dispenser for 5 rolls		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.16</b>	<b>1</b>	<b>Set</b>	<b>PLYOMETRIC BOX</b>		
			- Heavy-duty firm foam construction allows for added stability		
			- Soft material helps prevent injury		
			- Slip-free surface		
			- No assembly required		
			- Rotate the box for more challenging heights		
			Overall Height: 16"		
			Foam: Foam		
			Overall Width: 18"		
			Weight Capacity: 330 lbs.		
			Overall Length 20"		
			Product Weight: 24 lbs.		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.17</b>	<b>1</b>	<b>Set</b>	<b>COGNITIVE &amp; COORDINATION TRAINING PLATFORM</b>		
			commercial software license for sports, fitness, brain health, and education applications:		
			- 8 folders of gamified categories with variable difficulties and challenges, including: tack, seek (multiple choices), metronome, Go-no-Go, memory spelling, wquations, and more - turnkey programming - trainer-client management capability - easy customisable programming design and reporting/exporting options		

			1 CPU controller		
			1 interactive system made up of 2 joined 46"x46" panels		
			9 IED multi-functional targets - 16"x16" dot matrix		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>TREATMENT AREA</b>					
<b>C3.18</b>	<b>2</b>	<b>Nos</b>	<b>TREATMENT TABLE</b>		
			Safe working load and lifting capacity of 240Kg		
			Power assisted head section is adjustable from -25° to +75°		
			Power assisted backrest adjustable from horizontal to 80°		
			Head section and backrest incorporate anti-trap design		
			Choice of hydraulic or electric height elevation		
			Excellent height range from 45cm to 98cm		
			Retractable wheel design with adjustable foot for stability on uneven surfaces		
			Breathing hole and plug included as standard		
			Purpose made precision bearings on all pivot points		
			Clearance beneath frame for mobile hoist		
			Hand switch fitted as standard on electric models		
			65cm wide upholstery finished with standard vinyl/hessian backing or...		
			Easy Clean Upholstery only available on standard & basic head models at width of 70cm only.		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.19</b>	<b>4</b>	<b>Nos</b>	<b>ERGO CHAIR</b>		
			Safe working load and lifting capacity of 150Kg		

			Manufacturer's 5 Year Warranty		
			Choice of height range - 45cm-59cm or 54cm-74cm		
			360° Swing Around Arm fitted as standard		
			All-Round Height Adjustment Ring beneath seat		
			Foot Support Ring fitted as standard on High Model MC6163		
			Chrome-finished gas strut & base		
			Seat Pad Dimensions: 400mm x 400mm x 90mm		
			Choice of 15 Standard Upholstery Colours		
<b>C3.20</b>	<b>2</b>	<b>Nos</b>	<b>WORKING TABLE</b>		
			Office table in Melamine finish.		
			Wood Grain Cherry finish		
			Contemporary Chamfered edges		
			25mm thick laminated board with ducknose edging		
			1.25 inches thick table leg profile		
			center drawer and side drawer		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>HYDRO ROOM</b>					
<b>C3.21</b>	<b>1</b>	<b>Nos</b>	<b>HYDROCOLLATOR</b>		
			UL Safety Certified		
			220V AC, 60Hz, 1,500W Max.		
			Volume: 80 Liters		
			Capacity: 12 Hot Moist Packs		



			Internal Size: 50x38x45cm (WxDxH)		
			External Size: 58.5x47x71cm		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.22</b>	<b>1</b>	<b>Nos</b>	<b>FREEZER</b>		
			3.5 cu. ft		
			2 Years Warranty on Parts & Service		
			10 Year Warranty on Compressor		
<b>C3.23</b>	<b>2</b>	<b>Sets</b>	<b>HOTPACKS (ALL SIZES)</b>		
			570x170mm (450g)		
			395x300mm (850g)		
			490x300mm (1.15kg)		
			580x300mm (1.3kg)		
			580x350mm (1.4kg)		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.24</b>	<b>10</b>	<b>Nos</b>	<b>COLDPACKS</b>		
			230x130mm Gel Type		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		
<b>C3.25</b>	<b>1</b>	<b>Nos</b>	<b>PARAFFIN WAX BATH</b>		
			Size: 33 * 27 * 19cm		
			Capacity: 2.8L		
			Power: 200w		
			Temperature range: 45-60 degrees Celsius		
			Warranty Period: in accordance with the manufacturer's warranty period, not less than 12 months		

			The Bidder is required to submit <b>Product Brochures</b> or other related/equivalent documents containing the description of all the items under this lot.		
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# TECHNICAL SPECIFICATIONS

## Lot D

Bidders must indicate whether the goods and equipment offered are “Compliant” or “Non-Compliant” to the corresponding specifications prescribed by BCDA using this form.

<b>SUPPLY, DELIVERY AND INSTALLATION OF GOODS AND EQUIPMENT FOR THE NATIONAL ACADEMY OF SPORTS (NAS) - PHASE 1 AT NEW CLARK CITY</b>					
<b>TECHNICAL SPECIFICATIONS COMPLIANCE FORM</b>					
LOT	ITEMS	UNIT	SPECIFICATIONS	COMPLIANCE	
				Compliant	Non-compliant
<b><i>SUPPLY, DELIVERY AND INSTALLATION OF CLASSROOM FURNITURE</i></b>					
<b>D1.1</b>	<b>720</b>	<b>Nos</b>	<b>COLLABORATIVE STUDENT DESK</b>		
			·Trapezoid student desk are available for a 6 desk grouping (approx. 6' Circle)		
			·16-gauge steel tube frame are available in 30" fixed height		
			Size:700*500*780mm;		
			Hollow out metal book box with powder coating iron wire;		
			25 mm MDF Wood with laminated film or Curved Plywood with laminated is optional for Desk Board;		
			Injected PU Edge, protect the student hurt from crashing the desk;		
			Arched feet make more stable put on the floor,with non-slip glide;		
			Pen groove involved.		
			WARRANTY: <b>DepEd School Furniture 8-Year Replacement Program:</b> Compliance With the Mandatory Neutral School Desks Law, Readiness for Information Technology Devices, and Flexibility to Address Social Distancing		
<b>D1.2</b>	<b>720</b>	<b>Nos</b>	<b>STUDENT CHAIR</b>		
			Size: 380*400*460mm;		

			Frame: 1.2mm thick oval steel tube with pantone color powder coating;		
			Original Blown PP chair seat and chair back, with micro hole for breathable.		
			WARRANTY: <b>DepEd School Furniture 8-Year Replacement Program:</b> Compliance With the Mandatory Neutral School Desks Law, Readiness for Information Technology Devices, and Flexibility to Address Social Distancing		

<b>SUPPLY, DELIVERY AND INSTALLATION OF GOODS AND EQUIPMENT FOR THE NATIONAL ACADEMY OF SPORTS (NAS) - PHASE 1 AT NEW CLARK CITY</b>					
<b>TECHNICAL SPECIFICATIONS COMPLIANCE FORM</b>					
LOT	ITEMS	UNIT	SPECIFICATIONS	COMPLIANCE	
				Compliant	Non-compliant
<b>SUPPLY, DELIVERY AND INSTALLATION OF OFFICE EQUIPMENT</b>					
D2.1	4	Nos	<b>BINDING MACHINE</b>		
			Heavy Duty Comb Ring Binding Machine (A3 SIZE)		
			<b>Free Service Warranty: 2 years</b>		
D2.2	4	Nos	<b>PAPER SHREDDER MACHINE</b>		
			Micro-Cut shredders		
			<b>Free Service Warranty: 2 years</b>		
D2.3	4	Nos	<b>PAPER TRIMMER CUTTING MACHINE</b>		
			Paper Trimmer Electron A3 9 (Manual)		
			<b>Free Service Warranty: 2 years</b>		
D2.4	4	Sets	<b>Floor Mounted (Tight Fit UV)</b>		
			Floor Mounted (Tight Fit UV)		
			<b>Warranty on all parts: 5 years</b>		

<b>D2.5</b>	<b>10</b>	<b>Sets</b>	<b>Infrared Thermal Scanner w/ stand, K3</b>		
			Temperature measurement: Front if the thermometer and approach it with in 5-10cm Celsius temperature or Fahrenheit temperature display Alarm setting Language settings Volume settings Automatic Shut down : A1 Mode ; A0 Mode (always on)		
			Screen : Digital Display Accuracy : ±0.2 Degree Response time : 0.5s Abnormal Automatic Alarm : Flashing+voice Automatic Measurement : Measuring Distance 5~10cm Input : USB DC4.2-5V Infrared Measuring Range : 0°C ~50°C Environment Temperature : 10°C~40°C Weight : 227g Dimension : 155 x 104 x 84mm Standby : About One week Thermometer Scanner Stand User manual		
			<b>Warranty: 12 months</b>		
<b>D2.6</b>	<b>10</b>	<b>Sets</b>	<b>Non-Contact Infrared Forehead Thermometer</b>		
			Non Contact Thermometer Forehead / Infrared Colour Screen Indicator Green – Less than 37.4C Orange – 37.5-37.9C Red – Greater than 38C 1 Second fast response Memory records 20 sets Auto Standby		
			<b>Warranty: 12 months</b>		
<b>D2.7</b>	<b>30</b>	<b>Sets</b>	<b>AUTOMATIC ALCOHOL DISPENSER WITH STAND</b>		
			Personal Protective Automatic Alcohol Dispenser with Stand Continuous Spraying Function The Infrared Sensor Helps To Remove The Liquid Immediately, Preventing The Transmission Of Contact-Induced Bacteria. The Automated Power-Saving Chip Is Environmentally Friendly And Cost-Effective, Feasible For Use In Public Circumstances. The Automatic Disinfection Machine Is Easy To Operate, Widely Suitable For Train Station, Office, Mall, Hospital, Gym, And Restaurant And So On. Capacity: 1000ml Battery: 4pcs Batteries (not included) DC Power supply (included) Size: 12.5*11.1*26cm/ 4.91*4.36*10.22inch (L*W*H)		
			<b>Warranty: 12 months</b>		
<b>D2.8</b>	<b>4</b>	<b>Sets</b>	<b>ULV Generator Misting Machine Cold Fogger</b>		
			QUALITY: *Manufactured from strong durable resistant thermoplastics *More powerful electric motor *Producing greater aerosol volume at higher velocity *More uniform droplet spectrum *Droplet size can be regulated by increasing or decreasing the solution flow.		
			ADVANTAGES: *Range of application includes space and surface treatment *Easy handling and operation of the unit *Range of the fog is deeper than with		

			comparable units *Ideal equipment for the application of insecticides, disinfectants, etc. *Highly versatile		
			This unit is equipped with a 700 Watt electric motor producing greater aerosol volume at higher velocity with deeper penetration. fitted with an infinitely adjustable flow regulator enabling different output quantities.		
			<b>Manufacturer Warranty: 3 years</b>		
<b>D2.9</b>	<b>10</b>	<b>Sets</b>	<b>Atomizing Disinfection Gun of Blue Nano Disinfection Sprayer</b>		
			Product Parameters: Color: White Product Material: ABS+Hardware Product size: 23.5*7*22 Water Tank Capacity: 800ml Product Power: 10W Rated Voltage: 110V-240V/50HZ Output Voltage: DC 12V battery capacity: 2600mah Charging Time 2h Use time: 3 hours Product Use: Remove formaldehyde, Sterilize, Remove peculiar smell, Purify the air Packing List: Spray gun*1 ,USB charging cable*1, English manual*1		
			<b>Warranty: 12 months</b>		
<b>D2.10</b>	<b>20</b>	<b>Nos</b>	<b>Coffee Maker</b>		
			300ml Capacity Grind and Brew Coffeemaker One-touch switching Weight 1.7 kg Dimensions 24.5 × 17 × 29.3 cm Compact Size for 1 – 2 cups Grind and Brew Coffeemaker Drip coffee type 300ml Capacity One-touch switching Easy to clean Detachable Water Tank Power: 600 Watts Voltage: 110V 50 / 60Hz 1 Year Warranty on Parts & Service		
			<b>Warranty: 12 months</b>		
<b>D2.11</b>	<b>10</b>	<b>Nos</b>	<b>Coffee Vending Machines</b>		
			Dimension : 300*560*690mm Power : 1600W After-sales Service Provided : Online support, Free spare parts, Field maintenance and repair service, Field installation, commissioning and training, Video technical support Warranty : 1 Year colour : black or white drink selection : Three hot drinks powder : instant powder only water supply : top of machine or water pump canister : 3 canister canister capacity : 2kg selling : main in south of asia heater boiler : 1.6L heater highest temperature : 95-98degree machine meterial : metal		
			<b>Warranty: 12 months</b>		
<b>D2.12</b>	<b>10</b>	<b>Nos</b>	<b>Microwave Oven</b>		
			30 Liters Microwave Oven Digital LED display Push button/knob controls with electronic clock Stainless steel body with mirrorized front 10 program settings 5 microwave power levels Express cooking Auto defrost setting Turntable glass plate Easy-to-clean grey enamel coating Child safety lock Output power: 900 watts Power		

			Supply: 220v / 5.0A / 60Hz 1 Year Warranty on Parts & Service		
			<b>Warranty: 12 months</b>		
<b>D2.13</b>	<b>1</b>	<b>Nos</b>	<b>Weighing Scale with Height &amp; Weight</b>		
			Superior Accuracy		
			Heavy duty understructure		
			Die cast beam, and aluminum on black insert		
			Easily read from either side		
			Factory assembled		
			Capacity: 400 lb x 4 oz (180 kg x 100 g)		
			Platform Size: 10-1/2 x 14-1/2 inches (267 x 368 mm)		
			Height Rod: Measures 30-78 inches (76-198 cm)		
			Scale height: 59 inches (1.5 m)		
			Cartoon size: Height: 57" x Width: 19 1/2" x Length: 5 1/2"		
			20kg		
			<b>Warranty: 3 years</b>		
<b>D2.14</b>	<b>1</b>	<b>Set</b>	<b>DENTAL CHAIR &amp; ACCESSORIES</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Auto spittoon flush and cup filler control system-3-program control system-Assistant control system-Luxurious cuspidor-Saliva ejector with strong and weak suction-High-grade articulated headrest-Purified water supply system-3-way syringe (cold/hot water)-LED film viewer-Multi-functional foot pedal-LED operating lamp with sensor-Dentist stool DF-201A-High Resilience Foam + Seamless PU leather cushion-Instrument tray: low-mounted-Full function Control Panel-Reflecting LED lamp-3-Memory Position-Power voltage: 220V – 60Hz-Motor Voltage: 24V-Air Pressure: 0.2 Mpa – 0.4 Mpa-Max. Loading Capacity 180 KG-Height range of patient chair: 380-800mm		

			<b>Warranty Period: 20 years</b>		
<b>D2.15</b>	<b>12</b>	<b>Nos</b>	<b>4.0 cu.ft. Personal Refrigerator</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Weight: 26 kg		
			Dimensions: 54.2 × 53.2 × 89 cm		
			4.0 cu. ft. Personal Refrigerator		
			Manual Defrost		
			Full-Width Door Racks		
			Crisper Pan		
			Refrigerant R600A		
			Adjustable Leveler		
			Recessed Handle		
			Scratch Proof Cabinet		
			Tempered Glass Shelves		
			LED Light		
			2 Years Warranty on Parts & Service		
			10 Year Warranty on Compressor		
<b>D2.16</b>	<b>4</b>	<b>Nos</b>	<b>8.0 cu.ft. Top Freezer Two Door Refrigerator</b>		
			<b>Qualification of the Bidder</b>		
			The bidder must be capable of providing after sales service within service centers in Region III or National Capital Region		
			Weight: 42 kg		



			Dimensions: 58.5 × 55.5 × 152 cm		
			8.0 cu.ft. Two Door No-Frost Refrigerator		
			Smart Inverter Compressor		
			Tempered Glass Shelf		
			Transparent Door Basket		
			Vegetable Bin		
			Multi-Air Flow		
			Deodorizer		
			Egg Tray		
			Deodorizer		
			LED Lights		
			R600a Refrigerant		
			2 Years Warranty on Parts & Service		
			10 Year Warranty on Compressor		
<b>SUPPLY, DELIVERY AND INSTALLATION OF GOODS AND EQUIPMENT FOR THE NATIONAL ACADEMY OF SPORTS (NAS) - PHASE 1 AT NEW CLARK CITY</b>					
<b>TECHNICAL SPECIFICATIONS COMPLIANCE FORM</b>					
LOT	ITEMS	UNIT	SPECIFICATIONS	COMPLIANCE	
				Compliant	Non-compliant
<b>SUPPLY, DELIVERY AND INSTALLATION OF OFFICE FURNITURE AND FIXTURES</b>					
D3.1	2	Nos	<b>EXECUTIVE OFFICE TABLE - TYPE 1</b>		
			Main Table: 2200mm L x 900mm D x 750mm Ht		
			Side Cabinet: 1400mm L x 450mm D x 650mm Ht		

			Table top and legs : 50mm thick board		
			Sidings in 2mm PVC edge band		
			Carcass: Melamine		
			Finish: HPL Laminated available in more than 100 finishes		
			Inclusion:		
			With built in 1 wire management top cover in silver aluminum finish (16cm L x 8cm D)		
			With 3 drawer cabinet with central lock mechanism in soft closed		
			With 2 sliding door cabinet with lock and key		
			With 2 layer opens shelves at back cabinet area		
			Adjustable feet leveler		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.2</b>	<b>2</b>	<b>Nos</b>	<b>EXECUTIVE OFFICE TABLE - TYPE 2</b>		
			Main Table: 2200mm L x 900mm D x 750mm Ht		
			Side Cabinet: 1400mm L x 450mm D x 650mm Ht		
			Table top and legs : 50mm thick board		
			Sidings in 2mm PVC edge band		
			Carcass: Melamine		
			Finish: HPL Laminated available in more than 100 finishes		
			Inclusion:		
			With built in 1 wire management top cover in silver aluminum finish (16cm L x 8cm D)		
			With 3 drawer cabinet with central lock mechanism in soft closed		
			With 2 sliding door cabinet with lock and key		

			Metal legs: 1×3 metal steel in customized powder coated finish		
			Adjustable feet leveler		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.3</b>	<b>1</b>	<b>Nos</b>	<b>EXECUTIVE CONFERENCE TABLE</b>		
			Main Table: 4800mm L x 1200mm D x 750mm Ht		
			Table top : 50mm thick board		
			Sidings in 2mm PVC edge band		
			Carcass: Melamine		
			Finish: HPL Laminated available in more than 100 finishes		
			Inclusion:		
			Adjustable feet leveler		
			Wire management is optional		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.4</b>	<b>4</b>	<b>Nos</b>	<b>EXECUTIVE CHAIR</b>		
			Specifications (WDH): 610 mm x 740 mm x 1,120 mm		
			Height Adjustable up to:		
			Seat (Off the Ground): 600 mm		
			Chair: 1,180 mm		
			Polyurethane Upholstered		
			Chrome Base		
			Nylon Casters		
			Gas Lift		

			Tilt-Lock Mechanism		
			Chrome Armrests		
			Available Colors: Black		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.5</b>	<b>20</b>	<b>Nos</b>	<b>EXECUTIVE VISITORS CHAIR</b>		
			Specifications (WDH): 650mm x 650mm x 950 mm		
			Upholstered in Black leatherette		
			Seat: Density Mold Foam Cushion Fabric Seat		
			Armrest: PU		
			With tilting mechanism		
			Base: Metal sled chrome Base		
			Available Colors: Black		
			Weight capacity: 120kg		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.6</b>	<b>32</b>	<b>Nos</b>	<b>OFFICE TABLE - TYPE 1</b>		
			Main Table: 1800mm L x 800mm D x 750mm Ht		
			Side Cabinet: 1000mm L x 400mm D x 750mm Ht		
			Structure: Melamine		
			Finish: Dark Cherry with White front cabinet carcass		
			Top +legs : 25mm thick board		
			Side cabinet carcass in 18mm thick melamine board		
			Sidings in 2mm PVC edge band		
			3 Drawers: 45cm L x 45cm D x 60cm H		

			3 drawer cabinet and 2 swing door cabinet 100cm W x 40cm D x 60cm H		
			Max Weight Capacity 80Kg		
			Features:		
			With built in 1 wire management PVC grommet		
			Aluminum Bar type handles		
			Metal Brackets		
			3 drawer cabinet in central lock mechanism		
			Adjustable feet leveler		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.7</b>	<b>106</b>	<b>Nos</b>	<b>OFFICE TABLE - TYPE 2</b>		
			Main Table: 1500mm L x 600mm D x 750mm Ht		
			Table top and legs : 25mm thick board		
			Cabinet carcass: 18mm thick board		
			Sidings in 2mm PVC edge band		
			Carcass: Melamine		
			Finish: MFC Laminated available in 9 finishes		
			Inclusion:		
			With 1 PVC grommet for wire way		
			Adjustable feet leveler		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.8</b>	<b>66</b>	<b>Nos</b>	<b>OFFICE CHAIR - TYPE 1</b>		
			Specifications (WDH): 750 mm x 650 mm x 1,040 mm		

			Polyurethane Upholstered		
			Nylon Base		
			Polyurethane Casters		
			Gas Lift		
			Tilt-Lock Mechanism		
			Padded Polyurethane Armrests		
			Available Colors: Black		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.9</b>	<b>194</b>	<b>Nos</b>	<b>OFFICE CHAIR - TYPE 2</b>		
			Mid back office chair		
			Specifications (WDH): 660mm x 660mm x 905 mm		
			Height Adjustable up to: 940 mm		
			Back Rest: PU Leather Finish		
			Seat: PU Leather Finish		
			With tilting mechanism		
			Base: Steel Chrome Base		
			Casters: Floor-safe PU Casters		
			Available Colors: Black		
			Weight capacity: 120kg		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.10</b>	<b>130</b>	<b>Nos</b>	<b>OFFICE CHAIR - TYPE 3</b>		
			Mid back office chair		
			Specifications (WDH): 630mm x 567mm x 920mm		

			Height Adjustable up to: 950 mm		
			Back Rest: Mesh Fabric in Nylon Fiberglass Frame is		
			Seat: Density Mold Foam Cushion Fabric Seat		
			Armrest: PU Adjustable		
			With tilting mechanism		
			Base: Aluminum Star Base		
			Casters: Floor-safe PU Casters		
			Available Colors: Black		
			Weight capacity: 105kg		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.11</b>	<b>44</b>	<b>Nos</b>	<b>OFFICE VISITORS CHAIR</b>		
			Dimension: 440 mm L x 575 mm W x 828 mm H		
			Mid Back Leather Finish Chair		
			Sled Legs in high quality steel Chrome Finish		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.12</b>	<b>3</b>	<b>Nos</b>	<b>SOFA 3-SEATER (TYPE 1)</b>		
			2000mm L x 700mm D x 850mm Ht.		
			Customize: Fabric/ German leatherette fin.		
			Uratex foam with tufting at the back		
			Legs: Solid wood mahogany duco paint fin		
			Inclusive of 2 pillows in standard size 450mm D x 450mm W		
			<b>WARRANTY</b> <b>Workmanship (body/ stitching) : 5 years</b> <b>Fabric : 1 year</b>		

<b>D3.13</b>	<b>5</b>	<b>Nos</b>	<b>SOFA SINGLE-SEATER (TYPE 1)</b>		
			600mm L x 650mm D x 800mm Ht.		
			Customize: Fabric/ German leatherette fin.		
			Uratex foam with tufting at the back		
			Legs: Solid wood mahogany duco paint fin		
			Inclusive of 1 pillows in standard size 450mm D x 450mm W		
			<b>WARRANTY</b> <b>Workmanship (body/ stitching) : 5 years</b> <b>Fabric : 1 year</b>		
<b>D3.14</b>	<b>6</b>	<b>Nos</b>	<b>SOFA 3-SEATER (TYPE 2)</b>		
			2000mm L x 700mm D x 850mm Ht.		
			Customize: Fabric/ German leatherette fin.		
			Uratex foam with tufting at the back		
			Legs: Solid wood mahogany duco paint fin		
			Inclusive of 2 pillows in standard size 450mm D x 450mm W		
			<b>WARRANTY</b> <b>Workmanship (body/ stitching) : 5 years</b> <b>Fabric : 1 year</b>		
<b>D3.15</b>	<b>4</b>	<b>Nos</b>	<b>CENTER TABLE</b>		
			Table top : 10mm thick tempered tinted glass in polished edge		
			Carcass: 25mm Melamine		
			Finish: HPL Laminated available in 100 plus finishes		
			Inclusion:		
			Adjustable feet leveler		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.16</b>	<b>8</b>	<b>Nos</b>	<b>SIDE TABLE</b>		



			Table top : 10mm thick tempered tinted glass in polished edge		
			Carcass: 25mm Melamine		
			Finish: HPL Laminated available in 100 plus finishes		
			Inclusion:		
			Adjustable feet leveler		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.17</b>	<b>11</b>	<b>Nos</b>	<b>MEETING TABLE - RECTANGULAR</b>		
			Main Table: 2400mm L x 1200mm D x 750mm Ht		
			Table top : 25mm thick board		
			Sidings in 2mm PVC edge band		
			Carcass: Melamine		
			Finish: HPL Laminated available in more than 100 finishes		
			Metal legs: 2x2 metal steel in customized powder coated finish		
			Inclusion:		
			Adjustable feet leveler		
			Wire management is optional		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.18</b>	<b>12</b>	<b>Nos</b>	<b>MEETING TABLE - SQUARE</b>		
			Main Table: 1200mm L x 1200mm D x 750mm Ht		
			Table top : 25mm thick board		
			Sidings in 2mm PVC edge band		
			Carcass: Melamine		

			Finish: HPL Laminated available in more than 100 finishes		
			Metal legs: 2x2 metal steel in customized powder coated finish		
			Inclusion:		
			Adjustable feet leveler		
			Wire management is optional		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.19</b>	<b>3</b>	<b>Nos</b>	<b>MEETING TABLE - ROUND</b>		
			Main Table: 1200mm D x 750mm Ht		
			Table top : 25mm thick board		
			Sidings in 2mm PVC edge band		
			Carcass: Melamine		
			Finish: HPL Laminated available in more than 100 finishes		
			Metal legs: 1x3 metal steel in customized powder coated finish		
			Inclusion:		
			Adjustable feet leveler		
			Wire management is optional		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
			<b>FOLDING TABLE</b>		
<b>D3.20</b>	<b>4</b>	<b>Nos</b>	TYPE 1 : 1200mm L x 400mm D x 750mm Ht.		
<b>D3.21</b>	<b>2</b>	<b>Nos</b>	TYPE 2 : 1600mm L x 400mm D x 750mm Ht.		
<b>D3.22</b>	<b>2</b>	<b>Nos</b>	TYPE 3 : 1800mm L x 400mm D x 750mm Ht.		
			Structure: Melamine		

			Finish: MFC Laminated available in White/ Light grey finish only		
			Top : 25mm thick board		
			Legs: Metal legs in 2mm thick in black powder coated finish		
			With caster wheel		
			Sidings in 2mm PVC edge band		
			Max Weight Capacity 40Kg		
			<b>Warranty of at least minimum 5 years</b>		
<b>D3.23</b>	<b>24</b>	<b>Nos</b>	<b>FACULTY WORKSTATION DESK</b>		
			Size for 1 pax:		
			Main table: 1500mm L x 600mm D x 750mm Ht; Side table: 1200mm L x 450mm D x 750mm Ht		
			Specifications:		
			Structure: Melamine		
			Finish: MFC Laminated available in 9 finishes		
			Top : 25mm thick board		
			Legs: Metal steel 1×3 in customized powder coated finish		
			Sidings in 2mm PVC edge band		
			Features:		
			With built in grommet wire management for each staff		
			Metal Brackets		
			Adjustable feet leveler		
			<b>Warranty of at least minimum 5 years</b>		
<b>D3.24</b>	<b>80</b>	<b>Nos</b>	<b>STUDENT LOCKER CABINET</b>		

			6 Doors Metal Locker Cabinet (2 tune)		
			Built-In Steel Handles		
			Built-In Cardholders		
			Louvers per Door		
			Padlock Hasps per Door		
			Hanger Rod and Shoe Rack		
			Dimensions: 72" H x 36" W x 18" D		
			Opening: 31-1/2" H x 10" W		
			Color: Beige / Gray		
			Finish: Powder Coated (Plain)		
			Thickness: 0.6 / 0.7		
			Option (s): Individual Lock / Individual Combination Lock / Multi-colored Doors		
			<b>WARRANTY: Rust proofed material: 5 years</b>		
<b>D3.25</b>	<b>50</b>	<b>Nos</b>	<b>STEEL FILING CABINET</b>		
			STEEL FILING CABINET - LATERAL (4S)		
			4 Drawers with Lock		
			Full Extension Ball Bearing Drawer Slides		
			Provision for Vertical and Horizontal Filing		
			1 Vertical Steel Divider per Drawer		
			Dimensions: 52" H x 33-1/8" W x 18" D		
			Color: Beige / Gray / Light Gray		
			Finish: Powder Coated (Plain)		

			Thickness: 0.7		
			Option (s): Double Rail / Combination Lock / Multi-colored Handles		
			<b>WARRANTY: Rust proofed material: 5 years</b>		
<b>D3.26</b>	<b>40</b>	<b>Nos</b>	<b>LOW HEIGHT SHELVING CABINET - CLOSED</b>		
			Dimension: 1400mm L x 500mm D x 1000mm H		
			Material: MDF		
			Color: Wenge or Cherry or Old Rose		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.27</b>	<b>20</b>	<b>Nos</b>	<b>LOW HEIGHT SHELVING CABINET - OPEN</b>		
			Dimension: 1400mm L x 500mm D x 1000mm H		
			Material: MDF		
			Color: Wenge or Cherry or Old Rose		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D3.28</b>	<b>20</b>	<b>Nos</b>	<b>PRINTER CABINET WITH OPEN SHELVINGS</b>		
			Dimension: 1200mm L x 600mm D x 1000mm H		
			Material: MDF		
			Color: Wenge or Cherry or Old Rose		
			<b>Lifetime Warranty of at least minimum 5 years</b>		

**SUPPLY, DELIVERY AND INSTALLATION OF GOODS AND EQUIPMENT FOR  
THE NATIONAL ACADEMY OF SPORTS (NAS) - PHASE 1  
AT NEW CLARK CITY**

**TECHNICAL SPECIFICATIONS COMPLIANCE FORM**

LOT	ITEMS	UNIT	SPECIFICATIONS	COMPLIANCE	
				Compliant	Non-compliant

**SUPPLY, DELIVERY AND INSTALLATION OF KITCHEN EQUIPMENT & DINING HALL FURNITURE**

<b>D4.1</b>	<b>80</b>	<b>Nos</b>	<b>DINING TABLE SQUARE - OUTDOOR</b>		
			Material: Plastic/ Wood		
			Color: White/ Natural		
			Dimension: L30" x D30" x H29.15"		
			Foldable Metal Legs		
			With UV Protection		
			<b>Warranty: 12 months</b>		
<b>D4.2</b>	<b>250</b>	<b>Nos</b>	<b>DINING CHAIR- OUTDOOR</b>		
			Color: Black, Blue and Red		
			Dimension: H80cm x W45cm		
			Material: Plastic		
			Metal Legs		
			With UV Protection		
			<b>Warranty: 12 months</b>		
<b>D4.3</b>	<b>10</b>	<b>Nos</b>	<b>DINING TABLE SQUARE - INDOOR</b>		
			Material: Plastic/ Wood		

			Color: White/ Natural		
			Dimension: L30" x D30" x H29.15"		
			Foldable Metal Legs		
			With UV Protection		
			<b>Warranty: 12 months</b>		
<b>D4.4</b>	<b>10</b>	<b>Nos</b>	<b>DINING TABLE RECTANGLE - INDOOR</b>		
			Material: Plastic/ Wood		
			Color: White/ Natural		
			Dimension: L72" x D30" x H29.15"		
			Foldable Metal Legs		
			With UV Protection		
			<b>Warranty: 12 months</b>		
<b>D4.5</b>	<b>100</b>	<b>Nos</b>	<b>DINING CHAIR- INDOOR</b>		
			Color: Black, Blue and Red		
			Dimension: H80cm x W45cm		
			Material: Plastic		
			Metal Legs		
			With UV Protection		
			<b>Warranty: 12 months</b>		
<b>D4.6</b>	<b>6</b>	<b>Nos</b>	<b>KITCHEN CABINET</b>		
			Dimension: Length varies x 600mm D x 1000mm H		
			Custom-made Solid Wood Sideboard Pine Locker Kitchen Cupboard		

			Cabinet with 5-Door panels		
			with 5 wooden drawers		
			Material: MDF (moisture-resist)		
			Color: Wenge or Cherry or Old Rose		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D4.7</b>	<b>6</b>	<b>Nos</b>	<b>KITCHEN OVERHEAD CABINET</b>		
			Dimension: Length varies x x 400mm D x 800mm H		
			Custom-made Solid Wood Kitchen Wall Cupboard		
			Wall Hanging Cabinet Wall-Mounted Storage		
			With open shelving below		
			4-door panels		
			Material: MDF (moisture-resist)		
			Color: Wenge or Cherry or Old Rose		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D4.8</b>	<b>5</b>	<b>Nos</b>	<b>Stainless Steel Preparation Table</b>		
			Dimension: 60cmx60cmx150cm		
			Stainless Steel Preparation Table - 3 Layers		
			with cabinet and top shelves		
			<b>Warranty: 3 years</b>		
<b>D4.9</b>	<b>2</b>	<b>Nos</b>	<b>Commercial Hood Ranges</b>		
			Material : 304 stainless		
			Electrical: 220v 60hz. With fan , light and switch		



			Comes with industrial type oil filter.		
			2 oil drain cups on sides		
			<b>Manufacturer Warranty: 5 years</b>		
<b>D4.10</b>	<b>2</b>	<b>Nos</b>	<b>Stainless Steel Rack Cabinet</b>		
			Dimension: 60/70cm x 60cm x 150cm		
			Stainless Steel Plain Rack - 4 layers		
			<b>Warranty: 5 years</b>		
<b>D4.11</b>	<b>5</b>	<b>Nos</b>	<b>Stainless Working Tables (180cmx80cmx80cm)</b>		
			Dimension: 180cmx80cmx80cm		
			Stainless Steel Table - 2 layers		
			<b>Warranty: 5 years</b>		
<b>D4.12</b>	<b>20</b>	<b>Nos</b>	<b>Rubber floor mats for Kitchen</b>		
			Material: PVC		
			pattern: plain		
			Style: simple and modern		
			Size: 30Cmx30cm		
			Applicable space: bathroom		
			Cleaning type: hand washable vacuum cleaner		
			Applicable scenarios: home bathroom kitchen balcony etc.		
			---Sold per piece Free Stitching and you can DIY for what cut you want		
			---Bathroom puzzle mat non-slip		
			---Safety use		

			---Easy to apply		
			---Good Quality		
			---Affordable		
			---You can choose what color you like		
			-100- Brand new and high quality.		
			Slip impermeable in the bathroom the kitchen can be nice and practical.		
			-It can be spliced or cut bump points design the roll of foot massage.		
			Three-dimensional round hole splicing floor mat		
			Strong anti-skid comfortable foot feeling		
			Can be spliced arbitrarily		
			Safety and environmental protection		
			Soft and comfortable massage the soles of the feet		
			Environmentally friendly TPE zero formaldehyde and no odor you can use it with confidence and take care of your family's health		
			The water will be cleaned as soon as the water is flushed and the hair will not stick to the hair. The bathroom hair problem is completely avoided		
			Simple and easy to splice create the desired space		
			Preferred TPE elastic material durable not twisted and deformed comfortable and tough		
			High temperature resistant will not burn		
<b>D4.13</b>	<b>2</b>	<b>Nos</b>	<b>Commercial Kitchen Fire Suppression System</b>		
			Commercial Kitchen Fire Suppression System		
			<b>Warranty: 20 years upon original installation</b>		
<b>D4.14</b>	<b>5</b>	<b>Sets</b>	<b>First aid kit - complete set</b>		
			First aid kit - complete set		

			SPECIFICATIONS: Bag color: red		
			Bag size: 5.5" x 4"Material: Nylon		
			PACKAGE INCLUDES: 1 x First Aid Bag 1 x Triangular Bandage 1 x Gauze (5cm x 4.5m) 2 x Alcohol Pad 2 x Iodine Povidone Swab 1 x Non-Woven Surgical Tape 1 x Scissors 10 x Small Adhesive Bandages 10x pins 22 x sterile cotton swab applicator (Q-tips) TOTAL- 51		
			PIECESFEATURES:100% Brand New and High Quality.		
			Full set of first aid tools		
			Smart solution for correct processing wound, prevent infection		
			Convenient handle for easy-carrying		
			Full open zipper for easy pick-and-place items		
			Perfect for outing/Hiking/Camping		
			Striking cross symbol to make you easier to find in the outdoors		
			It also can be used for family and for timely handling unexpected emergencies		
<b>D4.15</b>	<b>4</b>	<b>Nos</b>	<b>Air Purifier with HEPA Filter</b>		
			Applicable area m <sup>2</sup> (ft <sup>2</sup> ): 26 (280)		
			Air Volume m <sup>3</sup> /min: High 3.5, Medium 2.0, Low 1.0		
			Power Consumption W: High 20, Medium 9, Low 6		
			Noise dB(A): High 44, Medium 32, Low 18		
			HEPA Filter: Yes		
			Filter Replace Indicator / Filter Life Check: Yes		
			Motor Type: DC		

			3D Circulation Airflow: Yes		
			House Dust Catcher: Yes		
			Auto Mode: Yes		
			Turbo Mode: Yes		
			Sleep Mode (8 hours): Yes		
			Clean Sign: Yes		
			Child Lock: Yes		
			Seamless Drive: Yes		
			Dimension (H x W x D) mm: 520 x 300 x 189		
			Weight kg: 4.8		
			HEPA Composite Air Filter / Composite Filter: F-ZXMP35Z		
			Deodorising Filter: F-ZXFD35X		
			Humidifying Filter: none		
			<b>Warranty: 12 months</b>		
<b>D4.16</b>	<b>2</b>	<b>Nos</b>	<b>Steel Cabinets - 10 drawers</b>		
			10 Drawers Cabinet		
			Structure: NON K/D Structure, 10 Drawers w/o Slide, Inter Lock;		
			Materials: 0.5MM Cold Rolling Steel Plate.		
			Surface: Powder Coating,		
			Finish: Smooth,		
			Color: White & Dark Grey		
			Size: H93.8*W37.5*D46.2(cm)		

			Carton Size: 95.8*39.5*48.2(cm)		
			Weight: 30Kg.		
			<b>WARRANTY: Rust proofed material: 5 years</b>		
<b>D4.17</b>	<b>2</b>	<b>Nos</b>	<b>Steel Cabinets - 8 drawers</b>		
			8-Drawer Cabinet		
			Thickness: 0.6mm		
			Size: W28*D41*H109(CM)		
			Carton Size: 116*47*7(CM)		
			N.W.: 18.2Kgs.		
			G.W.: 20.2Kgs		
			With metal handle and movable wheels		
			<b>WARRANTY: Rust proofed material: 5 years</b>		
<b>D4.18</b>	<b>1</b>	<b>Nos</b>	<b>Lockers - 18 doors steel locker</b>		
			Model: 6-Layer Utility Cabinet (CC-C18)		
			Standard Size: H1850*W900*D400 mm		
			Packaging Dimension H157*W10*L95cm		
			Weight 52kgs		
			Thickness: 0.6mm		
			<b>WARRANTY: Rust proofed material: 5 years</b>		
<b>D4.19</b>	<b>2</b>	<b>Nos</b>	<b>Office Cabinets - Glass &amp; Metal Swing Door Cabinet</b>		
			Model: 5-Layer Glass & Metal Swing Door		
			Standard Size: H1850*W900*D400 mm		

			Packaging Dimension H188*W20*L81		
			Weight 48kgs		
			Thickness: 0.6mm		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D4.20</b>	<b>1</b>	<b>Nos</b>	<b>Utility Office Table (200x60)</b>		
			Steel Frame		
			Dimension: W2000*D600*H750mm		
			<b>Lifetime Warranty of at least minimum 5 years</b>		
<b>D4.21</b>	<b>2</b>	<b>Nos</b>	<b>Height Adjustable Table for Para-athletes</b>		
			Electric-Height Adjustable Single Motor Desk		
			Table top: Waterproof MDF Sealed with Carbon Fiber textured ABS		
			Intelligent High Memory		
			Intelligent Sedentary Reminder		
			Materials: P2PB/ ABS/ Carbon Steel		
			Lifting Range: 74-119cm (Speed: 2M/Second)		
			Color: Black		
			Product Size: 110*60*74-119CM		
			Carton Size: 118*69.5*12CM		
			Weight Capacity: 100Kg		
			Net Weight: 19Kg		
			Gross Weight: 22.6Kg		
			<b>Lifetime Warranty of at least minimum 5 years</b>		

		The Bidder is required to submit <b>Product Brochures</b> or other related/equivalent documents containing the description of all the items under this lot.		
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