



ASTI-FM 03-10  
REV 3/13 January 2020

**DOST-ASTI Bids and Awards Committee  
REQUEST FOR QUOTATION**

<b>Kind of Procurement Activity:</b>	Negotiated Procurement: Small-value Procurement		
<b>Deadline of Submission of Bids:</b>	Jun-16-2021, 2:00 PM		
<b>RFQ No.:</b>	21-06-3440	<b>Date:</b>	June-11-2021
<b>PR No.:</b>	GRASPED-21-05-11382	<b>Date:</b>	May-19-2021

The Department of Science and Technology (DOST) - Advanced Science and Technology Institute (ASTI), through its Bids and Awards Committee (BAC), intends to procure the item/s listed below. As such, suppliers, contractors, or distributors are invited to submit their quotation/s duly signed by authorized representative. Prospective bidder/s who will submit a proposal with the single/lowest calculated and responsive quotation shall be selected. Guidelines on the format and eligibility documents are listed at the box below the item/s to be procured.

Quotations may be sent via **a)** electronic mail at bac-sec@asti.dost.gov.ph, **b)** fax message, or **c)** delivering documents to the BAC Secretariat. For further inquiries, you may contact +63 2 249-8500 local 1206/1212 or +63 2 426-7423.

Thank you.

Respectfully,

**REYNALDO JOSEPH A. CALLAO JR.**  
*BAC Chairman*

NO.	TECHNICAL SPECIFICATIONS	QTY	UNIT	UNIT PRICE(Php)	TOTAL PRICE(Php)
1	<p><b>1Ghz Single Board Computer with headers</b> Specifications:</p> <p>CPU : 1-GHZ, compatible with Broadcom BCM2835 RAM : 512MB Wireless : 802.11n / Bluetooth 4.1 / LE Ports : Micro USB, mini HDMI I/O : 40 GPIO Pins</p> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	3	pc	1100.00	3,300.00
2	<p><b>GNSS hat compatible with Raspberry Pi Zero</b> Specifications:</p> <p>Compatible with Raspberry Pi 40PIN GPIO extension header, supports Raspberry Pi series boards Supports SMS, phone call, GPRS, DTMF, HTTP, FTP, MMS, email, etc. Support GPS, COMPASS, Glonass, LBS base station positioning, omni-positioning Bluetooth 3.0, supports data transferring through</p>	3	pc	2500.00	7,500.00

## Bluetooth

Onboard USB TO UART converter CP2102 for UART debugging

6x LEDs for indicating the module working status

SIM card slot for 1.8V/3V SIM card

RTC with backup battery holder

Baudrate auto detection (1200bps ~ 115200bps)

Control via AT commands (3GPP TS 27.007, 27.005, and SIMCOM enhanced AT Commands)

Supports SIM application toolkit: GSM 11.14 Release 99

Comes with development resources and manual (examples for Raspberry Pi/Arduino/STM32)

## GSM/GPRS

### Band

GSM 850/EGSM 900/DCS 1800/PCS 1900 MHz

Quad-band auto search

Compliant to GSM phase 2/2+

### Emitting power

Class 4 (2W @ GSM 850/EGSM 900 MHz)

Class 1 (1W @ DCS 1800/PCS 1900 MHz)

### GPRS connectivity

GPRS multi-slot class 12 (default)

GPRS multi-slot class 1~12 (configurable)

### GPRS data feature

Downlink speed: max 85.6kbps

Uplink speed: max 85.6kbps

Coding schemes: CS-1\CS-2\CS-3\CS-4

Supports PAP (Password Authentication Protocol)

for PPP connection

Supports PBCCH

Supports USSD

### SMS

Supports: MT/MO/CB/Text/PDU mode

SMS storage: SIM card

### Audio

Voice encode/decode mode: Half Rate\Full Rate\Enhanced Full Rate\Adaptive muti rate

Supports echo cancellation

Supports noise reduction

## GNSS

### Receiver type

33 tracking channels

99 acquisition channels

GPS L1 C/A code

### Sensitivity

Tracking: -165 dBm

Cold starts : -148 dBm

### Time-To-First-Fix

Cold starts : 28s (typ.)

Hot starts : < 1s

Warm starts: 26s

### Accuracy

Horizontal position : <2.5m CEP

## Bluetooth

	<p>Integrates AT commands Compliant to Bluetooth specification 3.0 + EDR Supports SPP, OPP, HFP/HSP, etc.</p> <p>Misc</p> <p>Operating voltage: 5V Operating temperature: -40°C ~ 85°C Storage temperature: -45°C ~ 90°C Dimensions: 30.2mm x 65mm</p> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
3	<p><b>PCB Bonnet compatible with Raspberry Pi Zero</b> Specifications:</p> <p>Includes: - PCB Hat compatible with Raspberry Pi Zero - 2x20 GPIO header compatible with Raspberry Pi Zero</p> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	3	pc	400.00	1,200.00
4	<p><b>USB OTG Host Cable MicroB OTG male to A female</b> Specifications:</p> <p>-Approximately 6" long from tip to tip -Cable without connectors is 3" -MicroB is 8mm/.3" wide -A female is 11mm/.4" wide -11 grams</p> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	3	pc	75.00	225.00
5	<p><b>Single Board Computer with Tensor Processing Unit</b> Specifications: Edge TPU Module (SOM) compatible with NXP i.MX 8M SOC (Quad-core Cortex-A53, plus Cortex-M4F) compatible with Google Edge TPU ML accelerator coprocessor Cryptographic coprocessor Wi-Fi 2x2 MIMO (802.11b/g/n/ac 2.4/5GHz) Bluetooth 4.1 8GB eMMC 1GB LPDDR4</p>	2	pc	11250.00	22,500.00

	<p>USB connections  USB Type-C power port (5V DC)  USB 3.0 Type-C OTG port  USB 3.0 Type-A host port  USB 2.0 Micro-B serial console port</p> <p>Audio connections  3.5mm audio jack (CTIA compliant)  Digital PDM microphone (x2)  2.54mm 4-pin terminal for stereo speakers</p> <p>Video connections  HDMI 2.0a (full size)  39-pin FFC connector for MIPI DSI display (4-lane)  24-pin FFC connector for MIPI CSI-2 camera (4-lane)</p> <p>MicroSD card slot  Gigabit Ethernet port  40-pin GPIO expansion header  Supports Mendel Linux (derivative of Debian)</p> <p>Notes:  charged under GRASPED  Price inclusive of government fees, taxes and duties  Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
6	<p><b>5TB Portable Hard Disk</b></p> <p>Specifications:  Capacity-5 TB  Interface- USB 3.0  Compatibility  Windows-10, 8.1 or 7  Downloadable NTFS driver to read/write on macOS  Reformatting required to use Time Machine on macOS. Compatibility may vary depending on user's hardware configuration and operating system.  Dimensions (L x W x H)-4.33" x 3.21" x 0.83"</p> <p>Notes:  charged under GRASPED  Price inclusive of government fees, taxes and duties  Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	3	pc	12375.00	37,125.00
7	<p><b>HQ Camera Module compatible with Raspberry Pi</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• 12.3 megapixels, 7.9mm sensor diagonal, 1.55µm x 1.55µm pixel size</li> <li>• Output: RAW12/10/8, COMP8</li> <li>• Back focus: Adjustable (12.5mm – 22.4mm)</li> <li>• Lens standards: C-mount, CS-mount (C-CS adapter included)</li> <li>• IR cut filter: Integrated</li> <li>• Ribbon cable length: 200mm</li> <li>• Tripod mount: 1/4in. – 20</li> </ul> <p>Inclusions:</p> <ul style="list-style-type: none"> <li>• Module assembly w/ 1/4"-20 tripod mount</li> <li>• C-CS adapter</li> </ul>	1	pc	5600.00	5,600.00

	<ul style="list-style-type: none"> <li>Dust cap</li> <li>Ribbon cable (200mm) - a longer cable may be needed depending on the mounting technique used.</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
8	<p><b>PRO HD Webcam,1080p (at30 fps)</b></p> <p>Specifications: Technical Specifications Max Resolutions: 1080p/30fps- 720p/30fps Focus type: autofocus Built-in mic: stereo Tripod-ready universal clips fits laptops, LCD or monitors Cable length: 5ft (1.5m)</p> <p>System Requirements Compatible with Windows 10 or later Windows 8, Windows 7 Works in USB Video Device Class (UVC) with supported video calling clients Dimensions Height x Width x Depth: 1.14 in (29 mm) x 3.70 (94mm) x .94 (24mm) Cable length: 5ft (1.5m) Height x Width x Depth: 1.70 in (43.3 mm) x 3.70 (94mm) x 2.80 (71mm)</p> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	1	pc	6200.00	6,200.00
9	<p><b>868Mhz LoRaWAN Developer Gateway</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>Type: Connectors</li> <li>LoRa Module: must be compatible w/ RAK2246 / Semtech SX1308 chip</li> <li>GPS Module: must be compatible w/ Ublox MAX-7Q GPS module</li> <li>Heat Sink: Pre-installed Metal Radiator Material</li> <li>Frequency: RU864, IN865, EU868, US915, AU915, KR920, AS923</li> <li>LoRaWAN Version: LoRaWAN V1.0.2</li> <li>Interfaces: SPI, UART, I2C, GPIOs</li> <li>Antenna Interface 1: SMA connector for LoRa</li> <li>Antenna Interface 2 (for RAK7246G only): SMA connector for GPS</li> <li>Transmission Power: 20dbm</li> <li>Receiver Sensitivity: -139dbm @ SF12 at 125kHz</li> <li>Working Environment: Indoor</li> <li>Dimension (L x W x H): 96mm x 66mm x 47mm</li> <li>Enclosure Material: Acrylic</li> <li>Ingress Protection Rating: IP30</li> </ul> <p>Notes:</p>	1	pc	9600.00	9,600.00

	<p>charged under GRASPED  Price inclusive of government fees, taxes and duties  Delivery: Item must be delivered to ASTI 14 days  Calendar upon issuance of NTP</p>				
10	<p><b>High Precision 24 Bit A/D Converter Sensor Module</b>  Specifications</p> <ul style="list-style-type: none"> <li>• Low current consumption: as low as 120µA in duty cycle mode (typical)</li> <li>• Power range: 3 V~5 V</li> <li>• Up to 20 effective resolutions</li> <li>• Two differential or four single-ended inputs</li> <li>• Dual matched programmable current source: 10µA to 1.5 mA</li> <li>• Internal 2.048-V Reference: 5 ppm/°C (typical) Drift</li> <li>• Internal 2% precision oscillator</li> <li>• Internal temperature sensor: 0.5°C (typical) accuracy</li> <li>• SPI compatible interface (mode 1)</li> </ul> <p>Notes:  charged under GRASPED  Price inclusive of government fees, taxes and duties  Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	2	pc	1350.00	2,700.00
11	<p><b>USB WiFi (802.11b/g/n) Module with Antenna compatible with Raspberry Pi</b>  Specifications:</p> <ul style="list-style-type: none"> <li>• Compatible with RTL8192cu Chipset</li> <li>• Antenna Length: 150mm / 5.9"</li> <li>• Sticks out 48mm (1.9") beyond USB port</li> <li>• Weight: 6g</li> <li>• Wireless Standards: IEEE 802.11n (draft), IEEE 802.11g, IEEE 802.11b</li> <li>• Host Interface: High speed USB2.0/1.1 interface</li> <li>• Data Rate: 802.11n: up to 150Mbps (downlink) and up to 150Mbps (uplink) , 802.11g: 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps auto fallback, 802.11b: 11 / 5.5 / 2 / 1 Mbps auto fallback</li> <li>• Frequency Band: 2.4GHz ISM (Industrial Scientific Medical) Band/li&gt;</li> <li>• Chipset: Realtek</li> <li>• RF Frequency: 2412 ~ 2462 MHz (North America), 2412 ~ 2472 MHz (Europe), 2412 ~ 2484 MHz (Japan)</li> <li>• Radio Channel: 1 ~ 14 channels (Universal Domain Selection)</li> <li>• Antenna Type: Integrated Antenna</li> <li>• Roaming: Full mobility and seamless roaming from cell to cell</li> <li>• RF Output Power: 13 ~17 dBm (Typical)</li> <li>• Modulation: 11n: BPSK, QPSK, 16QAM, 64QAM with OFDM, 11g: BPSK, QPSK, 16QAM, 64QAM, OFDM, 11b: DQPSK, DBPSK, DSSS, CCK</li> <li>• Data Security: 64/128-bit WEP Encryption</li> <li>• WPA, WPA-PSK, WPA2, WPA2-PSK. TKIP/AES</li> <li>• Network: Auto-switch to use 802.11n or 802.11g or 802.11b mode</li> <li>• Supports Ad-Hoc, Infrastructure WLAN network, Wireless roaming, Data rate auto fall-back under noisy</li> </ul>	2	pc	1350.00	2,700.00

	<p>environment or longer range distance, Site Survey with Profile function</p> <ul style="list-style-type: none"> <li>• Configuration &amp; Management: Plug-and-Play setup and installation, Management Utility supports 2000 / XP/ Vista</li> <li>• Media Access Control CSMA/CA with ACK</li> <li>• LED Indicator Link/Active ( Green )</li> <li>• Operating Temperature 0°C to 40°C</li> <li>• Storage Temperature -20°C to 75°C</li> <li>• Operating Humidity 10% ~ 90% (Non Condensing)</li> <li>• Storage Humidity 5% ~ 95% (Non Condensing)</li> <li>• Regulatory Compliance RoHS Compliant, Wi-Fi Compliant</li> <li>• Requirements Available USB 2.0 port</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
12	<p><b>LTE Antenna 175mm Duck SMA Male</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• high-gain duck antenna designed for LTE devices that operate in the 690-960MHz and 1710-2690 MHz bands.</li> <li>• Center Frequency: 690~960/1710~2690 MHz</li> <li>• Polarization: Linear</li> <li>• Gain: 3dBi typ.</li> <li>• V.S.W.R: &lt; 3.0</li> <li>• Impedance 50Ω</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	1	pc	900.00	900.00
13	<p><b>Interface Cable SMA to U.FL</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• This is a 4" connector cable that interfaces U.FL RF connectors to regular SMA connectors.</li> <li>• Frequency Range:DC~12.4GHz</li> <li>• VSWR:≤1.10+0.02f</li> <li>• Impedance:50 Ω</li> <li>• Connector:</li> <li>• SMA Female</li> <li>• IPEX/U.FL</li> <li>• Cable:1.13x1.13x150mm(0.04"x0.04"x5.91")</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	8	pc	281.25	2,250.00
14	<p><b>Industrial Multimeter</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Multimeter Type-Digital</li> <li>• Absolute Maximum AC Current Measurement-10A</li> </ul>	1	pc	13200.00	13,200.00

	<p>ac</p> <ul style="list-style-type: none"> <li>• Absolute Maximum DC Current Measurement-10A</li> </ul> <p>dc</p> <ul style="list-style-type: none"> <li>• Absolute Maximum DC Voltage Measurement-1000V dc</li> <li>• Absolute Maximum Resistance Measurement-40MΩ</li> <li>• Absolute Maximum AC Voltage Measurement-1000V ac</li> <li>• Absolute Maximum Capacitance Measurement-10mF</li> <li>• Functions Measured-AC Current, AC Voltage, Capacitance, Continuity, DC Current, DC Voltage, Diode, Frequency, Resistance</li> <li>• Connectivity-Bluetooth</li> <li>• True RMS-Yes</li> <li>• Maximum Frequency-100kHz</li> <li>• Display Type-LED</li> <li>• Safety Category Level-CAT III, CAT IV</li> <li>• Width-82mm</li> <li>• Battery Type-AA</li> <li>• Height-46mm</li> <li>• Length- 165mm</li> </ul> <p>Features</p> <ul style="list-style-type: none"> <li>• Perfect for measurement of common parameters including Voltage, Current and Resistance</li> <li>• Capacitance measurement offering enhanced measurement capabilities</li> <li>• 6,000 counts digital and 60 segments analog display</li> <li>• Large white backlit display ensuring measurements can be displayed easily</li> <li>• True RMS measurements on ACV/ACA</li> <li>• 0.5% DCV accuracy</li> <li>• 10A ACA / DCA</li> <li>• Frequency measurements on ACV/ACA</li> <li>• Diode Test</li> <li>• High Frequency Rejection Save and share data quickly and effectively so smart devices via Bluetooth</li> <li>• Data Logging / Manual Save up to 4000 records</li> <li>• Auto-ranging for quick and easy measurements</li> <li>• Min/Max Hold</li> <li>• CAT IV 600V/ CATIII 1000V Safety Standards</li> </ul> <p>Notes:  charged under GRASPED  Price inclusive of government fees, taxes and duties  Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
15	<p><b>Velcro, Black Tape, 20mm x 10m</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Colour-Black</li> <li>• Width-20mm</li> <li>• Length-10m</li> <li>• Hook Type-Hook &amp; Loop</li> <li>• Colour-Black</li> <li>• Base Material-Polypropylene &amp; velour PA</li> <li>• Construction Extruded and laminated</li> <li>• Width Nominal ± 1%</li> <li>• Overall Thickness 1.35± 0.20mm</li> </ul>	3	pc	1500.00	4,500.00



	<ul style="list-style-type: none"> <li>• Weight/ m2 550g/m2± 60g/m2</li> <li>• Resistance Properties</li> <li>• Electrical Insulator None</li> <li>• Washing Resistance Good</li> <li>• UV Resistance Low</li> <li>• Humidity Resistance Medium</li> <li>• Sewn Resistances Low</li> <li>• Acid Resistance Medium</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
16	<p><b>2.4GHz Dipole Swivel Antenna with RP-SMA - 5dBi</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Type: Dipole</li> <li>• Connector: Option</li> <li>• Polarization Linear Vertical</li> <li>• SWE ≤1.5:1</li> <li>• Frequency 2400~2500MHz</li> <li>• Weight 30g</li> <li>• Size 205X13X13</li> <li>• 8"/200mm long swivel dipole antenna</li> <li>• 5dBi of gain</li> <li>• 50Ω impedance work with just about any 2.4-2.5GHz wireless receiver/transmitter such as:</li> <li>• 2.4GHz Wi-Fi (802.11b/g/n)</li> <li>• 2.4GHz XBee</li> <li>• Bluetooth</li> <li>• Other 2.4GHz transceivers</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	4	pc	600.00	2,400.00
17	<p><b>4 Port USB Power Charger</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• High-Speed USB-C Charging: Charge USB-C notebooks including Dell XPS 13 and MacBook Air 2018 at full speed via a 45W USB-C port.</li> <li>• Charge 4 Devices Simultaneously: A PowerIQ 3.0 enabled USB-C port pumps out a max 45W output to charge virtually any USB-C device at top speed, while 3 USB ports share a total of 20W to provide optimized charging for mobile devices.</li> <li>• Ultra-Slim: By swapping out silicon for gallium nitride (GaN), we've been able to create one of our slimmest USB-C chargers—without compromising power.</li> <li>• Universal Compatibility: provides high-speed charging to virtually any mobile device.</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar</p>	2	lot	3300.00	6,600.00

	days upon issuance of NTP				
18	<p><b>32 Gb SD Card</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Memory Capacity: 32GB</li> <li>• Type: MicroSDHC Memory Card</li> <li>• Class: Class 10</li> <li>• Transfer Rate: upto 80MB/s</li> <li>• Waterproof and Shockproof</li> <li>• Compatible with Smartphones and Cameras</li> <li>• OS Compatibility: Windows 2000 or later, Mac OS 10.4 or later</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	10	pc	350.00	3,500.00
19	<p><b>AI HAT for Edge Computing</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Processor: compatible with Sipeed MAIX-I module w/o WiFi ( 1st RISC-V 64 AI Module, K210 inside )</li> <li>• Features <ul style="list-style-type: none"> <li>o 1x USB 2.0 Device, Type C(Power and Programming)</li> <li>o 6x Grove Interface: include 1x Digital IO, 1x PWM, 1x I2C, 1x UART, 2x ADC</li> <li>o 1x Power LED, 1x Boot LED(can be used as User LED)</li> <li>o 1x Reset Button, 1x Boot Button (can be used as User Button)</li> <li>o 1x LCD Interface</li> <li>o 1x Camera Interface</li> <li>o 1x Digital Mic</li> <li>o 1x Accelerometers Sensor</li> <li>o 1x JTAG &amp; ISP UART Pin Header</li> <li>o 2x 20 Pin Header with I2C, UART, SPI, I2S, PWM, GPIO</li> </ul> </li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	2	pc	2075.00	4,150.00
20	<p><b>ReSpeaker 4-Mic Array compatible with Raspberry Pi</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Dimensions-65mm x65mm x9mm</li> <li>• Weight-G.W 38g</li> <li>• Battery-Exclude</li> <li>• MIC-4 analog microphones</li> <li>• LED-12 APA102 programable RGB LEDs, connected to SPI interface</li> <li>• Raspberry Pi 40-Pin Headers</li> <li>• support Raspberry Pi Zero, Raspberry Pi 1 B+, Pi 2 B, Pi 3 B, Pi 3 B+</li> <li>• AC108 highly integrated quad-channel ADC with</li> </ul>	2	pc	1950.00	3,900.00

	<p>I2S/TDM output transition</p> <ul style="list-style-type: none"> <li>• Software Algorithm-VAD(Voice Activity Detection), DOA(Direction of Arrival) and KWS(Keyword Search)</li> <li>• Grove-2 Grove Interfaces</li> <li>• Voice Capture Distance-3 meters radius voice capture</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
21	<p><b>Doppler Radar 24GHz Transceiver</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>• Transmission Frequency-Min: 24GHz; Typical: 21.125GHz; Max: 24.25GHz</li> <li>• Output Power (EIRP)-7dBm @ 25°C</li> <li>• Update Time-300ms</li> <li>• Communication Interface-UART (115200)</li> <li>• Detection Distance-10m @ 0dBsm</li> <li>• Standard Detection Field-65° / horizontal (-6dB); 22° / vertical (-6dB)</li> <li>• Supply Voltage-3.3-5V</li> <li>• Weight-5g</li> </ul> <p>Features</p> <ul style="list-style-type: none"> <li>• Compact size for easy deployment</li> <li>• Light-weight design, suitable for UAV applications</li> <li>• Low power consumption for prolonged usage</li> <li>• 24GHz Transceiver MMIC for high-precision measurements of movement and speed</li> <li>• Fast response using electromagnetic waves</li> <li>• ESD protection to avoid system failures caused by ESD strikes</li> <li>• High penetration which allows it to be deployed behind an object</li> <li>• Maintains operation through harsh weather conditions (temperature, light, dust, rain)</li> </ul> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	1	pc	3500.00	3,500.00
22	<p><b>Embedded board compatible with ATSAMD51</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>- Compatible with Cortex M4 core running at 120 MHz</li> <li>- Floating point support with DSP instructions</li> <li>- 512 KB flash, 192 KB RAM</li> <li>- 32-bit, 3.3V logic and power</li> <li>- Dual 1 MSPS DAC (A0 and A1)</li> <li>- Dual 1 MSPS ADC (8 analog pins)</li> <li>- 6 x hardware SERCOM (I2C, SPI or UART)</li> <li>- 22 x PWM outputs</li> <li>- Stereo I2S input/output with MCK pin</li> <li>- 10-bit Parallel capture controller (for camera/video in)</li> <li>- Built in crypto engines with AES (256 bit), true RNG,</li> </ul>	2	pc	1980.00	3,960.00

	<p>Pubkey controller - 64 QFN</p> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
23	<p><b>AC Current Sensor Board</b> Specifications:</p> <p>Module Operating Voltage: 3.3V - 5.5V Analog Output Voltage: 0.2V - 2.8V (DC) AC Signal Input Range: 0 - 1V (AC) Relative Error: + 3% Interface: PH2.0-3P Dimensions: 32 * 27 mm/1.26 * 1.06 inches</p> <p>AC Current Sensor Probe AC Measurement Range: 0 - 20A AC Signal Output: 0 - 1V AC map onto 0-20 A Non-linearity: ±3% (10% ~ 120% of the rated input current) lead length: 1.5 meters Opening and closing times: &gt;= 1000 times Working temperature: -25[?] to +70[?] Dimensions: 13 * 13mm/ 0.51 * 0.51 inches</p> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	2	pc	1210.00	2,420.00
24	<p><b>Deep Learning &amp; IOT Development Board</b> Specifications:</p> <p>CPU 800~1000Mhz Video encoder H.264, up to 1080p@30fps, H265, up to 1080p@30fps, JPEG, up to 1080p@30fps AI Accelerator NPU 0.2TOPS. support Conv,Inner_Product,Pool,Eltwise,ACT,BN,Split,Concat Memory SIP 64MB DDR2 Storage Optional 16M flash Camera 2lane MIPI, maximum support 1080P@60fps Display 8bit MCU LCD, with adapter board can be connected to a maximum of 10 inches RGB LCD SDIO SMHC x2 (SDC0, SDC1) SPI SPI x2 (SPI0, SPI1) I2C I2C x4 (TWI0, TWI1, TWI2, TWI3) I2S I2S x1 (I2S0) Ethernet 10/100 Mbit/s Ethernet port with RMII interface ADC 1-ch 6bit LRADC for key Audio LINEOUTP + MICIN1P/N</p> <p>Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar</p>	2	pc	2550.00	5,100.00

	days upon issuance of NTP				
25	<p><b>MPPT Solar Charge Controller with MODBUS</b></p> <p>Specifications:</p> <p>1: MPPT tracking efficiency is not less than 99.5%</p> <p>2: The charging conversion efficiency can reach up to 98%. Supports lead-acid batteries and lithium battery types</p> <p>3: Multiple load control modes</p> <p>4: Charging current limiting and power limiting function</p> <p>5: High temperature charging automatic power reduction function</p> <p>6: Use standard Modbus communication protocol based on RS-485 communication bus</p> <p>7: Real-time power statistics function</p> <p>Notes:</p> <p>charged under GRASPED</p> <p>Price inclusive of government fees, taxes and duties</p> <p>Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	1	pc	3600.00	3,600.00
26	<p><b>JTAG (2x10 2.54mm) to SWD (2x5 1.27mm) Cable Adapter Board</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>- Compatible with debuggers like JTAGulator or SEGGER J-Link</li> <li>- Dimensions w/components: 34mm x 24mm x 12mm / 1.3" x 0.9" x 0.5"</li> <li>- Weight: 5.7g</li> </ul> <p>Notes:</p> <p>charged under GRASPED</p> <p>Price inclusive of government fees, taxes and duties</p> <p>Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	2	pc	385.00	770.00
27	<p><b>Embedded board compatible with STM32F405</b></p> <p>Specifications:</p> <ul style="list-style-type: none"> <li>- Compatible with STM32F405 Cortex M4 with FPU and 1MB Flash, 168MHz speed</li> <li>- 192KB RAM total - 128 KB RAM for general usage + 64 KB program-only/cache RAM</li> <li>- 3.3V logic, but almost all pins are 5V compliant!</li> <li>- USB C power and data - our first USB C Feather!</li> <li>- LiPo connector and charger</li> <li>- SD socket on the bottom, connected to SDIO port</li> <li>- 2 MB SPI Flash chip</li> <li>- Built in NeoPixel indicator</li> <li>- I2C, UART, GPIO, ADCs, DACs</li> <li>- Compatible with Qwiic/STEMMA-QT connector for fast I2C connectivity</li> </ul> <p>Product Dimensions: 52.0mm x 23.0mm x 10.0mm / 2.0" x 0.9" x 0.4"</p> <p>Product Weight: 6.2g / 0.2oz</p> <p>Notes:</p> <p>charged under GRASPED</p> <p>Price inclusive of government fees, taxes and duties</p> <p>Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	2	pc	2200.00	4,400.00

28	<b>SWD 0.05" Pitch Connector - 10 Pin SMT Box Header</b> Specifications: - compatible with any 10-pin 2x5 socket-socket 1.27mm IDC (SWD) cable - Product Dimensions: 12.6mm x 5.0mm x 4.9mm / 0.5" x 0.2" x 0.2  Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP	4	pc	110.00	440.00
29	<b>10-pin 2x5 Socket-Socket 1.27mm IDC (SWD) Cable - 150mm long</b> Specifications: - ribbon cable = 0.06mm/0.025" pitch - connector = 1.27mm (0.05") pitch 2x5 box - length = 150 mm  Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP	2	pc	220.00	440.00
30	<b>Embedded board with Bluetooth Low Energy (BLE) module</b> Specifications:  - Compatible with ARM Cortex M4F (with HW floating point acceleration) running at 64MHz - 512KB flash and 64KB SRAM - Built in USB Serial converter for fast and efficient programming and debugging - Bluetooth Low Energy compatible 2.4GHz radio (Details available in the nRF52832 product specification) - FCC / IC / TELEC certified module - Up to +4dBm output power - 1.7v to 3.3v operation with internal linear and DC/DC voltage regulators - 19 GPIO, 8 x 12-bit ADC pins, up to 12 PWM outputs (3 PWM modules with 4 outputs each) - Pin #17 red LED for general purpose blinking - Power/enable pin - 4 mounting holes - Reset button  Notes: charged under GRASPED Price inclusive of government fees, taxes and duties Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP	2	pc	1760.00	3,520.00
31	<b>5pcs CAN Bus Module Transceiver compatible with TJA1050 Controller</b> Specifications: Quantity: Five (5) pieces	1	lot	400.00	400.00

	<p>1. onboard TJA1050 CAN controller interface chip  2. chip commonly used pin has led, convenient connection to use  3. pin 5 v to power supply  4. PCB board size: 22 (mm) x11.5 (mm)</p> <p>Notes:  charged under GRASPED  Price inclusive of government fees, taxes and duties  Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>				
32	<p><b>Software Defined Radio kit with multipurpose dipole antenna</b>  Specifications:</p> <p>Includes</p> <ul style="list-style-type: none"> <li>- 1x Compatible with RTL-SDR R820T2 RTL2832U 1PPM TCXO HF Bias Tee SMA Dongle (V3)</li> <li>- 1x portable multipurpose dipole antenna set.  Dipole set includes: <ul style="list-style-type: none"> <li>1x dipole base with 60cm RG174</li> <li>2x 23cm to 1m telescopic antenna</li> <li>2x 5cm to 13cm telescopic antenna</li> <li>1x 3m RG173 extension cable</li> <li>1x flex tripod mount</li> <li>1x suction cup mount.</li> </ul> </li> <li>- Tunes from 500 kHz to 1.7 GHz with up to 3.2 MHz (2.4 MHz stable) of bandwidth. -</li> <li>- Compatible with free software like SDR#, HSDR, SDR-Radio, GQRX or SDR Touch on Android.</li> <li>- Works on Windows, OSX, Linux, Android and computers like the Raspberry Pi.</li> </ul> <p>Notes:  charged under GRASPED  Price inclusive of government fees, taxes and duties  Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP</p>	1	pc	3285.00	3,285.00
33	<p><b>JTAG/SWD Debugger compatible with SEGGER J-Link</b>  Specifications:</p> <ul style="list-style-type: none"> <li>- Compatible with the J-Link EDU with standard 20-pin 0.1" male connector</li> <li>- 20-pin, 0.1" target ribbon cable</li> <li>- USB cable</li> </ul> <p>Features</p> <ul style="list-style-type: none"> <li>- Direct download into flash memory of most popular microcontrollers supported <ul style="list-style-type: none"> <li>- Supported CPUs: Any ARM7/9/11, Cortex-A5/A8/A9, Cortex-M0/M1/M3/M4/M7, Cortex-R4, Microchip PIC32 and Renesas</li> </ul> </li> <li>- Download speed up to 1 MByte/second</li> <li>- Supports unlimited breakpoints in flash memory</li> </ul>	1	pc	4950.00	4,950.00

- Supports concurrent access to CPU by multiple applications
- Crossplatform support (runs on Windows, Linux, Mac OS X)
- Intelligence in the emulator firmware
- Remote Server included. Allows usage remotely via TCP/IP
- GDBServer included
- Software Developer Kit (SDK) available
- Supports multiple target interfaces: JTAG, SWD
- Supports SWV/SWO (Serial Wire Viewer / Serial wire output)
- Wide target voltage range: 1.2V - 3.3V, 5V tolerant
- Supports JTAG chains with multiple devices
- Embedded Trace Buffer (ETB) support
- Fully plug and play compatible
- No power supply required, powered through USB
- Support for adaptive clocking
- Target power supply: can supply up to 300 mA to target with overload protection

Notes:

charged under GRASPED

Price inclusive of government fees, taxes and duties

Delivery: Item must be delivered to ASTI 14 Calendar days upon issuance of NTP

**TOTAL APPROVED BUDGET FOR THE CONTRACT:**

**Php 176,835.00**

**GUIDELINES**

**A. Submission of Quotations**

1. Quotation/s shall include the Request for Quotation and/or the Purchase Request Number as state above;
2. Pictures or brand/model names or numbers, if applicable, should be specified in the quotation/s; and
3. Quotation/s must be signed by the company's duly authorized representative.

**B. Eligibility Requirements**

Pursuant to Annex "H" or Consolidated Guidelines for the Alternative Methods of Procurement of the 2016 Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184, as amended by Government Procurement Policy Board Resolution No. 21-2017 dated 30 May 2017, the following documents shall be submitted except for Repeat Order, Shopping under Section 52.1(a), and Negotiated Procurement under Sections 53.1 (Two-Failed Biddings), and 53.5 (Agency-to-Agency):

**For Procurement of Goods**

1. Upon submission of quotation
  - ✓ PhilGEPS Platinum Membership Certificate including Annex "A". If not available, the following alternate documents may be submitted:
    - PhilGEPS Registration Number
    - Mayor's Permit
      - For individuals/professionals engaged under Section 53.6, 53.7 and 53.9 of the 2016 IRR of RA No. 9184, only the Bureau of Internal Revenue (BIR) Certificate of Registration shall be submitted in lieu of the Mayor's Permit.
2. Upon issuance of Notice of Award (NOA)
  - ✓ Omnibus Sworn Statement
    - Applicable only for bidders who have submitted their quotation on item/s with a total Approved Budget for the Contract (ABC) of above Php50,000.00.
  - ✓ Income/Business Tax Return



- Applicable only for: **a)** bidders who have submitted their quotation on item/s with a total ABC of above Php500,000.00; and **b)** bidders for Lease of Real Property and Venue (except for government agencies as lessors).

**For Procurement of Infrastructure**

1. The requirements for Goods with the same submission indicated therein; and
2. Valid Philippine Contractors Accreditation Board License.

**For Procurement of Consulting Services**

1. The requirements for Goods with the same submission indicated therein; and
2. Valid Professional Regulation Commission License or Curriculum Vitae.

**NOTE:** For new suppliers, submit a BIR Certificate of Registration for accounting purposes.

**C. Terms and Conditions**

1. Additional requirements, if necessary, may be requested by the BAC depending on the item to be bid;
2. For all kinds of procurement, the bidder who passed the bid evaluation, shall submit a duly notarized Omnibus Sworn Statement upon issuance of NOA, unless otherwise provided;
3. All transactions are subject to creditable withholding tax and final Value Added Tax or percentage tax per revenue regulation/s of the BIR;
4. A penalty of one-tenth of one percent (0.001) of the total value of the undelivered goods/services shall be charged as liquidated damages for every day of delay of the delivery; and
5. The DOST-ASTI reserves the right to accept or reject any proposal, to annul the bidding process, and to reject all proposals at any time prior to contract award, without thereby incurring any liability to the affected proponent or proponents.