



आईटीआईलिमिटेड / ITI LIMITED

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Ref: MSP-KTK/IT-MKTG/I/EOI-14/22-23/Cor-1

Date: 13/09/2022

Corrigendum -1

Corrigendum for ITI Limited Inviting an Expression of interest (EOI) for Selection of Business Associate (BA) for Supply, Installation, Commissioning and Maintenance of Components for 6500 ICT Enabled Classrooms for the Department of Collegiate and Technical Education to end customers.

Ref: MSP-KTK/IT-MKTG/I/EOI-14/22-23

Date: 09/09/2022

Sl. No	Clause Ref. No	Existing Clause	Revised Clause
1	Annexure-V	Scope of Work & Bill of Material	Replaced with new scope of work & Bill of Material as below from page. 2 onwards. (Existing scope of work was wrongly kept in the EoI)
2	Eligibility Criteria: Point no. C Page 3 of 22	The Business Associate must have successfully completed any of the following during last 07 (seven) years. > Three similar works each costing not less than the amount equal to 30% of advertised value of the tender, Or > Two similar works each costing not less than the amount equal to 40% of advertised value of the tender, Or > One similar work each costing not less than the amount equal to 60% of advertised value of the tender	The Business Associate must have successfully completed any of the following during last 07 (seven) years. > Three similar works each costing not less than the amount equal to 40% of advertised value of the tender, Or > Two similar works each costing not less than the amount equal to 50% of advertised value of the tender, Or > One similar work each costing not less than the amount equal to 80% of advertised value of the tender

Scope of Work & Bill of Material

Scope of work

Brief Scope:

1. The scope of work for the supply, installation, and Commissioning and maintenance service for three years shall include establishment of 6500 ICT Enabled Classrooms. Every ICT Enabled classroom is equipped with Projector, White board, Android box, 1 KVA UPS with 4 hours Backup and Wi-Fi Connectivity as per the requirements. Requirements are Categorized into 4 Components namely Component 1: Projectors, Component 2: Android Box, Component 3: UPS 1 KVA, Component 4: Networking and Component 5 : Speakers

Component 1: Projector 6500 Projectors being procured should be installed with Suitable ceiling mount kit, and related accessories within a secured metal enclosure

- White board to be fixed on the wall with suitable mounting bracket for each Classroom. The whiteboards should be positioned beside the green board and projector should be positioned so as to project onto the white board. Existing Green board should be repositioned if necessary.
- Projectors should be installed with Suitable ceiling mount kit, new 6' X 4' White board, Speakers, VGA to HDMI converter with Audio Support, 1 m HDMI Cable to be connected to Android box, Power cable within a secure metal enclosure. 20m additional HDMI cable to be connected to VGA to HDMI converter and to be placed within the casing up to podium/Dais.
- VGA to HDMI converter to be supplied and connected with HDMI cable already available at the college and to be placed within the casing up to podium/Dias for 2500 smart classrooms already established.
- For Projectors, a plug point with UPS backup shall be provided near the projector (within or near the metal enclosure) with two sockets to securely connect the projector and Android box, with controlling switch near the white board (approximately 50m of wiring for 2 Classrooms). ISI certified 2.5 sq. mm multi stand copper electrical wiring and ISI certified electrical switches and plug points to be used.

Component 2: Android Box

- Each Android Box should be connected to the Projector with 1 m HDMI cable.
- The Android box shall be housed within the same metal enclosure as the projector.
- Software to be provided for centralized management of all Android boxes.
- The software shall be hosted on server specified by DCTE. Licenses and other related software should be in the name of Director, Department of Collegiate Education.

Component 3: 1 KVA UPS 4 Hours backup

- 3350 1 KVA UPS being procured should be installed for 6500 Classrooms. Each UPS shall be wired to provide backup to two Classrooms.

- Each UPS to have stand and a secured enclosure.
- Installed 1 KVA UPS should power the Projector and android box in each classroom.

Component 4: Speakers.

- Bidder shall install the speakers on the secured enclosure along with projector.
- One set of speaker to be installed in 6500 smart classrooms. c. Similarly one set of speakers to be installed in 2500 Smart classrooms already established.

Component 5: Networking.

- Bidder shall implement Wireless LAN infrastructure (excluding bandwidth Procurement for 6500 Classrooms across 531 Colleges with controlled access to students.
- Each access point shall provide Wi-Fi access to Two Classrooms, ensuring stable wi-fi access to each classroom.
- Bidder shall provide a centralised Dashboard for the Purchaser to monitor and manage the networks across 531 Colleges. licenses and Subscriptions of the Centralized Dashboard should in the name of Director, Department of Collegiate Education.
- The wi-fi networking in each college is proposed to include one secure gateway and switch, one rack, one access point for two classrooms, about 600m of Cat 6 cabling with PVC casing and related accessories. In 420 Government First Grade Degree Colleges Secured Gateway has been installed. In remaining 111 colleges the Secured Gateway has to be supplied and installed along with other networking components
- Optic Fibre cable shall be used wherever required for the connections between the switches across the buildings in a college.
- 6U rack to be used in each college if necessary 4U rack to be used where switches needs to be placed apart from 6U rack.

2. Installation, integration, commissioning and handing over of ICT enabled Classrooms ensuring that all the components work together without any compatibility issues and should be interoperable with existing Network Infrastructure.
3. Warranty/Service/Maintenance Services for all the above components for a period of three Years.
4. The bidder shall provide a Call Centre number and a specific e-mail id for complaint redressal. The bidder shall also provide a dashboard for complaint monitoring during the contract period. The bidder shall perform periodic preventive maintenance apart from attending the complaints as and when reported.
5. The approximate number of components required for establishing ICT enabled classrooms across 531 colleges. The Bidder shall quote the price for the requirements given in Section V. In case of requirement of additional/ lesser number of components, then the payment will be made based on the actual number of components installed in each college as certified by the concerned principal.

Bill of Materials:**Committed Usage**

Sl.No.	Components	Item	Quantity	Technical Specifications
1	Projectors	Supply and Installation of Projectors with White boards and Ceiling mount kit	6500	TS1
2	Android Box	Android Box (one per classroom to be connected to Projector)	6500	TS2
3	1 KVA UPS	1 KVA UPS 4 Hours Backup	3350	TS3
4	Speakers	One set Speaker to be installed with Projector (Two Speakers in one set)	9000	TS5
5	Networking: Supply, Installation And commissioning of LAN Networking with Centralized cloud-based management dashboard	Wireless access point	3350	TS4
		8 port POE switch	1200	
		Secured gateway	120	
		Installation, testing, commissioning and documentation considering 600m Cat 6 cabling, 100m fiber cable and PVC casing, 1 wall mounted network rack 4U and 6U with power strip and other accessories per college	531 colleges	

Technical Specifications**TS1: Component 1: Projectors**

S.No.	Specifications	
1	Technology	LCD
2	Native Resolution	XGA (1024 x 768) or better
3	Brightness (Normal)	3300 lumen or higher
4	Lamp Life	10,000 Hours (ECO) / 6,000 hours (NOR) or higher
5	Aspect Ratio	4:3, 16:9 Compatible
6	Contrast Ratio	15000:1 or higher
7	Image Size	30 inches - 300 inches or higher
8	Interfaces	USB 2.0 Type A, USB 2.0 Type B, VGA in, HDMI in, Composite in
9	Remote	Full functional remote
10	Speaker	2W Mono or higher
11	Warranty	3 years comprehensive on-site, including projector lamp/ light source
12	Additional	1 m HDMI Cable, Power Cord, 20 m additional HDMI cable, VGA

	Accessories	to HDMI converter with Audio Support, Suitable Ceiling mount kit and a secured metal enclosure
13	Other	Auto shutoff functionality to increase lamp life when projector controls are not operated for a certain time period
14	White Board	6'X4' with aluminium frame

TS 2: Component 2: Android Box

S.No.	Specifications	
1	Processor	Quad core processor (1.5 GHz or Higher)
2	Operating System	Android 10.0 or higher with built-in MDM (Mobile Device Management)
3	RAM	4 GB
4	Internal Storage	64 GB or higher
5	Network and Communication	802.11 a/b/n dual band wireless LAN, Ethernet support and Bluetooth 4.0 or higher, Built-in RTC (Real Time Clock)
6	LED display	Network and Boot status indication
7	Ports	HDMI, USB 2.0 and USB 3.0
8	Software	<ul style="list-style-type: none"> • Server software should be hosted on server specified by DCTE. • Centralized Web based control panel. • DCTE Central Server should have the following provisions: • Provision to upload content such as Videos, Images, PDF and URL • Provision to push new application remotely • Provision to monitor the health of the device remotely • Provision to remotely manage devices by grouping of devices University-wise and College-wise and individual device • Provision for live monitoring, remote actions, remote update features, Detailed device info, usage report, connection status • Provision to provide real-time summary of active devices and total devices • Provision for uploading, removing apps and individual files on specific devices • Customized reports as per requirements of DCTE • Periodic updates • Location of devices on map with longitude and latitude
9	Additional Features	<ul style="list-style-type: none"> • To preload LMS Platform provided by DCTE • To provide dashboard for Colleges • Device to have Auto-refresh with MDM server every 30 mins to synchronize • Device to have overwriting feature, when built in memory is full
10	Keyboard and Mouse	Wireless Keyboard with Mouse
11	Warranty	

		3 years comprehensive on-site
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TS 3: Component 3: 1 KVA UPS

Sl. No.	Specifications	
1	Type	Online-Single phase input & Single-phase output
2	Capacity	1 KVA
3	Backup time	4 Hour
4	Input Frequency	50Hz +/-5%
5	Input Voltage	160 V-270V
6	Output Voltage	230 V+/-1% V
7	Output Frequency	50Hz+/- 0.2Hz.
8	Input Power Factor	>0.90
9	Output Power Factor	0.8 lag to unity PF
10	Waveform	Pure Sine Wave
11	Alarm	On Battery, Low Battery, UPS Over Load
12	Technology	IGBT based PWM technology with isolation transformer
13	Battery Type	SMF battery
14	Battery make	Preferred brands: Panasonic/ YUSA/Exide/Amaron/ Relicell
15	VAH	3200
16	Number of Batteries	Compatible
17	DC voltage (input)	Compatible
18	Over Load Capacity	150% for 1 Minute, 125% for 10 Minutes
19	Inverter Efficiency	90%
20	Overall Efficiency	85% or better
21	Crest Factor	3:1
22	Regulation	+/-1%
23	THD	< 2% linear, <5% non linear
24	Protection	Automatic discharge protection with self test features, Overload Surge protection, Input fault, Cold start, Low Battery, Battery Over charge, output short circuit, Charging current circuit, inverter over temperature
25	LCD Display	Output Voltage, Output Current, Load %, output frequency, Input voltage, Battery voltage
26	Certification	ISO 9001:2015, ISO14001:2015, RoHS, ETDC/CPRI test report, BIS CERTIFICATION
27	Warranty	3 years comprehensive on-site

TS 4: Component 4: Networking

Wireless Access Point	
1	The proposed access point shall support IEEE 802.11ax (Wi-Fi 6) and dual band 2.4Ghz & 5Ghz radio specification
2	The proposed access point shall support minimum 2 Gigabit Ethernet interfaces
3	The proposed access point shall support 2 x 2 MU-MIMO (Multi-user multiple input and multiple output) with minimum 6 dBi antenna or more.

4	The proposed Access point shall support Wireless Intrusion Prevention System (WIPS)/ Wireless Intrusion Detection System (WIDS) solution using a dedicated 3rd radio with the round the clock monitoring to protect from threats from day 1.
5	Must support 802.11 a/n/ac on the 2.4GHz & 802.11ac Wave 2 on 5 GHz radios simultaneously.
6	Must support aggregate 1.5 Gbps or more with dual radios
7	Must support 40 & 80 MHz wide channels in 5 GHz
8	The proposed access point shall support zero touch provision with true plug & play with zero configuration
9	The proposed access point shall support rapid deployment options to deploy all access points using centralized single configuration template, configuration copy, configuration sync etc
10	The proposed access point shall support fully remote monitoring, configuration, troubleshooting considering the situation of the deployment
11	The proposed access point support self-configuring, self-optimizing (channel, power client connection) and self-healing considering the situation of the deployment
12	The proposed access point shall support client real time location
13	Access point should be powered with POE with all features supported on POE/POE+
14	Access point should be unified and should be managed from central cloud dashboard and support WIDS/WIPS functionality from day 1.
15	Access Point must support Fast Handoff between APs
16	The Proposed AP shall be ceiling/wall mountable
17	The proposed AP should be approved by Wireless Planning Commission (WPC).

8 Port POE Switch

1	The proposed Switch shall have 8 ports x 1GbE RJ45 or more along with 2 x 1GbE SFP with a transceivers populated from same OEM with power budget of 120W or more
2	The proposed Switch shall have POE+ support on all ports
3	The proposed Switch shall support virtual stacking up to 80 ports considering the scalability
4	Device should support IEEE 802.1w, IEEE 802.1q, IEEE 802.1x, IEEE 802.3ad, IEEE 802.1d, IEEE 802.3u, IEEE 802.3ab Standards and Protocols
5	Device should have Switching Capacity of 20Gbps or higher
6	Device should have Packet Forwarding Rate 29.76 Mpps or more in duplex mode
7	Device should have mac address table of 8K or more
8	Device should Support QOS features
9	Device should support DHCP, Auto negotiation, LACP, MDIX, Broadcast/Multicast
10	Device should Support Spanning Tree features like STP/RSTP
11	Device should Support BPDU Filtering/Guard and TC/Root Protection
12	Device should support ACL features like MAC address, IP address, TCP ports
13	Device should Supports up to 2K VLANs or more
14	The proposed Switch shall support Zero Touch Provisioning deployment with zero configuration from day 1
15	The proposed Switch shall support 802.1X Radius, port security etc
16	Device should certified by FCC, CE and RoHS
17	Device should support Operating Temperature: 0–45 °C

18	Should be compatible with the existing central management, and logging platform
19	Should be capable of displaying the devices connected on each switch post on central management
20	Should be able to monitor the bandwidth performance of each application in the central management

Secure Gateway

1	The proposed Secure Gateway shall have at least 4 x RJ45 and dedicated console port RJ45.
2	The proposed Secure Gateway shall support 1 Gbps or more IPS throughput
3	The proposed Secure Gateway shall support SDWAN along with application level advanced visibility
4	The proposed Secure Gateway shall support UTM features includes (IPS, URL Filtering, Content filtering, Web filtering, Antivirus, Anti phishing etc) from day 1
5	Security solution should be able to block or allow matched Specific YouTube channels using Channel ID from day 1
6	The proposed Secure Gateway shall support web search filtering (search engine)
7	The proposed secured Gateway shall support category-based URL filtering from day 1
8	The proposed Secure Gateway shall support Layer 7 application visibility, traffic shaping at a per application level from day 1
9	The proposed Secure Gateway shall provide realtime analysis and visibility of clients, applications with usage statistics
10	The proposed Secure Gateway shall provide anomaly, outage based on LAN, WAN or ISP
11	The proposed Secure Gateway shall support QOS (Layer 2 and Layer 3) including priority and DSCP tagging at per application, hostname or website level
12	The proposed solution shall support time based firmware upgrade for whole network.
13	The proposed Secure Gateway shall provide web application detail like throughput, live and actual traffic and should be compatible with the existing central management and logging platform
14	The proposed Secure Gateway shall support traffic limiting based in ports, clients, applications, groups or subnets including control of upload/download
15	The proposed Secure Gateway shall support dynamic WAN & application traffic monitoring based on latency, jitter and packet loss % etc
16	Security solution must integrate with Open LDAP, Radius, AD for user based policy.

Component 5: Speaker

Sl. No.	Device	Specifications
1	Speaker Type	Stereo
2	Driver Size	2x2 inch
3	Output Power	10W (2x5W) rms
4	Connectivity	USB (DC5V)
5	Connectors	USB+ 3.5mm Jack
6	Power	USB powered

Other terms & conditions are remaining same as per EOI including corrigendum.