BIDDING DOCUMENT

ADDENDUM NO. 1

National Competitive Bidding (NCB)

Supply and Installation of Video Conferencing Facilities for Ministries and Government Institutions – Phase I of Stage 1

IFB No: ICTA/SG2/GOSL/NCB/GOODS/2018/001

JULY 2018

3. Technical Specifications & General Requirements

3.1 Technical Specifications

The changes are highlighted in yellow below:

The Technical specifications may be provided in the following format. The bidder shall fill the columns 6 and 7. Bidder's failure to provide the information requested in the columns 6 and 7 may be a reason for the rejection of the bid. If any discrepancy is observed between the information provided by the bidder in the columns 6 and 7 and the other technical information attached to the bid, the information provided herein shall take precedence.

(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)
Line Item No	Description of Goods or Related Service	Sub Component	Technical Specifications and Standards					
			Minimum Requirements			Bidder's Offer (Briefly Describe)	Compliance with the Specifications requested Complied / Not Complied	Technical Reference-Page Number/s
			Detail	Priority *(Sub-components will consider as Critical during the evaluation mark as "C")*				
1	Multi-Point Video Conferencing Unit (Bridging System)	Brand	(Specify)	"C"				
		Model/Type/ Version	(Specify)	"C"				
		Country of Origin	(Specify)	"C"				
		Country of Manufacture	(Specify)	"C"				
		Year of manufacture	(Specify)	"C"				
		Capacity	Multi-point video Conferencing Solution shall capable of offering a Full High Definition in real-time with intelligent built-in capability for dynamic bandwidth, resolution matching to give each user a better	"C"				

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			experience based on available bandwidth.				
		Scalability	System shall scale out with cascading physical/virtual appliances for distributed Processing architecture support from Day 1	"C"			
		Interoperability	MCU shall support various well-known video conferencing endpoints within last 05 years	"C"			
		No. of Concurrent Meetings	Minimum 10 meetings (shall be able to scale up and scale out)	"C"			
		Concurrent Sessions	Connect with 1080 30 fps Full HD 40 ports (shall be able to scale out horizontally)	"C"			
		Licencing	Please specify in detail (Same system shall be able to scale up to 10x for future expansions)	"C"			
		High Availability	Active - Active	"C"			
		Video Resolutions and Frame Rate	Support video resolutions SD, HD, Full HD up to 1080p 60fps	"C"			
		Video Standards	Support the latest video coding standard H.265 or H.264 (HP) Support for better/higher codecs shall be available as free upgrade	"C"			
			HTML5/WebRTC, SIP, TIP (Telepresence Interoperability Protocol), H.323,	"C"			
			Support up to 1080p 60fps or more on all ports with AES 128/256-bit encryption	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Content sharing H.239 and BFCP support with HD 1080p or better resolution with all system including H.323 and SIP based endpoint.	"C"			
		Audio Standards	Support wideband Audio Protocols AAC-LD G.722, G.722.1, G.722.1c, G.728, G.729a, G.711a/u (Other Specify)	"C"			
			Speex Opus				
			Automatic Gain Control				
			Automatic Noise Suppression				
		Volume Control	End-point volume control (During the conference)				
		Management Tools	Web-based management, users should manage their own conference such as mute, disconnect and lock conference on his own.	"C"			
			Ability to handle packet loss in between 15-20% to deliver consistent quality of video to end-users	"C"			
			REST API/SDK for assets, monitoring, configuration and diagnostics (Please provide full documentation)	"C"			
			System should support Meeting Recording Facility (Audio/Video) for 300 mins in HD)	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			System should backup all past meeting to a NAS.				
			Backup and Restore	"C"			
		Security	Encryption Protocol H.233 (AES) / H.234 (AES) / H.235 (AES) (Please Specify)	"C"			
			Media Encryption AES 128 / AES 256	"C"			
			TLS 1.1 / 1.2 / 1.3	"C"			
			All control data should be able to authenticated and encrypted (TLS /SSL) Field industry-standard strong cryptography protection of communications	"C"			
			Web UI/SNMP, whitelists	"C"			
			Other (Specify)				
		Layout	Personal layout, automatic and dynamic layouts,	"C"			
		Quality of service (QoS)	Support QoS	"C"			
		Network Port (IEEE 802.3)	Network Interface supporting 10/100/1000 Mbps (with Redundancy)	"C"			
		Internet Protocol (IP)	IPv4/IPv6	"C"			
		NAT/Firewall Traversal Support	Shall Support NAT/Firewall traversal ability to connect all the above ports from internet and intranet	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Virtual Meeting Room Facility	Create Virtual Meeting Rooms on the MCU to facilitate Multi-Party Conferencing with H.323 devices, desktop users and mobile users.	"C"			
		Management Server	Central directory in management server which can be seen by All Users.	"C"			
			Shall have the capability to add specific far site systems to central directory and dial.	"C"			
			Each user should have capability to conduct multiparty conference at any time. The Desktop/ Mobile users Should be able to share the Conference URL used by the Guests to join the conference without requiring create login credentials.	"C"			
		MCU Administrator Privileges	**Per Single User** • Create • Delete • Temporary Disable • Change the password	"C"			
			User Group Management • Create a User Group • Delete a User Group • Set, per User Group, limits such as: ➢ Managing Maximum Bandwidth ➢ Maximum Number of Participants who can join the	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			conferences of the users who belong to the group				
			Virtual Room Management: • Create Virtual Meeting Rooms (Public / Private) • Assign PIN to Join Meeting • Virtual Room Control (Ability to Lock/ Disable the Room)	"C"			
			Centrally control, manage, and deploy the software used by desktop systems.	"C"			
			Uploads a new software version to the management server all of the Users should be able to upgrade to it with minimal user intervention.	"C"			
		Endpoint User Privileges	Add/remove participants	"C"			
			Meeting Arrangements	"C"			
			On demand voice/video recording	"C"			
			Other (Specify)				
		LDAP/AD Integration	CDR must be available via the system whenever it's required and support integration with LDAP/AD.	"C"			
		Reporting & Logging	System should provide logs for troubleshooting and debugging.	"C"			
		Meeting Monitoring Dashboard	Entire meeting Process/status	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		MCU Power Rating	(Specify)	"C"			
		Warranty and Maintenance	Please refer Section VII – Contract Data – Clause No. CC 27.3 & CC 27.5	"C"			
		Training	Shall Provide the MCU System Training for administrators	"C"			
1.1	Video Conferencing Desktop Application (Web based and Client)	Camera Support	Support Built-in camera	"C"			
			Support External (USB) Camera	"C"			
		Supported Video Standards	H.265				
			H.264 HP	"C"			
			H.264	"C"			
			H.239 (Content sharing/slide shows)	"C"			
		Supported Live Video Resolution and Frame Rates	Support 1080p (30fps) (Specify required P2P bandwidth)	"C"			
			Support 720p (30fps) (Specify required P2P bandwidth)	"C"			
			Support 4CIF (30fps) (Specify required P2P bandwidth)	"C"			
			Other (Specify)				
		Video Layout	Picture in Picture (PIP)	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Consist of Layouts supporting multiple parties displayed in a single screen (Please specify number of parties displayed)	"C"			
			Support continuous presence (CP) and Voice activated (VA) mode selectable by the users.	"C"			
		User Interface	Consist of Contact List	"C"			
			Indicate the status of list of contact / participants online / offline / busy	"C"			
			Text overlay to identify participants	"C"			
			Consist of Preloaded Contact List				
		Instant Messaging	Support Private Chat with Conference Participants				
			Support Group Chat with Conference Participants	"C"			
		Conferencing Features	Ability to mute audio & hide camera	"C"			
		Audio Inputs/Outputs	Support external USB Speakerphone	"C"			
			Support Built-in mic & Speakers	"C"			
			Support External Headset with mic	"C"			
		Audio Features	Consist of Auto Echo cancellation	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			DTMF support	"C"			
		Language Support	English	"C"			
		Security	AES Encryption AES 128/ AES 256	"C"			
			Firewall Traversal	"C"			
			NAT Traversal	"C"			
			Other (Specify)				
		Supported Operating Systems	Windows 7 / 8 / 8.1 / 10	"C"			
			Mac OS X (Latest Version) (Please specify supported versions)	"C"			
			Linux Desktop Application / Web RTC (Please specify supported versions)	"C"			
		Minimum System Requirements	Processor: (Please specify)	"C"			
			RAM: (Please specify)	"C"			
			Hard Disk Space: (Please specify)	"C"			
		Supported Web Browsers	Latest Version of Chrome, Firefox, Safari, Edge/IE, etc.	"C"			
		Desktop Client Availability	Should be available as a web client or downloadable from central	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			server or available on a CD/USB				
		Warranty and maintenance	Please refer Section VII – Contract Data – Clause No. CC 27.5	"C"			
1.2	Video Conferencing Mobile Application for Tablets & Smartphones	Camera Support	Built-in Device Camera	"C"			
			Switch between front and rear cameras	"C"			
		Supported Video Standards	H.264 (HP) / 265	"C"			
			H.264	"C"			
			H.264 SVC	"C"			
			H.239 / BFCP (Content Sharing)	"C"			
			Other (Specify)				
		Supported Live Video Resolutions	720p HD	"C"			
			4CIF	"C"			
			CIF	"C"			
			Other (Specify)				
		Video Layout	Picture in Picture (PIP) /Ability to see self and to see far site video	"C"			
		User Interface	Contact List / Directory	"C"			
			Presence Status of Contacts (Available, Logged off, Busy)				
			Text overlay to identify participants	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Conferencing Features	Ability to mute audio & hide camera	"C"			
		Audio Inputs/Outputs	Support Built-in Device Mic & Speakers	"C"			
			Support External Headset with mic	"C"			
		Audio Features	Consist Auto Echo cancellation	"C"			
			DTMF support	"C"			
		Language Support	English	"C"			
		Security	AES Encryption AES 128 / AES 256	"C"			
			Firewall Traversal	"C"			
			Other (Specify)				
		Supported Operating Systems	iOS (latest version) (Please specify other supported versions)	"C"			
			Android (latest version) (Please specify other supported versions)	"C"			
			<mark>Windows Mobile (latest version) / Web RTC</mark>				
		Minimum System Requirements	Storage: (Please specify)	"C"			
		Warranty and maintenance	Please refer Section VII – Contract Data – Clause No. CC 27.5	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2	Video Conference Endpoint	Brand	(Specify)	"C"			
		Model	(Specify)	"C"			
		Country of Origin	(Specify)	"C"			
		Country of Manufacture	(Specify)	"C"			
		Year of manufacture	(Specify)	"C"			
		Solution package Contents	HD Video Conferencing Codec	"C"			
			Minimum 2x 1080p Cameras with Speaker Tracking up to 30 feet (camera should be separately connected to the codec)	"C"			
			Minimum 3 Table Microphones	"C"			
			10-inch Touch Pad for controlling the endpoint	"C"			
			All required Cables (cables should be original and appropriate brand)	"C"			
		Live Video Resolution and Frame Rates	Support 1080p (60 Fps) (Specify Required P2P Bandwidth)	"C"			
			Support 1080p (30 Fps) (Specify Required P2P Bandwidth)	"C"			
			Support 720p (60 Fps) (Specify Required P2P Bandwidth)	"C"			
			Support 720p (30fps) (Specify Required P2P Bandwidth)	"C"			
			Support 4CIF (60 Fps) (Specify Required P2P Bandwidth)	"C"			
			Support 4CIF (30 FPS)	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			(Specify Required P2P Bandwidth)				
		Supported Video Standards	H.323	"C"			
			H.264 HP / H.265	"C"			
			H.264	"C"			
			H.239 (Content Sharing)	"C"			
			Other (Specify)				
		Video Input ports	Two Cameras or more	"C"			
			Two HDMI Ports	"C"			
		Video Output ports	Support Simultaneous Multiple Displays (Specify number of displays)	"C"			
			Two HDMI Ports (One for far end video and one for near end video)	"C"			
		Video Layout	Picture in Picture (PIP) capability	"C"			
			consist Layouts which supports multiple parties in a single screen (Please specify maximum number of parties displayed)	"C"			
			16:9 Widescreen Supported	"C"			
		User Interface	Consist Address Book capability	"C"			
			Maintain Recently dialed number list up to minimum 10 calls.	"C"			
			Text overlay to identify participants	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Supported Audio Standards	G.722, G.722.1	"C"			
			G.711, G.728	"C"			
			AAC-LD (TIP calls)	"C"			
			Other (Specify)				
		Audio Inputs	Support three Microphone Inputs	"C"			
			Support Two HDMI Inputs	"C"			
		Audio Outputs	Support two HDMI outputs	"C"			
		Supported Audio Features	Support Echo cancellation	"C"			
			Support Automatic noise suppression	"C"			
			Support Automatic gain control	"C"			
			Audio error concealment	"C"			
			Other (Specify)				
		Supported Protocols	Support H.323/SIP/TIP	"C"			
		Supported Network Features	Support IPv4	"C"			
			Support IPv6	"C"			
			Auto – MDI-X	"C"			
			Packet Loss Recovery Ratio (specify)	"C"			
		Network Interface (IEEE 802.3)	Network Interface supporting 100 Mbps / 1000Mbps	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Wireless Connectivity	Should be able to connect through Wireless				
			Should support wireless content Sharing				
		Firewall Protocols	Support NAT traversal	"C"			
			Gatekeeper support	"C"			
		Encryption	Support AES encryption AES 128 / AES 256	"C"			
		Security	Support Account Lockout	"C"			
			Support Port Lockout	"C"			
			Maintain Login Session Lists	"C"			
			Ability to Detect Unauthorized Access	"C"			
			Support SNMP				
			IP Address Whitelist	"C"			
			Other (Specify)				
		Management	Support HTTP/HTTPS	"C"			
			Support Telnet	"C"			
			Support SNMP	"C"			
			Consist Serial Interface	"C"			
			Authentication for User Account	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Authentication for Admin Account	"C"			
			Maintain Call Detail Records up to minimum last 30 Calls	"C"			
		Camera Features	Support 1920x1080 at 60fps (Should include the license, if this is a license feature)	"C"			
			5x Digital/Optical zoom	"C"			
			Support Auto Focus by voice tracking up to 30 feet	"C"			
			People count (Metrics) for analytics purposes	"C"			
			Support Best Overview (framing) feature	"C"			
			Field of view (FoV) Horizontal: Minimum 70^0 or better	"C"			
			Support Minimum Zoom: -10x or shall facilitate face/voice tracking to a minimum of 10-meter distance or better	"C"			
			Capability to control the Far End Camera.	"C"			
			Support Camera Presets Using Remote /Touch Controller – Minimum 6 (Specify)	"C"			
		Table Microphone	Support Omni-directional 360-degree voice pickup	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Mute Button with LED indicator	"C"			
			Three or more Microphones for Medium to large spaces (20m x15m)	"C"			
		Remote Control Function	Touch Device with 10 inch screen	"C"			
		Voice/Video Recording	Should support on demand voice/video network recording facility through MCU	"C"			
		Other Interfaces	1 x RS-232 (Optional)				
			Other (Specify)				
		Protection	Over voltage protection, Lightning, Short circuit and surge protection	"C"			
		Durable padded dust cover	Should cover display panels and camera	"C"			
		Power Supply	220-240 Volts @ 50/60Hz	"C"			
		Dimensions & Weight	Specify Dimensions (Height x Width x Depth)	"C"			
			Specify Weight (Kg)	"C"			
		Environmental	Operating Temperature (Please Specify)				
			Storage Temperature (Please Specify)				
			Operating Humidity (Please Specify)				

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Storage Humidity (Please Specify)				
		Warranty & Maintenance	Please refer Section VII – Contract Data – Clause No. CC 27.3 & CC 27.5	"C"			
3	Display Panel for Video Conference Endpoint	Brand	(Specify)	"C"			
		Model	(Specify)	"C"			
		Country of Origin	(Specify)	"C"			
		Country of Manufacture	(Specify)	"C"			
		Year of manufacture	(Specify)	"C"			
		Required no. of screens	Two	"C"			
		Screen Size	55 Inch Full HD or better (Diagonal)	"C"			
		Contrast Ratio	Minimum 4000:1	"C"			
		Refresh Rate	100 Hertz	"C"			
		Brightness	Minimum 300 cd/m^2	"C"			
		Speaker System Details	2 way/2 speakers Audio output Power should be 20W (10W + 10W) or higher	"C"			
		Audio/Video	Screen Resolution: 1080p	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Interfaces	HDMI inputs x 2	"C"			
			LED Backlit	"C"			
			Audio out L-R	"C"			
			3.5mm stereo Output x 1	"C"			
			Output Power 10w x2 or higher	"C"			
		Viewing angle	178^0	"C"			
		Power supply	AC 220-240 V 50/60 Hz	"C"			
		Other Inputs	USB 2.0 x 2	"C"			
		Accessories	IR Remote Controller with batteries, User Manual, connecting cables (cables should be original and appropriate brand) and standard all required accessories.	"C"			
		Warranty and Maintenance	Please refer Section VII – Contract Data – Clause No. CC 27.3 & CC 27.5	"C"			
4	Display Panel Stand for Video Conference Endpoint	Brand	(Specify)	"C"			
		Model	(Specify)	"C"			
		Country of Origin	(Specify)	"C"			
		Country of Manufacture	(Specify)	"C"			
		Year of manufacture	(Specify)	"C"			
		Display	Should support two 55-inch displays	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			Display panel height should be adjustable	"C"			
		Supported Weight	<mark>Should Support minimum 200kg or higher (Specify)</mark>				
		Equipment Shelf/tray/rack	For Video Conferencing Camera x 1	"C"			
			For Video Conferencing equipment x 1	"C"			
			For UPS x 1	"C"			
			Invisible cable routing	"C"			
		Mobility	Swivel caster wheels with brake	"C"			
			13-amp outlet 6 output connections (power bar)	"C"			
		Electrical Plugs & Sockets	Power Cord Length 10 meters	"C"			
			Input/ Supply 220 – 260 Volt AC				
			Output Supply 200 – 230 Volt AC				
5	UPS	Brand	(Specify)	"C"			
		Model	(Specify)	"C"			
		Country of Origin	(Specify)	"C"			
		Country of Manufacture	(Specify)	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Year of manufacture	(Specify)	"C"			
		Power Rating	1200 VA	"C"			
		Type	Line Interactive	"C"			
		Input/ Supply	160 – 260 Volt AC				
		Input frequency	50Hz – 60Hz automatic detection				
		Input Connections	IEC 320 C14				
		Cord Length	5 meters	"C"			
		Output Supply Voltage	220 – 240				
		Output wattage	720 Watts	"C"			
		Output Frequency	50Hz				
		Output Connections	Four (4) Battery backup IEC 320 C13	"C"			
		Battery	Maintenance free lead acid battery	"C"			
		Backup time	Minimum 30 minutes on 50% load	"C"			
		Recharge time	8 hours to 90% capacity	"C"			
		Product certifications and standards	ISO 9001	"C"			
			FCC Class B	"C"			
		Protection	Over voltage protection, Lightning, Short circuit and surge protection	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Warranty and Maintenance	Please refer Section VII – Contract Data – Clause No. CC 27.3 & CC 27.5	"C"			
6	Network Cables and patch cords	Brand	(Specify)	"C"			
		Model	(Specify)	"C"			
		Country of Origin / Manufacture	(Specify)	"C"			
		Year of manufacture	(Specify)	"C"			
		Type	High Quality Cat 6 (Full copper)	"C"			
		Insulation	(Specify)	"C"			
		Jacket	(Specify)	"C"			
		Patch cord length	1 meter	"C"			
		Patch Code should factory crimped	Required	"C"			
		Color code for network cables and patch cords	Orange or Red	"C"			
	Cable Laying	Guidelines	Laying of UTP Cables enclosed in PVC/Casing/Conduits and Miscellaneous materials from Rack to keystone (with drilling)	"C"			
		Brand	(Specify)	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Face Plate and Keystone	Model	(Specify)	"C"			
		Country of Origin / Manufacture	(Specify)	"C"			
		Type	Single Face Plate	"C"			
			Cat 6 Keystone	"C"			
		Material	(Specify)	"C"			
		Color	(Specify)	"C"			
	Sunk Box	Material	(Specify)	"C"			
		Color	(Specify)	"C"			
	Termination, Labeling, Testing of a UTP Network Node Cabling	Installation Guidelines	The Cables shall be properly laid through the trunks and ducts. The Cables with conduits and casing shall be clipped to the concrete slab / wall.	"C"			
			Network nodes should be terminated on existing patch panels.	"C"			
			The cables have to be laid from the patch panel to the keystones.	"C"			
			Installation of network cables shall not be closer to power cables and water lines.	"C"			
			Installation of cables shall be free of tension at both ends.	"C"			
			The cables shall be tied up loosely together with sufficient distance.	"C"			
			Install Surge and Lightning protector for Rack-end and	"C"			

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			properly ground.				
			Tagging both Rack End and Equipment End	"C"			
	Warranty and Maintenance		Please refer Section VII – Contract Data – Clause No. CC 27.3 & CC 27.5	"C"			

Section III.

Evaluation and Qualification Criteria

2. Post – Qualification Requirements (ITB 37.2)

(a)   Experience and Technical Capability

v.   Detailed list of similar <u>local</u> projects/orders that the bidder has completed successfully during the period of last three (03) years ending on the deadline of bid submission…… shall be <u>amended </u>as follows:

v.   Detailed list of similar projects/orders that the bidder has completed successfully during the period of last three (03) years ending on the deadline of bid submission.