



Tender No. KU/R/1190 /16

Dated : 06 /10/2016

OPEN TENDER NOTIFICATION

**FOR SUPPLY AND INSTALLATION OF VIDEO ENABLED VIRTUAL CLASSROOM IN
KOLHAN UNIVERSITY, CHAIBASA, JHARKHAND- 833 202**



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FOR SUPPLY AND INSTALLATION OF VIDEO ENABLED VIRTUAL CLASSROOM IN KOLHAN UNIVERSITY, CHAIBASA, JHARKHAND- 833 202

KOLHAN UNIVERSITY invites sealed quotations from reputed manufacturers or their authorized distributors/resellers for supply, installation and maintenance of Video Enabled Virtual Classroom Solution at KOLHAN UNIVERSITY as per detailed terms and conditions, specifications and eligibility criteria prescribed in the tender document, which is available at the university website www.kolhanuniversity.ac.in .

Last date of submission of sealed quotation is up to 1: 00 p.m. on 28.10.2016.

Oh
6.10.16

**Registrar,
Kolhan university,
Chaibasa**

Sealed proposals are invited from manufacturers or their authorized distributors / resellers for supply, installation and maintenance of High Definition video conferencing solution at KOLHAN UNIVERSITY as per detailed Terms and Conditions, Eligibility criteria, and specifications mentioned in this document.

General Information

1. The Bidder is expected to examine all instructions, forms, terms, eligibility requirement and specifications in the bidding documents. Failure to furnish all information required by the bidding documents may result in the rejection of its bid and will bear the bidder's own risk.
2. All costs and expenses incurred by Bidders in any way associated with the development, preparation, and submission of responses, including but not limited to; the attendance at meetings, discussions, demonstrations, etc. and providing any additional information required by Kolhan University, will be borne entirely and exclusively by the bidder.
3. Incomplete quotations shall be rejected outright. No alterations, amendments or modifications shall be made by the Bidder in the tender documents and if any such alterations are made or any special conditions attached, the bid is liable to be rejected without reference to the bidder.

GENERAL TERMS AND CONDITIONS:-

1. **Cost of Tender Document** : The cost of Tender Document is Rs.20,000/- in the form of D.D. drawn in favour of "The Registrar, Kolhan University, Chaibasa payable at Chaibasa.
2. **Two Bid System** : The original copy of tender (duly signed) should be sent to the Office in a sealed cover in a double envelop. The tenderer must place the two sealed envelopes clearly marked 'TECHNICAL BID' and 'FINANCIAL BID' by indicating the Draft number, date & amount of EMD on the envelope of 'TECHNICAL BID' failing which the tender will not be opened. Financial Bid to indicate a warning "*DO NOT OPEN WITH THE TECHNICAL BID*". The outer cover should be super scribed **Tender for "FOR SUPPLY AND INSTALLATION OF VIDEO ENABLED VIRTUAL CLASSROOM IN KOLHAN UNIVERSITY, CHAIBASA"**.
3. **Downloads** : Tender Document with full details can be downloaded from university website: www.kolhanuniversity.ac.in from 06.10.2016 participation in the tender will be subject to remittance of the prescribed **Cost of tender document & EMD** alongwith the **Technical Bid**.
4. **EMD** : EMD in the form of crossed Demand Draft/ Bank Guarantee drawn from any commercial bank *in favour of* "The Registrar, Kolhan University, Chaibasa" payable at Chaibasa should be enclosed with the tender (technical bid) of each quoted by the bidder(s). The unsuccessful bidder's EMD will be returned soon after the finalisation of Tender, where as the successful bidders **EMD** will be returned subject to furnishing the required **Performance Security**. No interest will be paid on Earned Money for the period of retention in the university. Tenders without EMD would be rejected.
5. **Security Deposit** : The successful bidder has to furnish an amount equivalent to **ten (10) per cent** of the order value as **Performance Security Deposit** which will be refunded/ returned only after satisfactory completion of the contractual obligation including warranty. The Security Deposit should be in the form of Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any commercial bank and on which no interest will be paid.

6. **Warranty** : The supply of goods should be under tender warranty for 3 years including all parts in this schedule from the date of supply and acceptance by the concerned authority However, the manufacturer's guarantee if any which exceeds, should be extended accordingly. After Warranty period Annual Maintenance Charge (AMC) should be quoted for 02 or 03 years on yearly renewable basis.

7. **Important Dates** :

1	Start date of downloading the Tender Document	06.10.2016	04:00 P.M.
2	Last date and time for submission of Tenders	28.10.2016	01:00 P.M.
3	Date and Time for opening of Technical Bids	28.10.2016	02:00 P.M.

8. **Due Date** : Tenders received after due date and time will not be considered. University will not be responsible for postal delays.

9. **Payment** : No advance payment is permissible. Payment would be made after successful completion of work and duly certified by the officer of the university designated for the purpose.

10. **Place of Delivery** : Main location would be at university are video enabled e-learning for 15 location at different colleges.

11. **Liquidate Damage** : In case, the firm fails to supply the material as specified in the purchase order, a sum of equivalent to **0.5%** of the contract price per week or part thereof off delay until actual implementation or performance shall be deducted from the bill up to a maximum deduction of **10%** of the contract price. Once the maximum is reached, we may consider termination of the contract.

12. **Bank details for e-payment** : The bank details may be furnished alongwith tender for making e-payment to the successful bidder.

13. **Period of Validity** : The rates quoted shall be valid for a minimum period of 180 days beyond the date of opening of tenders.

14. **Evaluation** : The Technical Bids are to be opened by the university Tender Evaluation Committee in the first instance and will be evaluated technically be the Committee. At the second stage Financial Bids will be opened only for the technically qualified tenders for further evaluation before awarding the contract.

15. **Rejection of tenders** : Tenders not complying with the above conditions are liable to be rejected.

16. **Acceptance of tender and Jurisdiction** : Vice-Chancellor, Kolhan University, Chaibasa reserves the right to accept or reject any of the tenders either in part or in full without assigning any reason thereof. Decision of the V.C. will be final and legally binding. All disputes will be subject to Chaibasa Jurisdiction only.

GENERAL TERMS AND CONDITIONS :-

- 1) The sealed quotations from manufacturer or their authorized distributor/dealer/ resellers should reach to KOLHAN UNIVERSITY within the specified time period. Quotations received after the specified date & time will not be entertained.
- 2) The solution provider must possess the requisite experience, strength and capabilities in providing the services necessary to meet the requirements, as described in this documents.
- 3) The bidder must possess the technical know-how and the financial know-how that would be required to successfully provide the supply for the Solution, and support services sought by KOLHAN UNIVERSITY, for the entire period of the contract/AMC period
- 4) Mere fulfilment of all the stipulations as contained in the document, terms and conditions annexed to the quotation does not confer any right on the bidder on acceptance of their tender application.

- 5) Quotations received from manufacturers or their authorized distributors/dealers/retailers will only be accepted.
- 6) The product offer should comply with the required specifications and service deliverables.
- 7) Each Bidder acknowledges and accepts that KOLHAN UNIVERSITY in its absolute discretion may apply selection criteria specified in the document for evaluation of proposals for short listing/selecting the eligible vendor(s).
- 8) 80 % of The payment will be made only after supply of the material and providing the valid documents of the same, balance 20% of payment will be made on successful installation, commissioning, demonstration and training of the E-Learning solution in KOLHAN UNIVERSITY Payment for AMC support will be made half yearly after completion of every six months after the warranty period.
- 9) The E Learning solution should be provided with three years comprehensive onsite warranty on all the software and hardware products supplied by the vendor effective from the date of installation and commissioning at all the locations.
- 10) The AMC includes Installation, configuration, implementation, training and support for 3 years after completion of initial warranty of 3 years. The supplier has to provide free of charge upgrades of the software / patches released during the warranty and AMC period. The Charges should be quoted all inclusive.
- 11) The bidder should enclose self attested photo copies at all the relevant documents duly sealed and signed by the authorised person. In the absence of these documents, the quotation is liable for rejection.
- 12) All the relevant Forms and supporting documents should be submitted with for Technical bid. The Financial bid should contain only financial proposal as per format prescribed
- 13) *The Technical Bid shall be placed in a sealed envelope clearly superscripted as "Technical Bid" and the Financial Bid shall be placed in a separate sealed envelope clearly superscripted as "Financial Bid", The two envelopes shall then be placed in a third sealed envelope and superscripted as "FOR SUPPLY AND INSTALLATION OF VIDEO ENABLED VIRTUAL CLASSROOM IN KOLHAN UNIVERSITY, CHAIBASA". The successful bidder has to supply and install the solution within 2 months of the issuance of purchase order.***
- 14) Bids complete in all respect shall be submitted to:-

The Registrar,
Kolhan University,
Chaibasa, Jharkhand- 833 202.
- 15) Any bid received in KOLHAN UNIVERSITY after the prescribed date and time will be summarily rejected. KOLHAN UNIVERSITY shall not be responsible for any postal delay or non-receipt / non-delivery of the documents. No further correspondence on this subject will be entertained.
- 16) Acceptance of tender and Jurisdiction :** Vice-Chancellor (VC), Kolhan University, Chaibasa reserves the right to accept or reject any of the tenders either in part or in full without assigning any reason thereof. Decision of the V.C. will be final and legally binding. All disputes will be subject to Chaibasa Jurisdiction only.

OPENING OF TECHNICAL BIDS :

KOLHAN UNIVERSITY will open all Technical Bids on the prescribed date and time in the presence of the representatives of the bidders. The Bidder's representatives who are present shall mark their attendance. In the event of the specified date of bid opening being declared a holiday for KOLHAN UNIVERSITY the Bids shall be opened at the appointed time and location on the next working day.

1. **Bids Not Considered for Evaluation** : Bids those are rejected during the evaluation process shall not be considered for further evaluation, irrespective of any circumstances.
2. **Technical Evaluation Criteria** : Prior to the detailed evaluation of the Technical Bids, KOLHAN UNIVERSITY shall determine whether each bid is
 - a) Complete
 - b) Is accompanied by the required information and documents and
 - c) Is substantially responsive to the requirements set forth in the RFP (Tender) document.
 - The Tender Evaluation Committee may choose to conduct technical negotiation or discussion with any or all the Bidders. The decision of the Evaluation Committee in the evaluation of the Technical and Commercial bids shall be final and binding on all the parties.
 - Failure of the Bidder to agree with the Terms & Conditions of the RFP/Contract shall constitute sufficient grounds for the annulment of the award of contract, in such event the contract may be awarded to the next most responsive bidder.

3. **Opening of Financial Bids**

The Tender Evaluation Committee will evaluate the Technical proposal. The Financial Bids will be opened only for those bidders who qualify the technical requirements as evaluated by the Committee including demonstration by bidders before the Committee constituted by the University. The name of bidder, bid prices, total amount of each bid, etc. shall be announced by the KOLHAN UNIVERSITY at the Commercial bid Opening. The KOLHAN UNIVERSITY will prepare minutes of the Commercial Bid Opening.

The date, time and venue of opening of Commercial bids will be informed to the short listed bidders separately.

4. **Award of Contract** : KOLHAN UNIVERSITY will award the contract to successful BIDDER whose bid has been determined to be responsive and meeting all the requirements and considered by the Committee.
5. **Taxes and Duties** : Sales Tax/ Service Tax/VAT/Work Contracts Tax/ Octroi and other statutory levies, taxes, charges shall be paid by BIDDER as applicable and shall quote accordingly. The decision of KOLHAN UNIVERSITY in this regard will be final and binding and no disputes in this regard will be entertained.

6. **TIME - ESSENCE OF CONTRACT:**

The time allowed for completing the work under tender and handing over the same shall be of the essence of the Contract and shall be strictly observed by the bidder. The Work shall proceed with due diligence until Final Completion. Bidders shall have no right or claim for the extension of the contract in any circumstances. For delay, bidder shall be liable to pay penalty and/or liquidated damages as decided by the KOLHAN UNIVERSITY and such decision of the KOLHAN UNIVERSITY shall be final. KOLHAN UNIVERSITY also reserve right to its sole discretion to terminate the contract.

7. **Fraudulent & Corrupt Practice** : “Fraudulent Practice” means a mis-representation of facts in order to influence a procurement process or the execution of the project and includes collusive practice among BIDDERS (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels.

“Corrupt Practice” means the offering, giving, receiving or soliciting of anything of value, pressurizing to influence the action of the Officials of the KOLHAN UNIVERSITY in the process of project execution. KOLHAN UNIVERSITY will reject a proposal for award if it determines that the BIDDER recommended for award has engaged in corrupt or fraudulent practices in competing for, or in executing, the project.

8. **Operation and Maintenance**

The vendor will respond to any issue raised by the user within 2 working hours of being notified by the authorized person. The technical fault shall be resolved within 48 hours and in case of part/ component replacement it should be completed in 7 working days of the notification during the warranty and AMC period. KOLHAN UNIVERSITY may call for any technical support or operational training to the user.

9. **Force Majeure**

For the purpose of this Article, Force “Majeure” means any cause, which is beyond the control of the Bidder as the case may be, which such party could not foresee or with a reasonable amount of diligence could not have foreseen, and which substantially affect the performance of the Contract, such as:-

-War/hostilities

-Riot or civil commotion

-Earth Quake, Flood, Fire, Tempest, Epidemics, Lightning or other natural physical Disaster, Quarantine restricts and freight embargoes.

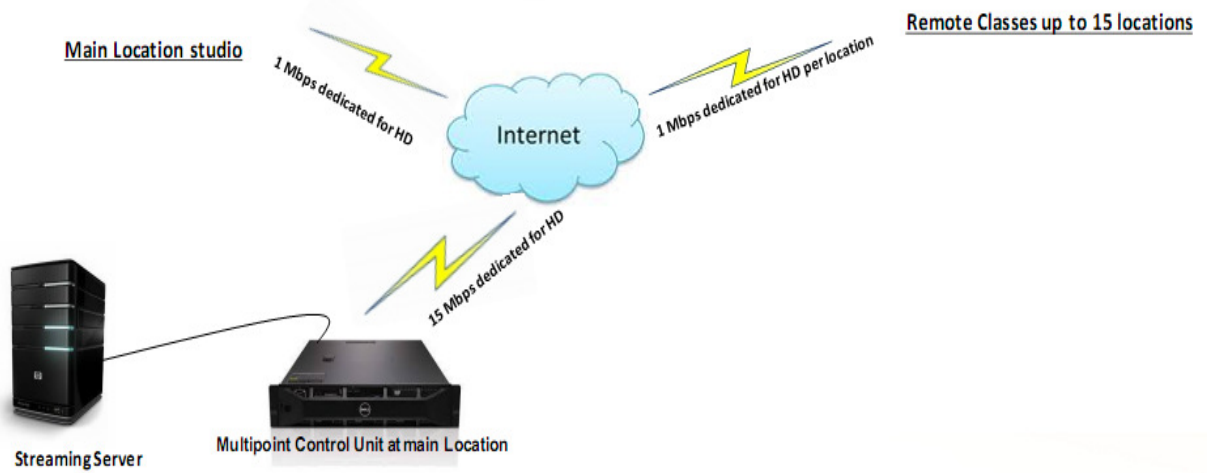
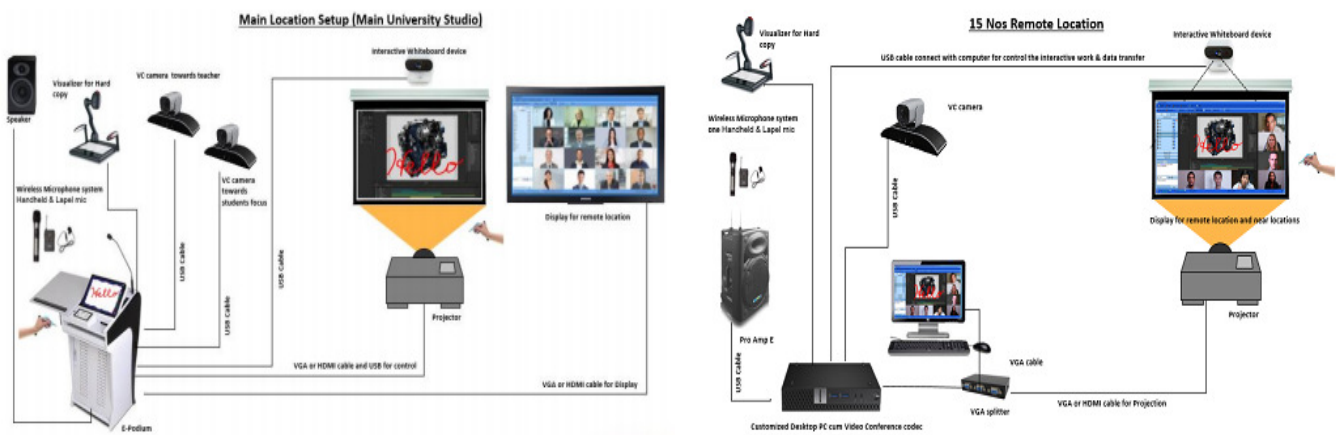
-Restrictions imposed by the Government or other statutory bodies, which is beyond the control of the BIDDER, which prevent or delay the execution of the order by the BIDDER.

Scope of Work

Kolhan University wants to enable e-learning by creating one studio and enabling it to connect to 15 other locations / classrooms (no. may increase or decrease) to join in from any location as detailed in tender document annexed herewith. The diagrammatical representation of Video Enabled e learning for 1+15 locations is for reference which may be followed for submission of detailed proposal in this regard.

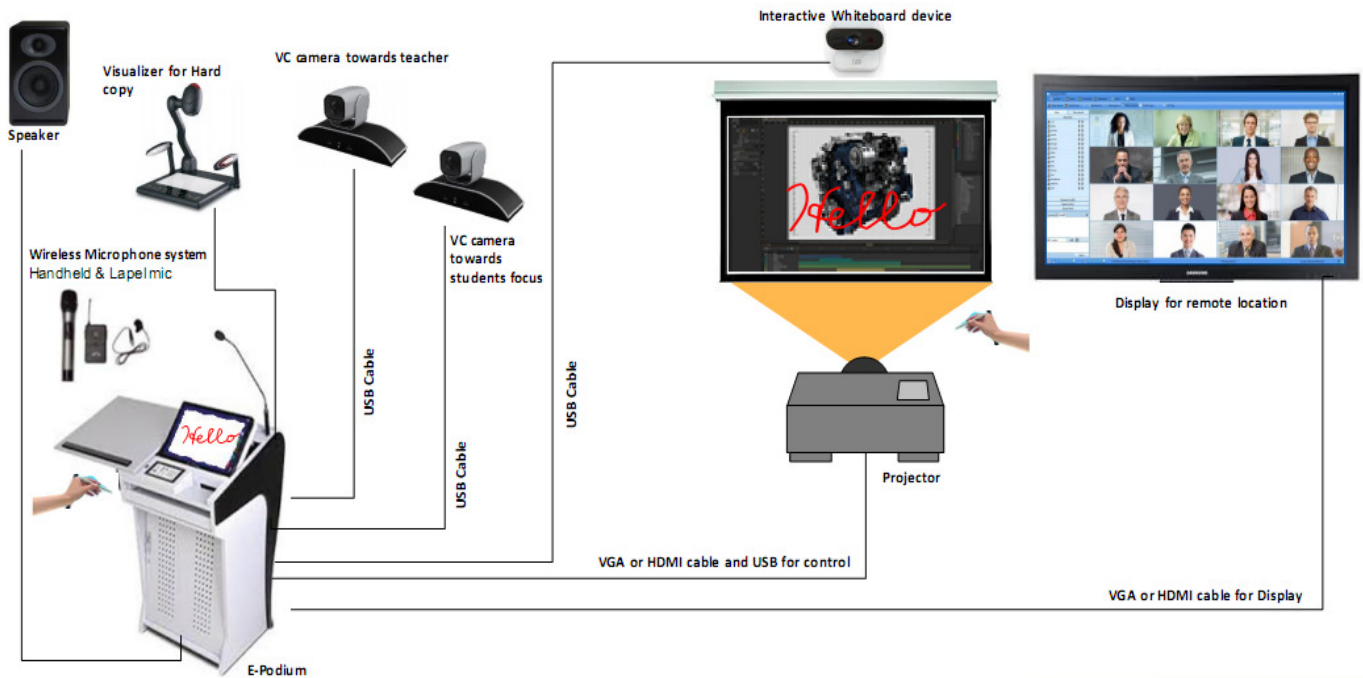

6.10.16
**Registrar,
Kolhan University,
Chaibasa**

Diagrammatical representation of Video Enabled e learning for 1+15 locations

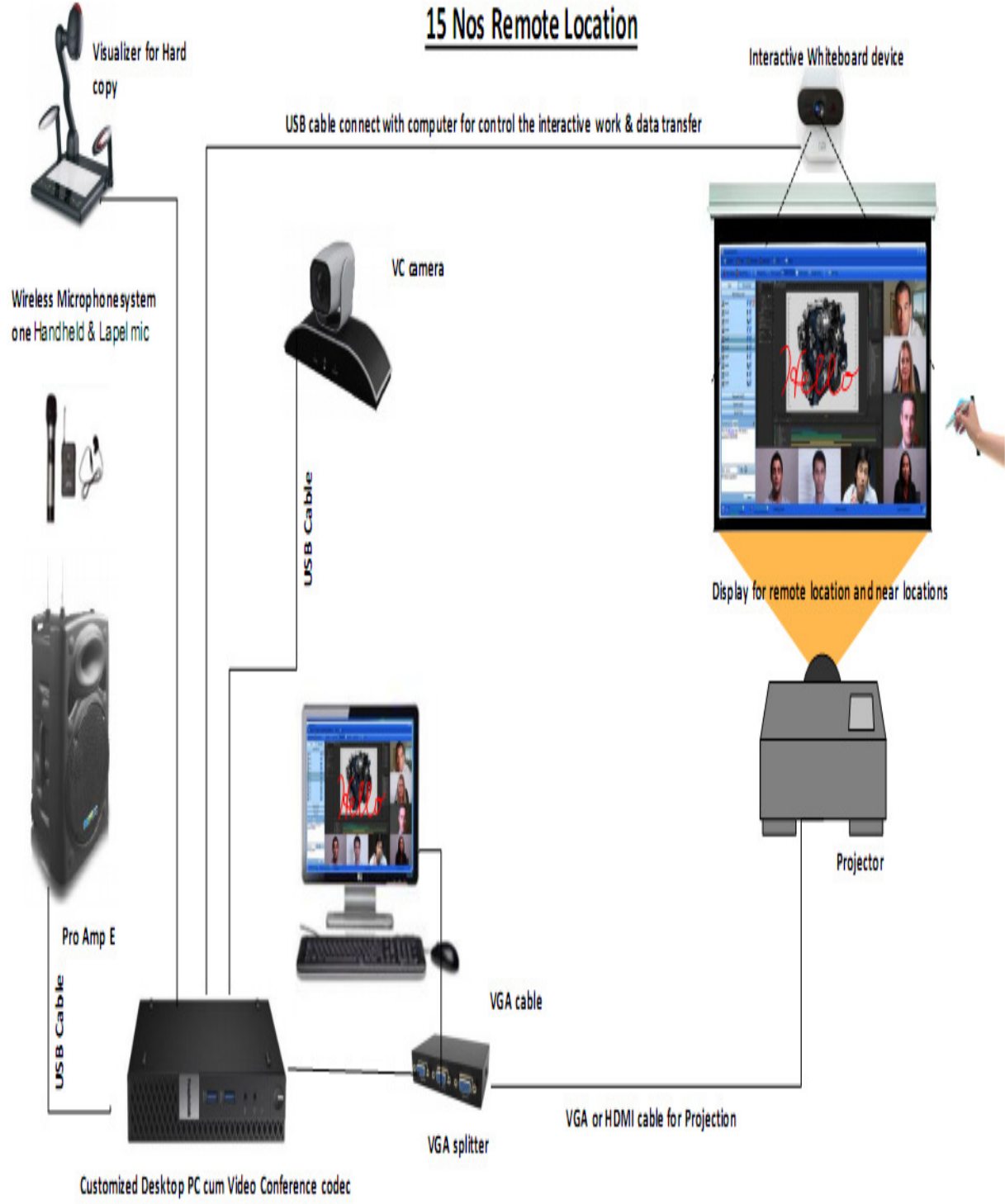


Diagrammatical representation of Video Enabled e learning for Main Studio

Main Location Setup (Main University Studio)



Diagrammatical representation of Video Enabled e learning for 15 Remote Classrooms.



Part I: Technical Bid- Form I

DECLARATION OF BIDDER (to be submitted on company's letter head)

To,
Registrar,
Kolhan University,
Chaibasa.

Sub: Bids for supply, installation and support for Video Conferencing solution in Kolhan University

Sir,

The undersigned having read and examined in detail all the requirements pertaining to supply, installation and support of E Learning solution in Kolhan university; do hereby express the interest to do the work as specified in the RFP document.

	Description	Response
1.	Name of the bidder organization	
2.	Address	
3.	Name, designation & address of the person to whom all references shall be made	
4.	Telephone (with STD code)	
5.	Mobile No. of the contact person	
6.	E-mail of the contact person	

We have enclosed the following documents:

1. Letters of Authorization from the OEM(s) for VC solution
2. Eligibility Criteria and specifications compliance duly sealed and signed by the authorized person.
3. Self Attested copies of all the Supporting Documents.

I/ We hereby declare that my/ our quotation is made in good faith and the information contained is true and correct to the best of my/ our knowledge and belief.

Thanking you,

Yours faithfully,

(Signature of the Applicant)

Name:

Designation:

Seal:

Date: _____

Place _____

Part I: Technical Bid- FORM II

Ref: Tender for Video Enabled Virtual Classroom in Kolhan University

Candidates shall be excluded from participation in the selection procedure if:

1. They are bankrupt or being wound up, are having their affairs administered by the courts, have entered into an arrangement with creditors, have suspended business activities, are the subject of proceedings concerning those matter, or are in any analogous situation arising from a similar procedure provided for in national legislation or regulations;
2. They have been convicted for an offence concerning their professional conduct by judgment.
3. They have been guilty of grave professional misconduct proven by any means, which the contracting authority can justify;
4. They have not fulfilled obligations in respect of payment of social security contribution or the payment of taxes in accordance with the legal provisions of the country in which they are established or with those of the country of the contracting authority or those of the country where the contract is performed;
5. They have been the subject of a judgment, which has the force of res judicata for fraud, corruption, and involvement in a criminal organization or any other illegal activity detrimental to the communities' financial interests;
6. Following another procurement procedure or grant award procedure financed by the community budget, they have been declared to be in serious breach of contract for failure to comply with their contractual obligations.

In response to your Call for Video Enabled Virtual Classroom in Kolhan University I/We hereby declare that I/we:

1. Am/are not in any of the situations excluding me/us from participation contracts.
2. Agree to abide by the highest ethical standards in the profession and, in particular, have no potential conflict of interest;
3. Will inform the Authority immediately if there is any change in the above circumstances at any stage during the tender procedure or during the implementation of the project;
4. Fully recognize and accept that any inaccurate or incomplete information deliberately provided in this tender may result in my/our exclusion from this or other contracts funded by the Authority.

Date:

SIGNATURE OF THE

Place:

AUTHORISED SIGNATORY & STAMP

Eligibility Criteria

S.No.	Eligibility Criteria	Documents attached	Compliance Yes / No
1	The OEM should have relevant ISO 9001:2008 certification for the IT Solutions	Valid ISO certificate.	
2	The OEM should have executed at least 3 Projects in Government with any State / Central Government (s), PSU during the last three (3) years for End to End Video Conferencing Solutions for multiple Location that consist of at least 1 MCU and end 15 remote locations or more. The composite business of Video Conference and Other office Automation Accessories should be Rs. 1.5 Cr or more in average for the last 2 years from Govt. sector.	Copies of work order and client's certificates of satisfactory work completion.	
3	The bidder should have an average annual turnover of Rs. 2.00 Cr during last three financial years	Copy of the audited profit and loss account of the company showing turnover of the company for last three years along with CA certificates.	
4	The bidder should submit valid authorization letters from the OEMs of VC solution (MCU & Endpoints)	Confirmatory letters from the OEMs.	
5	The Bidder shall not be under a Declaration of ineligibility for corrupt or fraudulent practices or blacklisted with any of the Government agencies.	Self-Declaration in this regard by the authorized signatory of the bidder (Form II)	
6	The bidder should have presence in Jharkhand	Letter of Undertaking	
7	EMD amounting to Rs.1.00 lakh in shape of DD or B.G. in favour of Registrar, Kolhan University, Chaibasa payable at Chaibasa.	Original D.D./B.G. (with technical bid)	
8	KOLHAN UNIVERSITY may invite for technical presentation and demonstration of solution being offered by the bidder before opening of the financial bids.		

Date:

SIGNATURE OF THE

Place:

AUTHORISED SIGNATORY & SEAL

Part I: Technical Bid- Form III

General Technical Specification for MCU & Recording Servers for 15+1 virtual Classroom			
Sl.No	Parameter	Specifications	Compliance
1	Capacity in ports	MCU should be Software Based/Appliance based/Server based 16 Full High Definition 1080p 16 port.	
2	Distributed Architecture/Cascading Architecture	The MCU should support distributed Architecture/Cascading Architecture and should support scalability to minimum 50 ports in distributed architecture/cascaded architecture and the upgradation should be possible in multiples of 1 port	
3		Architecture should provide resiliency or redundancy architecture	
	Firewall Traversal	System should support firewall traversal for secured calling thro' internet and Intranet right from day 1	
4	Video Codec	Solution should have H.264 SVC/ H.264VBR/H.264HP /H.264AVC /H.265 or equivalent or better Video Codec for good video quality at lower bandwidth. It should also support mandatorily ITU Standard based H.264 and H.263 in order to ensure smooth interoperability between different systems	
		System should have concrete plans for incorporating codecs of future without changing the hardware for the next 5 years. In case hardware becomes obsolete or needs to be changed then it has to be replaced or changed without any extra cost	
5	H.323 with H.239	The Solution should have capability to connect at least 49 or more Full High Definition IP Based H.323 Hardware Video Conference devices at the same time at HD Resolution. The Solution should also be able to share data presentations using H.239 with H.323 user.	
6	Audio Codec	Solution should have G.711, G.722 , G.723 , GIPS, OR equivalent or better Audio Codec for good quality Audio communication	
		Inbuilt Noise Cancellation	
		Audio gain technology	
7	Solution Capability	Video Calls thru VC Endpoints	

		Video Calls thru Web Browser or clients based. If it is client based, the there should be unlimited client downloads	
		Video Calls thru Smartphone & Tablets	
		Participation thru Chat (Group chat and Personal chat)	
		Solution should offer 10000 registered users from Day 1. Easy connectivity with MCU to be a part of video call.	
8	Recording Streaming webcasting and Video on demand	MCU appliance should have either inbuilt video recording capability or offer external Video Recording Server with the capacity to Record Min 5 Concurrent full HD 1080p30 Seccessions right from Day 1 with Min 2000 Hrs of Recording Storage at central location . It should also offer Video on demand, streaming – both unicast and Multicast, and webcasting from day 1. In case extra server is required, it must be supplied along with MCU	
9	Video Mixing	The MCU Must support Video mixing i.e the feeds of 4 video/data (min) should be captured and all the videos should be there in the screen at the same time. Or else separate video mixer has to supplied in all the locations	
10	Data Collaboration	Should support H.239 & other forms of content sharing	
11	Vendor Agnostic	Should support standard H.323/ SIP standards for interoperability with multiple endpoints	
12	Layout	Flexibility to have multiple layouts	
		Support mix of 16:9 & 4:3 participants	
		Layout on multiple screens desirable	
13	Management/ Administration	Capability to control far end camera and endpoint	
14	Booking scheduling &	System should allow end users to provision conferences, Conference Room Booking system	
15	Monitoring	Call quality monitoring	
		Compatibility with snmp, CDR reports and any other methods of monitoring	

Endpoint Specs (2 Camera And Codec Only) - 1 Unit for Main class Room			
	Parameter	Specifications	Compliance
A. Video Solution For Conference room (Codec and Camera)			
	Video Codec	The codec should support the following video standards H.263, H.264, H.264 AVC/SVC/VBR or H.265	
	IP	The codec should support H.323	
	Resolution supported	The codec should support Full HD Resolution up to 1080p @30fps	
	Aspect Ratio	The codec should support 4:3 and 16:9 aspect ratio	
	Frame rates	The codec should support minimum 30 frames per second from 512 kbps	
	Content sharing	The codec should support H.239 for content sharing	
	Resolution	Full High Definition- 1920 x 1080p	
		High Definition – 1280 x 720p	
		4CIF -704 x 576 pixels	
		4SIF-704 x 480 pixels	
		VGA -640 x 480 pixels	
		Interlaced CIF -352 x 576 pixels	
		CIF -352 x 288 pixels	
		SIF -320 x 240 pixels	
		QCIF-176 x 144 pixels	
	Multiple Camera input support	The codec should support 3 cameras and content sharing Simultaneously or external Video Mixer should be supplied	
	Audio Codec	The codec should support G.711, G.722, G.722.1, G.728, G.729 /GIPS / SPEEX codec or MPEG4 - AAC (LC).	
	Audio Output	Codec must support either common 3.5mm line out or headphone output & must support integration with external audio mixer.	

	Recording	The system should support local recording and storage of 4 hrs of video. The recording solution can be provided from 3rd party also if not available from the same OEM	
	Network port	Codec should have minimum 1 RJ-45 port for IP network.	
	Bandwidth Support	The system should support up to 4 Mbps in a Point to Point call and multipoint call.	
	Display Support	The system should support dual Display right from day one.	
	Codec Output for display	Codec must have at least HDMI /DVI ports or equivalent.	
	Packet Loss Correction	-Video packet loss should be buffered or corrected with some sort of intelligent protocol or algorithm.	
		-Audio packet loss should be buffered or concealed with some sort of intelligent protocol or algorithm.	
	Camera Resolution	Camera should support 720p resolution at 30fps.	
	Sensor Type	1/3 inch high quality CMOS sensor	
	Focal Length	f=4.0mm (W)~12.0 mm (T)	
	Video Format	Resolution 1280 (H) × 720 (V)	
	PAN & Tilt Angle /Zoom	PAN: 360 degree or better, Tilt: -20 to +80 degree or better and Zoom: 10x optical zoom.	
	Control	RS- 232 Camera control Interface or better	
	Presetting position	9 or more	
	PAN angle speed	180°/sec or better	
	Tilt angle speed	80°/sec or better	
	Operating Temperature	0 ~ 50 deg C	

Endpoint Specs (1 Camera And Codec Only with 15 inch monitor) - 15 Unit for Remote class Room

S.NO	Parameter	Specifications	Compliance
A. Video Solution For Conference room (Codec and Camera)			
	Video Codec	The codec should support the following video standards H.263, H.264, H.264 AVC/SVC/VBR or H.265	
2	IP Support	The codec should support H.323	
	Resolution supported	The codec should support Full HD Resolution up to 1080p @30fps	
4	Aspect Ratio	The codec should support 4:3 and 16:9 aspect ratio	
	Frame rates	The codec should support minimum 30 frames per second from 512 kbps	
6	Content sharing	The codec should support H.239 for content sharing	
	Resolution	Full High Definition- 1920 x 1080p	
		High Definition – 1280 x 720p	
		4CIF -704 x 576 pixels	
		4SIF-704 x 480 pixels	
		VGA -640 x 480 pixels	
		Interlaced CIF -352 x 576 pixels	
		CIF -352 x 288 pixels	
		SIF -320 x 240 pixels	
		QCIF-176 x 144 pixels	
8	Multiple Camera input support	The codec should support 3 cameras and content sharing Simultaneously or external Video Mixer should be supplied	

	Audio Codec	The codec should support G.711, G.722, G.722.1, G.728, G.729 /GIPS / SPEEX codec or MPEG4 - AAC (LC).	
10	Audio Output	Codec must support either common 3.5mm line out or headphone output & must support integration with external audio mixer.	
	Recording	The system should support local recording and storage of 4 hrs of video. The recording solution can be provided from 3rd party also if not available from the same OEM	
	Network port	Codec should have minimum 1 RJ-45 port for IP network.	
13	Bandwidth Support	The system should support up to 4 Mbps in a Point to Point call and multipoint call.	
14	Display Support	The system should support dual Display right from day one.	
15	Codec Output for display	Codec must have at least HDMI /DVI ports or equivalent.	
16	Packet Loss Correction	-Video packet loss should be buffered or corrected with some sort of intelligent protocol or algorithm.	
		-Audio packet loss should be buffered or concealed with some sort of intelligent protocol or algorithm.	
17	Camera Resolution	Camera should support 720p resolution at 30fps.	
	Sensor Type	1/3 inch high quality CMOS sensor	
	Focal Length	f=4.0mm (W)~12.0 mm (T)	
	Video Format	Resolution 1280 (H) × 720 (V)	

18	PAN & Tilt Angle /Zoom	PAN: 360 degree or better, Tilt: -20 to +80 degree or better and Zoom: 10x optical zoom.	
	Control	RS- 232 Camera control Interface or better	
19	Presetting position	9 or more	
20	PAN angle speed	180°/sec or better	
	Tilt angle speed	80°/sec or better	
21	Operating Temperature	O ~ 50 deg C	

General Technical Specification for Visualizer at 16 locations			
S.No	Parameter	Description Requirement	of Compliance (Yes / No)
1	Shooting Area	A minimum of 300×245 mm shooting area is desirable.	
2	Zoom	It should have a 12× optical zoom.	
3	Focus	It should have Auto/Manual Focus option.	
4	Image Sensor	It should have a 1/3" Image Sensor	
5	Total Pixel	It should have a minimum of 2 Million Pixels .	
6	Resolution	It should have 820 TV Lines or more	
7	Signal Support	It should support the following resolutions 1024×768; 1280×1024; 1360×768; 1920×1080 or more.	
8	White Balance	It should have option of Auto/ Manual White Balance.	
9	Multimedia Function	It should have the following Functions: Color/Black-White, Mirror, Rotate, brightness control, freeze.	

10	VGA Input	It should have Atleast 2 VGA Inputs.	
11	RS-232 Input	It should have RS-232 Port for Control.	
12	AV Output	It should have Video Outx1, VGA Output x 2 or more.	
13	USB Output	It should have USB Port x1	
14	Control Modes	Following Control Options are required, Control Panel; Remote Controller; RS-232 Control or more	
15	Power Source	It should work on 100-240Volts 50-60HZ or better.	
16	X-ray plate read	A4 size x-ray plate scan / read through Base Lamp	

General Technical Specification for Interactive Device & Board at 16 locations

S. N	Parameter	Specifications	Compliance
			Yes / No
1	Interactive Area	Turn any surface into an Interactive White Board.	
2	Touch Calibration	Multi touch recognition for much enhanced collaboration	
3	Movement Detection Tech.	Infrared	
4	Active Area(max projection size)	90 inch diagonal	
5	Active Area(horizontal angle) Active Area(vertical angle)	+/-30 degrees 0-120 degrees	
6	Calibration Technology	Infrared Positioning	
7	Active Distance from projection	0.8-2m	
8	Connectivity Interface	1 x USB Cable (connection distance up to 24 m)	
9	Power Requirement	4.5 DC 9 W (from USB port)	
10	Power Consumption	<1.5 W	

11	Weight	Not more than 75g	
12	Movement Detection Tech.	LED	
13	Electric quantity	400 m Ah	
14	Interactive Pen	2 nos with inbuilt rechargeable lithium battery	
15	Projection Size (Distance between Receiver and Projection Surface)		
16	Long Focus 100 inch	2.38m	
17	Short Focus 100 inch	140m	

Display - 42" or more at main location			
S. No	Parameter	Specifications	Compliance (Yes/No)
1	Size	42" LED backlit display panel with plug & play feature through USB Port with capabilities to play Audio, Video, Images, PPT& Flash Files. The panel should be of IPS technology.	
2	Aspect ratio	The Display should have aspect ratio of 16:9 or better	
3	Resolution	The Display should support 1920x1080 resolution or better	
4	Contrast ratio	The Display should have minimum contrast ratio of 1400:1.	
5	Life Span	The Display should have minimum life span of 50,000 Hrs. or better	
6	Brightness	The Display should have 700cd/m2 Brightness or better	
7	Bezel	Ultra narrow bezel – screen to screen 3.5 mm or less	
8	Input	The display should have following input terminals.	
		a) RGB Input –Mini D-Sub 15 PIN x 1	
		b) RS-232C - D-Sub 9 PIN X 1	
		c) HDMI In – 1	
		d) Display Port - 1	
		e) DVI-D In-1	
9	Output	The Display should have following Output Terminals	

		a) Display Port - 1	
		b) RGB Input –Mini D-Sub 15 PIN x 1	
10	Accessories	The Display should support various types of mounting accessories like:	
		a) Wall Mount Bracket as well as video Wall Frames	

E-podium or Digital podium at main location for interact with VC classroom

Sl.N	Parameter	Specifications
1	System Body	Top and Body should be Metal
2		The system should have a Top Sliding Mechanism.
3		The angle of the tablet Monitor should be electrically adjustable with the help of Switch
4	Touch Screen Monitor	The system should consist of 48.1cm or 19 Inches Touch Screen Monitor.
5		The monitor should be LED backlit.
6		The monitor should have a native resolution of 1440 x 900
7		The monitor should come with a USB port for PC Connection.
8		The monitor should have a Luminosity of 250 cd/m ² or more.
9		The monitor should have a 15 Pin HD ports or DVI Input port.
10		The monitor should have a DC input voltage of 12VDC, 4A.
11		The monitor should support Win 7 or higher.
12		The monitor should have an Electromagnetic Sensor Method.
13		The monitor should support Power Supply of 100 ~ 250VAC.
14	System Controller	The controller should consist of 2 VGA Inputs for PC and laptop
15		The system should consists of 1 no. VGA Output for Projector and 1 number VGA Output for Monitor.

16		The system should consist of Audio Input for 1 no Gooseneck MIC, 1 No Wireless MIC, 1 No of wireless Lapel 2 Audio inputs for PC.
17		The system should have Sound Output with 1 No RCA Audio.
18		The system should support 1 Ports of Composite video In.
19		The System should support IR Learning.
20		The system should come with Three LAN Ports.
21		The System should have 2 numbers Projector Controls, 1 No Screen Control Ports, IR receiver, 1 number Program input Control, 1 no Firmware input Control
22	Gooseneck Microphone	The Microphone should have a frequency response of 40 Hz to 17,000 Hz or better.
23		The Microphone should have a Cardioids Polar Pattern.
24		The Microphone should come up with standard 3 PIN XLR Connector.
25		The Cartridge should be a 20mm Condenser
26	Wireless Microphone	The Microphone should have Frequency band of UHF 900 MHz~ or better.
27		The microphone should have at least 32 number of Channels.
28		The microphone should have at least Step 8 Digital Variable Squelch Control Method
29		The microphone should have a ± 10 ppm Frequency Stability.
30		The microphone should have a Auto Scan Receive Mode.
31		The Microphone should have a frequency response of 40Hz to 17000 Hz or better.
32	Amplifier	The Amplifier should consist of a 300 Watts (150 WattsX2) at 4 Ohms.
33		The Amplifier should have S/N Ratio of >80dB.
34	DSP	The DSP should have a 100% Full Duplex Echo Cancelling – no attenuation during full-duplex.
35		It should have an Acoustic Echo Cancelling of > 40dB
36		The processor should have a Noise Reduction > 10dB

38		It should have delay of 10msec or better
39		The processor should have a Convergence of 40dB/sec or better even during full duplex.
43		Should support audio boost
46	Notebook or Laptop Interface	The system should consist of the atleast following ports on the interface
47		VGA port, HDMI Port, Audio port, 2 USB Ports, Power Outlet.
49	7 inches Touch Panel	It should have a resolution of 800X480.
50		It should have a viewing area of 154(H)mm X 92(V)mm.
51		It should have RS232 Interface.
52	Wall Mount Speakers	The System should come up with 2 Wall Mount Speakers. The Speakers should come with 4.25 Inches Driver and 1 inch High Frequency Driver. The Speaker should have a 70 Watts Low Impedance Power. The speaker should have a maximum SPL of 104dB at 1m. Below that would not be accepted. The speaker should be IP64 Certified. The two way speaker should have an 8 Ohm impedance. The speakers should be CE Certified.

Short Throw Projector 16 nos. for all location		
Parameter	Specifications	Compliance (Yes/No)
Panel Size	0.63 inch or better for LCD or DLP	
Aspect ratio	4:3	
Contrast Ratio	1000:1 in LCD or better & 2000:1 in DPL or better	
Resolution	XGA or better	
Input Terminals	Should have minimum one HDMI in and one RGB in	

Audio for VC - 15 Unit for Remote class Room

Sl.NO	Parameter	Specifications	Compliance
			Yes / No
	Speaker for Video conference		
1	Speaker size	15 inches or more woofer size	
	RMS	It should have an RMS Output of 80 W	
	Nominal Impedance:	8 ohms	
	Frequency Range	85 Hz to 22 kHz	
	Maximum Output	It should have a Peak Output of 100W	
2	Microphone Mixer for 2 nos wireless microphone		
	USB/SD/MMC	It should support SD/MMC/USB	
	Microphone input	It should support Microphone Input	
	Guitar Input	Yes	
	Aux IN	It should have Aux input Port	
	Accessories	Bluetooth function E Out	
	Master Volume	It should have separate Master Volume Knob	
	Microphone for Video conference		
	Microphone priority	It should have Microphone Priority	
	Microphone frequency	20 Hz to 20 kHz range	
	Wireless Microphone	Wireless hand held Mic	
4	Echo Cancellation (DSP) for Video Conference microphone		
	Frequency	32 KHz sampling frequency; 100Hz-16KHz bandwidth	
	Controller tail length	It should have a tail length of 240 ms.	
	Noise Reduction	8dB (Low), 14dB (Medium) and 20dB (High)	
	Residual Noise	Suppressed to room level to prevent pumping noise	

	Delay	It should have a Low delay (10 msec)	
5	Rechargeable Battery	Total Audio system should have powered 12V battery backup	

Date:
Place:

SIGNATURE OF THE
AUTHORISED SIGNATORY & SEAL

Annexure A

Tender No.KU/R/ /16.

Date:

**Letter of Authorization by the OEM
(Authorization Form)**

To,

We, [Manufacturer's Name], who are established and reputable manufacturers of [name and or description of the Goods] having factories at [address of factory] do hereby authorize: [Bidder Company address] to submit a bid, and subsequently negotiate and sign the contract with you against **Tender No.KU/R/ /16** dated _____ for the above goods manufactured by us.

We hereby extend our full guarantee and warranty for 3 years and AMC support for 2 years for the goods offered for supply by the above firm against this Invitation for bids.

Thanking you,

Yours faithfully,

[Manufacturer's Name]

Authorized person's Name and designation

With Company seal.

Tender No.KU/R/ /16

dated _____

PART - II: Financial Bid

I / We hereby offer the following rates for undertaking to supply, installation, training and maintenance support of video conferencing solution with required software licenses and hardware components at KOLHAN UNIVERSITY with 3 years comprehensive onsite warranty as well as AMC support as per specifications, are as following:

(A) Cost of systems, installation, training and implementation of VC system including 3 years onsite comprehensive warranty.

Sr. No.	Items	Qty	Unit Price (Rs)	Total Amount (Rs)	Taxes (Rs.)	
1	MCU	1				
2	Streaming Server	1				
3	PC with inbuilt customized codec for VC for virtual classroom	16				
4	Camera 10X optical zoom	17				
5	Document Camera/visualiser	16				
6	Interactive Whiteboard Device and white board	16				
7	42 inch LED Display	16				
8	Digital Interactive Podium (with Metal Body)	1				
9	Short Throw Projector	16				
10	Video Mixer to enable all the videos (video from teacher camera, student camera, Interactive white board and Visualizer come in the same screen	16				
11	All in One Echo cancellation PA System consisting of 150 W	15				

	speaker, 1 hand held mic, 1 no lapel Mic, amplifier, acoustic echo cancellation, and mixer				
Total (Rs.)					
Total Amount (Inclusive taxes)					
(B) Comprehensive Annual Maintenance Contract after Warranty					
1	Comprehensive AMC for the 4 th and 5 th year after completion of warranty for all the software and hardware components / devices.	4 th year Charges (Rs)	5 th Yr Charges (Rs)	5 th Yr Charges (Rs)	Total (Rs) all incl.
Total Project cost for 5 years (including A and B above) All inclusive.					

The above price is inclusive of all taxes, duties, freight and all other changer for supply, installation, commissioning and comprehensive maintenance for the period mentioned above. No extra payment shall be considered against any claim.

We accept all the Terms and Conditions and requirements specifications mentioned in the RFP document and submit the financial bids accordingly.

Date:

SIGNATURE OF THE

Place:

AUTHORISED SIGNATORY & SEAL