



University of Ruhuna  
Wellamadama  
Matara

13.09.2021

The Manager,  
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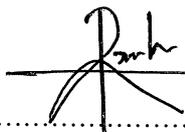
**Invitation for Bids (IFB)**

**Contract: Supply, Delivery, Installation, Commissioning and Testing of IT Goods for Audio Visual Studio, Faculty of Management and finance, University of Ruhuna**

**IFB No - AHEAD/RA2/ELTA-ELSE/RUH/MGT/GOODS/2021/NS-156**

The Chairman, Department Procurement Committee on behalf of the University of Ruhuna invites sealed bid from you for **Supply, Delivery, Installation, Commissioning and Testing of IT Goods for Audio Visual Studio, Faculty of management & Finance, University of Ruhuna** indicated in the annexed bid document.

01. Bidding will be conducted through National Shopping method of procurement.
02. You may obtain further information if any from the **Deputy Director- Procurement (AHEAD Project)** Supplies Branch, University of Ruhuna, Wellamadama, Matara. (T.P 041- 2227027/ Fax No. 041 – 2227027)
03. Bids must be delivered by mail in sealed envelopes addressed to **Director/OTS, AHEAD Project- OTS Office, University of Ruhuna, Wellamadama, Matara** before **02.00 p.m. on September 30, 2021**. Late bids will be rejected.
04. This contract is subject to,
  - Providing of performance security of 10% of the total contract price in accordance with the format attached and issued with this in favor of the Vice Chancellor, University of Ruhuna.
  - Entering in to the formal agreement with the University of Ruhuna.

  
13/09/2021

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Deputy Director - Procurements,  
University of Ruhuna,  
Wellamadama,  
Matara.





**UNIVERSITY OF RUHUNA**

**PROCUREMENT OF GOODS UNDER  
NATIONAL SHOPPING PROCEDURES**

**INVITATION FOR QUOTATIONS  
FOR**

**Supply, Delivery, Installation, Commissioning and Testing of  
IT Goods for Audio Visual Studio,  
Faculty of Management and Finance, University of Ruhuna**

**IFB No: AHEAD/RA2/ELTA-ELSE/RUH/MGT/GOODS/2021/NS-156**



## Section I. Instructions to Vendors (ITV)

<b>A: General</b>	
<b>1. Scope of Bid</b>	1.1 The Purchaser named in the Data Sheet invites you to submit a quotation for the supply of Goods as specified in Section III Schedule of Requirements.
<b>B: Contents of Documents</b>	
<b>2. Contents of Documents</b>	<p>2.1 The documents consist of the Sections indicated below.</p> <ul style="list-style-type: none"> <li>• Section I. Instructions to Vendors (ITV)</li> <li>• Section II. Data Sheet</li> <li>• Section III. Schedule of Requirements</li> <li>• Section IV. Technical Specifications &amp; Compliance with Specifications with price schedule</li> <li>• Section V. Quotation submission Form(s)</li> </ul>
<b>C: Preparation of Quotation</b>	
<b>3. Documents Comprising your Quotation</b>	<p>3.1 The Quotation shall comprise the following:</p> <ul style="list-style-type: none"> <li>(a) Quotation Submission Form and the Price Schedules;</li> <li>(b) Technical Specifications &amp; Compliance with Specifications</li> </ul>
<b>4. Quotation Submission Form and Price Schedules</b>	<p>4.1 The vendor shall submit the Quotation Submission Form using the form furnished in Section V. This form must be completed without any alterations to its format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.</p> <p>4.2 <b>Alternative offers shall not be considered. The vendors are advised not to quote different options for the same item but furnish the most competitive among the options available to the bidder.</b></p>
<b>5. Prices and Discounts</b>	<p>5.1 Unless specifically stated in Data Sheet, all items must be priced separately in the Price Schedules.</p> <p>5.2 The price to be quoted in the Quotation Submission Form shall be the total price of the Quotation, including any discounts offered.</p>

	<p>5.3 The applicable VAT shall be indicated separately.</p> <p>5.4 Prices quoted by the vendor shall be fixed during the vendor's performance of the Contract and not subject to variation on any account. A Quotation submitted with adjustable price shall be treated as nonresponsive and may be rejected.</p>
<b>6. Currency</b>	6.1 The vendors shall quote only in Sri Lanka Rupees.
<b>7. Documents to Establish the Conformity of the Goods</b>	<p>7.1 The vendor shall furnish as part of its quotation the documentary evidence that the Goods conform to the technical specifications and standards specified in Section IV, "Technical Specifications &amp; Compliance with Specifications".</p> <p>7.2 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item by item description of the essential technical and performance characteristics of the Goods, demonstrating substantial responsiveness of the Goods to the technical specifications, and if applicable, a statement of deviations and exceptions to the provisions of the Technical Specifications given.</p> <p>7.3 If stated in the Data Sheet the vendor shall submit a certificate from the manufacturer to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in Sri Lanka.</p>
<b>8. Period of Validity of quotation</b>	8.1 Quotations shall remain valid for the period of <b>sixty (60)</b> days after the quotation submission deadline date.
<b>9. Format and Signing of Quotation</b>	9.1 The quotation shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the vendor.
<b>D: Submission and Opening of Quotation</b>	
<b>10. Submission of Quotation</b>	<p>10.1 Vendors may submit their quotations by Registered post in sealed envelopes addressed to the Purchaser and bear the specific identification of the quotation number.</p> <p>10.2 If the quotation is not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the quotation.</p>
<b>11. Deadline for Submission of Quotation</b>	11.1 Quotation must be received by the Purchaser at the address set out in Section II, "Data Sheet", and not later than the date and time as specified in the Data Sheet.

<b>12. Late Quotations</b>	12.1 The Purchaser shall reject any quotation that arrives after the deadline for submission of quotations, in accordance with ITV Clause 11.1 above.
<b>13. Opening of Quotations</b>	13.1 The Purchaser shall conduct the opening of quotation in public at the address, date and time specified in the Data Sheet. 13.2 A representative of the bidders may be present and mark his attendance.
<b>E: Evaluation and Comparison of Quotations</b>	
<b>14. Clarifications</b>	14.1 To assist in the examination, evaluation and comparison of the quotations, the Purchaser may, at its discretion, ask any vendor for a clarification of his quotation. Any clarification submitted by a vendor in respect to his quotation which is not in response to a request by the Purchaser shall not be considered. 14.2 The Purchaser's request for clarification and the response shall be in writing.
<b>15. Responsiveness of Quotations</b>	15.1 The Purchaser will determine the responsiveness of the quotation to the documents based on the contents of the quotation received. 15.2 If a quotation is evaluated as not substantially responsive to the documents issued, it may be rejected by the Purchaser.
<b>16. Evaluation of quotations</b>	16.1 The Purchaser shall evaluate each quotation that has been determined, to be substantially responsive. 16.2 To evaluate a quotation, the Purchaser may consider the following: (a) the Price as quoted; (b) price adjustment for correction of arithmetical errors; (c) price adjustment due to discounts offered. 16.3 The Purchaser's evaluation of a quotation may require the consideration of other factors, in addition to the Price quoted if stated in Section II, Data Sheet. These factors may be related to the characteristics, performance, and terms and conditions of purchase of the Goods.

<b>17. Purchaser's Right to Accept any Quotation, and to Reject any or all Quotations</b>	17.1 The Purchaser reserves the right to accept or reject any quotation, and to annul the process and reject all quotations at any time prior to acceptance, without thereby incurring any liability to bidders.
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<b>F: Award of Contract</b>	
<b>18. Acceptance of the Quotation</b>	18.1 The Purchaser will accept the quotation of the vendor whose offer has been determined to be the lowest evaluated bid and is substantially responsive to the documents issued.
<b>19. Notification of acceptance</b>	19.1 Prior to the expiration of the period of validity of quotation, the Purchaser will notify the successful vendor, in writing, that his quotation has been accepted.
<b>20. Signing of Contract</b>	20.1 Within (14) days after notification, the Purchaser shall complete the Agreement, and in form the successful Bidder have to sign it. 20.2 Within fourteen (14) days of receipt of such information, the successful Bidder shall sign the Agreement.
<b>21. Performance Security.</b>	21.1 Within fourteen (14) days of the receipt of notification of award from the Purchaser, the successful Bidder is required furnish the Performance Security in accordance with the CC, using for that purpose the Performance Security Form included in Section VII contract forms, The Employer shall promptly notify the name of the winning Bidder to each unsuccessful Bidder and discharge the Bid Security of the unsuccessful bidders. 21.2 Failure of the successful Bidder to submit the above mentioned Performance Security or sign the contract shall constitute sufficient grounds for the annulment of the award and forfeiture of the Bid Security or execution of the Bid-Securing Declaration. In that event the Purchaser may award the Contract to the next lowest evaluated Bidder, whose offer is substantially responsive and is determined by the purchaser to be qualified to perform the contract satisfactorily.

## Section II: Data Sheet

ITV Clause Reference	
1.1	The Purchaser is: <b>Vice Chancellor</b> Address : University of Ruhuna, Wellamadama Matara.
5.1	If the bidder is allowed to quote for lesser number of items than the total number of items specified, indicate the details.
7.3	Manufacturer's Authorization is required.
11.1	Address for submission of quotations is <b>Director/ OTS, AHEAD Project, University of Ruhuna, Wellamadama, Matara.</b> Deadline for submission of quotations is at 2.00 P.M. on <b>September 30, 2021</b>
13	The Quotations shall be opened at the following address: <b>AHEAD PROJECT, OTS-Office, University of Ruhuna, Wellamadama, Matara.</b>
16	Other factors that will be considered for evaluation are (List and describe the methodology):
<b>Additional Clause</b>	
17. Payment	Payment shall be made within eight weeks after receiving the invoice and other required documents to the Office for each item supplied.
19. Liquidated Damages	The supplier should deliver the items within the delivery period stipulated in the schedule of requirements. The supplier should make payment to the purchaser for <b>each week of delay in delivery, at the rate of 0.5% of the contract sum per each week of delay, up to a maximum of 10% of the contract sum.</b>
21. Performance Security	The supplier should forward performance security of 10% of the total contract price. This should be issued in favor the Vice Chancellor, university of Ruhuna, valid for a required period (which include the warranty period) from date of acceptance of the order. (Format is Attached )

## Section III: Schedule of Requirements

Note:

1. Bidders a) May quote whole item.
2. Evaluation will be based on: a) separately.

Item No.	Brief Description of the Goods	Specification and Requirements	Quantity	Delivery Period	Bidder's offered Delivery Date
01	Portable Live Production Switcher	Annexure 1	02	2 Weeks	
02	PTZ Video Camera	Annexure 2	02	2 Weeks	
03	Professional Video Camera	Annexure 3	04	2 Weeks	
3.1	Dry Cabinet (to store the camera)	Annexure 3.1	04	2 Weeks	
04	PTZ Camera Control Unit	Annexure 4	01	2 Weeks	
05	USB 3.0 Video Capture Device	Annexure 5	01	2 Weeks	
06	Video Cross Converter	Annexure 6	01	2 Weeks	
07	Digital Video Recorder	Annexure 7	01	2 Weeks	
08	Preview Monitor	Annexure 8	02	2 Weeks	
09	Audio Mixing Console	Annexure 9	02	2 Weeks	
10	Audio Monitor (pair)	Annexure 10	02	2 Weeks	
11	Professional Headphones	Annexure 11	03	2 Weeks	

12	Audio Delay Device	Annexure 12	02	2 Weeks	
13	Studio Intercom System	Annexure 13	02	2 Weeks	
13.1	Studio Intercom 4 Belt Pack	Annexure 13.1	02	2 Weeks	
14	Wireless Handheld Microphone	Annexure 14	01	2 Weeks	
15	Wireless Lavalier Microphone	Annexure 15	01	2 Weeks	
16	Shotgun Microphone & Boom Pole	Annexure 16	01	2 Weeks	
17	Cardioid Condenser Microphone	Annexure 17	01	2 Weeks	
18	Camera Mount Condenser Microphone	Annexure 18	02	2 Weeks	
19	Four – in – One Cable	Annexure 19	07	2 Weeks	
20	Ac adapter/ charger and battery kit	Annexure 20	03	2 Weeks	
21	Additional Li-ion Camera Battery	Annexure 21	04	2 Weeks	
22	Solid State Drive	Annexure 22	02	2 Weeks	
23	SD Card	Annexure 23	08	2 Weeks	
24	SD/ SSD Docking Station	Annexure 24	01	2 Weeks	
25	Professional Tripod with Head	Annexure 25	06	2 Weeks	
26	Portable Audio recorder	Annexure 26	01	2 Weeks	

27	Microphone Stand	Annexure 27	01	2 Weeks	
28	Daylight LED Panel – Type 1	Annexure 28	05	2 Weeks	
29	Daylight LED Panel – Type 2	Annexure 29	04	2 Weeks	
30	Green Screen	Annexure 30	01	2 Weeks	
31	Video editing Workstation/ capture card	Annexure 31	01	2 Weeks	
32	L2 Managed Network Switch	Annexure 32	01	2 Weeks	
33	Wireless Omni Lavalier Mic. System	Annexure 33	02	2 Weeks	
34	Plug – On Transmitter for Dynamic Mics.	Annexure 34	02	2 Weeks	
35	Head mic with Cardioid Capsule	Annexure 35	04	2 Weeks	
36	Cardioid Handheld Dynamic Mic	Annexure 36	04	2 Weeks	
37	Camera – Mount Wireless Combo Mic	Annexure 37	02	2 Weeks	
38	Active Antenna Splitter with DC Power	Annexure 38	02	2 Weeks	
39	Antenna Booster	Annexure 39	02	2 Weeks	
40	Omnidirectional UHF Antenna	Annexure 40	02	2 Weeks	

**Place of Delivery:** Faculty of Management and Finance, University of Ruhuna, Wellamadama, Matara.

## Section V Quotation Submission Form

[The Vendor shall fill in this Form in accordance with the instructions indicated. No alterations to its format shall be permitted and no substitutions will be accepted.]

Date:

To:.....

[insert complete name of Purchaser]

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the document issued;
- (b) We offer to supply in conformity with the documents issued and in accordance with the Delivery Schedules specified in the Schedule of Requirements, the following Goods [insert a brief description of the Goods];
- (c) The total price of our quotation including any discounts offered is: [insert the total quoted price in words and in figures];
- (d) Our quotation shall be valid for the period of time specified in ITV Sub-Clause 8.1, from the date fixed for the quotation submission deadline in accordance with ITV Sub-Clause 11.1, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (e) We understand that this quotation, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us.
- (f) We understand that you are not bound to accept the lowest evaluated quotation or any other quotation that you may receive.

Signed:.....  
[insert signature of Person whose name and capacity are shown]

Name: .....  
[insert complete name of person signing the Bid Submission Form]

Dated:

## PRICE SCHEDULE –IV

**Contract: Supply, Delivery, Installation, Commissioning and Testing of IT Goods for Audio Visual Studio, Faculty of Management and Finance, University of Ruhuna.**

**IFB No - AHEAD/RA2/ELTA-ELSE/RUH/MGT/GOODS/2021/NS-156**

Item No.	Description	Qty.	Unit Rate. (Without VAT) (Rs. & Cents)	VAT (Rs. & Cents)	Total Amount (With VAT) (Rs. & Cents)
01	Portable Live Production Switcher	02			
02	PTZ Video Camera	02			
03	Professional Video Camera	04			
3.1	Dry Cabinet (to store the camera)	04			
04	PTZ Camera Control Unit	01			
05	USB 3.0 Video Capture Device	01			
06	Video Cross Converter	01			
07	Digital Video Recorder	01			
08	Preview Monitor	02			
09	Audio Mixing Console	02			

10	Audio Monitor (pair)	02			
11	Professional Headphones	03			
12	Audio Delay Device	02			
13	Studio Intercom System	02			
13.1	Studio Intercom 4 Belt Pack	02			
14	Wireless Handheld Microphone	01			
15	Wireless Lavalier Microphone	01			
16	Shotgun Microphone & Boom Pole	01			
17	Cardioid Condenser Microphone	01			
18	Camera Mount Condenser Microphone	02			
19	Four – in – One Cable	07			
20	Ac adapter/ charger and battery kit	03			
21	Additional Li-Ion Camera Battery	04			
22	Solid State Drive	02			
23	SD Card	08			

24	SD/ SSD Docking Station	01			
25	Professional Tripod with Head	06			
26	Portable Audio recorder	01			
27	Microphone Stand	01			
28	Daylight LED Panel – Type 1	05			
29	Daylight LED Panel – Type 2	04			
30	Green Screen	01			
31	Video editing Workstation/ capture card	01			
32	L2 Managed Network Switch	01			
33	Wireless Omni Lavalier Mic. System	02			
34	Plug – On Transmitter for Dynamic Mics.	02			
35	Head mic with Cardioid Capsule	04			
36	Cardioid Handheld Dynamic Mic	04			
37	Camera – Mount Wireless Combo Mic	02			
38	Active Antenna Splitter with DC Power	02			

39	Antenna Booster	02		
40	Omnidirectional UHF Antenna	02		

We agree to supply and delivery the above goods in accordance with the technical specifications for a total contract price of Rupees..... (amount in figures) ( ..... amount in words) within the period specified in the Invitation for Quotations.

We also confirm that the warrantee/guarantee specified shall apply to the offered goods.

.....  
**Signature of the Bidder** ..... **Name of the Bidder** ..... **Date** .....

### 1) Technical Specifications for Portable Live Production Switcher - 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Total Video Inputs	Should have at least 6 video inputs 4 x HD-SDI 2 x HDMI or more		
Total Video Outputs	Should have at least 5 assignable video outputs 3x HDMI 2x SDI		
Total Audio Inputs	2x Balanced XLR		
Total Audio Outputs	1x Stereo headphone		
Embedded Audio	Should support digital embedded audio at least of 2 channels (input & output)		
Video Formats	720p50Hz/720p59.94Hz/720p60Hz/1080i50Hz/1080i59.94Hz/1080i60Hz		
Upstream Keys	Should support at least 2 chromakeys		
Downstream Keys	Should support at least 2 luma and linear keys		
Special effects	Picture in picture Virtual Studio (ChromaKey) Built-in virtual sets Stinger Transition		
Video Streaming Control	Via socket commands/ HTTP		
Video Streaming Codecs	Should support configurable Bit-rates at least up to 10Mbps per sample. H.264 / AVC, Main/ High Profile		
Audio Streaming Codecs	Should support configurable Bit-rates at least up to 384Kbps per channel. AAC-LC, Sample rate: 48KHz, 16bit		
Streaming Protocols	Real-Time Messaging Protocol/Secure. Transport Stream over TCP/UDP. Real-Time Streaming Protocol over HTTP/TCP/UDP.		

Preview Display/ Multiview	Must have a built-in TFT / LED-backlit display larger than at least 17 inches and 1280x720 resolution.		
Recoding Control	Via HTTP		
Recording File System	NTFS, FAT, exFAT		
Recording File Format	MP4		
Portability	The unit should be made of reinforced plastic or aluminum casing for ease of carrying. Overall weight of unit should not exceed 8 kg		
Working Temperature/Humidity	0 °C ~ 40 °C		
Power	Compatible with 230V AC		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	3 Years		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 2) Technical Specifications for PTZ Video Camera – 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Video Output	Should have at least 2 video outputs HDMI x1, SDI x1		
Video Formats	720p50Hz/720p59.94Hz/720p60Hz/1080i50Hz/1080i59.94Hz/1080p59.94Hz/1080p50Hz/1080p25Hz		
Control Protocols & Standards	DVIP, VISCA via RS-232C/RS-422 or Industry Standard. Please specify		
Image Sensor	Progressive scan CMOS sensor		
Zoom Ratio	Should support optical zooming no less than 30x		
Field of View	Should not be less than 50° wide end		
Pixels	2 Mega pixels or higher		
Illumination	Color: 0.4 lx or higher B/W: 0.03 lx or higher		
Focus	Should support both automatic and manual focusing		
Pan/Tilt Range	Panning: Should not be less than 270° Tilting: Should not be less than +90°		
Pan/Tilt Speed	Should not be less than 150° per second		
Camera Control	IR remote controller		
Tally LED	Built-in tally LED		
Iris Control	Should support both automatic and manual controlling		
White Balance	Should support both automatic and manual white balancing		
Gain Control	Should support both automatic and manual gain controlling		
Special features	Digital noise reduction IR control		

Working Temperature/ Humidity	0 °C ~ 40 °C		
Power	Compatible with 230V AC		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

### 3) Technical Specifications for Professional Video Camera – 04 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Video Output	Should have at least 2 video outputs HDMI(Type A) x1, SDI(3G/HD/SD) x1		
Audio Output	1 x 1/8" / 3.5 mm Stereo Headphone Out		
Audio Input	2 x 3-Pin XLR Mic/Line Level (+48 V Phantom Power)		
Video Formats	720p50Hz/720p59.94Hz/720p60Hz/1080i50Hz/ 1080i59.94Hz/1080p59.94Hz/1080p50Hz/1080p 25Hz		
Control Protocols & Standards	DVIP, VISCA via RS-232C/RS-422 or Industry Standard. Please specify		
Image Sensor	Back-illuminated Exmor RS CMOS sensor		
Sensor Resolution	Should not be less than 14 M pixels		
Zoom Ratio	Should support optical zooming no less than 10x		
Illumination	Color: 0.4 lx or higher B/W: 0.03 lx or higher		
Focus	Should support both automatic and manual focusing 10 mm to ∞ (Wide) 1000 mm to ∞ (Tele)		
Iris Control	Should support both automatic and manual controlling		
Image Stabilizer	Selectable ON or OFF		
White Balance	Should support both automatic and manual white balancing		
Gain Control	Should support both automatic and manual gain controlling		
ND Filter	Should have built-in ND filter		
Built-in Microphone	Omni-directional stereo microphone		
Recording Media	2 x SDXC Card Slot		
Video Recording Formats	XAVC, XAVC HD, AVCHD 1280 x 720p at 50/59.94 fps (50 Mb/s) 1920 x 1080i at 50/59.94 fps (25 to 50 Mb/s) 1920 x 1080p at 23.98/25/29.97/50/59.94 fps (24 to 28 Mb/s)		

Audio Recording Formats	Linear PCM 2ch, 24bit, 48kH/AAC-LC 2ch, 16bit, 48kHz		
Recording Frame Rate	UHD: 1 to 30 fps 1080p: 1 to 120 fps		
Electronic View Finder	OLED		
Built-in Display	LCD		
Wi-Fi	Standards: IEEE 802.11 a/b/g/n/ac Frequency: Dual Band Support (2.4 & 5 GHz) Security: WEP/WPA-PSK/WPA2-PSK		
Special features	Digital noise reduction IR control		
Working Temperature/ Humidity	0 °C ~ 40 °C		
Power	Compatible with 230V AC		
Accessories	Camera Bag		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment during the warranty period.		
Dry box cabin to store the camera when not in use.	Required		

## 3.1) Specification for Dry Cabinet to store the camera – 04 NOS

Technical Specifications		Bidder's response	
		Yes/No	Remarks
Capacity	Upto 80L		
Humidity control	Should be digital control		
Display	Digital LCD		
Lowest Achievable Humidity	35%		
Power	Compatible with 230V AC		

## 4) Technical Specifications for PTZ Camera Control Unit – 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Maximum Camera Control	Controller should be able to control at least 4 cameras.		
Preset Positions	There should be at least 4 presets for 1 camera.		
Control Protocol	VISCA		
Special features	Joystick (Pan/Tilt/Zoom) Focus (Auto/Manual) Gain Control Iris (Auto/Manual) Motion Speed Control (at least 3 presets)		
Camera Connectivity	Point-to-Point (Cat6)		
Working Temperature/Humidity	0 °C ~ 40 °C		
Power	Compatible with 230V AC		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 5) Technical Specifications for USB 3.0 Video Capture Device - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Video Input	HDMI (Type A) x1		
Output	USB 3.0 x 1		
Input Video Formats	720p50/720p59.94/720p60/1080i50/1080i59.94/1080p59.94/1080p50/1080p25		
Output Video Formats	720p50/720p59.94/720p60/1080i50/1080i59.94/1080p59.94/1080p50/1080p25		
Audio Inputs	HDMI Embedded Audio 3.5 mm stereo		
Input Audio Formats	2-Channel, 44.1KHz and 48KHz , 24-bit PCM		
Video Capture Formats	USB3.0 - YUY2/ MJPG USB2.0 - MJPG		
Support Operating Systems	Windows 10 / Windows 8.1 / Windows 7(SP1) (x86, x64)		
Working Temperature/Humidity	0 °C ~ 40 °C		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 6) Technical Specifications for Video Cross Converter – 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Video Input	HDMI(Type A) x1 VGA x1 SDI(3G/HD/SD) x1		
Video Output	HDMI(Type A) x1 SDI(3G/HD/SD) x2 (With Embedded Audio)		
Loop Through	Should support loop throughout in SDI input		
Input Video Formats	720p50/720p59.94/720p60/1080i50/1080i59.94/1080p59.94/1080p50/1080p25		
Output Resolutions	720p50/720p59.94/720p60/1080i50/1080i59.94/1080p59.94/1080p50/1080p25		
Audio Inputs	HDMI Embedded Audio x 2 SDI Embedded Audio x 2 RCA (Stereo) x1		
Audio Outputs	HDMI Embedded Audio SDI Embedded Audio		
Input Audio Formats	8-Channel, 48KHz, 24-bit PCM		
Reclocking & Equalizing	Should support automatic reclocking & equalizing of video signals		
Working Temperature/Humidity	0 °C ~ 40 °C		
Power	Compatible power supply		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 7) Technical Specifications for Digital Video Recorder - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Video Input	SDI(3G/HD/SD) x1		
Video Output	HDMI(Type A) x1 SDI(3G/HD/SD) x2		
Loop Through	Should support loop throughout in SDI input		
Input Video Formats	720p50/720p59.94/720p60/1080i50/1080i59.94/1080p59.94/1080p50/1080p25		
Audio Inputs	Balanced mini XLR x 2		
Audio Outputs	Balanced mini XLR x 2		
Embedded Audio	SDI: 8-Channel HDMI: 8-Channel		
Video Recording Bit Rate	MPEG2 HD: 35/ 50/ 65/ 120Mbps 4:2:2 1920x1080/1280x720 MPEG2 SD: 15/ 30/ 50Mbps 4:2:2 720x480/720x576		
Audio Recording Format	Uncompressed 48KHz, 24-bit PCM		
Recording Media	2.5" Removable HDD/ SSD x 1		
Recording File System	NTFS		
Recording File Format	MOV, MXF		
Time Code	Should support time codes in and out		
Genlock	Should support both Black Burst & Tri-level with loop thru		
Data Protection	Content should be saved up to last second before a power failure happened		
Working Temperature/Humidity	0 °C ~ 40 °C		
Power	Compatible with 230V AC		

Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 8) Technical Specifications for Preview Monitor - Full HD Smart TV - 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Screen Size	40.0"(101.6 cm)		
Display Resolution	1920x1080		
Display Type	LCD		
Backlight Type	Direct LED		
HDMI Inputs	Should Consist at least 2 HDMI inputs		
Composite Inputs	Should Consist at least 1 Composite input		
RF Inputs	1 (One)		
Audio Outputs	Should Consist at least 1 Audio Output		
Ethernet Input	Should Consist at least 1 Ethernet inputs		
Operating System	Please specify		
Frequency Range	45.25MHz-863.25MHz		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		
Power	Compatible with 230V AC		

## 9) Technical Specifications for Audio Mixing Console – 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Audio Input	Should Consist with minimum of 12 audio input channels. 4x Mono [mic/line] (Combo) 2x Mono/stereo [mic/line] (XLR, ¼" TRS) 2x Stereo [line](¼" TRS)		
Audio Output	2x Stereo out (XLR, ¼" TRS) 1x Monitor out (¼" TRS) 1x Headphone out (¼" TRS) 2x Aux out (¼" TRS) 2x Group out (¼" TRS)		
Audio BUS	2x Stereo out 2x Aux out 2x Group out		
Digital Input/Output	USB Audio Class 2.0 or 3.0		
Phantom Power	+48V		
Level Indicators	Audio pre monitor levels should be indicated		
Working Temperature/Humidity	0 °C ~ 40 °C		
Power	Compatible power		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 10) Technical Specifications for Audio Monitor (pair) – 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Type	Active 2-Way		
Material	MDF/Other, Please Specify		
Power Rating	70W (Dynamic) Low Frequency: Should not be less than 40W High Frequency: Should not be less than 20W		
Frequency Range	50Hz-30KHz		
Crossover Frequency	2kHz		
Cone/Dome Sizes	Low Frequency: 5" Woofer High Frequency: 1" Tweeter		
Audio Input	1x Balanced Analog Input (XLR) 1x Balanced Analog Input (TRS)		
Output Level Control	Should consist with rotary type volume control (Front/Back)		
Power	Compatible power supply		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

### 11) Technical Specifications for Professional Headphones - 03 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Type	Closed		
Frequency Range	15Hz - 24kHz		
Sensitivity	96 dB or higher		
Impedance	Between 32-50 Ohms		
Cable	Cable should be detachable. 1.2 m - 3.0 m coiled or straight		
collapsible	Headphone should be collapsible for easy carry		

## 12) Technical Specifications for Audio Delay Device – 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Audio Input	Should Consist with minimum of 5 audio input channels. 2 x XLR (Line in) 1 x XLR (Mic in) 2 x RCA		
Audio Output	2 x XLR (Line in) 2 x RCA		
Indicator	LCD		
Audio Delay	Should support minimum up to 680ms		
Indicators	Audio pre monitor levels should be indicated		
Working Temperature/Humidity	0 °C ~ 40 °C		
Power	Compatible power supply		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than Five years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 13) Technical Specifications for Studio Intercom System – 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Channels	Should be consist at least 6 intercom talkback channels		
Talkback Matrix	One-to-One One-to-All (Simultaneously)		
Communication Distance	Must be able to communicate at least up to 100m between base station & client		
Headset/Mic Input	3.5 mm Stereo Jack Socket for Headphone & Microphone		
Mic Inputs	XLR or ¼ TRS		
Audio Output	Should consist with built-in speaker for audio monitoring		
Tally	Should consist of tally signal outputs (A & B)		
Accessories	Gooseneck Microphone (XLR)		
	Gooseneck Light (XLR)		
Working Temperature/Humidity	0 °C ~ 40 °C		
Power	Compatible power supply		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 13.1) Technical Specifications for Studio Intercom 4 Belt Pack - 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Headset/Mic Input	3.5 mm Stereo Jack Socket for Headphone & Microphone 2.5 mm Stereo Jack Socket for Headphone & Microphone		
Input	5 Pin XLR		
Tally Out	3.5 mm Stereo Jack Socket		
Tally LED	Unite should consist with bi-color LED Indicator		
Communication Distance	Must be able to communicate at least up to 100m between base station & client		
Headset with microphone	Unite should consist with Single-Ear Headset		
Working Temperature/Humidity	0 °C ~ 40 °C		
Power	Compatible power supply		

## 14) Technical Specifications for Wireless Handheld Microphone System – 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
<b>Wireless Receiver</b>			
Modulation Mode	Frequency Modulation (FM)		
Operating Frequencies	UHF Band 487.125 MHz to 506.500 MHz		
Frequency Response	100 Hz to 15 kHz		
Receiving System	Should consist with 2 independent receivers with separate antennas.		
Number of Channels	Must support at least 10 channels		
Operating Range	Must be able to communicate at least up to 50m between base station & client		
Power	Compatible power		
<b>Handheld Transmitter</b>			
Microphone Element	Dynamic cardioid		
RF Power Output	The power output should be able to switch between 10mW and 30mW		
Battery	Please specify		
Battery Life	At least 6 hours of operation time.		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 15) Technical Specifications for Wireless Lavalier Microphone System - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
<b>Wireless Receiver</b>			
Modulation Mode	Frequency Modulation (FM)		
Operating Frequencies	UHF Band 487.125 MHz to 506.500 MHz		
Frequency Response	100 Hz to 15 kHz		
Receiving System	Should consist with 2 independent receivers with separate antennas.		
Number of Channels	Must support at least 10 channels		
Operating Range	Must be able to communicate at least up to 50m between base station & client		
Power	Compatible power supply		
<b>Body Pack Transmitter</b>			
RF Power Output	The power output should be able to switch between 10mW and 30mW		
Input	4 Pin Locking Connector		
Battery	2 x 1.5V AA		
Battery Life	Please specify		
<b>Lavalier Condenser Microphone</b>			
Microphone Element	Condenser cardioid		
Sound Field	Mono		
Output	4 Pin Locking Connector		
Cable Length	Minimum 1 m and maximum 1.6 m.		

## 16) Technical Specifications for Shotgun Microphone &amp; Boom pole - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
<b>Shotgun Microphone</b>			
Microphone Element	Polarized condenser		
Sound Field	Mono		
Polar Pattern	Gradient & Line		
Frequency Range	20Hz -20kHz		
Sensitivity	Should not be higher than -40 dBV/pa		
SNR	Should Not Be less than 75 dB		
Output	XLR(Male)		
Phantom Power	15-52V DC		
Battery	Please specify		
Windscreen	Should consist with a wind guard protection		
<b>Boom pole</b>			
Material	Aluminum		
Length	1 meter to 2.3 meter (Expandable)		
Weight	Should not exceed 800g		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 17) Technical Specifications for Cardioid Condenser Microphone - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Microphone Element	Externally-polarized condenser		
Polar Pattern	Cardioid		
Frequency Range	20 - 20kHz		
Sensitivity	Should not be higher less -32 dBV/pa		
SNR	Should Not Be less than 82 dB		
Dynamic Range	133 dB, 1 kHz at Max SPL or better		
Phantom Power	DC 48V		
Output	XLR(Male)		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 18) Technical Specifications for Camera Mount Condenser Microphone – Nos. 02

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Microphone Element	Condenser		
Polar Pattern	Cardioid		
Frequency Range	Stereo: 80 Hz to 20 kHz Mono: 70 Hz to 20 kHz		
Sensitivity	Stereo: Should not be higher less -32 dBV/pa Monaural: Should not be higher less -36 dBV/pa		
SNR	Should Not Be less than 70 dB		
Dynamic Range	100 dB, 1 kHz at Max SPL or more		
Phantom Power	DC 40 V to 52 V		
Output	XLR(Male)		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 19) Technical Specifications for Four-in-One Cable – Nos. 07

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Length	30m		
Interfaces	1 x 5-pin XLR Tally cable		
	1 x 75Ω BNC for HD/SD SDI video		
	1 x 75Ω BNC for CV return video		
	1 x CAT-5 cable for Camera control		

## 20) Technical Specifications for AC adaptor/charger and battery kit - 03 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Type	Li-Ion Battery Charger		
Max Output Voltage	DC 8.4V		
Battery Capacity	25Wh / 3410mAh		
Batter Slots	2 Slots		
Charging Method	Consecutive		
Indicator	LCD (Battery Life)		
Input Voltage	100 to 230 VAC, 50 / 60 Hz		
Working Temperature/Humidity	0 °C ~ 40 °C		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 21) Technical Specifications for Additional Li-Ion Camera Battery (Rechargeable) - Nos 04

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Chemistry	Li-Ion		
Max Output Voltage	DC 8.4V		
Battery Capacity	3410mAh or above		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 22) Technical Specifications for Solid State Drive (SSD) – NOS 02

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Capacity	256GB		
Form factor	2.5 Inch		
Interface	SATA		
NAND Type	3D		
Data Transfer Rates	Read Speed: 500MB/s Write Speed: 320MB/s or better		
Working Temperature/Humidity	0 °C ~ 70 °C		

## 23) Technical Specifications for SD Card – Nos.08

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Capacity	64GB		
Form factor	SDXC		
Bus Type	UHS-I		
UHS Speed Class	U3		
Speed Class	10		
Video Speed Class	V30		
Data Transfer Rates	Read Speed: 170 MB/s Write Speed: 90 MB/s		
Durability	Temperature Extremes, Waterproof, Shockproof		
Working Temperature/Humidity	-25 °C ~ 85 °C		

## 24) Technical Specifications for SD/SSD Docking Station - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Number of Bays	1 x 2.5"		
Interfaces	1 x USB Type-A 1 x USB Type-B 1 x RJ45 (Ethernet) 1 x UHS-I SD		
Drive Interface	SATA III		
Operating System Support	Windows, macOS/OS X		
Max Capacity	At least up to 4TB (HDD/SSD)		
Power	Please specify		

## 25) Technical Specifications for Professional Tripod with Head – Nos.06

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Load Capacity	Should not be less than 4 kg		
Materials	Aluminum		
Weight	Should not weigh more than 4.5 kg		
Maximum Working Height	Should not be less than 1.5 m		
Minimum Working Height	Between 0.7m 0.8m		
Folded Length	Should not be higher than 0.9 m		
Base Mount	75 mm Half Ball		
Counter Balance	Fixed		
Drag Type	Fluid		
Drag Control	Pan: Fixed Tilt: Continuous/Variable		
Vertical Tilt	+90° to -60°		
Independent Locks	Pan/Tilt		
Leg Lock Type	Twist lock		
Leg Material	Rubber		
Leg Options	Removable, Spiked		

## 26) Technical Specifications for Portable Audio Recorder - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Inputs (Analog Audio)	2 x Combo XLR-1/4" TRS Balanced 1 x 3.5 mm TRS Unbalanced		
Inputs (Digital Audio)	1 x 3.5 mm AES3, AES/EBU, (S/PDIF)		
Outputs (Analog Audio)	3.5mm Stereo (Line Out) 3.5mm Stereo (Headphone Out) Built-in Speaker		
Control (I/O)	USB2.0 - Micro Type B 2.5mmTRS		
Recording Media	SD, SDHC, SDXC		
Recording formats	WAV: 44.1kHz/48kHz MP3: 44.1kHz/48kHz		
Bit Depth	16/24 bit		
Bit Rates	128 - 320kbps		
Signal Processing	Limiter, Auto gain		
Recording channels	2 channels (stereo)		
Display	Monochrome LCD (Backlit)		
Phantom Power	DC 24 V to 48 V (All Inputs)		
Power Options	Built-in lithium-ion rechargeable battery (3,950mAh) 2 x AA Batteries USB Power		
Working Temperature/Humidity	0 °C ~ 40 °C		

Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 27) Technical Specifications for Microphone Stand - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Material	Steel		
Height	0.9 to 1.6m		
Boom Length	Between 0.8m to 1m		
Base Type	Tripod		
Weight	Should not exceed 2Kg		

## 28) Technical Specifications for Daylight LED Panel – Type 1 – Nos 05

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Illumination	5600K		
Color Temperature	5600K (Daylight)		
Dimming	0 to 100%		
Dimensions	566 x 350 x 90mm		
Mount	5/8" Receiver		
Power	AC 100 to 230, 50 / 60 Hz		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 29) Technical Specifications for Daylight LED Panel – Type 2 – NOS 4

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Illumination	5600K		
Color Temperature	5600K (Daylight)		
Dimming	0 to 100%		
Dimensions	664 x 400 x 85mm		
Mount	5/8" Receiver		
Power	AC 100 to 230, 50 / 60 Hz		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 30) Technical Specifications for Compact 4 x100 Green screen – 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 31) Technical Specifications for Video Editing Workstation with Video Editing Software - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
<b>Video Editing Workstation</b>			
Operating system	Microsoft Windows 10 (64-bit) version 1809 or later		
Processor	Intel® 9thGen or Higher		
RAM	32 GB or better		
Graphics	4 GB of higher		
Capture Card (External)	Blackmagic Deck-Link SDI 4K of higher		
Hard Disk	<ol style="list-style-type: none"> <li>1. 960GB SATA-III SSD (System Drive)</li> <li>2. 2TB SATA-III HDD</li> </ol>		
Optical Drive	DVD/RW		
Network storage connection	2 x 1 Gigabit Ethernet		
Keyboard & Mouse	USB Optical mouse and keyboard		
Monitor resolution	1920 x 1080 or greater		
Monitor	2 x 24 Inch (Full HD)		
Power	AC 100 to 240, 50 / 60 Hz		
USB Ports	3 minimum		
HDMI Ports	1 or more		
<b>Video Editing Software</b>			
Software	Adobe Creative Cloud Collection		
License Period	3 Years		

## 32) Technical Specifications for L2 Managed Network Switch - 01 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Network Interfaces	24 10/100/1000 Mbps auto-sensing Gigabit Ethernet 2 SFP slots for fiber Gigabit Ethernet modules		
Throughput	Up to 35 Mpps or higher		
Switching Capacity	45 Gbps or higher		
Forwarding modes	Store-and-forward		
Network latency	Less than 20 us for 64-byte frames		
MAC Database	4000 address or higher		
IEEE 802.1Q Tag VLAN	60 Static VLAN groups or higher		
Port-based VLAN	Up to 20groups or higher		
Port Trunking	IEEE802.3ad Link Aggregation		
Configuration	Web Based (HTTP)		
Switch Management	Spanning Tree Protocol		
	Jumbo Frame Support		
	Class of Service		
	Port-based QoS		
	Configuration Backup/Restore		
Power	AC 100-230 / 50-60 Hz		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

**33) Technical Specifications for Wireless Omni Lavalier Microphone System (19" Rack Mount kit)**  
**- 02 NOS**

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
<b>Wireless Receiver</b>			
Modulation Mode	Frequency Modulation (Wideband FM)		
Frequency range	A1: 470 to 516 MHz		
Nominal deviation	±24 kHz		
RF sensitivity	< 2.5 µV for 52 dBA eff S/N		
Squelch	low: 5 dBµV middle: 15 dBµV high: 25 dBµV		
THD, total harmonic distortion	≤ 0.9 %		
Antenna connector	2 BNC sockets		
Equalizer	Preset 1: Flat Preset 2: Low Cut (-3 dB at 180 Hz) Preset 3: Low Cut/High Boost (-3 dB at 180 Hz, +6 dB at 10 kHz) Preset 4: High Boost (+6 dB at 10 kHz)		
Current consumption	300 mA		
Dimensions	190 x 212 x 43 mm		
Weight	Approx. 980 g		
Temperature Range	-10 °C to +55 °C		
Audio output	6.3 mm jack socket (unbalanced): +12 dBu XLR socket (balanced): +18 dBu		
Receiver Principle	True diversity		
Signal-to-noise ratio	≥ 110 dBA		
Intermodulation attenuation	Typically, ≥ 65 dB		
Blocking	≥ 70 dB		
Switching bandwidth	up to 42 MHz		
Peak deviation	±48 kHz		
Receiving frequency	Max. 1680 receiving frequencies, adjustable in 25 kHz steps 20 frequency banks, each with up to 12 factory-preset channels, no intermodulation 1 frequency bank with up to 12 programmable channels		

Power	Please specify		
<b>Body Pack Transmitter</b>			
RF output power	30 mW		
Switching bandwidth	up to 42 MHz		
Signal-to-noise ratio	≥ 110 dBA		
THD, total harmonic distortion	≤ 0.9 %		
Compondor	HDX		
Input impedance	40 kΩ, unbalanced / 1 MΩ		
Current consumption	at nominal voltage: typ. 180 mA with transmitter switched off: ≤ 25 μA		
Power supply	2 AA batteries, 1.5 V or BA 2015 accupack		
Powering	3 V battery / 2.4 V rechargeable batter		
Operating time	Typically, 8 h		
Nominal deviation	±24 kHz		
Peak deviation	±48 kHz		
Max. Input voltage	3 Veff		
Transmission frequency	Max. 1680 transmitting frequencies, adjustable in 25 kHz steps 20 frequency banks, each with up to 12 factory-preset channels, no intermodulation 1 frequency bank with up to 12 programmable channels		
AF frequency response	Mic: 80 - 18,000, Hz Line: 25 - 18,000 Hz		
Temperature Range	-10 °C to +55 °C		
Frequency stability	≤ ±15 ppm		
<b>Lavalier Condenser Microphone</b>			
Transducer principle	pre-polarized condenser microphone		
Frequency response	50 to 18,000 Hz (ME 2-II)		
Output	4 Pin Locking Connector		
Cable Length	Minimum 1 m and maximum 1.6 m.		
Max. sound pressure level	130 dB		
Pick-up pattern	omni-directional		
Sensitivity in free field, no load (1kHz)	20 mV/Pa		
Equivalent noise level	36 dB		
Accessories	19" Rack mount kit for stationary evolution wireless receiver.		

in the Box	<p>true diversity receiver  bodypack transmitter  clip-on microphone (ew 100 G4-ME2 set only)  clip-on microphone (ew 100 G4-ME4 set only)  rackmount set  power supply  2 AA batteries  2 rod antennas  RJ 10 cable</p>		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for at least More than 5 year and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	3 years		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 34) Technical Specifications for Plug-On Transmitter for Dynamic Microphones - 02 NOS

Technical Specification		Bidder Response	
		(Yes/No)	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
<b>Plug-On Transmitter</b>			
Frequency range	A1: 470 to 516 MHz)		
Switching bandwidth	up to 42 MHz		
Modulation	Wideband FM		
RF output power	30 mW		
Signal-to-noise ratio	≥ 110 dBA		
THD, total harmonic distortion	≤ 0.9 %		
Companor	HDX		
Input impedance	68 kΩ, unbalanced		
Current consumption	at nominal voltage: typ. 180 mA with transmitter switched off: ≤ 25 μA		
Power supply	AA batteries, 1.5 V or BA 2015 accupack		
Powering	3 V battery / 2.4 V rechargeable battery		
Operating time	Typically 8 h		
Nominal deviation	Please specify		
Peak deviation	Please specify		
Max. Input voltage	Please specify		
Transmission frequency	Max. 1680 transmitting frequencies, adjustable in 25 kHz steps 20 frequency banks, each with up to 12 factory-preset channels, no intermodulation 1 frequency bank with up to 12 programmable channels		
AF frequency response	80 – 18,000 Hz		
Temperature Range	- -10 °C to +55 °C		
Frequency stability	≤ ±15 ppm		
in the Box	plug-on transmitter 2 AA batteries		

Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5 years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 35) Technical Specifications Head mic with Cardioid Capsule for Wireless Systems - 04 NOS

Technical Specification		Bidder Response	
		(Yes/No)	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Transducer principle	pre-polarized condenser microphone		
Sensitivity	1.6 mV/Pa		
Sound pressure level	150 dB SPL		
Pick-up pattern	cardioid		
Frequency response	50 to 18,000 Hz		
Connector	Please specify		
Cable length	Please specify		
Temperature range	10 °C to +55 °C		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 36) Technical Specifications for Cardioid Handheld Dynamic Microphone - 04 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Frequency response	40 - 16000 Hz		
Nominal impedance	350 $\Omega$		
Sensitivity in free field, no load (1kHz)	2,7 mV/Pa		
Min. terminating impedance	1000 $\Omega$		
Dimensions	$\emptyset$ 48 x 180 mm		
Weight	Please specify		
Weight w/o cable	Please specify		
Connector	XLR-3		
in the Box	1 Dynamic Microphone 1 microphone clip 1 pouch		
Accessories	Popp protection & Microphone Cable (10 M)		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 37) Technical Specifications for Camera-Mount Wireless Combo Microphone System - 02 NOS

Technical Specification		Bidder Response	
		(Yes/No)	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
<b>Wireless Receiver</b>			
Modulation Mode	Frequency Modulation (Wideband FM)		
Frequency range	A: 516 - 558 MHz		
Nominal deviation	±24 kHz		
RF sensitivity	< 1.6 µV for 52 dBA eff S/N		
Squelch	low: 5 dBµV middle: 15 dBµV high: 25 dBµV		
Compandor	HDX		
THD, total harmonic distortion	≤ 0.9 %		
Adjacent channel rejection	≥ 65 dB		
Current consumption	Please specify		
Dimensions	Please specify		
Weight	Please specify		
Temperature Range	Please specify		
Audio output	Please specify		
Receiver Principle	Adaptive diversity		
Signal-to-noise ratio	≥ 110 dBA		
Switching bandwidth	up to 42 MHz		
Peak deviation	±48 kHz		
Receiving frequency	Max. 1680 receiving frequencies, adjustable in 25 kHz steps 20 frequency banks, each with up to 12 factory-preset channels, no intermodulation 1 frequency bank with up to 12 programmable channels		
Powering	3 V battery / 2.4 V rechargeable battery		
Power supply	AA batteries, 1.5 V or BA 2015 accupack		

<b>Body Pack Transmitter</b>			
RF output power	30 mW		
Modulation	Wideband FM		
Switching bandwidth	up to 42 MHz		
Signal-to-noise ratio	≥ 110 dBA		
THD, total harmonic distortion	≤ 0.9 %		
Compondor	HDX		
Input impedance	40 kΩ, unbalanced / 1 MΩ		
Current consumption	at nominal voltage: typ. 180 mA with transmitter switched off: ≤ 25 μA		
Power supply	AA batteries, 1.5 V or BA 2015 accupack		
Powering	3 V battery / 2.4 V rechargeable batter		
Operating time	Typically 8 h		
Nominal deviation	Please specify		
Peak deviation	Please specify		
Max. Input voltage	3 Veff		
Transmission frequency	Max. 1680 transmitting frequencies, adjustable in 25 kHz steps 20 frequency banks, each with up to 12 factory-preset channels, no intermodulation 1 frequency bank with up to 12 programmable channels		
AF frequency response	Mic: 80 - 18,000 Hz Line: 25 - 18,000 Hz		
Dimensions	Approx. 82 x 64 x 24 mm		
Temperature Range	Please specify		
Weight	Please specify		
Frequency stability	≤ ±15 ppm		
<b>Lavalier Condenser Microphone</b>			
Transducer principle	pre-polarized condenser microphone		
Frequency response	50 to 18,000 Hz		
Output	3.5 mm jack		
Cable Length	approx. 1.60 m		
Sensitivity in free field, no load (1kHz)	20 mV/Pa		
Pick-up pattern	omni-directional		
Equivalent noise level	36 dB		

in the Box	camera receiver bodypack transmitter plug-on transmitter clip-on microphone 6 AA batteries CA 2 camera adapter CL 1 3.5 mm jack cable CL 100 XLR to 3.5 mm jack adapter cable		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

**38) Technical Specifications for Active Antenna Splitter with DC Power Distribution and NT 1-1  
Power Supply - 02 NOS**

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Impedance	50 $\Omega$		
Frequency range	470-870 MHz (UHF), 1785-1800 MHz (1G8)		
Antenna connector	BNC		
Power consumption	max. 2.0 A with connected receivers and boosters		
Power supply	13,8 V DC (with NT 1-1 mains unit)		
Operating relative humidity	Please specify		
Storage temperature	Please specify		
Operating temperature	Please specify		
Dimensions	Please specify		
Weight	Please specify		
in the Box	splitter 8x BNC cable 50cm 1-1 power supply		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 39) Technical Specifications for Antenna Booster - 02 NOS

Technical Specification		Bidder Response	
		(Yes/No)	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Gain	approx. 12 dB		
Frequency range	+: 470-558 MHz		
Power supply	via antenna cable from ASA or EM		
Connector	BNC		
Dimensions	Please specify		
Weight	Please specify		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		
Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		

## 40) Technical Specifications for Omnidirectional UHF Antenna - 02 NOS

Technical Specification		Bidder Response	
		Yes/No	Remarks
Make			
Model			
Country of Origin			
Country of Manufacture			
Impedance	50 Ohm		
Frequency range	450 - 960 MHz		
Connector	BNC		
Pick-up pattern	omni-directional		
Apex angle (horizontal)	360°		
Deviation from circular radiation	< 3 dB		
Gain	0 dB		
input power	10 WDC		
input resitance	ax. $\geq 1 \text{ M}\Omega$		
Ambient temperature	-20 °C - +80 °C		
Relative air humidity	max. 95% at 40 °C (non-condensing)		
Dimensions	Please specify		
Weight	(with booster) approx. 150 g		
Mounting connection	5/8" thread / adaptor to 3/8"		
Accessories	BNC/BNC co-axial cable. Antenna cable with 50 ohms impedance. 15m		
Vendor Qualification	The organization who bid for the tender should be an authorized service provider of quoted product line for more than 5years and an authorized letter from principals to certify these should be attached.		
Warranty period	All-inclusive minimum 2 years comprehensive warranty is required		

Number of services	Please specify number of free services carried out per year during the period of warranty		
Warranty Agreement	A suitable replacement should be provided if repairing time for any breakdown period exceeds 72 hours during warranty.		
Condition of service agreement and fee after warranty	Please specify		
Availability of spare parts for minimum five years	Please specify		
Operational environmental conditions	Should function without any defect under the costal climate conditions prevailing in the university environment.		