

**ADDITIONAL SPECIFICATIONS TO BE FOLLOWED FOR SUBMITTING PROPOSAL FOR SETTING UP
VIRTUAL CLASSROOM IN GANDHI CENTENARY B.T. COLLEGE HABRA**

(REF- : GCBT/QUOT/VC Dtd. 22.12.16)

Annexure - I

TECHNICAL COMPLIANCE STATEMENT

S/ N	Features	Compliance Yes/No
	<p>The Interactive Smart Class Room should have following features.</p> <ul style="list-style-type: none"> • Should be able to display the course content of teacher from any application (PPT, PDF, DOC etc.) • Teacher should be able to use his writing on the board which can be saved for later usage. • Teacher can work offline and create his own content. • Based on the comfort of the teacher, he should be in position to display content using stylus/finger/self made or any third party object. • Audio and video recording of the lecture inside classroom. The same should be recorded in local PC and in the portal (cloud) for offline access. All AV items should be compiled & mixed in single file preferably mp4 format. Cloud storage for each classroom 25 GB and 400 hours of recording for each classroom with proper security of the content • All the smart classrooms are to be connected with the portal for easy access by the students through the portal which will be integrated with the University Website. • Teachers will log on to the portal and take control of the classroom. • Live streaming /offline streaming. • Outside student can participate in the lecture Live from remote through internet/Intranet using the portal. Maximum 50 students Live from remote. • Teachers/ Administrator can manage the class schedule and monitor the various events going on in various classrooms • Teacher should be in position participate into another digital class room on invitation. • Overall easy to operate Smart class room for regular and guest teacher. 	
1	<p>Interactive White Board Solution:-</p> <p>Physical size: minimum 79 inch (min)</p> <p>Physical ratio: 4:3</p> <ol style="list-style-type: none"> 1. Technology: Infrared or Optical Technology 2. Movement detection: IR/Optical tracking 3. Suggested interactive area: Upto 79 - 90" diagonal 4. System Calibration: Automatic/Manual Calibration is a must 5. Tracking speed: 60-70 FPS. Extrapolated upto 200 FPS 6. Ambient light resistance: 850nm +/- 20 & 650nm +/- 20 7. Active background subtraction: Required 	

	<p>8. Interactivity: Using Stylus / Pen / Finger</p> <p>9. Storage temperature -10°C to 50°C</p> <p>10. Interface: Through 1 x USB 2.0 Cable Only.</p> <p>11. Power requirement: No external power. Should take power from USB.</p> <p>12. Compatibility platform: Windows / Linux</p> <p>13. Power consumption: Less than 1 watt</p> <p>14. Non-electronic strips to activate commonly used interactive tools on the projection board itself</p> <p>15. Shortcut Icon at both the end of board for easy access</p> <p><u>Interactive Software:</u></p> <ol style="list-style-type: none"> 1. Should support Gesture Recognition like zoom, pan, tilt, flicks etc. (on Win platform) 2. Should have the following interactive tools/features like Pen, Magic Pen, Eraser, spot light, curtain, shape recognition, shape editing, infinite color options for annotation, lines & arrows, screen capture tools (freehand capture is must), import / export files, unlimited pages, page navigation, save page(s), Undo/Redo, Geometric Tools like Math, protractor, compass, ruler etc. 3. Should capable to annotate on any 3rd party applications 4. Annotation Capability & integration with MS office application (for Win platform only): <ol style="list-style-type: none"> a. MS Word: handwriting recognition & draw object b. MS Excel: Should draw graph w/o touching KB & Mouse c. MS Power point: Should Create, Edit, Save, delete & annotate slides 5. Should have recording feature 6. Software should support & compatible with document camera solution 7. Capability of taking Snapshot from running video (Win platform) 8. Should support & operational with MS Touch Pack (Free Multi Touch application on Win platform) 9. Auto replaying page without prior recording 	
2	<p>Short Throw Projector:-</p> <p>Short Throw recommended for lesser shadow, important in interactive scenario.</p> <ul style="list-style-type: none"> • XGA- 1024 X 768, 3000 ANSI Lumens • 18000:1 Contrast Ratio, • Throw Ratio 0.617 :1, • VGA In x 2, • Audio Input x 1, Audio Output x 1, VGA Out x 1, RS-232 x 1, USB (mouse control) x 1) 	
3	<p>Wall Mount kit and Other accessories:-</p> <ol style="list-style-type: none"> 1) To mount projector on the wall so that it cannot be damaged complete with cabling 2) No need to align every time projector is used. 3) Others Connectivity. 	

4	<p>Document Camera::</p> <ol style="list-style-type: none"> 1) Image sensor:: 3 Mega Pixel. 2) Resolution:: 2048X1536 3) Frame Rate:: 20 4) DPI::280 5) Scan Size::A4 6) Sensor:: CMOS 7) Led light 8) Document format::Support PDF, Word, txt format. 9) Image Format::JPG/TIF/PDF/BMP/TGA/PNG/RAS 10) Video Format:: Avi/WMV 11) Interface:: USB 2.o or above 12) Image Processing:: Brightness, Contrast, Sharpness, Saturation, Gamma, Rotation, Mirroring, etc. 	
5	<p>PA system should have following::</p> <ol style="list-style-type: none"> 1) 100 V Amplifier. 2) Speaker 30watt X 2. 3) 1 Lapel Mic 4) 1 Handheld Mic. 5) Mixer for mixing of diff Audio into Computer. 	
6	<p>CPU:</p> <ol style="list-style-type: none"> 1) Intel i 5 / 4 GB RAM / 1TB HDD/ Dos / Wired keyboard & Mouse 2) Should be Branded 	
7	<p>Document organizer:</p> <ol style="list-style-type: none"> 1) Professional Housing for Desktop, UPS, Pen, Remote and other Accessories. 2) Professional Termination of Network & Power lines. 3) Professional Housing of Audio Components. 	
8	<p>PTZ/Web Camera for recording::</p> <ol style="list-style-type: none"> 1) Sensor: 1/2.8 inch high quality HD CMOS sensor 2) Effective Pixels: 16: 9 2.07 megapixels 3) Video Format: 176x144/320x240/320x180/352x288/640x480/720x480/720x576/640x360800X600/960X540/1024X576/1024X768/1280X720/1920X1080 P30/25/20/15/10/5 4) Optical zoom: Fixed focal length, digital zoom X10, preferable 10X optical zoom. 5) Minimum Illumination: 0.5Lux(F1.8, AGC ON) 6) Video Adjustment: Brightness,Color,Saturation, Contrast, 7) Sharpness,Gamma curve, Gain, Anti-flicke 	
9	<p>UPS</p> <ol style="list-style-type: none"> 1) 600 KVA offline UPS with 10 min backup. 	

10	<p>Broadcasting and recording system.</p> <ol style="list-style-type: none"> 1) Virtual Classroom Software for live online classes. 2) Use API to Integrate Virtual Classroom with Your Teaching Website, CMS, or LMS 3) Increase student engagement with real-time audio-video communication, text chats, and advanced, interactive whiteboards. 4) Deliver live classes on-the-go from any mobile device using Android and iOS apps. 5) Manage your classes and students easily with handy features like Attendance Reporting, Recording, and Notifications. 6) Reuse lectures recorded by using recording and secure content facility. 7) Access from any internet browser, without downloading any software. 8) Multilingual support in 19 languages 9) Text chat with students individually or in groups, and even in multiple languages, on our robust, multilingual e-learning platform. 10) Breakout rooms 11) Secure recording capabilities 12) Varied courseware file types and desktop screen 13) Integrated media player 14) Teacher-managed control options 15) Attendance reporting and notifications 16) Virtual Classroom plug-ins for future 17) Enabling the real-time interaction of a traditional classroom, our Virtual Classroom polling tools enable you to ask students questions and receive answers instantly during class. Surprise students with a quick quiz or conduct a survey, and then easily assess comprehension levels by viewing results in bar graph or chart form 18) No need to download and install software, or set up new servers. Use the API for web conferences 19) Power your online teaching website with API. You can access all the features of the Virtual Classroom like, managing classes, tracking attendance and reviewing class recordings from your own website 20) Should have option to Integrate smoothly with your existing website or LMS (e.g., Moodle, Blackboard, Sakai) using our APIs & plugins. 	
12	<p>Software:-</p> <ol style="list-style-type: none"> 1) License Software for Interactive White board, Camera, document camera. 2) Integration of all license software for proper usage inside classroom. 	

WARRANTY and AMC:

S/N	Features	Compliance
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		Yes/No
1	<p>WARRANTY and Maintenance</p> <p>1 years warranty on all the products for all active and passive components (except consumable items like Projector Lamp, battery etc.) of each Virtual Class Room .</p>	
1	<p>TERMS & CONDITIONS</p> <p>Prices are inclusive of all taxes and duties.</p> <p>Validity of the Tender: 180 days</p> <p>The Installation and Commissioning within one week.</p> <p>[Penalty clause will be imposed for late implementation]</p> <p>Payment after Successful Commissioning and Installation</p>	

PRINCIPAL