



Agricultural Development Trust
Sharadanagar, Baramati, Tal – Baramati
Dist – Pune, Maharashtra 413115
Phone: 02112 – 254256
<https://agridevelopmenttrustbaramati.org>
Email : siac.tender@adtbaramati.com

E-TENDER

for

Supply, Installation, Integration, Development, Testing and
Commissioning of Hardware and Software for setting up of

Technology Demonstration Laboratory (TDL)

at

Science and Innovation Activity Centre (SIAC)
Agricultural Development Trust, Sharadanagar, Baramati,
Dist. Pune, Maharashtra, 413115
with 3 years onsite warranty

Technology Demonstration Laboratory

Project of Rajiv Gandhi Science and Technology Commission
Government of Maharashtra



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E - TENDER NOTICE
Tender ID: 2024_RGSTC_1009344_1

Start Date : 20 / 02 / 2024

End Date : 04 / 03 / 2024

Online, digitally signed e-tenders in prescribed format in Two Bid System are invited from reputed and experienced Agencies / Firms / Consultants / Consortiums / Integrators / Developers for a turnkey job of :

Supply, Installation, Integration, Development, Testing and Commissioning of Hardware and Software for setting up of Technology Demonstration Laboratory at Science and Innovation Activity Centre, Sharadanagar, Baramati, Dist. Pune, Maharashtra, 413115 with 3 years onsite warranty at an estimated cost of Rs 3.00 Crores.

For more details of the e-tender and online submission, visit <https://mahatenders.gov.in/nicgep/app> and search for Tender ID:

Tender details can also be viewed at <https://agridevelopmenttrustbaramati.org> or at <https://rgstc.maharashtra.gov.in/>


Chief Executive Officer
Agricultural Development Trust, Baramati

Agricultural Dev. Trust, Baramati
Sharadanagar, Tal. Baramati, Dist. Pune.

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Project of Rajiv Gandhi Science and Technology Commission
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Notice Inviting E-Tender

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NIT

Agricultural Development Trust, Baramati invites reputed and experienced agencies / firms / consultants / consortiums / integrators / developers to offer their online bid in 2 part system for **Supply, Installation, Integration, Development, Testing and Commissioning of Hardware and Software for setting up of Technology Demonstration Laboratory (TDL) at Science and Innovation Activity Centre (SIAC), Baramati, Dist. Pune, Maharashtra, 413115 and also provide 3 years onsite warranty.**

Estimated cost of the turnkey project of setting up Technology Demonstration Laboratory as specified including supply, installation, integration, development, testing and commissioning of the hardware and software at SIAC Baramati is Rs 3.00 Crores, inclusive of 3 years post commissioning onsite warranty.

Interested agencies / firms / consultants / consortiums / integrators / developers must provide information in prescribed format indicating their eligibility for undertaking this task. Tender may be downloaded from <https://mahatenders.gov.in/nicgep/app>. Tender details can also be viewed at <https://agridevelopmenttrustbaramati.org> or at <https://rgstc.maharashtra.gov.in/>

Background

Rajiv Gandhi Science and Technology Commission (RGSTC) of the Government of Maharashtra has set up Science and Innovation Activity Centres (SIACs) at Warnanagar, Pravaranagar, Satara, Baramati, Amravati, and a few more are in making. The primary objective of SIACs is to encourage and inculcate scientific temper and

attitude among the common population with a special emphasis on young students and teachers spread all over the State. The focus, of course, is to set up the facility in the rural areas. All the SIACs have an indoor science exhibition hall, training hall and an outdoor science park. The science exhibition hall houses several interactive exhibits / setups / demonstrations explaining various principles of science and technology and their applications in our day-to-day life in an interesting manner. Outdoor science parks provide a unique opportunity of learning science while playing in the surroundings of nature. Interactive, three dimensional, hands-on exhibits / setups invite visitors to participate in the functioning thereby giving inclusive experience. This process has been proved to be the most effective way of understanding scientific & technical principles / concepts. It raises curiosity, encourages the thinking process, and develops the attitude of questioning, experimenting, and finally arriving at the answers or conclusions. These are the basic constituents of the scientific attitude and temper.

The SIAC set up at Agricultural Development Trust (ADT) Baramati has been pioneer in catering to the large number of students, teachers, and general public since its inception.

Several interactive exhibits here are the primary attractions for visitors. Supporting educational activities such as Teachers' Training Programs, Popular Science Lectures, Vacation Hobby Camps and Workshops have become very popular not only in Baramati but also in the region.

The Government of Maharashtra now intends to establish Technology Demonstration Laboratories (TDLs) through Rajiv Gandhi Science and Technology Commission at all the SIACs in the State in a phased manner. TDL at Baramati is the first such endeavor, and on successful commissioning of this pilot project, the setup is also likely to be replicated at other SIACs in the Maharashtra State.

Project Outline

The basic objective of the TDL is to make young students and teachers aware of advancements in digital technology and their applications in our everyday life. The objective also includes encouraging the younger generation to undertake innovative application-oriented research projects using advanced computer technology. The idea is to demonstrate how advanced computer technology can be helpful in resolving our daily life issues or even to make the process of education much simpler, effective, and enjoyable. Computers are being increasingly used in all fields and it's a challenge for us to find newer and newer areas where computers can be adopted to overcome common difficulties.

SIAC Baramati has adequate space and environmentally friendly facilities for housing the proposed technology demonstrations. The demonstrations involve advanced computer technology gadgets and their software-driven applications. Interestingly, the

demonstrations are designed to bring a flair of entertainment coupled with education. They are experiential in nature and hence inclusive. The visitors are destined to experience modern techniques such as, Augmented Reality, Virtual Reality, 3D Projection, Holographic Imaging, Interactive Touch Panels, Motion Simulator, Spherical Projection etc. The hardware proposed is sufficiently of an advanced nature and the matching application software (content) is expected to be developed by the successful bidder for each demonstration. The content software (to be developed) is expected to be creative, thought-provoking, rich in quality, educational, entertaining, and providing true experience of Augmented Reality, Virtual Reality, 3-D and holographic projection, etc. In all, right now, 11 demonstrations are proposed to be set up in the TDL at Baramati which may have a scope for further expansion at an appropriate time.

The successful bidder, in addition to supply, installation, integration, testing and commissioning of specified hardware is also required to develop content software for technology demonstrations as specified. The content software must be rich in quality in terms of subject content, graphics, 3-D images, animations, simulations, AR effects, VR effects, Holographic effects, interactions, cut sections, popups, textual information, correctness of information, colours, shapes, sizes, language, translation etc.

Tender Schedule

Bid Document Published Date	20.02.2024 (11:00 A. M.)
Bid Document Download Start Date	20.02.2024 (11:00 A.M.)
Bid Document Download End Date	04.03.2024 (2:00 P.M.)
Bid Submission Start Date	20.02.2024 (11:00 A.M.)
Bid Submission End Date	04.03.2024 (2:00 P.M.)
Technical Bid (Cover – 1) Opening Date	05.03.2024 (2:00 P.M.)
Presentations of Sample Content at ADT Baramati & Publishing the List of Technically Qualified Bidders	06.03.2024 (10:00 A.M.)
Opening of Financial Bids (Cover – 2) of the technically qualified / eligible bidders	07.03.2024 (10:00 A.M.)

Other Details :

Time for completion of the work	180 days
Estimated Cost of the work	Rs 3.00 Crores
Earnest Money Deposit (EMD)	Rs 3,00,000/-
Tender Processing Fee	Rs. 11800/- (Rs 10,000/- + 18% GST)

Visit <https://agridevelopmenttrustbaramati.org> OR <https://rgstc.maharashtra.gov.in/> also for details of the tender.

Eligibility Criteria for Applying

With a view to ensure a thoroughly professional implementation of the project, expert agencies / firms / consultants / consortiums / integrators / developers should have association with such individuals / domain experts as per subjects of the demonstrations / art & graphic visualizers & designers / software developers / AR, VR & interactive software designers / hardware specifications & integration / multimedia and experts well conversant with video production, playback etc.

1. The applicant tenderer should have sufficient technical knowledge concerned with advanced computer technology / Information Technology. The applicant tenderer should also have the requisite ability to follow the technical specifications, hardware, interconnection / integration, software installation and playback. Appropriate documents supporting this must be submitted along with the profile.
2. The applicant tenderer should have sufficient technical and financial capabilities on the lines mentioned below.
 - a. Experience – The applicant tenderer should have sufficient experience in execution of similar projects of hardware – software installation / integration, content development.
 - b. Financial Soundness – The applicant tenderer should have :
 - i. Business Registration Certificate
 - ii. Tax Registration numbers PAN/GST/VAT etc.
 - iii. Minimum Annual Turnover of Rs.50 Lakh in each of the last 3 financial years (2020-21, 2021-22, 2022-23) consecutively.
 - iv. In case of less turnover, the bidders are requested to apply for the tender. However, the committee will discuss the possibility of relaxing the financial turnover criteria during the presentation meeting.
 - c. Software Development Expert – An experienced content software development team associated with the applicant tenderer.
 - d. Art & Graphics Developer team – An experienced Art & Graphics visualization and development team associated with the applicant tenderer.

3. Interested applicant firms / consultants / consortiums / integrators / developers are requested to submit the relevant documents as specified with the bid to facilitate assessment of adequacy of the resources and expertise available with the applicant:

Bid Submission

Online bids in 2 Parts, Cover-1 and Cover-2, Technical Bid and Financial Bid respectively, should be uploaded within the due date and time as per the schedule mentioned above. The responsibility to ensure timely submission in the prescribed format lies with the bidders. Offline / physical tenders shall not be accepted and no request in this regard will be entertained whatsoever.

Bid Evaluation Methodology

Bid evaluation methodology will have **Three Stages**:

Stage 1 - Online Technical Bids (Cover-1) will be opened at the First Instance in the Conference Hall of ADT Baramati on the date and time as mentioned in the schedule.

Stage 2 - Presentations of the Sample Content (software developed) by the bidders will be held at the same place (Conference Hall of ADT Baramati) on the date and time mentioned in the schedule. Applicant tenderers should also submit a copy of the sample content software developed for presentation & evaluation in a flash drive clearly marked with the name and address of the bidder during the presentation.

The Technical (Techno-Commercial) Bid Evaluation will be completed based on the information and supporting documents received online in Cover-1

and

the quality of the sample contents presented before the Evaluation Committee of ADT on the date and time as mentioned in the Schedule.

List of the acceptable Techno-Commercial Offers (qualifying bidders), eligible for opening of their Financial Bids, i.e. Cover-2, will be published/uploaded on the date and time mentioned in the Schedule.

Stage 3 – Online Financial Bids (Cover-2) of only the qualifying bidders will be opened at the Third Instance on the date and time as per schedule at the same place.

Criteria for evaluation of Technical Bids for arriving at the eligibility of bidders for opening of their Financial Bids will be as follows:

Bid Evaluation Criteria:

Sr. No.	Criteria Element	Max Marks	Minimum Essential Criteria (Supporting documents to be submitted)
01.	General Profile, Address, Business Registration, GST Registration, PAN / VAT, Type of business / firm	10	Attach supporting docs.
02.	Technical Qualification / Competence of the team leader of the agency / firm / consultant / consortium / integrator / developer responsible for execution of the entire work	5	The team leader should be with a minimum bachelor's degree in relevant technical discipline and have experience of at least 3 years. Provide detailed biodata of the team leader with supporting docs.
03.	Qualification / Competence of the main content developer/s of the agency / firm / consultant / consortium / integrator / developer.	5	The concerned content developer/s should have a minimum of a bachelor's degree in relevant discipline and have at least 3 years' experience of developing rich graphical contents / presentations/animations using latest graphic development software. Provide detailed biodata of the concerned along with content development software experience with supporting docs.
04.	Number of years of experience of the bidder in the similar field of hardware–software installation, integration, content development preceding the proposal's start date. Experience > 5 yrs – 10 Pts	10	Attach supporting docs mentioning title of the work, cost of the work, name of the host, start date, end date etc.

	<p>Experience 3 to 5 yrs – 8 Pts</p> <p>Experience 2 to 3 yrs – 7 Pts</p> <p>Experience 1 to 2 yrs -6 Pts</p> <p>Experience < 1 yr – 5 Pts</p>		
05.	Number of similar projects / works executed and completed successfully.	10	<p>Give complete details, such as list of the projects executed, project cost, completion date, duration of execution, completion certificate etc.</p> <p>Attach supporting docs.</p>
06.	<p>Financial soundness for 3 consecutive years (20-21, 21-22, 22-23)</p> <p>-Annual Turnover >2.5 Cr – 10 Points</p> <p>-Annual Turnover 2 Cr to 2.5 Cr -8 Points</p> <p>-Annual Turnover 1.5 Cr to 2 Cr – 7 Points</p> <p>-Annual Turnover 1 Cr to 1.5 Cr – 6 Points</p> <p>-Annual Turnover 50 Lakh to 1.0 Cr – 5 Points</p>	10	A copy of audited Balance sheet for last 3 financial years 20-21, 21-22, 22-23 along with ITRs filed to be submitted.
07.	<p>Sample Contents (Software Developed) Presentation (Subjective evaluation)</p> <p><i>A Sample content Software as specified in the Technical Specifications and Scope of Work (Annexure F) at Demonstration No. I :</i></p> <p>Human Anatomy (Augmented Reality) for an approximate duration of 3 to 4 minutes on any one human body system out of</p>		Soft Copy of the Sample Content developed to be submitted in the form of Flash Drive at the time of Presentation.



	<i>the 3 specified should be developed and presented as per schedule.</i>		
	a. Subject matter in the content	10	
	b. Richness of graphics/ images / animation / 3D effects	10	
	c. Creativity in Presentation / design	10	
	d. Interactivity / AR component	15	
	e. Textual Information panels / popups / audio effects / versatility in presentation	05	
08	Total Points	100	

Important Note : For qualifying (to be eligible) for opening of the Cover-2, the Financial Bid, the bidder must secure at least **60 Points out of the total 100** as above.

Only those bidders who secure 60% Points in total as per the above eligibility criteria will be shortlisted for Financial Bid opening at Stage-3.

The decision of the Evaluation Committee of the ADT regarding selection of eligible bidders for opening of the Financial Bids shall be final and binding on all the bidders. Bidders will have to make a presentation of the Sample Contents developed by them to the Evaluation Committee as per the scheduled date and time. Bidders may remain present during the opening of the tenders.

ADT Baramati reserves the right to accept or reject any or all tenders in full or part without assigning any reason whatsoever. ADT shall also not be bound to accept merely the lowest tender but the technical suitability, capability, superiority of the equipment / system, after sales service including infrastructure to render such service etc. shall be of prime consideration for selection of the successful bidder.

ADT Baramati reserves the right to consider the Financial Bid for all the demonstrations/equipment together in totality and not based on the cost of the individual demonstrations / equipment. ADT, Baramati also reserves the right to drop or cancel any or all the demonstrations / equipment without assigning any reason.

Tender document can be downloaded from e-procurement Portal of Government of Maharashtra <https://mahatenders.gov.in/nicgep/app>. Details of the tender can also be

obtained from the website of ADT Baramati at <https://agridevelopmenttrustbaramati.org> or from the website of Rajiv Gandhi Science and Technology Commission of Government of Maharashtra at <https://rgstc.maharashtra.gov.in/>.

This being an e-Tender, the bids are to be submitted through e-procurement Portal of the Government of Maharashtra <https://mahatenders.gov.in/nicgep/app> only. Bids submitted in any other form anywhere else other than e-procurement portal of GoM will be summarily rejected.


Chief Executive Officer
ADT Baramati

C.E.O.
Agricultural Dev. Trust, Baramati
Shardanagar, Tal. Baramati, Dist. Pune.

General Information and Instructions for Bidders

1. The instructions given herein will be strictly binding on the bidders and deviation, if any, will make the tender or tenders liable to be considered invalid. Tenders incorporating any/additional conditions by the bidder/s are liable for rejection.
2. Bids shall be submitted online only at <https://mahatenders.gov.in/nicgep/app> Offline (Manual) bids shall not be accepted.
3. The instructions given in **Annexure - A** titled "**Instructions for Online Bid Submission**" should be strictly followed for submission of the bid.
4. Bid documents may be scanned with 100 dpi with a black and white option which helps in reducing the size of the scanned document file.
5. Tenderer/Bidder should pay the EMD through online payment only. Details of the same should be uploaded while submitting the tender documents.
6. **Validity of Bids: The bids should remain valid for 180 days from the date of opening of the Financial Bids (Cover-2).**
7. **Rejection of Bids:** Canvassing by the bidder/s or anyone on their behalf in any form, unsolicited letter/s and post-tender submission of correction/s may invoke summary rejection. Conditional tenders will be rejected. Non-compliance of applicable General Information and Instructions will disqualify the Bid.
8. The Bidders should have Digital Signature Certificate (DSC) for filling up the Bids. The person signing the tender documents should be authorized for submitting the online e-Tender.
9. The bidders shall fill up the **Prescribed Format** for submission of **Technical Bid as per "Annexure B"** duly signed by the authorized signatory. The person signing the tender documents should be authorized for submitting the online tender.
10. The **Prescribed Format** for submission of **Financial Bid (Bill of Quantity)** shall be filled by the authorized signatory and submitted online in the prescribed format **as per "Annexure C"** available at <https://mahatenders.gov.in/nicgep/app>. Offline Financial Bids shall not be considered under any circumstances and rejected outrightly.

11. Tender Bid must be uploaded in two separate covers, marked **Cover-1 (Technical Bid)** and **Cover-2 (Financial Bid / BOQ)**. The contents of the Cover-1 and Cover-2 shall be as follows: -

Cover-1 (Technical Bid)

- i) "Technical (Techno-Commercial) Bid as per **Annexure B** format in the attached proforma on the eProcurement portal of the Government of Maharashtra (<https://mahatenders.gov.in/nicgep/app>), duly filled in and signed by Authorised Signatory with official stamp.
- ii) All relevant documents related to "Technical (Techno-Commercial) Bid" as per **Annexure B**.
- iii) Technical brochures of all the equipment with technical explanation for every feature of the product offered by bidders.
- iv) Scanned copy of the online transaction details towards Earnest money Deposit (EMD) in pdf format to be uploaded in the tender documents.
- v) Scanned copy of the online transaction details towards Tender Processing Fee in pdf format to be uploaded in the tender documents.
- vi) Scanned copy of the "**General Information and Instructions for Bidders**" duly signed by the Authorised Signatory with official stamp as a token of acceptance of the bidder.
- vii) Scanned copy of "**Instructions for Online Bid Submission**" (**Annexure A**) duly signed by the Authorised Signatory with official stamp as a token of acceptance of the bidder.
- viii) Scanned copy of "**General Terms and Conditions**" (**Annexure D**) duly signed by the Authorised Signatory with official stamp as a token of acceptance of the bidder.
- ix) Scanned copy of "**Technical Terms and Conditions**" (**Annexure E**) duly signed by Authorised Signatory with official stamp as a token of acceptance by the bidder.
- x) Scanned copy of "**Technical Specifications and Scope of Work**" (**Annexure F**) duly signed by Authorised Signatory with official stamp as a token of acceptance by the bidder.

- xi) Scanned copy of the following Check List duly filled in, signed by the authorized signatory with official stamp on the letterhead.

Check List : -

Sr. No	Description of items to be included in Cover-1	Yes ✓	No X	Remarks
01.	Technical BID duly filled in (in the attached proforma) and signed (by the authorized signatory), sealed with official stamp. (As per Annexure - B format)			
02	<p>Scanned copies of the relevant documents as per Annexure B,</p> <ul style="list-style-type: none"> - Business Registration Certificate - GST Registration Certificate - PAN Number - VAT Number (if applicable) - Technical Qualification / competence of the Team leader responsible for execution of the entire work - No. of years of experience of the team leader responsible for execution of the entire work in the relevant field/s - Qualification / Competence of the Team leader responsible for content development including software skills / artistic visualization etc. - No. of years of experience of the Team leader responsible for content development in the relevant fields - Number of years of experience of the bidder/firm in the similar field of hardware–software installation, integration, content development preceding the proposal's start date. 			

	<ul style="list-style-type: none"> - Number of similar / relevant projects / works executed by the bidder and completed successfully. - Annual Turnover F. Y. 2020-21 - ITR F.Y. 2020-21 - Annual Turnover F. Y. 2021-22 - ITR F.Y. 2021-22 - Annual Turnover F. Y. 2022-23 - ITR F.Y. 2022-23 - Scanned Copy of the duly signed, sealed General Information and Instructions for Bidders in token of acceptance. - Scanned Copy of the duly signed, sealed Instructions for Online Bid Submission (Annexure A) in token of acceptance. - Scanned Copy of duly signed, sealed General terms and Conditions (Annexure D) as a token of acceptance. - Scanned Copy of duly signed, sealed Technical Terms and Conditions (Annexure E) as a token of acceptance. 			
03	<p>Technical Brochures of equipment as per Technical Specifications and Scope of Work (Annexure F) (PDF Files)</p> <ul style="list-style-type: none"> - AR capable Tablet (Annexure 1, 19) - Smart TV (Ann. 2,4,8,10,20,21) - Wireless VR Headset (Ann. 3,5,9) 			



	<ul style="list-style-type: none"> - Workstation (Ann. 6,11,15,17) - Motion Simulator (Ann. 7) - Projectors for SoS (Ann. 12) - Navigation Tablet for SoS (Ann. 13) - Short Throw 3D Projector (Ann. 14) - Short Throw Projector (Ann. 16) - Interactive Touch Panel (Ann. 18) - Humanoid Robot (Demo. IX) - 3 D Printer (Demo. IX) - 3 D Pen (Demo. IX) - DIY Drones (Demo. IX) - DIY IoT Kit (Demo. IX) - DIY Robotics Kit (Demo. IX) - DIY Electronic Kit (Demo. IX) - DC Power Supply (Demo. IX) - Central Online UPS System (No. XII) - Central WiFi Router (No. XIII) 			
04	Scanned Copy of Online transaction details towards EMD of Rs. 3,00,000/-			Details should be mentioned.
05	Scanned Copy of Online transaction details towards Tender Processing Fee of Rs 11,800/-			Details should be mentioned.
06	Scanned Copy of Technical Specifications and Scope of Work (Annexure F) as a token of acceptance			
07	Scanned copy of the authorization letter for the authorized signatory for signing all			



	documents of this tender.			
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Cover-2 (Financial Bid / BOQ)

- i) The Financial Bid (BOQ) (as per **Annexure C**) in the attached proforma on the eProcurement portal of the Maharashtra Government (<https://mahatenders.gov.in/nicgep/app>), duly filled in and signed by Authorised Signatory with official stamp.
- At the 1st instance, as per schedule date and time, the Cover-1, i.e. Technical (Techno-Commercial) Bid shall be opened and evaluated by the competent authority of the ADT.
 - At the 2nd instance, the sample content (sample software developed by the bidder) presented by the bidders as per the scheduled date and time shall be evaluated by the competent authority of the ADT. Scope of work for sample content development is as specified in Demonstration No. I, Human Anatomy – Augmented Reality in the Technical Specifications (Annexure F).
 - At the 3rd instance, as per scheduled date and time, the Cover-2, containing **Financial Bid / BOQ of only techno-commercial offers** shall be opened for further evaluation and ranking before awarding the contract.

N.B.: The bidders shall consider the prevailing tax rates while quoting the rates. However, in the event of any changes in the statutory taxes and duties, the rates of statutory taxes/duties applicable at the time of payment shall be made by the competent authority of the ADT, Baramati against submission of supporting documentary evidence.

12. Authorities of ADT, Baramati, do not bind themselves to accept the mere lowest tender, reserve the right to reject or accept any or all tenders wholly or partially without assigning any reason whatsoever.



Annexure – A

Instructions for Online Bid Submission

1. The bidders are required to submit soft copies of their bids electronically on the eProcurement portal of Maharashtra Govt., using valid Digital Signature Certificate. The instructions given below are meant to assist the bidders in registering on the eProcurement portal of Maharashtra, prepare their bids in accordance with the requirements and submit their bids online on the eProcurement portal of Maharashtra.
2. More information useful for submitting online bids on the eProcurement portal of Maharashtra may be obtained at <https://mahatenders.gov.in/nicgep/app>

REGISTRATION

1. Bidders are required to enroll on the e-Procurement Portal of Maharashtra (URL: <https://mahatenders.gov.in/nicgep/app>) by clicking on the link "Online Bidder Enrolment" on the home page which is free of charge.
2. As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
3. Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the eProcurement Portal.
4. Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / nCode / eMudhra etc.) with their profile.
5. Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSC"s to others which may lead to misuse.
6. Bidders may then log-in to the site through the secured log-in by entering their user ID / password and the password of the DSC / e-Token.

SEARCHING FOR TENDER DOCUMENTS

1. There are various search options built in the eProcurement Portal to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, Organization Name, Location, Date, Value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine several search parameters such as Organization Name, Form of Contract, Location, Date, Other keywords, etc. to search for a tender published on the eProcurement Portal.
2. Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective "My Tenders" folder. This would enable the Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3. The bidders should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

1. Bidders should take into account any corrigendum published on eProcurement Portal in connection with the tender document before submitting their bids.
2. Please go through the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of sets in which the bid documents have to be submitted, the number of documents - including the names and content of each of the documents that need to be submitted. Any deviations from these may lead to rejection of the bid.
3. Bidders, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF / JPG formats. Bid documents may be scanned with 100 dpi with black and white option which helps in reducing size of the scanned document.
4. To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates, etc.) has been provided to the bidders. Bidders can use "My Space" or "Other Important Documents" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

1. Bidders should log-in to the site well in advance for bid submission so that they can upload the bid in time i.e., on or before the bid submission time. Bidders will be responsible for any delay due to other issues.
2. The bidders have to sign with official stamp and upload the required bid documents one by one as indicated in the tender document.
3. Bidders have to pay the requisite Earnest Money Deposit (EMD) and Tender Processing Fee Online.
4. **Bidders should pay the EMD & Tender Processing Fee as per the instructions specified in the tender document. The scanned copy of the transaction details should be uploaded while submitting the tender documents.**
5. A standard Price Schedule format (Financial Bid / BOQ) has been provided with the tender document to be filled in by all the bidders. Bidders are requested to note that they should submit their financial bids in the format provided and no other format is acceptable. The price bid (a standard BOQ format) is to be downloaded and to be filled out by all the bidders. Bidders are required to download the BOQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. **In case no rate value is required to be quoted in any particular cell, that cell may be kept blank, figure "0" (zero) shall not be entered in such cell(s).** Once the details have been completed, the bidders should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidders, the bid will be rejected.
6. The server time (which is displayed on the bidders" dashboard) will be considered as the standard time for referring the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.
7. All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128-bit encryption technology. Data storage encryption of sensitive fields is done. Any bid document that is uploaded to the server is subjected to symmetric encryption using a system generated symmetric key. Further this key is subjected to asymmetric encryption using buyers/bid opener's public keys. Overall, the uploaded tender documents become readable only after the tender opening by the authorized bid openers.

8. The uploaded tender documents become readable only after the tender opening by the authorized bid openers.
9. Upon the successful and timely submission of bids the portal will give a successful bid submission message and a bid summary will be displayed with the bid number and the date & time of submission of the bid with all other relevant details.
10. The bid summary has to be printed and kept as an acknowledgement of the submission of the bid. This acknowledgement may be used as an entry pass for any bid opening meeting.

ASSISTANCE TO BIDDERS

1. Any enquiries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority or the relevant contact person indicated in the tender.
2. Any queries relating to the process of online bid submission or queries relating to eProcurement Portal in general may be directed to the 24x7 helpdesk. The contact numbers for the helpdesk are 0120-4001 002, 0120-4001 005, 0120-6277 787.

Annexure – B

Agricultural Development Trust
Sharadanagar, Baramati,
Tal. Baramati Dist - Pune,
Maharashtra 413115

Tender No.:

TECHNICAL (Techno-Commercial) BID

Notes:

- 1) All particulars / Information should be given in the following format with complete details.
- 2) Please provide documentary copies (Scanned) wherever mentioned.

1.	Name of the Bidder /firm	:	
2.	Mailing address of the Bidder with PIN/ZIP Code	:	
3.	Contact details	:	
	Telephone Number(s)	:	
	Mobile	:	
	Fax Number(s)	:	
	E-mail Address	:	
	Website	:	
4.	Background details of the Bidder (State whether agency / firm / consultant / consortium / integrator / developer / hardware supplier / etc.)	:	

5.	Current and Valid details of the bidder / firm i) Business Registration Certificate ii) GST registration Certificate iii) PAN Number (Please provide documents)	:	
6.	Technical Qualification / competence of the Team leader responsible for execution of the entire work (Please provide documents)	:	
7.	No. of years of experience of the team leader responsible for execution of the entire work in the relevant field/s (Please provide documents)	:	
8.	Qualification / Competence of the Team leader responsible for content development including software skills / artistic visualization etc. (Please provide documents)	:	
9.	No. of years of experience of the Team leader responsible for content development in the relevant fields (Please provide documents)	:	
10.	Number of years of experience of the bidder/firm in the similar field of hardware–software installation, integration, content development preceding the proposal's start date. (Please provide documents)	:	



11.	Number of similar / relevant projects / works executed by the bidder/firm and completed successfully in last 3 years, 20-21, 21-22, 22-23. (Please provide documents)	:	
12.	Annual turnover of the bidder / firm for last three years; F.Y. 2020 – 21 F.Y. 2021 – 22 F.Y. 2022 – 23 (Please provide documents)	:	
13.	Details of the EMD Payment	:	
14.	Details of the Tender Processing Fee (Non-refundable) Payment	:	
15.	Whether capable to supply, install and commission the Technology Demonstration Laboratory in complete sense including developing the content software as specified in Technical Specifications and Scope of Work in Annexure F (Please mention YES or NO)	:	
16.	If YES, submit the work complete plan with timing details as to how exactly the entire work will be completed within time. Please mention how the hardware & software will be supplied, systems integrated, content software developed. Please mention if the bidder has in-house capability for all the essentials or certain work to be passed on to associates. PI provide	:	

	complete details including name/s, address/s of associates if any. (Attach additional sheets if necessary)		
17.	Whether agreed to offer Three Years Onsite Warranty for the entire hardware/software (Please mention YES or NO)	:	
18.	Minimum downtime to handle breakdown calls and/or any sort of emergencies	:	
19.	Single point contact details for all post-installation service-related issues with hierarchy levels (if any)	:	
20.	Whether agree to accept the Delivery Schedule mentioned in the General terms & Conditions for Submission of Tender (Annexure D)	:	
21.	Whether agree to accept the payment terms mentioned in the General Terms & Conditions for Submission of Tender (Annexure D) (State YES or NO) (No advance payment shall be considered for any reason whatsoever)	:	
22.	Timeline for execution of the entire work from the date of placement of order indicating therein parallel activities to establish completion of the entire work within the stipulated time schedule. (Attach separate sheet if necessary)	:	
23.	Please attach Scanned Copies of the duly signed (by authorized signatory), sealed with official		



	stamp of the following in token of acceptance		
	a. General Information and Instructions for Bidders	:	
	b. Instructions for Online Bid Submission	:	
	c. General Terms and Conditions (Annexure D)	:	
	d. Technical Terms and Conditions (Annexure E)	:	
	e. Technical Specifications and Scope of Work (Annexure F)	:	
24.	Willing for Presentation of the Sample Content Software Developed by the bidder as specified. (Please mention YES or NO)	:	
25.	Please attach Scanned Copies/PDF files of the following Technical Brochures of hardware; (Annexures mentioned here are part of Annexure F)	:	
	<ul style="list-style-type: none"> - AR capable Tablet (As per Annexure 1, 19) - Smart TV (As per Annexure 2,4,8,10,20,21) - Wireless VR Headset (As per Annexure 3,5,9) - Workstation (As per Annexure 6,11,15,17) - Motion Simulator (Annexure 7) - Projectors for SoS (Annexure 12) - Navigation Tablet for SoS 		



	(Annexure 13) - Short Throw 3D Projector (Annexure 14) - Short Throw Projector (Annexure 16) - Interactive Touch Panel (Annexure 18) - Humanoid Robot (Demo. No. IX) - 3 D Printer (Demo. IX) - 3 D Pen (Demo. IX) - DIY Drones (Demo. IX) - DIY IoT Kit (Demo. IX) - DIY Robotics Kit (Demo. IX) - DIY Electronic Kit (Demo. IX) - DC Power Supply (Demo. IX) - Central Online UPS System (No. XII) - Central WiFi Router (No. XIII)		
26.	Name and designation of the Authorised Signatory for this tender	:	

Dated

Official Stamp

Name & Signature of the Bidder



Annexure C

Agricultural Development Trust
Sharadanagar, Baramati,
Tal. Baramati Dist - Pune,
Maharashtra 413115

Tender No.: 2024_RGSTC_1009344_1

Financial BID (Bill of Quantity)

Price Quote should be in Indian Rupees for each demonstration/item in total, consisting of supply, installation, integration, interconnection, testing, development of content software/apps, operating systems, transport, overheads, labor, onsite warranty/guarantee etc. Taxes (CGST, SGST), and any other duties, levies are to be filled in separately in appropriate columns. The cost of each demonstration in totality for achieving the specified end result should be quoted.

Financial Bid would be considered for comparison in totality for all the 13 demonstrations/items together and not individually for any demonstration / item.

Item Rate BoQ
 Tender Issuing Authority: CEO, Agricultural Development Trust, Sharadanagar, Baramati, Tal. Baramati Dist - Pune

Name of Work: Supply, Installation, Integration, Development, Testing and Commissioning of Hardware and Software for setting up of Technology Demonstration Laboratory (TDL) at Science and Innovation Activity Centre (SIAC) Agricultural Development Trust, Sharadanagar, Baramati, Dist. Pune, Maharashtra. 413115 with 3 years onsite warranty (NOTE: Financial Bid would be considered for comparison in totality for all the 13 demonstrations/items together and not individually for any demonstration / item.)

Contract No:

Name of the Bidder/ Bidding Firm/									
PRICE SCHEDULE									
(This BoQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)									
NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	NUMBER #	NUMBER #	NUMBER #	TEXT #
Sl No.	Item Description	Quantity	Units	Estimated Rate	BASIC RATE in Figures To be entered by the Bidder Rs. - P	TOTAL AMOUNT With All Taxes	TOTAL AMOUNT With All Taxes	TOTAL AMOUNT in Words	
1	2	4	5	6	13	53	54		55
1	Human Anatomy - Augmented Reality (AR)	1.000	SET	0.00		0.000	0.000	INR Zero Only	
2	Human Anatomy - Virtual Reality	1.000	SET	0.00		0.000	0.000	INR Zero Only	
3	Space Voyage Simulator - 3D Virtual Reality	1.000	SET	0.00		0.000	0.000	INR Zero Only	
4	Virtual Chemistry Lab - Virtual Reality	1.000	SET	0.00		0.000	0.000	INR Zero Only	
5	Science on Sphere - Spherical Screen Projection	1.000	SET	0.00		0.000	0.000	INR Zero Only	
6	How Dinosaurs went extinct - 3D Film Theatre	1.000	SET	0.00		0.000	0.000	INR Zero Only	
7	Interaction with Dr APJ Abdul Kalam - Holographic Projection	1.000	SET	0.00		0.000	0.000	INR Zero Only	
8	India Tour - Interactive Touch Screen Panel	1.000	SET	0.00		0.000	0.000	INR Zero Only	
9	Robotics Lab	1.000	SET	0.00		0.000	0.000	INR Zero Only	
10	Household Machines Repair & Maintenance: AR Demo	1.000	SET	0.00		0.000	0.000	INR Zero Only	
11	Video Station - Technology Video Clips	1.000	SET	0.00		0.000	0.000	INR Zero Only	
12	Central Onsite UPS System for Technology Demo Lab	1.000	SET	0.00		0.000	0.000	INR Zero Only	
13	Central Wi-Fi Router	1.000	SET	0.00		0.000	0.000	INR Zero Only	
Total in Figures						0.000	0.000	INR Zero Only	
Quoted Rate in Words						INR Zero Only			

GENERAL TERMS AND CONDITIONS FOR SUBMISSION OF TENDER

1. The successful bidder shall submit within 7 (seven) days from the date of placement of the work order the duplicate copy of the work order duly signed and sealed with official stamp on all pages as a token of acceptance of the order.
2. **Earnest Money Deposit (EMD)** : The tenderers should pay sum of Rs. 3,00,000.00 (Rupees Three Lakhs only) as Earnest Money Deposit (EMD) Online.
3. The scanned copy of online transaction details towards EMD should be uploaded while submitting the tender documents.
4. EMD of the unsuccessful tenderers shall be refunded without interest on a written request after the date of acceptance of the Final Work Order by the successful tenderer on completion of the tender process or within sixty days from the date of opening of the tenders.
5. In case the successful bidder refuses to accept the offer after finalization or does not comply with the Clause No. 01 of these General Terms and Conditions within 07 (Seven) days from the date of placement of the order as per the finalized and accepted terms and conditions, the Earnest Money Deposit would be automatically forfeited and the order shall be cancelled forthwith.
6. **Tender Processing Fee** : The tenderers shall be required to pay Rs.11,800.00 (Rupees Eleven Thousand Eight Hundred only) (Rs.10,000.00 plus GST @ 18%), towards the Non-refundable tender processing fee online.
7. Scanned copy (pdf file) of Transaction details towards Tender Processing Fee instrument shall be uploaded in the Cover-1 of the tender along with other documents.
8. **Eligibility** : With a view to ensure a thoroughly professional implementation of the project, expert agencies / firms / consultants / consortiums / integrators / developers should have association with such individuals / domain experts as per subjects of the demonstrations / art & graphic visualisers, designers / software developers / AR, VR & interactive software developers / hardware specifications, integration, multimedia and experts well conversant with video production, playback etc.

On complying all other criteria such as EMD, Tender Processing Fee, etc., based on the documents submitted in Cover-1 regarding profile, technical and financial competence and experience, and on the basis of presentation of the developed Sample Content Software, the bidder has to secure at least 60% points as described in the '**Bid Evaluation Methodology**' prescribed in the Notice Inviting Tender.

Financial Bids of only those securing at least 60% points would be eligible for opening of Cover-2, the Financial Bid.

9. **Scope of work** : The selected bidder shall be responsible for setting up of Technology Demonstration Laboratory consisting of various technology demonstrations involving Augmented Reality, Virtual Reality, 3 D imaging, holographic projection, spherical screen projection, touch screen technology, motion simulator, Robotics, etc. The selected bidder will be responsible for achieving end result as described in each demonstration which involves creative content software development. The selected bidder will be the turnkey solution provider and will have to set up all the demonstrations to achieve end result as prescribed. The selected bidder shall have associations with expert teams.
10. **Price** : The Price and Rates quoted in Indian Rupees shall include all incidental charges like packing, forwarding, freight, insurance, delivery etc. and as may be applicable to this tender for supply, installation, integration, development, testing and commissioning along with three years onsite warranty at SIAC Baramati. The price should include the cost of providing training in the operation of the system to the representatives of SIAC Baramati and RGSTC. The quoted price should include all and the cost due to CGST, SGST and any other duties, taxes, levies shall be indicated clearly in appropriate columns.
- i) Custom duty on any item/s, if any, shall be clearly mentioned in the offer form. If applicable, it shall be a part of price quoted.
 - ii) Prices and Rates quoted shall be firm and fixed for the entire period of execution of order and no escalation of prices/rates on any ground whatsoever shall be accepted.
 - iii) In case desired, the host shall place order for any additional demonstration / equipment at the same rate, terms and conditions.
11. **Time for Completion of the Work** : The entire work of setting up of Technology Demonstration Laboratory consisting of all the Technology Demonstrations as described in the Technical Specifications and Scope of Work (Annexure F) along with the equipment specified should be completed in all respects within the maximum time period of **180 days** from the date of placement of the confirmed order.

12. Every effort should be made to complete the entire work by the successful bidder within the specified time. In case the successful bidder fails to comply with the specified time schedule and accepted terms and conditions, and where the progress of work is not found satisfactory, and commensurate with the expected progress, The ADT Baramati reserves the right to cancel the order. The decision of the ADT Baramati shall be final and binding on the successful bidder. The successful bidder cannot claim any compensation for such cancellation or determination of the work order.
13. **Authorised Signatory** : All the documents including the Technical Bid, Financial Bid and the supporting documents, scanned copies, etc. shall be signed by the authorized signatory of the bidder. The bidder must provide authorization letter to this effect and the same must be included in the Cover-1.
14. **Pre-Bid Meeting** : A Pre-Bid Meeting will be held in the Conference Hall of Agricultural Development Trust, Sharadanagar Baramati, Dist. Pune on the date and time as mentioned in the Schedule in the NIT to clarify, queries, if any, of the Tenderers before submission of their Tenders. Intending bidders must submit their queries either through email / hard copy (at the address for communication) at least 2 (two) days before the date of Pre-Bid Meeting. The Minutes of the Pre-Bid Meeting will be integral part of this Tender Document and will be uploaded as per clause mentioned under "Provisions for Amendments" in the tender document.
15. **Amendments/Corrigendum to the tender** : At any time prior to the deadline the TIA for any reason, whether at its own initiative or in response to clarifications in pre-bid meeting may modify the tender document by issuing amendment(s) to clarify an interpretations of the provisions of this tender. Such supplements, amendments/corrigendum to the tender document issued by the TIA would be displayed on the mahatender website and shall be deemed to be incorporated by this reference into this tender document.
16. **Inspection** : The successful Bidder shall arrange for inspection of the equipment including its accessories at the site whenever desired by the authorities of ADT Baramati. The successful bidder shall also arrange inspection of content software development work at wherever location it will be going on. Any / all defects pointed out to the successful bidder during such inspection shall be promptly rectified at the cost (including material cost) of the successful bidder to meet the desired quality, and specifications as per the requirement failing which penal action shall be taken as deemed fit. The decision of the ADT Baramati in this regards shall be final and binding on the successful bidder.
17. **General Terms of Payment** : All payments will be made on actual measurement /



work done basis.

- 60% payment of the ordered value will be made against the delivery of materials / equipment, hardware, operating systems at site within 10 (ten) days after submission of bills along with delivery challan and full detailed measurements and as certified by authorized representative of ADT Baramati.
- 10% payment of the ordered value will be made against the delivery of content software at site within 10 (ten) days after submission of bills along with delivery challan and full detailed inspection report of the authorized representative of ADT Baramati.
- 20% payment of the ordered value will be made against mounting and installation and integration of material, hardware, software, content software as per the specifications and to the satisfaction of ADT authorities within 10 (ten) days after submission of bills and full detailed measurements and certified by the authorized representative of ADT Baramati.
- 10% payment of the ordered value will be made against commissioning of the entire Technology Demonstration Laboratory consisting of various demonstrations / equipment as per specifications and to the satisfaction of the authorities of ADT Baramati within 10 (ten) days after submission of bills along with delivery challan and full detailed measurement / inspection by the authorized representative of ADT Baramati.
- Prior to release of balance 10% (ten percent) payment of the total value of the work order, the successful bidder shall arrange for an irrevocable Bank Guarantee acceptable to ADT Baramati **valid for a period of three years** as security deposit for fulfilment of warranty / defect liability obligations.
- Training of the officials of SIAC / ADT personnel in operation and preventive maintenance of the entire ordered systems shall be organized by the successful bidder at every stage of installation and also after satisfactory commissioning of the equipment at site and before 10% payment is released as per terms stated above.

18. **Penalty Clause** : In case of non-compliance of the entire work within the stipulated time, and the delay is not attributable to site requirements, **Liquidated Damage (L.D.) @ 1% of the tendered / ordered value per week** shall be recovered from the bill of the successful bidder subject to a maximum of 10% of the tendered / ordered value.

19. **Defect Liability Period / Warranty Period** : The defect liability / warranty period shall be **Three Years** from the date of certification of the satisfactory installation and commissioning of all the technology demonstrations / equipment. The

successful bidder shall be responsible for all defects of the installed systems, hardware, software, interconnections, operating systems, manufacturing or other defects of the components, playback and associated software etc. For a period of **Three Years** from the date of satisfactory completion of the installation and commissioning of the Technology Demonstration Laboratory, the successful bidder, shall at their own cost, rectify the defects and or replace the defective parts / equipment / hardware / software up to the complete satisfaction of the authority of ADT Baramati within reasonable time. The successful bidder shall maintain an inventory of all necessary components to reduce downtime.

20. The authority of ADT Baramati do not bind themselves to accept the lowest tender and reserves the right to accept or reject any or all tenders wholly or partially without assigning any reason whatsoever.
21. The successful bidder shall obtain necessary trade and other licenses / permissions as may be required to carry out the tendered job at SIAC, ADT Baramati and shall also be responsible for compliance of all statutory rules and regulations which may be in force from time to time from the appropriate authorities at their own cost.
22. Agricultural Development Trust shall not be responsible for any injury or death of an employee who is deployed by the successful bidder within / outside the work site during the time of execution of the work order.
23. **Security Deposit : The Security Deposit shall be 5% of the gross value of the work executed and shall be submitted by the successful bidder in the form of Bank Guarantee before release of the final payment. The Security Deposit shall be released after expiry of the Defects Liability Period of Three Years from the date of satisfactory completion of the installation and commissioning of the Technology Demonstration Laboratory.**
24. All disputes between the successful bidder and the Agricultural Development Trust of any kind whatsoever arising out of or in connection with the order on carrying out the ordered work and during the period of Three Years of Defect Liability Period shall be referred to the sole arbitration of Member Secretary, Rajiv Gandhi Science and Technology Commission, whose decision in this regard will be final and binding on both the successful bidder and the ADT Baramati. The provisions of the Arbitration and Conciliation Act 1996 or any statutory modification or re-enactment thereof and of the rules made there under for the time being in force shall apply to arbitration's proceedings under this Clause.

25. The contract, including all matters connected with this contract, shall be governed by the Laws of India, both substantive and procedural, for the time being in force, subject to legal jurisdiction of Pune Court, if required.

26. The responsibility for the custody, maintenance, and restoration of all material / equipment, prior to the official handover to the ADT Baramati shall be solely with the successful bidder. Any damages, regardless of their extent, shall be the successful bidder's obligation to restore. Any interim payment received for such work shall not affect this responsibility. The handover process shall be conducted in the presence of authorities of ADT Baramati with the copies of documentation, guarantee / warranty certificates, licenses, interconnection diagrams, details etc.

27. FORCE MAJEURE

- i. Should any force majeure circumstances arise, each of the contracting party shall be excused for the non-fulfillment or for the delayed fulfillment of any of its contractual obligations, if the affected party within 14 days of its occurrence in forms in a written form the other party.
- ii. Force majeure shall mean fires, floods, natural disasters or other acts such as war, turmoil, strikes, sabotage, explosions, and quarantine restriction beyond the control of either party.

28. All other conditions given in the tender document under various sections shall stand valid and the successful bidder shall abide by them.

TECHNICAL TERMS AND CONDITIONS

1. The successful bidder shall be solely responsible for achieving the total end result of the demonstration as specified in Technical Specifications and Scope of Work (Annexure F). Necessary hardware / software / gadgets / apps shall be supplied by the successful bidder.
2. The successful bidder shall be solely responsible for procuring necessary hardware, software, operating systems, gadgets, accessories from genuine authentic sources only.
3. All the hardware/equipment/accessories/gadgets shall be OEM products, absolutely brand new, unused and shall carry originality certificates, original manuals, license certificates, guarantee/warranty documents, including original packings as applicable.
4. All the hardware should bear applicable certifications (ROHS, Energy Star, FCC/UL, EPEAT India etc.).
5. OEM hardware / equipment / gadgets shall be branded ones and from among the top 5 OEM brands as per IDC latest report.
6. There are 11 Technology Demonstrations and 2 equipments to be set up, installed and commissioned under this tender at the Science and Innovation Activity Centre (SIAC) set up in the premises of Agriculture Development Trust (ADT) at Sharadanagar Baramati.
7. The hardware and software specified in the tender is not just to be supplied but is to be integrated, interconnected either through wires/cables or wirelessly to provide specified end result.
8. Data Files (contents) are to be developed / compiled by the successful bidder and must be rich in contents, quality, graphics, animations, simulations, still images, text information pop ups, panoramic views, 3D views, interactions, cut sections, A-V material, etc. AR and VR contents are most essential wherever specified.
9. Contents / Data Files must be free from copyright / patent infringement.
10. All the OS / software / Apps / Programmes required to be installed for the operation of demonstrations must be authorized licensed versions only and should have perpetual license in the name of ADT Baramati.
11. Projectors / Smart TVs / Panels must be supplied with OEM accessories such as connectors, cables, wall / ceiling mounts, metallic stands, etc.
12. OEM / professional quality interconnecting accessories necessary for the demonstrations (even if not mentioned specifically) must be supplied by the successful bidder as cost included in the quote.

13. In case any hardware / software necessary for achieving end-result is missing in the specifications, it must be brought to the notice of the host immediately but not later than Pre-Bid meeting.
14. All the hardware, Tablets, Smart TVs, Workstations, AR / VR Headsets, Panels, Touch Screens, Projectors, Sound Systems, Microphones, Monitors, Keyboards, Mouse, Touch Pads etc. must be from reputed brands only and of professional quality. Compromise in quality due to assembled / non-standard / spurious product/s will not be accepted under any circumstances.
15. Deviations, if any, from Technical Specifications will not be accepted.
16. All the hardware/software must have 3 years onsite guarantee / warranty. The successful bidder must be able to provide onsite support on the next business day including within region HW-SW support.
17. Evaluation of the tender will be based on the total cost of all or acceptable demonstrations together in lumpsum and not on the basis of cost of individual demonstration or equipment.
18. Any hardware / software not available in the country will have to be procured / imported by the successful bidder on their own. Host organization would not be able to provide any support for import or waiver of any duties / taxes etc.
19. The successful bidder will ensure that there is no malicious code embedded in any hardware or software. Malicious Code Certificate shall be provided by the successful bidder for all the concerned hardware/software.
20. The technical specifications of all the hardware are just bare minimum. The bidders may consider the latest specifications for all the hardware / equipment.

Annexure F

Technical Specifications for Supply, Installation, Integration, Development, Testing and Commissioning of 'Technology Demonstrations & other Equipment for setting up Technology Demonstration Laboratory

(Tender ID : 2024_RGSTC_1009344_1)

List of Technology Demonstrations / Equipment

Sr. No.	Title of the Demonstration / Equipment
I.	Human Anatomy - Augmented Reality (AR)
II.	Human Anatomy – Virtual Reality
III.	Space Voyage Simulator – 3D Virtual Reality
IV.	Virtual Chemistry Lab – Virtual Reality
V.	Science on Sphere – Spherical Screen Projection
VI.	How Dinosaurs went extinct – 3D Film Theatre
VII.	Interaction with Dr APJ Abdul Kalam - Holographic Projection
VIII.	India Tour - Interactive Touch Screen Panel
IX.	Robotics Lab
X.	Household Machines Repair & Maintenance: AR Demo
XI.	Video Station – Technology Video Clips
XII.	Central Online UPS System for Technology Demo Lab
XIII.	Central Wi-Fi Router

**Technical Specifications for Supply, Installation, Integration, Development,
Testing and Commissioning of 'Technology Demonstrations & other Equipment
for setting up Technology Demonstration Laboratory**

I. Human Anatomy - Augmented Reality (AR)

An immersive and interactive experience of exploring human body organs/systems using **Augmented Reality** Technology. With avant-garde augmented reality technology experience, one can delve deep into human anatomy. This demo presents users with a dynamic, hands-on method to study the body's core systems, offering insights into the organs involved in, their structure and normal functions, operations, and familiar pathologies.

Demo Setup:

- 5 ft tall human body colour graphic vinyl print, pasted on 12 mm thick foam sheet cutout in the same shape. The graphic shows the **Respiratory System, Nervous System, Circulatory System** etc. and the organs involved in them.
- Graphic has a unique QR code associated with each human body system listed above. Thus, there are a minimum of 3 QR codes.
- 3 Nos pre-programmed, fully loaded, AR capable Tablets with latest OS and necessary hardware / software / data files / Apps. (1 in use and 2 spare)
- Tablets would also be equipped for seamless WiFi wireless transmission of screen contents (screen mirroring) to the nearby paired Smart TV.
- A 65 inches screen Smart TV for wirelessly mirroring (displaying) the immersive and interactive AR contents (audio as well as video) visible on the demo Tablet screen.
- The Tablets would contain a minimum of 3 Data Files (one for each system & to be developed by the successful bidder) consisting of rich, interactive, immersive, edutaining, and experiential, AV content describing the structure and function of the three body systems listed above and the involved organs in details. The information content of each data file would provide a full-fledged Augmented Reality experience to the users.
- Data files would be in 2 languages: Marathi and English.
- An overall 'Demo App' titled 'Human Body Systems-AR' (to be developed by the successful bidder) in both the Tablets for facilitating the demonstrator to select the language, to initiate the back camera, to scan the QR codes and go through the entire demo in detail, and to safely exit the App etc. The Demo App would also take care of resetting/initializing all the concerned hardware/software.
- At any point in time, only one Tablet would be used for demonstration and the second one would be used as standby.

Demonstration:

The demonstrator/user picks up the Tablet and invokes the 'Demo App' to initiate the demo. He/She selects the language (English or Marathi) for the demonstration. The 'Demo App' initiates the entire hardware and software and prompts the user to scan the QR code of any human body-system available on the graphic cutout using the rear camera of the Tablet.

On scanning the QR code, the corresponding data file residing in the memory of Tablet would get fetched, and the contents therein would be presented on the Tablet screen in landscape format. The same contents (both audio & video) would also be instantly transmitted wirelessly by the Tablet to the paired Smart TV nearby, over the WiFi network.

The user goes through the interactive and immersive contents corresponding to all the 3 human body systems by scanning the associated QR codes one by one and completes the demo. The larger group audience would be able to watch the contents on Smart TV.

The Demo App provides necessary instructions / guidance to the user throughout the demonstration. The App would have an option to exit the demo at any time and to reset the system safely.

Brief Description of Data Files:

The data files would consist of audio, video, 3D images, cut sections, blowups, animations, interactions, popups, textual panels etc. to provide rich, educational, interactive, immersive, entertaining and AR experience for the users. Each data file would have content lasting for about 5 minutes duration thereby for 3 systems it would take approximately 15 minutes.

There would be a provision for adding more data files concerned with other body systems later.

The contents of the data files must be authentic, error-free, vetted by experts and to be pre-approved by the host. The contents would also be free from any copyright, patent, or any similar infringement. The contents are to be so designed that they appear in landscape format on the Tab as well as on the Smart TV screen.

1. Respiratory System:

- ✓ Focuses on structure and functions of the nose, throat, larynx, lungs, diaphragm, trachea, bronchial tubes, and more. It would explain how exactly the gas exchange (Oxygen & Carbon-dioxide) takes place in lungs. The respiration process, inhaling and exhaling.
- ✓ Highlight the effects of diseases like pneumonia, tuberculosis, lung cancer, etc.

2. Nervous System:

- ✓ Details of the structure of the brain's various sections and their functions, spinal cord, nervous network, neurons etc. Actual communication in the neural network would also be highlighted through animation etc.
- ✓ Discusses conditions like tumors, strokes, Alzheimer's, and nerve-related disorders.

3. Circulatory System:

- ✓ Covers the structure and functions of heart, arteries, veins, blood vessels, blood constituents, blood cells, and related processes.
- ✓ Heart diseases, hypertension, anemia, blood disorders Heart Attack and more.

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Human Body Colour Graphic vinyl print pasted on 12 mm thick foam sheet Cutout	600 DPI Resolution colour graphic of human body outline showing internal organs and body systems, namely Respiratory System, Nervous System and Circulatory System printed on imported vinyl and flawlessly pasted on 12 mm thick foam sheet cutout in the same shape. Height of the cutout – 5ft The graphic print to be clear laminated, and UV protected. The cutout to be adequately strengthened at the back to avoid any bending. There would be 3 unique QR Codes pasted/printed with the 3 body systems listed.	1 No.	Graphic to be pre-approved by the host.
2.	AR capable Tablets	As per Annexure 1	3 Nos.	1 for Demo 2 in Spare
3.	SMART TV	As per Annexure 2	1 No.	

RB

4.	a. GUI Demo App	As described above in the Set up.	1 No.	To be developed
	b. Data Files for Respiratory, Nervous and Circulatory System	Content rich audio, video, 3D images, cut sections, blowups, animations, interactions, popups, textual panels etc. to provide rich, educational, interactive, immersive, and entertaining AR experience to the user.	3 Nos.	To be developed

Annexure 1: Technical Specifications for AR Capable Tablets (Qty – 3 Nos)

Description	Technology	Specifications
Network	Technology	WIFI Only
Body	Size	Minimum 11 inches.
	Build	Glass front, aluminum back, aluminum frame
	Stylus Support	Stylus Support Required
Display	Type	AMOLED
	Resolution	Minimum 2560 x 1600 pixels (~274 ppi density)
Platform	OS	At least Android 13, One UI 5.1 or latest
	Chipset	Snapdragon 8 Gen 1 (4nm) or similar
	CPU	Octa-core
	GPU	Adreno 730 or higher
Memory	Card slot	Micro SDXC (dedicated slot)
	Internal	Minimum 256 GB ROM, Minimum 8GB RAM
Main Camera	Single	Minimum 13 MP
	Features	HDR, panorama
	Video	1080p@60fps or better
Selfie Camera	Single	Minimum 12 MP
	Video	1080p@30fps or better
Sound	Loudspeaker	Yes, with Stereo Speakers
	Earphone	Through Bluetooth

Communication	WLAN	Wi-Fi 802.11 a/b/g/n/ac, dual-band, Wi-Fi Direct
	Bluetooth	5.2, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO
	NFC	No
	Radio	No
	USB	USB Type-C
Features	Sensors	Accelerometer, Gyro, Fingerprint
		ANT+ Certified
Battery	Type	Li-Po 8000 mAh, Non-removable
	Charging	45W wired, Charger/Adapter supplied with Tab
AR Compatible	YES	YES
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided	
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)	

Annexure 2: Technical Specifications for Smart TV (Qty – 1 No.)

Description	Specifications
Screen Type	LED with super bright backlit display Commercial Grade
Backlight Type	LED
Brightness	Minimum 700 nit
Resolution	Minimum 3840 X 2160
Contrast	At least 4000:1 or better
Audio Amplifier	In-built 2 channel output
Audio Speaker	At least 2 X 10W
I/O Connectors	At least HDMI 2.0 (x2), USB 2.0 (x2)
CPU, GPU and Memory	Inbuilt CPU and GPU with minimum 8 GB Memory

OS Module	Android / Tizen or Equivalent OEM provided latest OS only
Wi-Fi & Bluetooth	Inbuilt
Size	Minimum 65" diagonal
Smart Features	Smart View or similar feature for smart device wireless connectivity (In order to assure flawless wireless connectivity between the panel and VR headset or, Smart handheld device, separate branded hardware may be utilized)
Operating Hours	Suitable for 24 x 7 operation
Wall Mount Fixture	OEM provided wall mount bracket.
Connectors / Cables	All the standard Connectors/Cables supplied by OEM
Warranty	3 Yrs Onsite
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Important Notes:

1. Tablets and Smart TV of the same OEM would be preferred for proper matching and better communication. Tablets and Smart TV would communicate using central WiFi network.
2. Contents of all the data files appearing on the Tablets screen to be designed to appear in Landscape format on Tablet as well as Smart TV.

II. Human Anatomy – Virtual Reality (VR)

Virtual Reality is yet another state-of-the-art technology which can be used for experiencing the wonders of human anatomy like never before. The demo equips users to dive deep into detailed 3D models of vital organs of the human body in virtual space, explore their structure, functions, and gain insights into common ailments, all within an immersive virtual space.

Demo Setup:

- 5 feet tall human body colour graphic print on vinyl, flawlessly pasted on 12 mm thick foam sheet cutout in the same shape, showing vital human body organs; Heart, Lungs, Kidneys, Eyes, Ears, Pancreas, Intestines, Liver etc.
- The demo consists of exploring the Heart, Lungs, Kidneys, Eyes and Ears.
- 3 Nos. of pre-programmed, fully loaded, wireless VR headsets with 6 DoF tracking integrated technology and equipped with necessary hardware / software / programmes / Apps necessary for the purpose of this VR demonstration. (1 in use and 2 spare)
- The VR Headsets would communicate wirelessly (over WiFi network) directly with the paired Smart TV nearby.
- 2 Nos of handheld wireless gadgets/pointers (for left and right hand) (for each VR Headset) for pointing to the subject for selection in the virtual field visible to the user in the headset.
- The VR interactive information content (data files) for the demonstration would be residing in the VR Headsets memory.
- 1 data file corresponding to each organ namely **Heart, Lungs, Kidneys, Eyes and Ears** thereby in all 5 data files would be there. The information content of each data file must be able to provide a full-fledged interactive Virtual Reality Experience to the users consisting of audio, video, enhanced graphics, animations, simulations, still images, cut sections, textual information etc.
- Each data file would contain sufficient information that would last at least for 5 minutes while exploration. Thus, the demonstration of 5 data files for 5 organs would last for about 25 minutes.
- A 65 inches Smart TV firmly fixed nearby to wirelessly mirror (display) the audio/video interactive VR content presented on the VR Headset screen. This would facilitate the larger group audience (behind the user) to see the information visible to the user in the VR headset.
- The Smart TV and the VR Headsets would be paired over the WiFi network.
- There would be a provision for adding more data files concerning other organs later.
- Each data file would be in 2 languages – English and Marathi and there should be option for user to select language of his/her choice at the beginning.

Demonstration:

The demonstrator / user picks up a VR Headset and wears it. He/She also holds the pointer gadget in hand. On starting the demo, the user gets to see the title of the demo with options for selection of language. The user selects the language with the pointer. On selecting the language, the user starts seeing the human body graphic in the virtual space. The user points towards a particular organ of the human body. On selecting the organ, the interactive VR content file of the selected organ (data file) gets presented in the virtual space. The same content also gets displayed on the paired Smart TV. The handheld pointer allows user to wander through the human body organs in virtual space.

The user thus explores different organs of the human body in virtual space and derives a unique experience of diving deep into human body organs in virtual space thereby understanding the structure and functioning of the organs. The data files would also enable users to compare healthy organs with diseased ones.

The contents of the data files must be authentic, error-free, vetted by experts and to be pre-approved by the host. The contents would also be free from any copyright, patent, or any similar infringement. The contents are so designed that they appear in landscape format on the VR headset screen as well as on the paired Smart TV to utilize maximum screen area.

Brief Description of Data Files:

The Demonstration will cover 5 modules (Data Files) as below and would last for 5 minutes each thereby totaling to 25 minutes.

1. Heart

- Interactive 3D model showing shape, size, chambers, aorta, valves, and impure-purified blood flow, beating of heart etc.
- Disease insights including coronary artery disease, heart failure, and arrhythmias.

2. Lungs

- Detailed representation of trachea, bronchi, alveoli, and the diaphragm, expansion-contraction, gas exchange etc.
- Discussion on diseases like asthma, pneumonia, tuberculosis, smoking related issues etc.

3. Kidneys

- Focus on the cortex, medulla, renal pyramids, and more.



- Insights into diseases like glomerulonephritis and kidney stones.

4. Eyes

- Structure of an Eye, eyeball, iris, cornea, eye lens, retina, optic nerve
- Process of seeing and visualizing, eye related ailments, eye care etc.

5. Ears

- Structure of Ear, inner ear, diaphragm, bones, semicircular rings, inside fluid, auditory nerve etc.
- Process of hearing, process of balancing, hearing loss due to various ailments and remedies, precaution/care etc.

Each module would be rich in content having interactive components, internal structures, cut sections, 3D renderings, animations, textual panels/popups, and audio-visual information equipped to provide a unique VR experience. Users would be able to compare healthy versus diseased organs, deepening their understanding of Human Anatomy.

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Human Body Colour Graphic print pasted on foam sheet Cutout.	600 DPI Resolution colour graphic of human body showing internal organs namely Heart, Lungs, Kidneys, Eyes and Ears printed on imported vinyl medium and flawlessly pasted on 12 mm thick foam sheet cutout. Height of the Cutout – 5ft The graphic print should be clear laminated, and UV protected. The cutout to be adequately strengthened at back to avoid bending.	1 No.	Graphic to be pre-approved by the host.
2.	Wireless VR Headset	As per Annexure 3	3 Nos.	1- Demo 2 - Standby

3.	Smart TV	As per Annexure 4	1 No.	
4.	VR Data Files for 5 human body organs namely, Heart, Lungs, Kidneys, Eyes and Ears	As described above	A Set of 5 data files for human body organs as mentioned above.	

Annexure 3: Technical Specifications for Wireless VR Headsets Qty. – 3 Nos.)

Description	Specifications
Product Weight	Not exceeding 650 Gms.
Tracking	Supports 6 degrees of freedom (6DoF) on head through integrated technology
Storage	Minimum 128 GB
Display Panel	Fast-switch LCD
Display Resolution	At least 1830×1920 per eye
Display Refresh	Minimum 72Hz
Processor	Qualcomm® Snapdragon™ XR2 Platform
Audio	Integrated Headphones
RAM	At least 6GB
Charger Type	USB-C power adapter,
IPD	Adjustable IPD with three settings for 58, 63 and 68mm.
Wireless Connectivity	AIR LINK or similar wireless connectivity App
Controllers	Suitable handheld wireless gadgets (for left as well as right hand) for pointing to the subject for selection in the virtual field visible to the user
Controller Weight	Not exceeding 150g per controller without battery
Batteries Required	YES

Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Annexure 4: Technical Specifications for Smart TV (Qty. – 1 No.)

Description	Specifications
Screen Type	LED with super bright backlit display Commercial Grade
Backlight Type	LED
Brightness	Minimum 700 nit
Resolution	Minimum 3840 X 2160
Contrast	At least 4000:1 or better
Audio Amplifier	In-built 2 channel output
Audio Speaker	At least 2 X 10W
I/O Connectors	At least HDMI 2.0 (x2), USB 2.0 (x2)
CPU, GPU and Memory	Inbuilt CPU and GPU with minimum 8 GB Memory
OS Module	Android / Tizen or Equivalent OEM provided latest OS only
Wi-Fi & Bluetooth	Inbuilt
Size	Minimum 65" diagonal
Smart Features	Smart View or similar feature for smart device wireless connectivity (In order to assure flawless wireless connectivity between the panel and VR headset or, Smart handheld device, separate branded hardware may be utilized)
Operating Hours	Suitable for 24 x 7 operation
Wall Mount Fixture	OEM provided wall mount bracket.
Connectors / Cables	All the standard Connectors/Cables supplied by OEM
Warranty	3 Yrs Onsite



Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Important Note:

VR Headsets and the Smart TV must be able to be wirelessly paired / connected over the central Wi-Fi network for data content mirroring.



III. Space Voyage Simulator – Virtual Reality

Embark on a celestial journey in Space Voyage - VR demonstration here. Take Off and transport yourself to outer space, engage in an authentic spacewalk and traverse through the inter-planetary distances, traverse on the lunar surface or explore other celestial bodies. Experience the marvels of the cosmos with life-like renditions, panoramic vistas, and realistic space mechanics.

Demo Setup:

- 4 Nos. pre-programmed, fully loaded, configured, Wireless VR Headsets equipped with necessary hardware / software for simulator demonstration on the topic Space Voyage. (2 in use and 2 spare)
- 2-Seater Simulator setup having 6 DoF, smooth, jerk-free movements through electric / pneumatic stimulations, with all necessary components e.g. foundation, frame, mounting arrangements, equipment, gadgets, compressors, motors, cylinders, valves, pressure-tubes, sensors, control panel/s, connectors panel/s, safety devices, user safety arrangements, cushioned seats, head rest, arm rest, leg rest etc. complete in all respects.
- A 65 inches Smart TV.
- A fully loaded, pre-programmed, equipped Workstation with necessary hardware / software, programs, data file/s, synchronized stimulus signals file/s etc.
- Both the VR headsets wirelessly connected to / paired with the dedicated Workstation for display of 3D A-V contents in the virtual space in both the headsets.
- Data files integrated with simulator stimulus signals would reside in the Workstation.
- The Workstation would transmit 3D A-V contents to the VR Headsets wirelessly and the same would also be displayed on the Smart TV simultaneously using central WiFi network.
- The Simulator would receive stimulus input signals from the Workstation in synchronization with the visual contents.
- The simulator would be equipped and capable of providing (virtual) realistic experience of Space Voyage.
- An authentic data file on Space Voyage to provide realistic and educational experience of space voyage, spacecraft, dynamic, space views, 3D realistic renditions, 360 degrees panoramic views, surface details of moon, mars, audio-video clips, effects, textual information, clock etc.
- The synchronized movement / stimulus file would be integrated with the 3D A-V data file to provide realistic experience of spacecraft take off, landing, dynamic space traverse, spacewalk, traverse on the surface of moon, mars etc.
- The data file would have contents lasting for 10 minutes.
- Language of the demo would be English.
- There would be a provision for adding data files on other topics later.

Demonstration:

2 users would participate in this demonstration at same time. Others may watch the demo from a distance and would be able to see the AV contents on the Smart TV.

The users would be given safety instructions and directed to occupy simulator seats. With tightening of the safety belts, users would be prompted to wear wireless VR headsets. When everything is set, the demonstrator starts the demo on the workstation / control panel. The 2 users start getting subject audio-visual 3D contents in virtual space in the headsets. In sync with the audio-video contents, the simulator unit undergoes pitch, roll and up-down movements. The users get an immersive experience of spacecraft launch, take-off, space traverse, landing on moon/mars, spacecraft traverse on moon surface etc. The demo continues for about 10 minutes providing an inclusive experience never-before to the users.

Description of Data File:

The data file contents should last for about 10 minutes and would cover the following modules –

1. Moon Exploration

- Ultra-realistic models of lunar terrains, inclusive of craters, plains, and mountains, etc.
- Panoramic 360° 3D views of lunar landscapes with earthrise over the horizon.
- Awareness indicators: Clocks for elapsed and remaining exploration time.

2. Planetary Expeditions (e.g. Mars)

- Authentic terrains with spacewalk physics adjusted for different gravities.
- Features like Moon and Mars rovers, stellar views without atmospheric interference tailored to specific planets.
- Immersive space tourism: Tour planetary landmarks and understand the environment within a 10-minute window.

3. Dynamic Space Traverse**4. Spacecraft Take-Off, Landing****5. Spacewalk, 360 degrees views of spacecraft interior and exterior****6. Traverse on surface of Moon**

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remarks
1.	Wireless VR Headsets	As per Annexure 5	4 Nos	2 in use, 2 spare
2.	Workstation	As per Annexure 6	2 No.	1 in use, 1 spare
3.	2-Seater Simulator setup	As per Annexure 7	1 No.	See notes below
4.	Smart TV	As per Annexure 8	1 No.	
5.	Data File/s on topic Space Voyage integrated with synchronized Simulator movement stimulus signals	As described above	1 Set	

Annexure 5: Technical Specifications for Wireless VR Headsets (Qty. – 4 Nos.)

Description	Specifications
Product Weight	Not exceeding 650 Gms
Tracking	Supports 6 degrees of freedom (6DoF) on head through integrated technology
Storage	Minimum 128 GB
Display Panel	Fast-switch LCD
Display Resolution	At least 1830×1920 per eye
Display Refresh	Minimum 72Hz
Processor	Qualcomm® Snapdragon™ XR2 Platform
Audio	Integrated Headphones
RAM	At least 6GB
Charger Type	USB-C power adapter,

IPD	Adjustable IPD with three settings for 58, 63 and 68mm.
Wireless Connectivity	AIR LINK or similar wireless connectivity App
Controllers	Suitable handheld wireless gadgets (for left as well as right hand) for pointing to the subject for selection in the virtual field visible to the user
Controller Weight	Not exceeding 150g per controller without battery
Batteries Required	YES
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Annexure 6: Technical Specifications for Workstation of reputed brand OEM only. (Qty. – 2 No.)

Specification	Features
Processor Family	11 th Generation Intel Core i7 or better
Processor	Intel® Core™ i7-12700K with Intel® UHD Graphics, 25 MB L3 cache, 8 P-cores and 4 E-core
Graphics 1	NVIDIA® T1000 (8 GB GDDR6 dedicated) with adapters if necessary (With necessary converters for HDMI)
Memory	Minimum 32 GB DDR 5 (In 2 modules of 16 GB)
Memory Slots	4DIMM
Storage 1 (Boot Drive)	Minimum 512 GB, M.2, Gen 4 PCIe NVMe, SSD, Class 40
Storage 2	Minimum M.2 1TB PCIe NVMe Gen 4 Class 40 Solid State Drive
Optical drive	Slim DVD-Writer
Audio	Realtek ALC3205-VA2-CG or better, 2.0W internal mono speaker
Expansion slots	1 PCIe 3 x4 (x16 connector); 1 PCIe 3 x4 (x4 connector); 1 PCIe 3 x1 (x4 connector); 1 PCIe 5 x16 (x16 connector); 1 M.2 2230 PCIe 3 X1 for WLAN (1 M.2 2230 slot for WLAN and 3 M.2 2280 slots for storage)
Operating System	Windows 11 Pro
Monitor	27" LED Non-Touch
Keyboard	Wireless
Mouse	Wireless

Cables and accessories	All OEM provided cables
Warranty	3 Years Onsite
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Annexure 7: Technical Specifications for 3DoF Electric / Pneumatic Motion Simulator Setup (2-Seater) (Qty. – 1 No.)

Specification	Value
Seating Capacity	2
Actuation method	Electric / Pneumatic
Degrees of Freedom	At least 3
Maximum vertical lift	150 mm or more
Maximum Velocity	150 mm / Sec
Maximum Acceleration	+/- 0.5 Gs
Maximum Lifting Capacity	At least 150 KG per Seat i.e. 300 Kg for 2 seats together.
Frequency Range	0 to 20 Hz or better
Operating Voltage	220 volts, 50 Hz, 1 Phase AC
Seating arrangement	Cushioned Chairs suitable for mounting on the platform
Operating Temperature	0 to 40 Degree Celsius
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Annexure 8: Technical Specifications for Smart TV (Qty. – 1 No.)

Description	Specifications
Screen Type	LED with super bright backlit display Commercial Grade
Backlight Type	LED
Brightness	Minimum 700 nit
Resolution	Minimum 3840 X 2160
Contrast	At least 4000:1 or better
Audio Amplifier	In-built 2 channel output
Audio Speaker	At least 2 X 10W
I/O Connectors	At least HDMI 2.0 (x2), USB 2.0 (x2)
CPU, GPU and Memory	Inbuilt CPU and GPU with minimum 8 GB Memory
OS Module	Android / Tizen or Equivalent OEM provided latest OS only
Wi-Fi & Bluetooth	Inbuilt
Size	Minimum 65" diagonal
Smart Features	Smart View or similar feature for smart device wireless connectivity (In order to assure flawless wireless connectivity between the panel and VR headset or, Smart handheld device, separate branded hardware may be utilized)
Operating Hours	Suitable for 24 x 7 operation
Wall Mount Fixture	OEM provided wall mount bracket.
Connectors / Cables	All the standard Connectors/Cables supplied by OEM
Warranty	3 Yrs Onsite
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Notes:

1. 2-Seater Simulator setup having 3 DoF, smooth & jerk-free movements through electric / pneumatic stimulations, with all necessary components e.g. foundation, frame, mounting arrangements, equipment, gadgets, compressors, motors, cylinders, valves, pressure-tubes, sensors, control panel/s, connectors panel/s, safety devices, user safety arrangements, cushioned seats, head rest, arm rest, leg rest etc. complete in all respect in professional presentable form.
2. Movement of Simulator setup in synchronization with 3D A-V contents is important. The Stimulus signals should be integrated / synchronized with the data file.

IV. Virtual Chemistry Lab – Virtual Reality (VR)

Step into the virtual realm of chemistry with Virtual Chemistry Lab demonstration here. Simulating a realistic chemistry lab environment lets students perform and experience hands-on experiments, do concept analysis, and much more, all without the physical constraints or risks of a real lab.

Demo Setup:

- Colour graphic prints of atomic model of Hydrogen, Oxygen, Carbon, and Uranium, on vinyl, flawlessly pasted on 12 mm thick foam sheet of size 2ft X 2 ft.
- Colour graphic print of Periodic Table, on vinyl, flawlessly pasted on 12 mm thick foam sheet of size 6ft X 4 ft.
- 3 Nos. of pre-programmed, fully loaded, wireless VR headsets with 6 DoF tracking integrated technology and equipped with necessary hardware / software / programmes / Apps necessary for the purpose of this VR demonstration. (1 in use 2 spare)
- The VR Headsets would communicate wirelessly (over WiFi network) directly with the paired Smart TV nearby.
- 2 Nos of handheld wireless gadgets/pointers (for left and right hand) (for each headset) for pointing to the subject for selection in the virtual field visible to the user in the headset.
- The VR interactive information content (data files) for the demonstration would be residing in the VR Headsets memory.
- A 65 inches Smart TV firmly fixed nearby to wirelessly mirror (display) the audio/video interactive VR content presented on the VR Headset screen. This would facilitate the larger group audience (behind the user) to see the information visible to the user in the VR headset.
- The Smart TV and the VR Headsets would be paired/connected over the WiFi network.
- VR Headsets would contain 3 data files for the 3 modules namely, **Lab Environment, Concept Analysis and Difficult Experiments**.
- The information content of each data file must be able to provide a full-fledged interactive **Virtual Reality Experience** to the users consisting of rich audio, video, enhanced graphics, animations, simulations, still images, cut sections, textual information, panoramic views, 3D renderings etc.
- Each data file would contain sufficient information that would last at least for 5 minutes while exploration. Thus, the demonstration of 3 data files for 3 modules would last for about 15 minutes.
- There would be a provision for adding more data files concerning other modules later.
- Each data file would be in 2 languages – English and Marathi and there should be an option for the user to select the language of his/her choice at the beginning.

Demonstration:

The demonstrator / user picks up a VR Headset and wears it carefully. He/She also holds the pointer gadget in hand. On starting the demo, the user gets to see the title of the demo with options for selection of language (English and Marathi). The user selects the language with the pointer.

On selecting the language, the user starts seeing Module 1 – The Chemistry Lab Environment in the virtual space. The user then goes through certain interactive navigation as described below. On completing Module-1, the user goes on exploring other modules and enjoys the VR experience of Chemistry Lab in true sense without physically going to lab and without using any chemicals.

The demo lasts for about 15 minutes covering 3 modules.

Brief Description of Data Files:

There would be 3 data files for 3 modules, each having VR content lasting for about 5 minutes. The data files to be developed by the successful bidder should be authentic, realistic, error free, vetted by Chemistry expert and pre-approved by the host. Content should be rich in audio, video, colour graphics, panoramic views, text, interactive, informative, educational, and entertaining in nature.

Modules:**a. Lab Environment:**

- Comprehensive VR replication of a typical chemistry lab, complete with appropriate furniture, cabinets, glassware, containers, bottles filled with colourful chemicals, lighting, lab benches, fume hoods, wash basins, Bunsen burners, fire extinguishers, normal lab decore on walls consisting of chemical symbols, equations, process charts, pictures of renowned chemists, chemistry Nobel laureates, and other related items / equipment.
- Interactive navigation: Walk through the lab, open/close cabinets, control chemical taps, observe items closely, pick up certain glassware, mix up certain simple chemicals in test tubes and more.

b. Difficult Experiments:

- Electrochemical Series: Demonstrate voltaic cells using various metals. Observe redox reactions and voltage measurements.
- Chemical Kinetics: Analyze reaction rates by altering temperature, catalysts, and reactant concentrations.
- Stoichiometry: Conduct experiments involving limiting and excess reactants. Compute reaction and leftover quantities.
- Explain the Chain Reaction in detail using animations, simulations, equations, charts, graphics.

c. Concept Analysis Modules:

- Structure of Atom
- Exothermic vs. Endothermic: Distinguish temperature variations during substance mixing and dissociation.
- Acid-Base Titrations: Conduct titrations of strong acids and bases with indicators. Note pH and color changes.
- Chemical bond formation reaction from organic chemistry (2nos)

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Colour Graphic vinyl prints pasted on foam sheet.	600 DPI Resolution colour graphic printed on imported vinyl and flawlessly pasted on 12 mm thick foam sheet, a. atomic model of Hydrogen in size 2ft X 2ft b. atomic model of Oxygen in size 2ft X 2ft c. atomic model of Carbon in size 2ft X 2ft d. atomic model of Uranium in size 2ft X 2ft e. Periodic Table showing all the elements known so far in size 6ft X 4ft All the prints should be clear laminated, and UV protected. Periodic Table foam sheet should be adequately strengthened at the back to avoid bending.	1 No. 1 No. 1 No. 1 No. 1 No.	Graphics to be pre-approved by the host.
2.	Wireless VR Headsets	As per Annexure 9	3 Nos.	1 in Use 2 Spare

3	SMART TV	As per Annexure 10	1 No.	
4.	Data Sets / Files	As described above	1 set as described above	

Annexure 9: Technical Specifications for Wireless VR Headsets (Qty. – 3 Nos.)

Description	Specifications
Product Weight	Not exceeding 650 Gms.
Tracking	Supports 6 degrees of freedom (6DoF) on head through integrated technology
Storage	Minimum 128 GB
Display Panel	Fast-switch LCD
Display Resolution	At least 1830×1920 per eye
Display Refresh	Minimum 72Hz
Processor	Qualcomm® Snapdragon™ XR2 Platform
Audio	Integrated Headphones
RAM	At least 6GB
Charger Type	USB-C power adapter,
IPD	Adjustable IPD with three settings for 58, 63 and 68mm.
Wireless Connectivity	AIR LINK or similar wireless connectivity App
Controllers	Suitable handheld wireless gadgets (for left as well as right hand) for pointing to the subject for selection in the virtual field visible to the user
Controller Weight	Not exceeding 150g per controller without battery
Batteries Required	YES
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW

Support, 36 Month(s)

Annexure 10: Technical Specifications for Smart TV (Qty. – 1 No.)

Description	Specifications
Screen Type	LED with super bright backlit display Commercial Grade
Backlight Type	LED
Brightness	Minimum 700 nit
Resolution	Minimum 3840 X 2160
Contrast	At least 4000:1 or better
Audio Amplifier	In-built 2 channel output
Audio Speaker	At least 2 X 10W
I/O Connectors	At least HDMI 2.0 (x2), USB 2.0 (x2)
CPU, GPU and Memory	Inbuilt CPU and GPU with minimum 8 GB Memory
OS Module	Android / Tizen or Equivalent OEM provided latest OS only
Wi-Fi & Bluetooth	Inbuilt
Size	Minimum 65" diagonal
Smart Features	Smart View or similar feature for smart device wireless connectivity (In order to assure flawless wireless connectivity between the panel and VR headset or, Smart handheld device, separate branded hardware may be utilized)
Operating Hours	Suitable for 24 x 7 operation
Wall Mount Fixture	OEM provided wall mount bracket.
Connectors / Cables	All the standard Connectors/Cables supplied by OEM
Warranty	3 Yrs Onsite

Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Important Note:

VR Headsets and the Smart TV must be able to be wirelessly paired / connected over the central Wi-Fi network for data content mirroring.



V. Science on Sphere (SoS) – Spherical Screen Projection

'Science on Sphere (SoS)' is an immersive dynamic display system of projecting high resolution animated visualizations and images on a large sphere hung from the ceiling. Four projectors driven by advanced software simulate celestial bodies in motion on the sphere engulfing the entire spherical surface. The auditory and visual combination intends to create a captivating representation of our solar system, further enhancing the understanding of astronomical concepts. It's a unique way of implementing technology in edutainment for all.

Demo Setup:

- A dark room set up with acoustic paneling and circular seating arrangement for about 50-60 visitors.
- The centerpiece of the setup is a large, suspended sphere, onto which animated visualizations are projected. This spherical display system creates a realistic representation of Earth and other planets. The sphere is designed to accurately depict geographical features, atmospheric phenomena, and various datasets.
- Circular railing made up of stainless-steel pipes standing on the floor for protection of the suspended sphere.
- Four high end projectors, strategically placed around the suspended sphere to project images and videos onto the sphere. (There would also be 1 more projector as a spare)
- Specialized visualization software for controlling the projection of the content, ensuring accurate shaping, alignment, stitching and synchronization of visuals over the surface of sphere.
- A fully loaded, equipped workstation with all necessary hardware and software for seamless projection on the sphere covering the entire surface. Specialized software allows splitting, shaping, stitching, synchronizing, mapping, calibration on the spherical surface. The software also allows demonstrator to use handheld device (Tablet) to navigate through different datasets, pause animations, provide explanations etc. This control system enables real-time interaction with the visualizations, making the learning experience much more engaging. (There would also be 1 more workstation as a spare)
- Tablet for wireless navigation through the demo by the demonstrator.
- A Sound system with a microphone for the demonstrator for interaction / narration.
- A data file that explains every planet and important celestial bodies of our solar system which contains rich, colourful visualizations, simulations, animations.
- There would be a provision for adding more data files concerning other subjects later.

Demonstration:

The demo is in a dark room setup where the Sphere is firmly suspended from ceiling by 3 supports with stainless steel wires in the centre. Circular railing made up of stainless-steel pipes self-standing on the floor protects suspended sphere from hand touching by anyone. There is general illumination in the beginning while visitors enter in. On settling, the demonstrator selects the language for the demo and starts narration about the set up. The demonstrator uses a handheld device (Tablet) for navigation through the demonstration.

On initial introduction, the video projection starts on the sphere and the entire sphere converts into illuminated screen. Four projectors project a quadrant of each of the images on the sphere thereby covering the entire surface of sphere. Various video data sets are projected onto the sphere on varied topics. The demonstrator uses a Tablet and a wireless microphone to turn the demo into an interactive session. The demonstrator navigates through the datasets and explains various features of the solar system including the Sun, Earth, Moon and other planets. Four projectors projecting on the sphere provide an amazing experience of realistic visualization. The demo lasts for about 15 minutes.

Brief Description of Data File:

In-depth visual tour of the Solar System including Sun, Planets, Moons, Planetary rings, Asteroid belt/s, interplanetary spaces, structure & other features of celestial bodies, dwarf planet/s. Other astronomical concepts such as galaxies, stars, distances, planetary scales, compositions, motions, revolutions, rotations, speed etc.

Space Exploration: Highlighting the importance of understanding celestial bodies to plan potential space missions.

Environmental Awareness: Emphasizing the uniqueness of Earth among other planets, thereby underscoring the importance of its conservation.

The contents would last at least for about 15 minutes.

Data file should be in English and Marathi language.

Data files on other subjects (freeware) to be provided.

Contents / data files should be free from copyright/patent infringement.

Following datasets to be provided with the system by default:

- Milky Way panorama
- Milky Way constellation
- The wanderers (asteroid belt)
- Solar system for scale: sun and planets
- Sun: Helium wavelength (AIA 304)
- All Planets - Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, dwarf planet Pluto
- Moon and its phases
- Phobos, Deimos, Io, Europa, Ganymede, Callisto, Titan, Miranda, Triton, Charon etc.

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Sphere / Globe	A 5.5 ft diameter, hollow, lightweight, durable, made up of fiberglass / acrylic with smooth and evenly texture surface. The sphere/globe to have 3-point suspension system. For suspending from ceiling, necessary ceiling brackets, steel wires complete system. The sphere/globe to have single seam at the equator. The sphere/globe to be evenly painted with latex paint having matte black/white/grey shade for proper reflectance suitable for projection.	1 No Complete unit with all suspending accessories.	
2.	Workstation	As per Annexure 11	2 Nos	1 in Use 1 Spare
3.	Projectors	As per Annexure 12	5 Nos	4 in Use 1 Spare
4.	Nav. Tablet	As per Annexure 13	1 No.	
5.	WiFi Router	TP-Link AC1750 or	1 No.	

		equivalent Smart Router		
6.	Sound System	Dolby 5.1, 1000W Professional quality Sound System with all necessary elements / audio cables, connectors and professional quality microphone	1 No.	
7.	Data Sets	As described above	1 Set	
8.	Video, Audio and network cables with connectors	CAT 6 and other with necessary connectors	As required at site	

Annexure 11: Technical Specifications for Workstation of reputed Brands OEM Only. (Qty. – 2 Nos.)

Specification	Features
Processor Family	11th generation Intel Core i7 or better
Processor	Intel® Core™ i7-12700K with Intel® UHD Graphics, 25 MB L3 cache, 8 P-cores and 4 E-core
Graphics 1	NVIDIA® T1000 (8 GB GDDR6 dedicated) with adapters if necessary (With necessary converters for HDMI)
Graphics 2	NVIDIA® T400 (4 GB GDDR6 dedicated) with adapters if necessary (With necessary converters for HDMI)
Memory	32 GB DDR 5 (In 2 modules of 16 GB)
Memory Slots	4 DIMM
Storage 1 (Boot Drive)	512 GB, M.2, Gen 4 PCIe NVMe, SSD, Class 40
Storage 2	M.2 1TB PCIe NVMe Gen 4 Class 40 Solid State Drive
Optical drive	Slim DVD-Writer
Audio	Realtek ALC3205-VA2-CG or better, 2.0W internal mono speaker
Expansion slots	1 PCIe 3 x4 (x16 connector); 1 PCIe 3 x4 (x4 connector); 1 PCIe 3 x1 (x4 connector); 1 PCIe 5 x16 (x16 connector); 1 M.2 2230 PCIe 3 X1 for WLAN (1 M.2 2230 slot for WLAN and 3 M.2 2280 slots for storage)
Operating System	Windows 11 Pro
Software Bundle	Microsoft Office, Antivirus, PDF Reader/Editor
Monitor	27" LED Non-Touch
Keyboard	Wireless

Mouse	Wireless
Cables and accessories	All OEM provided cables
Warranty	3 Years Onsite
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Annexure 12: Technical Specifications for Projectors (Qty. – 5 Nos.)

Specification	Value
Projection Technology	DLP single
Resolution (Native)	At least 1920 x 1200 (WUXGA)
Brightness	Not less than 7000 ANSI Lumens
Contrast Ratio	Minimum 3,000,000:1
Aspect Ratio	Native 16:10
Light Source	Laser diodes
Light Source Life	Minimum 20,000 hours in Normal mode
Lens Shift	Digital Lens Shift (\pm Vertical 5% @ 1080P or better)
Keystone	V: ± 30 degree; H: ± 30
Horizontal Frequency	15~102KHz
Vertical Scan rate	23 - 120 Hz
Built-In-Speaker	10 Watt X 1
Connectivity	HDMI (HDCP2.2) x 2 , USB Type A X 1 , LAN port (RJ 45 for network control) X 1 , 12 V trigger X 1
Special Features	Rec.709 92 %, Multiple standard picture modes
Power Supply	AC 100 to 240 V, 50/60 Hz
Wireless Remote	IR / RF with Battery
Mounting arrangements	OEM certified Ceiling Mount
Operating Temperature	0 ⁰ ~ 40 ⁰ Celsius
Warranty	3 Years Onsite
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Annexure 13: Technical Specification for Navigation Tablet (Qty. – 1 No.)

Description	Technology	Specifications
Network	Technology	WIFI Only
Body	Size	Minimum 11 inches.
	Build	Glass front, aluminum back, aluminum frame
	Stylus	Stylus support required
Display	Type	AMOLED
	Resolution	At least 2560 x 1600 pixels (~274 ppi density) or, higher
Platform	OS	At least Android 12, One UI 5.1 or latest
	Chipset	Snapdragon 8 Gen 1 (4nm) or, similar
	CPU	Octa-core
	GPU	Adreno 730 or, higher
Memory	Card slot	Micro SDXC (dedicated slot)
	Internal	Minimum 256GB ROM, Minimum 8GB RAM
Main Camera	Single	Minimum 13 MP
	Features	HDR, panorama
	Video	1080p@30fps or, better
Selfie Camera	Single	Minimum 12 MP
	Video	1080p@30fps or, better
Sound	Loudspeaker	Yes with Stereo Speakers
	Earphone	Through Bluetooth
Communication	WLAN	Wi-Fi 802.11 a/b/g/n/ac, dual-band, Wi-Fi Direct
	Bluetooth	5.2, A2DP, LE
	Positioning	GPS, GLONASS, BDS, GALILEO
	NFC	No
	Radio	No

	USB	USB Type-C
Features	Sensors	Accelerometer, Gyro, Fingerprint
		ANT+ Certified
Battery	Type	Li-Po 8000 mAh, non-removable
	Charging	45W wired, Charger required.
AR Compatible	YES	YES
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided	
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)	

Important Note:

The SoS system is to be completely supplied, installed, integrated, tested, and commissioned for satisfactory end result as described with necessary hardware / software / data files including all essential gadgets, fixtures, cables, components etc. The successful bidder must demonstrate the satisfactory end result as described above.

VI. How Dinosaurs went extinct – 3D Film Theatre

Watching specially created & captivating 3D films through active glasses is an amazing immersive experience. It is a fascinating experience of education and entertainment together. Though giant and very powerful dinosaurs had evolved on Earth in the Mesozoic era, they could not survive the test of time and became extinct. It is interesting to go behind in history and watch dinosaurs in realistic action in 3D theatre. Today 3D films on several subjects are available and they provide a unique experience of its kind.

Demo Setup:

- *3D theatre set up having enclosed and dark ambience with acoustic paneling.*
- *Large silver screen (professional quality projection screen) mounted at the front side of the 3D theatre.*
- *Specially equipped, high resolution, full HD projector mounted to project 3D visuals on the screen.*
- *Fully equipped, loaded, latest OS Workstation having all the necessary hardware / software for playing 3D films on the projector.*
- *Specialized visualization software loaded on the Workstation ensuring accurate alignment and synchronization of visuals across the screen's surface to achieve rich 3D effect with active goggles.*
- *Dolby 5.1 surround sound professional quality reputed brand sound system.*
- *Active 3D Goggles for viewing the 3D film projection.*
- The data file (3D Video film) appropriately titled and showcasing '**How Dinosaurs went Extinct**' would last for about 15 minutes duration. The video film would have appropriate dramatic 3D effects.
- There would be a provision for adding more data files to the Workstation concerning other subjects later.
- Data file (showcasing 'How Dinosaurs went Extinct') would be in English and Marathi language.
- UV Sanitizer Box for sanitization of 3D goggles.
- Central Charging Station for goggles

Demonstration:

A dark room theatre set up having seating capacity of 50 visitors in rows. A silver screen mounted at the front and projector suspended from ceiling in

front of the screen. All the visitors wear Active 3D Goggles, and the demonstrator begins the 3D show. The 3D film is on topic 'How dinosaurs went extinct' lasting for about 15 minutes. The film would have quite a few dramatic 3D effects. At the end, all the active 3D goggles are collected back and set for sanitization.

Description of the data File:

The Demonstration or the Data File must have dramatic 3D effects and cover following modules –

- **Dinosaur Life:** Scenes depicting the vibrant world of the dinosaurs during the Mesozoic Era along with matching ambience. Dinosaurs moving around, eating, running, fighting, chasing etc.
- **Impact Event:** Visually depict the impact of an asteroid or comet, explaining its devastating effects on the Earth's climate and ecosystems.
- **Climate Changes:** Show the rapid changes in climate, including the darkness caused by debris in the atmosphere, leading to the collapse of ecosystems.
- **Volcanic Activity:** Illustrate the volcanic activity that could have contributed to the extinction event.
- **Effects on Flora and Fauna:** Showcase the impact on plant life and other species, emphasizing the interconnectedness of ecosystems.
- **Post-Extinction Recovery:** Conclude with scenes illustrating how life gradually rebounded after the mass extinction event.
- **Engaging Narration:** Throughout the film, an engaging and informative narration will provide explanations, insights, and scientific context for the events being portrayed. The narration will be carefully scripted to balance education and entertainment.

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Silver Projection Screen	<ul style="list-style-type: none"> - Silver Projection Screen that retains close to 100% of the polarization methods to allow the use of active 3D glasses. - Size 17.6 ft X 12 ft 	1 No.	

		- Standard Mounting accessories & Arrangement from all 4 sides		
2.	Short Throw Active 3D Projector	As per Annexure 14	2 Nos.	1 in Use 1 Spare
3.	Workstation	As per Annexure 15	2 No.	1 in Use 1 Spare
4.	3D Active Goggles	3D Active goggles with LCD shutter lenses. Active synchronization with projector supplied for against Annexure 14 above. Rechargeable integrated batteries, with charging using a micro-USB or similar cable. Battery Life minimum 100 hours on single charge.	60 Nos	50 in use 10 Spare
5.	Sound System	Dolby 5.1 1000W Surround sound professional quality sound system of reputed brand with all essential hardware / software / gadgets / connectors / cables / professional quality Microphone	1 set	
6.	Charging Station for Active 3D goggles	Capable to charge about 50 goggles simultaneously	1 No.	
7.	UV Light Sanitization System for Active 3D Goggles	Portable electric UV sanitization box / housing for sanitization of 50 goggles in one go.	1 No.	
8.	Data File	As described above	1 set	
9.	Accessories	OEM certified Projector Mounts	2	



		necessary to execute the project, Necessary cables for interconnections and all other accessories required for installation.	Complete Set	
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Annexure 14: Technical Specifications for Short Throw 3D Active Projector
(Qty. – 2 Nos.)

Specification	Value
Projection Technology	DLP single
Resolution (Native)	At least 1920 x 1200 (WUXGA)
Brightness	Not less than 7000 ANSI Lumens
Contrast Ratio	Minimum 3,000,000:1
Aspect Ratio	Native 16:10
Light Source	Laser diodes
Light Source Life	Minimum 20,000 hours in Normal mode
Lens Shift	Digital Lens Shift (\pm Vertical 5% @ 1080P or better)
Keystone	V: \pm 30 degree; H: \pm 30
Horizontal Frequency	15~102KHz
Vertical Scan rate	23 - 120 Hz
3D Compatibility	Full 3D support for all standard stitched and non stitched modes
Built-In-Speaker	10 Watt X 1
Connectivity	HDMI (HDCP2.2) x 2 , USB Type A X 1 , 3D sync in X 1 , 3D sync out X 1 , LAN port (RJ 45 for network control) X 1 , 12 V trigger X 1
Special Features	Rec.709 92 %, Multiple standard picture modes
Power Supply	AC 100 to 240 V, 50/60 Hz
3D Glass	OEM certified compatible 3D glass
Wireless Remote	IR / RF with Battery
Mounting arrangements	OEM certified Ceiling Mount
Operating Temperature	0 ⁰ ~ 40 ⁰ Celsius
Noise Level	Quieter projector with proper cooling system
Refresh Rate	120 Hz or Higher
Warranty	3 Years Onsite
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

**Annexure 15: Technical Specifications for Workstation of reputed Brand OEM
only (Qty. – 2 Nos.)**

Specification	Features
Processor Family	11th generation Intel Core i7 or better
Processor	Intel® Core™ i7-12700K with Intel® UHD Graphics, 25 MB L3 cache, 8 P-cores and 4 E-core
Graphics 1	NVIDIA® T1000 (8 GB GDDR6 dedicated) with adapters if necessary (With necessary converters for HDMI)
Memory	32 GB DDR 5 (In 2 modules of 16 GB)
Memory Slots	4 DIMM
Storage 1 (Boot Drive)	512 GB, M.2, Gen 4 PCIe NVMe, SSD, Class 40
Storage 2	M.2 1TB PCIe NVMe Gen 4 Class 40 Solid State Drive
Optical drive	Slim DVD-Writer
Audio	Realtek ALC3205-VA2-CG or better, 2.0W internal mono speaker
Expansion slots	1 PCIe 3 x4 (x16 connector); 1 PCIe 3 x4 (x4 connector); 1 PCIe 3 x1 (x4 connector); 1 PCIe 5 x16 (x16 connector); 1 M.2 2230 PCIe 3 X1 for WLAN (1 M.2 2230 slot for WLAN and 3 M.2 2280 slots for storage)
Operating System	Windows 11 Pro
Software Bundle	Microsoft Office, Antivirus, PDF Reader/Editor
Monitor	27" LED Non-Touch
Keyboard	Wireless
Mouse	Wireless
Cables and accessories	All OEM provided cables
Warranty	3 Years Onsite
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

VII. Interaction with Dr APJ Abdul Kalam - Holographic Projection

Holographic projection is an image projected onto a screen that appears to be three-dimensional and hence real. This technology has been very helpful in engineering designs, drawings, mathematical modelling, art, industrial visualizations and so on.

A holographic projection of Dr. APJ Abdul Kalam here aims to inspire and educate young minds, sharing his life journey, vision, and the importance of perseverance and dreams.

Demo Setup:

- *A thin holographic, close to invisible, 3D projection mesh-screen mounted in portrait form at one end of the set up.*
- *Short throw Projector suspended from ceiling near the screen.*
- *Fully loaded, equipped Workstation with LED monitor.*
- *Data Files about Dr APJ Abdul Kalam interacting (answering a few questions and inspiring them with his advice and life-time experiences) with students loaded in Workstation.*
- *Dolby 5.1 Professional quality reputed brand Sound System with professional quality microphone.*
- The entire data file would last at least for 10 minutes duration.
- Data file would be in English.
- A provision for adding more data files later.

Demonstration:

Real-time rendering technology to ensure that the holographic representation responds promptly to user interactions, maintaining a natural flow of conversation making it immersive.

In this demonstration, a holographic image of Dr Kalam is projected on a special screen. Since the screen is almost invisible and the projection is holographic, Dr Kalam appears to be real and living. The users are expected to pick up the microphone available there and begin conversation with Dr Kalam. Certain pre-determined questions are asked to Dr Kalam in the microphone and Dr Kalam responds to each question with his recorded speech. This is aimed to inspire and

educate the users and acquaint them with his experiences in difficult situations. The holographic projection of Dr Kalam's video clips creating the feeling of his realistic presence using advanced technology is aimed to inspire and motivate the users.

Description of Data File:

Short conversation sessions with Dr. Kalam that cover a range of topics, including his life, achievements, vision, and thoughts on various subjects. 5 different modules of motivational speeches should be developed.

Sample Conversation Module

Q.1 - User: Sir, will you please share any incident from your life where you faced failure and how did you overcome it?

Dr. Kalam: Definitely, My dear friend!

In my early career days, while I was deeply involved in a satellite launch project, our first attempt did not succeed. We failed. It wasn't a setback just for me, but the entire team felt it. However, we didn't let this failure define us. We analyzed our mistakes, corrected them, and ensured success in our subsequent attempts.

Remember, every setback is a setup for a comeback. Use failures as stepping stones and learn from them.

Q. 2 - User: Sir, with the myriad of technological distractions today, how can we maintain focus on our goals?

Dr. Kalam: The world today is technologically rich, which can be both a boon and a challenge. It's imperative to establish clear goals and discipline. Dedicate specific time for studying, recreation, and rest. Reduce distractions by setting limits; for instance, have fixed hours for technological leisure, keeping it separate from your study time. Meditation and reading can also significantly improve concentration. Stay passionate, and you'll naturally remain engaged and focused.

There would be five such modules of conversation lasting in total for about 10 minutes. Questions may be picked up from video recorded motivational speeches of Dr Kalam.

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Short Throw Projector	As per Annexure 16	2 No.	1 in Use 1 Spare
2.	Workstation	As per Annexure 17	2 No.	1 in Use 1 Spare
3.	Holographic Projection Screen	Mesh type texture that goes transparent in controlled lighting Close knitting to help projection of a bright image. Foldable, washable, stretchable 4.5 feet width X 8 feet height	1 complete set	
4.	Sound System	Dolby 5.1 1000W Sound System complete with all, amplifier, mixer, connectors, audio cables, speakers woofers, twitters, speaker mounts, etc. complete in all respect	1 System	
5.	Microphone attachable to Computer	High quality Professional grade Microphone suitable for NLP applications	1 No.	
6.	Data Sets / Files	As described in Demo Set up	1 Set	

Annexure 16: Technical Specifications for Short Throw Projector (Qty. – 2 No.)

Specification	Value
Projection Technology	DLP single
Resolution (Native)	Minimum 1920 x 1200 (WUXGA) or better
Brightness	Not less than 7000 ANSI Lumens
Contrast Ratio	Minimum 3,000,000:1
Aspect Ratio	Native 16:10
Light Source	Laser diodes
Light Source Life	Minimum 20,000 hours in Normal mode
Lens Shift	Digital Lens Shift (\pm Vertical 5% @ 1080P or better)
Keystone	V: ± 30 degree; H: ± 30
Horizontal Frequency	15~102KHz
Vertical Scan rate	23 - 120 Hz
Built-In-Speaker	10 Watt X 1
Connectivity	HDMI (HDCP2.2) x 2 , USB Type A X 1 , LAN port (RJ 45 for network control) X 1 , 12 V trigger X 1
Special Features	Rec.709 92 %, Multiple standard picture modes
Power Supply	AC 100 to 240 V, 50/60 Hz
Wireless Remote	IR / RF with Battery
Orientation	Should support operation in case of vertical mounting (At an angle of 90° compared to horizontal position)
Mounting arrangements	OEM certified Ceiling Mount
Operating Temperature	0° ~ 40° Celsius
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In Region HW-SW Support, 36 Month(s)



Annexure 17: Technical Specifications for Workstation of reputed brand OEM only (Qty. – 2 No.)

Specification	Features
Processor Family	11th generation Intel Core i7 or better
Processor	Intel® Core™ i7-12700K with Intel® UHD Graphics, 25 MB L3 cache, 8 P-cores and 4 E-core
Graphics 1	NVIDIA® T1000 (8 GB GDDR6 dedicated) with adapters if necessary (With necessary converters for HDMI)
Memory	32 GB DDR 5 (In 2 modules of 16 GB)
Memory Slots	4 DIMM
Storage 1 (Boot Drive)	512 GB, M.2, Gen 4 PCIe NVMe, SSD, Class 40
Storage 2	M.2 1TB PCIe NVMe Gen 4 Class 40 Solid State Drive
Optical drive	Slim DVD-Writer
Audio	Realtek ALC3205-VA2-CG or better, 2.0W internal mono speaker
Expansion slots	1 PCIe 3 x4 (x16 connector); 1 PCIe 3 x4 (x4 connector); 1 PCIe 3 x1 (x4 connector); 1 PCIe 5 x16 (x16 connector); 1 M.2 2230 PCIe 3 X1 for WLAN (1 M.2 2230 slot for WLAN and 3 M.2 2280 slots for storage)
Operating System	Windows 11 Pro
Software Bundle	Microsoft Office, Antivirus, PDF Reader/Editor
Monitor	27" LED Non-Touch
Keyboard	Wireless
Mouse	Wireless
Cables and accessories	All OEM provided cables and accessories
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

VIII. India Tour - Interactive Touch Panel

Creation of an interactive touch screen wall highlighting detailed maps, cultures, festivals, important places, and other location specific features of India. It aims to educate users about the vast geography, culture, tourism destinations, and other facets of our country.

Demo Setup:

- *The centerpiece of the setup is an 85" high resolution Touch Screen panel. The surface of the panel is an interactive touch screen that responds to the touch gestures.*
- *An India Map displaying highlighted regions, states, important cities, rivers, icons representing important features such as Tajmahal, Himalaya, Konark temple, Qutub Minar, heritage sites etc. on the panel.*
- *The user interface is designed to be intuitive and user-friendly, allowing users to navigate through the various destinations and content seamlessly.*
- *The touchscreen supports multi-touch gestures, enabling users to interact with the content using familiar gestures such as tapping, swiping, pinching, and zooming.*
- *The touchscreen is responsive to both human and stylus touch.*
- The entire demo would be in English and Marathi language.
- There would be a provision for adding more data files concerning other subjects later.

Demonstration:

Normally, an India Map would be displayed on the interactive Panel. The map shows various regions, states, important cities, historical sites, tourists' attractions, heritage locations, mountains, rivers etc. The users are prompted to touch the area of their interest to derive deeper information. On touching a particular location on the screen, the corresponding information is displayed in detail on the screen in the form of photographs, panoramic views, slide shows, audio clips, video clips, narrations, text popups etc. As much information as possible would be available on the interactive map screen. On finishing the

information on particular subject, the back arrow/ home button is to be pressed to go the start point again. This way, an interactive map is an interesting tool for learning about our country.

Description of Data File:

The Demonstration would cover the following modules (an example)

- ✓ *Users can select different regions or cities on the India map to explore. The interface could provide visual cues and animations to guide users as they interact with the touchscreen.*
- ✓ *Once a location is selected, the touchscreen transitions to a virtual tour mode. The screen displays a captivating panoramic view of the selected location, giving users a sense of being present at the site.*
- ✓ *360-degree photos and videos showcasing famous landmarks, historical sites, and natural wonders.*
- ✓ *Information pop-ups providing historical, cultural, and geographical details about each location.*
- ✓ *Slideshows with captivating visuals that highlight the unique aspects of each destination.*
- ✓ *Audio narrations or soundscapes that complement the visual experience.*
- ✓ *The interactive content could delve into the cultural richness of each location. Users can learn about traditional art, music, dance, festivals, and cuisine through multimedia presentations.*

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Interactive Touch Screen Panel	As per Annexure 18	1 No.	
2.	Sound System	Professional quality reputed brand 200 W sound Bar with all necessary gadgets/accessories/hardware etc. Complete setup.	1 Set	
3.	Interactive India Map Software Data Set	As described above	1 Set	

**Annexure 18: Technical Specifications for Interactive Touch Screen Panel
(Qty – 1 No)**

Description	Specifications
Screen Size	At least 85 Inches / 86 Diagonal
Panel Type	IPS
Resolution	Minimum 4K (3840 x 2160 pixels, 16:9 Aspect Ratio)
Brightness	450 nits or better
Contrast Ratio	Minimum 12000 : 1 or better
Color Depth	10 bit or better
Response time	2 ms or better
Life	Minimum 30,000 hrs
Glass Hardness	9H Hardness
Anti glare coating	Yes

Touch Technology	Infrared Touch responsive to both Human Touch and Stylus
Touch Points	20 or more
Touch Response	4 ms or better
Inbuilt CPU	A73 x 4 + A53 x 4 or similar
Inbuilt GPU	G52 MP8 or similar
Preinstalled OS	Android 11 or, newer version of Android
Connectivity	HDMI / DP, USB, Ethernet, Wi-Fi
Audio Speaker	2 X 16W
Power Supply	AC 100 – 240V, 50/60Hz
Cables / Accessories	Cables for Display, Touch, Power, Sound etc. and Remote Control
Wall Mount	OEM supplied metal wall mount with options for Adjustment
Warranty	3 Years Comprehensive
Certification	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

IX. Robotics Lab

The establishment of a comprehensive robotics lab, equipped for all stages of robot creation, from ideation to testing. The lab aims to provide a state-of-the-art facility for research, assembly, and training.

Demo Setup:

- The Lab will be equipped with a classroom kind of set up consisting of writing board / white board, Lab furniture, sitting stools, storage racks/cupboards, illumination, etc.
- The Robotics Lab will be an opportunity for students to learn basic skills and explore various kits available in the markets.
- Students will be able to build small projects of their own choice under the expert supervision.
- The kits will normally be kept in specially designed racks / cupboards.
- For assembly of kits, there would be a sufficient stock of general electronic / electrical components such as Resistors, Capacitors, PCBs, wires, LEDs, lamps, Transistors, Diodes, holders, wires, soldering kits, DC Power Supplies 12V, 5V, 5 Amp etc.
- The Lab would be decorated with circuit diagrams of various basic projects so as to encourage students to follow them.

Table of Technical Specifications and Quantity:

Sr. No.	Item	Description	Quantity
1.	DIY Arduino Kit	This kit will comprise of Arduino Board with all necessary electronic components (Resistors, capacitors, connectors, wires, etc.) (100 Nos each) to get started with Open Source Programming	10 kits
2.	DIY Robotics Kit	This kit will comprise of microcontroller board also known as Brain of Robot, Mechanical Spares and required sensors to build various robotics-based projects	10 kits

3.	DIY Electronics Kit with one electrostatic workbench	This kit will comprise of breadboard, soldering kit and assorted components (Resistors, capacitors, connectors, wires, etc.) (100 Nos each) to build various electronics circuits. It will also contain bare PCBs to give hands on soldering experience to students	10 kits
4.	Internet of Things Kit	This kit will comprise of various sensors, GSM, GPS and other similar devices to help students develop IoT based projects	10 kits
5.	DIY Drones	Using this kit students will not only learn to assemble drone and learn to fly them	6 kits
6.	3D Printer	Fused Filament Fabrication Technology, 2 Numbers of Extruders, Layer Resolution 0.05–0.4 mm, Position Accuracy XY-axis: 0.011 mm and Z-axis: 0.0025 mm, Filament Diameter 1.75 mm, Material Type: PLA, ABS etc. SD Card Reader, USB, Wi-Fi connectivity, Enclosed build chamber and Illuminated build area.	1 No.
7.	3D Pen	5 volts DC Operation, ABS & PLA compatible, 0.6 mm nozzle diameter, 1.75 mm filament diameter, Necessary safety precautions for users from high temperature filament melting heater	5 Nos
8.	Assorted Tools & Safety Equipment	This will comprise of tools like hammer, pliers, wire-cutters, tweezers, hacksaw, micro-drilling machine, soldering irons, multimeters, desoldering pumps, safety masks, fire extinguishers. The aim is to give hands on experience to students to use these tools which they see in daily life.	10 each
9.	Humanoid Robots	A. Fully assembled Set of 17DOF Biped Robot comprising metal gear	

		<p>servo.</p> <ul style="list-style-type: none"> • 1DOF of the head • 4DOF of the arm • 2DOF of the shoulder • 2DOF of the hip • 6DOF of the legs • 2DOF of the feet <p>B. Size: 40 cm (H) x 23 cm (W) approximately</p> <p>C. Programming Interface: USB</p> <p>D. Control Interface: Bluetooth</p> <p>E. Power Supply: Rechargeable Li Ion / Li Po with suitable charger</p> <p>F. Command refresh rate: 50 Hz or higher</p> <p>G. Hardware Detection: Plug and Play</p> <p>H. Programming Interface: Open Source</p> <p>I. Operating Speed of Servo: 0.17sec / 60 degrees (4.8V), 0.13sec / 60 degrees (6.0V)</p> <p>J. Operation Voltage of Servo: 4.8 – 7.2Volts</p> <p>K. Torque of Servo: 13 KG/Cm (4.8V), 15KG/Cm (6.0V)</p> <p>L. Gear Type: All Metal Gears</p> <p>M. Pre-programmed movements: Walking, Balancing, Ups and Downs etc.</p>	2 Nos
10.	DC Power Supplies of reputed OEM Make	12V, 5A and 5V, 5 A (5 Nos each)	10 Nos



X. Household Machines Repair & Maintenance: AR Demonstration

The Household Machines Repair & Maintenance AR application offers an intuitive, hands-on method for repairing and maintaining household machines. Employing AR technology, this application allows users to visualize the inner workings of various household and industrial machines, streamlining tasks such as equipment inspection, troubleshooting, maintenance procedures, and safety protocols.

Demo Setup:

- ✓ 4 ft X 4 ft colour graphic vinyl print, pasted on 12 mm thick foam sheet, one each, for 3 household machines namely, Four Stroke IC Engine, Kitchen Mixer, Refrigerator.
- ✓ All the pictures show assembled machines, cut sections, pop ups of important machine parts, nomenclature of parts, specific highlights etc.
- ✓ Each graphic has a QR code of appropriate size printed /fixed near the corresponding machine and also near important part/s.
- ✓ 3 Nos pre-programmed, fully loaded, AR capable Tablets with latest OS and necessary hardware / software / data files / Apps. Both Tablets would be equipped for scanning the QR Codes and displaying the concerned information in Audio, Video, and 3D format. (1 in use and 2 Spare)
- ✓ Tablets would also be equipped for seamless wireless transmission of screen contents (screen mirroring) to the nearby paired Smart TV over WiFi.
- ✓ A 65 inches screen Smart TV for wirelessly mirroring (displaying) the immersive and interactive AR contents (audio as well as video) visible on the demo Tablet screen.
- ✓ There would be a specially developed GUI App for running this Demo.
- ✓ The data files would display AR contents which would last at least for 5 minutes duration for each machine. As such for exploring 3 different machines, the demonstration would last at least for about 15 minutes.
- ✓ There would be a provision for adding more data files concerning other machines later.
- ✓ For the demo, only one Tablet would be required at any time and the second Tablet would be a standby.
- ✓ Each datafile should be in 2 languages – English and Marathi.

Demonstration:

The demonstrator/user picks up the Tablet and invokes the 'Demo App' to initiate the demo. He/She selects the language (English or Marathi) for the demonstration. The 'Demo App' initiates the entire hardware and software and prompts the user to scan the QR code of any machine on the graphic using the rear camera of the Tablet.

On scanning the QR code, the corresponding data file residing in the memory of Tablet would get fetched, and the contents therein would be presented on the Tablet screen in landscape format. The same contents (both audio & video) would also be wirelessly transmitted on the paired Smart TV nearby, over the WiFi network.

The user goes through the interactive and immersive contents corresponding to all the 3 machines by scanning the associated QR codes one by one. The larger group audience would be able to watch the contents on Smart TV.

The Demo App provides necessary instructions / guidance to the user throughout the demonstration. The App would have an option to exit the demo at any time and to reset the system safely.

Description of Data Files:

The Demonstration would cover 3 modules for IC Engine, Mixer and Refrigerator as below -

✓ **Disassembly Instructions (1 min):**

- Step-by-step guidance on disassembling key components of machines.
- Virtual guides spotlight every bolt, nut, clip, and screw, indicating their correct sequence for removal.

✓ **Inspection Procedures (1 min):**

- Offers visuals and guidance for inspecting disassembled parts for damage, wear and tear, or replacement necessity.
- AR highlights parts requiring attention and demonstrates optimal cleaning procedures for reusable components.

✓ **Reassembly Instructions (1 min):**

- Outlines the steps for correctly reassembling components and ensuring proper connections (electrical, mechanical, piping).
- Detects and flags incorrect assemblies.

✓ **Testing & Validation (1 min):**

- Demonstrations on equipment functionality tests post-repair or maintenance.
- Utilizes visual/audio alarms for detecting and highlighting issues such as gas/refrigerant leaks or loose connections.

✓ **Routine or preventive Maintenance (1 min):**

- Clarifies routine maintenance tasks, like filter changes and lubrication.
- Demonstrates each process interactively, emphasizing their importance and suggesting periodicity.

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Colour Graphic vinyl print pasted on 12 mm thick foam sheet	<p>600 DPI Resolution colour graphics of household machines namely Four Stroke IC Engine, Kitchen Mixer, Refrigerator printed on imported vinyl and flawlessly pasted on 12 mm thick foam sheet.</p> <p>Size 4 ft X 4 ft</p> <p>The graphic print to be clear laminated, and UV protected.</p> <p>The graphics need to be adequately strengthened at the back to avoid any bending</p> <p>There would be a minimum of 3 QR Codes pasted/printed on the graphics near the machines.</p>	1 Graphic print for each machine totaling to 3 os.	Picture to be got approved before printing.
2.	AR capable Tablets	As per Annexure 19	3 Nos.	1 in Use 2 in Spare
3.	SMART TV	As per Annexure 20	1 No.	
4.	GUI based App for running the demo	As described above	1 No.	
5.	Data Files for all the 3 household machines namely Four Stroke IC Engine, Kitchen	As described above	1 Set of 3 data files for machines as mentioned	

	Mixer, Refrigerator.		above.	
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Annexure 19: Technical Specifications for AR Capable Tablets (Qty. – 3 Nos)

Description	Technology	Specifications
Network	Technology	WIFI Only
Body	Size	Minimum 11 inches.
	Build	Glass front, aluminum back, aluminum frame
	Stylus Support	Stylus Support Required
Display	Type	AMOLED
	Resolution	Minimum 2560 x 1600 pixels (~274 ppi density)
Platform	OS	At least Android 13, One UI 5.1 or latest
	Chipset	Snapdragon 8 Gen 1 (4nm) or similar
	CPU	Octa-core
	GPU	Adreno 730 or higher
Memory	Card slot	Micro SDXC (dedicated slot)
	Internal	Minimum 256 GB ROM, Minimum 8GB RAM
Main Camera	Single	Minimum 13 MP
	Features	HDR, panorama
	Video	1080p@60fps or better
Selfie Camera	Single	Minimum 12 MP
	Video	1080p@30fps or better
Sound	Loudspeaker	Yes, with Stereo Speakers
	Earphone	Through Bluetooth
Communication	WLAN	Wi-Fi 802.11 a/b/g/n/ac, dual-band, Wi-Fi Direct
	Bluetooth	5.2, A2DP, LE

	Positioning	GPS, GLONASS, BDS, GALILEO
	NFC	No
	Radio	No
	USB	USB Type-C
Features	Sensors	Accelerometer, Gyro, Fingerprint
		ANT+ Certified
Battery	Type	Li-Po 8000 mAh, Non-removable
	Charging	45W wired, Charger/Adapter supplied with Tab
AR Compatible	YES	YES
Certifications		Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)	

Annexure 20: Technical Specifications for Smart TV (Qty. – 1 No.)

Description	Specifications
Screen Type	LED with super bright backlit display Commercial Grade
Backlight Type	LED
Brightness	Minimum 700 nit
Resolution	Minimum 3840 X 2160
Contrast	At least 4000:1 or better
Audio Amplifier	In-built 2 channel output
Audio Speaker	At least 2 X 10W
I/O Connectors	At least HDMI 2.0 (x2), USB 2.0 (x2)
CPU, GPU and Memory	Inbuilt CPU and GPU with minimum 8 GB Memory
OS Module	Android /.Tizen or Equivalent OEM provided latest OS only

Wi-Fi & Bluetooth	Inbuilt
Size	Minimum 65" diagonal
Smart Features	Smart View or similar feature for smart device wireless connectivity (In order to assure flawless wireless connectivity between the panel and VR headset or, Smart handheld device, separate branded hardware may be utilized)
Operating Hours	Suitable for 24 x 7 operation
Wall Mount Fixture	OEM provided wall mount bracket.
Connectors / Cables	All the standard Connectors/Cables supplied by OEM
Warranty	3 Yrs Onsite
Certifications	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

Note:

The Tablets and SMART TV of the same OEM would be preferred.



XI. Audio-Video Station – Technology Audio-Video Clips

Quite a few other technologies which could not be accommodated in the Technology Demonstration Lab would be presented here through Audio-video presentations on Smart TV. The A-V clips would be played in loop mode continuously. Technologies such as Plant Phenotyping AR for sustainable agriculture, Food wastage detection in warehouses, Quality of fruits, Drones, space technology etc. would find an appropriate place here.

Demo Setup:

- A simple setup having a Smart TV.
- Audio-Video clips on various advanced technologies and their applications residing in flash drive.
- Audio-Video clips would be played on Smart TV in loop mode sequentially.
- Visitors can watch the clips just by standing in front of the Smart TV.
- Audio-Video clips would be provided by the host.

Demonstration:

The audio-video clips would go on playing on the Smart TV continuously in closed loop mode.

Description of Data Files / Video Clips:

Audio-Video clips on various advanced technologies to be played would be made available by the host. Audio-Video clips on Phenotyping, Food Wastage detection, Quality of fruits, application of drones in agriculture, space technologies, automobile technologies etc. would be provided by host.

Table of Technical Specifications and Quantity:

Sr. No.	Description of Item	Specifications	Quantity	Remark
1.	Smart TV	As per Annexure 21	2 Nos.	1 in Use 1 Spare
2.	Audio-Video Clips	To be provided by the host	1 set	Provided by host.

Annexure 21: Technical Specifications for Smart TV (Qty. – 2 Nos.)

Description	Specifications
Screen Type	LED with super bright backlit display Commercial Grade
Backlight Type	LED
Brightness	Minimum 700 nit
Resolution	Minimum 3840 X 2160
Contrast	At least 4000:1 or better
Audio Amplifier	In-built 2 channel output
Audio Speaker	At least 2 X 10W
I/O Connectors	At least HDMI 2.0 (x2), USB 2.0 (x2)
CPU, GPU and Memory	Inbuilt CPU and GPU with minimum 8 GB Memory
OS Module	Android / Tizen or Equivalent OEM provided latest OS only
Wi-Fi & Bluetooth	Inbuilt
Size	Minimum 65" diagonal
Smart Features	Smart View or similar feature for smart device wireless connectivity (In order to assure flawless wireless connectivity between the panel and VR headset or, Smart handheld device, separate branded hardware may be utilized)
Operating Hours	Suitable for 24 x 7 operation
Wall Mount Fixture	OEM provided wall mount bracket.
Connectors / Cables	All the standard Connectors/Cables supplied by OEM
Warranty	3 Yrs Onsite
Certifications	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

XII. Central Online UPS System for Technology Demo Lab

Supply Installation, Testing, Connecting and Commissioning of Central Online UPS System including battery bank, cables, switchgears, and other accessories for the Technology Lab as per following Technical Specifications.

Table of Technical Specifications for Central Online UPS System: Qty. – 1 No.

Description	Specifications
Type	Online with Isolation Transformer
Phase	3 Phase with separate Earth
Nominal I/P voltage	210 ~ 240 VAC, per phase
VA Rating	30 KVA or higher
I/P Frequency Range	45Hz to 60Hz
Power Factor	0.99 @ Nominal Voltage at Full Load
O/P Voltage	230 VAC, per phase
O/P Frequency	50 Hz Regulated
O/P Wave Form	Pure Sine Wave
Harmonic Distortion	Less than 3% for Linear Load and Less than 5% for Non Linear Load
Transfer Time Inverter to Bypass	Less than 4 ms (Typical)
Battery Module	External, Completely Shield and Leak Proof with Necessary Racks, Connectors
Battery Type	SMF or Equivalent of reputed brand only
Individual Battery Capacity	35 Ah or Higher per module
Battery Recharge Time & charging Rate	8 to 10 Hours (after complete discharge to 90% charge)
Back Up Time	No Less than 30 Minutes on Full Load
Indicators	Load level, Battery level, AC mode, Battery mode, Bypass mode, and Fault indicators
Alarms	Battery Mode, Low Battery, Overload, Fault
Connectors / Cables	All the standard Connectors/Cables supplied by OEM
Warranty	Comprehensive, Onsite, 3 Years Warranty
Certifications	Applicable Certification ROHS, Energy Star, FCC/UL, EPEAT India for best rating to be provided
Support	Support on Next Business Day Onsite with In-Region HW-SW Support, 36 Month(s)

XIII. Central Wi-Fi Router

Most of the demonstrations would have devices communicating with each other using the central Wi-Fi network. The Central Wi-Fi Router having wide bandwidth and necessary accessories would serve the purpose.

NETGEAR Nighthawk RAX50, Linksys E8450 AX3200 or Equivalent Wi-Fi 6 Router - Qty. 2 Nos.

Important Notes :

1. All the hardware must be absolutely brand new.
2. All the Hardware must be from among the top 5 OEMs from IDC latest Report
3. Successful bidder should submit MAF from OEM
4. Wherever applicable Certificate from MS for OS to be submitted.
5. Hardware specifications are bare minimum for demonstration requirement. However, bidders may consider higher specifications if desired.