

ERNET India
(An Autonomous Scientific Society under Ministry of Electronics & Information
Technology (MeitY), GoI)
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(Tele: +91-11- 22170598, FAX: +91-11-22170602)

Tender Enquiry No.: EI-D/Tech-VR/1-1/2019

Dated: 21.11.2019

Due Date: 13.12.2019, 03:00 PM

Opening of Bids: 13.12.2019, 03:30 PM

Subject: Tender for Development of Virtual reality And Augmented Reality Based Cyber Security Module

ERNET India, an Autonomous Scientific Society under administrative control of Ministry of Electronics & Information Technology (MeitY), Govt. of India is a Class 'A' Internet Service Provider for the Education and Research community in India.

1. ERNET India being the National Research & Education Network (NREN) in India provides network and Internet service to educational research institutions. The services are provided through 05 Points of Presence (PoPs) located at the premier education & research institutions across the country. ERNET provides handholding and facilitates projects of educational and research community related to Campus Network, Wi-Fi, ICT, Video Conferencing, Datacentre creation & other ICT & IT related infrastructure for various ministries, departments, academic & research institutions/universities/colleges under central and state Governments.
2. ERNET India is also providing internet & other VPN access services to various institutions, universities colleges, departments and organizations of central /state government. ERNET India also provides of "C Band based VSAT based connectivity to the remote unconnected areas. ERNET India is operating Smart Virtual Classrooms across 07 States, ERNET is Nodal agency for providing eduroam services in India and connected more than 250 institutions.
3. Under ERNET initiatives to equip and train against real world cyber-attack Scenarios, through this tender, ERNET India intends to engage a vendor for Development of Virtual Reality (VR) & Argument (AR) based cyber security modules. It is anticipated that VR based cyber security Modules with AR will not only easily equip officials with cyber-security knowledge but also it will provide real life scenarios in virtual environment where trainees will practice application of knowledge gained and get assessed.
4. Sealed tenders are therefore, invited from shortlisted vendors participated in respective EoI process for supply, Installation & Commissioning of items as per scope of work in conformity with Technical Specifications as mentioned in scope of work of Tender Document.



5. ELIGIBILITY CRITERIA

- As per EoI no. EI-D/Tech-VR/1-1/2019 Published date 31st May 2019
- Bidder should comply with all the terms mentioned in EoI as well in Tender Document.

6. GENERAL CONDITIONS

- I. Single Bid (Techno-commercial) should be submitted in sealed cover. Bid cover indicating marked "Bids for Tender for Development of Virtual reality And Augmented Reality Based Cyber Security Module".
- II. Bids should be valid for a minimum period of 180 days from the due date or any extended date of bid submission. In exceptional circumstances, the ERNET India may request the Bidder(s) for an extension of the period of validity of the bid. The request and the responses thereto shall be made in writing and transmitted through speed post/registered post/courier/fax. The validity of EMD shall also be required to be suitably extended.
- III. Envelope should bear the inscription:
"Bid for Tender for Development of Virtual reality And Augmented Reality Based Cyber Security Module"
"Tender Enquiry No. : EI-D/Tech-VR/1-1/2019"
- IV. The Bids must reach the undersigned on or before the due date, i.e. Bids received after the due date & time will be rejected. In the event of due date being a National or public or declared Holiday for Central Government offices, the due date for above schedule activities will be the following working day at the appointed time & venue.
- V. All rates for quoted items/services should be in Indian Rupee for delivery at the premises of ERNET India or at any other place in India as and when specified by ERNET India free of charge. Any type of delivery/ installation/ commissioning charges must be inclusive in unit prices quoted by bidders. All prices shall be fixed and shall not be subject to escalation for any reason whatsoever. Bids not quoted in the specified format shall be out rightly rejected. Also, ERNET India reserves the right to correct any of the arithmetical and/or Tax errors in the bidder(s)'s price bids and thereby derived a revised GTV based on arithmetical correction for evaluation of bids.
- VI. Bidder(s) should be registered under Goods and Service Tax (GST) and should comply to all provisions of GST. Rates should be quoted giving the basic price, GST etc., in case of non-compliance by the Bidder of the GST provisions which results in blockage/reversal of any input tax credit to ERNET India, Bidder(s) shall be liable to indemnify the ERNET India any such loss of input credit including interest, penalty and all incidental expenses incurred by ERNET India. Such indemnification may also be by way of invocation of any security deposit, deduction from any payment that ERNET India has to make to the Bidder(s), as per the discretion of the ERNET India. ERNET India reserves the right to review the Vendor/ bidder documents to ensure that they are GST compliant and in such a case bidder shall forthwith

provide all such documents as may be required by ERNET India. In case, in future any GST liability is required to be borne by ERNET India; which was the responsibility of the bidder(s), then the same shall be claimed from the Vendors by way of raising debit notes. In case of any variation in the GST rates (upward/ downward) than the quoted rates, the rate applicable on the date of raising of invoices will be paid. ERNET India will not bear any additional tax burden due to change in tax rate for delay on account of delivery, installation and commissioning by the vendor.

VII. Representation and Warranties Clause

The vendor represents that they are registered under Goods and Service Tax (GST) and compliant of GST provisions. The vendor is required to submit the GST Registration Certificate clearly stating the GSTIN and category of registration of the vendor, in case of registration as composite dealer same may also be mentioned very clearly, along with all necessary documentary proofs substantiating the category of registration.

In case of unregistered supplier, the vendor needs to submit a certificate, certifying that they are not registered under GST regime and they will immediately intimate ERNET India, in case they obtain registration at a later date.

VIII. Indemnity Clause

The vendor undertakes that in case of non-compliance by the vendor of the GST provisions which results in blockage/reversal of any input tax credit to ERNET India, the vendor shall be liable to indemnify the ERNET India for any such loss of input credit including interest, penalty and all incidental expenses incurred by ERNET India. Such indemnification may also be by way of invocation of any security deposit, deduction from any payment that ERNET India has to make to the vendor, as per the discretion of the ERNET India.

IX. Non-Compliance with Payment terms

Vendor has to raise invoice within 30 days from the date of payment is due as per payment and other terms & conditions of tender. In case invoice is raised and submitted before the due date of payment; then ERNET India reserves the right to return the invoice to the vendor. In such a situation ERNET India will process the payment only once the invoice in current date is issued by the vendor.

X. Provision for raising Debit Notes/Invoices

In case, in future any GST liability is required to be borne by ERNET India due to improper/un-timely invoicing or any dispute, then the same shall be claimed from the vendor by way of raising debit notes/invoice and also GST liability thereon will be recovered from the vendor.

XI. Review / Audit Right

ERNET India reserves the right to review the vendor documents to ensure that they are GST compliant and in such a case the vendor will provide all such documents as may be required by ERNET India.

XII. In addition to above, as per Sec. 171 of CGST Act-2017, any reduction in rate of tax on any supply of goods or services or the benefit of input tax credit shall be passed on to the recipient by way of commensurate reduction in prices.

XIII. If the vendor fails to adhere the terms & conditions of the P.O. and ERNET deducts Liquidated damages for the delay, under GST regime ERNET India has to discharge GST liability on LD

recovered from the vendor. Hence GST shall also be recoverable from the vendor on LD amount.

- XIV. It may specifically be mentioned whether the Bid is strictly as per tender specifications/conditions. If not, deviations must be spelt out specifically. In the absence of this, the quotation may be rejected. Deviation on lower side of specifications will not be considered. No deviations in terms & conditions of the tender document will be accepted in any case subject to ERNET India's right under mentioned in Tender.
- XV. ERNET India reserves the right to accept or reject any bid or cancel the tender proceedings without assigning any reason whatsoever.
- XVI. ERNET India may waive any minor infirmity or non-conformity or irregularity in a bid or may seek any clarification on the bids, if so desired. The decision in this regard shall be taken by the concerned evaluation committees & their decision will be final.
- XVII. Any attempt of negotiation direct or indirect on the part of the bidder with the authority to whom he has submitted the tender or authority who is competent finally to accept it after he has submitted his tender or any endeavour to secure any interest for an actual or prospective bidder or to influence by any means the acceptance of a particular tender will render the tender liable to be excluded from consideration. The decision of ERNET India in this regard will be final & conclusive and no queries/communication will be entertained in this regard.
- XVIII. ERNET India will have the right to reject the components/equipment supplied if it does not comply with the specifications at any point of installation/ inspection.
- XIX. The bidder must quote for all the items as mentioned in the Annexure-II. The bids not quoting all the items and/or quoted zero value against any item of Annexure-II will be summarily rejected.
- XX. ERNET India reserves the right to order the line items in any set of combinations depending upon the requirement.
- XXI. ERNET may increase or decrease the quantity. ERNET may have right to place full or partial purchase order.
- XXII. All materials submitted by the bidder(s) through this Tender Document will become the property of ERNET India/its customers.
- XXIII. All authorizations & undertaking from should be in original ink signed and stamped.
- XXIV. All the other documentary proofs should be self-attested by authorized person.
- XXV. During the process of evaluation, ERNET India reserves the right to seek clarifications from bidders, wherever needed.
- XXVI. Bidder shall sign all pages of the bid document including all enclosures with the bid.



- XXVII In the event of successful bidder is taken over /bought over by another company, all the obligations and execution responsibilities under the agreement with the ERNET India, should be passed on for compliance by the new company in the negotiation for their transfer.

XXVIII. ARBITRATION

- For removal of doubts, it is clarified that this tender document will be governed by the applicable laws including Arbitration and conciliation Act, 1996 and Insolvency & Bankruptcy code, 2016.
- Any dispute or difference whatsoever arising between the parties out of or relating to the construction, meaning, scope, operation or effect of this contract or the validity or the breach thereof which cannot be amicably resolved between the parties; within 90 days from the date of raising of dispute by any of the party; shall be settled by arbitration in accordance with the Rules of Domestic Commercial Arbitration of the Indian Council of Arbitration and the award made in pursuance thereof shall be binding on the parties.
 - i. The venue of Arbitration shall be Delhi.
 - ii. The law governing arbitration shall be Arbitration and conciliation Act, 1996.
 - iii. The language of the arbitration shall be English.

Pending reference to arbitration, the parties shall make all endeavors to complete the work in all respect. Disputes, if any, will finally be settled in the arbitration.

7. INSPECTION

ERNET India or its representative shall have the right to inspect or to test the items to confirm their conformity to the ordered specifications. The supplier shall provide all reasonable facilities and assistance to the inspection team at no charge to ERNET India. In case any inspected or tested goods fail to conform to the specifications, ERNET India may reject them and supplier shall replace the rejected goods with the goods in conformity with the specification required free of cost to ERNET India. Any delay due to above shall attract relevant penalty clauses of the tender.

8. PAYMENT TERMS

- In case of any discrepancy between rates mentioned in figures and words, the later shall prevail.
- ERNET India shall release the 100 % payment after successful Development of modules, Delivery of Software & hardware, testing, training & satisfactory acceptance by ERNET official.

Note 2: All the above payments will be released subject to the condition that successful bidder(s) has submitted the Performance Security equivalent to 10% of the total cost of the purchase order as per clause no. 11 below

9. ☐ WARRANTY CONTRACT

Onsite warranty shall include free maintenance of the whole equipment supplied including free replacement of faulty equipment/parts free software upgrades/ updates/ renewals etc for one year. The defects, if any shall be attended to on immediate basis. The comprehensive warranty shall begin from the date of acceptance.

10. EARNEST MONEY DEPOSIT

- i. If the successful bidder fails to furnish the performance Security as per clause 11 below within 15 days from the date of placement of the purchase order, the earnest money shall be liable to be forfeited by ERNET India.
- ii. The earnest money of successful bidder will be returned after submission of PBG. The earnest money of all the unsuccessful bidders will be returned after placement of order on the selected vendor. EMD submitted in the form of fixed deposit/BG will be returned as it is (which was in submitted in EoI). In case of EMD in the form of DD/Pay order, no interest will be payable by ERNET India on the Earnest Money Deposit.

11. PERFORMANCE SECURITY

- i) The successful bidder shall submit a Performance Security of 10% of the cost of the purchase order within 15 days of the placement of purchase order. The Performance Security may be in the form of Demand Draft/Pay Order/Bank Guarantee of any nationalized/scheduled bank. The Bank Guarantee should be valid for the minimum period of its service liability (i.e. delivery & warranty period) + 3 months in respect of individual purchase orders. In case supplier fails to deliver the items/services within delivery/ installation/warranty period, the Performance Security submitted by the firm is liable to be forfeited. Performance Security shall be released immediately after the warranty is over. No interest will be payable by ERNET India on the Performance Security.
- ii) The successful bidder has to ensure submission of all BGs as per the latest RBI guidelines.
- iii) Non submission of performance security as per above schedule may lead to cancellation of work order. Also, any payment due on ERNET w.r.t work done by the bidder till such date will be forfeited.

12. Liquidated Damages

In the event of the vendor(s)'s failure to complete the delivery, installation, commissioning and testing of the ordered equipment/Software /component along with imparting of training specified in the tender or any extended period, ERNET India may at its discretion withhold any payment, as liquidated damages (and not by way of penalty) at the rate of 2% of the PO value of non-operational sites per week or a part of a week subject to a maximum of 10%. The amount towards Liquidated

Damage would be recovered from the performance security as required vide clause 11 above or the amounts due to vendor(s). The LD will be imposed only in case the delay is on part of the vendor(s).

In case the cumulative delay is beyond 5 weeks during the implementation period, ERNET India reserves the right to cancel the purchase order and forfeit all due payments including forfeiture of Security Deposit, besides initiating legal action as per rules/laws and/or debarring / blacklisting the vendor(s) concerned for at least three years, for further dealings with ERNET India. In such a case ERNET India will initiate action to get the work completed at the cost and risk of vendor(s) and may further distribute such a work to other remaining vendor(s).

13. Indemnity

The successful bidder(s) shall indemnify the ERNET India against all third party claims of infringement of patent, trademark/copyright or industrial design rights arising from the use of the supplied items and related services or any part thereof. ERNET India/ End-user department stand indemnified from any claims that the bidder's manpower may opt to have towards the discharge of their duties in the fulfilment of the purchase orders. ERNET India/End user department also stand indemnified from any compensation arising out of accidental loss of life or injury sustained by the bidder's manpower while discharging their duty towards fulfilment of the rate contract and purchase orders. The bidder shall solely responsible for any damage, loss or injury which may occur to any property or to any person by or arising out the execution of the works or temporary works or in carrying out of the contract otherwise than due to the matters referred to in this agreement hereinbefore. The bidder would ensure for observance of all labour and other laws applicable in the matter and shall indemnify and keep indemnified the ERNET/its customers against the effect of no observance of any such laws.

14. Force Majeure

If at any time, during the period of contract, the performance in whole or in part by either party of any obligation under the project is prevented or delayed by reasons of any war, hostility, acts of public enemy, civil commotion, sabotage, fires, floods, explosions, epidemics quarantine restrictions, strikes, lockouts or acts of God (hereinafter referred to as "events"), provided notice of happenings of any such event is duly endorsed by the appropriate authorities/chamber of commerce in the country of the party giving notice, is given by party seeking concession to the other as soon as practicable, but within 21 days from the date of occurrence and termination hereof and satisfies the party adequately of the measures taken by it, neither party shall, by reason of such event, be entitled to terminate the contract, nor shall either party have any claim for damages against the other in respect of such non-performance or delay in performance, and deliveries under the contract shall be resumed as soon as practicable after such event has come to an end or ceased to exist and the decision of the purchaser as to whether the deliveries have so resumed or not, shall be final and conclusive, provided further, that if the performance in whole or in part or any obligation under the contract is prevented or delayed by reason of any such event for a period exceeding 60 days, the purchaser may at his option, terminate the contract.



15. Applicable Law

- i) The bidder shall be governed by the laws and procedures established by Govt of India, within the framework of applicable legislation and enactment made from time to time concerning such commercial dealings/processing.
- ii) All disputes in this connection shall be settled in Delhi jurisdiction only.
- iii) ERNET India reserves the right to cancel this tender or modify the requirement without assigning any reasons. ERNET India will not be under obligation to give clarifications for doing the aforementioned.
- iv) ERNET India also reserves the right to modify/relax any of the terms & conditions of the tender.
- v) ERNET India, without assigning any further reason can reject any tender(s), in which any prescribed condition(s) is/are found incomplete in any respect.

16. DELIVERY AND INSTALLATION PERIOD

The schedule of delivery, installation, commissioning, development, testing & training is as follows:

SN	Deliverables	Time Period	Time Interval
1	Procurement and delivery for all hardware	Date of issue of PO + 2 Months	P1
2	CBS and CMS software development		
3	VR content Development		
4	AR Content Development		
5	Acceptance Testing, modification & training	P1 + 1 Month	P2

18. SCOPE OF WORK

- i. Development of various modules of cyber security based on VR & AR.
- ii. Each part of cyber-security module should be proper animations and with bi-lingual (English and Hindi) voice overs.
- iii. There should be familiarization section for virtual reality controls at the start.

- iv. Bidder should follow all procedures of Software Development Life Cycle (SDLC)
- v. Development Plan: Bidder needs to work closely with ERNET. The draft storyboard is mentioned in Tender Document; however, Bidder needs to take final approval of story before developing of module after allotment of purchase order.
- vi. The scope of work contains the hardware and software. Detailed bill of material is mentioned in Annexure 1.
- vii. Security Awareness Program
- a. VR & AR based Cyber Security Training Modules should be educating officials with cyber-security related knowledge and teleport them into real life scenarios in virtual reality where learning & understanding of the officials could be assessed by allowing them to take decisions or execute actions based on the lessons or skills developed.
 - b. Guides Employees/students on do's and don'ts of creating their digital footprints.
 - c. It should be covering all the critical processes & procedures for providing a holistic learning & understanding to the officials regarding the various possible cyber-attack and countermeasures. Additionally, the training modules should also be educating the officials about the different terminologies related to the security of any digital or internet-based payment.
 - d. To empower and protect the human being by various security threads like Privacy protection, digital payments, malware, end point security like mobile security
- vi. **Installation:** Bidder needs to provide appropriate guidance in installing all the related hardware. Any software required in the computing device, Installation of motion sensors / Installation of HMD related/ or any other software required.
- vii. All the related support technology and modules will be run on ERNET Infrastructure.
- viii. Bidder should provide the support to ERNET wherever said training will be implemented.
- ix. **Training and Handover**
- All the training materials will be provided by the bidder. Manual etc.
 - Bidder has to be provide hands-on of training
 - Bidder should provide all software codes to ERNET and it will be property of ERNET.
 -
- x. Vendor must need to share the details and GUI flow of CBS CMS Server application, VR application at trainee side and AR application with ERNET team within 10 days of Purchase order and take approval from ERNET team.

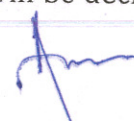
○ All VR modules should support Oculus Go and HTC vive. [any VR device from oculus or HTC family at the time of purchase order placement]

19. CARE OF WORK

From the commencement to the completion of the works on individual POs, the bidder(s) should ensure to take full responsibility for the care thereof and of all temporary works and in case any damages loss or injury happens to the works or to any part thereof or to any temporary works due to lack of precaution or negligence on the part of Bidder(s), the loss shall be made good at its own cost.

20. Evaluation of Bids

- i. Tender Document will be issued only to successful technical qualified bidder(s), who had participated in EoI issued (EI-D/Tech-VR/1-1/2019) dated 31st May 2019.
- ii. Bidder should submit the Bid duly signed on each and every page with stamp.
- iii. Bidder should submit the **compliance statement for Annexure 1** in tabular format for each parameter.
- iv. Bid will be rejected in case of non-submission of compliance for Annexure-1 by Bidder.
- v. The bidder must quote for all the items as mentioned in the **Annexure-II**. The bids not quoting all the items and/or quoted zero value against any item of Annexure-II will be summarily rejected.
- vi. The decision of the Evaluation Committee in the evaluation of Tender Document responses shall be final. No further correspondence(s) will be entertained in this regard.
- vii. Arithmetic errors in the Bids submitted shall be treated as follows:-
 - Where there is a discrepancy between the amounts in figures and in words, the amount in words shall prevail.
- viii. Successful Evaluated Bidder: Comparison of the Price Bids as per Annexure -II will be made based on the Grand Total Value (GTV) and after completing internal approval process. Bidder whose Bid Price is the lowest subject to submission as point 20 (iii) above will be declared as successful evaluated bidder who will be called L1 Bidder.



21. TERMINATION FOR DEFAULT

(i) Default is said to have occurred

- a. If the bidder fails to deliver any or all of the services within the time period(s) specified in the work order or any extension thereof granted by the competent authority.
- b. If the bidder fails to perform any other obligation(s) under the contract.

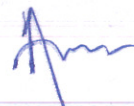
(ii) If the bidder, in either of the above circumstances, does not take remedial steps within a period of 30 days after receipt of the default notice from ERNET India (or takes longer period in spite of what has been authorized in writing), the engagement / work order would stand terminated in whole or in part. In addition to above, the following actions can be taken: The procurement can be done, upon such services and in such manner, as is deemed appropriate, goods similar to the undelivered services and the defaulting bidder shall be liable for compensation for any extra expenditure involved towards services to complete the scope of work in totality.

(iii) The work order / engagement can be terminated by giving one month written notice to the bidder, without any compensation to the bidder, if the bidder becomes bankrupt or otherwise insolvent.

22. This Tender does not commit ERNET India to award a Work/contract or to engage in negotiations. ERNET India reserves the right to cancel/stop the process of Tender at any point of time without assigning any reasons thereof. The decision of the ERNET India is final and binding on the applicants.

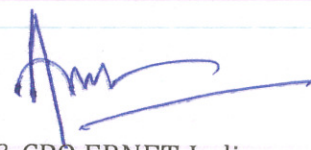
23. Bank Guarantees:-

- a. In case of any violation of any tender terms and condition recovery of any dues, the bank guarantee is liable to be encashed Invoked without giving any prior notice to the bidder. For invocation of BG, Consent of the bidder shall not be taken.
- b. The bank guarantee will be returned to the successful bidder at the end of the warranty period without any interest.
- c. In case submitted Bank Guarantees need to be extended as per the tender terms and the bidder is unable to extend it for further period, the available bank guarantee with ERNET India will be liable to be en-cashed.
- d. All Bank Guarantees shall be in the form of an irrevocable and unconditional Bank Guarantee on a Nationalized / Scheduled commercial bank in Indian rupees. The claim period of BGs shall be minimum three months.
- e. In view of guidelines issued from Ministry of Finance, it is mandatory that all the Bank Guarantees submitted must be routed through Structured Financial Messaging System (SFMS) from issuing Bank to our Bank by sending IFN 760 COV Bank Guarantee Advice Message. Thereafter only physical Bank Guarantee will be acted upon. Our bank details for this purpose are: -



1	Beneficiary Name & Address	ERNET India 5th Floor, Block I A Wing DMRC IT Park, Shastri Park, Delhi-110053
2	Bank Name	Bank of India
3	Bank Branch & Address	Electronics Niketan 6 CGO complex New Delhi - 110003
4	Beneficiary Account No	604810100002033
5	IFSC code	BKID0006048


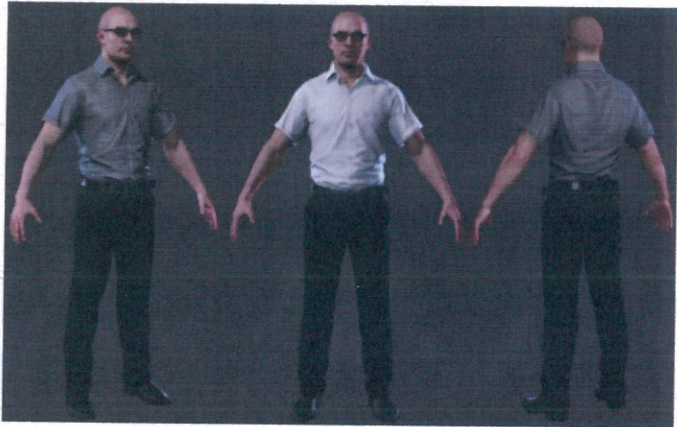
Yours faithfully,



Registrar & CPO ERNET India

Annexure I

Bill of Material

S.No	Description
	<p>i) Bidder should ensure that they will provide the best quality. The minimum Virtual Reality Content Quality Criteria will be : (*)</p> <ul style="list-style-type: none"> ⇒ Bit rate : 30 Mbps or above ⇒ Frame Rate : 60 FPS ⇒ Resolution : 4K ⇒ Refresh rate : 80Hz ⇒ All animation should be fluent and no jerks. ⇒ 3D model or assets should be equal or above following samples: <div style="display: flex; flex-direction: column; align-items: center;">   </div> <p>ii) The minimum Augment Reality Content Quality Criteria will be:</p> <p>Resolution: 1920X1080 Bitrate: 20-30 Mbps Frame Rate: 25 fps</p>

○	PART A
	Hardware Requirement :
1.1	<p>High End Laptop:</p> <ul style="list-style-type: none"> • Intel Core i7-8750H 8th Gen processor, Hex-Core, up to 4.6 GHz • Pre-loaded Windows 10, Home, 64Bit operating system with lifetime validity • 15.6-inch Full HD (1920 x 1080) 120HZ • Memory: 8GB DDR4 RAM • Storage: 1TB HDD • GTX 1070 Ti or above • 2 Type-A USB 3.1 Gen 1, 1 Type-A USB 3.1 Gen.2, 1 Type-C USB 3.1 Gen.2 , 1 RJ45, 1 HDMI, 1mDP, 1 SD card reader, 1 Mic-in, 1 Headphone-out (SPDIF), Without CD drive
1.2	<p>Standalone VR HMD [Oculus Go]:</p> <ul style="list-style-type: none"> • Oculus Go: [64 GB] • Virtual Reality HMD unit Type: Standalone VR headset • Controller Memory – 64 GB • Processor: Qualcomm Snapdragon 821 SoC • Resolution: 2,560 × 1,440 display using a fast-switch LCD • Speaker: Inbuilt speaker; Standard 3.5mm headphone jack • Controller Type: 3DoF controller feature for trigger • Input type: trackpad, and a back and menu button • Removable facepad and lens backing
1.3	<p>High End VR HMD-I [HTC Vive]:</p> <ul style="list-style-type: none"> • Screen: OLED 3.5" diagonal • Resolution: 1080x1200 per eye • Refresh rate: 90 Hz • Field of view: 100 degrees • Sensors: SteamVR Tracking, G-sensor, gyroscope, proximity • Connections: HDMI, USB 2.0, stereo 3.5 mm headphone jack, Power, Bluetooth; Input: Integrated microphone; • Adjustment option: Inter-pupillary distance and lens distance adjustment, Adjustable IPD, Adjustable headphone, Adjustable head strap • Wireless Controller: 2 • Nos. of Sensors: SteamVR Tracking, G-sensor, gyroscope, proximity; Input: Multifunction trackpad, Grip buttons, dual-stage trigger, System button, Menu button; • Use per charge: Approx. 6 hours • Base Station: 2 wireless base station compatible with wireless controller. • Other Accessories to be supplied along with the above items: Link box, 5

	meters headset extension kit including 3-in-1 cable, 4 Face Cushion (2x Narrow & 2x wide, Earbuds, Cables, chargers etc
1.4	<p>High End VR HMD-II [Oculus Quest]:</p> <ul style="list-style-type: none"> • Display panel: OLED • Display resolution: 1440 x 1600 per eye (Oculus Rift had 1080×1200 per eye) • 72Hz refresh rate • Qualcomm Snapdragon 835 processor • 4GB RAM • Lithium-ion battery with 2-3 hours playtime, depending on what you are playing • 6 degrees of freedom head and hand tracking • Two touch controllers • Weight: 571g (Rift is 470g)
1.5	<p>Android tablet</p> <ul style="list-style-type: none"> • 10.1" HD display • Qualcomm snapdragon quad-core 64-bit, up to 1.4 GHz • Up to 2GB of RAM and 16GB of storage • Up to 20 hours battery

PART B

2 Software Requirement :

2.1 CBS & CMS software System:

A content management system to help guide/coordinator to manage, add or remove VR content on the platform without the need of specialized technical knowledge. Intuitive indexing, search and retrieval features should be the key features of CMS.

Content Broadcast System to broadcast content from guide/coordinator side to users' side. Same content should be displayed on all user VR HMDs with full controllability residing at the guide/coordinator's end. Guide/coordinator should be able to draw or write anything in live VR content and same should be displayed at all VR HMDs simultaneously. There should be an intuitive mechanism using the same guide/coordinator that can assist users with the direction where guide/coordinator wants to draw attention of audience. Should have capability that in future can add new VR content in same software.

For interactive immersive content there will should be some scoring system and instructor can get view of scores of all the trainees, simultaneously.

○	<p>CBS & CMS system should be like a dashboard at server side, which will help instructor in managing class. As soon as trainee launch application in there headset , they should automatically list up at the server side.</p> <p>For interactive content instructor should be able to get view of any trainee at any point of time.</p>
2.2	<p>Immersive Virtual Reality Content/Modules :</p> <p>[Storyboards can be optimized or reshaped during development for better understanding , before starting development vendor team and ERNET team will discuss in detail about each storyboard]</p>
2.2.1	<p>A1) Cyber Security [Minimum Length: 6 min]</p> <p>Explaining concepts of virus, trojan horse , cyber phishing and hacking with creative and easy-to-understand animations . Should use daily life analogies to explain these cyber security concepts.</p> <p><u>Draft Storyboard:</u> A person is sitting in his office premises doing some task, suddenly an email came that he has won some lottery, he just needs to submit a form. The person fills the form. After this event, his PC starts getting slow. After talking to his colleagues, he also comes to know that many of his colleagues also found that their PC also working very slow. Then an IT guy comes and explain them that it is VIRUS attack and explains the how computer virus work. There should be good animation of virus working displayed while the IT guy is explaining them about it.</p> <p>A12) Phishing: Phishing attacks are the practice of sending fraudulent communications that appear to come from a reputable source. It is usually done through email. The goal is to steal sensitive data like credit card and login information, or to install malware on the victim's machine. Phishing is a common type of cyber-attack that everyone should learn about in order to protect themselves.</p> <p><u>Storyboard:</u> A person gets a message on his phone, while he is in the market that his Bank Account has been hacked, he needs to click a URL and fill some details. Without matching URL with bank's original URL, he immediately out of fear, quickly performs whatever the message asks him to do. In next 2 min, his account gets debited with 1L INR, and he is fainted. In next scene an IT guy comes and explain how to check and act in case of any such phishing attack .</p>

2.2.2

Information Type [Minimum Length: 6min]

Explaining concepts of information types, that is handled daily. Also guiding how to safeguard personal identity username, password and other important documents.

Personal Data, Internal use, Confidential level A, Confidential Level B

Draft Storyboard:

New joiner who also happens to be a fresher was telling his new boss how much his family and friends are excited about his new job; everybody wants to know what company does and how work environment is . He tells about his plan to take photos, printouts and mailing some ppts , in order to let his family and friend know about his work. At this time the boss start explains him about data categories and take him to various departments and people in order to explain things.

2.2.3

Social Media and Online Payment Security [Minimum Length: 7min]***Online Payment Security***

User is sitting in front of a machine and is asked to buy xyz product from Internet. User is given option to type in the URL or Search Google for the same. On entering choice user is explained: Poisoned search results are created by cyber criminals who use search engine optimization tricks called Black SEO;to manipulate search results to insert malicious links. Ensure that the link starts with 'https'. The 's' symbolises a secure site. Make sure there is a padlock symbol in the browser window frame whenever you visit a payment site. User is at a public WiFi Network. User is given a choice to use low speed mobile connection or high-speed public WIFI to do payment. On selecting an option it's explained: Never do financial transactions on a public Wi-Fi. Hackers can intrude easily into a public Wi-Fi network and steal your login details. If you need to make a financial transaction when you are out, use your own mobile phone network. User has forgot to pay his bill online. He has an option to use public computer or strangers' phone. On using the same it's explained: Never use a public computer since it could be infected or might be running keylogger to record all your details which makes it very easy for someone to hack you. Someone from an online store calls you telling you that your payment was not successful and ask for personal details. User is given options on what to do: It's explained that never share your personal details with strangers as they can easily hack into to your account.

Social Media Security

Use unique passwords for each social network: You are sitting in front of a system, where you are prompted to login. Four passwords are shown in front of you to select 1.) 12345 2.) Date Of Birth 3.) Mobile Number 4.) Your Name As you

<p>○</p>	<p>select these options one by one issues of using public information as password is explained to you. A new option appears which combine above two options to create a new password.</p> <p>Watch your mailbox: As you login you receive a message from XYZ corporation telling you to download and open the attached document to redeem your price. Once you click on the button your system is infected and it's explained why not to open untrusted messages.</p> <p>Don't be too personal: You receive a request from a girl/boy on social media. As you accept their request, they start casually chatting with you after couple of questions they tell you they like your picture with dog what's his name? Then they ask when you graduated from college. As you share this information in form of options your account gets hacked and you are locked out. It's explained why sharing personal information someone can hack into your account.</p> <p>Trusted Sources: You are shown an advertisement of an image editing application by Facebook on social network as you click on the link and download the application your mobile gets hacked. It's explained why it's important to click on links from trusted sources on social network.</p>
<p>2.2.4</p>	<p>Daily Actions and how to any handle in case of attack [Minimum Length: 5-6min]</p> <p>A guided tour of ideal day from cyber security point of view starting from home till office . It will also point out most the common mistakes that people do. In this video it will also explain how and what preventive actions user needs to perform in case one found himself in any attack situation.</p> <p>Draft Storyboard: Will explain do's and don'ts with help of employee action in office. An employee enters in office , he firstly does some wrong actions then there a narrative will be played, and again same scene will played where same employee will perform correct steps. Minimum 10 such points need to be covered.</p>
<p>2.2.5</p>	<p>Immersive Interactive content [Minimum Length: 5-6min]</p> <p>An exercise to validate all items learnt with the help of non-interactive content. (2.2.1- 2.2.4) Person will have to safeguard personal and official information without affecting his routine work. He/she will learn how to avoid malign content in order to safeguard the system from security hazards.</p> <p>Storyboard: In this section we will evaluate all topics learnt above in section, using interactive content. But instead of asking direct questions, users will be brought into real time situations that he would need to handle. For example, a person is working on his PC, and suddenly there is a call for birthday celebration in another side of</p>

<p>○</p>	<p>the cubicles. So, if that person leaves his desk after locking his desktop then, he will be awarded +1 point otherwise he would be awarded with -1 point. Minimum 5 such scenarios should be embedded within a Gamified content which would fire such scenarios randomly without any previous acknowledgement to the user about upcoming questionnaires.</p> <p>In the second part of interactive realistic 360-degree video, user would need to identify all the faults around him which are wrong from cyber security point of view. He will be scored based on his count of catching such faults around him.</p>
<p>2.2.6</p>	<p>Immersive Interactive content [Minimum Length: 5-6min]</p> <p>Advance Persistent Threat CONTENT Real Life Example of Carbanak attack</p> <p>The scenario relates to the cyber security that has helped the enterprise to mitigate from potential threat/attacks from cyber space.</p> <p>It will be simulation of famous cyber-attack like the famous CARBANAK attack which led to the loss of 3 billion over a period of two years across 30 countries, also the simulation provide how a bank could be resilient to cyber-attacks</p> <p>Attack description</p> <ol style="list-style-type: none"> 1) Intelligence Gathering Attackers gather threat intelligence on their target network 2) Point of Entry: Attackers send spear phishing mails to bank employees 3) Command & Control communication: Remote malicious users execute commands 4) Lateral Movement: To move laterally across networks, attackers use a remote access Trojan to reach other systems 5) Asset/ Data Deliver: Identity documents 6) Data Exfiltration: Sensitive bank documents are stolen <p>Storyboard: A unsuspecting email is sent out from the hacker to the bank employee. The seemingly authentic email opens to request the user to enable macros. Once the macros are enabled PowerShell would request to download of certain files. Unknowing to the system and on prompts from inbuilt software manipulates a malware would get downloaded onto the user's machine. The malware- Carbanak would check in the background if certain processes order to understand the type of security software present. It would then get the system details, network neighbourhood, software installed, security software's and send it to hacker.</p> <p>Once the information is sent by the malware to the hacker server, it would download another malicious software onto the user's machine. This software would help the hacker understand that the user cannot perform any related activities and installs a keylogger and screen capture/recording.</p>

<p>0</p>	<p>Hacker gains controls of the user's desktop sends a mail to IT team that his machine running very slow and to come and check.</p> <p>IT person as usual comes and tells the user that he has to check the system without validating the user's intent and starts putting the credentials as admin, the key logger successfully of the keystrokes.</p> <p>Once the key logger collects the keystrokes and the report is regularly send to random intervals , the hacker would collect the necessary details and would gain possession of credentials.</p> <p>Hacker starts gaining the knowledge of the network and hops from one-man using the credentials from the IT or exploit the existing vulnerabilities to gain the elevated identifies the machine running the core banking application. Once the transfers are successfully completed, the hacker would remove the trace of transaction from the backend.</p> <p>On erasing the traces of the transactions, the hacker would gain access and connect to machines by modifying modules in the software.</p> <p>The hacker gains details and access to the ATM machine KYC. He then initiates cash spewing. The hacker collects the cash and leaves.</p>
<p>2.2.7</p>	<p>Augmented Reality Content-</p> <p>In Augmented reality application [for android and iOS] [vendor should make sure that it will be compatible with at least 2 future releases of android or ios] user will get information via state of art animation and models for following topics. Instead of detailed storyboard, in AR application only working of these topics will be explained as mentioned in VR content details. Storyboard and video timeline will be exactly same as mentioned above for immersive VR content.</p> <p>A1) Cyber Security- Phishing</p> <p>A2) Information Type</p> <p>A3) Social Media and Online Payment Security</p>

**In case of non-satisfactory graphics or output quality as per ERNET team , ERNET reserves the rights to cancel purchase order .*

ANNEXURE: II**PRICE SCHEDULE FOR THE SUPPLY OF ITEMS AS AT**

To,

The Registrar & CPO
 ERNET India
 5th Floor, Block-I, A Wing,
 Delhi IT Park, Shastri Park, Delhi-110053
 Tender No.

Date of Opening

Wehereby certify that we are established firm for providing the hardware and software for Development of Virtual reality And Augmented Reality Based Cyber Security Module. We hereby confirm that the Prices are quoted in Indian Rupees and indicated both in figures and words. Price in words will prevail, in the event of any mismatch. We hereby offer to supply the following items at the prices and within the period indicated below:

S.No	Description	Qty	Unit price in INR (A)	Rate of GST (B)	Amount of GST (C)	Total unit price in INR (A+C)	Total Price in INR (8=3X7)
1	2	3	4	5	6	7	8
	<i>Note : All prices will be quoted as per specification mentioned in Annexure "I"</i>						
	<u>Part A</u>						
1	<u>Hardware Requirement</u>						
1.1	High End Laptop	1					
1.2	Standalone VR HMD	1					
1.3	High End VR HMD- I	1					
1.4	High End VR HMD- II	1					
1.4	Android tablet	1					
	<u>Sub Total(A)</u>						



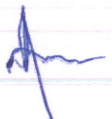
○	Part B						
2	Software Requirement :						
2.1	CBS & CMS software System:	1					
2.2	Virtual Reality Content:						
2.2.1	Module of Cyber Security	1					
2.2.2	Module of Information Type	1					
2.2.3	Module of Social Media and Online Payment Security	1					
2.2.4	Module of Daily Actions in case of attack	1					
2.2.5	Module of Interactive content (Exercise content)	1					
2.2.6	Module of Interactive content (Carbanak attack)	1					
2.2.7	Module of Augmented Reality Content A1) Cyber Security-Phishing A2) Information Type A3) Social Media and Online Payment Security	1					
	Sub Total(B)						
	Total (Part A Sub Total + Part B Sub Total)= GTV						

We (bidder) hereby undertake and confirm that:

1. Prices are inclusive of all charges and taxes/ duties there on at user sites. Payment will be subject to deduction of TDS.
2. Unit Prices are inclusive of transit insurance, delivery, installation, commissioning charges, software development etc. and custom duty (if applicable).
3. All items are quoted along with necessary accessories and software.
4. In case of any arithmetical error (omission or commission) of any item/value, the evaluation committee may correct such a value based on its unit price mentioned in the price bid.
5. Any situation arising out of correction in the arithmetical error which if changes the L1 bidder, in such a case the committee may have the right to declare the new L1 bidder. Also all the terms & conditions as specified in the tender for L1 bidder will apply to the new L1 bidder.
6. All the equipment and components quoted in Annexure: II have at least one year comprehensive warranty. The comprehensive warranty includes on- site warranty with parts/spares.
7. The quotation has been submitted for all items strictly as per the specifications and been given compliance in this regard.
8. There are no deviations in the specifications as asked in the tender.
9. During warranty services will be provided directly to ERNET India and/or its customers at sites.
10. The support services for all the items will be available for 24 Hrs a day, 7 days a week.
11. All the prices are quoted in the format as above provided by ERNET India failing which the bid will be rejected out rightly. Also any conditional Price Bid will be rejected.
12. If a bidder quotes 'NIL' charges / consideration, the bid shall be treated as non-responsive and will not be considered for evaluation.
13. It is hereby confirmed that we have understood the terms and conditions of the tender and have thoroughly examined specifications and are thoroughly aware of the nature of goods required and our offer is to supply goods strictly in accordance with the requirement and terms and conditions of the tender. We agree to abide by the terms and conditions of the tender if the contract is awarded to us.
14. We hereby offer to supply the goods (software & hardware) detailed above or such portion thereof as you specify in the purchase order at the price quoted/ accepted and agree to hold this offer open for acceptance for a period of 180 days from the date of opening of bid.

.....
(Signature and seal of Bidder)

Date: 2019



ANNEXURE-III

MODEL BANK GUARANTEE FORMAT FOR PERFORMANCE SECURITY

(To be stamped in accordance with stamp Act)

(The non-judicial stamp paper should be in the name of issuing Bank)

B.G. NO. _ Date of issue _____ Amount (Rs.)_ Valid upto _____

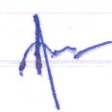
To,

ERNET India
5th floor, Block-I, A Wing
Delhi IT Park, Shastri Park, Delhi-

110053 Dear Sirs,

In consideration of the ERNET India, Ministry of Electronics & Information Technology (hereinafter referred as the '**Owner**', which expression shall unless repugnant to the context or meaning thereof include its successors, administrators and assigns) having awarded to M/s. _____ a Purchase Order No. _____ dated _____ valued at _____ (hereinafter referred to as Contract) and the Contractor having agreed to provide a Bank Guranatee towards Performance of the entire Contract equivalent to Rs. _____ (amount of BG) (i.e. _____ per cent of the said value of the Contract) to the Owner.

We _____ (name of the Bank) having its Registered Office at _____ and Corporate/Head Office at _____ (hereinafter referred to as the 'Bank', which expression shall, unless repugnant to the context or meaning thereof, include the successors, administrators, executors and assigns) do hereby guarantee and undertake to pay at any time up to _____ (day/month/year including claim period) an amount not exceeding Rs. _____, within ten (10) calendar days from the date of receipt by us on first written demand by Owner; through hand delivery or registered A.D. Post or by speed post or by courier, stating that "Contractor" has failed to perform its obligations under the Contract. Aforesaid payment will be made without any demur, reservation, contest, recourse or protest and/or without any reference to the Contractor. Any such demand made by the owner the Bank shall be conclusive and binding notwithstanding any difference between the Owner and Contractor or any dispute pending before any court, tribunal or any authority.



The Bank undertakes not to revoke this guarantee during its currency without previous consent of the Owner and further agrees that the guarantee herein contained shall continue to be enforceable till the Owner discharges this guarantee. The owner shall have the fullest liberty, without affecting in any way the liability of the Bank under this guarantee, to postpone from time to time the exercise of any powers vested in them or of any right which they might have against the Contractor, and to exercise the same at any time in any manner, and either to enforce or to forebear to enforce any covenants, contained or implied, in the Contract between the Owner and the Contractor or any other course of or remedy or security available to the Owner. The Bank shall not be relieved of its obligations under these presents by any exercise by the owner or by any other matters or thing whatsoever which under law would, but for this provision, have the affect of relieving the Bank. The Bank also agrees that the Owner at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Contractor and notwithstanding any security or other guarantee that the Owner may have in relation to the Contractors liabilities.

This Guarantee can be invoked in one or more trenches and in such a case Owner will not be required to submit the original Guarantee along with submission of claim.

Notwithstanding anything mentioned herein above our liability under this guarantee is restricted to Rs. _____ and it shall remain in force up to and including _____ shall be extended from time to time for such period as may be desired by the Contractor on whose behalf this guarantee has been issued.

WITNESS

BANK

Signature _____

Signature _____

Name _____

Name _____

(Bank's Rubber Stamp)

Seal, name & address of the Bank and address of the Branch

Designation with Bank Stamp

Attorney as per Power of Attorney No. _____

