

Invitation for Expression of Interest (EOI) for creation of hyper-realistic high-end gamified 3D virtual experience of treks in Sikkim to be delivered through virtual reality, augmented reality and/or mixed reality

Expression of interest are invited from State / Central Government Institutes, Autonomous Bodies, Educational Institutes of high repute, eminent academic institutes, research centres, reputed and experienced organizations/business entities having expertise in development of very high quality Virtual Reality and Augmented Reality content and delivering the same in different modes/platforms to create visualization and immersive experience of nature based tourist destinations in Sikkim.

Important milestones of the EOI are as given below:

Publication Date	08/03/2024
EOI Document download start date	08/03/2024
EOI Submission end date	08/04/2024
Date of Opening EOI	15/04/2024
Date of Presentation before Appraisal Committee	22/04/2024

Contact Information

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ABOUT THE PROJECT

Objective

Sikkim, known for its rich biodiversity and scenic beauty, is a sought-after ecotourism destination. The state's diverse landscape, flora, and fauna can be explored through treks, nature walks, and excursions. Although the beauty of this heritage is best appreciated in person, advancements in Virtual Reality (VR) technology now allow tourists to experience nature's beauty at their convenience. To give a realistic experience to the tourists in Sikkim, and to help them enjoy the beauty that the state offers in its original perspective through the comfort of a room, an ecotourism initiative is being proposed. It aims to capture the beauty of Sikkim through 3D digital reconstruction in a realistic form, and deliver it to users in a safe, user-friendly virtual reality and/or augmented reality experience for indoor presentations within a physical simulator.

Target Audience

The intended audience for the experience will be Indian and international tourists visiting the state of Sikkim of all ages. This will be housed in a VR Experience Centre in Sikkim.

Area proposed to be taken up

The Forest Department of Sikkim proposes to commence the creation of this VR experience with Dzungri trek in Gyalshing District of Sikkim. In addition, there are more treks, locations and viewpoints which are planned to be covered under this project subsequently.

Timeline for completion of Project

6 months from the date of issue of letter of intent.

Specifications & Scope of work

The agency/organization/institute may note the following specifications and the quantum of work involved while preparing their plans and proposals. The agency/organization/institute/business entities shall be responsible for:

1. Scanning of the trek which entails capturing its landscape, natural flora & fauna using some or all the scanning technologies such as 3D LIDAR, 3D Drone shoot, 360⁰ shoot, Photogrammetry, ultrasound and electromagnetic depending upon the requirement to get maximum details of object such as textures, colours, etc.
2. Ensuring that the native resolution of scan will be in 8K or higher to be at par with the best possible resolution available anywhere in the world as on date.
3. Creating textures and lighting in as realistic a way as possible depending on the requirement of the object scanned (after the scanning is done) to create the required finish of the whole landscape.
4. 3D model creation from the scanned cloud points and model optimization. Digital reconstruction of the plants, trees, stones, mountains, etc which are native to the state of Sikkim for gamification.
5. Developing a Virtual Reality app (VR app) with interactive modules and gamification built on top of the whole scan to enhance the user engagement through various features built using some or all game development techniques such as narrative design, input interactions, spatial and audio engineering, and others.
6. The experience should be developed in a 30–45-minute gamified format with a well-defined narrative. The experience should have well-defined start & end points with checkpoints in between as the user progresses within the experience.
7. The experience should provide layered information through various interactive elements such as interaction points, fact checks, virtual guides & quizzes depending on the narrative of the game.
8. Making necessary 3D reconstructions of the captured location to enable close interaction between the user and with the environment. This would involve engagement of very high-quality artists to clean the model.

These graphics/visuals created must be approved by the Forest Department of Sikkim after translating them into 3D reconstructions. The 3D renderings are to be done by incorporating the shapes, textures and the colours exactly resembling the location of the capture. The approval of officials from the Forest Department regarding the reconstructions made and authenticity of content created is mandatory. All suggestions made by such experts are required to be implemented to achieve the authenticity of all 3D generated graphics.

9. Creating Virtual reality-based application with interactive walkthroughs through a 3D game avatar.
10. The VR experience should be tied to a physical room-sized simulator to enable a deeper immersive experience for the user. The experience should have cues for physical simulation of sound, smell, etc, etc to enable a truly immersive experience. The bidder can creatively come up with solutions and new ideas for enabling this.
11. The content generated must be done keeping in view the possible technology developments and should be upgradable to new platforms.
12. Designing a physical room-sized simulator on the specifications given by the Forest Department for delivering the content to end users.
13. The room should be laid with sensors to enable interaction between the user's physical self and the VR experience.
14. Designing the required equipment and infrastructure required for storing, delivering/streaming the content to the end users through different experience enhancing modes in a user-friendly manner.
15. Exploring the feasibility of various Public-Private-Partnership models for the execution and operation of the project.

It may please be noted that the technologies and ideas mentioned here are indicative and may be extended further. Additionally, the Department of Forest and Environment shall reserve the right to use and determine the manner of use for various products developed in this project.

Expected Deliverables under this EOI

The Forest Department of Sikkim plans to get this VR experience to promote ecotourism and enable tourists to witness the beauty of the state with minimum environmental impact. The experience should be streamed in a highly realistic graphics mode at par with the international standards especially in the tourism sector.

1. Digitization of the identified location in very high resolution (8K) or higher, at par with the international best standards.
2. Digitization of the natural landscape along with its components through 3D scanning in very high resolution and providing the content to visitors through dedicated software to explore them in a gamified format.
3. Creation of interactive 3D virtual experience for viewing and experiencing the landscape of the location using various output displays such as (a) Head Mount Devices (HMDs) by 4 or less visitors simultaneously in different rooms; and (b) a high-end streaming device
4. Creation of augmented reality features within the experience with rich content for providing game-like features such as quizzes, guides. This content should have interaction such as walking, manoeuvring, rotation to see all sides of the experience.
5. Multi-dimensional physical room-simulator to provide a safe space to visitors to experience the VR app.
6. Creating a library of 3D contents generated for the above applications / delivery modes and providing the content generated in any other formats for future uses

DETAILS OF EXPRESSION OF INTEREST

Submission of Expression of Interest

Interested organizations/institutes/business entities who are confident of their capability to execute the work and having sound technical knowledge and capable to deliver the commitment within stipulated time frame may submit their Expression of Interest online in prescribed format to pccf-fewd@sikkim.gov.in

The proposals submitted will be scrutinized by a duly constituted committee. Selected organizations /business entities will be communicated by email (official email address of the responding organizations /business entities mentioned in their EOI) for making a presentation at Forest Secretariat, Deorali, Gangtok, Sikkim.

Expectations from Presentation

The presentation by the organization/institute/business entities should clearly bring out the technologies proposed to be used, methodology and strategies to be followed, experts to be engaged by them for various aspects of the project, their in-house capabilities, collaborators, technical partners, etc. in delivering the project under the scope of this EOI. It is expected that the organizations/business entities will bring out suitability and comparative assessment of various AR/VR technologies for the proposed VR application targeted at the specific features of the sites. They should also provide information about the similar projects executed by them earlier in past 2 years related to gaming, creation of photo-realistic 3D spaces and VR application along with the project costs, Project head for the current project under this EOI and his/her expertise domain for executing such projects.

Clarifications about the EOI

Any clarifications required about submission of EOI may be had from the office of DFO (T) Gyalshing up to the date as mentioned in the EOI document. (May be reached by email on dfotgyalshing@gmail.com)

Check List to be filled by the applying organization / institute

The following documents are required to be submitted by the agency/organization / institute which are willing to participate in this Expression of Interest:

1. Profile and details of the organization, project leader etc. issued on the official letter head of the organization as per Annexure - 1.
2. No objection certificate issued by the organization to take up the project/s by the proposing project head/team leader.
3. Write-up on the approach and methodology for implementation, operations, and maintenance of the project for next 1 year.
4. Technical details of the procedure and matching deliverables that can be achieved by the organization.
5. Details of technical partners / game designers/ 3D artists content experts / graphic artists etc. to be engaged by the organization to supplement / complement the existing expertise of the organization. The credentials and samples of the works/achievements of such experts to be clearly brought out in the technical presentation.
6. Details of previous and current projects handled/ being handled as per Annexure – 2.
7. Tentative cost for execution of the project including hardware and infrastructure costs for setting up the simulation in a physical room.
8. Non-Relation certificate.
9. Willingness to participate in the financial bid.

Only those bidders who participate in EOI Process will be eligible to submit bid for RFP which will be floated subsequently.

Annexure 1

Format for Submission of Organizational Details

(To be issued on the official letter head of the organization)

Name of the Organization/Institute	
Address for correspondence:	
Contact E-mail Address:	
Contact Phone numbers of Project leader & lead team members	
Details of technical partners/ consortium / Professionals engaged by them for this project:	
Experience and expertise of the project head/Organization in similar projects:	
Details of similar projects on which the project leader is currently engaged and likely date of completion of the current project.	
Name and designation of the authority who is authorized to sign agreement/MoU on behalf of the organization/institute.	
No Objection Certificate issued by the Head of Institute/organization for taking up of this project.	
Non-Relation Certificate issued by the lead project head nominated by the organization.	

It is certified that the information given above is correct to the best of my knowledge.

(_____)

Authorized Signatory

Place: _____

Date: _____

Annexure 2

Details of the similar works/projects undertaken and delivered by the applying institute/organization:

Sr. No.	Name of the Project	Name of Customer & project location	Scope of work	Duration of Project		Project cost (Rs. cr)	Remarks
				Start date	Completion date		
1							
2							
3							
4							
5							