PROPOSAL FOR PROOF OF PROTOTYPE

Thermovision

PROPOSAL SUMMARY

Project Title	Thermovision		
Proposed Total Budget	1.47 lakh rupees		
Estimated Duration to Prove Concept	8 Months		
Proposed Starting Date	August/2021	**Ending Date**	May/2022
Keywords (max. 4)	1. Covid Detection	2. Med Tech	
	3. Wildlife Conservation	4. Crop Protection	

Problem Statement

(What unmet need is addressed by technology)

- Standard imaging systems perform functions similar to that of the human eye and therefore cannot uncover hidden issues in things around us.
- Standard imaging systems do not perform well under lowlight conditions or in the absence of light.
- Measuring conditions like heat or temperature of objects around us and inferring results from them is a tedious process and cannot be solved by standard imaging systems.

Current State of Technology

Current systems perform singular functions solving simple tasks only in 2D.

The proposed 3D Thermal Imaging System performs the following:

- Tracking of subject
- Mapping and reporting
- Measuring temperature
- Measuring oxygen saturation levels
- Measuring intoxication levels
- Detecting sneezing/coughing
- Object detection/ face identification

What is required to further marketability

- Market Size: Includes all healthcare institutions, offices, factories, homes, agricultural and wildlife conservation sectors, and government bodies handling public places.
- Competitive landscape: Current competitors include systems that perform singular functions solving less complex tasks, mostly only in 2D.
- Timing: Current COVID period demands increased security measures worldwide, thereby requires organisations to adopt more advanced security systems.

Business opportunities for technology

(Market, applications, who will use)

- Covid Period: Fever screening, oxygen saturation, sneezing/coughing, mask detection, exposure of subjects to potential risks tracking, mapping and reporting, vaccination drives.
- Wildlife: Forest fire detection, animal count, migration pattern, highway passage protection, illegal hunting/ poaching.
- Medical: Preliminary screening, detection of peripheral vascular diseases, early breast cancer detection, diabetic foot pathology detection, Inflammation, circulation issues.
- Agriculture: Detection of plant diseases, pest intrusion detection, predicting water stress in crops, planning irrigation scheduling, predicting fruit yield, evaluating the maturity of fruits, bruise detection.

BUDGET

Head	Amount (Rs)	Justification
Raspberry Pi (4)	24000	Thermal camera interface
Thermal Camera (4)	40000	Thermal image sensing
Cables and adapters (4)	12000	Connections between components
Microphone (4)	8000	Detection of sneezing/ coughing
Standard camera (4)	10000	Object detection and identification
Monitor	3000	Processed live feed
Cloud infrastructure	10000	Storage of data
Consultation	40000	Expert consultation fee

Total: 1.47 Lakh Rupees

Team Details

S.No.	Role	Name with Register Number
1	Team Leader	Nitin Radhakrishnan RA1811003010196
2	Member	Lennox Sherwin RA1811003010189
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4	Member	Krishnanand G RA1811003010204
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6	Member	Siddhanth Satish
7	Mentor	Rajkumar R