PROJECT SUMMARY

Ref No.: MRIC-PCS-2104	**Title:** Modular vitals monitoring system using earlobe for headsets and fashion accessories
Local Company: Amalgam Watches Co Ltd	
Project Leader	
Mr Abdur Raheem Hosany	Amalgam Watches Co Ltd
Team Members	
Name	**Organisation**
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TECHNICAL ABSTRACT

This application is a continuation of my B.Tech capstone project (for a Biomedical Engineering degree from VIT University). This project scored an "A" during final evaluation phase (May 2020). The idea is to create a module that records the user's vital, including heart rate and oxygen saturation using PPG method (photoplethysmogram). A data processing algorithm will be performed after data acquisition. The results are stored for future reference via a deployed APP or SD card in supplied reports. The module is integrated in headsets based for the proposed applications.

The advantage of PPG at the earlobe (compared to other body locations) is the high data quality (90% correlation with ECG probes, source: project report). The application will be aimed at national and international consumers, focusing two main immobile applications on (I) Professional e-sports (II) Physiological-based surveys for studios, e.g music, movies. Other applications will be explored at the end of the projects (e.g Employee Productivity consultancy and healthcare).

The funding will be used to develop the appropriate technology, on hardware and software level and appropriate IP protection for a headset. Testing and iterative improvement will be conducted in-house until the results are satisfactory including 3D printed samples (SLA).

Key Words: Earlobe, heart rate, oxygen saturation, monitoring, PPG, gaming, headsets