Project: Heimdall | Mid-scale Positioning System

Individual Design project – UC Davis – California, 95616

ESSC Microgrants

UC Davis
One Shield Ave.
Davis, CA 95618

May 13, 2015

Dear Officer,

We are writing to apply for UC Davis Engineering Student Starup Microgrants Funding Program, looking for funding opportunity to make our idea to real.

Team: PIEC

Jonathan G. Tao: Junior year EE & CE double majors, will graduate at June, 2016
Yi Lu: Senior year EE & CE double majors, will graduate at June, 2015
Hengjiu Kang: Junior year Electrical Engineering major, will graduate at June, 2016

Summer plan during 2015

Jonathan G. Tao: TBD
Yi Lu: Because of being graduating during summer 2015, Yi is looking for career opportunity at California.
Hengjiu Kang: Registered summer session I at UC Davis. Will be in Davis till Aug.11 2015

Abstract

We believe that virtual-reality is the next generation of consumer electronics, or, the next generation of our perspectives to this world. Google glass, Hololens and Oculus Rift, all of those headset displays expand the three dimension real world a new layer: Cyber World, or Virtual World. For this future, a precise positioning system is critical to setup a universal coordinate system. We already have GPS for global positioning and iBeacon tech for in-door positioning, however we need a street-scale posistioning system serving for public users.

Our idea was coming from laser galvanometer and laser communication system. By modulating information into laser beam, end-device can decode its absolute coordinate.

The most important potential cusomers are those who are using virtual-reality devices, and this technolgy is also useful in industry, tracking products and components.

We have not start the project yet, but we have thought about it for years, and we decided to declare this project as our individual senior project. Additionally, Hengjiu Kang has developed a

basic laser communicating prototype boards during Summer 2014 in professor Xiaoguang, Liu's lab. The whole system has three divisions: Hardware design, software design and real product (Smart phone App). We plan to do them one by one in each quarter. Microgrant funds will be used to buy developing/Evaluation boards, and research components, including PCB fabrication cost.

Yours faithfully,

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