

Tongji-KNU Global Capstone Design Project (Proposal 1)

Project Title:

Beacon Localization Using Beacon Sensors with Drone

Project Period:

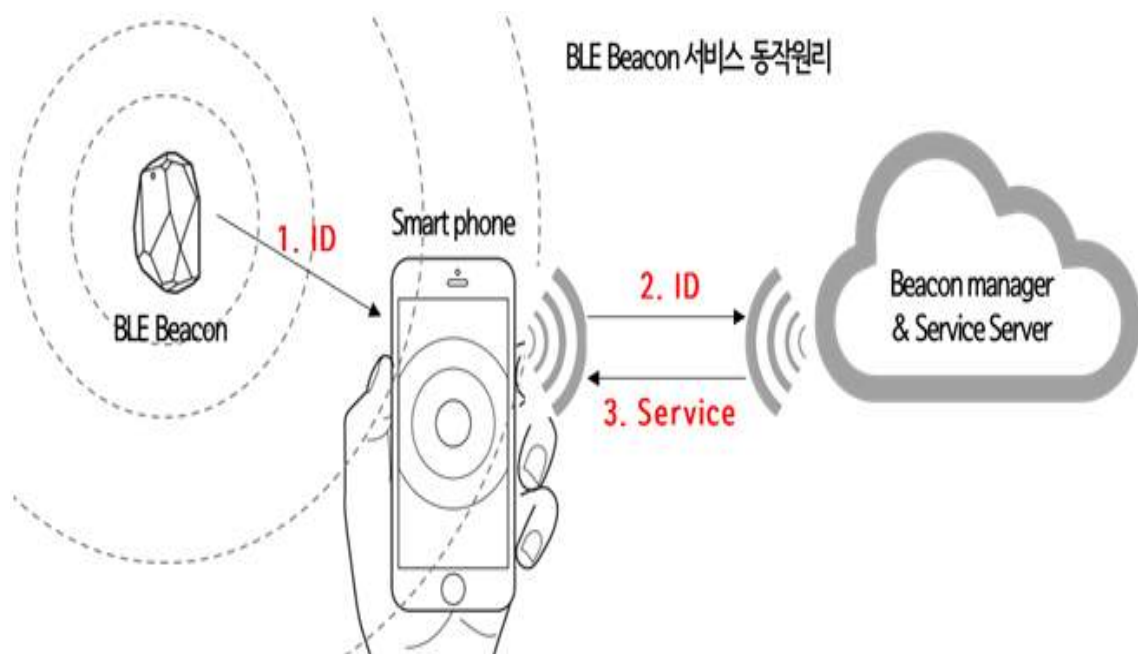
2016.3.1. ~ 2016.6.30. (4 months)

Project Advisor:

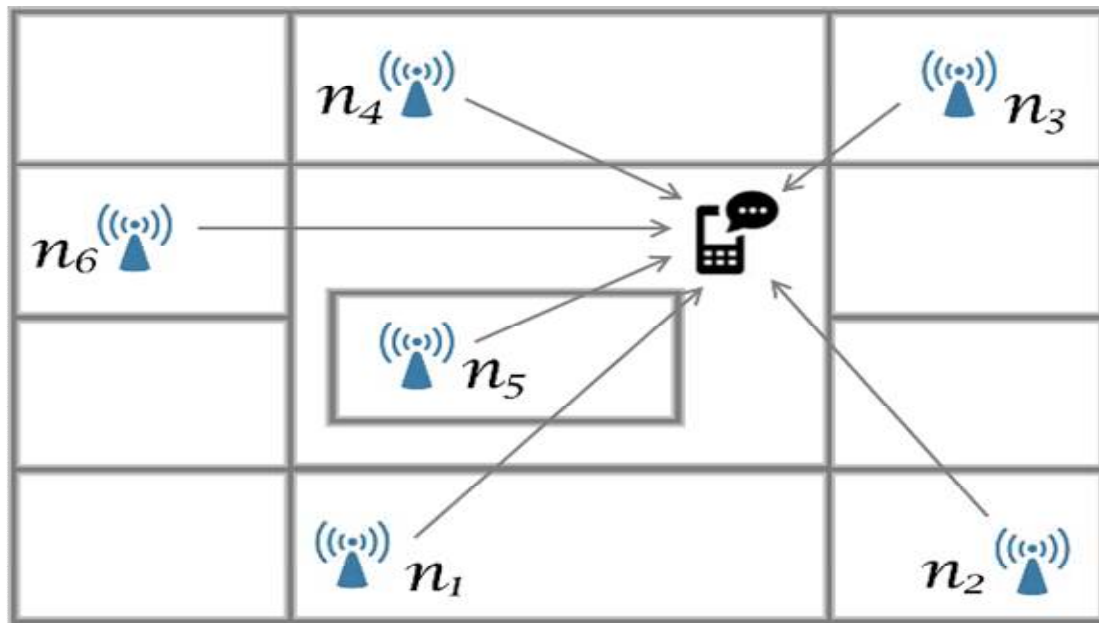
- 1) KNU/CSE: Ho-Kyoung Lee (Professor), E-mail: hokyoungee@knu.ac.kr
- 2) TJU/SSE: Hongfei Fan (Dr.), E-mail: fanhongfei@tongji.edu.cn

Background:

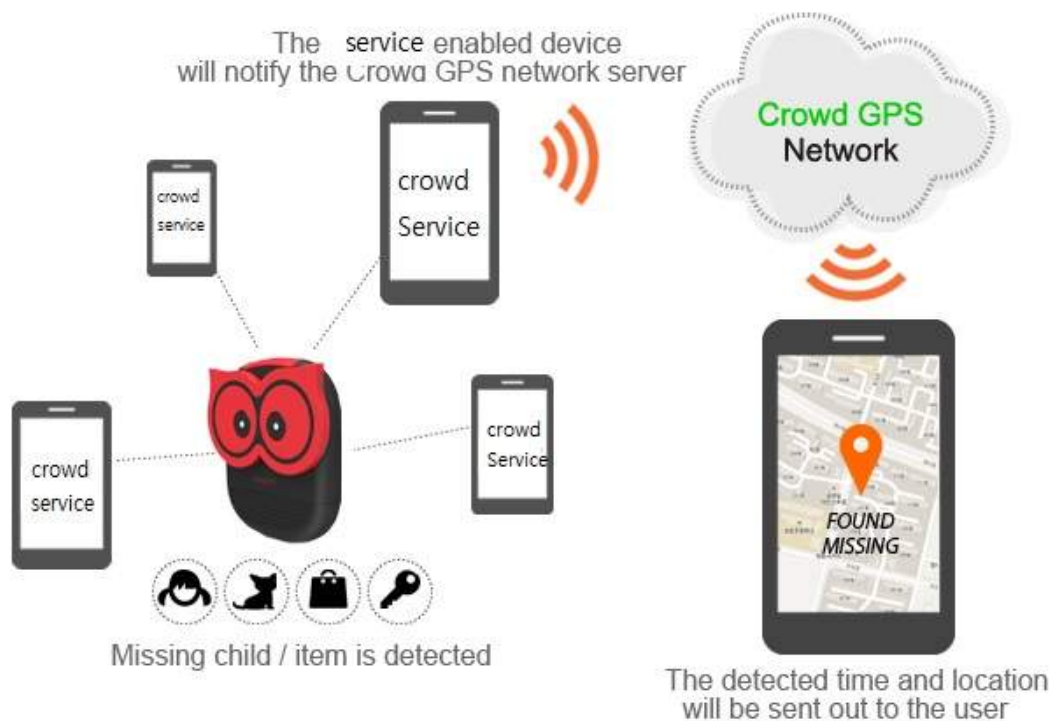
- ✧ Recently, the beacon-based technology is spotlighted to prevent missing children, pets and things



- ✧ Beacons technology can be used for indoor positioning because it can determine the location of a given target beacon in the number of meters away.



- ✧ Crowd GPS technology is a technique for positioning a target beacon in the outdoors using the smart phone of the members who subscribed the crowd GPS service.



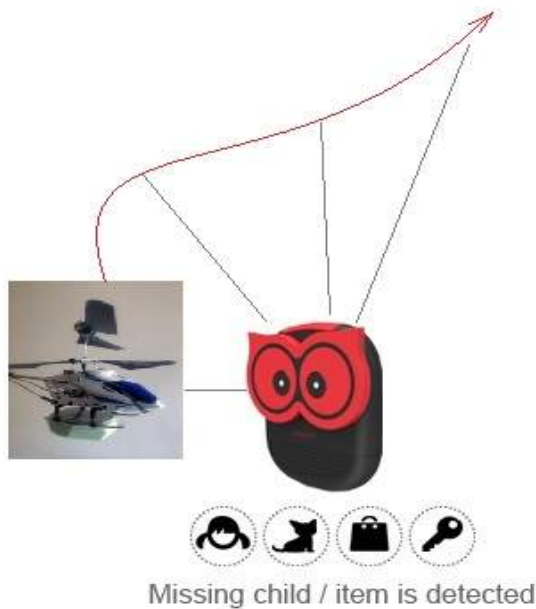
- ✧ When positioning using Crowd GPS system, if there are not any members around the target beacon then you can't identify the location of it.

There is no crowd service enabled device around the missing beacon



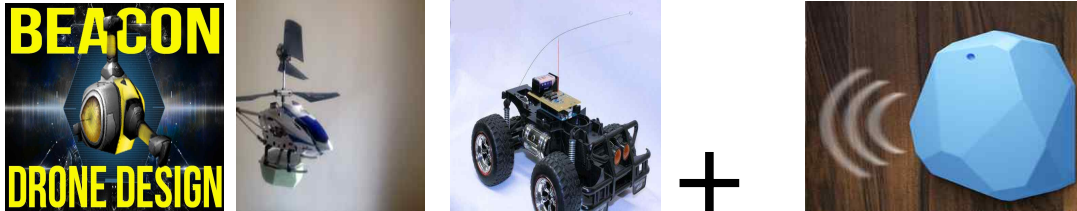
✧ If you have a portable beacon sensor which forms of drone or car,

- you can keep up with the moving target which equipped with a beacon.
- you could find missing children, pets or things equipped with a target beacon, by investigating a predictable area.



Project Objectives:

- ✧ Construction of a drone or a radio-controlled car which equipped with iBeacon sensor, which can follow a given iBeacon and can calculate the distance from a given beacon.



- ✧ If you want to locate a lost beacon, you could search expected area systematically using the developed mobile beacon sensor.
- ✧ Development of serve which can collect and can calculate the location of target beacon using the information collected by developed mobile type beacon sensor.
- ✧ Development of smart-phone applications which can view the location of given target beacons.

Project Schedule:

Each work will be done with on-line cooperation between KNU and Tongji students.

- ✧ 2016. 3. 15: Team Configuration (KNU 3~4 students, Tongji 3~4 students)
- ✧ 2016. 3. 30: Submission of detailed work plan from students (by KNU and Tongji)
- ✧ 2016. 4. 30: 1st report on project progress (in each school) and coordination
- ✧ 2016. 5. 30: 2nd report on project progress (in each school) and coordination
- ✧ 2016. 6. 30: final report on project progress (in each school) and coordination
- ✧ 2016. 7. : Presentation of Project Outcome in KNU-Tongji Workshop

Requirements (pre-requisites) for Students:

- ✧ Describe the requirements or pre-requisites for students to perform this project
- ✧ For example, C/C++ programing skills, Experiences on Linux, Open Source SW, etc
- ✧ Any other special requirements, if any.