

# Communication Support with Location-based Information

Hiroki Uematsu, Kosuke Numa, Masahiro Hamasaki, Ikki Ohmukai, Hideaki Takeda

Yokohama National University,  
79-2 Tokiwadai, Hodogaya, Yokohama, Kanagawa 240-8501 Japan  
National Institute of Informatics,  
2-1-2 Hitotsubashi, Chiyoda, Tokyo 101-8430 Japan  
uematsu@nii.ac.jp

## Abstract

In this paper, we propose the communication supporting system with location-based information such as landmarks. Our system provides cooperative aggregation environment for location-based information. The user can also communicate each other with.

## 1 Introduction

Moving one place to the other is an indispensable part of our daily life, i.e., we visit somewhere, meet somebody at somewhere, and even go by somewhere. Not only location is a key of our life but also a key of our communication. By sharing information on location, we can meet to each other, talk about locations, and exchange various information by specifying location. We aim to support such location-based communication with GPS and mobile phone environment.

Our key idea is to share “landmarking”. We often cite in our communication locations which we frequently visit or which is famous in some reasons. We call such a specific location “landmark”, and we provide an environment in which people can make landmarks anywhere they want, then they can share these landmarks if they want.

Our system supports two types of landmark. One is public space such as a park, a building and a station. The other is the area where people meet to make communication. Users make the “Landmark” based on latitude and longitude. And share them to communicate with.

## 2 Proposed systems

Our system consists of CGI application and database server. Users access the server with GPS-enabled mobile phone.

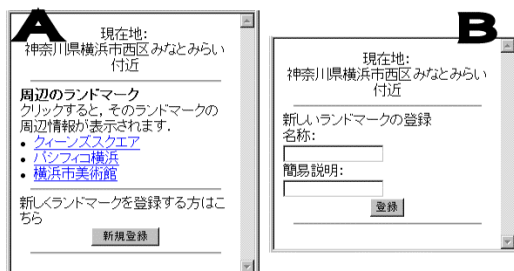


Figure 1 image of system

Figure 1 shows snapshots when users access our system. Users can enter their own location with mobile phone. CGI application receives location data with user information. System registers it to database. Users register own location data with latitude and longitude. However, Precise latitude and longitude are unnecessary for landmarking.

Accordingly, location data had better to be registered with ranges. So, our system registers location data by address and “Landmark”.

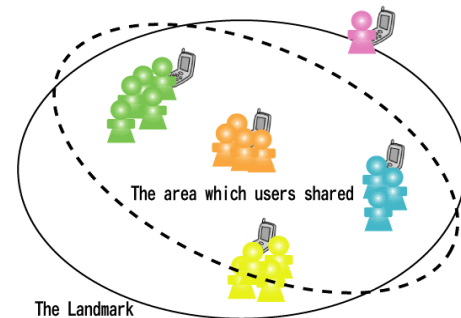


Figure 2 “Landmark” which is shared

In our system, users can name to the area registered as Landmark. Users can choose two types of landmark from Public-Landmark or Own-Landmark. Public-Landmark indicates a station or a park and anymore. Own-Landmark means what something like users own home. Figure 2 shows concept of Public-Landmark. Users can share Public-Landmark. One user entry the Public-Landmark and some other people entry their own location with using that landmark. We expect that public landmarks would grow up as common database for locations. Not all landmarks can be survived. Popularity of each landmark, i.e., how often it is used by users, can be used to determine whether it will be deleted from the database or not. Gradually only popular landmarks will be stored and served to users.

## 3. Conclusion

In this paper, we proposed the communication supporting system with location-based information. Using “Landmark”, the system provides an easy way to share location-based information among users.

We investigate the process of generating Landmarks as a future works.