An Abstract Location Model for Mobile Games

Leif Oppermann

Mixed Reality Lab
University of Nottingham
NG8 1BB, Nottingham, UK
lxo@cs.nott.ac.uk

A key task when building location-based applications, such as mobile games, is to model locations and to define how they are going to be triggered by the underlying technology. This is usually done by using the wireless sensing technology that is available on the desired target device, e.g. GPS, Wi-Fi, Cell ID, Infrared, Bluetooth, NFC, etc. – or a combination of those. This paper argues that it is beneficial to employ a location model that supports deriving locations from different positioning technologies through an abstract interface, so as to be more flexible for technical changes throughout the development phase and, with software patches becoming commonplace, also over the life-cycle of the project.

The full paper, which is available in the digital proceedings, elaborates on why a distinction between positioning technology and a notion of *abstract locations* is useful, and also presents a concrete model that has been used in practical work. This model is based on the author's own practical experience of building several location-based mobile games that employed different positioning technologies. Theoretically, the presented model is grounded in Harrison's and Dourish's distinction of *space* and *place* [1], which it appropriates to be more flexible about the definition of space. Harrison and Dourish came from a human factors perspective as they argued that *"space is the opportunity, place is the understood reality"* – meaning that places are spaces that are accepted and used by humans. The colloquial example in this sense is the difference between a house and a home: a house is a physical structure that protects from weather, but a home is a cherished place where people live. Places are what designers of mobile games ultimately strive for, as they provide meaning and, hopefully, fun interaction.

In short, the location model presented in the full paper subdivides space into *position* and *abstract location* in order to account for diverse technical circumstances. This abstraction decouples the idea of space from any particular metric and allows developers of mobile games to easily switch between different positioning technologies without having to redesign their whole application; it thus facilitates the development.

References

[1]   S. Harrison and P. Dourish, "Re-Place-ing Space: The Roles of Place and Space in Collaborative Systems," presented at CSCW, 1996.