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ジオインタラクティブ・ガイドブック・サービス：位置連動イラストに基づく位置情報アプリケーションの設計と開発
Geo-interactive Guidebook Services: Design and Development of LBS Applications Featuring Geo-enabled Illustrations

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The current location-based mobile applications for tourists usually use Web maps as base maps with attached objects like POIs (points of interest) to provide relevant guide information. Their services rely on accuracy of positioning functions on the handsets and accessibility of the Web maps. However, their diversity of maps and geo-information representation methods are insufficient, and are regardless of the differences in cultures as well as target users. Meanwhile, such services provide information mainly based on points, but storytelling and plots are less concerned. On the other hand, conventional paper-based guidebooks and magazines are still popular because they are good at dealing with subdivided topics, content arrangement, illustrations and stories to provide tentative travel plans with attractiveness and readability. However, they lack the capability of interactions with readers' actions and locations.

In considering of combining the advantages of positioning-enabled devices and well-designed guidebooks, we researched on a framework to create geo-enabled pages for designing applications and services providing better user experience when traveling in the real world. By analyzing the graphic components of the pages of a guidebook from the viewpoint of geo-information representation, a structured description of both graphic and geographic information of the components is established. Different geo-reference methods for geocoding the components are discussed. Especially, the methods of positioning using illustrated-maps and lines on pages are focused. Possible location-based events in the procedures of interactions with users and their locations are summarized. The design principles of user interfaces for both content creators and final users are discussed.

Finally, prototypes named "Manpo" including a content editor and a content browser are developed based on Apple Inc.'s iOS platform. Contents created by the prototype editor from existing guidebooks were used with Manpo by experimenters, to show the usability of the framework and the potential to be a commercial product.

Keywords: guidebooks, illustrated maps, geo-reference, mobile applications