

Android e-Tourism Application Tourist Assistant - TAIS

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Abstract—This paper presents an e-Tourism application for supporting a tourist in a region. The application recommends the tourist attractions that is interested to him/her based on the tourist preferences and the current situation in the region. Attractions and their descriptions & images are extracted from accessible Internet sources (like Wikipedia, Wikivoyage, Panoramio). They are ranged by the recommendation component of the application. Recommendations are based on ratings set by the tourists that use the application. The paper describes the service-based application architecture, ontology for intelligent tourist Assistant services interaction, and evaluation. Developed application is accessible for download in Google Play market for Android device users.

Application architecture is based on Smart-M3 information sharing platform that implement smart space concept. It makes possible to significantly simplify further development of the system, include new information sources and services, and to make the system highly scalable. The key idea of this platform is that the formed smart space is device, domain, and vendor independent. Smart-M3 assumes that devices and software entities can publish their embedded information for other devices and software entities through simple, shared information brokers. Platform is open source and accessible for download at Sourceforge.

Tourist Assistant consists of several services that solving particular tasks and interact in smart space. Interaction is based on presented on the service ontologies. The every ontology defines the main concepts and relationships for the particular service. There are the following services have been developed for tourist assistant application: attraction information

service, recommendation service, administration service, context service and mobile client. Attraction information service extracts the information about attractions from different Internet sources and shares it with the smart space. Recommendation service takes the lists of shared attractions, their images and descriptions and range this lists according the tourist preferences and context situation in the considered area shared with the smart space by context service. It uses for automated filtering and ranking two approaches: content analysis and user evaluation. Administration service allows to setup the following parameters for the tourist assistant operation: attractions searching radius, recommended attractions count, smart space waiting time, new default items count, images searching radius for main page, GPS inquire timeout, and changing location for GPS inquire. Using the mobile client for accessing to the tourist assistant allows the tourist to see recommendation about attractions in the region during the trip and rate the attractions, photos and their descriptions.

In the Fig. 1 the architecture of tourist assistant is presented. Mobile client shares with the smart space the tourist context information like coordinates and his/her preferences. Attraction Information Service acquires from different Internet sources attraction information (a list of attractions around the tourist, images and their descriptions). The recommendation service analyzes the attraction information and tourist preferences estimations and provides recommendations for the tourist. Mobile client shows these recommendations for the tourist. Administration Service allows to set special settings, which allows to tune tourist assistant with balance between quickness and recommendations quality. Context Service provides weather information in the region around the tourist.

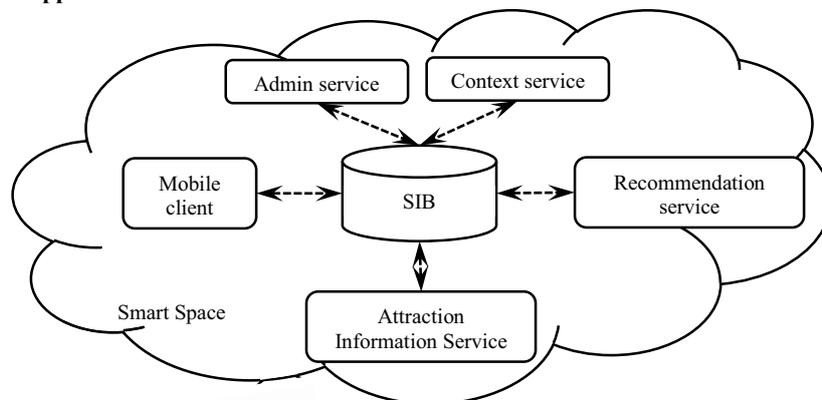


Fig. 1. General Architecture of tourist assistant