

**Review Form: 1<sup>st</sup> International Workshop on  
Services and Infrastructure for the Ubiquitous and Mobile Internet (SIUMI'05)**



**SIUMI 2005**

**WEB MINDS**

Columbus, Ohio,  
USA, June 6<sup>th</sup>, 2005

In conjunction with the 25th Int. Conference on Distributed Computing Systems (**ICDCS'05**)

Paper Number: 07

Paper Title: Indoor and outdoor location based services for portable wireless devices

Authors: C. di Flora, M. Ficco, S. Russo, V. Vecchio

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**Reviewer 1:**

<b>Familiarity</b> Rate your familiarity with the topic	1	2✓	3	4	
	Novice	Some knowledge	Familiar	Expert	
<b>Significance</b> Technical relevance and practicality of ideas in the paper	1	2 ✓	3		
	Not significant	Somewhat significant	Highly significant		
<b>Novelty</b> How original the problem and/or solution method is	1	2 ✓	3		
	Not novel	Somewhat novel	Highly novel		
<b>Quality of Presentation</b> Writing and presentation style/accuracy	1	2	3✓		
	Poorly written	Could be improved	Well written		
<b>Overall Recommendation</b>	1	2	3	4✓	5
	Strong reject	Weak reject	Weak accept	Accept	Strong accept

**Contributions**

The paper proposes a middleware that allows a combined use of indoor and outdoor location-sensing technologies. The paper is well written and clearly presents the proposed solution.

**Strengths and weaknesses**

The paper proposes an interesting integrated middleware for supporting indoor and outdoor location-based services for portable wireless devices. The proposed solution is clearly described and seems to be technically sound. Notwithstanding, I would suggest authors to better clarify the contribution and novelty of the proposal with regard to other state-of-the art solutions.

**Detailed public comments**

## **Reviewer2:**

<b>Familiarity</b> <b>3</b> Rate your familiarity with the topic	1	2	3	4	
	Novice	Some knowledge	Familiar	Expert	
<b>Significance</b> <b>3</b> Technical relevance and practicality of ideas in the paper	1	2	3		
	Not significant	Somewhat significant	Highly significant		
<b>Novelty</b> <b>2</b> How original the problem and/or solution method is	1	2	3		
	Not novel	Somewhat novel	Highly novel		
<b>Quality of Presentation</b> <b>3</b> Writing and presentation style/accuracy	1	2	3		
	Poorly written	Could be improved	Well written		
<b>Overall Recommendation</b> <b>4</b>	1	2	3	4	5
	Strong reject	Weak reject	Weak accept	Accept	Strong accept

## **Contributions**

This paper studies the implementation issues of designing a software architecture that makes a combined use of indoor and outdoor location-sensing technologies. These issues are important because mobile devices, such as PDA's and cell-phones, can move from indoor to outdoor and vice versa. The paper proposes a new and novel idea for specifying the location of a mobile device, called zoning. Instead of using specific coordinates, the new method expresses the location of a device by its physical zone where it is located. The zoning concept is extended to both indoor and outdoor scenarios. Some implementation details are described. Overall, it is a well-written paper for this workshop.

## **Strengths and weaknesses**

The paper is well written. The problem and the proposed solution are clearly described at the beginning. It is rather easy to read the paper. The overall architecture of the proposed software solution is described in reasonable detail. Overall, there are more strengths than weaknesses. One weakness is in Section 5: The paper would have been much stronger if it had reported more experiences and lessons learned in the experimental test-bed.

## **Detailed public comments**

Overall, this is a well-written paper for this workshop. The problem addressed is interesting and important: To design a single unified software system that can deal with both indoor and outdoor location-based services. The idea proposed is also interesting: To use a predefined "zone" for expressing the location of a mobile device. Enough details are provided in the paper that readers can appreciate the implementation issues. Nevertheless, I think the authors could provide more details on the experiences and lessons learned in their experimental test-bed.

### **Reviewer 3:**

<b>Familiarity</b> Rate your familiarity with the topic	1	X 2		3	4
	Novice	Some knowledge		Familiar	Expert
<b>Significance</b> Technical relevance and practicality of ideas in the paper	1		2		X 3
	Not significant		Somewhat significant		Highly significant
<b>Novelty</b> How original the problem and/or solution method is	1		X 2		3
	Not novel		Somewhat novel		Highly novel
<b>Quality of Presentation</b> Writing and presentation style/accuracy	1		X 2		3
	Poorly written		Could be improved		Well written
<b>Overall Recommendation</b>	1	2	3	X 4	5
	Strong reject	Weak reject	Weak accept	Accept	Strong accept

### **Contributions**

The paper addresses the problem of a uniform access to location information regarding users switching from outdoor to indoor locations (and vice versa). A uniform interface to location information seems mandatory for a convenient development of LBSs. The authors propose an easily deployable, low-cost solution based on a coarse-grained specification of location areas, and on GPS and Bluetooth as positioning systems. A running prototype is implemented, based on state-of-the-art technologies.

### **Strengths and weaknesses**

The proposed solution is based on a coarse-grained specification of location areas which seems adequate for a number of location-based services. Moreover, the positioning infrastructure based on GPS and Bluetooth makes the system easily deployable in real-world scenarios. The proposed architecture is based on established technologies. It comprises a client-side implementation of the Location API for J2ME specification (JSR-179) and server modules for keeping up-to-date the users' location and for providing it to location-aware applications.

The authors claim that the indoor positioning technique based on Bluetooth is effective, but no experimental results are given.

Privacy concerns are not taken into account.

### **Detailed public comments**

The use of Bluetooth for indoor positioning makes the architecture easily deployable, given the wide adoption of Bluetooth devices. However, is your technique based on RSSI and BER really effective? Experimental results and a comparison with other techniques would give more strength to your solution.

You do not consider privacy in your implementation. The architecture would benefit from a client-side mechanism for specifying trusted services and infrastructures. Maybe this feature is not taken into account by JSR-179?

The paper reads quite well (a lot of "such a"!).

The "Location Event Sink" is sometimes called "Local Event Sink" throughout the paper.