

Transmitting Multi-sized Location-based Services to the End Users Using New Dynamic Mode

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Abstract—This paper presents a new dynamic methodology for data flow management in mobile communications, mainly Location-based Services (LBS). Previously, the data used to be streamed from the LBS server to the end users with a fixed size, but this new mechanism is designed to broadcast data according to both the user's location as well as their mobile available resources. Hence, each user receives different size and quality of services. This mechanism was tested using different network speeds, the results showed that it efficiently manages the bandwidth, which proves its significant impact on enhancing the overall LBS performance.

Keywords: Location Based Services LBS; Pedestrian Navigation; Mobile Computing; Data-Flow Management

CONCLUSION

In this paper, a new dynamic Zone-based Update Mechanism for improving LBS performance was presented and evaluated. This mechanism is called Intelligent Resource Monitor (IRM). A simplified prototype was implemented and evaluated using a laptop mobile device. The results obtained from this work showed that this mechanism has significantly contributed to managing the size of information sent from the LBS server to the end user. Subsequently, the benefits of this new mechanism have been evaluated by comparing its functions with current systems. The results showed that the new mechanism has minimised the time, effort, and cost which might be added due to uploading redundant information or by losing data.

When the IRM was tested using different network speeds, the results showed how the IRM automatically changes the size of data retrieved according to the change of wireless connection speed. This prevents any network congestion, and efficiently manages the bandwidth, which proves that IRM mechanism has a significant impact on enhancing the overall LBS performance.

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