## AIM - Adaptive Invalidation Mechanism for Wireless Networks

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*Abstract*— With the advent and advancement of mobile technology, there has been a significant increase in accessing the Internet services and information wirelessly. One of key optimization techniques is to cache frequently accessed data items in a local cache. In Invalidation report (IR) based cache invalidation mobile nodes access the cached data items to answer a query only after receiving an IR that is periodically broadcasted by a server. This may unnecessarily increase the query delay for waiting towards next IR. To provide broadcast support to nodes distributed over different wireless cells, IR incurs communication overhead. In this paper, we propose a data access scheme with low cache consistency scheme based on the poll-each-request (PER) cache invalidation framework, called Poll Each Request-Weak Consistency (PER-WC). Unlike prior approach, where every node has the same consistency level with the server, each node is able to set its own target consistency level independently. We designed a customized simulation framework to conduct our experiments using the CSIM, which is a popular development toolkit for discrete-driven simulation and modeling. We vary key simulation parameters to measure the performance. Our results show that the proposed scheme can reduce the query delay.

## Keyword-Internet of Things, Wireless sensor Networks, Security, Privacy, Trust



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