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Abstract

To incorporate the computation and communication with the physical world, next generation architecture i. e. CPS is viewed as a new technology. To improve the better interaction with the physical world or to perk up the electricity delivery usage, various CPS based approaches have been introduced. Recently several GPS equipped smart phones and sensor based frameworks have been proposed which provide various services i. e. environment estimation, road safety improvement but encounter certain limitations like elevated energy consumption and high computation cost. To meet the high reliability and safety requirements, this paper introduces a novel approach based on QCPS model which provides several users services (discussed in this

paper). Further, this paper proposed a Transport Information System (TIS), which provide the communication with lower cost overhead by arranging the similar sensors in the form of grids. Each grid has a coordinator which interacts with cloud to process the user query. In order to evaluate the performance of proposed approach we have implemented a test bed of 16 wireless sensor nodes and have shown the performance in terms of computation and communication cost.

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Index Terms

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Keywords

QCPS; Heterogamous sensor networks; Cyber Physical Systems; Transport;