Abstract

Among many Infrastructures based Middle-ware proposed Global Sensor Network (GSN) is one among them to mitigate the co-existence issue to interconnect IP based and legacy Wireless Sensor Networks. It is an open-source, Infrastructure based abstraction Middle-ware developed in Java. Though there are advantages like simplicity, adaptability, lightweight and scalability, there are still few areas for improvement. This paper attempts to identify those, propose an enhanced architecture and analyze with a case-study. Data-Acquisition module is
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one area to peek in. GSN represents every WSN as a Virtual Sensor (VS) using XML. Based on its requirements, each user application aggregates data from various Wireless Sensor Networks (Virtual Sensors). As the data format is Virtual Sensor specific, it is the responsibility of every heterogeneous user application to identify and resolve data discrepancy if any. Moreover, the data aggregation method employed is not explicitly described and when investigated, is no different than the lower level abstractions. Hence this paper proposes an enhanced architecture with an adaptable data aggregation achievable via integrated Network Coding and a global data format as part of the Middle-ware.

References

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