Abstract

During the past few years there has been an explosive growth in the research devoted to the field of wireless sensor networks (WSN). These networks use hundreds to thousands of inexpensive wireless sensor nodes over an area for the purpose of monitoring certain phenomena and capture geographically distinct measurements over a long period of time. The pervasive interconnection of such nodes has given birth to a broad class of exciting new applications in several areas of our lives, including environment and habitat monitoring,
healthcare applications, home automation, and traffic control. Up to now most of the works
focused on designing routing protocols to address energy consumption issue, fault tolerance of
WSN. In our work we designed a model which is based on service oriented architecture (SOA)
for the management of WSN through internet mainly. Our model builds a standardized interface
between a WSN and external IP network. Designed gateway that offers a synthesis of web
services offers by the WSN assuring its entire management. Furthermore, Authentication,
Authorization and Accounting mechanism has been implements to provide security services.

Reference

1. Priyantha Nissanka B, Kansal Aman, Goraczko Michel, and Zhao Feng. Tiny web
services: design and implementation of interoperable and evolvable sensor networks. In
Proceedings of the 6th ACM conference on Embedded networksensor systems, SenSys ’08,
pages 253–266, New York, NY, USA, 2008. ACM.

2. Chien-Liang Fok, Gruia-Catalin Roman, and Chenyang Lu. Enhanced coordination in
sensor networks through flexible service provisioning. In Proceedings of the 11th International
Conference on Coordination Models and Languages,COORDINATION ’09, pages 66–85,

3. Graham, S. et al., Building Web Services with Java: Making Sense of XML, SOAP,

Differences and commonalities of service-oriented device architectures,wireless sensor
networks and networks-on-chip. In Proceedings of the 2009 International Conference on
Advanced Information Networking and Applications Workshops, WAINA ’09, pages 482–487,

5. Intanagonwiwat, C., Govindan, R., and Estrin, D., “Directed diffusion: a scalable and
robust communication paradigm for sensor networks”, in Proc. of the ACM/IEEE International
Conference on Mobile Computing and Networking (MobiCom 2000), pp. 56-67,Boston, MA,
USA, Aug 2000.


7. Intanagonwiwat Chalermek, Govindan Ramesh, and Estrin Deborah. Directed diffusion: a
scalable and robust communication paradigm for sensor networks.In Proceedings of the 6th
annual international conference on Mobile computing and networking, MobiCom ’00, pages
56–67, New York, NY USA, 2000. ACM.

oriented architecture for heterogeneous and dynamic sensor networks.In Proceedings of the
second international conference on Distributed eventbased systems, DEBS ’08, pages
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