



International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 6, June 2015

Anti-Void Traversal for Wireless Network

Jennifer .P¹, Muthu Kumaravel .A², Kannan Subramanian³

¹Assistant Professor, Department of MCA, Bharath University, Chennai, Tamil Nadu, India

²HOD, Department of MCA, Bharath University, Chennai, Tamil Nadu, India

³Assistant Professor, Department of MCA, Bharath University, Chennai, Tamil Nadu, India

ABSTRACT: The unreachability problem (i.e., the so-called void problem) that exists in the greedy routing algorithms has been studied for the wireless sensor networks. Some of the current research work cannot fully resolve the void problem, while there exist other schemes that can guarantee the delivery of packets with the excessive consumption of control overheads.

Moreover, the hop count reduction scheme is utilized as a short-cutting technique to reduce the routing hops by listening to the neighbor's traffic, while the intersection navigation mechanism is proposed to obtain the best rolling direction for boundary traversal with the adoption of shortest path criterion.

In order to maintain the network requirement of the proposed RUT scheme under the non-UDG networks, the partial UDG construction (PUC) mechanism is proposed to transform the non-UDG into UDG setting for a portion of nodes that facilitate boundary traversal. These three schemes are incorporated within the GAR protocol to further enhance the routing performance with reduced communication overhead. The proofs of correctness for the GAR scheme are also given in this paper.

I. INTRODUCTION

The greedy routing algorithm has been studied for the unreachability problem (i.e void problem) in the wireless sensor networks. Some of the current research work cannot fully resolve the void problem, while there exist other schemes that can guarantee the delivery of packets with the excessive consumption of control overheads.

In our application, a greedy anti void routing (GAR) protocol is proposed to solve the void problem with increased routing efficiency by exploiting the boundary finding technique for the unit disk graph (UDG).

The proposed rolling-ball UDG boundary traversal (RUT) is employed to completely guarantee the delivery of packets from the source to the destination node under the UDG network. The boundary map (BM) and the indirect map searching (IMS) scheme are proposed as efficient algorithms for the realization of the RUT technique.

Moreover, the hop count reduction (HCR) scheme is utilized as a short-cutting technique to reduce the routing hops by listening to the neighbor's traffic, while the intersection navigation (IN) mechanism is proposed to obtain the best rolling direction for boundary traversal with the adoption of shortest path criterion.

In order to maintain the network requirement of the proposed RUT scheme under the non-UDG networks, the partial UDG construction (PUC) mechanism is proposed to transform the non-UDG into UDG setting for a portion of nodes that facilitate boundary traversal. These three schemes are incorporated within the GAR protocol to further enhance the routing performance with reduced communication overhead. The proofs of correctness for the GAR scheme are also given in this project. Comparing with the existing localized routing algorithms, the simulation results show that the proposed GAR-based protocols can provide better routing efficiency.

II. IMPLEMENTATION

Existing System:

As mobile computing requires more computation as well as communication activities, energy efficiency becomes the most critical issue for battery-operated mobile devices [1]. Specifically, in ad hoc networks where each node is responsible for forwarding neighbor nodes' data packets, care has to be taken not only to reduce the overall energy consumption of all relevant nodes but also to balance individual battery levels.

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

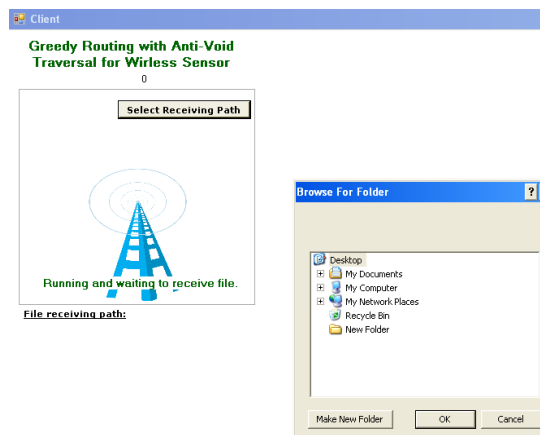
Vol. 3, Issue 6, June 2015

Unbalanced energy usage will result in earlier node failure in overloaded nodes, and in turn may lead to network partitioning and reduced network lifetime. Localized routing algorithms which achieves a trade-off between balanced energy consumption and shortest routing delay, and at the same time it avoids the blocking and route cache problems [2].

Overview of the Proposed System:

In this application, a greedy anti-void routing protocol is proposed to solve the void problem with increased routing efficiency by exploiting the boundary finding technique for the unit disk graph. [6]The dead end problem in greedy forwarding is an important **issue** of location based routing in sensor networks [3]. It occurs when a message falls into a local minimum using greedy forwarding. Current solutions to this problem are insufficient in either eliminating traffic/path memorization or finding satisfactory short paths.

The proposed rolling-ball UDG boundary traversal is employed to completely guarantee the delivery of packets from the source to the destination node under the UDG network. The boundary map (BM) and the indirect map searching scheme are proposed as efficient algorithms for the realization of the RUT technique. [5] ARP is also a new position-based routing protocol that uses an improved geographic forwarding to route packets to the destination as and when possible. If the geographic forwarding fails, it uses an angle-based forwarding scheme to circumvent voids in sparser networks.



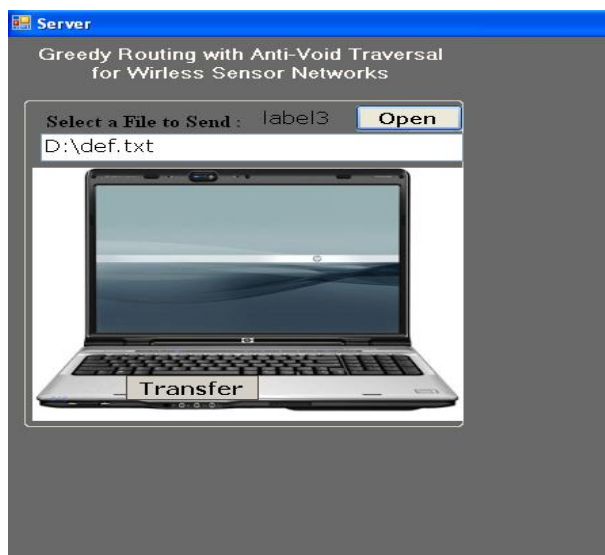
PATH SCREEN

[7]Greedy geographic routing has been considered as an attractive approach due to its simplicity and scalability [4]. Client-server computing or networking is a distributed application architecture that partitions tasks or workloads between service providers (servers) and service requesters, called clients. Often clients and servers operate over a computer network on separate hardware. A server machine is a high-performance host that is running one or more server programs which share its resources with clients. A client also shares any of its resources; Clients therefore initiate communication sessions with servers which await (listen to) incoming requests.

International Journal of Innovative Research in Computer and Communication Engineering

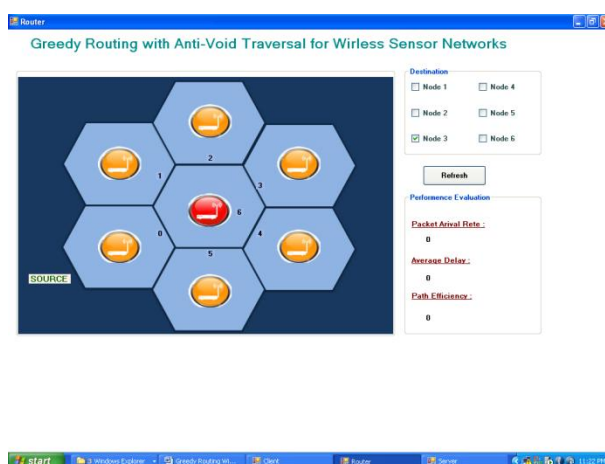
(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 6, June 2015



SELECTING FILE SCREEN

The RUT scheme is adopted to solve the boundary finding problem, and the combination of the GF and the RUT scheme (i.e., the GAR protocol) can resolve the void problem, leading to the guaranteed packet delivery. The definition of boundary and the problem statement are described as follows: Definition 1 (boundary). If there exists a set B such that 1) the nodes in B form a simple unidirectional ring and 2) the nodes located on and inside the ring are disconnected with those outside of the ring, B is denoted as the boundary set and the unidirectional ring is called a boundary [8].

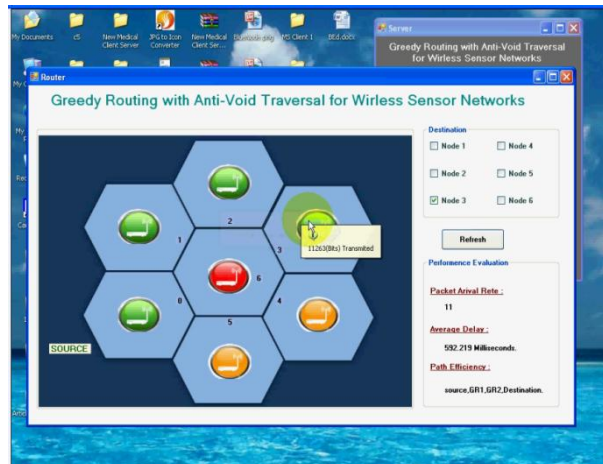


DATA TRANSFER SCREEN

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 6, June 2015



The objective of the GAR protocol is to resolve the void problem such that the packet delivery from NS to ND can be guaranteed [11]. Before diving into the detail formulation of the proposed GAR algorithm, an introductory example is described in order to facilitate the understanding of the GAR protocol, the data packets initiated from the source node NS to the destination node ND will arrive in NV based on the GF algorithm [9]. The void problem occurs as NV receives the packets, which leads to the adoption of the RUT scheme as the forwarding strategy of the GAR protocol [10]. A circle is formed by centering at SV with its radius being equal to half of the transmission range $R/2$.

III. CONCLUSION

Because of the low energy consumption and less amount of packet loss greedy routing algorithm is used for the transfer of packets. Main advantage of greedy routing algorithm is effective routing when compare to other algorithms. In this application, a UDG-based GAR protocol is proposed to resolve the void problem incurred by the conventional GF algorithm. The RUT scheme is adopted within the GAR protocol to solve the boundary finding problem, which results in guaranteed delivery of data packets under the UDG networks. The BM and the IMS are also proposed to conquer the computational problem of the rolling mechanism in the RUT scheme, forming the direct mappings in between the input/output nodes. The proposed GAR algorithms can guarantee the delivery of data packets under the UDG network.

IV. FUTURE ENHANCEMENT

In future, we can enhance our idea by implementing this task for sending a multiple of datas at a same time while one data is travelling to another node. In this current research datas will reach its destination even if one of the nodes becomes failure, in future we can develop this application to make datas travel even there is more failure in node network. Even we can make increase the data travel speed in future implementation.

REFERENCES

1. N. Arad and Y. Shavitt, "Minimizing Recovery State in Geographic Ad-Hoc Routing," *Proc. ACM MobiHoc '06*, pp. 13-24, May 2006.
2. Das M.P., Jeyanthi Rebecca L., Sharmila S., "Evaluation of antibacterial and antifungal efficacy of Wedelia chinensis leaf extracts", *Journal of Chemical and Pharmaceutical Research*, ISSN : 0975 – 7384, 5(2) (2013) pp.265-269.
3. J. Na, D. Soroker and C.K. Kim, "Greedy Geographic Routing Using Dynamic Potential Field for Wireless Ad Hoc Networks," *IEEE Comm. Letters*, vol. 11, no. 3, pp. 243-245, Mar. 2007.
4. Subhashini V., Ponnusamy S., Muthamizhchelvan C., "Growth and characterization of novel organic optical crystal: Anilinium d-tartrate (ADT)", *Spectrochimica Acta - Part A: Molecular and Biomolecular Spectroscopy*, ISSN : 1386-1425, 87(0) (2012) pp.265-272.
5. H. Frey and I. Stojmenovi&ccacute;, "On Delivery Guarantees of Face and Combined Greedy Face Routing in Ad Hoc and Sensor Networks," *Proc. ACM MobiCom '06*, pp. 390-401, Sept. 2006.
6. Thomas J., Ragavi B.S., Raneesha P.K., Ahmed N.A., Cynthia S., Manoharan D., Manoharan R., "Hallermann-Streiff syndrome", *Indian Journal of Dermatology*, ISSN : 0019-5154, 58(5) (2013) pp.383-384.



ISSN(Online): 2320-9801
ISSN (Print): 2320-9798

International Journal of Innovative Research in Computer and Communication Engineering

(An ISO 3297: 2007 Certified Organization)

Vol. 3, Issue 6, June 2015

7. V.C. Giruka and M. Singhal, "Angular Routing Protocol for Mobile Ad Hoc Networks," Proc. IEEE Int'l Conf. Distributed Computing Systems Workshops (ICDCSW '05), pp. 551-557, June 2005.
8. Subha Palaneeswari M., Ganesh M., Karthikeyan T., Manjula Devi A.J., Mythili S.V., "Hepcidin-minireview", Journal of Clinical and Diagnostic Research, ISSN : 0973 - 709X, 7(8) (2013) pp.1767-1771.
9. L. Zou, M. Lu, and Z. Xiong, "A Distributed Algorithm for the Dead End Problem of Location Based Routing in Sensor Networks," IEEE Trans. Vehicular Technology, vol. 54, no. 4, pp.1509-1522, July 2005.
10. Laljee R.P., Muddaiah S., Salagundi B., Cariappa P.M., Indra A.S., Sanjay V., Ramanathan A., "Interferon stimulated gene - ISG15 is a potential diagnostic biomarker in oral squamous cell carcinomas", Asian Pacific Journal of Cancer Prevention, ISSN : 1513-7368, 14(2) (2013) pp.1147-1150.
11. J. Na, D. Soroker, and C.K. Kim, "Greedy Geographic Routing Using Dynamic Potential Field for Wireless Ad Hoc Networks," IEEE Comm. Letters, vol. 11, no. 3, pp. 243-245, Mar. 2007.
12. R.Karthikeyan, Dr.S.R.Suresh, An Approach for Real Time Testing Reliability & Usability Testing Process, International Journal of Innovative Research in Computer and Communication Engineering, ISSN (Online): 2320 – 9801, pp 644-651, Vol. 1, Issue 3, May 201
13. P.Ramya, dr.nalini, effective navigation query results based on biomedical database, International Journal of Innovative Research in Computer and Communication Engineering, ISSN: 2249-0183, pp 36-39, volume 1 Issue 3 No4- Dec 2011
14. P.Kavitha, Authentic Learning Activities with Pedagogical Stylistics – Enhancing InE-Learning Websites, International Journal of Innovative Research in Computer and Communication Engineering, ISSN(Online): 2320-9801, pp 1211-1215, Volume 1, Issue 6, August 2013
15. N.Priya, VANET Based Adaptive Traffic Signal Control, International Journal of Innovative Research in Computer and Communication Engineering, ISSN(Online): 2320-9801, pp 1201-1208, Vol. 1, Issue 6, August 2014
16. N.Sakthi Priya, Cervical Cancer Screening and Classification Using Acoustic Shadowing, International Journal of Innovative Research in Computer and Communication Engineering, ISSN(Online): 2320-9801, pp 1676-1679, Volume 1, Issue 8, October 2013