IJRRECS/June 2015/Volume-3/Issue-6/4136-4140 **ISSN 2321-5461**

INTERNATIONAL JOURNAL OF REVIEWS ON RECENT ELECTRONICS AND COMPUTER SCIENCE

AN EFFECTIVE UTILIZATION OF ENERGY REQUIREMENTS CONCERNING WIRELESS SYSTEMS

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ABSTRACT:

Numerous movement strategies were planned for mobile relays were studied in earlier works. A vital challenge that is faced by data-intensive wireless sensor networks is to express the entire data that is generated within an application's lifetime in the direction of the base station regardless of the fact that sensor nodes have restricted power supplies. We practice inexpensive disposable mobile relays to decrease the total energy expenditure of data intensive wireless sensor networks. Our approach is encouraged by the up to date state of technology concerning mobile sensor platform. It considers advantage of capability by means of assuming that we contain a huge number of mobile relay nodes. Our strategy is different from earlier works in two most important aspects such as: it does not necessitate difficult motion planning of mobile nodes; as a consequence it is implemented on several of low-cost platforms of mobile sensor; and we construct energy expenditure because of mobility as well as wireless transmissions into a holistic optimization structure. We put together complication of best possible mobile relay configuration within data-intensive wireless systems. The best possible mobile relay configuration complexity is demanding because of the dependence of solution on numerous factors.

Keywords: Wireless sensor networks, Mobile relays, Optimal mobile relay configuration, Data-intensive, Energy expenditure.

1. INTRODUCTION:

In recent times, quite a lot of approaches were proposed to considerably decrease energy cost of wireless sensor networks by usage of mobility of nodes. As a result of the partial storage capacity concerning sensor nodes, for the most part of data have to be transmitted to base station for the aim of archiving as well as analysis [1]. One of the important challenges that are faced by data-intensive wireless sensor networks is to reduce energy expenditure of sensor nodes with the intention that all the data that is generated within lifetime of application is transmitted towards the base station. Mobile nodes may possibly be used as relays that convey data from source nodes towards base station. In our work we make usage of low-priced disposable mobile relays to decrease the total energy expenditure of data intensive wireless sensor networks. Our approach is motivated by means of the modern state of technology concerning mobile sensor platform. Altered from mobile base station mobile relays do not transfer data; as an alternative, they progress to several locations and subsequently remain inactive to forward data all along the paths from the sources towards the base station [2][3]. The communication delays can be considerably reduced when compared with usage of mobile sinks or else data mules. Each mobile node carries out a particular relocation different from other approaches which necessitate repeated relocations. Our proposed approach considers advantage of capability by means of assuming that we contain a huge number of mobile relay nodes. Because of low manufacturing outlay, traditional mobile sensor platforms are usually powered by batteries and only competent of limited mobility. Our purpose of energy maintenance is holistic in that total energy that is consumed by mobility of relays as well as wireless transmissions is reduced, which is in contrast to traditional mobility approaches that only reduce the transmission energy spending. Reliable with this constraint, our approach simply requires one-shot relocation towards designated positions subsequent to deployment. Optimal Mobile Relay Configuration difficulty is difficult because of the dependence of solution on numerous factors. Its difficulty is to some extent similar to a number of graph theory troubles. A centralized method to resolve optimal mobile relay configuration breaks the difficulty into three separate steps for instance initial tree construction, insertions

of nodes, and tree optimization. When compared with our approach, traditional mobility approaches naturally suppose a small number of commanding mobile nodes, which does not make use of numerous low-cost mobile nodes.

2. AN OVERVIEW OF PROPOSED SYSTEM:

Wireless sensor networks are more and more applied in data-intensive applications. An important challenge that is faced by data-intensive wireless sensor networks is to convey the entire data that is generated within an application's lifetime towards the base station regardless of the fact that sensor nodes have restricted power supplies. Quite a lot of movement strategies designed for mobile relays were studied. Even though efficiency of mobility in energy maintenance is demonstrated by earlier studies but several important issues have not been cooperatively addressed such as movement expenditure of mobile nodes is not considered for complete network energy expenditure; complex motion planning concerning mobile nodes is often supposed in existing solutions which set up important design difficulty as well as manufacturing costs. We propose low-priced disposable mobile relays to decrease the total energy expenditure of data intensive wireless sensor networks [4]. Established mobility approaches naturally suppose a small number of commanding mobile nodes, which does not make use of numerous low-cost mobile nodes. Our proposed approach differs from earlier work in two most important aspects. First, it does not necessitate difficult motion planning of mobile nodes; as an outcome it is implemented on quite a lot of of low-priced platforms of mobile sensor. Second, we put together energy expenditure because of mobility as well as wireless transmissions into a holistic optimization structure. Our approach considers benefit of capability by means of assuming that we contain a huge number of mobile relay nodes. We formulate complication of best possible mobile relay configuration within data-intensive wireless system. Our intention of energy conservation is holistic in that total energy that is consumed by mobility of relays as well as wireless transmissions is reduced, which is in contrast to traditional mobility approaches that only reduce the transmission energy expenditure. The trade-off in energy utilization among mobility as

well as transmission is utilized by means of configuring positions of mobile relays.

3. AN OVERVIEW OF ENERGY OPTIMIZATION STRUCTURE:

Mobility has been expansively considered in sensor network as well as robotics applications that consider only mobility expenses but not communication expenditure. Our optimal mobile relay configuration difficulty is to some extent comparable to a number of graph theory troubles. On the other hand, since optimal mobile relay configuration cost function is basically different from cost function for other problems, traditional solutions to these problems cannot be functional directly and do not offer high-quality solutions to optimal mobile relay configuration. The optimal mobile relay configuration difficulty is demanding due to the dependence of solution on numerous factors. Fig1 shows an optimal configuration as a function of data that has to be transferred. In which source nodes have to send data bits to sink [5]. While amount of data that is transferred increase, three changes take place such as the topology might change by means of adding novel relay nodes, the topology might alter by means of changing which edges are used, as well as relay nodes might move close mutually. In numerous cases, we might contain restrictions for instance no mobility for convinced relay nodes or else we must utilize a permanent routing tree. These constraints have an effect on the optimal configuration. A centralized approach to solve optimal mobile relay configuration breaks the difficulty into three separate steps for instance initial tree construction, insertions of nodes, and tree optimization. Our approach is not assured to construct a best possible configuration since we do not essentially locate optimal topology, but results show that it performs fine. Algorithm for initial tree construction is most favourable for static environment in which nodes cannot move. On the other hand, we can efficiently apply the later algorithms when we have to begin with a different topology. Our greedy heuristic meant for getting better routing tree topology by means of adding nodes exploits mobility of recently added nodes. Our tree optimization algorithm advances routing tree by means of relocating its nodes devoid of changing its topology. This iterative algorithm unites on best possible position for every node specified the constraint that routing tree topology is permanent [6].

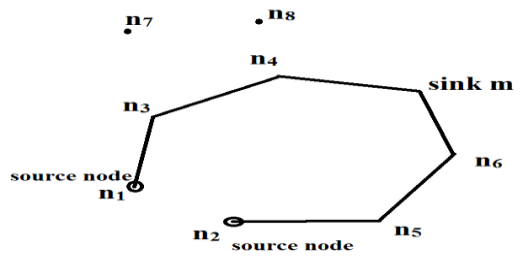

Fig1: Optimal configuration as function of data to be transferred.

4. CONCLUSION:

Wireless sensor networks are increasingly functional in data-intensive applications. As a result of low manufacturing outlay, conventional mobile sensor platforms are usually powered by batteries and only capable of restricted mobility. In our work we take advantage of not expensive disposable mobile relays to decrease the total energy expenditure of data intensive wireless sensor networks. Our method is motivated by recent state of technology concerning mobile sensor platform. When compared with proposed method, conventional mobility approaches naturally suppose a small number of commanding mobile nodes, which does not make use of numerous low-cost mobile nodes. We put together complication of best possible mobile relay configuration within data-intensive wireless system. Our proposed method is different from previous works in two most significant aspects. First, it does not require tricky motion planning of mobile nodes; consequently it can be implemented on a number of low-priced platforms of mobile sensor. Secondly, we construct energy spending because of mobility as well as wireless transmissions into a holistic optimization arrangement. Although competence of mobility in energy maintenance is demonstrated by earlier studies but several important issues have not been cooperatively addressed.

REFERENCES

[1] R. Shah, S. Roy, S. Jain, and W. Brunette, "Data mules: Modeling a three-tier architecture for sparse sensor networks," in IEEE SNPA Workshop, 2003.

[2] S. Jain, R. Shah, W. Brunette, G. Borriello, and S. Roy, "Exploiting mobility for energy efficient data collection in wireless sensor networks," MONET, vol. 11, pp. 327–339, 2006.

[3] W. Wang, V. Srinivasan, and K.-C. Chua, "Using mobile relays to prolong the lifetime of wireless sensor networks," in MobiCom, 2005.

[4] G. Wang, M. J. Irwin, P. Berman, H. Fu, and T. F. L. Porta, "Optimizing sensor movement planning for energy efficiency," in ISLPED, 2005, pp. 215–220.

[5] M. Sha, G. Xing, G. Zhou, S. Liu, and X.Wang, "C-mac: Modeldriven concurrent medium access control for wireless sensor networks," in INFOCOM, 2009.

[6] W. R. Heinzelman, A. Chandrakasan, and H. Balakrishnan, "Energy-efficient communication protocol for wireless microsensor networks," in HICSS, 2000.