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# Review on Guidance Mechanism in Sensor Networks for Target Tracking

**Priti G. Kandhare[1], Gayatri M. Bhandari[2]**

[1]JSPM's Bhivarabai Sawant Institute of Technology and Research, Wagholi Pune 412 207, India

*priti13.m@gmail.com*

[2]JSPM's Bhivarabai Sawant Institute of Technology and Research, Wagholi Pune 412 207, India

*gayatri.bhandari1980@gmail.com*

**ABSTRACT**

Wireless sensor networks (WSN) are very interesting research area of today's computer engineering. Wireless sensor networks consist of number of sensor nodes. A sensor node predicts the area, and information of the predicted area send to the base station, sometimes it is called as 'sink'. In this paper we have reviewed and studied algorithms for continuous object tracking .In predicted area continuous objects like oil spills and forest fires activation control message cannot reach at the right time, this is main cause of detection errors and therefore continuous objects are very harmful for people. A continuous object protocol, tracking object in wireless sensor network and also the information to be collected during configuration time and to reach object or target in minimum possible time is the main research work of this paper

**Key Words:** WSN, Guidance Navigation, void, cluster, continuous object

## INTRODUCTION:

Wireless sensor networks (WSN) consist of large numbers of sensor nodes. Sensor networks are of different type's sensor nodes such as magnetic, thermal, radar which are used for monitor variety condition. Sensor networks is heterogeneous system consist number of detection stations. Target tracking detects target and location of the object area. The predict area is different from the individual area. To identify the object of shape, firstly the boundaries area of the target is very useful for predicting the object. And this is possible when sensor nodes nearby of the boundary of target.

An effective strategy selective wake up sensors node are active when target is predicted otherwise sleep mode used. Sleep mode of sensors saving the energy. Recently, PRECO [9] and CCOT [10] used selective wakeup scheme for efficient object tracking. If the sensors are inactive, then tracking objet is impossible.

In Grid based structure the target area is divided in sensors of grid, active-sleep smart-cluster are used for tracking the target area and named as Continuous Object Tracking using Smart-cluster (COTS)[1]

The problem occurred in void area is shown in Figure 1.The continuous objects spread from t1 to t3.At t1 point sensor nodes are active. Due to some reason sensor nodes are not activated at t2 point therefore the target of object can not predict [1].

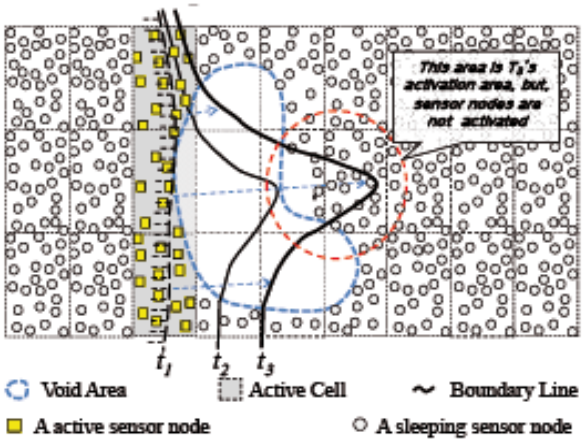


**Figure 1: the problem of void area in WSN**

There are two types of messages are used for activation control of sensor nodes:

**A**. Left-hand Guard band Wakeup Request (LGWR) message

**B.** Right-hand Guard band Wakeup Request (RGWR) message

Most existing work proposed a dynamic convoy tree-based collaboration (DCTC) framework to predict or detect mobile target for monitoring surround area. In DCTC the tree structure called as convoy tree. Figure 2 shows that to track the mobile target how the convoy tree is used. Firstly Target enters into the detection area and after collaborating with each other target selects root node .The convoy tree the root of tree collects data from all sensor nodes. For more accurate data or information about target used some algorithms [7][8]

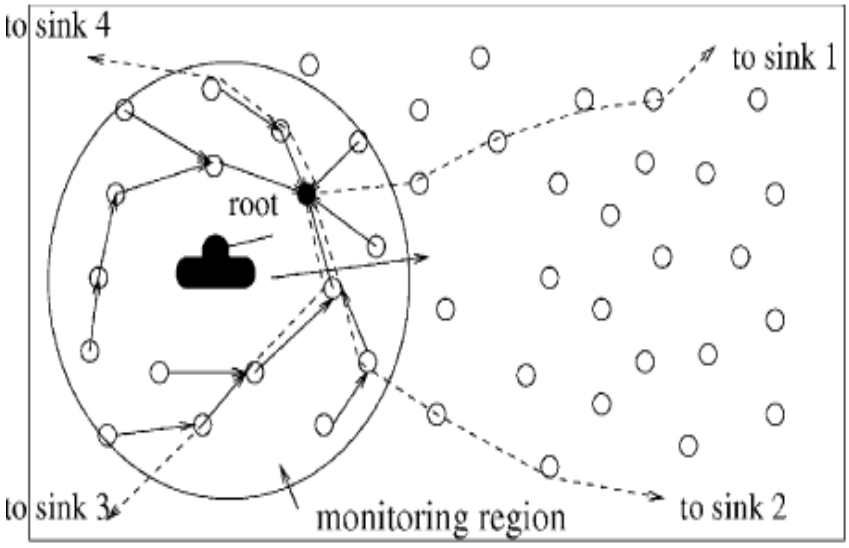


**Figure 2: Using convoy tree to track the target: Data collection**

**1. IMPLEMENTATION OF CONVOY TREE TO TRACK THE OBJECT:**

Whenever target moves in convoy tree some nodes of tree become away from the target .Thus power saved and root node should sensor nodes are at asleep mode due to this easy to detect moving direction of target . To reconfigures itself convoy tree root should be changed to communicate. And reconfigures convoy tree with new root as shown in figure3.

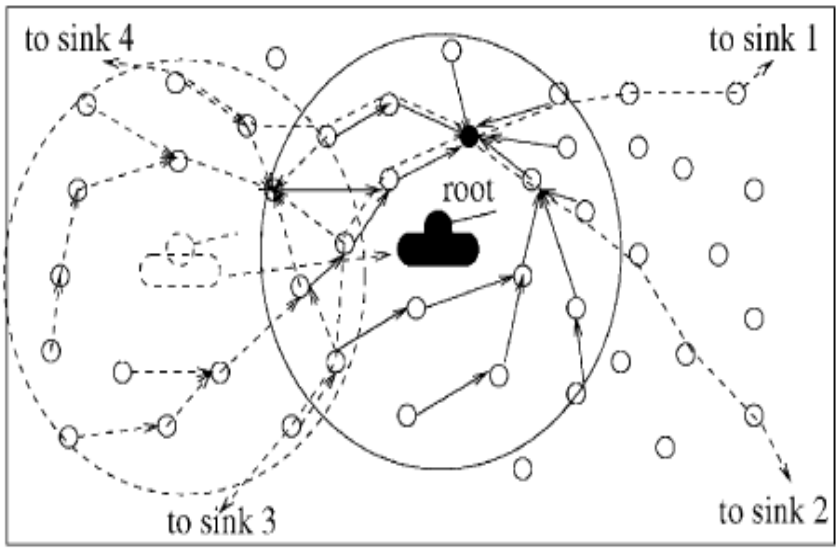


**Figure 3- Using convoy tree to track the target: Tree reconfiguration**

**2. PROBLEMS IN DYNAMIC CONVOY TREE-BASED COLLABORATION (DCTC):**

There are two types of problems occurred in dynamic convoy tree-based collaboration and these problems are

**A**. In proposed approach reconfiguring tree cost is very high as compare to the reconfiguring clustering.

**B**. Tree structure is based on information of root node and it collects from sensor node i.e. root.

**3. FOR PREDICTING AREA OR LOCATION OF TARGET FOLLOWING POINTS ARE TO BE CONSIDERED [4]**

Whenever acoustic event has been occurred. Some points used to predict target area. And therefore the predict area found in shortest possible time.

- Location Error: The exact location of the target from the estimated location.
- Latency: Time between when acoustic event occurs and time instant result of location is sent to sink.
- The number of acoustic events detected and reported to the sink node.
- The number of collisions throughout the simulation. All the control messages (information solicitation messages, replies, and tracking reports to the base station) throughout simulation.

**4. CONCLUSION:**

In this paper target tracking scheme analyzed selective wake up scheme used to detect area. Recently two clustering approaches have been proposed for target tracking. We studied COTS can show more correctly predict area and also can activate sensor at right time. We are going to work on detect or predict the target area in shortest time, due to this it will not harmful for people. And also system provides the current position of mobile target to reach the predict area.

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