

# A SURVEY ON SELFISH NODE DETECTION IN WIRELESS SENSOR NETWORK

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**ABSTRACT:** Wireless sensor network is a Special type of network node group which help in solving many real time requirements. The node participates in this group help in collecting information from various usable entities and delivers it for the productive purpose. Wireless sensor network use hop to hop, end to end communication to deliver the right information efficiently. It helps in processing information using the secure, routing techniques. Intermediate node participation always makes it enable to provide high end delivery. A participation of selfish node degrades the network performance due to lacking in peer to peer communication. Selfish node involvement make more energy degradation from the given other participant nodes. In such scenario the detection and prevention the network from such selfish node network is important. In this paper a discussion about the wireless sensor network. Detection of the selfish node in wireless sensor network and finally the algorithm using which the same can be done. A discussion table is also presented which help in better understanding of the work performed by different author to deal with sameproblem.

**Keywords:** WSN, Selfish node, Retransmission Numbers, Network workload, Energy lifetime, maximizing network utilization.

## I. INTRODUCTION

Wireless Sensor Networks (WSNs) [1], Mobile adhoc network used in data packet transmission and network communication [2] [3]. The wireless sensor node network consists of various node data criteria which help in communication with the help of multiple sensor units. A data packet transmission over the range of node is get performed using the given network optimization techniques. WSN help in many private and public areas to provide communication, security to data transmission. While performing the data packettransmission,

various protocols and mechanism take participate which help in improving the delivery performance. Working with the energy model and avoiding the energy dissemination is also get performed using the WSN communication algorithms. Many sensor node participate and act as a selfish node. They establish their replica and try finding the network information . Such information replication detection and prevention is also one of the important requirement in dealing with sensor network[14].

Wireless sensor network forms many advantage over the network such as finding the communication with weather forecasting. Proposing the predictions for next working time.Communication with the user to provide better information while collecting same at real time. Military communication does use the sensor network application while they are working in remote area network. Temperature sensing and dealing with collection of spatial data is also get performed using the wireless sensornetwork.

While dealing with such important network, there are intermediate entities which try to access usable information in different direction. Thus the selfish node concept is presented. The detection and prevention from such node is an important requirement of the time. This paper discussabout the selfish node detection techniques which involve in detection and prevention over the wireless sensor network[5-7].

## II. RELATED WORK

**The wireless sensor network deals with the selfish node. The energy dissemination, information gathering and non-participation in communication hop module is being discussed here which is given solution to prevent by authors is presented.**

The paper [4] Selfish replica allocation technique is presented. This technique discuss about the selfish node detection by replica allocation and analysis technique. This paper also discuss on mitigation from selfish node which hide their identity by generating its replica and further finding the node for alternative node selection.. The node determine technique take use of given token generation to each node participants and then monitoring the token. The technique called token based umpiring approach TBUA is proposed. A network model over the node is presented where the token based approach is implemented with MANETprotocol. The implementation of TBU approach is presented with AODV routing protocol. Finally a selfish quarantine is applied on selfish detected nodes.

In [5], A fault diagnosis approach is presented by the author of this paper. This approach uses the mobile sink based distribution over the wireless networkingsystem.

An optimal tour diagnosis planning and fault detection over the hardware component is performed mutually. A network area polling over the system is performed, where mobile fault detection is applied and used. Thus finally an infrastructure protection is observed with high efficiency and high end delivery in network.

In this paper [6], A survey over the different selfish node such as hiding the properties from self-participation. Working with the diagnosis over the wireless sensor network is discussed. A dynamic routing and finding a selfish node among them is need to be improved.

In [7], They presented the cluster based approach for the selfish node detection. The paper explained about the cluster generation, cluster finding technique and then optimizing the routing path to determine the working nodes. Further the dissemination of selfish node is presented. This paper mainly discussed all the clustering mining approaches which participate in the mining approach for selfish node detection. Thus a selfish node detection can get performed using the proposed solutions given by different authors.

In [8], Leach protocol based routing over the wireless network. A leader selection among the given node in a network is presented. The finding of selfish node is determined using the leader selection policy in network. The given proposed solution works with the available given clustering models.

In [9], The author presented a fault tolerance method for detection of selfish node and prevention from such node network. The discussion made which gives how the node energy dissemination can be saved. The communication protocol with fault tolerance mechanism is presented to find selfish node over the wireless sensor network.

In [10], have given the fault tolerance and discussion mechanism using the cluster head from the network node availability. The given FDRC approach use for the cluster head node failure system. A monitoring given node is presented which help in detecting the selfish node among the available data packet sharing nodes.

In [11], Author of this paper have presented an approach which is a CNBD detection method, in this paper end to end transmission over the network is presented. A fault in network determination is performed. If the fault in network is determine then the sensor node level detection foundation is performed. Thus it help in detecting selfish node and further improvement in prevention can get perform.

The table 1 above, it shows the comparison brief analysis of selfish node detection and prevention module.

<b>Authors</b>	<b>Algorithm/Technique</b>	<b>Remark/ Extension</b>	<b>Further</b>
Chanak P, Banerjee [5]	mobile sink oriented approach.	Faulty node	
Imran Khan[1]	Architecture allocation and detection.	A network Simulation	architecture
Ali Dorri, Seyed Reza	Security challenges over the MANET.	Network security aspect	

Kamel[2]		
K. Chitra [7]	Cluster Heed Failure recovery Algorithm.	Secondary cluster selection.
Sami UIGani [8]	Cluster based fault detection algorithm is proposed	Provides better network performance and detection accuracy.
T.Gobinath [9]	fault tolerance method based on mobile agent federation	it also proposed communication protocol to initiate the fault repair system.
HOU Hui [10]	fault detection algorithm	Fault detection algorithm in which sensor nodes detects its own fault depends on the information from its neighboring nodes.
DipaliBhosale [11]	novel centralized Naïve Bayes Detector (CNBD)	End to end transmission time is calculated at the sink node using the communication protocols.
Doaa AbdelMohsen, TamerAbdelkader[12]	A selfishness detect and motivation approach which is SDM is presented by the author.	An approach which helpin selfishness detection and prevention is presented. The approach is compared withselfishness detectand isolate algorithm.
N.Muthumalathi, Dr.M.MohamedRaseen[13]	A Secure Hill cipher algorithm is presented for the selfish node detection and prevention.	Novel technique for replica detection, selfish node detection is presented. The proposed algorithm reduce the cost , low node detection and prevention time is also given.

Jae-HoChoi, Kyu-Sun him, SangKeun Lee, and Kun- Lung Wu[14]	Replica allocation to the node and detection over MANET.	This concept discuss about the replica data allocation over the network andits detection.
Abdelkader, Tamer; Naik, Kshirasagar; Gad, Walaa[15]	Game theory approach	A game based theory approach is applied forselfish node detection over network traffic.
SenthilkumarSubramaniyan, William Johnson2 and KarthikeyanSubramaniyan[16]	Record- and Trust-Based Detection (RTBD) technique	A trust based and record based analysis is given which help in track record of finding selfish node which limits with thetrust value associated.
M. Sandhini and S. Saravanan[17]	False Alarm Method	This paper discuss about the calculation of degree of selfishness. A false alarm method which compute the misbehavior alarm.

**Table 1: Comparison analysis and working of several algorithms on different aspects.**

In the comparison table 1 above, some existing recent algorithms are discussed. The different approach discusses the main theme behind selfish node detection and prevention.

### III. CONCLUSION

Wireless network help in improving communication in any of the wide area. The avoidance of physical system cost and thus finding it useful in different circumstances help in reliable communication.

Many security algorithm, routing algorithm and optimizing the packet transmission is given. While using all node participation, there are some node which is selfish node. They avoid their participation from the network to avoid their energy dissemination. Also sometime selfish node act in network to acquire the communication information which is exchange over the network. These papers discussed about the problem associate while selfish node participate in the network. Different work which is performed to avoid selfish node. A discussion table is also presented which help in understanding the overall scenario which is associate with selfish node detection techniques.

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