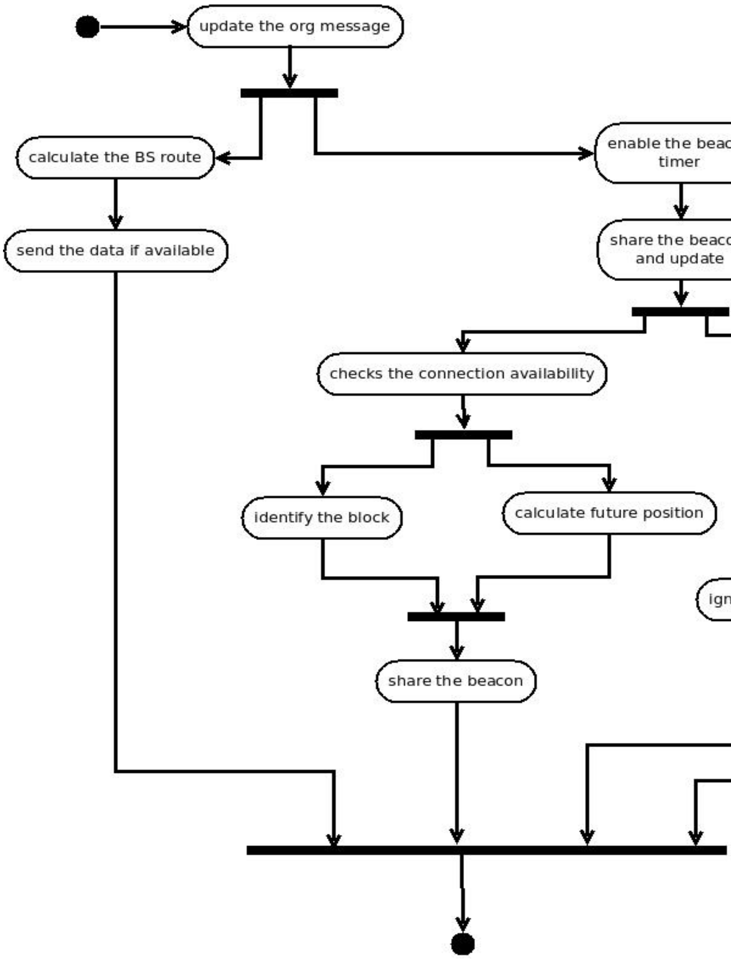

Figure 2: Activity flow of proposed work

4.2 Smallest Block Identification

In this step we've to seek out smallest disjoint block. If it's tiny then it'll scale back the recovery overhead within the network. The tiniest block is that the one with the smallest amount variety of nodes.

4.3 Substitution Faulty Node

If node J is that the neighbors of the failing node that belongs to the tiniest block J is taken into account the B.C. to interchange the faulty node Since node J is taken into account the entree node of the block to the failing vital node (and the remainder of the network) We talk over with it as "parent." A node could be a "Kid" if it's 2 hops Away from the failing node, "grand Kid" if 3 hops Away from the failing node In case over one SensRob fits the characteristics of a B.C. (Best Candidate), the highest SensRob to the faulty node would be picked as a B.C.. Any further ties are resolved by choosing the SensRob with the smallest amount node degree. At last the node ID would be accustomed resolve the tie

4.4 Kids Movement Guidance

In our base model, the researchers have considered the single node failure with the Kid node movement. Indeed our base model working perfectly and recovering the node failure and extend the communication throughout the network level. But the problem is while multimode failure the node movement is getting collapse. So to avoid this problem, we proposed the technique with extra actor system. As per our base model, each actor node will scan the environment by sharing the periodic beacon information. While sharing the beacon message each actor node can know the neighbor actor availability and position of each actor node. And each actor node will store the neighbor actor availability with limited expire time for neighbor availability and route availability.

In periodic interval the neighbor actor list will be deleted based on the expired time of the actor beacon information. Each time of data transmission the actor will check the neighbor actor availability in the list of neighbor actor list. In case, the deleted actor information is necessary to route the data then that actor information will be checked with the available neighbor actor's list. This information will be monitored by the base station in periodic manner by sharing the originating massage. While the monitoring time, if base station detected multimode failure then base station will gather the information of extra actor availability. The base station will calculate the position information of multi node failure. Based on the group of node failure information and available actor position, base station will calculate the group connectivity and distance b/w each member of group node with respect to available actors. Form this calculation the base station will sort-out available extra actors with respect to failure group. The extra actor sorting is done by the base station in two modes; one is based on the less distance and based on route connectivity. In case, there is no issue in the route connectivity of disconnected group then the extra actor will be moved towards nearest position which actor failed. In case, there is a problem in route of disconnected group the extra actor will be moved to the place which will be effective to connect the disconnected group and connected group.

5. Results

We have used the popular simulator such aw NS2 to simulate our proposed technique. We have tested our network with various number of SensRob's. here we have shown the simplified output model for ease of explanation.

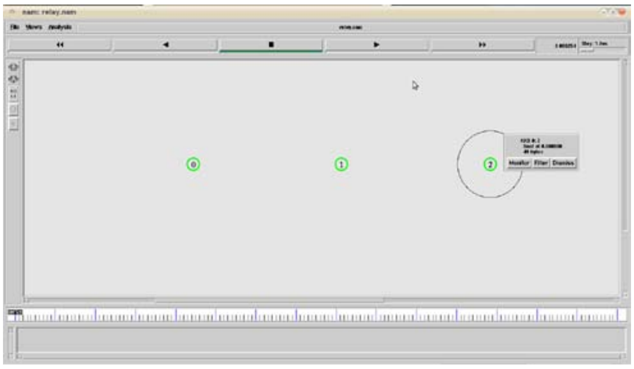

Figure 3: Network initialization

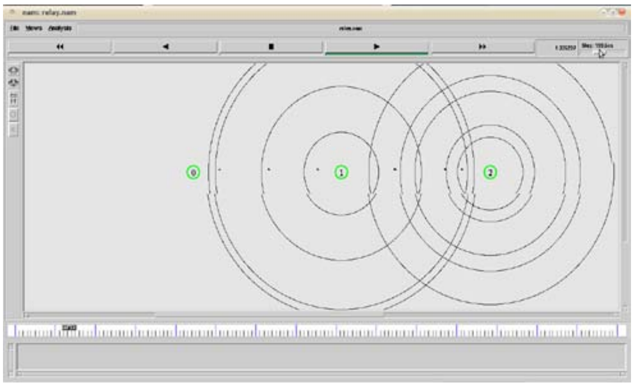

Figure 4: beacon sharing and data sharing

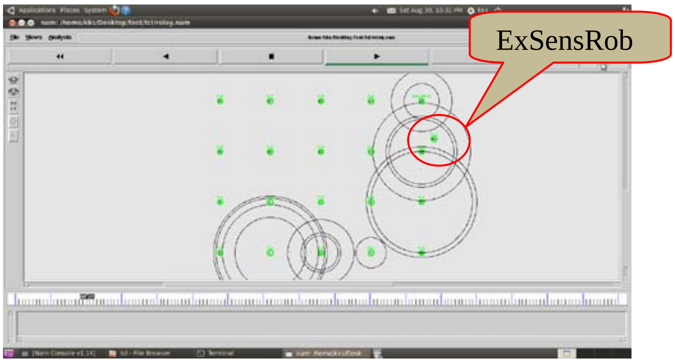

Figure 5: ExSensRob placement

In our result pictures we clearly shown the information such as heartbeat beacon sharing and failure detection and SensRob mobement (fig.3, 4, 5, 6)

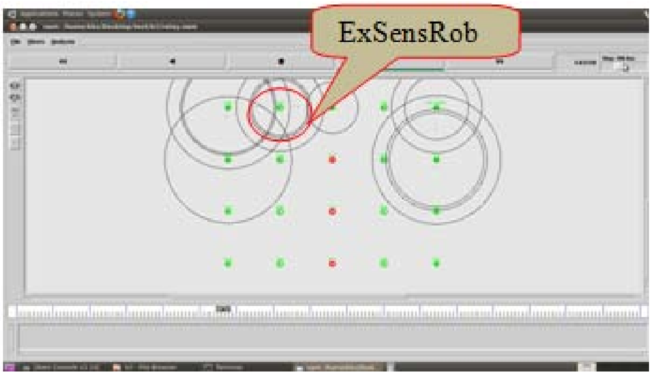

Figure 6: recovering the failure with ExSensRob

Figure 7: Packet delivery for enhanced method

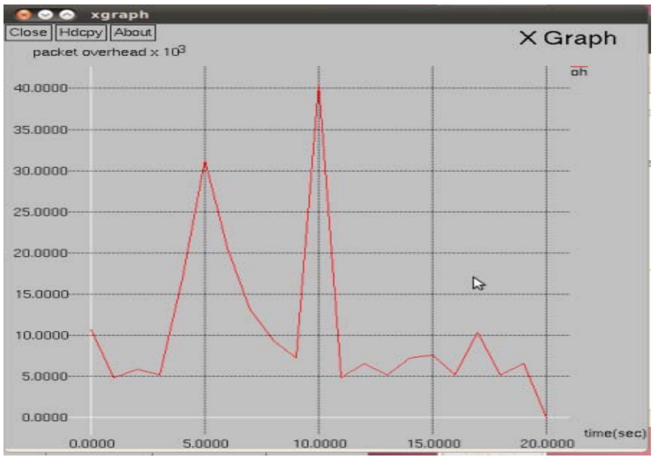

Figure 8: Overhead for enhanced method

6. Conclusion

Recent years Wireless sensing element and SensRob Networks square measure gaining growing interest due to their suitableness for mission vital applications that need autonomous and intelligent interaction with the setting. In this paper we have tested our proposed algorithm with multi node failure recovery system, by the use of free SensRob movements to recover SensRob failure. The algorithm which we have proposed provides the efficient results. In future we will study the details of sensor node coverage hole and hole healing methods.

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