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.2, Special Issue 1, March 2014

Proceedings of International Conference On Global Innovations In Computing Technology (ICGICT'14)

Organized by

Department Of CSE, JayaShriram Group Of Institutions, Tirupur, Tamilnadu, India on 6th & 7th March 2014

Biconnectivity Of Zigbee UMTS Hybrid Network

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ABSTRACT : A ZigBee network is a low cost and low power wireless network based on the IEEE 802.15.4 standard , which allows wireless connectivity with limited power and relax throughput requirements.On the other hand, the Universal Mobile Telecommunication System(UMTS) is third generation cellular network that provides high speed wireless traffic transfer to the internet .This paper presents the design and implementation of the novel intergrated ZigBee and UMTS hybrid network in the Network Simulators(ns-2).In this hybrid network,we design a new mobile gateway to inter-connect these two different sub-networks.With the hierarchial addressing and some special UMTS network discovering mechanisms, routing in the hybrid network,is achieved.We also design a simulation platform to make it easier for protocol designer to design and evaluate new protocol in such a hybrid network. To perform the data communication between the wireless node(source node) and the destination node that is connected to the server via LAN.

I . INTRODUCTION

DOMAIN SPECIFICATION: NETWORKING

A network is any collection of independent computers that communicate with one another over a shared network medium. A computer network is a collection of two or more connected computers. When these computers are joined in a network, people can share files and peripherals such as modems, printers, tape backup drives, or CD-ROM drives. When networks at multiple locations are connected using services available from phone companies, people can send e-mail, share links to the global Internet, or conduct video conferences in real time with other remote users. When a network becomes open sourced it can be managed properly with online collaboration software. As companies rely on applications like electronic mail and database management for core business operations, computer networking becomes increasingly more important.

Zigbee is a specification for a suite of high level communication protocols using small, low-power digital radios based on the IEEE 802.15.4 standard. The goal of the ZigBee network approach is to maximize the application market through standardization and low cost. Universal Mobile Telecommunication System (UMTS) is one of the third generation (3G) mobile communication systems. The main purpose for UMTS is to offer a universal infrastructure that is able to support both existing and future services.

However, some research areas, such as industrial control and medical monitoring, need low-power wireless network connectivity. And it is preferred to choose the ZigBee rather than the IEEE 802.11 ad hoc network as the intra wireless communication mechanism. In this paper, we design a new Mobile Gateway to interconnect the ZigBee and UMTS networks. We also redesign the addressing and routing mechanisms to make it possible that the two nodes respectively in ZigBee and UMTS subnetworks can communicate with each other. To the best of our knowledge, we are the first to address this problem.

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II. EXISTING SYSTEM:

In the **EXISTING SYSTEM**, the zigbee networks and UMTS networks are working separately. There is no implementation to merge the two networks and creating a new network for data processing.

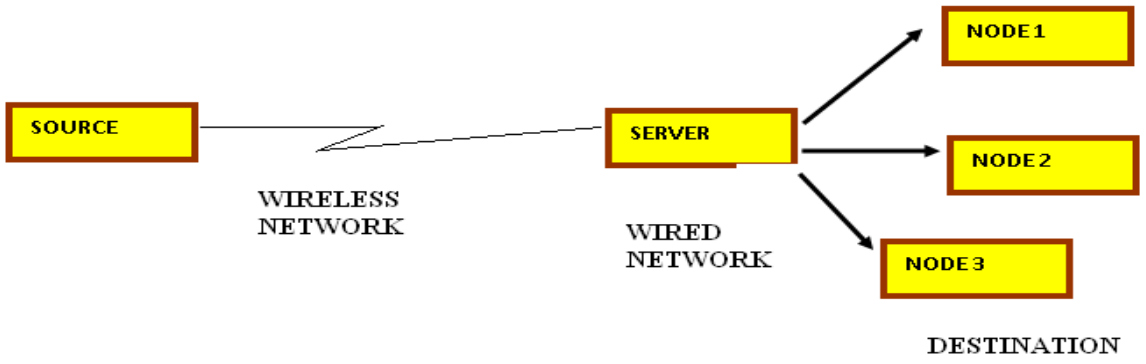
PROPOSED SYSTEM:

In the **PROPOSED SYSTEM**, we will combine the two networks and develop the hybrid network in which the data is transferred from source node (Wireless) to the destination node via the server which is connected through LAN.

ALOGIRTHM USED:

- Ad hoc On Demand Distance Vector

ARCHITECTURE DIAGRAM:



III.CONCLUSIONS

This paper presented the design and implementation of the novel integrated ZigBee and UMTS network modules in *ns*- 2. We designed a new Mobile Gateway to interconnect these two different sub-networks. We also redesigned the addressing and routing mechanisms to make it possible that the two nodes . Simulation platform client interface. respectively in ZigBee and UMTS sub-networks communicate with each other.

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