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MESSAGING SYSTEM FOR HAND HELD DEVICES USING WI-FI/BLUETOOTH NETWORK

Ajita Arvind Mahapadi,Prof.Soumitra Das

Computer Engineering

Dr.D Y Patil School of Engineering

Lohegaon,Pune,Maharashtra,India

ajita_mahapadi@rediff.com, soumitra.das.1974@ieee.org

Abstract : *In day-to-day life use and performance of mobile phones has increased drastically from previous few years.Most of them take the benefit of extremely capable smartphones for file sharing.Exisiting peer-to-peer system[4][8] suffers from frequent disconnections and requires retranmission of data in case of transmission failure.Smart phones provides us with SMS facility which is not free of cost,so we proposed an application called Seamless File Sharing[1] that provides us with chatting and file uploading facility free of cost without using any internet facility.Here we use two methods of data sharing one through WiFi network[4][5] and other through Bluetooth.First file transmission is done through WiFi and if connection is not possible then file transmission automatically switches to Bluetooth network.So an Adhoc network is created for sharing file contents .Transferring file through internet is costly so adhoc network can be used for file sharing.This application has an a benefit of low battery consumption.*

Keywords*: File sharing,Adhoc network,Andriod,Energy Efficiency,Sharing at low cost.*

1.INTRODUCTION

The use of smartphones[1][4] has been increasing rapidly from last few years,and it has been noted that over 50% of people are using smartphones[4].Smart phone are multimedia devices which are useful for sharing files,videos,pictures to another smartphones .For

example consider our home entertainment system smart phones provides us with the facility for sharing videos,pictures or even can be connected to TV for watching movies or any multimedia files.

Peer-to-peer sharing[4][8] of information among smart phones was one of the solution to consume free peer-to-peer wireless links and expensive data packets that we can use for sharing information,but peer-to-peer system experience disconnections because of user's displacement from one place to another.So to over come this problem we have propose a system called Seamless File Sharing(SFS)[1] for smartphones.WiFi[4][5] provides us with high speed over long distance communication.Consider this application for Seamless File Sharing in which we can create group in our college premises for file sharing within students without any use of 3G(Internet) connection[8].

Important features of Seamless File Sharing are:

- Adhoc networks[4] are used for file sharing ie.WiFi[4][5],bluetooth.
- Faster communication.
- SFS[1] reconnects automatically when disconnection occurs in the available network.

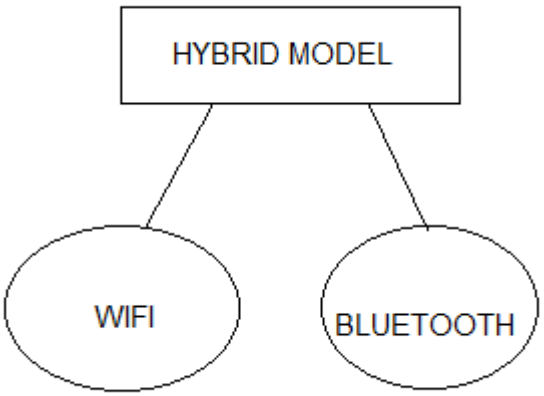

Figure1:Hybrid Model

From the above figure a hybrid model is designed which has capability of file sharing through WiFi network[4][5] and Bluetooth.

2.EXISTING WORK

SDNAN(Software-Defined Networking in Adhoc Networks of Smartphones)[2] in this application Software defined networking(SDN) is used to meet the changing demand of the operating environment.The principle of SDN is divided into 3 distinct components.

1. Communication layer.
2. Network operating System(NOS).
3. Control Program.

Communication layer consists of physical network devices like routers and switches;NOS manages network resources and the control program controls the network through NOS.Adding SDN to adhoc network improves its performance.It consist of 3 layers:

1. Adhoc networking layer based on AODV.
2. NOS layer which maintains the global map of network which manages the subnetwork for each application.
3. A control program that controls routing tables and forwarding protocol.

Managing Adhoc Networks of Smartphones[3] in this paper author has proposed for managing multi-hop adhoc networks on mobile Andriod devices.It uses the Adhoc On-demand Distance vector(AODV) protocol for application layer routing and the Reliable User Datagram Protocol(RUDP) for reliable data delivery.It is implemeted in two ways ,one through traditional layer networking structure and the other based on software-defined networking principles.MANET middleware designs are used to achieve multi-hop communication.

Development of a cooperative application for sending SMS on WiFi mobile phones[4] this application provides peer communication on Adhoc network but the main constraint is the radio coverage which can be improved by using relay protocols.In this paper WLAN is used as it is cheap as compared to mobile phones or PDAs.MANET(Mobile Adhoc Network) mobile devices get connected to any type of infrastructure.The algorithm used for routing are Single-hop,Multi-hop.In this type of terminal network used there are 3 reasons taken into consideration ie,

1. Mobility which makes topology dynamic.
2. Device battery dependence.
3. Packet priority.

This application is used for sending SMS for short group of people,friends in shopping center,confidential warning to VIP people.

Earlier uploading and sharing of file contents was done through peer-to-peer[8] systems as one system was connected to another system.As peer-to-peer system offers advantage over the traditional client-server networking models.Where data can be send through wireless lines and expensive data packets.WiFi Adhoc network is created for sharing information between the peers.But the limitations over this system was that if one wants to share any file and if any disconnection occurs in between then retransmission of data was not done automatically and should be done manually.

3.PROPOSED SYSTEM ARCHITECTURE

The design of SFS consist of two managers:

A.Seamless Service Manager(SSM)

B.File Manager(FM)

SSM[1] is used for seamless file sharing and FM[1] manages the files being sent and received .When the devices are attached to each other SSM sender communicates with SSM and FM of recipient.When file is transmit SFS choose the channel of file transfer such as through WiFi or Bluetooth according to the network connected.When sender sends through Bluetooth the device first searches for the devices which are connectable and connects through the MAC[1] address of the receiver.When forward through WiFi it uses UDP for broadcasting[1].

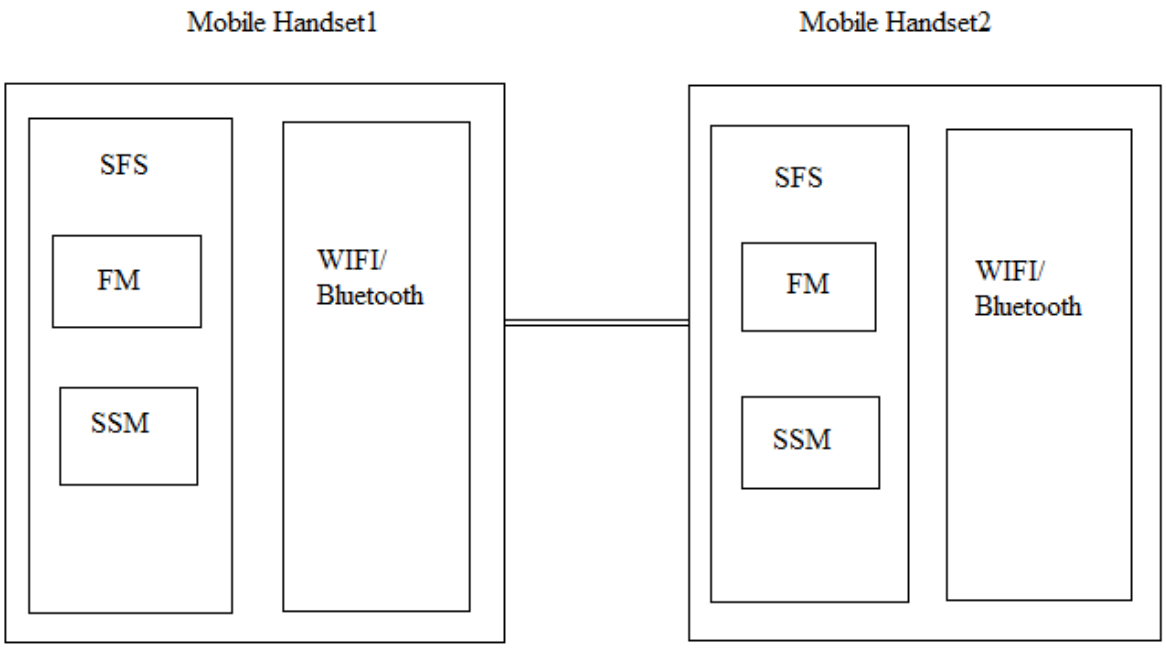

Figure2:System Architecture

A.Seamless Service Manager(SSM)

SSM[1] maintains and update the name of device after few seconds.Seamless file sharing means suppose consider when a file is send from sender to receiver and if receiver is unavailable it is not needed to retransmit data again it will be send automatically without resetting it. In Seamless file sharing the device is connected to both Bluetooth an WiFi ,suppose a data is send through WiFi[4][5] network and due to some reason it get disconnected the the device automatically get switched to Bluetooth device.

B.File Manager(FM)

FM[1] basically looks which file needs to be send or received.The file which need to be send is first divided into 10KB blocks.After receiving file from sender FM stores the offsets for checking other file blocks and after that combines all the data to make the entire file.FM sends the offset as acknowledgement to the sender while file sharing.

4.COMPARISION OF EXISTING AND PROPOSED SYSTEM

Existing System	Proposed System
Peer-to-peer[4][8] file sharing suffers from frequent disconnections because of users displacement.	Seamless file sharing[1] overcomes this limitation by automatically resending the messaging without manual help when the network connection is available.
Files and messages were send through WiFi network[4][5].	Files and messages were send through WiFi network[4][5] and Bluetooth.
Folder lock is not provided for security purpose.	Folder lock[8] is provided for security purpose.
Battery life is not prolonged in existing system.	Battery life is prolonged in proposed system[1][8].

5.CONCLUSIONS AND FUTURE SCOPE

We propose an application for Andriod devices known as SFS[1]. This application provides a solution for peer-to-peer systems,because peer-to-peer suffers from frequent dicsonnections.Server charges are decreased as SFS(Seamless File Sharing) doesnot use it and other charges are also cut down eg:data packet connection.Other reason for cost deduction are WiFi and Bluetooth as they are free of charge .It also provides capacity for simultaneous sending and receiving of files at same time.Power competence is taken in concerned to extend the battery life.

This application can be implemented on other devices which supports different operating systems like Blackberry OS,Apple's iOS and Windows Mobile OS.

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