

Content Sharing Systems in Mobile Social Networks

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I. INTRODUCTION

II. SYSTEM DESIGN

A. Bluetooth scatternet design

To form the Bluetooth scatternet to distribute the video, we propose a new method based on social network. users will take into consider their social relationship with new discovered Bluetooth devices when their want to build connection between them. It is naturally that someone is willing to share his data source to strangers while others will select their friends in real society as the only ones having the right to get their data. In this system, we divide the users to three categories. The users in the first category will distribute their data only to their friends. The users in the second category are willing to provide their data to the users sharing the same attribute with them. At last, the users are so generous that they can distribute their data to all other users.

Based on the social relationship we have built, an original method to build up a scatternet is developed. The scatternet is built as a tree for several reasons. First, in the particular scenario, there is a server which provides the origin data source to the users. Second, when a new user joins the system, it is probably that he will connect with his friends, in the way that the friend he select to connect acts as the master in a piconet while the new user acts as a slave. Such structure works like a tree.

The system takes into consider the dynamic mobility of node in system. The users join or leave off the system at an unpredictable time. The nodes in the system keep on discovery new Bluetooth device and monitor current connection. When a new Bluetooth device join in the system, e.g. move into the range the users, it's discovered by others. The Bluetooth devices who discover new devices should check whether they would like to connect to them. A node would like to connect to a newcomer satisfying one of 3 conditions:

- (1) the newcomer is a friend of the node;
- (2) the newcomer share the same attribution with the node while the node willing to distribute his data to others with the same attribution;
- (3) the newcomer is a stranger of the node, but the node is willing to share his data to strangers.

If they are willing to build a connection to the new devices, they will send the information of the devices discovered to their master nodes, and find out which are more suitable to connect to the new devices. The goal of this step is to optimize the scatternet structure. Since master Bluetooth devices are potentially busier than their slaves devices, and therefore spend less time discovering new BDs. As a consequence, it is more possible that a new BD is discovered by a slave BD. Presented

no restriction, the slaves will arbitrarily create new piconets. That will lead to long diameter of the scatternet, and increase data transmission delay.

The criteria to judge whether the new devices should be connected to masters or slaves is based on social relationship, too. Besides, to optimize the structure of scatternet, we take into consider the value of master and slave.

When a node leaves off the system, the connections with his

case	relationship with master	relationship with slave	to be connected to
1	friend	friend/ same attribution/ stranger	master
2	same attribution	friend	slave
3	same attribution	same attribution/ stranger	master
4	stranger	friend	slave
5	stranger	same attribution/ stranger	master

TABLE I
NODE SELECTION FOR NEW CONNECTION

master and his slaves are cut off. The slaves and the child part of the slaves are reconnected to the system. The same steps are executed as one node joins the system.

III. SIMULATION

IV. RELATED WORKS

V. CONCLUSION