

## Proximal Social Chatting App for Smartphones using AllJoyn

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**Abstract.** The attention of the social network is increasing rapidly, as a consequence, various services based on social network are provided recently. In the usage of existing social network service, however, there are complicated processes including registration and releasing of private information. To solve this problem, we design and develop a social chatting application which has the feature of one-off connection in this paper. This application can be used for sharing the information with unspecified individuals through Wi-Fi connection.

**Keywords:** AllJoyn SDK, social network service, proximal social chatting, Android application, chatting application

### 1 Introduction

Recently, social network services have been conducted in various fields and they are closely related to the location based services [1]-[3]. However, these services have a severe restriction. Firstly, due to the lack of context awareness, it is hard to use these services. For example, users should perform complicated processes for the registration and releasing of private information when offering and receiving related information. Secondly, since the users can adjust their location, false information can be provided [4].

Considering these problems, in this paper, we design and develop a proximal social chatting application between smartphones through Wi-Fi connection. Using AllJoyn SDK of Qualcomm, which offers a service to connect with various devices, users can be connected to neighboring people.

## 2 Design of a Proximal Chatting Application through Wi-Fi Connection

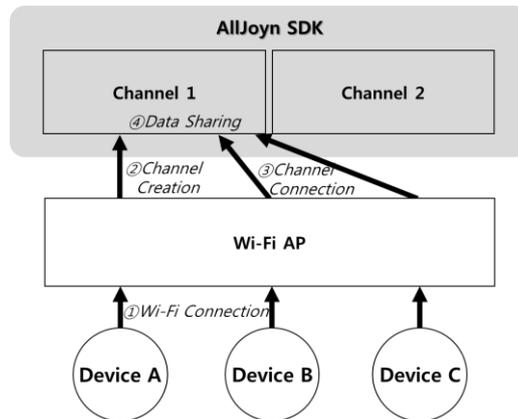


Fig. 1. Application operating sequence

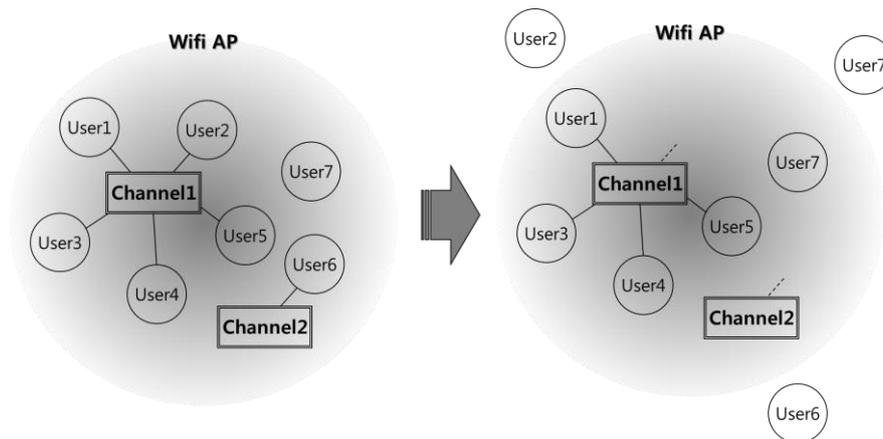


Fig. 2. Device-to-device connection

The proposed application operates as shown in Figure 1. After the device is connected with Wi-Fi, user can create a channel that is similar to chatting room. Devices connected with the same Wi-Fi Access Point (AP) can access channels within that AP. A channel can be accessed by multiple devices. This can allow sharing data (text, image, etc.) between connected users. As shown in Figure 2, the user's device is automatically disconnected with the channel when the user is out of the service region of Wi-Fi.

These operations offer the service which enables users to share the location information with neighboring people and to communicate with a one-off group without private information exposure.

### 3 Implementation of an Application Using AllJoyn SDK

We have implemented the application using AllJoyn SDK for Android offered by AllJoyn official website [5] and tested this app in three Galaxy S4 smartphones.

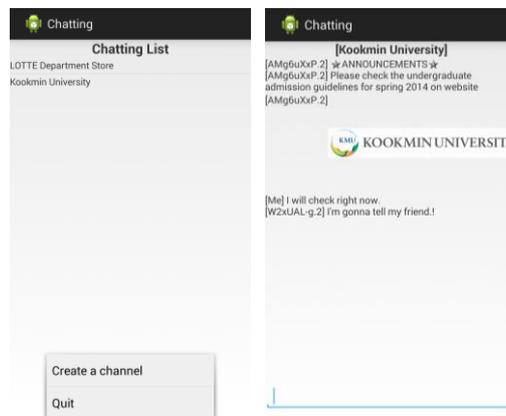


Fig. 3. The screenshots of the application

Figure 3 shows the screenshots of this application. As soon as the application is executed, the application is connected with AllJoyn Daemon using Bus Attachment. After the connection is completed, devices can create the channel. The channel can be accessed by devices connected with the same Wi-Fi AP. Users can check the channel list within connected Wi-Fi AP, and handle to connect to the corresponding channel by touching the list of channel. The described features above make the proposed chatting programs different from others. Furthermore, users can share their texts and images in the galleries of smartphones.

### 4 Conclusion

In this paper, we designed and implemented the chatting application using AllJoyn SDK, which is an open-source project about Internet-Of-Things (IoT) of Qualcomm. This application takes advantage of the AllJoyn connection feature that enables various devices to connect to each other, thus, user can easily communicate with unspecified neighboring individuals. Through the configured connection, users can share their data with other people and obtain the information of location without private information exposure. We believe that various applications can be developed

through the proposed setting such as travel-tracking and store's information management apps. In the future works, we will soon realize these applications.

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