



**Document:**Functional Requirements

**Project:** Group Chat For Linphone (Agile DO-178)

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**Github repository:**

<https://github.com/TheBaobabTeam/linphone-android>

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# 1 Introduction

## 1.1 Purpose

The purpose of this project is to extend Linphone's Instant Messaging (IM) implementation on Android platforms to include group chat and to implement other minor improvements to Linphone's IM capabilities and user interface.

## 1.2 Scope

We are required to develop the following functionality for the Linphone project:

- Group chat (Invite additional members to a chat, all members receive chats)
- Secure group chat (AES256)
- Creation and deletion of groups
- Voice record and send over IM
- Improve the messaging user interface
  - Spacing between words are terrible
  - Make text bigger
  - Blocks indents required to better specify who said what
  - Presence indication to show a remote user is typing
  - User picture portraits

# 2 Overview of Linphone Group Chat

Diagram to show an abstract overview of the Linphone Group Chat. This system will be discussed in greater detail in the rest of the article.

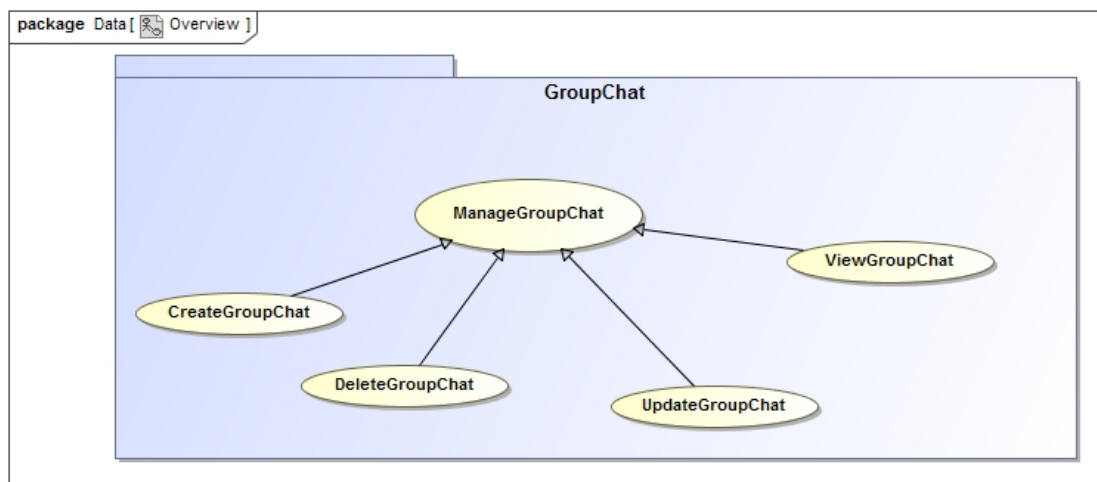


Figure 1: Overview of Linphone group chat

## 3 Linphone Group Chat

### 3.1 Create Group Chat

#### 3.1.1 Required Functionality:

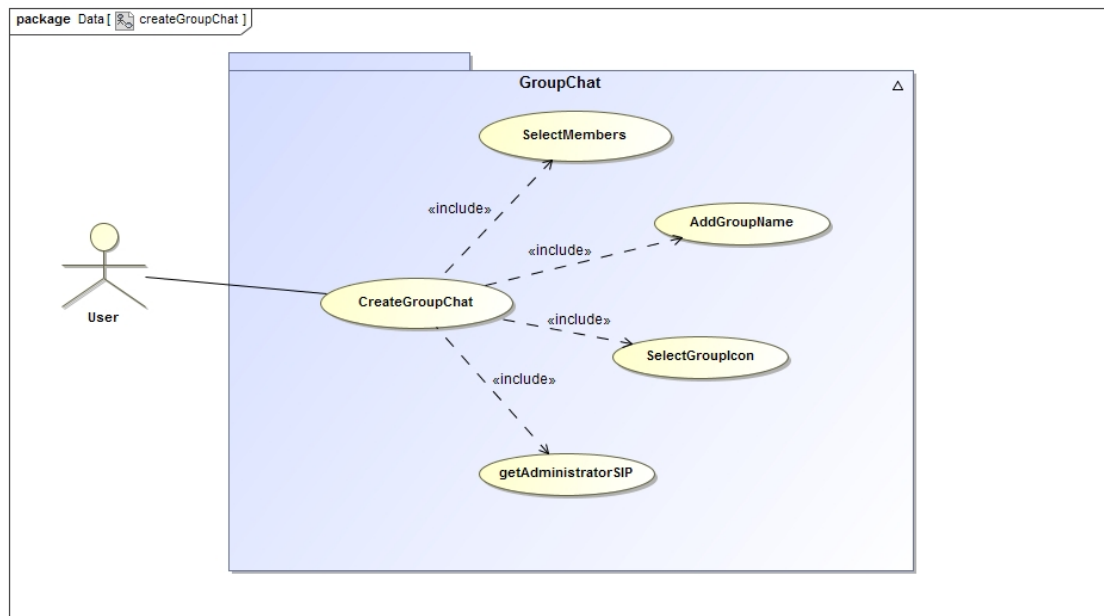


Figure 2: Create Group Chat use case diagram

**Description:** This use case encapsulates the ability for a user to create a new group chat. Upon the creation of the group chat, the user will have the group chat appear on their chats screen. The user will now be able to chat with other group members.

#### 3.1.2 Prioritization:

Critical

#### 3.1.3 Conditions and Data Structures:

##### Pre-Conditions:

- The user wanting to create a new group chat should register on linphone and have a registered account.
- The user should have the people that they want to add to the group chat as contacts on their linphone application. The participants to be added should also have a registered linphone account.

##### Post-Conditions:

- A message is displayed to inform the creator of the group chat that the creation has been successful. Users can now chat in the group.
- If this service has been rejected, an exception is thrown and an error message will be displayed to the user.

### 3.1.4 Process Specifications:

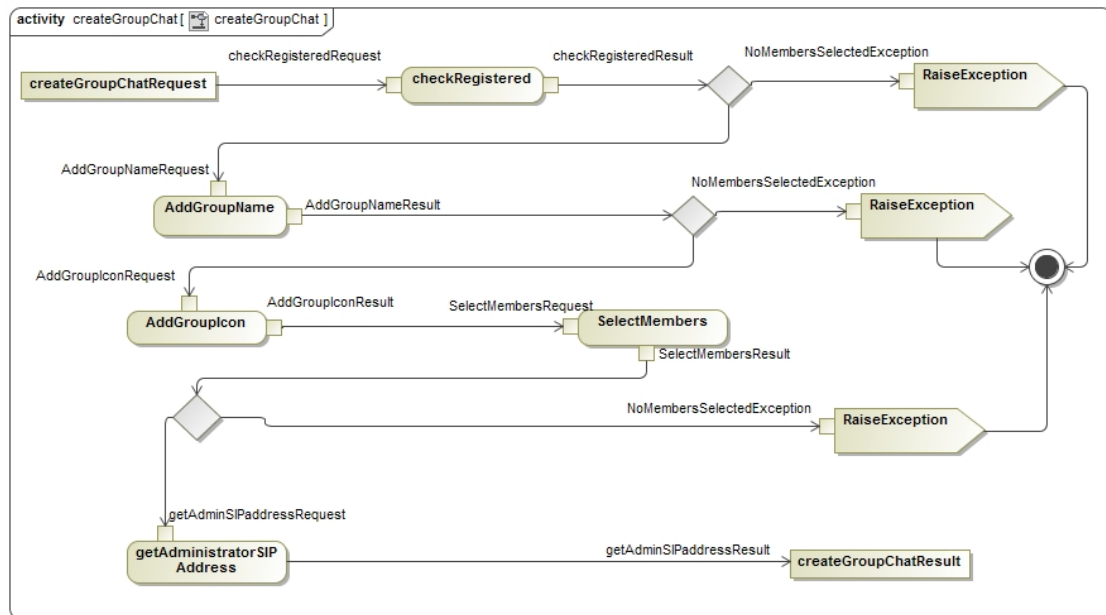


Figure 3: Create Group Chat activity diagram

### 3.2 Domain model

This is the domain model for the group chat

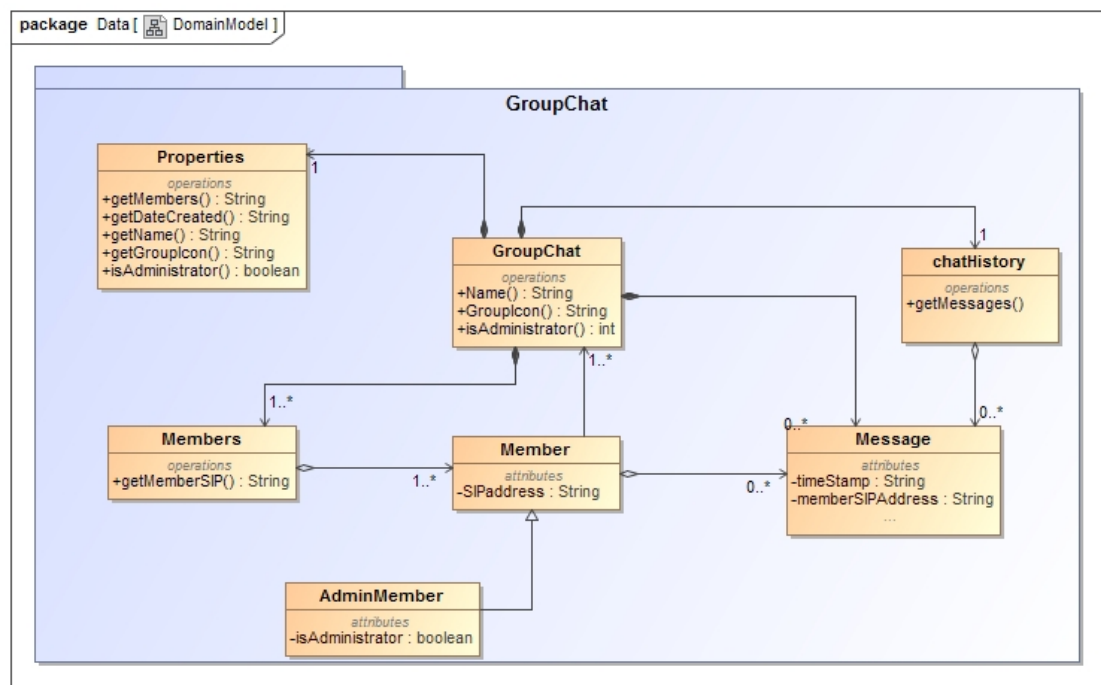


Figure 4: Domain model for Group Chat

Note that the relationship between the GroupChat and Properties,Members,

Message and chatHistory is a composite relationship because they are only accessible from the GroupChat and if the GroupChat is deleted, they all are also deleted.

There is a aggregation relationship between Members and member because the members class has to consists of one or more members.

There is also a specialization relationship between member and AdminMember because a member can be administrator member(can add members, remove members,delete group) or a basic group member(can edit group icon,group name and view members).