
Stevens LLC

**Apple FaceTime
Software Requirements Specifications
For FaceTime Call Management and Interaction**

Version 1.0

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Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

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Software Requirements Specifications

1. Introduction

This document outlines the Software Requirements Specifications (SRS) for Apple FaceTime, specifically focusing on the call management and interaction features. The SRS provides a detailed description of the external behavior of the FaceTime application, including functional and nonfunctional requirements, as well as any design constraints and supplementary specifications. The purpose of this document is to serve as a comprehensive guide for developers, testers, and stakeholders to ensure that the FaceTime application meets the necessary requirements for effective call management and interaction.

1.1 Purpose

The purpose of this Software Requirements Specification is to provide a complete and detailed description of the external behavior and functionalities required for the FaceTime call management and interaction system. This document will describe the key features, user roles, and use cases that define how FaceTime calls are initiated, managed, and ended. The SRS also covers nonfunctional requirements and design constraints essential for the development and deployment of the FaceTime application.

1.2 Scope

This SRS applies to the FaceTime call management and interaction features within the Apple FaceTime application. It covers both individual and group FaceTime calls, including key functionalities such as call initiation, participation, screen sharing, and call management. The document is associated with the use case models that describe the user interactions with these features and is applicable to all user roles, including Call Initiator, Participant, and Group Administrator. The scope of this document also includes supplementary requirements such as performance, security, and usability standards that must be adhered to during the development process.

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1.3 Definitions, Acronyms and Abbreviations

1.3.1 Definitions

- Call Recipient: A user who receives and joins a FaceTime call. Additional participants will be identified as “Call Recipient 1”, “Call Recipient 2”, etc.
- FaceTime: A video and audio calling application developed by Apple Inc.
- Call Initiator: The user who starts a FaceTime call. Also responsible for managing participants in a group FaceTime call.
- Group Administrator: The user responsible for managing participants in a group FaceTime call.
- Participant: A user who is part of a FaceTime call. It can be a Call Initiator or a Call Recipient. Additional participants will be identified as “Participant 1”, “Participant 2”, etc.

1.3.2 Acronyms

- None

1.3.2 Abbreviations

- SRS: Software Requirements Specification
- UC: Use Case

1.4 Overview

This SRS document is organized into several sections. The Introduction provides the purpose, scope, definitions, and overview for the document. The Overall Description section discusses general factors affecting the FaceTime application and its requirements, including assumptions and dependencies. The Specific Requirements section contains detailed descriptions of all software requirements, including use cases and supplementary specifications. The document concludes with supporting information and references.

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2. Overall Description

This section provides an overview of the FaceTime call management and interaction features, highlighting the general factors that influence the product and its requirements. This background information supports the understanding of the detailed requirements presented in the subsequent sections.

2.1 Use-Case Model Survey

The FaceTime application includes several key use cases that define its call management and interaction functionalities. The detailed Use Cases are in section 3.

Use Case #	Use Case Title	Description
UC1	Start a Video Call	Describes how a user initiates a FaceTime video call.
UC2	Add an Incoming Call	Details the process for joining an ongoing FaceTime call.
UC3	Mute Audio During a Call	Explains how a user can mute their audio during a call.
UC4	Share Screen During a Call	Covers the steps for sharing a screen during a FaceTime call.
UC5	Initiate a Group FaceTime Call	Outlines the procedure for starting a group FaceTime call.
UC6	Manage Group Call Participants	Describes how a group administrator can manage participants during a call.
UC7	End a Call	Details the process for ending a FaceTime call.
UC8	Respond to a Call Invitation	Explains how a user can respond to a FaceTime call invitation.

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2.2 Assumptions and Dependencies

This SRS assumes that all users have access to compatible Apple devices with FaceTime installed and that these devices are connected to a stable internet network. Additionally, it is assumed that the FaceTime application is integrated with the Apple ecosystem, including the Contacts app, and is fully updated to the latest version. Dependencies include the availability of Apple servers for call management and the functionality of the device's hardware components, such as the camera, microphone, and speakers.

3. Specific Requirements

The following section contains detailed software requirements, categorized by use cases, which provide a level of detail sufficient for the system's designers and testers. Each use case describes the interactions between the user and the system to achieve specific goals, with supplementary requirements outlining the expected performance, security, and usability standards.

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3.1 Use-Case Reports

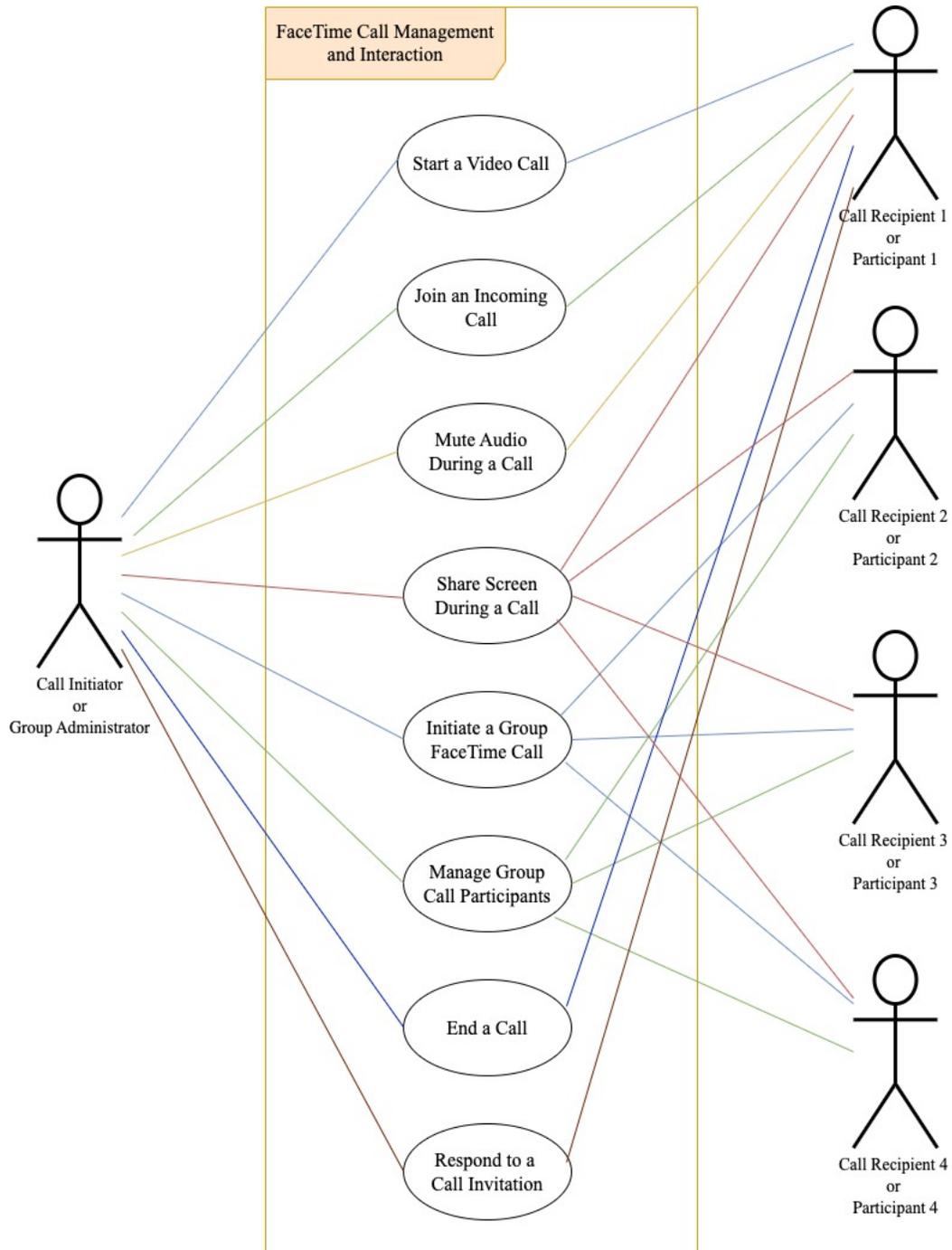


Fig. 1 - Use Case Diagram for the FaceTime Call Management and Interaction System

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3.1.1 Use Case Name: Start a Video Call

Summary

This use case describes how a user (Call Initiator) initiates a FaceTime video call with a contact. The call is established when both parties have active connections.

Preconditions

- The device is on.
- The Call Initiator is logged into FaceTime.
- The Call Initiator has an active internet connection.
- The contact may be listed in the Call Initiator’s FaceTime contact list.

Triggers

- Call Initiator selects a contact and taps “FaceTime”.

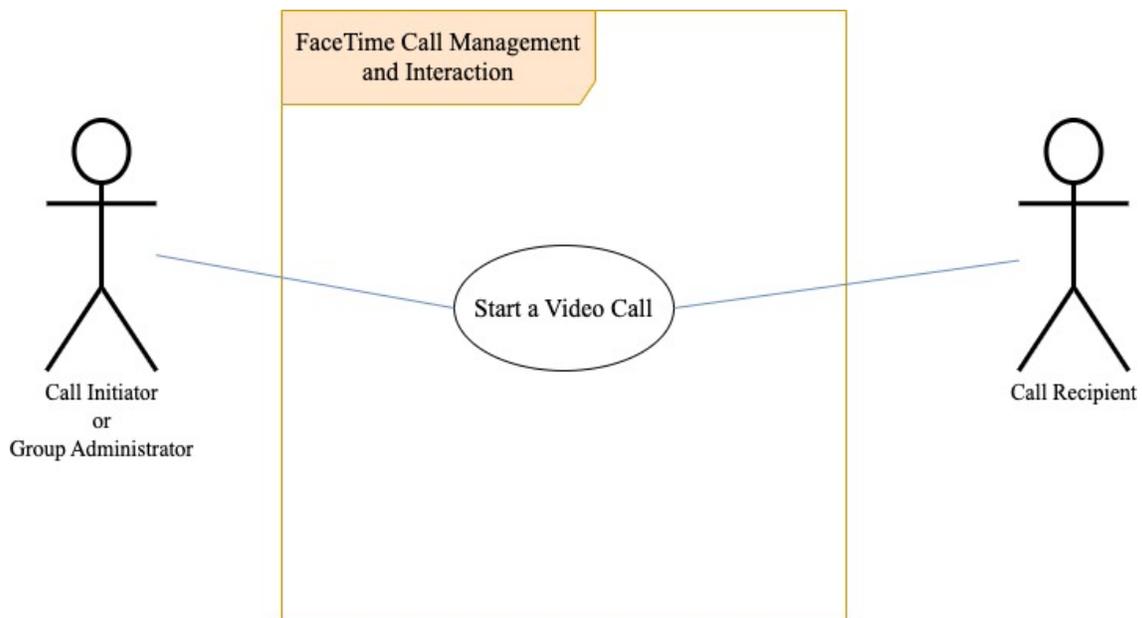
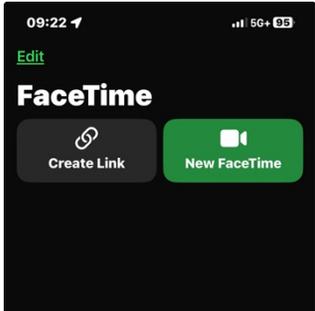
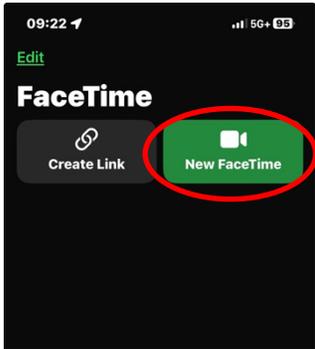


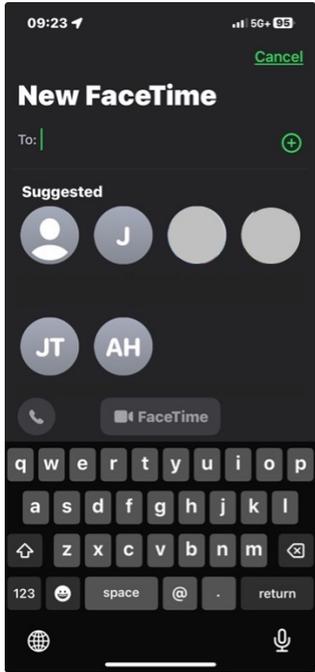
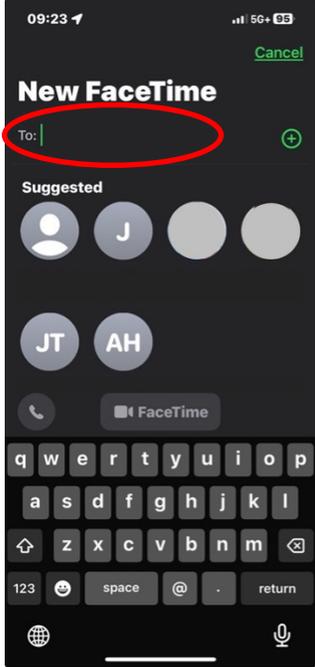
Fig.2 - Use Case Diagram for Start a Video Call

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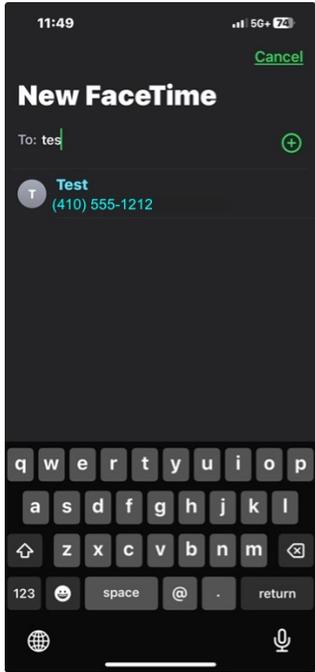
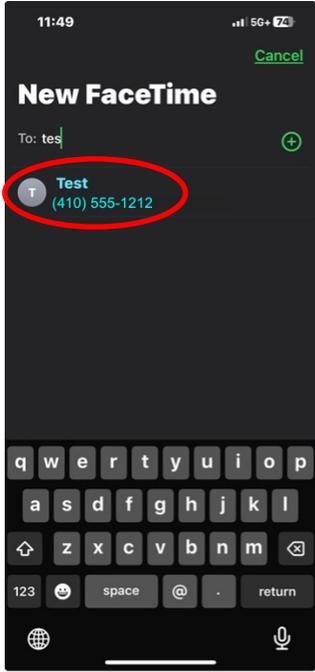
Basic course of events (main scenario)

Actor	System	Screen
<p>1. The Call Initiator taps the FaceTime icon.</p>		 <p>A screenshot of an iPhone home screen. The time is 09:21 and the signal strength is 5G+. The FaceTime app icon, which is a green square with a white video camera icon, is circled in red. The background is a scenic image of a stone archway over water. The dock at the bottom contains icons for Phone, Mail, App Store, and Music.</p>
	<p>2. The System shall open FaceTime.</p>	 <p>A screenshot of the FaceTime app interface. The time is 09:22 and the signal strength is 5G+. At the top, there is an 'Edit' link. Below it, the word 'FaceTime' is displayed in large white text. There are two buttons: 'Create Link' with a link icon and 'New FaceTime' with a green video camera icon.</p>
<p>3. The Call Initiator taps the "New FaceTime" icon.</p>		 <p>A screenshot of the FaceTime app interface, identical to the previous one. The 'New FaceTime' button, which is a green rounded rectangle with a white video camera icon and the text 'New FaceTime', is circled in red.</p>

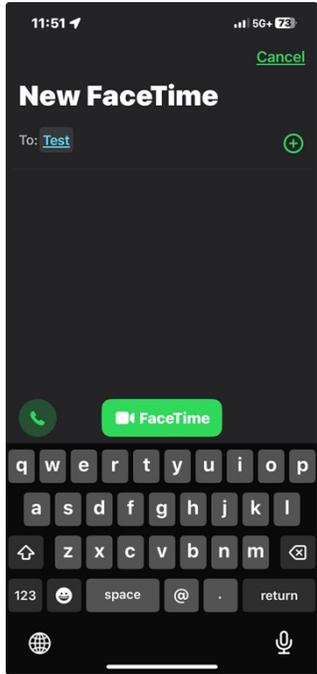
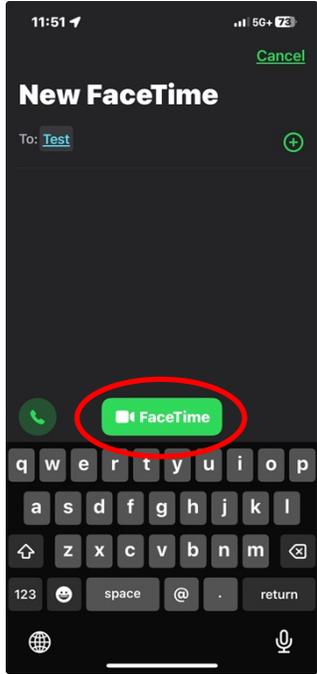
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Actor	System	Screen
	<p>4. The System shall open “New FaceTime”, giving the Call Initiator the option to enter a contact name, telephone number, email address, or select from suggested contacts (frequent contacts).</p>	
<p>5. The Call Initiator types a contact name, telephone number or email address.</p>		

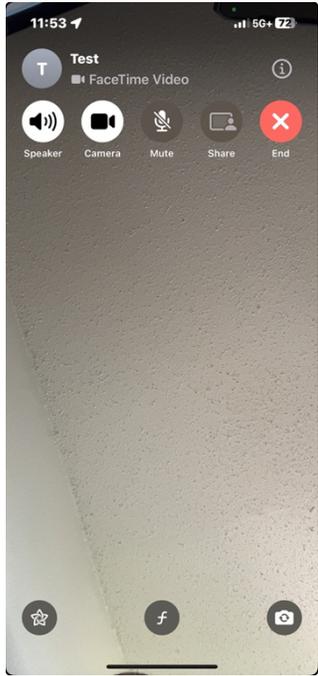
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Actor	System	Screen
	<p>5.1. The System shall perform a search, displaying selections that match the entry.</p>	
<p>5.2. The Call Initiator selects the intended Call Recipient.</p>		

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Actor	System	Screen
	<p>6. The System shall select the intended Call Recipient; the FaceTime icon appears.</p>	
<p>7. The Call Initiator taps "FaceTime" to initiate the FaceTime call with the Call Recipient.</p>		

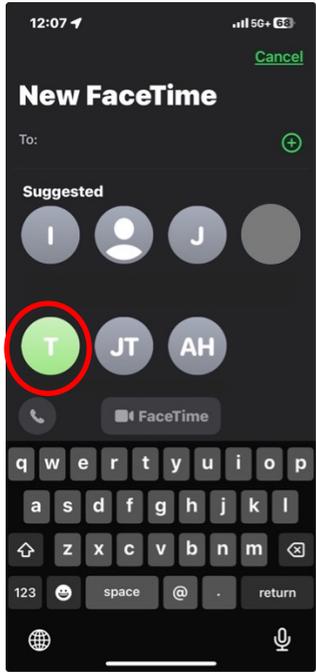
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Actor	System	Screen
	<p>8. The System shall initiate the FaceTime call, notifying the Call Recipient of an incoming call.</p>	
<p>9. The Call Recipient taps the green button to answer the call.</p>		

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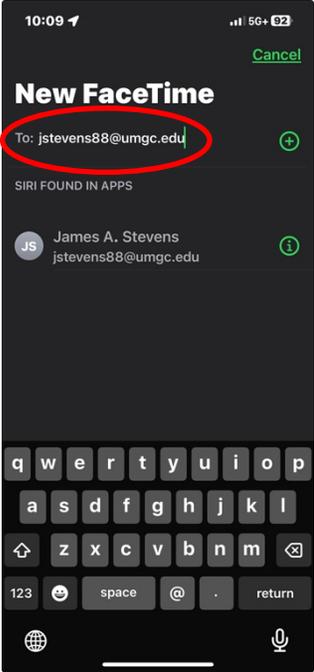
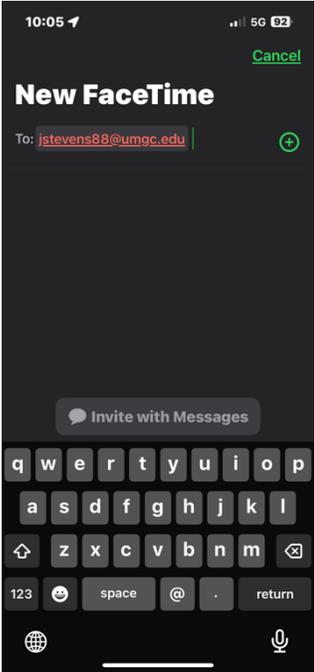
Actor	System	Screen
	<p>10. The System shall connect the Call Recipient to the Call Initiator, thus initiating the FaceTime call, where both the Call Initiator and Call Recipient can see and hear each other.</p>	

Alternative Scenario 1 - The selected contact appears as a suggested contact.

Actor	System	Screen
<p>5. The Call Initiator taps one of the suggested choices.</p>		

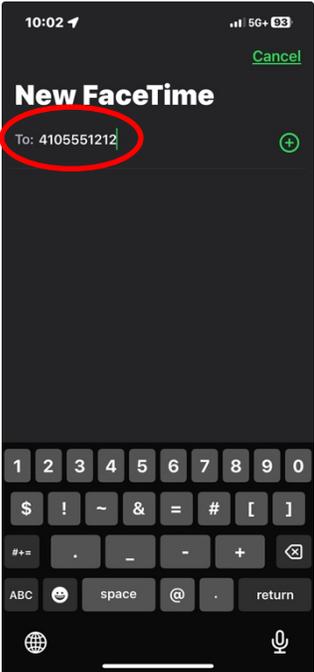
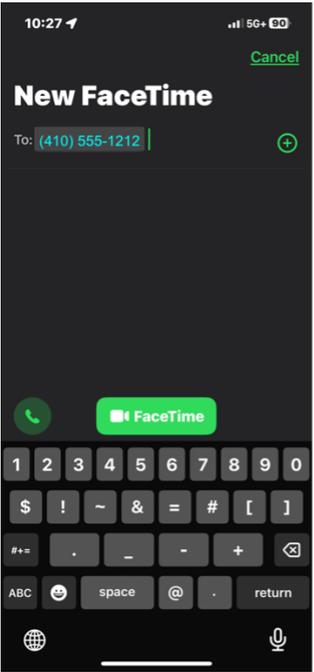
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Alternative Scenario 2 - The entered email is not a contact.

Actor	System	Screen
<p>5. The Call Initiator enters an email address and taps 'return'.</p>		
	<p>6. The System shall turn the email red and shall maintain the "Invite with Messages" grayed out since it does not recognize the information entered, as no contacts are listed and the email address is not a viable FaceTime option.</p>	

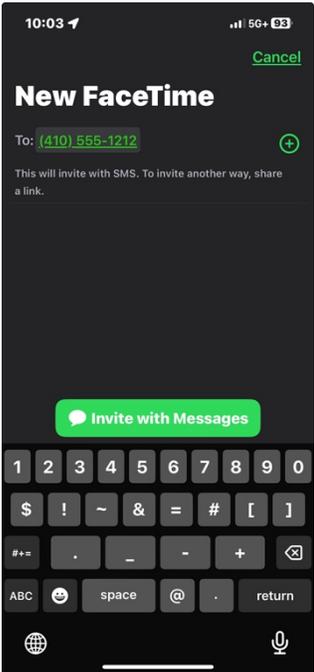
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Alternative Scenario 3 - The telephone number is not a contact but a valid FaceTime Number.

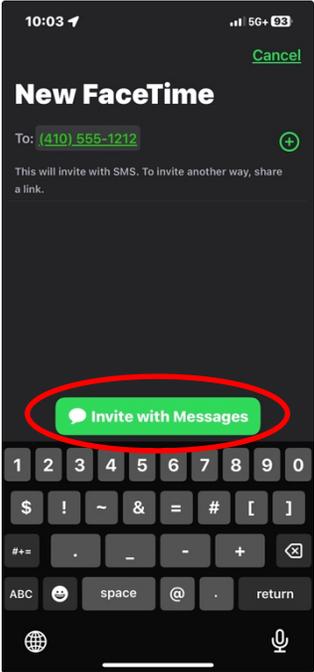
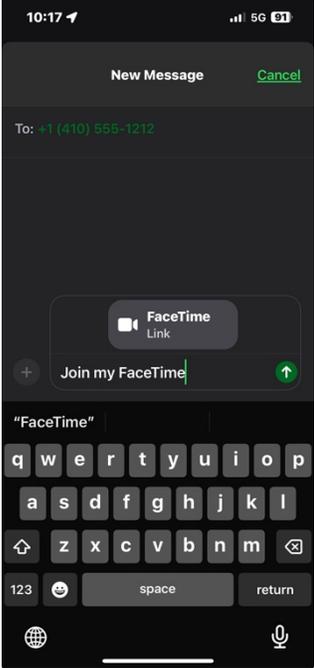
Actor	System	Screen
<p>5. The Call Initiator enters a telephone number and taps 'return'.</p>		
	<p>6. The System shall perform a search, checking if the telephone number is a valid FaceTime number. If a valid FaceTime number, the System shall turn the telephone number teal in color and shall activate the "FaceTime" button by turning it green in color, giving the Call Initiator the option to start a FaceTime call.</p>	

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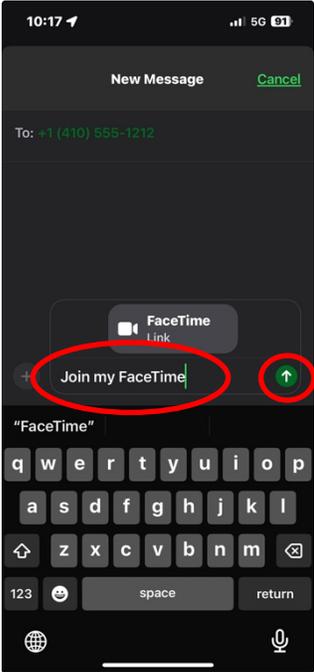
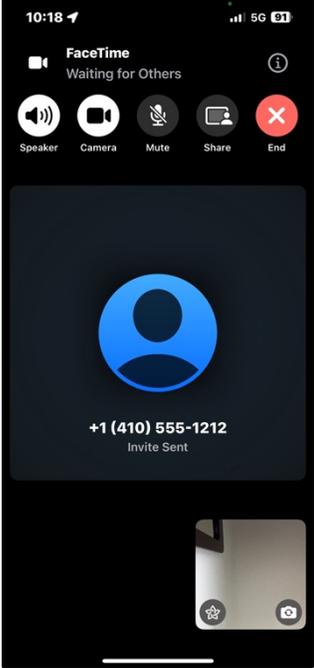
Alternative Scenario 4 - The telephone number is not a contact and not a valid FaceTime Number.

Actor	System	Screen
<p>5. The Call Initiator enters the telephone number of the Call Recipient and taps 'return'.</p>		
	<p>6. The System shall perform a search, checking if the telephone number is a valid FaceTime number. If not a valid FaceTime number and a valid telephone number, the System shall turn the telephone number green in color and shall activate the "Invite with Messages" button by turning it green in color, giving the Call Initiator the option to send an invite to FaceTime via SMS to the Call Recipient.</p>	

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<p>7. The Call Initiator taps the “Invite with Messages” icon to send an invite to the Call Recipient.</p>		
	<p>8. The System shall open the SMS screen, providing the Call Initiator the option to send an SMS invite to the Call Recipient.</p>	

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<p>9. The Call Initiator sends the message as is or modify the message. The Call Initiator taps the up arrow to send the SMS to the Call Recipient.</p>		 <p>The screenshot shows a text message interface on an iPhone. At the top, it says 'New Message' with a 'Cancel' link. Below that, the recipient is listed as '+1 (410) 555-1212'. A 'FaceTime Link' is visible, and below it is a button that says 'Join my FaceTime' with a green up arrow icon to its right. The keyboard is visible at the bottom.</p>
	<p>10. The System shall send the SMS message to the Call Recipient and shall open the FaceTime screen awaiting the invite.</p>	 <p>The screenshot shows the FaceTime 'Waiting for Others' screen. At the top, it says 'FaceTime' and 'Waiting for Others'. Below that are several control icons: Speaker, Camera, Mute, Share, and End. In the center, there is a large blue circular icon representing a person. Below that, the phone number '+1 (410) 555-1212' is displayed with 'Invite Sent' underneath. At the bottom, there is a small video preview window showing a camera view.</p>

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<p>11. The Call Recipient taps the link, thus accepting the invite.</p>		<p><i>No Image</i></p>
	<p>12. The System shall connect the Call Recipient to the Call Initiator, thus initiating the FaceTime call, where both the Call Initiator and Call Recipient can see and hear each other.</p>	

Post-conditions

- The FaceTime call is successfully connected.
- The Call Initiator and Call Recipient can see and hear each other.

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3.1.2 Use Case Name: Join an Incoming Call

Summary

This use case describes how a Participant responds to an incoming FaceTime call and successfully joins the video conversation.

Preconditions

- The device is on.
- The Call Recipient is logged into FaceTime.
- The device can receive FaceTime calls.
- The Call Recipient has an active internet connection.
- The contact may be listed in the Call Initiator's FaceTime contact list.

Triggers

- An incoming FaceTime call notification is received.

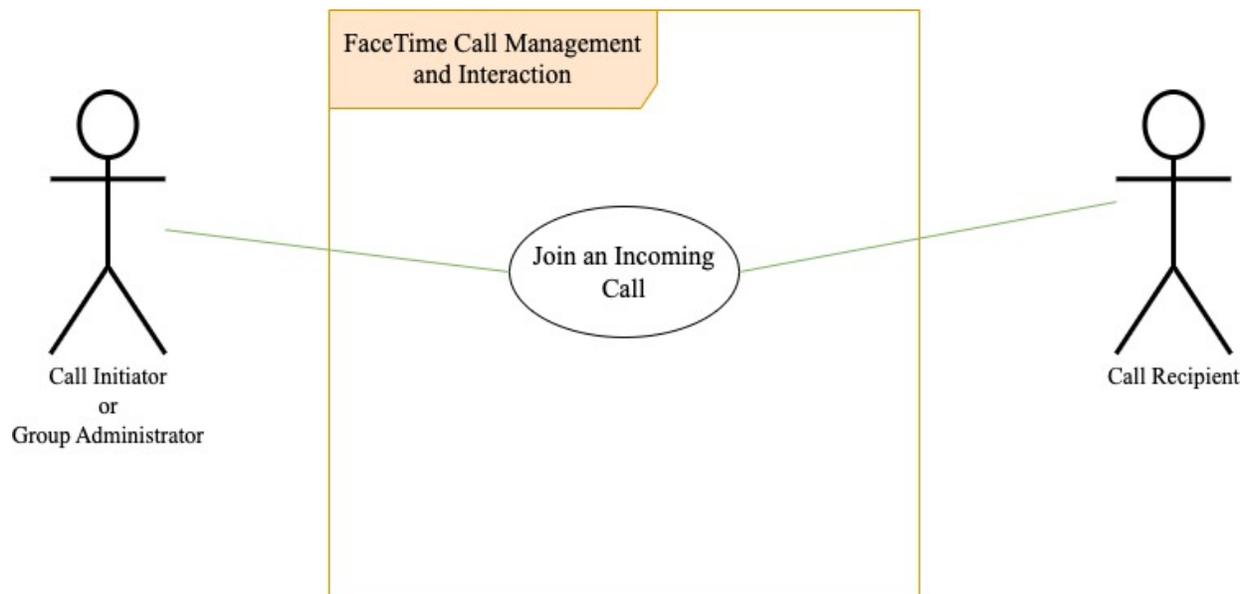


Fig.3 - Use Case Diagram for Join an Incoming Call

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Basic course of events (main scenario)

Actor	System	Screen
	<p>1. The System shall send a call invitation to the Call Recipient from the Call Initiator.</p>	
<p>2. Upon receiving a notification of an incoming FaceTime call, the Call Recipient taps the green button to answer the call.</p>		

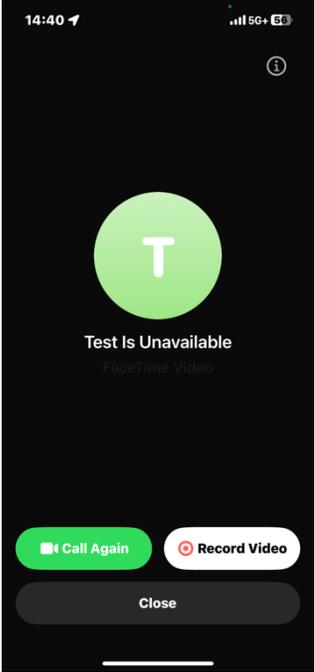
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Actor	System	Screen
	<p>3. The System shall connect the Call Recipient to the Call Initiator, thus initiating the FaceTime call, where both the Call Initiator and Call Recipient can see and hear each other.</p>	

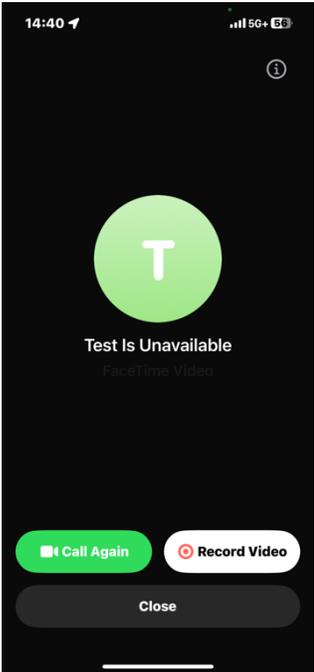
Alternative Scenario 1 - The Call Recipient misses the call invitation.

Actor	System	Screen
<p>2. The Call Recipient does not click the green button, so the call will not be answered.</p>		

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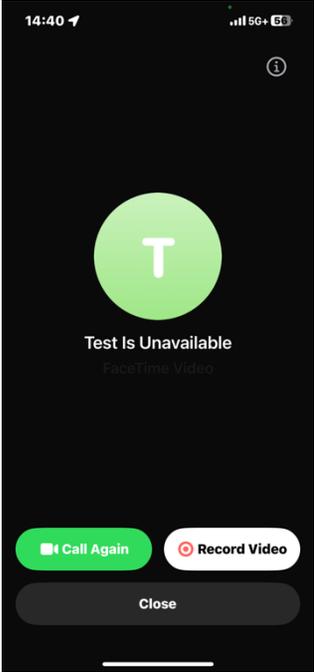
Actor	System	Screen
	<p>3. The System shall allow the call to ring for a specified duration.</p>	
	<p>4. The System shall decline the call and shall inform the Call Initiator that the contact is unavailable. The Call Initiator shall retry, record a video, or close FaceTime.</p>	

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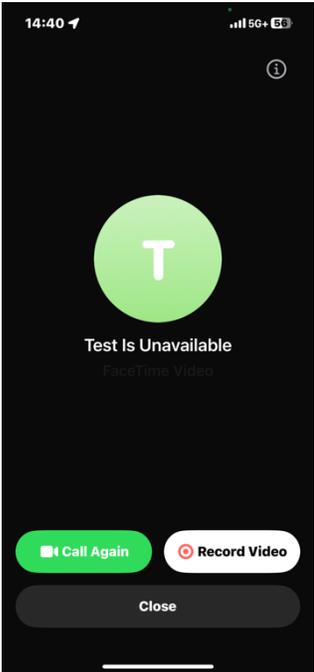
Actor	System	Screen
<p>5. The Call Initiator can retry, record a video, or close FaceTime.</p>		

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Alternative Scenario 2 - The Call Recipient declines the invitation.

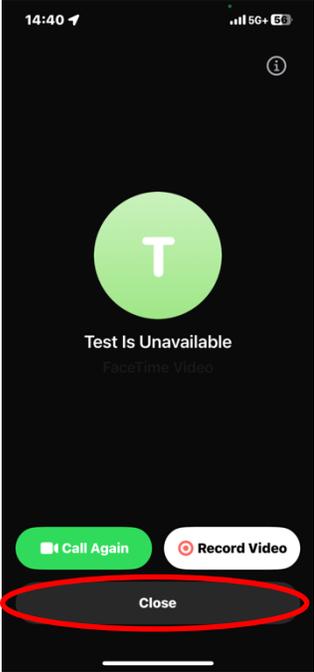
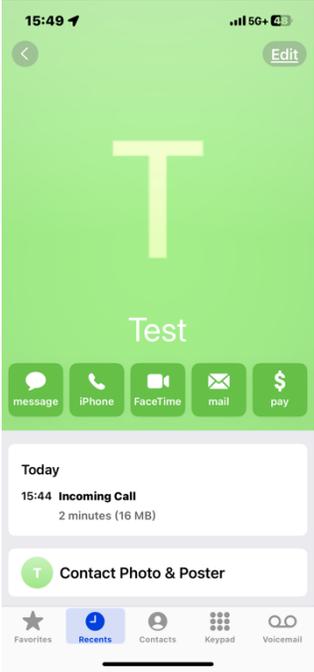
Actor	System	Screen
<p>2. The Call Recipient taps the red circle with the “X”, rejecting the call.</p>		
	<p>3. The System declines the call and informs the Call Initiator that the contact is unavailable. The Call Initiator may retry, record a video, or close FaceTime.</p>	

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Actor	System	Screen
<p>4. The Call Initiator can retry, record a video, or close FaceTime.</p>		

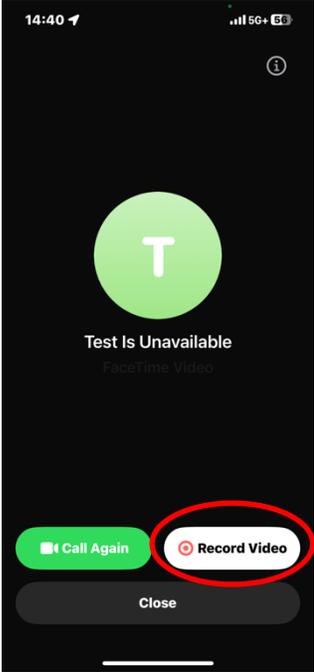
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Alternative Scenario 3 - Exiting after rejecting or not answering a call.

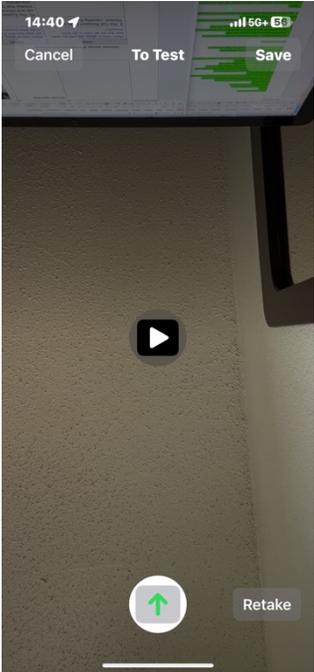
Actor	System	Screen
<p>4. The Call Initiator taps "Close".</p>		
	<p>5. The System shall exit the FaceTime application.</p>	

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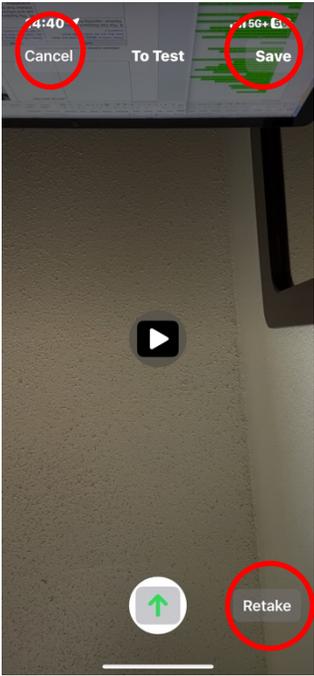
Alternative Scenario 4 - Options after rejecting or not answering a call.

Actor	System	Screen
<p>4. The Call Initiator taps “Record Video”.</p>		
	<p>5. The System shall switch to video and shall begin a countdown. At the end of the countdown, the system shall begin the video recording.</p>	

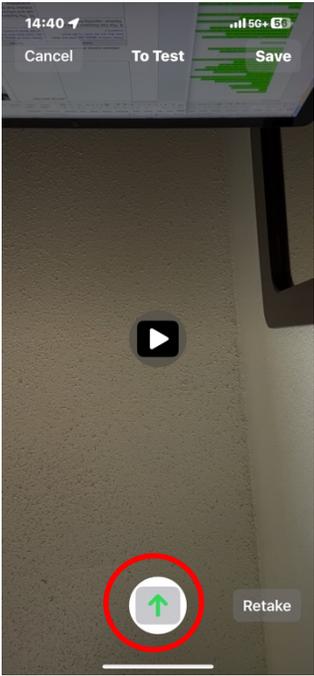
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Actor	System	Screen
<p>6. The Call Initiator records a video message. At the end of the message, the Call initiator taps the red square to end the recording.</p>		
	<p>7. The System shall stop video recording, saving the message.</p>	

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Actor	System	Screen
<p>8. The Call Initiator can cancel the video, save the video, or retake the video.</p>		 <p>A screenshot of a video recording interface. At the top, there is a status bar with the time '14:40' and signal strength indicators. Below the status bar, there are three buttons: 'Cancel' on the left, 'To Test' in the center, and 'Save' on the right. The 'Cancel' and 'Save' buttons are circled in red. In the center of the screen, there is a large black play button icon. At the bottom, there is a green circular button with an upward-pointing arrow and a 'Retake' button to its right. The 'Retake' button is also circled in red.</p>
<p>9. The Call Initiator taps the white play insignia with back background to replay the recording.</p>		 <p>A screenshot of the same video recording interface as above. The central black play button icon is circled in red. The other elements, including the status bar, 'Cancel', 'To Test', 'Save' buttons, and the bottom 'Retake' button, are visible but not circled.</p>

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Actor	System	Screen
<p>10. The Call Initiator taps the green arrow to send the message to the Call Recipient.</p>		
	<p>11. The System shall send the message to the call Recipient.</p>	<p><i>No Image</i></p>

Post-conditions

- The Call Recipient successfully joins the call and can see and hear the Call Initiator.

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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3.1.3 Use Case Name: Mute Audio During a Call

Summary

This use case explains how a Call Participant mutes their microphone during an active FaceTime call.

Preconditions

- The Call Participant is engaged in an active FaceTime call.

Triggers

- The Call Participant decides to mute their audio.

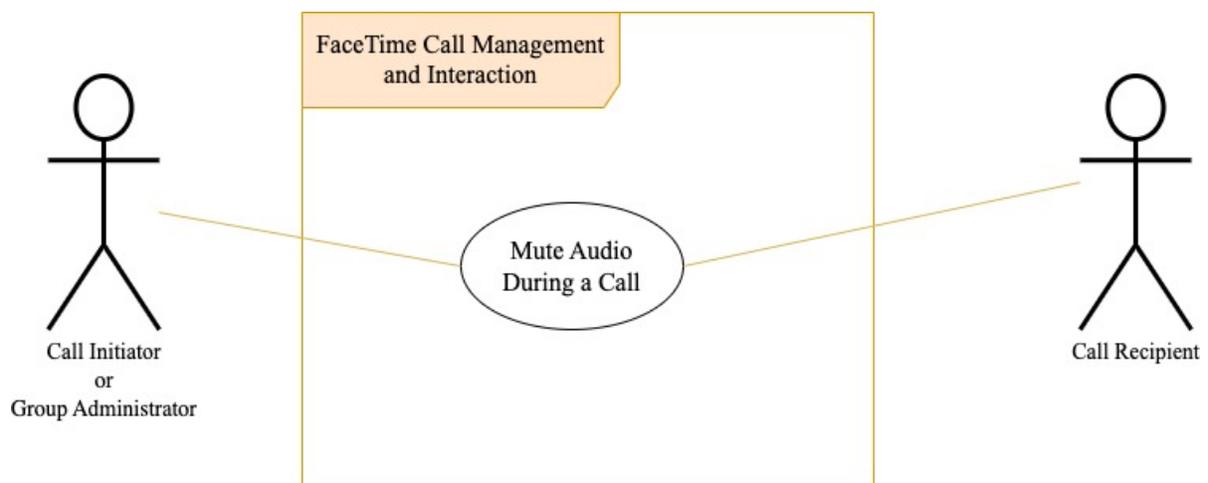
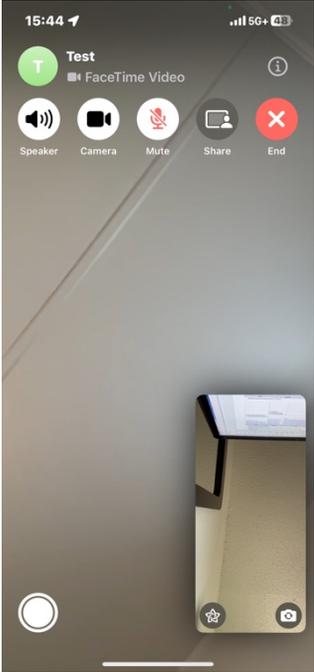


Fig.4 - Use Case Diagram for Mute Audio During a Call

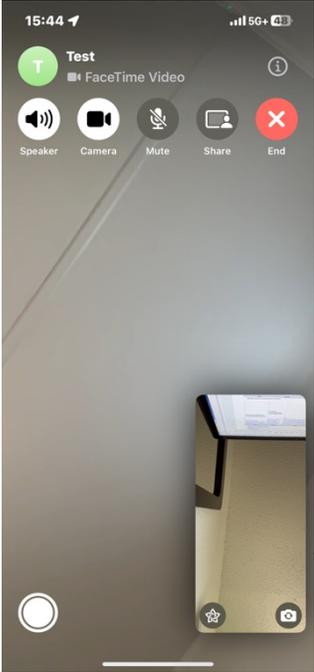
Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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Basic course of events (main scenario)

Actor	System	Screen
<p>1. Call Participant 1 taps the "Mute" button to mute the call.</p>		
	<p>2. The system shall mute Call Participant 1's microphone; Call Participant 2 shall not hear Call Participant 1.</p>	

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Alternative Scenario 1 - Resume audio

Actor	System	Screen
<p>3. Call Participant 1 taps the "Mute" button.</p>		
	<p>4. The System shall reactivate the user's microphone, allowing the audio to be transmitted; Call Participant 2 shall hear Call Participant 1.</p>	

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Post-conditions

- The Call Participant's microphone is muted, and no audio is transmitted to other participants.

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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3.1.4 Use Case Name: Share Screen During a Call

Summary

This use case covers how a Call Participant shares their device's screen with other participants during an active FaceTime call.

Preconditions

- Call Participants are engaged in an active FaceTime call.
- Devices supports screen sharing.

Triggers

- Call Participant selects the "Share" option.
- Call Participant then selects the "Share My Screen" option.

Apple FaceTime	Version: 1.0
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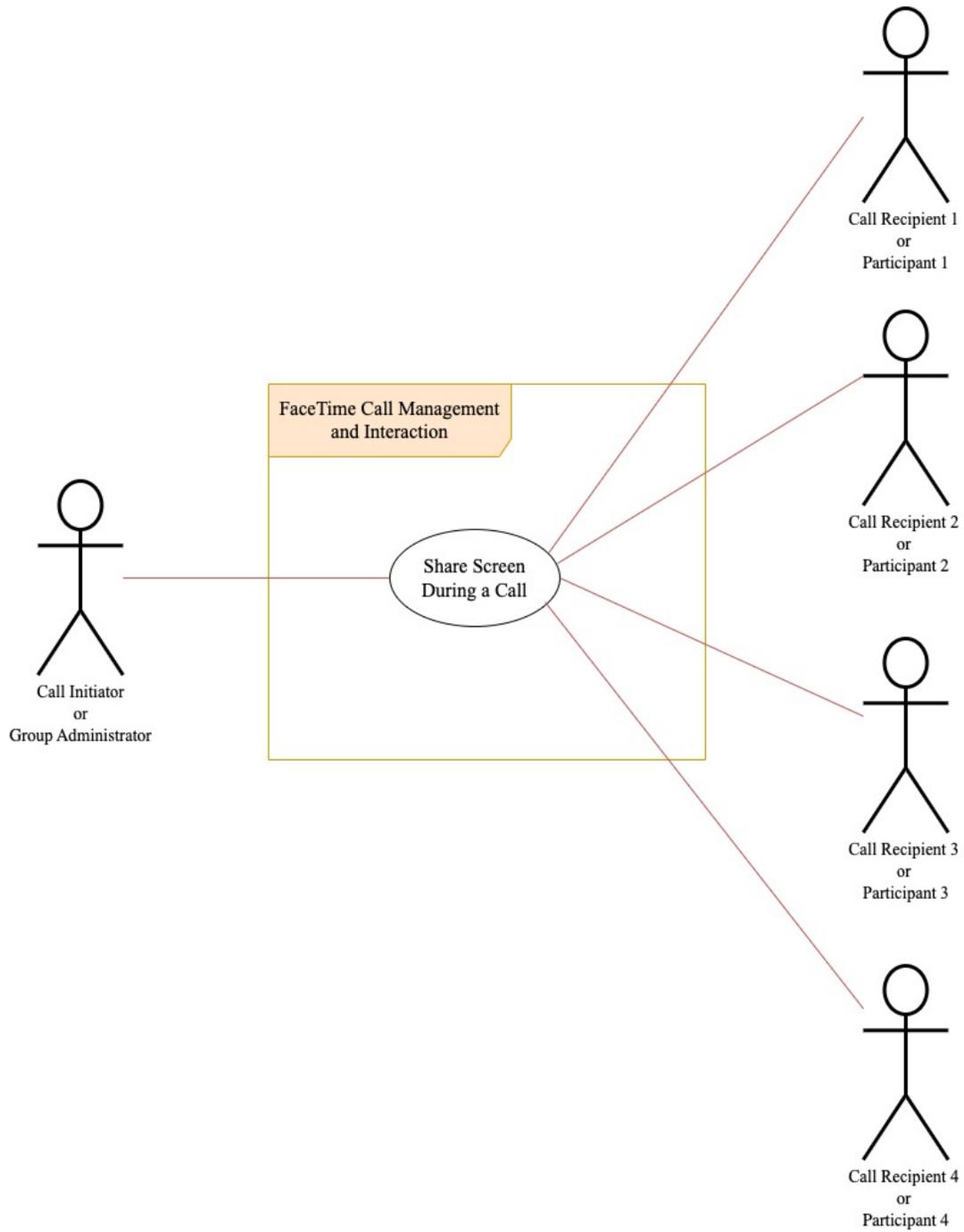
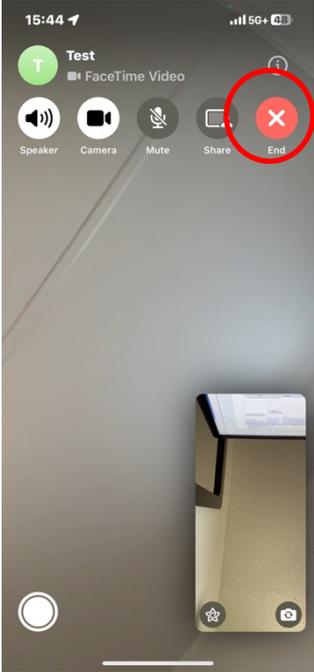
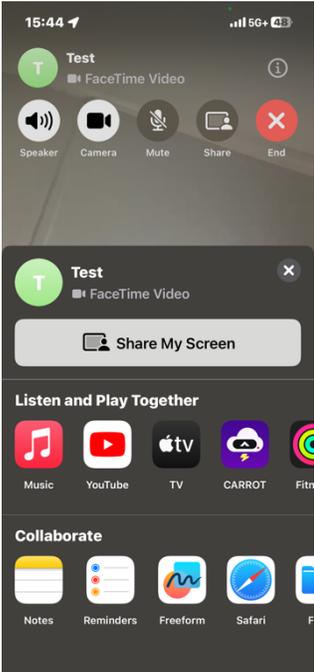


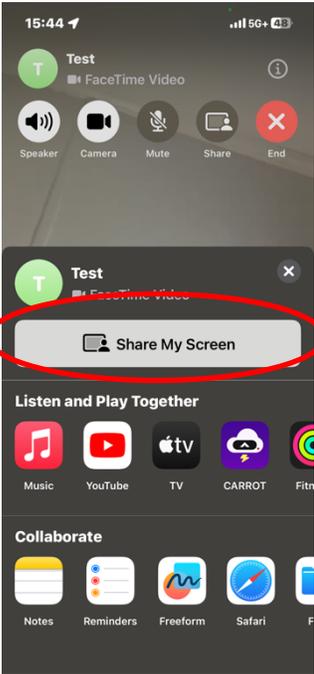
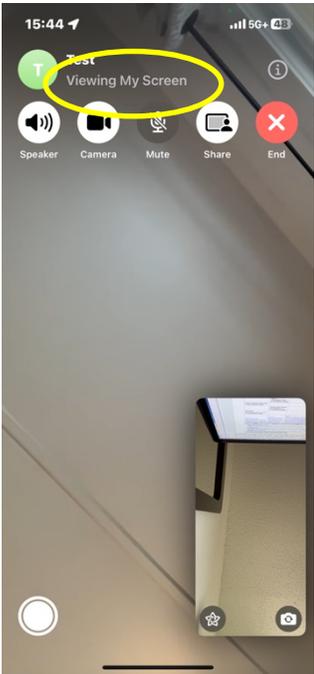
Fig.5 - Use Case Diagram Share Screen During a Call

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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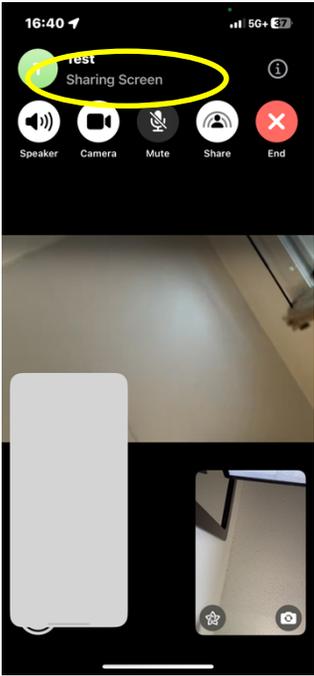
Basic course of events (main scenario)

Actor	System	Screen
<p>1. Call Participant 1 taps the "Share" option.</p>		 <p>The screenshot shows the top control bar of a FaceTime call. From left to right, the buttons are: Speaker (with a speaker icon), Camera (with a camera icon), Mute (with a microphone icon), Share (with a square icon containing a smaller square), and End (with a red 'X' icon). The 'Share' button is circled in red. The background shows a blurred video feed of a person's face.</p>
	<p>2. The System shall open the share options field.</p>	 <p>The screenshot shows the share options menu that appears after tapping the 'Share' button. The menu is overlaid on the call control bar. At the top, there is a 'Share My Screen' button with a screen icon. Below this, there are two sections: 'Listen and Play Together' and 'Collaborate'. The 'Listen and Play Together' section contains icons for Music, YouTube, TV, CARROT, and Fit. The 'Collaborate' section contains icons for Notes, Reminders, Freeform, Safari, and Files.</p>

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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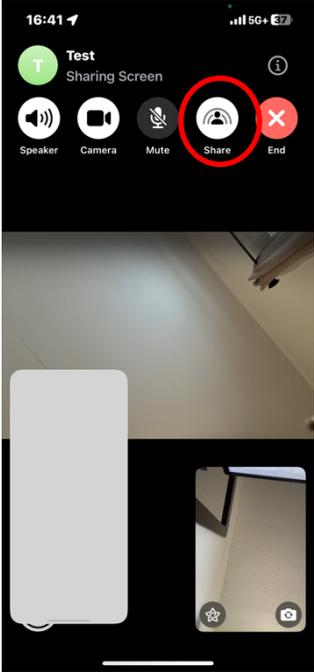
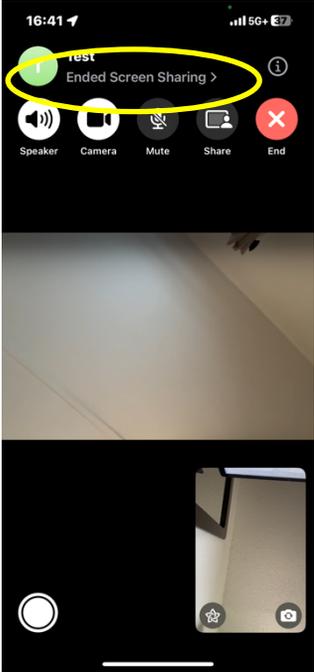
Actor	System	Screen
<p>3. Call Participant 1 taps the "Share My Screen" option to share their screen.</p>		 <p>The screenshot shows the top portion of an iPhone FaceTime call. At the top, the time is 15:44 and the signal strength is 5G+. Below the status bar, there's a header for 'Test' with a green circular icon containing a white 'T'. Underneath, there are several control icons: Speaker, Camera, Mute, Share, and End. The 'Share My Screen' button is highlighted with a red oval. Below this, there are sections for 'Listen and Play Together' (with icons for Music, YouTube, TV, CARROT, and Fit) and 'Collaborate' (with icons for Notes, Reminders, Freeform, and Safari).</p>
	<p>4. The System shall accept and initiate screen share.</p>	 <p>The screenshot shows the same iPhone FaceTime call interface as above, but now the text 'Viewing My Screen' is visible in the top left area, circled in yellow. The 'Share My Screen' button is no longer visible. The background of the call shows a blurred view of the other participant's screen.</p>

Apple FaceTime	Version: 1.0
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Actor	System	Screen
<p>5. All participants are actively viewing Call Participant 1's screen.</p>		

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Alternative Scenario 2 - The Participant stops screen sharing.

Actor	System	Screen
<p>6. The Participant 1 taps “Share” to end screen share.</p>		 <p>A screenshot of the FaceTime control bar on an iPhone. The status bar at the top shows the time 16:41, signal strength, and 5G+ connectivity. The control bar includes icons for Speaker, Camera, Mute, Share, and End. The 'Share' icon, which is a person with a red 'X' over it, is circled in red. Below the control bar, a portion of the shared screen is visible, showing a white rectangular object on a dark background.</p>
	<p>7. The System shall accept and end screen share. The System shall notify Participant 2.</p>	 <p>A screenshot of the FaceTime control bar on an iPhone, similar to the previous one. The status bar shows 16:41 and 5G+ connectivity. The control bar includes icons for Speaker, Camera, Mute, Share, and End. The 'Share' icon is circled in yellow. Below the control bar, the shared screen is visible, showing a white rectangular object on a dark background.</p>

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Post-conditions

- The Call Participant's screen is successfully shared with all call participants.

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3.1.5 Use Case Name: Initiate a Group FaceTime Call

Summary

This use case explains how the Call Initiator starts a group FaceTime video call, inviting multiple participants to join.

Preconditions

- The device is on.
- The Call Initiator is logged into FaceTime.
- The Call Initiator has an active internet connection.
- Contacts may be listed in the Call Initiator's FaceTime contact list.
- Selected contacts are available for the group call.

Triggers

- Call Initiator selects multiple contacts and taps "FaceTime."

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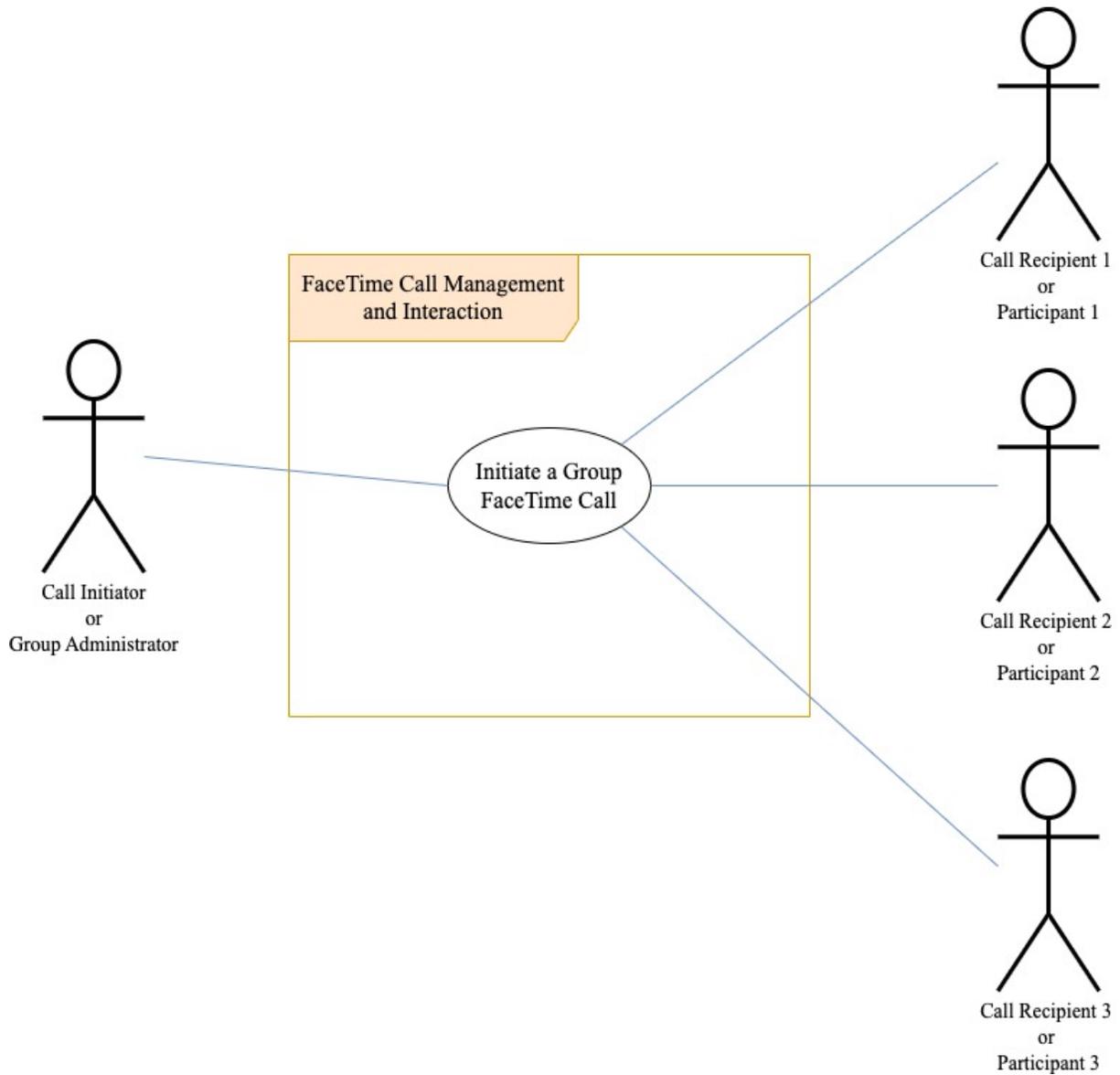
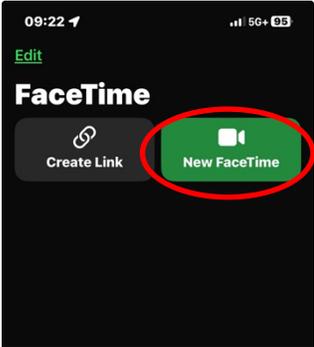


Fig.6 - Use Case Diagram for Initiate a Group FaceTime Call

Apple FaceTime	Version: 1.0
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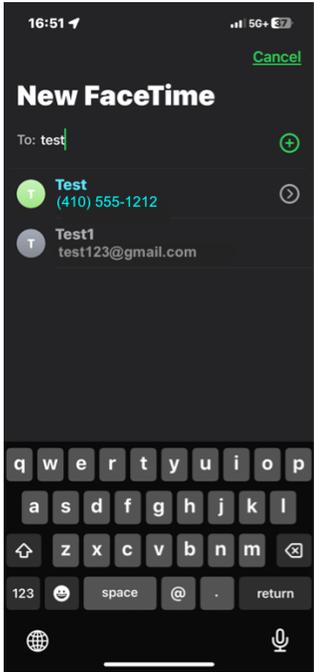
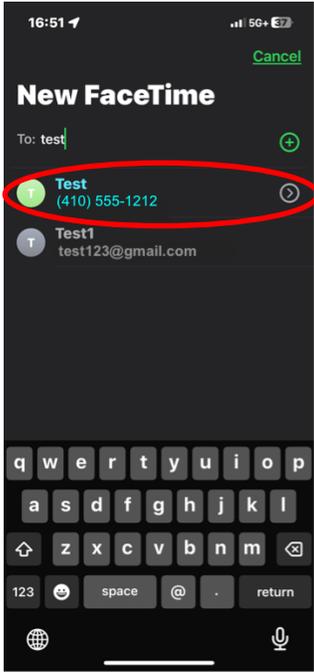
Basic course of events (main scenario)

Actor	System	Screen
<p>1. The Call Initiator taps the FaceTime icon.</p>		
	<p>2. The System shall open FaceTime.</p>	
<p>3. The Call Initiator taps the “New FaceTime” icon.</p>		

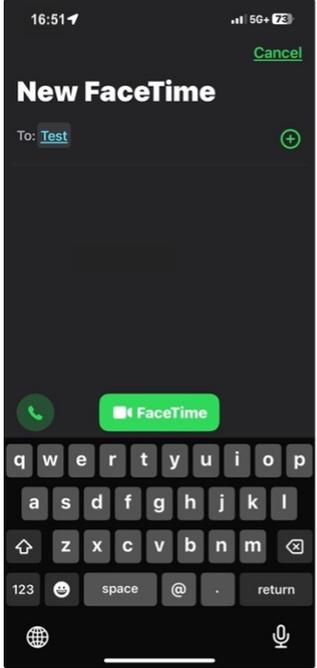
Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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Actor	System	Screen
	<p>4. The System shall open “New FaceTime”, giving the Call Initiator the option to enter a contact name, telephone number, email address, or select from suggested contacts (frequent contacts).</p>	
<p>5. The Call Initiator types a contact name, telephone number or email address for the first Call Recipient.</p>		

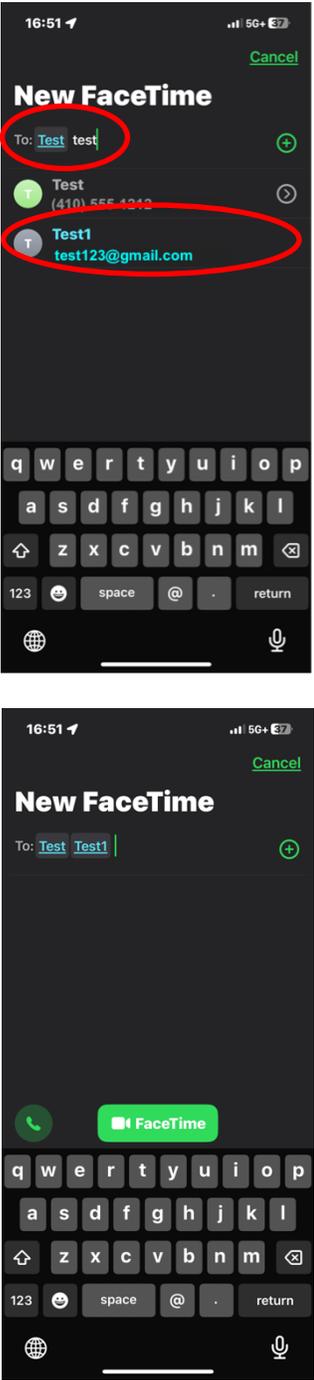
Apple FaceTime	Version: 1.0
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Actor	System	Screen
	<p>6. The System shall perform a search. The System shall display selections that match the entry. The System shall identify FaceTime valid numbers/emails by turning the email/number teal in color.</p>	
<p>7. The Call Initiator selects the Call Recipient.</p>		

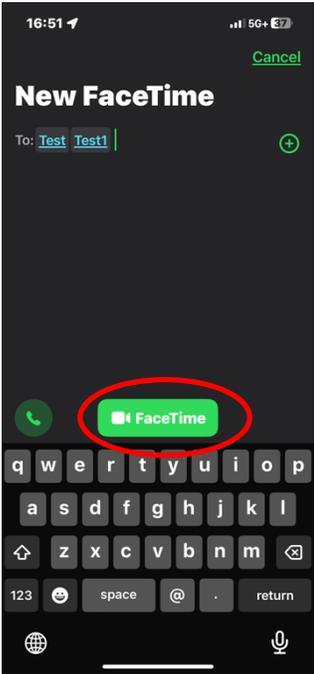
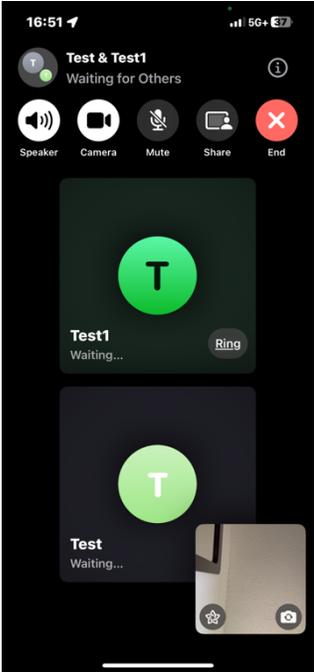
Apple FaceTime	Version: 1.0
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Actor	System	Screen
	<p>8. The System shall select the Call Recipient. The System shall allow the green FaceTime icon to appear and be active.</p>	

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Actor	System	Screen
<p>9. The Call Initiator repeats steps 5-8 to add additional callers as requested by the Call Initiator.</p>		

Apple FaceTime	Version: 1.0
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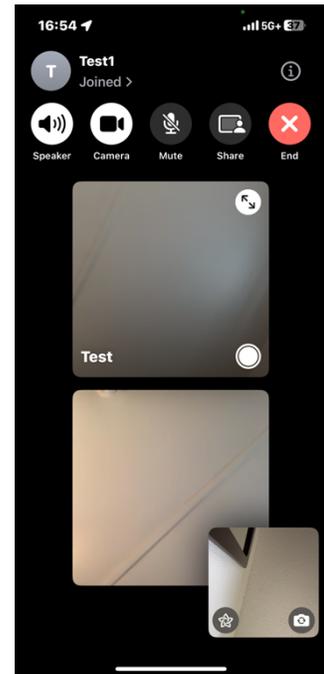
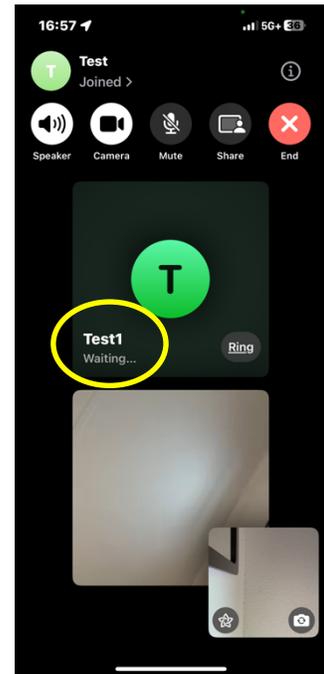
Actor	System	Screen
<p>10. The Call Initiator taps “FaceTime” to initiate the FaceTime call with the Call Recipients.</p>		
	<p>11. The System shall initiate the FaceTime call, and shall notify the Call Recipients of an incoming call.</p>	

Apple FaceTime	Version: 1.0
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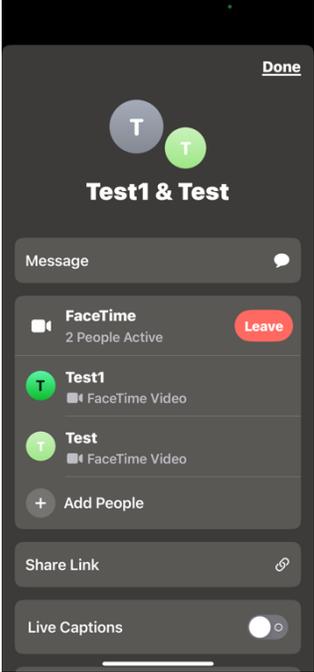
12. Each Call Recipient taps the green button to answer the call.

The first image illustrates awaiting 'Test1' to answer.

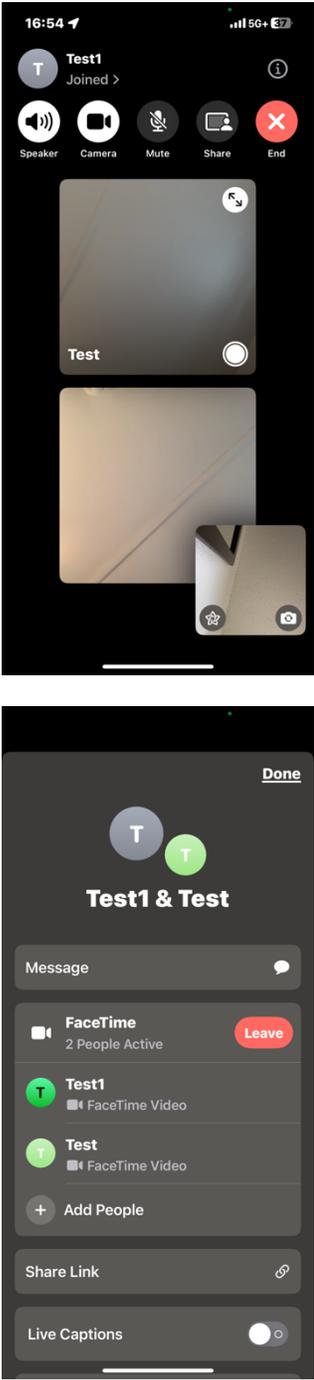
The second and third images illustrate the active call with all participants.



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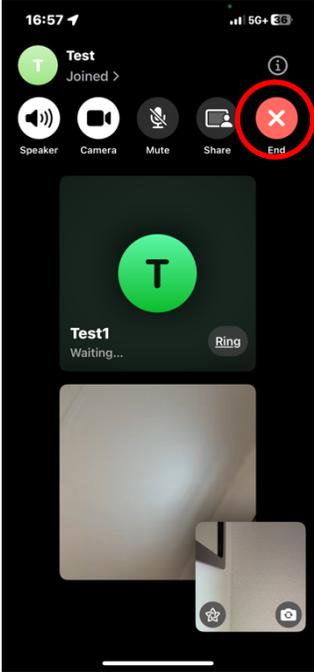
Actor	System	Screen
		

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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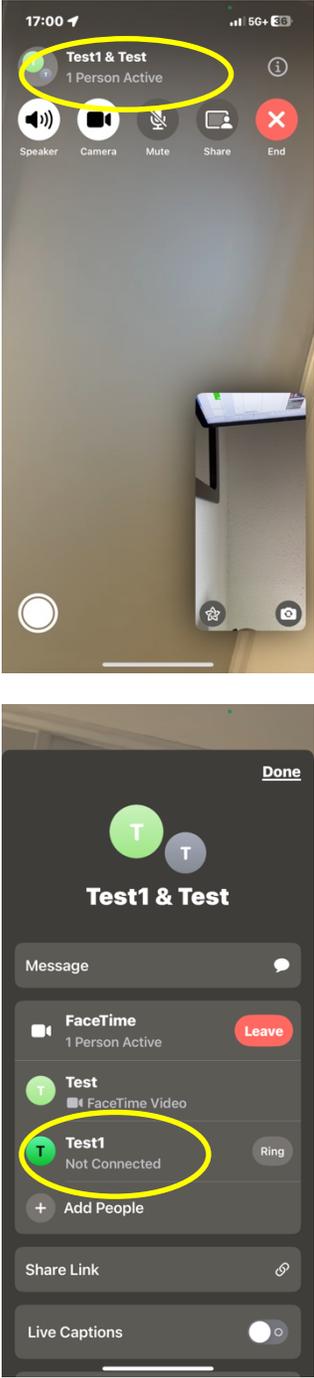
Actor	System	Screen
	<p>13. The System shall connect the Call Recipients to the Call Initiator, thus initiating the FaceTime call, where the Call Initiator and Call Recipients can see and hear each other.</p>	

Apple FaceTime	Version: 1.0
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Alternative Scenario 1 - One or more participants decline the group call invitation.

Actor	System	Screen
<p>12. Call Recipient 1 taps the red circle, declining the FaceTime call.</p>		

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Actor	System	Screen
	<p>13. The System shall cancel the call to Call Recipient 1.</p> <p>The first image illustrates only one Call Recipient ('Test') as active.</p> <p>The second image illustrates Call Recipient 'Test1' is not on the call.</p>	

Post-conditions

- Group video call is successfully established with all participants.

Apple FaceTime	Version: 1.0
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3.1.6 Use Case Name: Manage Group Call Participants

Summary

This use case describes how a Group Administrator can manage participants in an active group FaceTime call, such as adding participants or monitoring activity.

Preconditions

- Group Administrator is actively on a group FaceTime call.

Triggers

- Administrator decides to manage participants during a group call.

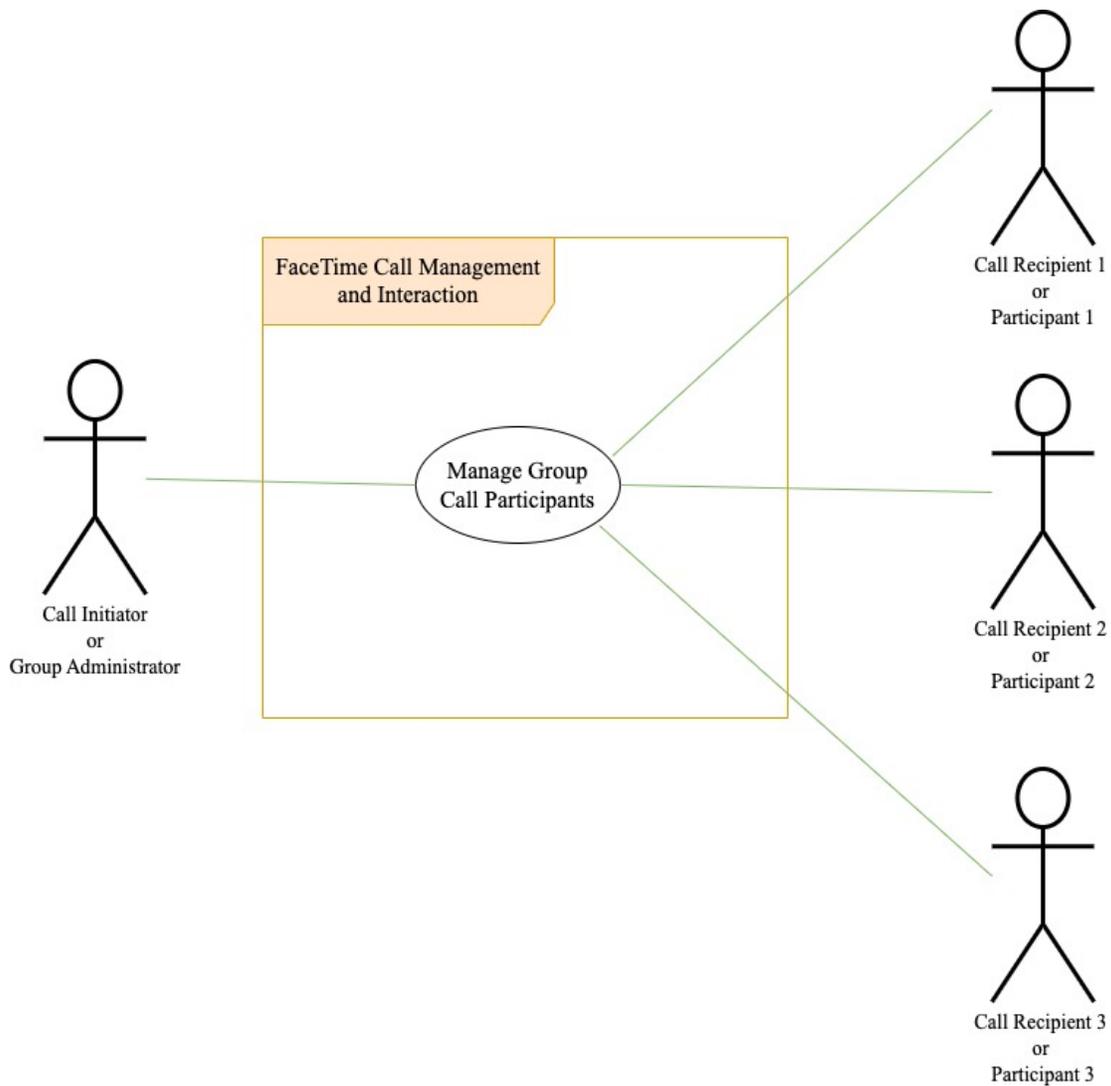
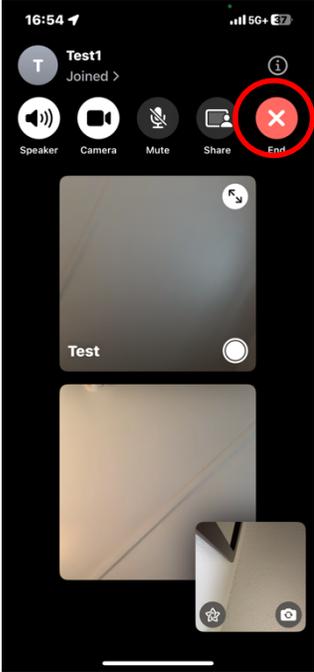
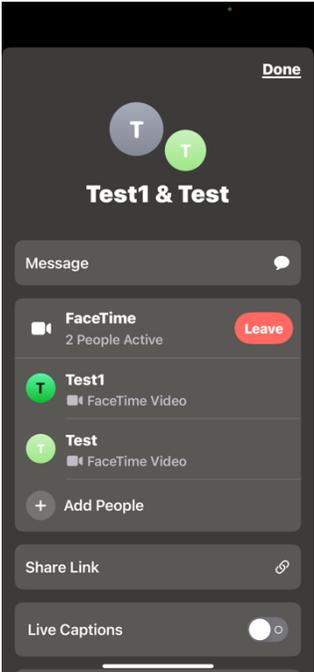


Fig.7 - Use Case Diagram for Manage Group Call Participants

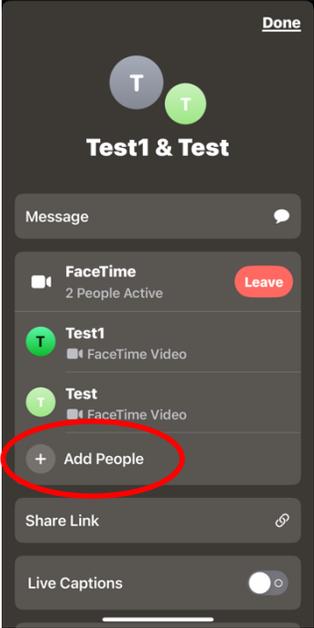
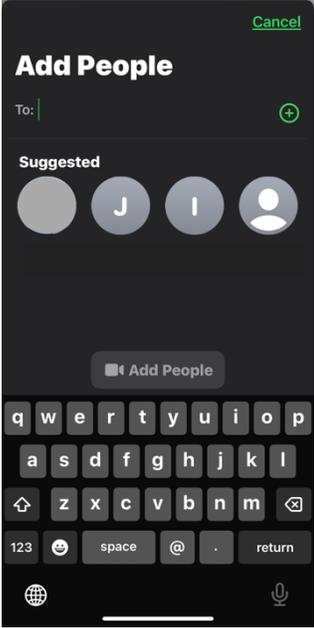
Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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Basic course of events (main scenario)

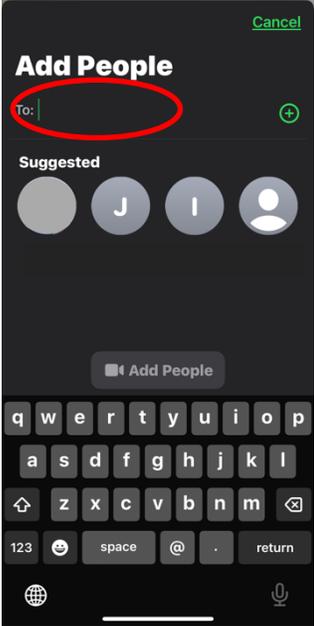
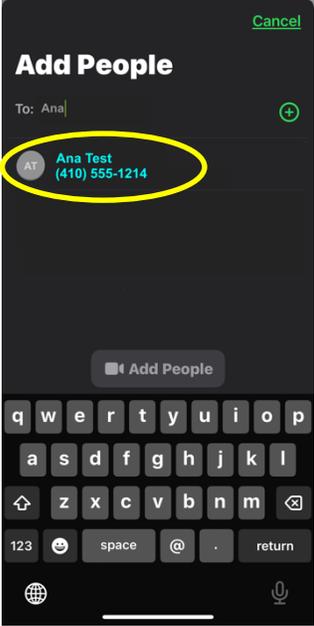
Actor	System	Screen
<p>1. From an active group call, the Call Initiator taps the 'i' icon to view Call Participants.</p>		 <p>The screenshot shows the top of a FaceTime call interface. At the top, it says 'Test1 Joined >'. Below this are icons for Speaker, Camera, Mute, Share, and End. The 'End' button is a red circle with a white 'X' and is circled in red. Below the icons are two video thumbnails, one labeled 'Test'.</p>
	<p>2. The System shall open the call information screen to view all participants and other options.</p>	 <p>The screenshot shows the 'Test1 & Test' call information screen. At the top, it says 'Done' in the top right corner. Below this are two participant icons labeled 'T'. The title is 'Test1 & Test'. Below the title is a 'Message' field. Underneath is a 'FaceTime' section with '2 People Active' and a red 'Leave' button. Below that are two participant entries: 'Test1' and 'Test', each with a 'FaceTime Video' icon. At the bottom, there are 'Add People', 'Share Link', and 'Live Captions' (with a toggle switch) options.</p>

Apple FaceTime	Version: 1.0
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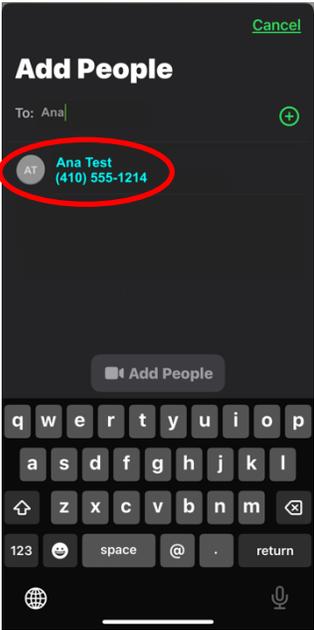
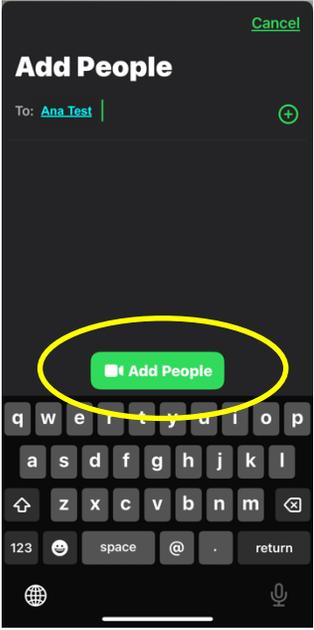
Alternative Scenario 1 - The Group Administrator adds a participant to the call.

Actor	System	Screen
<p>2. The Call Initiator taps the '+' next to 'Add People' to add another caller.</p>		 <p>The screenshot shows a FaceTime call in progress with two participants, 'Test1' and 'Test'. The 'Add People' button is highlighted with a red circle. Other visible elements include a 'Message' field, a 'FaceTime' status bar with '2 People Active' and a 'Leave' button, 'FaceTime Video' indicators for each participant, a 'Share Link' button, and a 'Live Captions' toggle.</p>
	<p>3. The System shall open "Add People", giving the Call Initiator the option to enter a contact name, telephone number, email address, or select from suggested contacts (frequent contacts).</p>	 <p>The screenshot shows the 'Add People' screen with a 'To:' field and a 'Cancel' button. Below the field are 'Suggested' contacts represented by circular icons. A keyboard is visible at the bottom of the screen.</p>

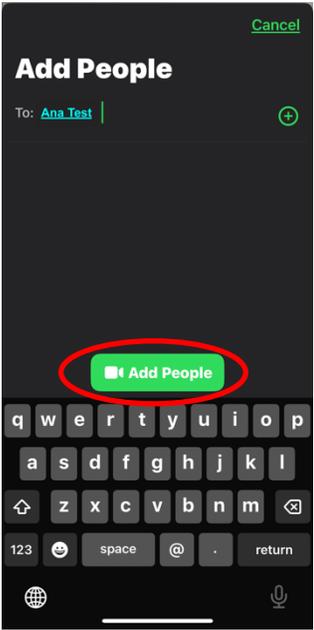
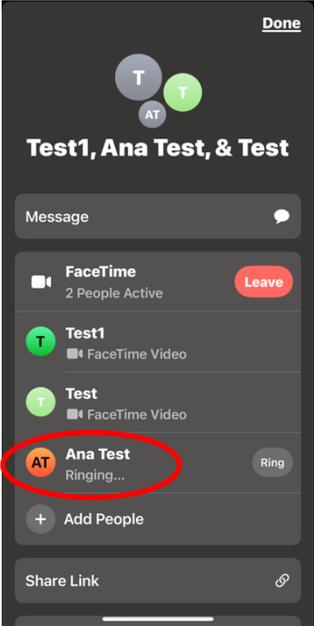
Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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Actor	System	Screen
<p>4. The Call Initiator enters a contact name.</p>		
	<p>5. The System shall search for the intended Call Recipient.</p>	

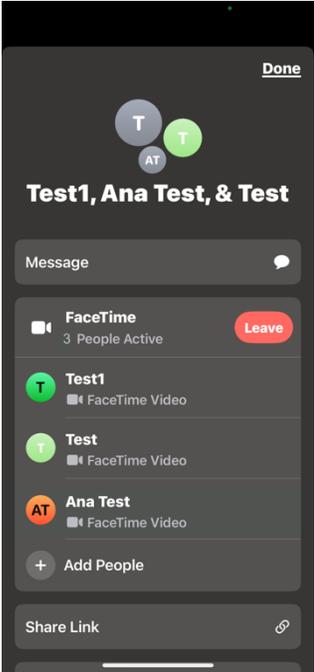
Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Actor	System	Screen
<p>6. The Call Initiator selects the intended Call Recipient.</p>		
	<p>7. The System shall select the intended Call Recipient. The System shall allow the green “Add People” icon to appear.</p>	

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
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Actor	System	Screen
<p>8. The Call Initiator taps “Add People” to initiate the FaceTime call with the new Call Recipient.</p>		
	<p>9. The System shall add and notify the Call Recipient.</p>	

Apple FaceTime	Version: 1.0
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Actor	System	Screen
<p>10. Upon receiving a notification of an incoming FaceTime call, the Call Recipient taps the green button to answer the call.</p>		<p><i>no image</i></p>
	<p>11. The System shall connect the new Call Recipient to the group call, thus initiating the FaceTime call, where all group members can see and hear each other.</p>	

Post-conditions

- Group call continues with updated participants, but no one can be forcibly removed.

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

3.1.7 Use Case Name: End a Call

Summary

This use case explains how a Call Participant ends an ongoing FaceTime call.

Preconditions

- The Call Participant is currently in an active FaceTime call.

Triggers

- The user decides to end their involvement in the call.

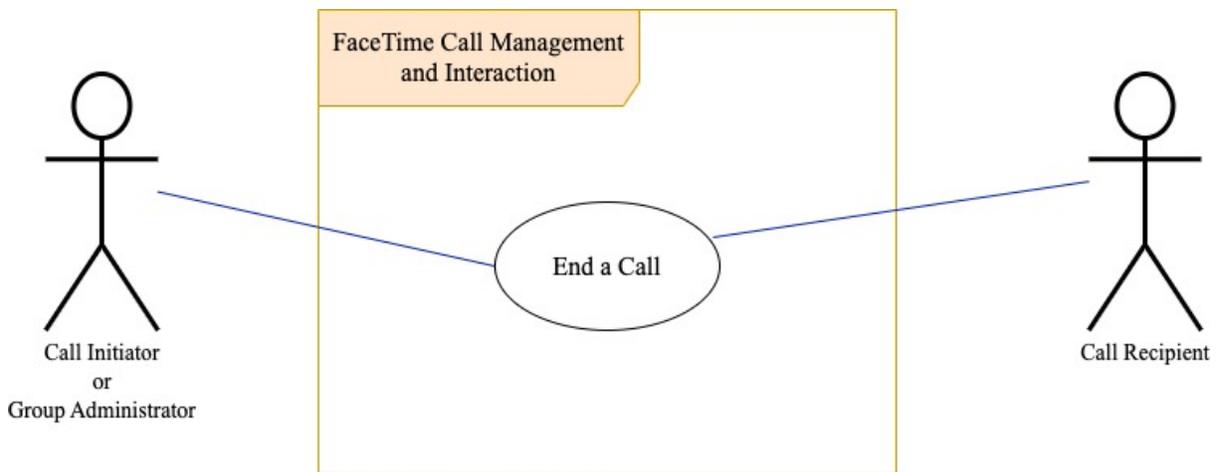
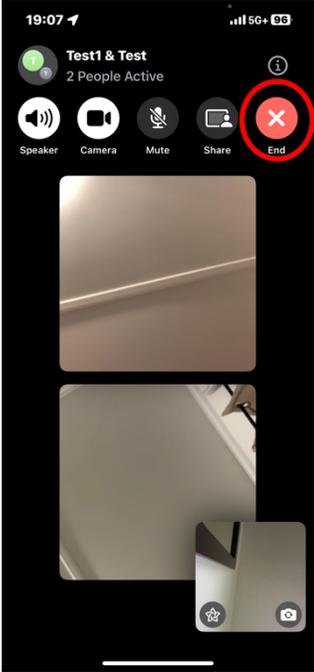


Fig.8 - Use Case Diagram for End a Call

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Basic course of events (main scenario)

Actor	System	Screen
<p>1. Participant taps the red circle, ending the FaceTime call.</p>		
	<p>2. The system shall disconnect the Participant from the call. The call shall continue for the remaining participants.</p>	

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Post-conditions

- The user is disconnected from the call.
- If the Call Initiator ends the call, all participants are disconnected, and the call terminates.

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

3.1.8 Use Case Name: Respond to a Call Invitation

Summary

This use case describes how a Call Recipient responds to a FaceTime invitation, either joining or declining the group call.

Preconditions

- The device is on.
- The Call Recipient is logged into FaceTime.
- The Call Recipient has an active internet connection.
- The Call Recipient receives a group call invitation.

Triggers

- The Call Recipient successfully joins or declines the group FaceTime call.

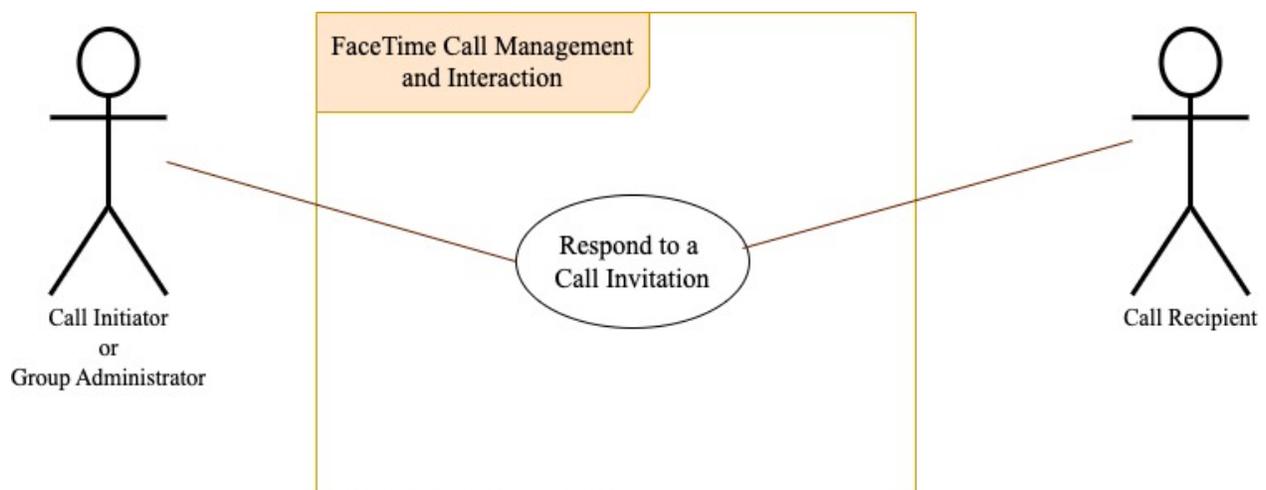


Fig.9 - Use Case Diagram for Respond to a Call Invitation.

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

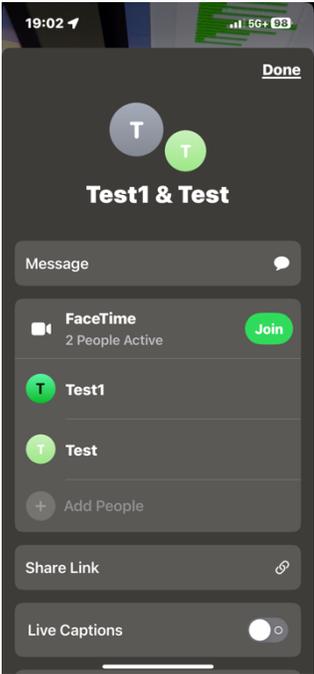
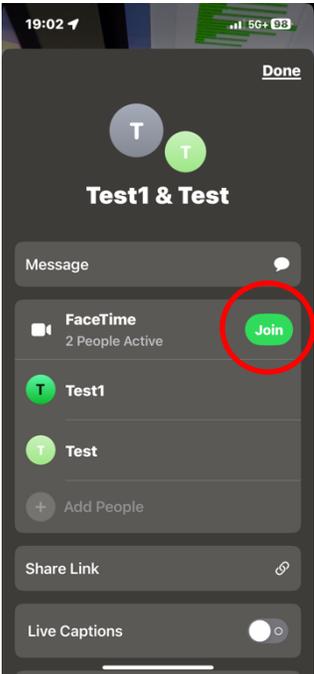
Basic course of events (main scenario)

Actor	System	Screen
	<p>1. The System shall send a notification of a group FaceTime invitation.</p>	
<p>2. The Call Recipient receives a notification of a group FaceTime invitation. The Call Recipient touches the black aspect of the notification bar.</p>		

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Actor	System	Screen
	<p>3. The System shall start the camera and shall reveal more options.</p>	
<p>4. The Call Recipient taps the 'i' icon to view the invitation details.</p>		

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Actor	System	Screen
	<p>5. The System shall open the invitation details, revealing the call participants and more options.</p>	
<p>6. The Call Recipient taps on "Join" to accept the invitation.</p>		

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Actor	System	Screen
	<p>7. The System shall connect the Call Recipient to the Call Initiator, thus initiating the FaceTime call, where both the Call Participants can see and hear each other.</p>	

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Alternative Scenario 1 - The Call Recipient declines the invitation.

Actor	System	Screen
	<p>1. The System shall send a notification of a group FaceTime invitation.</p>	
<p>2. Upon receiving a notification of a group FaceTime invitation, the Call Recipient taps the red circle to decline the call.</p>		

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Actor	System	Screen
	<p>3. The System shall decline the call and shall send a notification to the Call Initiator.</p>	

Alternative Scenario 2 - The Call Recipient misses the call invitation.

Actor	System	Screen
	<p>1. The System shall send a notification of a group FaceTime invitation to the Call Recipients.</p>	

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Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Actor	System	Screen
<p>2. The Call Recipient does not click the green button nor the red button with the white “x” in the middle, so the call will not be answered.</p>		
	<p>3. The System shall allow the call to ring for a specified duration.</p>	

Apple FaceTime	Version: 1.0
Software Requirements Specifications	Date: 09/02/2024
SLLC-001	

Actor	System	Screen
	<p>4. The System shall automatically decline the call and the Call Initiator is notified. The Call Initiator shall retry, record a video, or close FaceTime.</p>	

Post-conditions

- The Call Recipient successfully joins or declines the group FaceTime call.

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3.2 Supplementary Specifications

- Performance Requirements
 - The system should initiate a call within 2 seconds after the user taps the "FaceTime" or "Add Call" buttons.
 - The video and audio should maintain a latency of less than 100ms to ensure real-time interaction, though for live interactive applications, latency up to 150ms one-way is acceptable, with a maximum of 200ms for interactive video.
 - For optimal video quality, a minimum of 1-4 Mbps bandwidth is required, with at least 1 Mbps of upload speed to ensure high-quality video transmission during calls.
- Privacy & Security Requirements
 - All calls must be end-to-end encrypted using AES256 in Counter Mode to protect media channels, ensuring only the sender and receiver can access the content.
 - User data and call logs must comply with Apple's privacy policy, GDPR, and CCPA standards, ensuring minimal data collection and retention in accordance with privacy laws.
 - Forward Secrecy: Communication protocols must provide forward secrecy, ensuring past calls remain secure even if a user's device is compromised.
 - Session Key Management: Implement mechanisms to rotate session keys for each call, ensuring newly invited participants in group calls do not gain access to previously used keys.
 - Compliance with Apple Standards: Adhere to Apple's data security measures, including encryption standards (AES-SIV for session keys and ECIES for key distribution), and comply with their privacy governance practices.
 - Incident Response: Include a robust incident response plan to quickly address any data security incidents and notify affected individuals as required by law, following Apple's protocols for incident resolution.

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- Usability Requirements
 - The user interface should be easy to use and fully accessible, supporting features like VoiceOver, Switch Control, and Assistive Touch.
 - Ensure all content can be accessed through sight, hearing, or touch, with support for text scaling, Invert Colors, and haptic feedback.
 - The interface should adjust to accessibility settings like Bold Text, Larger Text, and Reduce Motion without losing functionality.
 - Use large, easy-to-tap buttons and ensure enough spacing between controls.
 - Provide text descriptions for important images and make sure all interactive elements are labeled.

4. Supporting Information

- None

5. References

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