IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

MULTIMODAL MEDIA LLC,	)	Case No. 2:21-cv-00436-JRG-RSP
Plaintiff,	)	**JURY TRIAL DEMANDED**
v.	)	
GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP., LTD.,	)	
Defendant.	)	

PLAINTIFF'S FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Multimodal Media LLC ("Multimodal" or "Plaintiff") for its First Amended Complaint against Defendant Guangdong OPPO Mobile Telecommunications Corp., Ltd. ("OPPO" or "Defendant") alleges as follows:

THE PARTIES

1. Multimodal is a limited liability company organized and existing under the laws of the State of Texas, with its principal place of business located at 100 W. Houston Street, Marshall, Texas 75670.

2. Upon information and belief, OPPO is a corporation organized and existing under the laws of China, with its principal place of business located at 18 Haibin Road, Wusha, Chang'an Town, Dongguan, P.R. China 523860. Upon information and belief, OPPO is a majority stakeholder of subsidiary OnePlus Technology (Shenzhen) Co., Ltd. OPPO may be served pursuant to the provisions of the Hague Convention. OPPO is a leading manufacturer and seller of consumer electronics devices, including smartphones, tablets, streaming media players, smart devices, IoT devices, and audio devices, in the world and in the United States. Upon information

and belief, OPPO does business in Texas and in the Eastern District of Texas, directly or through intermediaries.

JURISDICTION

3. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq*. This Court has jurisdiction over this action pursuant to 28 U.S.C. §§ 1331 and 1338(a).

4. This Court has personal jurisdiction over Defendant. Defendant regularly conducts business and has committed acts of patent infringement and/or has induced acts of patent infringement by others in this Judicial District and/or has contributed to patent infringement by others in this Judicial District, the State of Texas, and elsewhere in the United States.

5. Venue is proper in this Judicial District pursuant to 28 U.S.C. § 1391 because, among other things, Defendant is not a resident in the United States, and thus may be sued in any judicial district pursuant to 28 U.S.C. § 1391(c)(3).

6. Defendant is subject to this Court's jurisdiction pursuant to due process and/or the Texas Long Arm Statute due at least to its substantial business in this State and Judicial District, including (a) at least part of its past infringing activities, (b) regularly doing or soliciting business in Texas, and/or (c) engaging in persistent conduct and/or deriving substantial revenue from goods and services provided to customers in Texas.

PATENTS-IN-SUIT

7. On April 19, 2011, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 7,929,949 (the "'949 Patent") entitled "Interactive Multimodal Messaging." A true and correct copy of the '949 Patent is available at: https://pdfpiw.uspto.gov/.piw?PageNum=0&docid=07929949&IDKey=&HomeUrl=%2F.

8. On January 31, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,107,978 (the "'978 Patent") entitled "Addressing Voice SMS Messages." A true and correct copy of the '978 Patent is available at: https://pdfpiw.uspto.gov/.piw?PageNum=0&docid=8107978.

9. On November 10, 2015, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,185,227 (the "'227 Patent") entitled "Sender Driven Call Completion System." A true and correct copy of the '227 Patent is available at: https://pdfpiw.uspto.gov/.piw?PageNum=0&docid=9185227.

10. On February 4, 2020, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 10,552,030 (the "'030 Patent") entitled "Multi-gesture Media Recording System." A true and correct copy of the '030 Patent is available at: https://pdfpiw.uspto.gov/.piw?PageNum=0&docid=10552030.

11. On April 17, 2012, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 8,161,116 (the "'116 Patent") entitled "Method and System for Communicating a Data File Over a Network." A true and correct copy of the '116 Patent is available at: https://pdfpiw.uspto.gov/.piw?PageNum=0&docid=8161116.

12. Multimodal is the sole and exclusive owner of all right, title, and interest in the '949 Patent, the '978 Patent, the '227 Patent, the '030 Patent, and the '116 Patent (collectively, the "Patents-in-Suit"), and holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit, including the filing of this patent infringement lawsuit. Multimodal also has the right to recover all damages for past, present, and future infringement of the Patents-in-Suit and to seek injunctive relief as appropriate under the law.

13. Multimodal has at all times complied with the marking provisions of 35 U.S.C.

§ 287 with respect to the Patents-in-Suit. On information and belief, prior assignees and licensees have also complied with the marking provisions of 35 U.S.C. § 287.

FACTUAL ALLEGATIONS

14. The Patents-in-Suit generally cover systems and methods of recording and sending interactive messages and voice messages using mobile devices, as well as completing a communication after an incomplete call.

The '949 Patent

15. The '949 Patent relates to interactive multimodal messaging on mobile devices. The technology described in the '949 Patent was developed by Ewald Anderl. The technology is implemented by infringing phones that permit users to create, send, receive, and interact with multimodal messages.

16. According to the '949 Patent, prior art mobile communications options were limited for users. Traditional voice calls, text, and even multimedia messages involved very limited interaction between user and message. For example, "[v]oice calls can only be made if a calling subscriber and a called subscriber are connected to each other via the mobile communication network at the same time. Often, a called subscriber may be busy and unable to answer a call from a calling subscriber. The called subscriber may therefore miss important calls." '949 Patent at 1:25-31. Further, text messages have a character limit and are limited to plain text, and "[m]ultimedia messages allow subscribers to send images, videos, and other kinds of multimedia content over the communication network. However, there is limited interactivity in the multimedia messages. The content of a single multimedia message remains unchanged when forwarded to different recipients." *Id.* at 1:31-40.

17. The '949 Patent discloses concrete solutions to these identified problems, and the

inventions claimed therein create a new and enhanced interactive mobile device user experience. The inventions of the '949 Patent expand the user experience through increased offered functionality with far more than routine steps, including but not limited to:

> "allowing the sender 201 to speak, hear, type, touch or see in that application, and one or more human interaction modes on the output side of the application such as the recipient's 205 ability to hear, visually see, or simultaneously hear and visually see the output. Multimodal interactions thereby extend web or other application user interfaces to allow multiple modes of interaction, offering the sender 201, for example, the choice of using their voice, or an input device such as a key pad, keyboard, mouse, or stylus. For output, the recipient 205 will, for example, be able to listen to spoken prompts and audio, to view information on graphical displays, and to simultaneously listen to and view an output."

Id. at 3:23-35.

18. For example, the sender can create a message that,

> "comprise[s] text, images, video, voice content, and any combination thereof, as well as web based scripted interfaces. The created interactive multimodal message is stored 102 at a server 204. The server 204 may, for example, be a remote server. The server 204 sends 103 a notification to the recipient's 205 mobile device. The notification may, for example, be an unstructured supplementary service data (USSD) prompt, a text message, a voice SMS message, or a voice call. The notification comprises a pointer to the stored interactive multimodal message. The pointer may, for example, be a text link to the stored interactive multimodal message, a USSD code, etc. The recipient 205 and the sender 201 may be subscribers of a single mobile communication network or of different mobile communication networks."

Id. at 4:7-21.

19. The interactive message may be "triggered" when the recipient, for example, accesses the pointer by, for example, activating a link on a text message (or by, for example, using "dual-tone multi-frequency dialogs, prompts in voice extensible markup language, automated speech recognition, and a hypertext transfer protocol post."). *Id.* at 4:22-35.

20. Service information (such as advertisements, alerts, or service content previews) can be provided by the sender. For example, such content can include weather updates or

horoscope readings. The recipient can then trigger various billing menus based on the content, for example from the specification,

> "the service information transmitted from a sender 201 providing horoscope services may provide the recipient 205 with the following three options: "view horoscope summary", "view detailed horoscope", and "view advertisements". If the recipient 205 selects the "view horoscope summary" option, the mode of billing may be zero billing, and the recipient 205 may not be billed for the transmitted service content. If the recipient 205 selects the "view detailed horoscope" option, the mode of billing may be premium billing, and the recipient 205 may be billed for a higher amount. If the recipient 205 selects the "view advertisements" option, the mode of billing may be negative billing, and the recipient 205 may be given a reward, for example, an amount may be deducted from a bill payable by the recipient 205."

Id. at 4:36-5:1.

21. The messages may be "grouped," for example,

> "grouping rules may be based on factors such as the context of the interactive multimodal message, prior responses to earlier interactive multimodal messages, for example, those recipients who had accepted an offer vs. those recipients that had declined, etc. Moreover, since mobile phone messages are personal, the interactive multimodal messages may be grouped based on other information known about the recipient 205, for example, language, date of birth, demographics, etc."

Id. at 5:41-49.

22. The messages may be forwarded in a manner which results in different message displays for different users based, for example, on subscription or billing settings:

> "[f]or example, if a recipient 205 receives an interactive multimodal message from a sender 201 providing services to which the recipient 205 has not subscribed to, the interactive multimodal message may only display a preview of the service content and provide the recipient 205 with an option to subscribe to the services provided by the sender 201. However, the same interactive multimodal message may display the entire transmitted service content to the recipient 205 if the recipient 205 has subscribed to the services provided by the sender 201. In another example, a sender 201 providing horoscope services may dynamically play the appropriate content based on the date of birth of the recipient 205. Another example is a follow up to a survey. The recipients who responded to an offer are provided with a "thank you" message and a discount offer whereas the recipients who did not respond to the offer are provided with a shortened survey one last time with the

promise of some reward."

Id. at 5:50-6:12.

23. The '949 Patent discloses a system composed of different modules performing different functions, for example, "a client application 202 and a server 204 connected via a network 203. The client application 202 comprises a message creating module 202 a. The server 204 comprises a storage module 204 a, a notification module 204 b, a triggering module 204 c, a transmission module 204 d, a billing module 204 e, a grouping module 204 f, and a routing module 204 g." *Id.* at 6:22-31.

24. Each of these components assists in providing the new and enhanced user experience described above.

The '978 Patent

25. The '978 Patent relates to integrating and transmitting voice messages with text messages on mobile devices. The technology described in the '978 Patent was developed by Ewald Anderl, Ajay Thapar, and Chinna Chockalingam. For example, the technology is implemented by infringing phones that permit users to input and transmit voice content with a text message.

26. According to the '978 Patent, prior art methods of sending voice SMS messaging "employed a mobile station integrated services digital network (MSISDN) number of the recipient's mobile device to send voice SMS messages," and therefore, "the existing methods for voice SMS messaging do not allow the sender to practically use addresses stored in a local address book in the mobile device for selecting the recipients." '978 Patent at 1:51-64.

27. The inventions claimed in the '978 Patent disclose concrete solutions to the identified problems by proposing new and concrete methods and systems whereby "voice short message service (SMS) messaging is combined with the standard methods of recipient addressing

as employed in text SMS messaging." *Id.* at 3:5-7. This results in an expanded user experience through increased offered functionality with far more than routine steps.

28. In one embodiment the user is given a choice to add voice SMS, for example:

> "[i]n order to integrate 104 the text SMS message with voice content, the client application 201 a intercepts 104 a the addressed text SMS message. The client application 201 a then prompts 104 b the user 202 as to whether a voice SMS message needs to be included. If the user 202 prefers not include a voice SMS message, the client application 201 a sends the intercepted text SMS message to the recipient. If the user 202 prefers to additionally add a voice SMS message, the client application 201 a connects the mobile device 201 to a server 314. The user's voice message is recorded and stored on the server 314. A voice message notification is attached to the text SMS message and transmitted 105 to the addressed recipients. The recipients on receiving the text SMS message may use the information in the voice message notification to access and listen to the user's voice message stored on the server 314."

Id. at 3:42-57.

29. The '978 Patent discloses a method where after recording the voice message, a notification and the recipient's information is sent, for example:

> "a voice message notification is attached to the text SMS message. The text SMS message along with the voice message notification is then sent to the addressed recipient 206. In one embodiment, if the text message body is blank, the recipient's information may be sent to the server 314 by transmitting the dial string '*MSISDN' to the server 314 as part of the connection process. If the message body is not blank, it is advantageous to send the recipient information before or as a part of the connection process to the server 314. For example, the address information could be sent via out-of-band signaling, unstructured supplementary service data (USSD) or as a background text SMS message containing the address and text information."

Id. at 4:10-23.

30. The '978 Patent also discloses a system that can implement the above methods. For example,

> "a mobile device 201 and the server 314 connected via a network 313. The mobile device 201 comprises a client application 201 a, a user interface 201 c, and a memory storage means 201 b. The client application 201 a integrates voice content to a text message created by a user 202 using methods of recipient addressing as

> used by text short message service messaging. The client application 201 a may be implemented in the application layer, or in the hardware and firmware layer of the mobile device 201 as illustrated in FIG. 3B. The user 202 accesses a list of addresses of recipients stored in the memory storage means 201 b of the mobile device 201. The user 202 inputs voice messages and text messages through the user interface 201 c on the mobile device 201. The server 314 stores the voice messages of the user and transmits a voice message notification with a text message to addressed recipients. In an embodiment, the server 314 may comprise one or more servers or hardware devices, each performing one or more functionalities. For example, the server 314 may comprise a first server 314 a and a second server 314 b. The first server 314 a may store the voice SMS messages of the user. The second server 314 b may transmit text SMS messages along with the attached voice message notification to the addressed recipients."

Id. at 5:22-46.

31. The '978 Patent discloses four exemplary particularized embodiments for a method for sending a voice SMS message to a single or multiple recipients using a client application, including where the operating system is Symbian and where the client application is implemented as a SIM toolkit. *See, e.g.,* 6:21-10:19.

32. The '978 Patent discloses new, particularized, and concrete methods and systems for combining voice and text SMS messaging using standard methods of recipient addressing.

The '227 Patent

33. The '227 Patent relates to completing an incomplete call on mobile devices. The technology described in the '227 Patent was developed by Inderpal Mumick, Surinder Anand, and Raja Moorthy. The technology is implemented by infringing phones that permit users to complete an incomplete call by detecting the incomplete call with a call completion application that determines call completion actions to be performed, such as setting a reminder, transmitting media data, transmitting alerts and notifications, etc.

34. According to the '227 Patent, prior art call completion solutions typically relied on the *called* party's device and network configurations and, "for example, voicemail, are often

insufficient since the calling party does not get to decide on whether a voice message can be sent to the called party, that is, the calling party is dependent on the called party having enabled a voice message service for receipt of voice messages. Furthermore, all message transactions need to be mandatorily performed via the network." '227 Patent at 1:44-52.

35. The '227 Patent discloses concrete solutions to the identified problems by proposing new and concrete methods and systems that can, for example, "complete an incomplete call made by a calling party to a called party by executing a call completion action, for example, setting up a reminder, transmitting voice messages, text messages, missed call alerts, notifications of a call attempt, etc., to the called party, etc., independent of a preconfigured call completion service on the called party's network or a called party device, and that provide a sender, that is, the calling party the option to drive or trigger execution of the call completion action." *Id.* at 1:54-62. This results in an expanded user experience through increased offered functionality with far more than routine steps.

36. The call completion application on the calling party device detects an incomplete call based on any number of events including, for example, "the called party being busy, the called party device being in an out of coverage area, the called party device being unreachable, the called party device being switched off, network congestion, the call not being answered by the called party, etc. In another embodiment, the incomplete call is a call of a short duration…" *Id.* at 6:50-56.

37. Upon detection of the incomplete call, for example, "the call completion actions comprise, for example, setting a reminder to call back the called party at a configurable time, recording media data on the calling party device, transmitting the media data to the called party device, transmitting a missed call alert to the called party device, transmitting a notification of the

detected incomplete call to the called party device, transmitting a notification on availability of the called party, transmitting the media data to a social networking platform, transmitting an automated message requesting the called party to call back the calling party when available, etc., and any combination thereof." *Id.* at 7:18-37.

38. In an embodiment, the call completion actions are based on duration of the call, and the user can pre-configure the action to be taken, for example,

> "setting a reminder to call the called party again, sending a text message to the called party, sending an automated message to the called party requesting the called party to call back the calling party when he/she is free, etc….The configurable criteria comprise, for example, user configuration of the call completion application on the calling party device, call settings configured on the calling party device, network characteristics, device characteristics, etc. In this embodiment, the calling party does not need to intervene or select a call completion action on a per call basis. For example, a calling party can configure sending a missed call alert to a called party device, each time a call to a specific number of the called party results in being unanswered due to the called party device being switched off. The call completion application automatically sends the missed call alert to the called party device, on detection of the incomplete call."

Id. at 7:49-67.

39. In another embodiment, the call completion application queries the user which action the user would like to take, for example, the "device of calling party A generates a pop up message, "Do you want to send called party B a message?", on the GUI of the calling party device. In another example, the call completion application on the calling party device of calling party A generates a pop up message with a menu of call completion actions, for example, "Do you want to send called party B (a) a voice message, (b) a text message, (c) a video message, (d) a missed call alert, (e) a pre-recorded message, or (f) set a reminder to call called party B?" *Id.* at 8:23-31.

40. The '227 Patent specification discloses an exemplary particular system for performing the above methods. *See, e.g.*, 12:34-15:50. The '227 Patent specification discloses exemplary particular executable algorithms for both Android and iOS devices. *See, e.g.*, 15:51-

17:25. The '227 Patent specification discloses an exemplary particular computer architecture for the system. *See, e.g.*, 18:6-21:10.

The '030 Patent

41. The '030 Patent relates to multi-gesture media recording on mobile devices. The technology described in the '030 Patent was developed by Kieraj Mumick. The technology is implemented by infringing phones that permit users to record media data, such as audio or video by using different gestures such as press and hold, and swipe and hold, and where portions of the user interface dynamically change based on the detected type of gesture.

42. According to the '030 Patent, prior art methods and systems of gesture based media recording on mobile devices include push to talk (PTT) communication mode, a tap to start (TTS) communication mode, a release to record (RTR) communication mode, a release to stop (RTS) communication mode, a tap to end (TTE) communication. '030 Patent at 1:29-33.

43. "In the push to talk (PTT) communication mode, a user presses or pushes and holds a button on an electronic device, for example, a mobile phone, or taps on an icon on a graphical user interface (GUI) of the electronic device and keeps the button or icon pressed. The user records media data while the button is pushed down or pressed. The recording of the media data continues as long as the button is held or pressed. When the button is released, the recording stops." *Id.* at 1:34-42.

44. "The tap to start (TTS) communication mode requires a user to first click on a start button or an initiation button on the electronic device to start the recording process. In this case, the user clicks, that is, taps and releases the button, at which time a recorder of the electronic device initiates recording of the media data. The user then has to tap on a stop button on the electronic device to stop the recording." *Id.* at 1:50-56.

45. "After initiating recording of media data, the release to record (RTR) communication mode allows a user to release the initiation button on the electronic device to continue the recording process. In the RTR communication mode, the user can either keep the button held while recording or can release the button to continue recording. A user can switch from one mode of recording to another by releasing the button." *Id.* at 1:66-2:6.

46. "The tap to end (TTE) communication mode is triggered after the user releases the button, and the recording process is then in progress, and the user can terminate the recording by tapping on the button. In this case, the user has to tap on a stop button on the electronic device to terminate the recording." *Id.* at 2:6-12.

47. "In the release to stop (RTS) communication mode, the user is required to release the button on the electronic device to stop or terminate the recording process. In the RTS communication mode, the user can either keep the button pressed to continue recording or can release the button to stop recording." *Id.* at 2:14-19.

48. All of these methods of media recording have their drawbacks, and "the above mentioned models for recording media data do not offer a method for the user to cancel the recording once begun, or perform any other action such as switching from one communication mode to another communication mode." *Id.* at 2:38-43.

49. The inventions claimed in the '030 Patent disclose concrete solutions to the identified problems by proposing new and concrete methods and systems that "addresses the above stated needs for recording media data in one or more of multiple communication modes based on one or more gestures of a user on a graphical user interface (GUI) of the user's electronic device, while allowing the user to switch between the communication modes for recording the media data, or to cancel recording of the media data, or to perform any other action associated with the media

data at any time during and/or after the recording of the media data." *Id.* at 3:2-10. This results in an expanded user experience through increased offered functionality with far more than routine steps.

50. The '030 discloses "interface regions" for the user to interact with on the device GUI. The application detects various defined gestures including, for example, "a drag and drop gesture, a click gesture, a double click gesture, a click and hold gesture, a tap gesture, a tap and hold gesture, a hold and swipe gesture, a touch gesture, a slide gesture, a glide gesture, a scrolling gesture, etc., or any combination thereof." *Id.* at 4:10-14.

51. The application performs a first action associated with recording after detecting a first gesture in an interface region, and then detects within the same or another interface region a second gesture where it performs a second action in response to the detection of the other gesture on the same or other defined interface region. For example,

> "[i]n an embodiment, the second action is the same as the first action. In another embodiment, the second action is different from the first action. The first action and the second action performed by the media recording application comprise at least one of, for example, triggering recording of the media data, switching from one of the communication modes to another one of the communication modes for recording the media data, canceling the recording of the media data, generating and displaying multiple options for performing an operation associated with the recorded media data, etc. In an embodiment, the media recording application streams the media data to a server via a network, for example, the internet, as the recording happens, or at predefined time intervals after initiation of the recording of the media data, or after completion of the recording of the media data."
>
> *Id.* at 4:15-38.

52. The '030 Patent specification discloses several exemplary embodiments with two and three interface regions with various function. *See, e.g.*, 10:48-11:58; 11:59-12:67; 13:53-14:36. The '030 Patent specification discloses an exemplary computer implemented system. *See, e.g.*, 14:52-16:18. The '030 Patent specification discloses exemplary architecture of a computer

system according to the invention. *See, e.g.*, 16:19-19:65.

The '116 Patent

53. The '116 Patent relates to sending, storing, and transmitting data files using basic communication tools that are generally compatible, regardless of the network to which the recipient is subscribed. The technology described in the '116 Patent was developed by Navin Chaddha, Adesh Desai, Sanjeev Kuwadekar, and Dan Sodhi. For example, the technology is implemented in infringing phones with operating systems that support the Rich Communication Services protocol (RCS).

54. According to the '116 Patent, prior art methods and systems of transmitting data files (such as voice mail messages) have used proprietary, disconnected networks. For example,

> "in cellular carrier networks, each network may be associated with a different provider that implements a different hardware and/or software platform, and/or utilizes a different set of communication and/or data protocols. For voicemails, each cellular carrier (*e.g.*, AT&T, Verizon, Cingular, etc.) maintains a proprietary voicemail system within its own carrier network. While a person in one cellular carrier network may call another person in another cellular carrier network to leave a voicemail message, voicemails cannot be transferred from one cellular carrier network to another by messaging. However, within the same cellular carrier network, a sender can record a message and forward the message to a designated recipient. Heretofore, voicemail messaging is not available across dissimilar cellular carrier networks and dissimilar platforms within the same network."

'116 Patent at 1:51-64.

55. Although SMS text messaging was not network dependent, SMS text messaging could only be used for text, had character limitations (typically 160 characters per message), and required using an awkward text entry interface. *Id.* at 2:1-9.

56. Multi-media service (MMS) messaging,

> "offers additional functionalities to support messaging of multi-media files, such as audio, video, graphics, photos, images, music, and other types of digital data. MMS is user device and network dependent. However, while some of the modern cellular handsets may have the capabilities to handle MMS functions, not all handsets are

enabled to do so."

Id. at 2:12-17.

57. United Kingdom Patent Application Number 2,387,737 to Munnariz purportedly discloses "a telephone message network that stores a voice message from a sender to a recipient." *Id.* at 2:35-37.

> "When the recipient calls to retrieve her voice message, the network selects the appropriate voice message using calling line identity (CLI) to identify the calling device of the intended recipient of the message. The number called by the recipient to retrieve voice message is not uniquely associated with the voice message."

Id. at 2:42-47.

58. The '116 Patent discloses concrete solutions to these problems, and the inventions claimed therein create "an improved method and system for forwarding information such as data files to a recipient across disparate or incompatible communication networks, which are not constrained by incompatible user devices," including, but not limited to, for example:

- "[A] sender device 40 transmits a data file 50 to a recipient device 80, 82. FIG. 7 is a flow diagram 102 illustrating the steps in this embodiment. The sender 40 transmits (at step 104) via communications network 58 the data file 50 to a messaging server 60, along with the intended recipient's notification address (e.g., cellular phone number, landline phone number, email address, instant message ID, etc.). The network 58 may include cellular network, telephony network (e.g., landline or PSTN), data network, Internet, or other types of communications networks. The sender 40 may specify more than one recipient of the same data file. The messaging server 60 stores (at step 106) the data file 50 in a database 64 and sends (at step 108) a notification message 70, 72 to the recipient 80, 82, respectively, based on the recipient's notification address."

- "The notification message 70, 72 contains a unique access address 66, which is assigned to be associated with the data file 50. The notification message 70, 72 may also include message ID, name of data file, sender's identification, size of message, date and time of message, and other relevant information, which may be provided by the sender or the system (e.g., time and date). The notification message 70, 72 usually do not include any substantive part of the content of the message or data file, to avoid exceeding the notification messaging limitation."

- "The recipient 80, 82 receives (at step 110) the notification message 70, 72 and using

> the unique access address 66 retrieves (at step 112) the data file 50. The unique access address may be an access address to contact the messaging server 60. The unique access address may include a phone number and/or web address."

Id. at 2:6366; 4:32-46; 4:50-59; 4:62-67.

59. Some of the benefits achieved include, for example, "[t]he sender is a subscriber of the messaging server, thus the sender device is compatible with the messaging server" and "the messaging server communicates with the intended recipient using basic communication tools that are generally compatible regardless of the network that the recipient is subscribed to."

60. OPPO has infringed and is continuing to infringe the Patents-in-Suit by making, using, selling, offering to sell, and/or importing, and by actively inducing others to make, use, sell, offer to sell, and/or import products including, but not limited to, OnePlus brand phones including, but not limited to, the OnePlus 10 Pro 5G, OnePlus 9 Pro 5G, OnePlus 9 5G, OnePlus 8 5G UW, OnePlus 8T, OnePlus 8 Pro, OnePlus 8, OnePlus 7T, OnePlus 7 Pro, OnePlus 6T, OnePlus Nord N200 5G, OnePlus Nord N20 5G, OnePlus Nord N10 5G, and OnePlus Nord N100 (collectively, the "Accused Products") that infringe the Patents-in-Suit.

COUNT I
(Infringement of the '949 Patent)

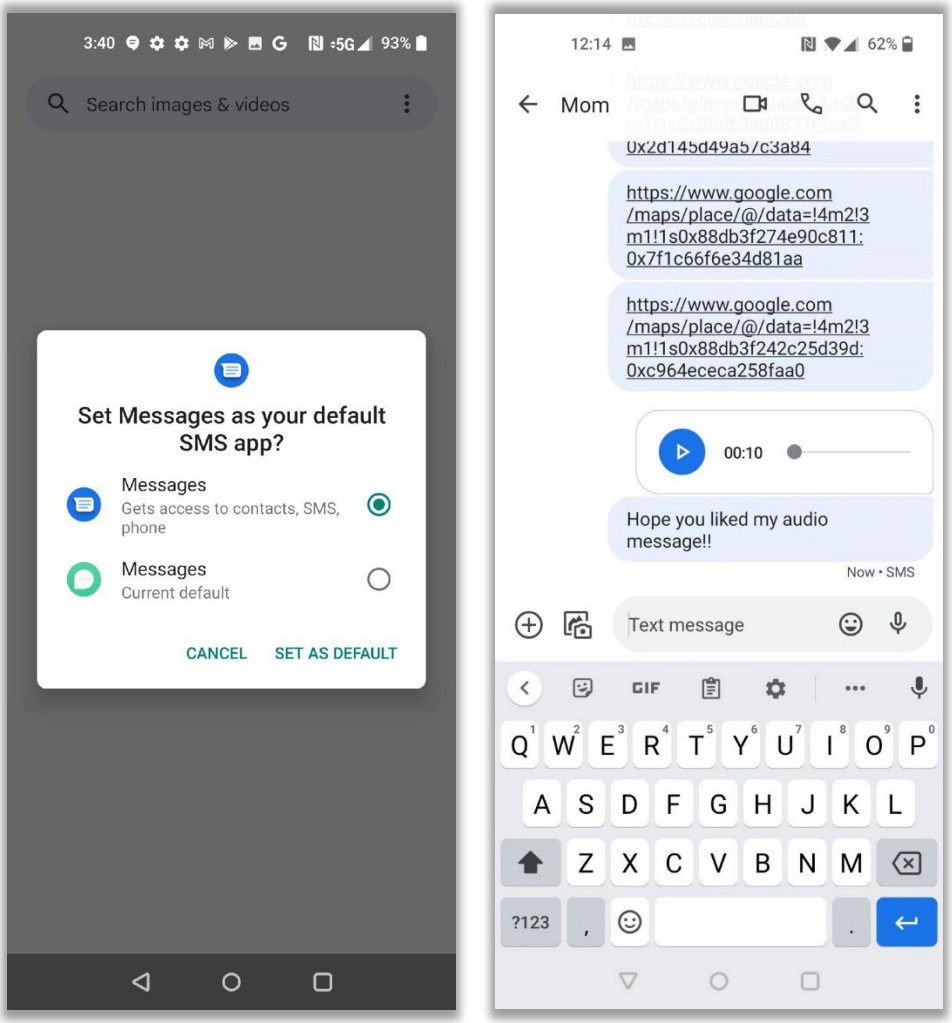
61. Paragraphs 1 through 60 are incorporated by reference as if fully set forth herein.

62. Multimodal has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '949 Patent.

63. Defendant has and continues to directly infringe the '949 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '949 Patent. On information and belief, such OPPO products include at least the OnePlus tablets and phones that enable a user to create and

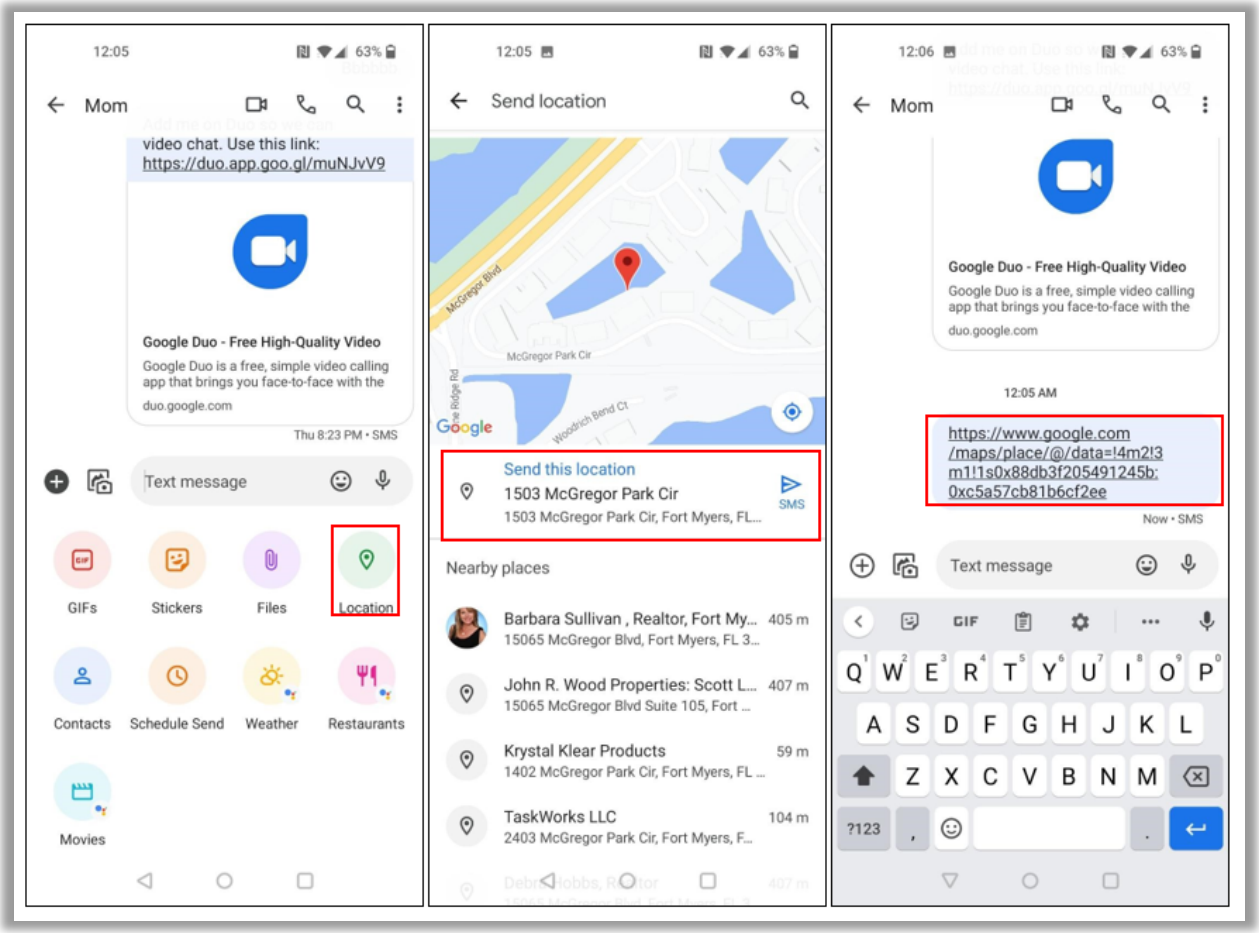
transmit interactive multimodal messages to a recipient.

64. For example, Defendant has and continues to directly infringe at least claim 1 of the ’949 Patent by making, using, offering to sell, selling, and/or importing into the United States products that use an application on the mobile device and server to create, transmit, and trigger interactive multimodal messages. Upon information and belief, Defendant directly infringes claim 1 by performing the claimed method in the United States, including at least through testing and qualification of the Accused Products by Defendant or its agents. As an example, the OnePlus Nord N200 running the OnePlus OxygenOS based on OnePlus OxygenOS operating system performs a method of enabling a recipient to interact with an interactive multimodal message triggered on a mobile device of said recipient, comprising the step of creating said interactive multimodal message by a sender using a client application available to said sender, wherein said created interactive multimodal message is stored at a server:



Source: OnePlus Nord N200 5G 07/14/

65. Defendant's products running the Google Android operating system perform a method of sending notifications with pointers to the stored messages, triggering stored multimodal messages on the Defendant's mobile devices, and transmitting information through the triggered interactive multimodal message:



Source: OnePlus Nord N200 5G 07/14/22

66. Defendant has and continues to indirectly infringe one or more claims of the ’949 Patent by knowingly and intentionally inducing others including, but not limited to, network operators, server operators, OPPO’s customers, and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as phones that create, transmit, and trigger interactive multimodal messages.

67. Defendant, with knowledge that these products, or the use thereof, infringes the ’949 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the ’949 Patent by

providing these products to end-users for use in an infringing manner.

68. Defendant has induced infringement by others, including end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '949 Patent, but while remaining willfully blind to the infringement. Defendant provides detailed information about how to use the Accused Products in the OnePlus Support website.[1] Defendant provides product manuals and documentation that instruct customers and end-users how to use the Accused Products in an infringing manner, including specifically how to use the OnePlus OxygenOS Google Messages/Chat feature.[2]

69. Multimodal has suffered damages as a result of Defendant's indirect infringement of the '949 Patent in an amount to be proved at trial.

70. Multimodal has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '949 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

COUNT II
(Infringement of the '978 Patent)

71. Paragraphs 1 through 60 are incorporated by reference as if fully set forth herein.

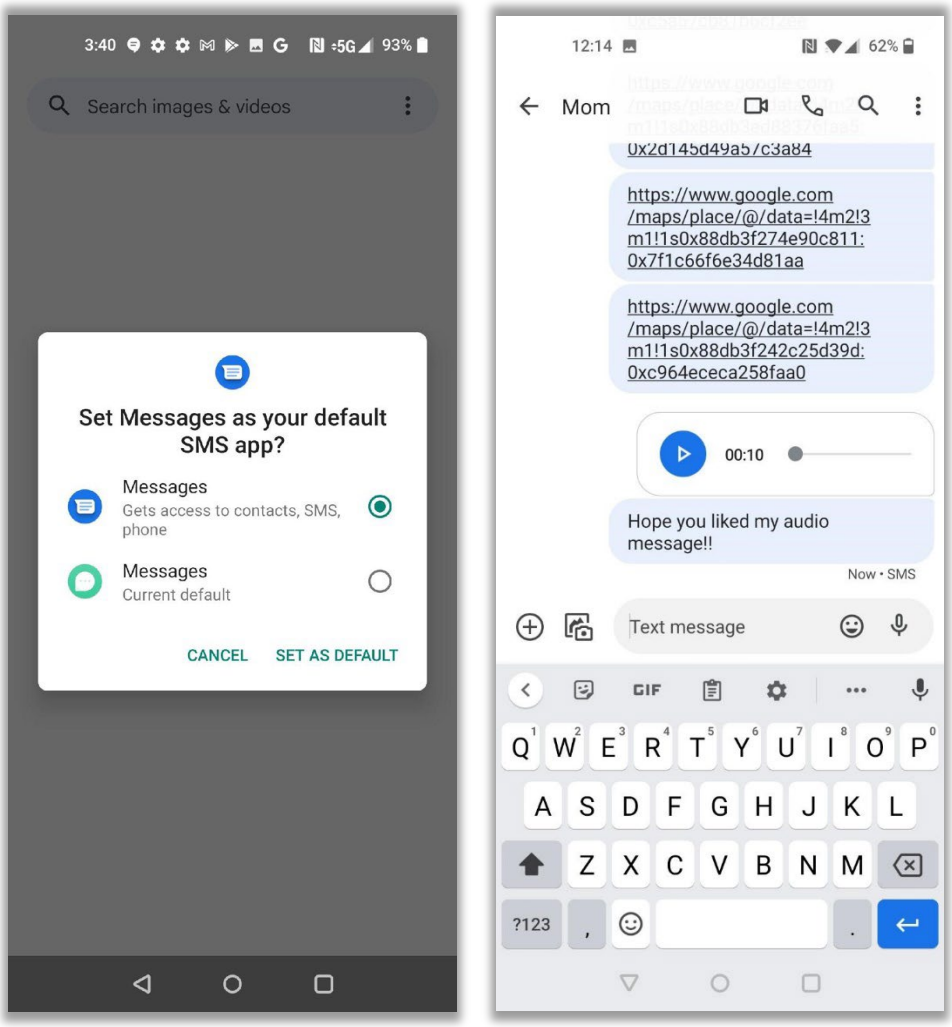
72. Multimodal has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '978 Patent.

73. Defendant has and continues to directly infringe the '978 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making,

[1] https://service.oneplus.com/us
[2] https://service.oneplus.com/content/dam/support/user-manuals/common/OnePlus_10_Pro_User_Manual_EN.pdf

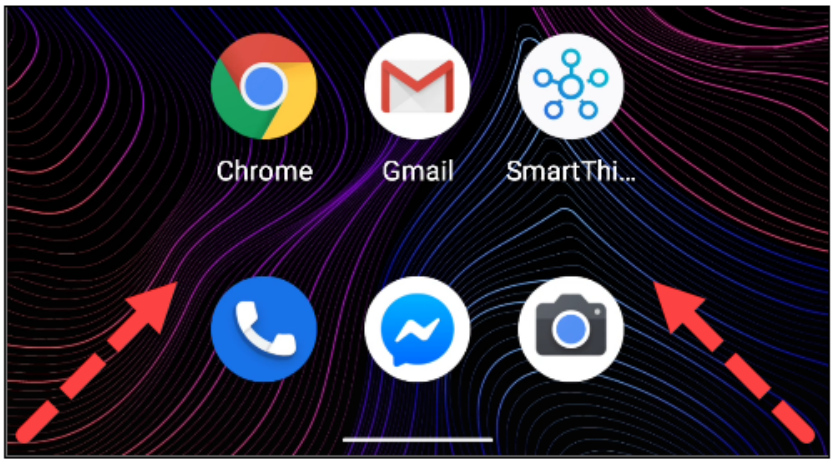
using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '978 Patent. On information and belief, such OPPO products include at least the OnePlus tablets and phones that record and store voice content and send a text message with a voice message notification allowing the recipient to listen to said recorded voice content.

74. For example, Defendant has and continues to directly infringe at least claim 10 of the '978 Patent by making, using, offering to sell, selling, and/or importing into the United States products that use an application on the mobile device and server to record and store voice content, and send a text message with a voice message notification allowing the recipient to listen to said recorded voice content. Upon information and belief, Defendant directly infringes claim 10 by using the claimed system in the United States, including at least through testing and qualification of the Accused Products by Defendant or its agents. As an example, the OnePlus Nord N200, running OnePlus OxygenOS based on the Google Android operating system and using network servers, supports a client application to integrate and transmit voice content in a text message:

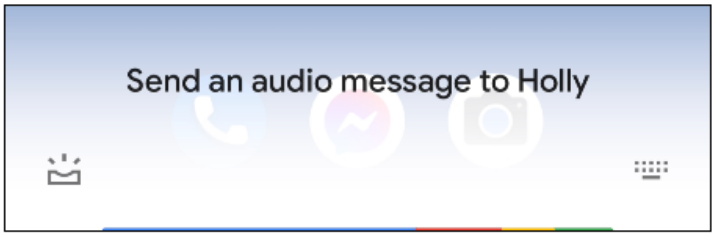


Source: OnePlus Nord N200 5G 07/14/

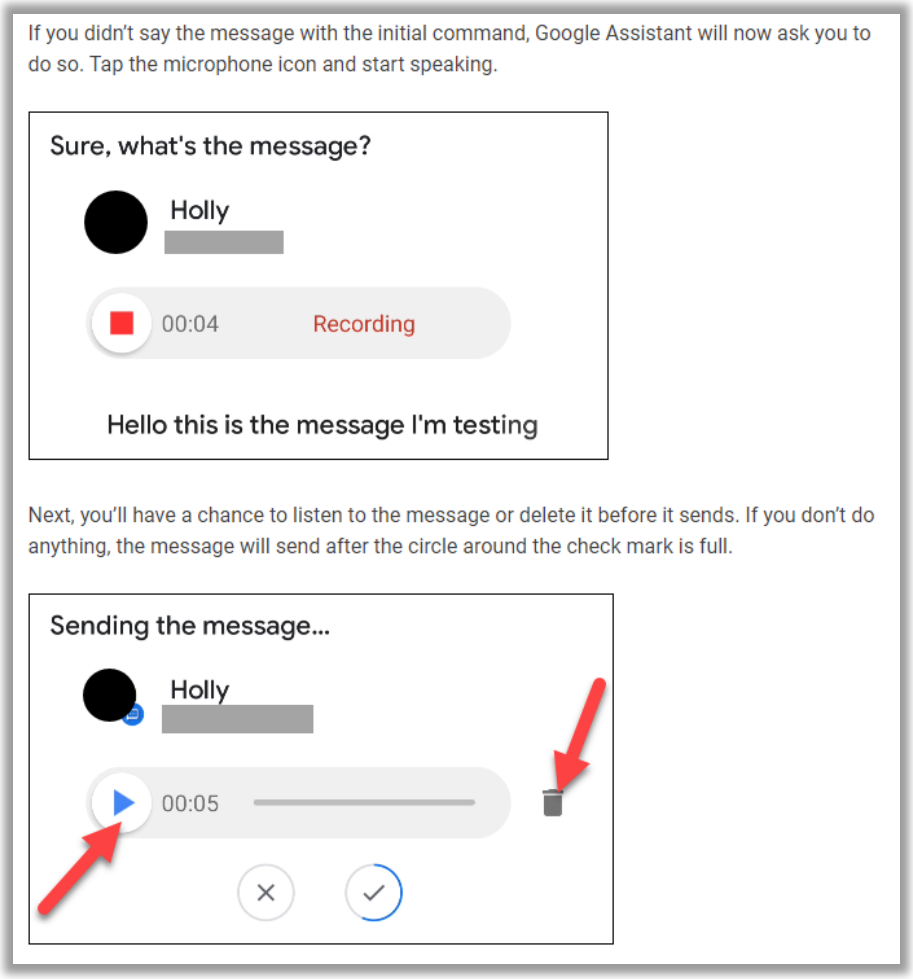
This feature is only available on Android phones and tablets, but the audio messages can be sent to any contact, regardless of what kind of device they have. To begin, launch Assistant by saying "OK, Google," or by swiping in from the bottom-left or -right corner.



Next, the command to say is, "Send Audio Message to [Name of Contact]." You can say the message immediately after the person's name, or you can pause and wait.



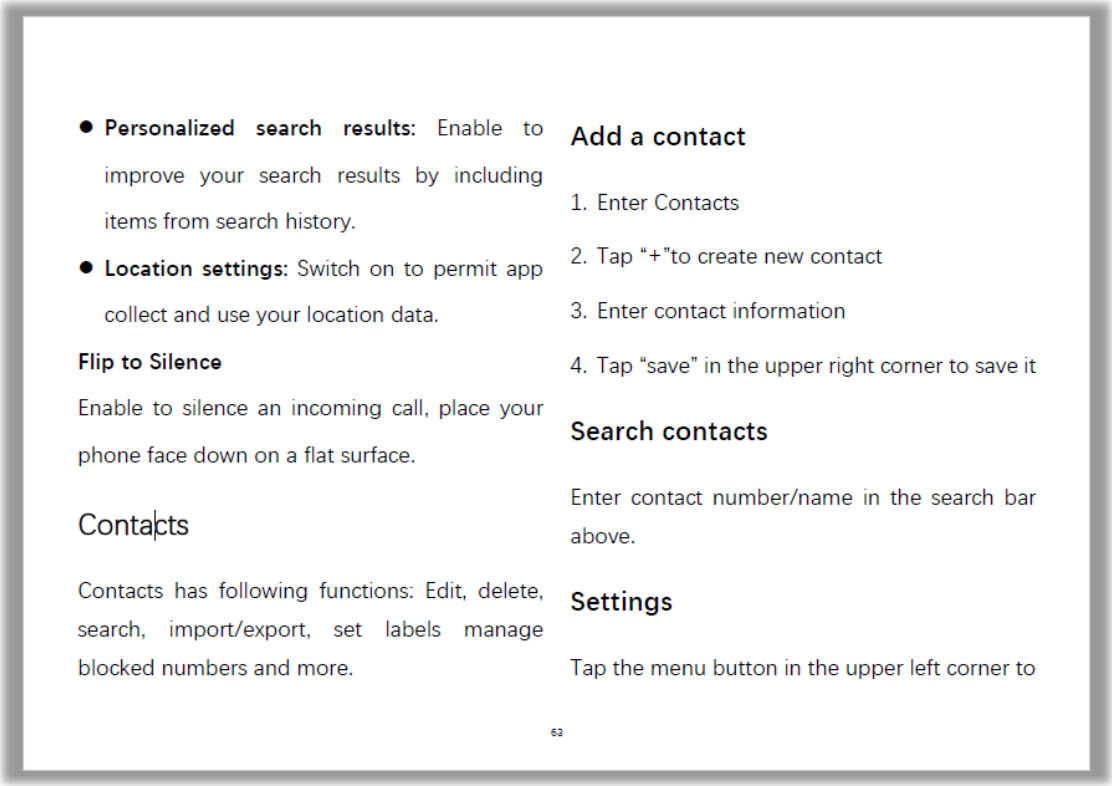
Google Assistant may now ask you to clarify which contact you meant or choose a phone number.



https://www.howtogeek.com/721234/how-to-send-audio-messages-with-google-assistant/

75. Defendant's products store a list of addresses of recipients and include a user interface for the user to input voice and text messages. For example, the OnePlus Nord N200

includes memory to store phone numbers and addresses and includes a touch screen and microphone.



- **Personalized search results:** Enable to improve your search results by including items from search history.
- **Location settings:** Switch on to permit app collect and use your location data.

Flip to Silence

Enable to silence an incoming call, place your phone face down on a flat surface.

Contacts

Contacts has following functions: Edit, delete, search, import/export, set labels manage blocked numbers and more.

Add a contact

1. Enter Contacts
2. Tap "+"to create new contact
3. Enter contact information
4. Tap "save" in the upper right corner to save it

Search contacts

Enter contact number/name in the search bar above.

Settings

Tap the menu button in the upper left corner to

63

OnePlus Nord N200 5G User Manual, p. 63.

76. Defendant's products use a server to remotely record and store voice messages and provide access to the recipients. For example, the OnePlus Nord N200 uses a server to store audio messages where it can access the audio messages to play them for the recipient of the message.

77. Defendant has and continues to indirectly infringe one or more claims of the '978 Patent by knowingly and intentionally inducing others including, but not limited to, network operators, server operators, OPPO's customers, and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as phones that integrate and send voice content in short message service messages.

78. Defendant, with knowledge that these products, or the use thereof, infringe the '978 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '978 Patent by providing these products to end-users for use in an infringing manner.

79. Defendant has induced infringement by others, including end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '978 Patent, but while remaining willfully blind to the infringement. Defendant provides detailed information about how to use the Accused Products in the OnePlus Support website.[3] Defendant provides product manuals and documentation that instruct customers and end-users how to use the Accused Products in an infringing manner, including specifically how to use the OnePlus OxygenOS Google Messages/Chat feature and Google Assistant.[4]

80. Multimodal has suffered damages as a result of Defendant's direct and indirect infringement of the '978 Patent in an amount to be proved at trial.

81. Multimodal has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '978 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

COUNT III
(Infringement of the '227 Patent)

82. Paragraphs 1 through 60 are incorporated by reference as if fully set forth herein.

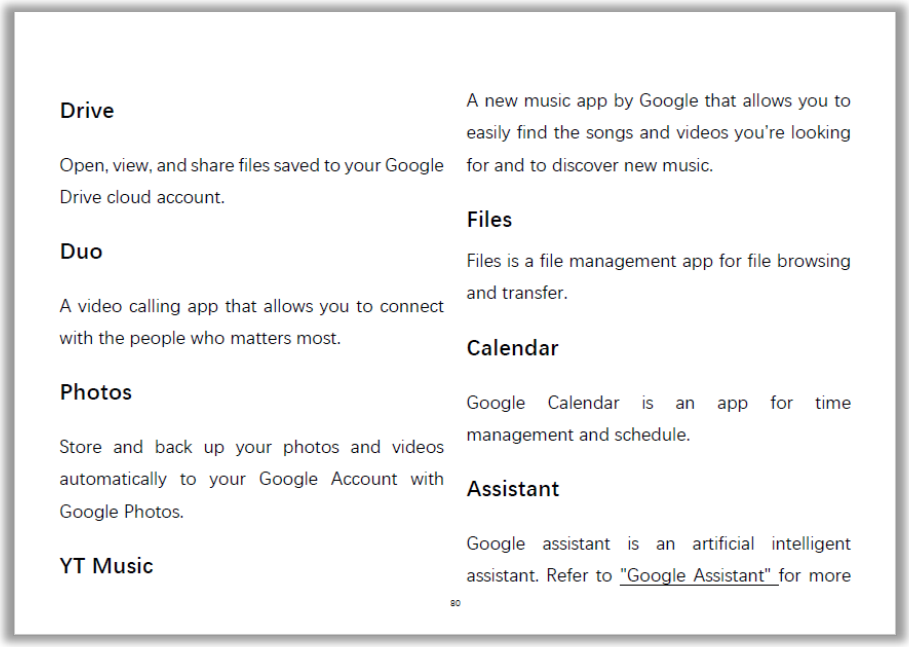
83. Multimodal has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '227 Patent.

[3] https://service.oneplus.com/us

[4] (https://service.oneplus.com/content/dam/support/user-manuals/common/OnePlus_10_Pro_User_Manual_EN.pdf.) at 19, 64-65, 75.

84. Defendant has and continues to directly infringe the ’227 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making, using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’227 Patent. On information and belief, such OPPO products include at least the OnePlus tablets and phones that complete an incomplete call including detecting the incomplete call and receiving and triggering call completion actions.

85. For example, Defendant has and continues to directly infringe at least claim 1 of the ’227 Patent by making, using, offering to sell, selling, and/or importing into the United States products that use a call completion application to detect incomplete calls and provide call completion actions for execution on the OPPO mobile device. Upon information and belief, Defendant directly infringes claim 1 by performing the claimed method in the United States, including at least through testing and qualification of the Accused Products by Defendant or its agents. As an example, the OnePlus Nord N200, running the OnePlus OxygenOS based on operating system OxygenOS including Google Duo, provides a call completion application to complete an incomplete call by detecting the incomplete call and performing a call completion action based on the caller’s selection:



Drive

Open, view, and share files saved to your Google Drive cloud account.

Duo

A video calling app that allows you to connect with the people who matters most.

Photos

Store and back up your photos and videos automatically to your Google Account with Google Photos.

YT Music

A new music app by Google that allows you to easily find the songs and videos you're looking for and to discover new music.

Files

Files is a file management app for file browsing and transfer.

Calendar

Google Calendar is an app for time management and schedule.

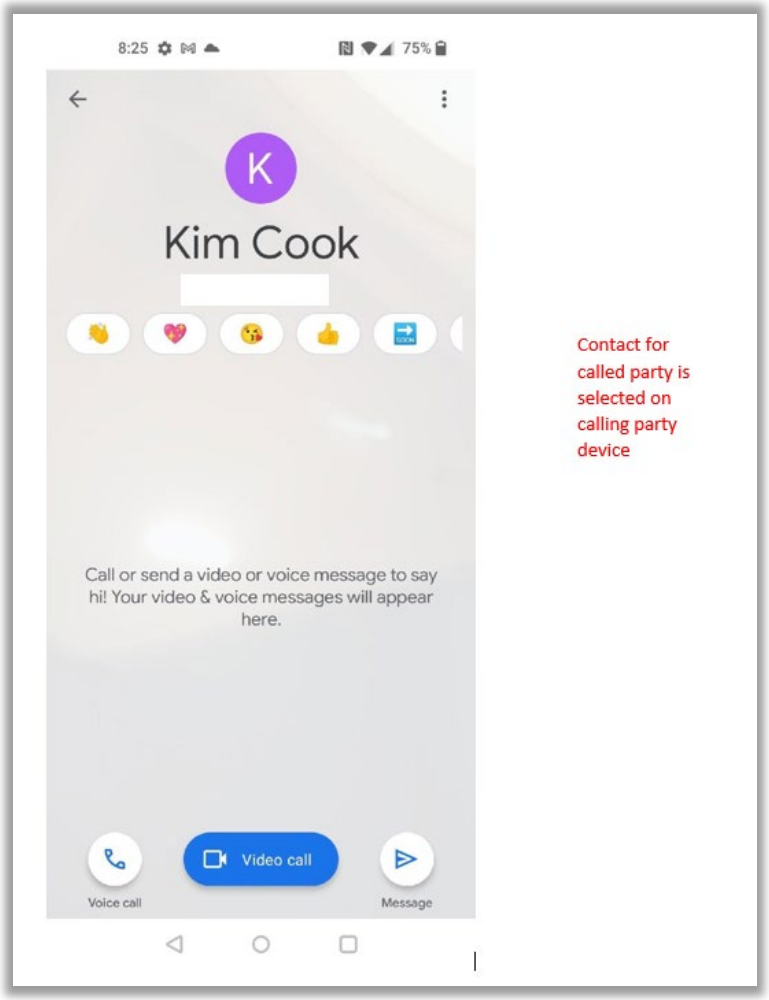
Assistant

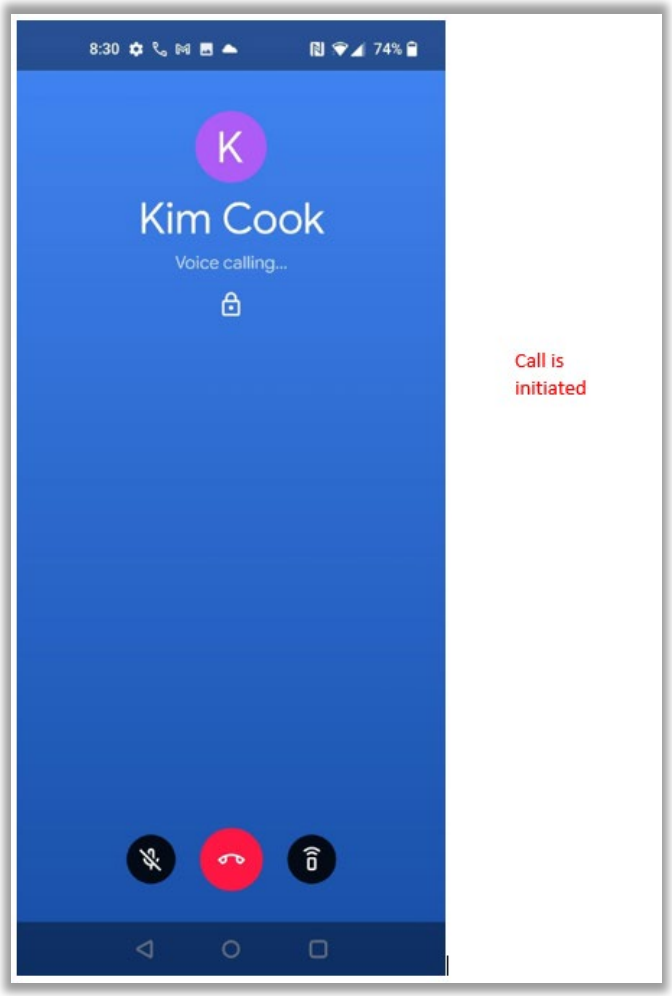
Google assistant is an artificial intelligent assistant. Refer to "Google Assistant" for more

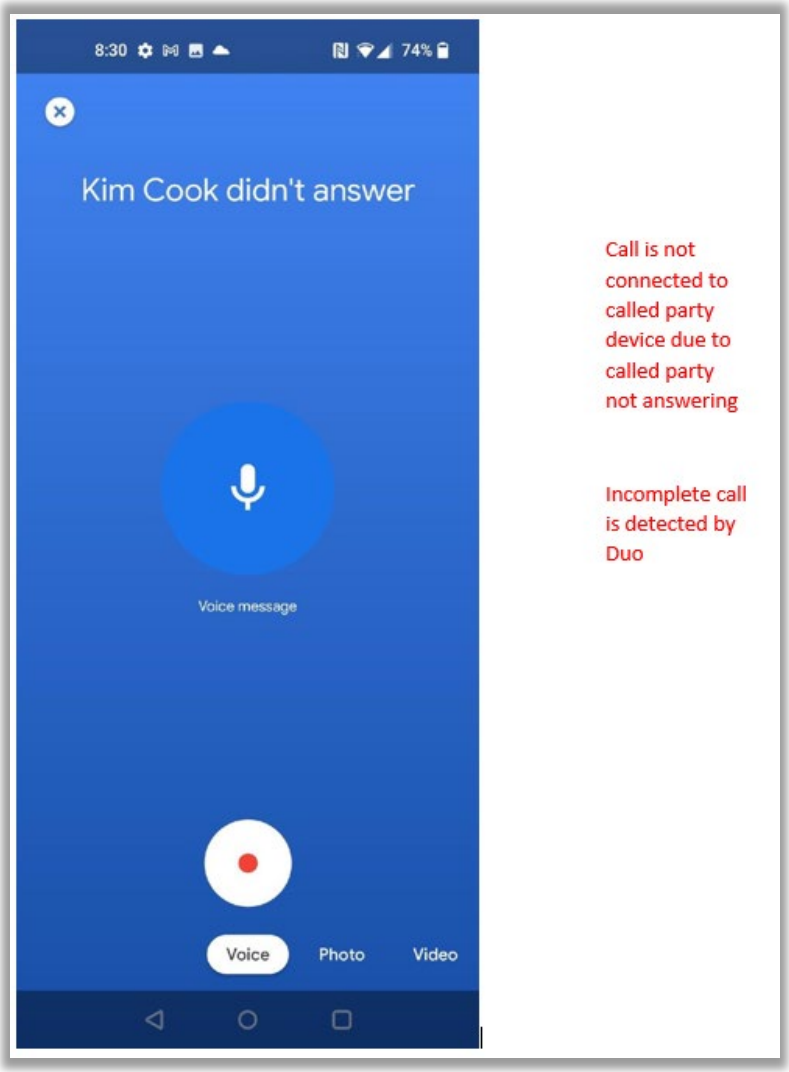
80

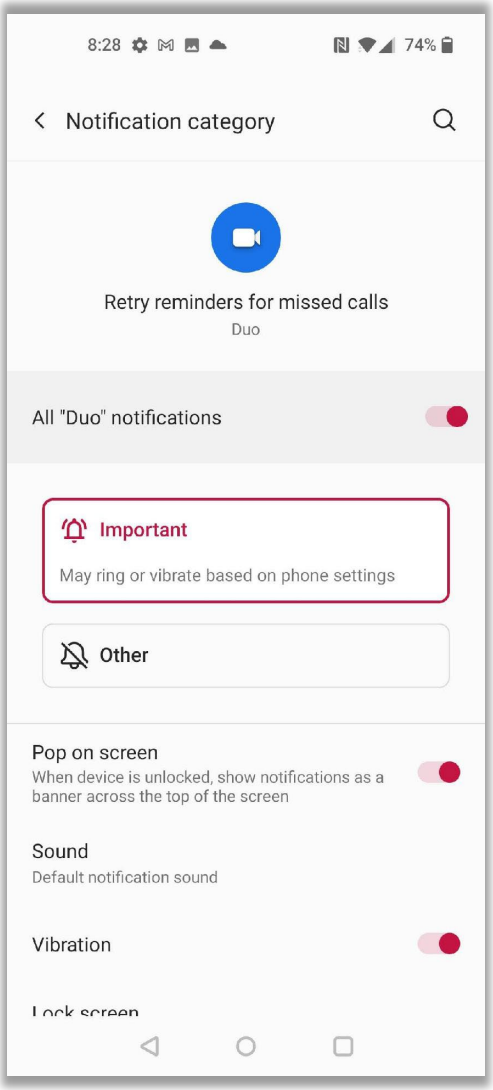
OnePlus Nord N200 5G User Manual, p. 80.

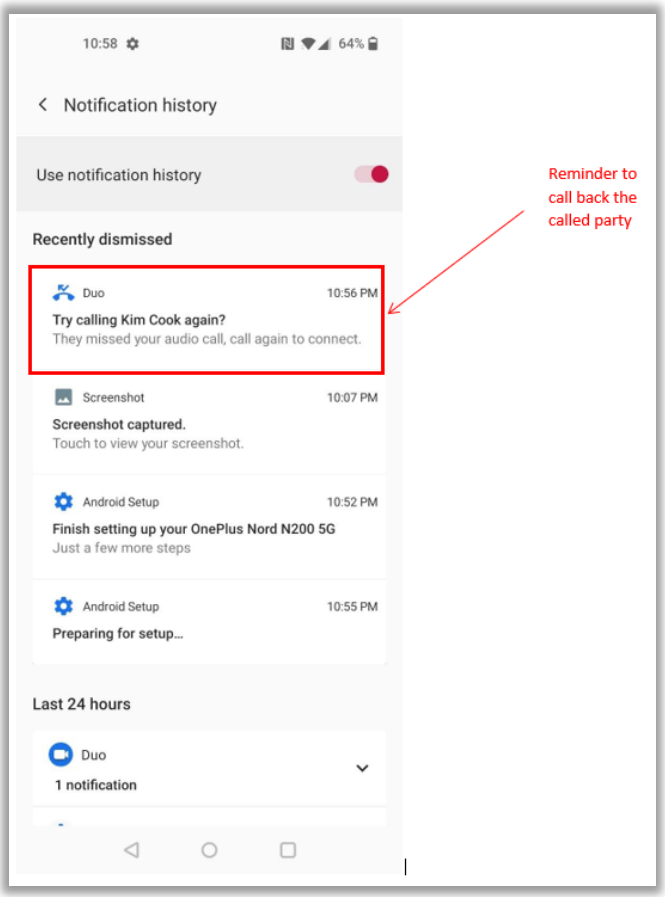
Source: OnePlus Nord N200 5G 7/14/22.

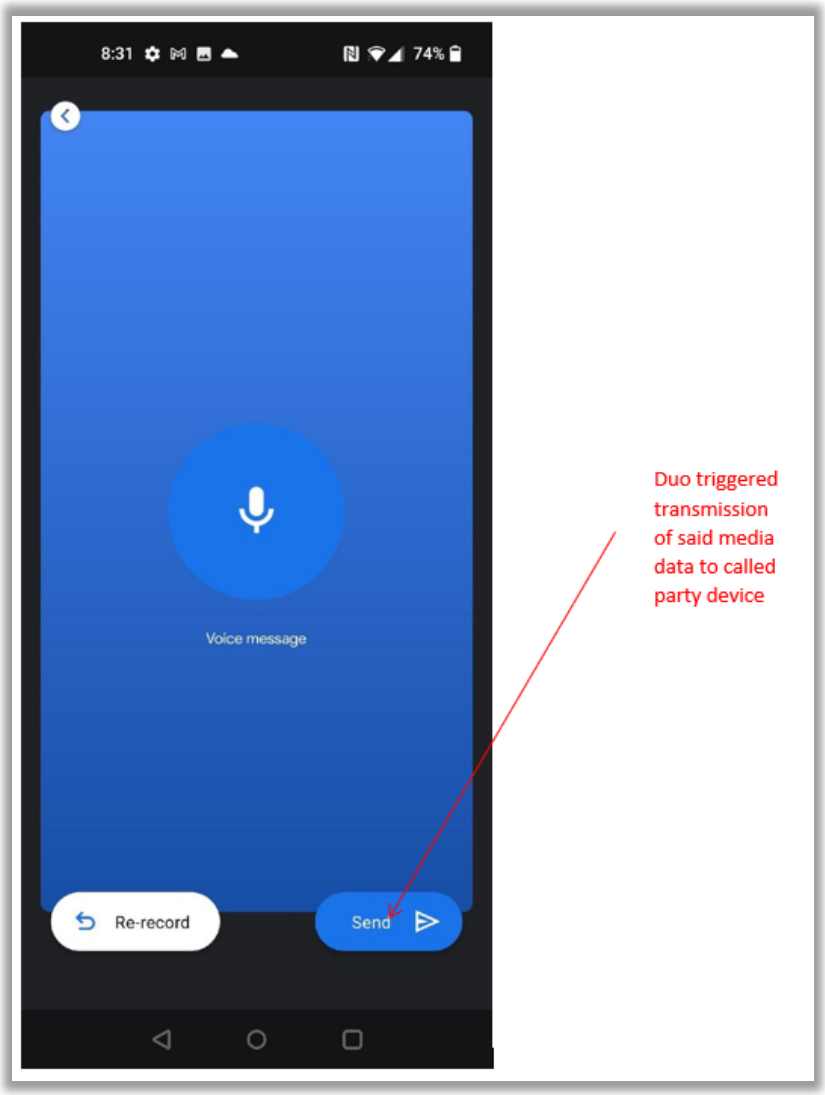

8:25
75%
K
Kim Cook
Call or send a video or voice message to say hi! Your video & voice messages will appear here.
Voice call
Video call
Message
Contact for called party is selected on calling party device


8:30
74%
K
Kim Cook
Voice calling...
Call is initiated


8:30
74%
Kim Cook didn't answer
Voice message
Voice
Photo
Video
Call is not connected to called party device due to called party not answering
Incomplete call is detected by Duo


8:28
74%
Notification category
Retry reminders for missed calls
Duo
All "Duo" notifications
Important
May ring or vibrate based on phone settings
Other
Pop on screen
When device is unlocked, show notifications as a banner across the top of the screen
Sound
Default notification sound
Vibration
Lock screen


10:58
64%
Notification history
Use notification history
Recently dismissed
Duo
10:56 PM
Try calling Kim Cook again?
They missed your audio call, call again to connect.
Screenshot
10:07 PM
Screenshot captured.
Touch to view your screenshot.
Android Setup
10:52 PM
Finish setting up your OnePlus Nord N200 5G
Just a few more steps
Android Setup
10:55 PM
Preparing for setup...
Last 24 hours
Duo
1 notification
Reminder to call back the called party



Source: OnePlus Nord N200 7/14/2022.

86. Defendant has and continues to indirectly infringe one or more claims of the '227 Patent by knowingly and intentionally inducing others, including OPPO's customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as phones that use call completion applications to detect incomplete calls and perform call completion actions selected by the caller.

87. Defendant, with knowledge that these products, or the use thereof, infringe the '227

Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '227 Patent by providing these products to end-users for use in an infringing manner.

88. Defendant has induced infringement by others, including end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '227 Patent, but while remaining willfully blind to the infringement. Defendant provides detailed information about how to use the Accused Products in the OnePlus Support website.[5] Defendant provides product manuals and documentation that instruct customers and end-users how to use the Accused Products in an infringing manner, including specifically how to use the OnePlus OxygenOS Google Duo feature.[6]

89. Multimodal has suffered damages as a result of Defendant's direct and indirect infringement of the '227 Patent in an amount to be proved at trial.

90. Multimodal has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '227 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

COUNT IV
(Infringement of the '030 Patent)

91. Paragraphs 1 through 60 are incorporated by reference as if fully set forth herein.

92. Multimodal has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '030 Patent.

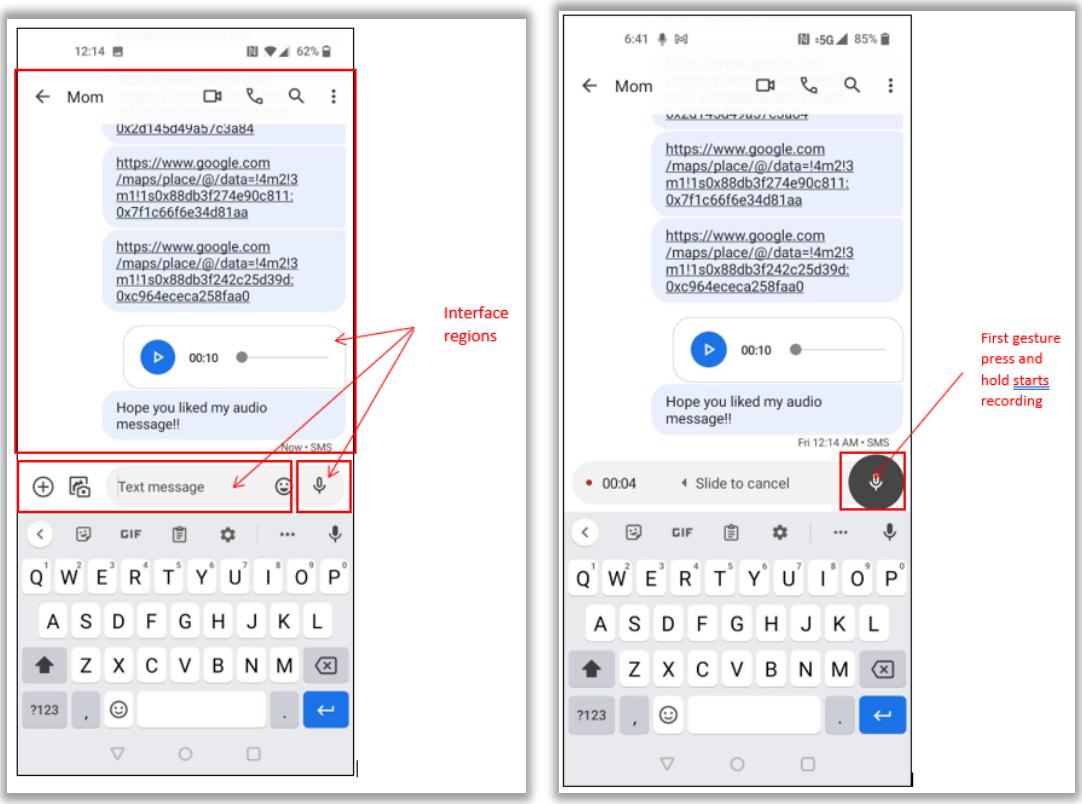
93. Defendant has and continues to directly infringe the '030 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making,

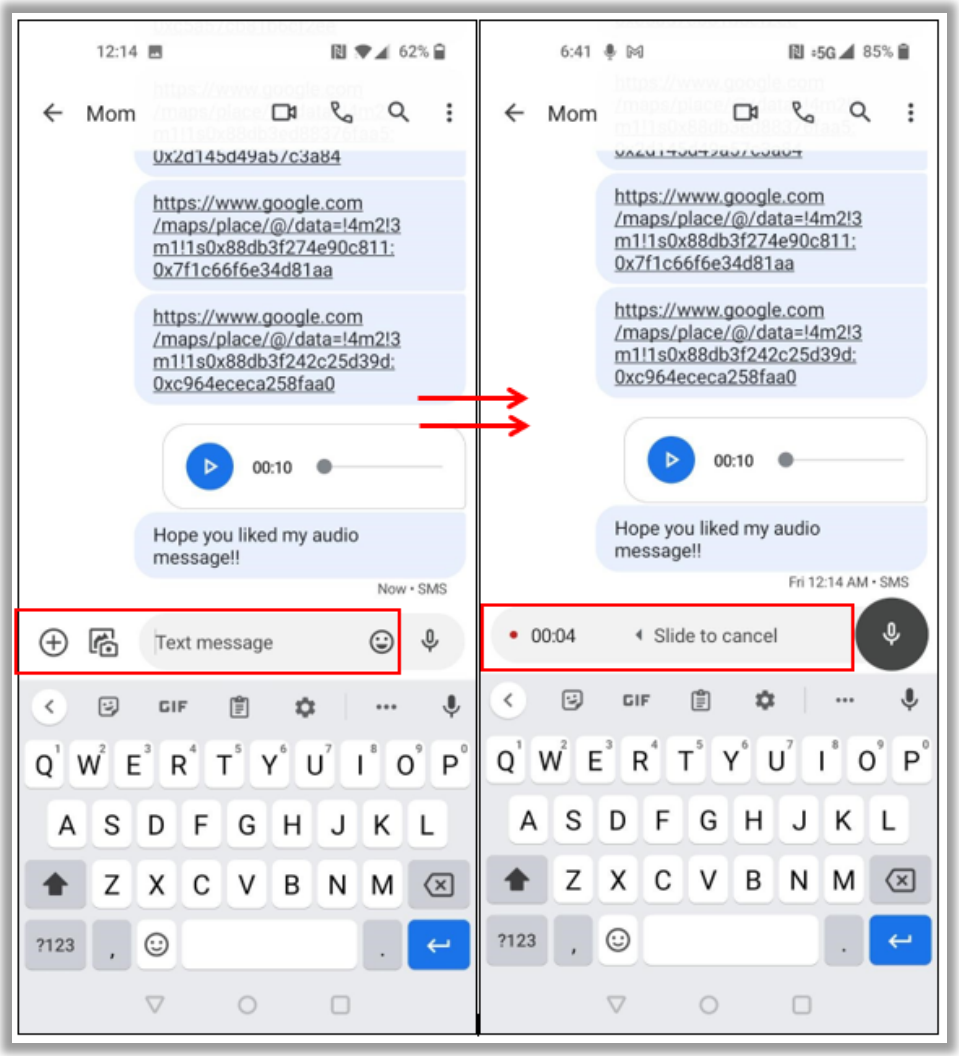
[5] https://service.oneplus.com/us

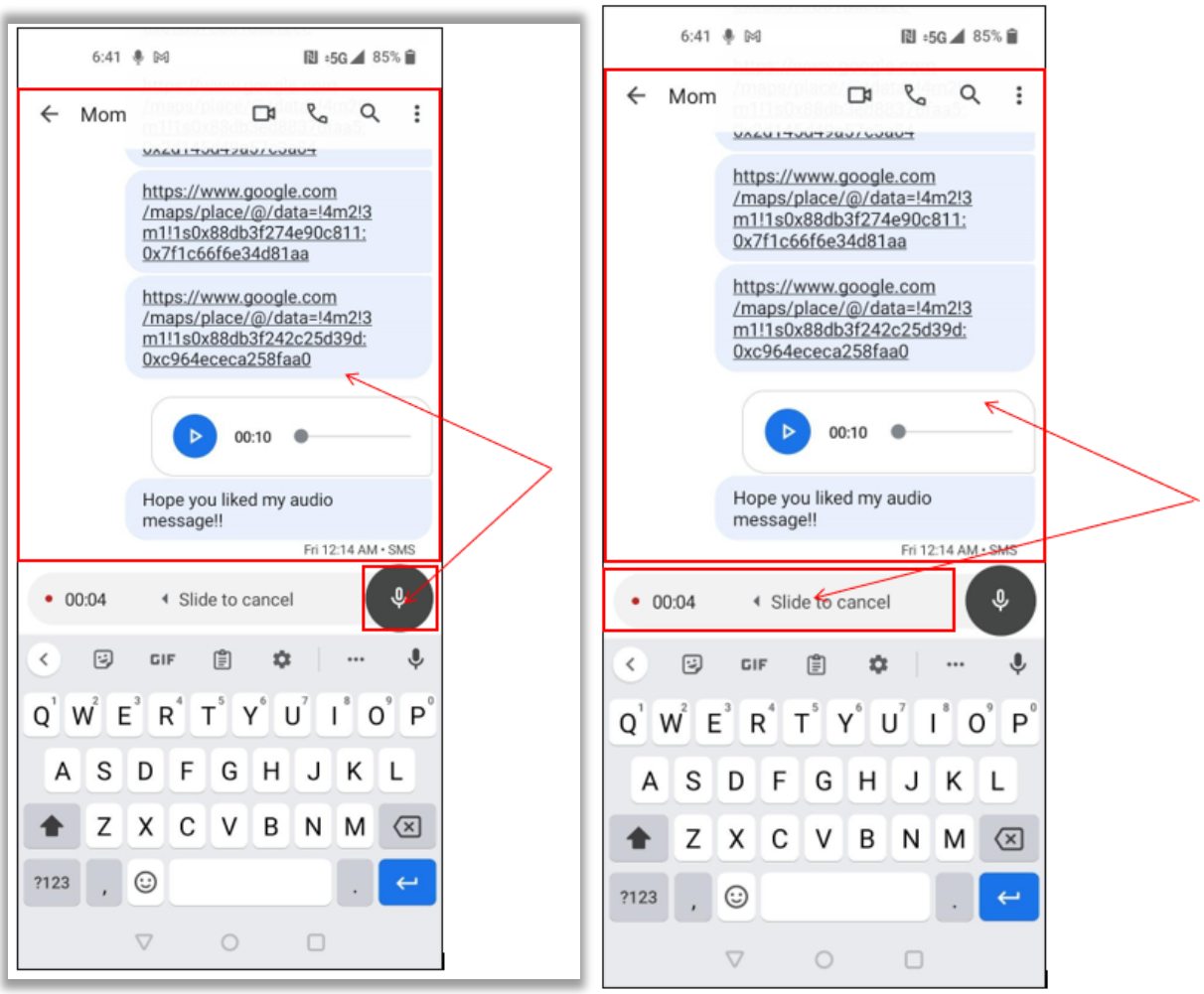
[6] (https://service.oneplus.com/content/dam/support/user-manuals/common/OnePlus_10_Pro_User_Manual_EN.pdf) at 74.

using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the ’030 Patent. On information and belief, such OPPO products include at least the OnePlus tablets and phones that use a processor and computer readable storage medium to store and execute a gesture based media recording application.

94. For example, Defendant has and continues to directly infringe at least claim 1 of the ’030 Patent by making, using, offering to sell, selling, and/or importing into the United States products that include a processor and storage to store and use a gesture based media recording application for recording audio. Upon information and belief, Defendant directly infringes claim 1 by performing the claimed method in the United States, including at least through testing and qualification of the Accused Products by Defendant or its agents. As an example, the OnePlus Nord N200, running the OnePlus OxygenOS based on the Google Android operating system, supports a user interface to detect a first and second gesture input by the user and record media based on the gestures detected through applications, such as Google Messages:


12:14
62%
Mom
https://www.google.com
/maps/place/@/data=!4m2!3
m1!1s0x88db3f274e90c811:
0x7f1c66f6e34d81aa
https://www.google.com
/maps/place/@/data=!4m2!3
m1!1s0x88db3f242c25d39d:
0xc964ececa258faa0
00:10
Hope you liked my audio
message!!
Now • SMS
Text message
Interface
regions
6:41
85%
Mom
https://www.google.com
/maps/place/@/data=!4m2!3
m1!1s0x88db3f274e90c811:
0x7f1c66f6e34d81aa
https://www.google.com
/maps/place/@/data=!4m2!3
m1!1s0x88db3f242c25d39d:
0xc964ececa258faa0
00:10
Hope you liked my audio
message!!
Fri 12:14 AM • SMS
00:04
Slide to cancel
First gesture
press and
hold starts
recording


12:14
62%
Mom
https://www.google.com
/maps/place/@/data=!4m2!3
m1!1s0x88db3f274e90c811:
0x7f1c66f6e34d81aa
https://www.google.com
/maps/place/@/data=!4m2!3
m1!1s0x88db3f242c25d39d:
0xc964ececa258faa0
00:10
Hope you liked my audio
message!!
Now • SMS
Text message
6:41
85%
Mom
https://www.google.com
/maps/place/@/data=!4m2!3
m1!1s0x88db3f274e90c811:
0x7f1c66f6e34d81aa
https://www.google.com
/maps/place/@/data=!4m2!3
m1!1s0x88db3f242c25d39d:
0xc964ececa258faa0
00:10
Hope you liked my audio
message!!
Fri 12:14 AM • SMS
00:04
Slide to cancel



Source: OnePlus Nord N200 5G 07/18/22

95. Defendant has and continues to indirectly infringe one or more claims of the '030 Patent by knowingly and intentionally inducing others, including OPPO's customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as phones that use processor and computer readable storage medium to execute a gesture based media recording application, such as Google Messages.

96. Defendant, with knowledge that these products, or the use thereof, infringe the '030 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues

to knowingly and intentionally induce, direct infringement of the '030 Patent by providing these products to end-users for use in an infringing manner.

97. Defendant has induced infringement by others, including end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '030 Patent, but while remaining willfully blind to the infringement. Defendant provides detailed information about how to use the Accused Products in the OnePlus Support website.[7] Defendant provides product manuals and documentation that instruct customers and end-users how to use the Accused Products in an infringing manner, including specifically how to use the OnePlus OxygenOS Google Messages/Chat feature.[8]

98. Multimodal has suffered damages as a result of Defendant's direct and indirect infringement of the '030 Patent in an amount to be proved at trial.

99. Multimodal has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '030 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

COUNT V
(Infringement of the '116 Patent)

100. Paragraphs 1 through 60 are incorporated by reference as if fully set forth herein.

101. Multimodal has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, or import any products that embody the inventions of the '116 Patent.

102. Defendant has and continues to directly infringe the '116 Patent, either literally or under the doctrine of equivalents, without authority and in violation of 35 U.S.C. § 271, by making,

[7] https://service.oneplus.com/us
[8] https://service.oneplus.com/content/dam/support/user-manuals/common/OnePlus_10_Pro_User_Manual_EN. pdf at 64-65.

using, offering to sell, selling, and/or importing into the United States products that satisfy each and every limitation of one or more claims of the '116 Patent. On information and belief, such OPPO products include at least the OnePlus tablets and phones that transmit data files from a sender to a recipient using the RCS protocol.

103. For example, Defendant has and continues to directly infringe at least claim 1 of the '116 Patent by making, using, offering to sell, selling, and/or importing into the United States products that transmit data files from a sender to a recipient using the RCS protocol. Upon information and belief, Defendant directly infringes claim 1 by performing the claimed method in the United States, including at least through testing and qualification of the Accused Products by Defendant or its agents.

104. Every Accused Product practices transmitting a data file to a messaging server over a first communication network by said sender using a sender device. For example, a OnePlus Nord N200 running the Messages/Chat app in OnePlus OxygenOS (based on Android 11 operating system) transmits a data file to a messaging server (*e.g.*, Content Server) over a first communication network (*e.g.*, Verizon, T-Mobile, AT&T, Sprint) by said sender (*e.g.*, User A) using a sender device (*e.g.*, User A's device).

[9]

[9] https://www.oneplus.com/n200-5g/specs

Latest OnePlus Android 11 preview prepares RCS, teases OnePlus 8T and other phones

Ben Schoon - Sep. 1st 2020 1:02 pm PT @NexusBen

OnePlus Messages app is preparing RCS support

RCS is the big thing in messaging for Android right now, and it's slowly been rolling out across the globe thanks to carriers and Google's efforts, too. Now, OnePlus is showing signs of better support for the feature. In Android 11, the company's own messaging app is laying the foundation for RCS support.

A debug menu within the OnePlus Messages app shows a couple of options for RCS messaging, including checking the framework state and debugging the server address. Of course, this is still early days so the functionality isn't live yet, but it seems this is something OnePlus wants to bring to users in the not-too-distant future. [10]

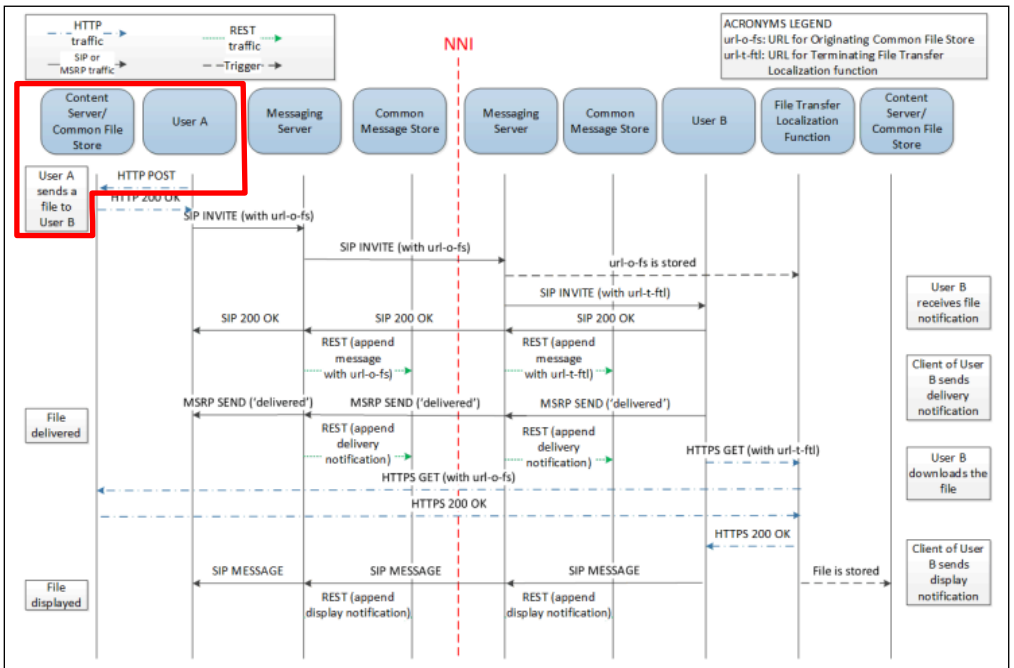


Figure 18: File Transfer Localisation Function: global flow [11]

Verizon, AT&T, T-Mobile, and Sprint will work together to grow RCS adoption

[10] https://9to5google.com/2020/09/01/oneplus-8-android-11-developer-preview-findings/
[11] https://www.gsma.com/futurenetworks/wp-content/uploads/2019/09/RCC.07-v9.0.pdf

It's not often that we see all four major U.S. carriers team up on something, but that's precisely what's happening today.

Verizon, T-Mobile, AT&T, and Sprint have announced the formation of the Cross Carrier Messaging Initiative (CCMI). The goal of the group is to help make Rich Communications Service (RCS) messaging more widely available.

CCMI says that it's working to develop and deploy a messaging service based on the RCS standard starting with Android in 2020. The group says that it's working with its carrier ownership group as well as "other companies in the RCS ecosystem."

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That's about all we know about the effort right now, but the carriers say that more info about CCMI and its RCS messaging initiative will be announced in the future.

[12]

105. Said messaging server associates said data file with a unique access address. For example, the messaging server (*e.g.*, Content Server) associates the data file with a unique access address (*e.g.*, data url).

4. The following cases apply for the result returned by the HTTP Content Server:

a) If the upload is successful, the client shall get a HTTP 200 OK response containing a XML in the body that specifies:

i. The Uniform Resource Locator (URL), size, content type and validity for the thumbnail, if applicable.
ii. The URLs, size, filename, content type and validity for the file.

```
<?xml version="1.0" encoding="UTF-8"?>
<file xmlns="urn:gsma:params:xml:ns:rcs:rcs:fthttp"
      xmlns:x="urn:gsma:params:xml:ns:rcs:rcs:up:fthttpext">
      <file-info type="thumbnail">
            <file-size>[thumbnail size in bytes]</file-size>
            <content-type>[MIME-type for thumbnail]</content-type>
            <data url = "[HTTP URL for the thumbnail]" until = "[validity of the thumbnail]"/>
      </file-info>
      <file-info type="file">
            <file-size>[file size in bytes]</file-size>
            <file-name>[original file name]</file-name>
            <content-type>[MIME-type for file]</content-type>
            <data url = "[HTTP URL for the file]" until = "[validity of the file]"/>
            <x:branded-url>[alternative branded HTTP URL of the file]</x:branded-url>
      </file-info>
</file>
```

Table 21: HTTP Content Server response: XML contained in the body

[13]

106. Said messaging server associates said unique access address with a notification message and transmits said notification message to said recipient over a second communication network. For example, said messaging server (*e.g.*, Content Server) associates said unique access address (*e.g.*, data url) with a notification message (*e.g.*, SIP INVITE) and transmits said

[12] https://news.wirefly.com/2019/10/24/verizon-att-t-mobile-sprint-rcs-ccmi
[13] https://www.gsma.com/futurenetworks/wp-content/uploads/2019/09/RCC.07-v9.0.pdf

notification message to said recipient over a second communication network (*e.g.*, Verizon, T-Mobile, AT&T, Sprint).

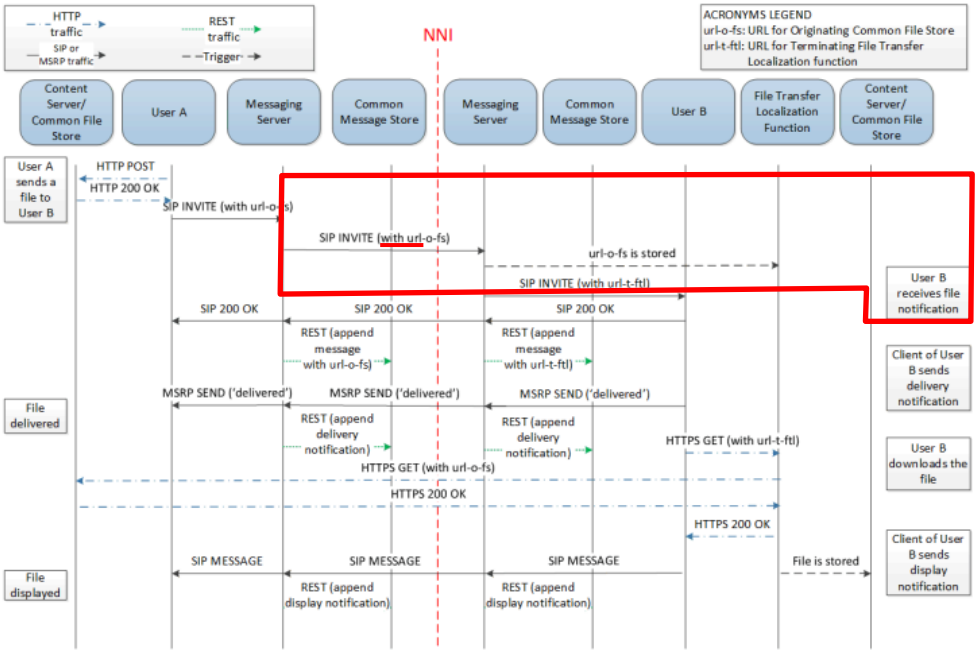

Figure 18: File Transfer Localisation Function: global flow

14

3.2.3 1-to-1 Chat

3.2.3.1 Overview

At a technical level, the Chat service relies on the following concepts:

- SIP procedures for the setup of sessions using MSRP for the message exchange;
- In the SDP of the SIP INVITE request and response, the *a=accept-types* attribute shall include only *message/cpim* and *application/im-iscomposing+xml*, i.e., "*a=accept-types:message/cpim application/im-iscomposing+xml*".
- Delivery assurance information is included in SIP signalling by the network as per section 3.2.3.8.
- Messages are transported in the MSRP session. Each MSRP SEND request contains a request to receive an Instant Messaging Disposition Notification (IMDN) 'delivery' notification, and possibly a request to receive an IMDN 'display' notification. A client should, therefore, always include "positive-delivery" in the value for the CPIM/IMDN Disposition-Notification header field. That means that the value of the header field is either "positive-delivery" or "positive-delivery,display" depending on whether display notifications were requested. The value of "negative-delivery" is not used in RCS for 1-to-1 Chat.

- Multimedia content within a Chat session is not permitted. Therefore, in the SDP of the SIP INVITE request and response, the *a=accept-wrapped-types* attribute shall only include text/plain and message/imdn+xml and if File Transfer using HTTP or Geolocation PUSH is supported (see sections 3.2.5 and 3.2.6.2) *application/vnd.gsma.rcs-ft-http+xml* and *application/vnd.gsma.rcspushlocation+xml* respectively, e.g., *a=accept-wrapped-types:text/plain message/imdn+xml*. This also applies to requests generated by the Participating Function, and to responses generated by the Participating Function even if a response from the terminating client has not yet been received. To transfer multimedia content during a chat, File Transfer is used.

15

[14] *Id.*

[15] *Id.*

107. Said notification message is not sent while the sender is accessing the messaging server and said notification message is queued for later delivery. For example, said notification message (*e.g.*, SIP INVITE) is not sent while the sender is accessing the messaging server (*e.g.*, Content Server) and said notification message is queued for later delivery (*e.g.*, User A first sends the file to the Content Server, then the notification sent to User B for later delivery.)

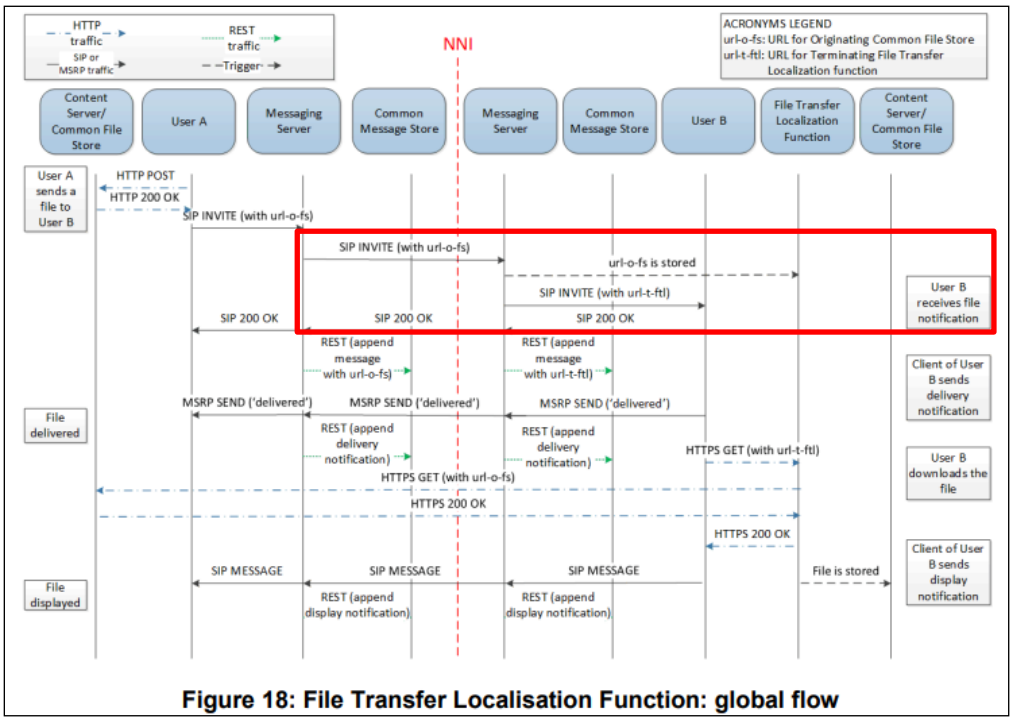

Figure 18: File Transfer Localisation Function: global flow

3.2.3.9 Message display and message store

All messages are stored in the participating devices, together with a time indication and an appropriate indication of the sender and the receiver of each message. This time indication shall be obtained from the CPIM *DateTime* header for received messages. Since according to section 3.2.3.1 these values should be set by the Messaging Server, this allows for a correct time based indication for those messages without depending on the device's own clock which may not have been set correctly. For sent messages however, the only clock available at transmission time is the device's own clock.

However, it is Messaging Server responsibility to deliver messages in the correct order, so the RCS Client is able to rely on the reception order to interleave the incoming and outgoing messages. Please note that the shown message time at the UX should be based on the network time (i.e. the CPIM DateTime header, when available) in order to correctly display the time of store and forwarded messages.

When a Common Message Store is available for the user, the messages are synchronised with the Message Store Server as specified in section 4.1.

[16]

108. Said first communication network and said second communication network are disparate networks (*e.g.*, Verizon, T-Mobile, AT&T, Sprint).

Verizon, AT&T, T-Mobile, and Sprint will work together to grow RCS adoption

It's not often that we see all four major U.S. carriers team up on something, but that's precisely what's happening today.

Verizon, T-Mobile, AT&T, and Sprint have announced the formation of the Cross Carrier Messaging Initiative (CCMI). The goal of the group is to help make Rich Communications Service (RCS) messaging more widely available.

CCMI says that it's working to develop and deploy a messaging service based on the RCS standard starting with Android in 2020. The group says that it's working with its carrier ownership group as well as "other companies in the RCS ecosystem."

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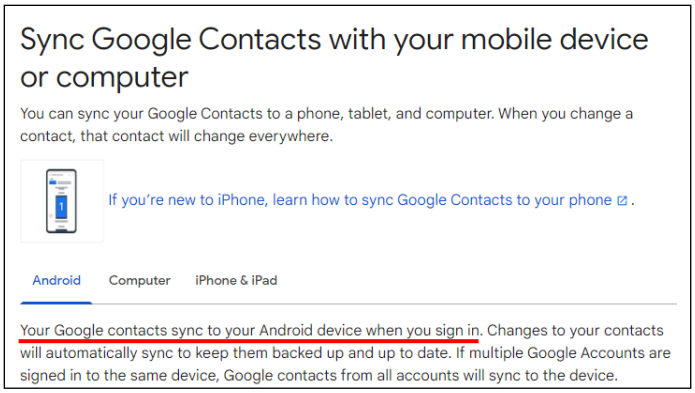
That's about all we know about the effort right now, but the carriers say that more info about CCMI and its RCS messaging initiative will be announced in the future.

[17]

109. Said sender device stores contact information to keep recipient contact information of said sender updated within an address book stored on said messaging server. For example, contacts on the sender device (*e.g.*, Android device) synchronize contacts with the Google Contacts.

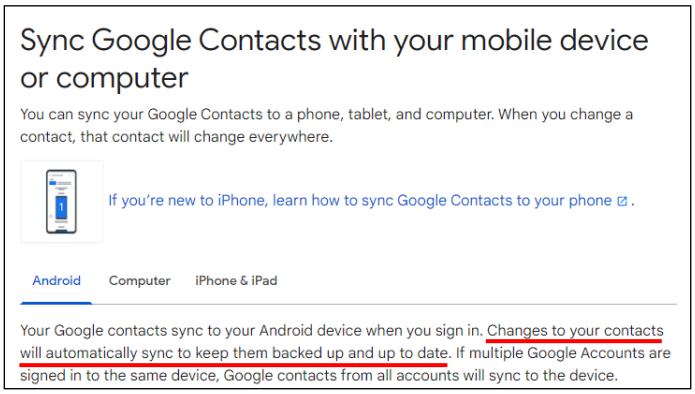
[16] *Id.*

[17] https://news.wirefly.com/2019/10/24/verizon-att-t-mobile-sprint-rcs-ccmi

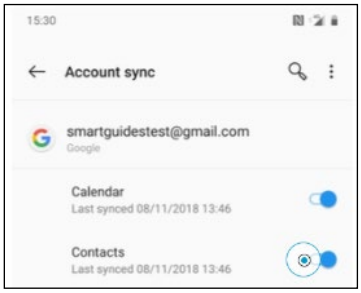


[18]

110. Said messaging server periodically queries said sender device for detecting changes in said stored contact information. For example, said messaging server periodically queries (automatically syncs sender device) for detecting changes in said stored contact information.



[19]



[20]

111. Said messaging server transmits said notification message to said recipient based

[18] https://support.google.com/contacts/answer/2753077?hl=en&co=GENIE.Platform%3DAndroid

[19] *Id.*

[20] https://www.helpforsmartphone.com/public/en/oneplus/6/android-9-0/guides/20/Import-contacts-OnePlus-6

on said recipient contact information. For example, said messaging server (*e.g.*, Messaging Server) transmits said notification message (*e.g.*, SIP INVITE) to said recipient based on said recipient contact information.

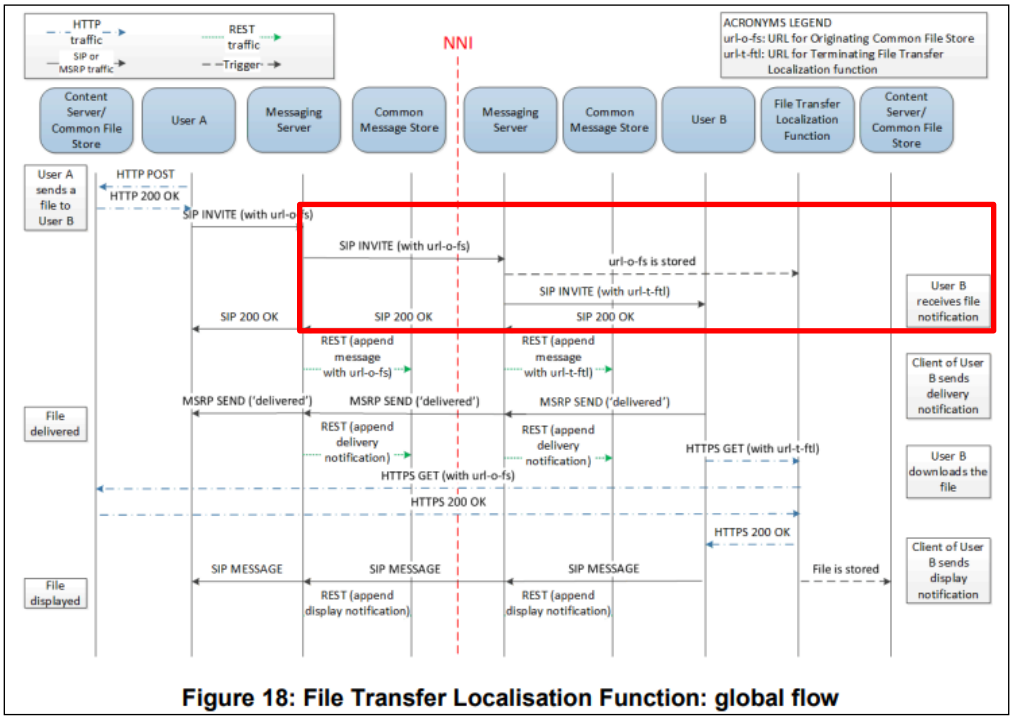


Figure 18: File Transfer Localisation Function: global flow

[21]

112. The recipient accesses said unique access address to retrieve said data file. For example, the recipient (*e.g.*, User B) accesses said unique access address (*e.g.*, data url) to retrieve said data file.

[21] https://www.gsma.com/futurenetworks/wp-content/uploads/2019/09/RCC.07-v9.0.pdf

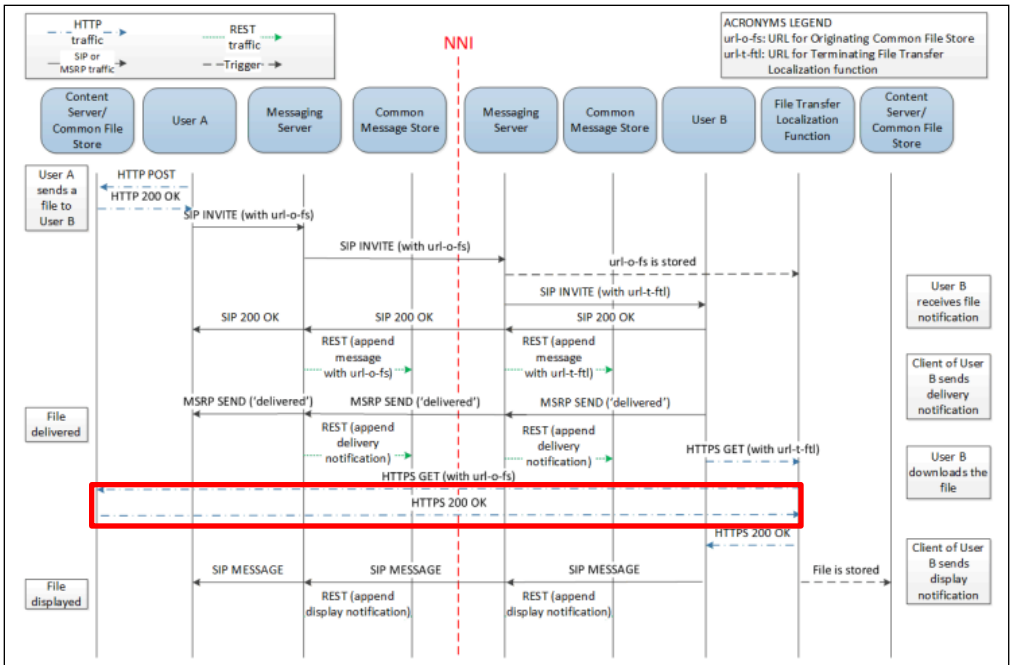


Figure 18: File Transfer Localisation Function: global flow

[22]

113. Said messaging server identifies the unique access address used by the recipient and transmits said data file corresponding to the unique access address to said recipient. For example, said messaging server (*e.g.*, Content Server) identifies the unique access address (*e.g.*, data url) used by the recipient (*e.g.*, User B) and transmits said data file corresponding to the unique access address to said recipient.

[22] *Id.*

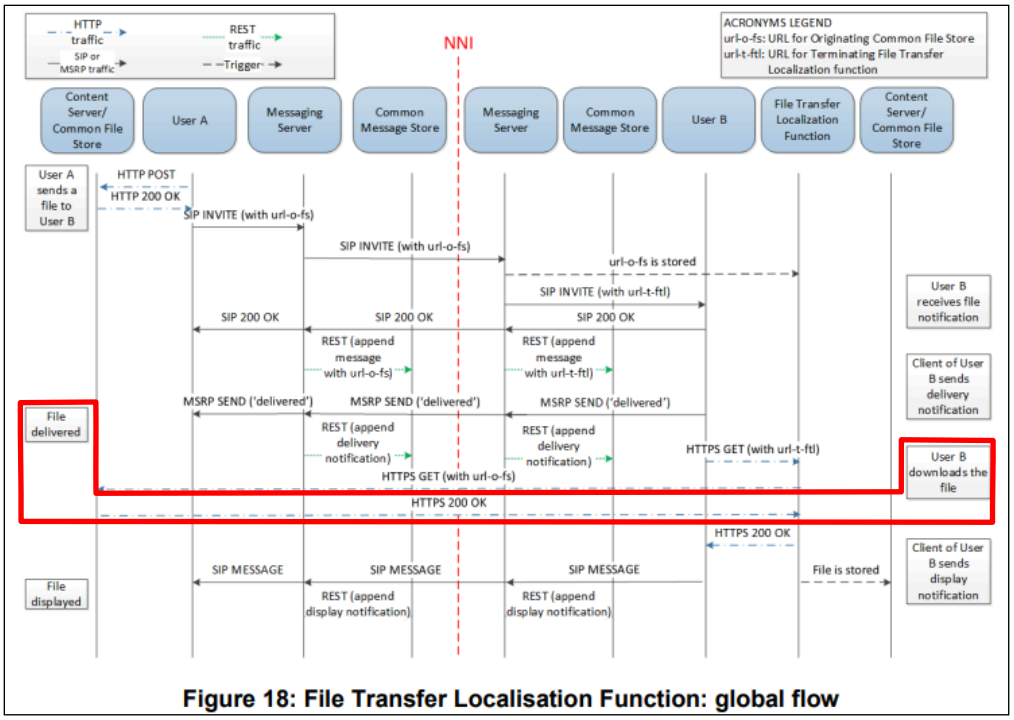


Figure 18: File Transfer Localisation Function: global flow

[23]

114. Defendant has and continues to indirectly infringe one or more claims of the '116 Patent by knowingly and intentionally inducing others, including OPPO's customers and end-users, to directly infringe, either literally or under the doctrine of equivalents, by making, using, offering to sell, selling, and/or importing into the United States products that include infringing technology, such as the Accused Products.

115. Defendant, with knowledge that these products, or the use thereof, infringe the '116 Patent at least as of the date of this Complaint, knowingly and intentionally induced, and continues to knowingly and intentionally induce, direct infringement of the '116 Patent by providing the Accused Products to end-users for use in an infringing manner.

116. Defendant has induced infringement by others, including end-users, with the intent to cause infringing acts by others or, in the alternative, with the belief that there was a high probability that others, including end-users, infringe the '116 Patent, but while remaining willfully

[23] *Id.*

blind to the infringement. Defendant provides detailed information about how to use the Accused Products in the OnePlus Support website.[24] Defendant provides product manuals and documentation that instruct customers and end-users how to use the Accused Products in an infringing manner, including specifically how to use the integrated Messages/Chat feature.[25]

117. Multimodal has suffered damages as a result of Defendant's direct and indirect infringement of the '116 Patent in an amount to be proved at trial.

118. Multimodal has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '116 Patent, for which there is no adequate remedy at law, unless Defendant's infringement is enjoined by this Court.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, Multimodal prays for relief against Defendant as follows:

a. Entry of judgment declaring that Defendant has directly and/or indirectly infringed one or more claims of each of the Patents-in-Suit;

b. An order pursuant to 35 U.S.C. § 283 permanently enjoining Defendant, its officers, agents, servants, employees, attorneys, and those persons in active concert or participation with it, from further acts of infringement of one or more of the Patents-in-Suit;

c. An order awarding damages sufficient to compensate Multimodal for Defendant's infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, together with interest and costs;

[24] https://service.oneplus.com/us
[25] https://service.oneplus.com/content/dam/support/user-manuals/common/OnePlus_10_Pro_User_Manual_EN.pdf at 64-65.

d. Entry of judgment declaring that this case is exceptional and awarding Multimodal its costs and reasonable attorney fees under 35 U.S.C. § 285; and

e. Such other and further relief as the Court deems just and proper.

Dated: September 2, 2022

Respectfully submitted,

/s/ Alfred R. Fabricant

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that, on September 2, 2022, all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ Alfred R. Fabricant
Alfred R. Fabricant