UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS

WIRELESS DISCOVERY LLC	)	
PLAINTIFF,	)	
	)	**Cause No. 6:20-cv-00762-ADA**
V.	)	
	)	**JURY TRIAL DEMANDED**
BUMBLE TRADING LLC, BUMBLE	)	
HOLDING, LTD, BADOO TRADING	)	
LTD., WORLDWIDE VISION	)	
LIMITED, BADOO LIMITED,	)	
BADOO SOFTWARE LIMITED,	)	
BADOO TECHNOLOGIES LIMITED,	)	
CHAPPY LIMITED, and LUMEN	)	
APP LIMITED	)	

PLAINTIFF'S FIRST AMENDED COMPLAINT

Plaintiff Wireless Discovery LLC ("Wireless Discovery") files this First Amended Complaint[1] and demand for jury trial seeking relief from patent infringement by Bumble Trading LLC ("Bumble Trading"), Bumble Holding, LTD, Badoo Trading LTD. ("Badoo Trading"), Badoo Limited, Badoo Software Limited, Badoo Technologies Limited, Chappy Limited, and Lumen App Limited (collectively referred to as "Defendants" or "Bumble").

I.   THE PARTIES

1.   Wireless Discovery is a Delaware limited liability corporation with a principal address of P.O. Box 1435, Los Gatos, CA 95124.

2.   On information and belief, Bumble Trading LLC ("Bumble Trading") is a Delaware Limited Liability Company with a principal place of business at 1105 W 41st St., Austin, TX 78756. Bumble has answered.

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[1] This First Amended Complaint is filed within 21 days of Defendants' Answer.

3.   On information and belief, Bumble Holding, Ltd. ("Bumble Holding") is a corporation existing under the laws of the United Kingdom with a principal place of business in London, United Kingdom. Bumble Holding has answered.

4.   On information and belief, Badoo Trading Limited ("Badoo Trading") is a corporation existing under the laws of the United Kingdom with a registered office at the Broadgate Tower, Third Floor, 20 Primrose Street, London EC2A 2RS United Kingdom. The ultimate controlling party of Badoo Trading Limited is Andrey Ogandzhanyants, also known as Andrey Andreev. Badoo Trading has answered.

5.   On information and belief, Badoo Limited is a corporation existing under the laws of the United Kingdom with a registered office at the Broadgate Tower, Third Floor, 20 Primrose Street, London EC2A 2RS United Kingdom, where it may be served. The ultimate controlling party of Badoo Limited is Andrey Ogandzhanyants, also known as Andrey Andreev. Badoo Limited has answered.

6.   On information and belief, Badoo Software Limited ("Badoo Software") is a corporation existing under the laws of Malta with a principal place of business in Birkirkara, Malta. The ultimate controlling party of Badoo Software Limited is Andrey Ogandzhanyants, also known as Andrey Andreev. Badoo Software has answered.

7.   On information and belief, Badoo Technologies Limited ("Badoo Technologies") is a Cyprus company with a registered office at 332 Agiou Andreou Str., Patrician Chambers 3035 Limassol, Cyprus and United Kingdom tax residency. The ultimate controlling party is Andrey Ogandzhanyants, also known as Andrey Andreev. Badoo Technologies has answered.

8.   On information and belief, Chappy Limited is a United Kingdom corporation with a principal place of business in Austin, Texas. It is believed that Chappy Limited is now a part of Bumble Trading. Chappy has answered.

9. On information and belief Lumen App Limited is a is a corporation existing under the laws of the United Kingdom with a principal place of business at Broadgate Tower Third Floor, 20 Primrose St., EC2A 2RS, London, United Kingdom. Lumen has answered.

II. JURISDICTION AND VENUE

10. This is an action for patent infringement arising under the patent laws of the U.S., 35 U.S.C. §§ 1 et seq. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

11. This Court has personal jurisdiction over Bumble Trading, Bumble Holding, and Chappy (collectively "Bumble Entities") consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. Bumble Entities conduct business, maintain an established place of business, and have committed acts of patent infringement and/or have induced and/or have contributed to acts of patent infringement by Badoo Entities and/or others in the Western District of the Texas, the State of Texas, and elsewhere in the United States. In addition, Bumble Trading's headquarters and principal place of business is located in Austin, Texas, within the District.

12. This Court has personal jurisdiction over Badoo Trading, Badoo Limited, Badoo Software, Badoo Technologies, and Lumen (collectively "Badoo Entities") consistent with the requirements of the Due Process Clause of the United States Constitution and the Texas Long Arm Statute. Badoo Entities have committed acts of patent infringement and/or induced and/or have contributed to acts of patent infringement by Bumble Entities and/or others in the Western District of the Texas, the State of Texas, and elsewhere in the United States, and continue to do so.

13. Venue is proper in this District for Bumble Trading and Chappy under 35 U.S.C. § 1400(b) because Bumble Trading has a regular and established place of business in Austin, Texas and has committed acts of infringement in the District by making, using, and selling the Bumble

app in the District. Venue is also proper as to Bumble Holding because it is a foreign company and is thus not subject to the patent venue statute in 35 U.S.C. § 1400(b) and is otherwise amenable to valid service of process and personal jurisdiction in this district. To the extent that Bumble Holding is not a wholly foreign company and is subject to the provisions of 35 U.S.C. § 1400(b), venue is proper because it has a regular and established place of business in Austin, Texas and has committed acts of infringement in this district by making, using, and selling the Bumble app in the District.

14.   Venue is also proper as to Badoo Trading, Badoo Limited, Badoo Software, Badoo Technologies, and Lumen because they are foreign companies and are thus not subject to the patent venue statute in 35 U.S.C. § 1400(b) and are otherwise amenable to valid service of process (including through counsel for Bumble) and personal jurisdiction in this district.

III.   FACTUAL BACKGROUND

15.   Wireless Discovery asserts infringement of U.S. Patent Nos. 8,914,024; 9,264,875; 10,321,267; and 10,334,397 against the Defendants for their making, using, selling, offering to sell, and importation of systems and methods related to the Bumble Trading, Badoo, Chappy and Lumen social networking and online dating applications.

IV.   THE BUMBLE APP INFRINGES WIRELESS DEVICES' ASSERTED PATENTS

a. INFRINGEMENT OF THE '024 PATENT

16.   On December 16, 2014, U.S. Patent No. 8,914,024 ("the '024 patent"), entitled "Discovery of Network Members By Personal Attributes" was duly and legally issued by the U.S. Patent and Trademark Office. Wireless Discovery owns the '024 patent by assignment.

17.   The '024 patent's Abstract states, "A method and application for mobile phone users provides an ability to discover personal attributes including photo of other individuals in

vicinity covered by a short range wireless network, such as Bluetooth or similar signals operating

in a wireless free spectrum, such as WiFi. The users can elect to exchange, send or receive contact

information with ones that are in the vicinity that includes photos."

      18.   The following chart illustrates how features of the Bumble app meet the claims of

the '024 patent literally or under the Doctrine of Equivalents:

Claim Language	Bumble Evidence
A system comprising:	Bumble is a system As a social network rooted in promoting kindness, respect, and empowerment, Bum provides ways for our users to make genuine connections. Bumble is the first app of kind to bring dating, friend-finding, and career-building to a single platform. Users
a server configured to communicate personal information between a first user and a second user, the first user using a respective first mobile communications device and the second user using a respective second mobile communications device each connected to a mobile telecommunications provider network and each also connected to a short range wireless communication protocol through an ad hoc wireless network;	Bumble comprises servers which can be accessed by users. We want you to be able to access Bumble wherever you happen to be in the world. To enable us provide that service, we operate a global network of servers including in the US, Hong Kong, Cz Republic and Russia. The hardware is located in third-party data centres but is owned by the Bumble group. Data collected by advertising partners may also be held outside the European The server communicates with mobile phone If you turn these features on, when you use your cell phone, we will collect information about WiFi access points as well as other location information about your longitude and latitude and may so Each mobile phone can also connected to a short range wireless communication protocol through an ad hoc wireless network; If you turn these features on, when you use your cell phone, we will collect information about WiFi access points as well as other location information about your longitude and latitude and may sa

the server in communication with the mobile telecommunications provider network, and configured to provide access to stored user profile information about the first user and the second user, respectively, including personal attribute information and a mobile communications device address;	the server provides online registration to store personal attribute information, And a mobile communications device address (Cell phone number) When you download the App and create an account ("Account"), we may collect certain information ("Registration Information") about you, such as: • Name; • Username; • Email address; • Cell phone number; • Gender identity; • Date of birth; • Sexual preference; • Photographs; • Location; and • Login information and friend lists for social media accounts that you connect to your Bumble Account (this could include, for example, your Facebook and Instagram accounts ("Social Media Accounts").
the server configured to receive from the first mobile communications device a received unique ad hoc network identifier for the second mobile communications device received by the first mobile communications device from the second mobile communications device responsive to a search by the first mobile communications device using the short range communication protocol for the presence of the second mobile	Bumble is an APP based on Android or iPhone App. If you have enabled location services, but wish to turn it off, you can do so by the following met 1. iPhone app — settings, privacy, location services, Bumble 2. Android — settings, location, Bumble, permissions, location Android platform provide Bluetooth communication API (Using the short range communication protocol), The device can communicate by Bluetooth communication API. A first communication device can search other device through Bluetooth (a kind of ad hoc network), the first communication device can get MAC address (unique ad hoc network identifier) of the second communication device. The Android platform includes support for the Bluetooth network stack, which allow device to wirelessly exchange data with other Bluetooth devices. The application framework provides access to the Bluetooth functionality through the Android Bluet APIs. These APIs let applications wirelessly connect to other Bluetooth devices, ena point-to-point and multipoint wireless features.

communications device on the ad hoc network;	Using the **BlueetoothAdapter** (/reference/android/bluetooth/BluetoothAdapter), you can remote Bluetooth devices either through device discovery or by querying the list of devices. requests by being *discoverable*. If a device is discoverable, it responds to the discove request by sharing some information, such as the device's name, its class, and its u MAC address. Using this information, the device that is performing the discovery proce can then choose to initiate a connection to the discovered device.
the server configured to receive from the first mobile communications device the unique ad hoc network identifier of the second mobile communications device and to send to the second mobile communications device, using the unique ad hoc network identifier, an invitation to accept personal attribute information from, or share personal attribute information with, the first user, upon receipt of permission from the second user to receive personal attribute information about, or share personal attribute information with, the first user; and	The Android provide a service offers a client -server interface that allows App to send the unique ad hoc network identifier of the second mobile communications device and to send to the second mobile communications device, using the unique ad hoc network identifier. . A bound service offers a client-server interface that allows components to interact the service, send requests, receive results, and even do so across processes with interprocess communication (IPC). A bound service runs only as long as another application component is bound to it. Multiple components can bind to the service a once, but when all of them unbind, the service is destroyed. **public class ConnectivityManager** The primary responsibilities of this class are to: 1. Monitor network connections (Wi-Fi, GPRS, UMTS, etc.) 2. Send broadcast intents when network connectivity changes 3. Attempt to "fail over" to another network when connectivity to a network is lost 4. Provide an API that allows applications to query the coarse-grained or fine-grained st of the available networks 5. Provide an API that allows applications to request and select networks for their data traffic

| the server configured to connect the first user and the second user through the mobile telecommunications provider network for personal communication between the first user and the second user, without the first user and the second user first connecting for personal communication through the ad hoc network wherein the server is configured to receive from the first mobile communications device the unique ad hoc network identifier for the second mobile communications device, and locate information about the second user from a social network file of the second user, including a name and image of the second user, and transmit this information to the first mobile communications device | The server configured to connect the first user and the second user through the mobile telecommunications provider network for personal communication between the first user and the second user, without the first user and the second user first connecting for personal communication through the ad hoc network

Most network-connected Android apps use HTTP to send and receive dat

the server is configured to receive from the first mobile communications device the unique ad hoc network identifier for the second mobile communications device, and locate information about the second user from a social network file of the second user, including a name and image of the second user, and transmit this information to the first mobile communications device

From the decompiled APK the WiFi scanning code was found. This code shows that Bumble is capturing the SSID, BSSID (MAC address), and the strength of the signal of each available WiFi access point. In order to get this WiFi information the App is required to ask for the

Bumble is a dating application which implements a similar swiping mechanic as Tinder where users are matched based on whether t mutually liked each other's profile. Founded in 2014 Bumble has a user base of ~55 million and is valued at more than $1 billion.
(the profile includes name and image)

Bumble shows you people in or very close to your location. Once you've swiped through all of the people in your area, Bumble will automatically find other users in places nearby. We don't want you to run out of people to swipe on! (Besides, who knows who you might find just a little farther away?)
Swipe through all of the people means user browse the profile of people nearby. |

19.   Bumble Holding is the listed distributing company for the Bumble app on the Apple App Store and the Google Play Store. Bumble also markets and distributes the Bumble app. Thus, both are directly infringing the '024 Patent by making, using, selling, offering to sell, or importing the Bumble system.

20.   Bumble also indirectly infringes the '024 Patent by inducing infringement by others, such as end-user customers, by, for example, encouraging and instructing end-user customers to install and use the Bumble app in the United States.

21.   Bumble took the above actions intending to cause infringing acts by others.

22.   Bumble also indirectly infringes the '024 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Bumble's app and interacting with the servers associated with Bumble's app. These software components are, for example, the Bumble app, and the download package that contains the Bumble app for interacting with Bumble's servers. Bumble's end-users directly infringed the '024 Patent by, for example, installing and using the Bumble app in the United States to use the Bumble system in the United States and Bumble servers in the United States. These software components are known by Bumble to be especially made or adapted for use in Bumble's infringing system.

23.   Bumble Trading has known these components to be especially made or especially adapted for use in infringement of the '024 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

24.   To the extent that any Bumble's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies, or Badoo Software, that company also directly infringes.

25.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '024 Patent by inducing infringement by others, such as Bumble Trading and Bumble Trading's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Bumble with the technical implantation of the Bumble app, and/or encouraging and instructing end-user customers to install and use the Bumble app in the United States.

26.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '024 in the same ways as described above with respect to Bumble Trading.

27.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '024 Patent by contributing to infringement by others, such as Bumble Trading and Bumble Trading's end-users, by directing, controlling, or assisting Bumble Trading with the technical implantation of the Bumble app, providing within the United States software components for operating Bumble Trading's app and interacting with the servers associated with Bumble Trading's app. These software components are, for example, the Bumble app, and the download package that contains the Bumble app for interacting with Bumble Trading's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Bumble's infringing system.

28.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '024 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use

b. INFRINGEMENT OF THE '875 PATENT

29.   On February 16, 2016, U.S. Patent No. 9,264,875 ("the '875 patent"), entitled "Location-Based Discovery Of Network Members By Personal Attributes For Alternate Channel Communication" was duly and legally issued by the U.S. Patent and Trademark Office. Wireless Discovery owns the '875 patent by assignment.

30.   The '875 patent's Abstract states, "User mobile devices are equipped to discover each other through an ad hoc network, based on their location and proximity or based on mobile network reporting to one another. Locations may be reported through global positioning methods and cross-referenced by other users. Following discovery and consent, the mobile devices are connected to one another via various means, other than the ad hoc network, and utilize functions provided by services such as SMS, E-mail, chat/instant messaging, multimedia, or video. The users may be members of a common social network, and can thereby exchange social network attributes."

31.   The following chart illustrates how features of Bumble meet the claims of the '875 patent literally or under the Doctrine of Equivalents:

Claim Language	Bumble Evidence
A system comprising:	Bumble is a system As a social network rooted in promoting kindness, respect, and empowerment, Bumble provides ways for our users to make genuine connections. Bumble is the first app of its kind to bring dating, friend-finding, and career-building to a single platform. Users can
a computing device configured to allow communication between a plurality of members of a social network for any of connecting through said social	Bumble comprises servers (a computing device) which allow communication between a plurality of members of a social network for any of connecting through said social network. We want you to be able to access Bumble wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by the Bumble group. Data collected by advertising partners may also be held outside the European

network and exchanging personal information between a first user and a second user, the first user using a respective first mobile communications device and the second user using a respective second mobile communications device each operatively connected to any of a mobile telecommunications provider network and an internet connection to access said computing device;	The server communicates with mobile phone If you turn these features on, when you use your cell phone, we will collect information about WiFi access points as well as other location information about your longitude and latitude and may save
the computing device in communication with said first user and said second user through said first mobile communications device and said second mobile communications device, wherein said computing device connects said first mobile communications device and said second mobile communications device to the internet using any of the mobile	each operatively connected to any of a mobile telecommunications provider network and an internet connection to access said computing device Most network-connected Android apps use HTTP to send and receive data. Connect to the network, Android developers Each mobile phone can also connected through a Wi-Fi connection; If you turn these features on, when you use your cell phone, we will collect information about WiFi access points as well as other location information about your longitude and latitude and may save

telecommunications provider network and a Wi-Fi connection;	
the computing device configured to provide access to stored user profile information relating to said first user and said second user, respectively, wherein said stored user profile information comprises any of a picture, name, and location of a respective user;	the server provides online registration to store personal attribute information, wherein said stored user profile information comprises any of a picture, name, and location of a respective user; When you download the App and create an account ("Account"), we may collect certain information ("Registration Information") about you, such as: • Name; • Username; • Email address; • Cell phone number; • Gender identity; • Date of birth; • Sexual preference; • Photographs; • Location; and • Login information and friend lists for social media accounts that you connect to your Bumble Account (this could include, for example, your Facebook and Instagram accounts ("Social Media Accounts").
the computing device configured to receive an inquiry from said first user about members in said social network who are close by in proximity to a current location of said first user to permit connection through said social network and for exchanging contact information between the users;	Bumble shows you people in or very close to your location. Once you've swiped through all of the people in your area, Bumble will automatically find other users in places nearby. We don't want you to run out of people to swipe on! (Besides, who knows who you might find just a little farther away?) Swipe through all of the people means user browse the profile of people nearby.
the computing device configured to return said inquiry by providing a user profile information of said members,	Bumble is a dating application which implements a similar swiping mechanic as Tinder where users are matched based on whether they mutually liked each other's profile. Founded in 2014 Bumble has a user base of ~55 million and is valued at more than $1 billion. (the profile includes name and image)

wherein said user profile information comprises attributes comprising any of a picture, name, and location of a respective member, and wherein said computer device reports to said first user said attributes of all members who are close by in proximity to said current location of said first user;	
the computing device configured to receive information identifying locations of the first user and cross reference with any of a location of said second mobile communications device, and locations of multiple users that are close by in proximity to said current location of said first user;	If you turn these features on, when you use your cell phone, we will collect information about WiFi access points as well as other location information about your longitude and latitude and may save your device's coordinates to offer certain features to you. This information helps us identify your physical location and we may use it to personalize the App and make it easier for you to interact with other Users, by enabling the information to be displayed and shared with other members choosing to view "nearby" posts.
the computing device configured to receive a unique device hardware identifier from each mobile communication device from each linked member in said social network to associate and link to a respective	Bumble is an APP based on Android or iPhone App. If you have enabled location services, but wish to turn it off, you can do so by the following methods: 1. iPhone app — settings, privacy, location services, Bumble 2. Android — settings, location, Bumble, permissions, location Android platform provide Wi-Fi Aware APIs to sent message to another device, the message includes an identifier.

member profile to authenticate said respective member as a linked member;	Embedding an <mark>identifier</mark> in a message implies modifying the message byte array to include an identifier (for example, as the first couple of bytes).
the computing device configured to determine proximity of the locations of the first and second mobile communication devices and other communication devices of other users to one another and to send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user;	send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user With Bumble <mark>a match is required before you can communicate with a member.</mark> A <mark>match happens after two users have mutually right-swiped one another.</mark> When a match does happen both members will receive a push notification on their phones (or an email if you use the website). At that point what follows depends on the user's gender.

the computing device configured to provide services between users for personal communication, the personal communication comprising services including one or more of SMS, E-mail, chat/instant messaging, multimedia, voice, or video;	the personal communication comprising services include chat, message ○ Shows a list of members who have sent you a message. Clicking or tapping on their photo brings up their profile. Clicking on the text brings up the full conversation ○ You can send written messages, voice only messages, and video messages ○ You can search your messages for a certain conversation by tapping the search icon ○ The AI feature called Private Detector will automatically blur explicit photos shared within a chat and warn the user that they've received an obscene image (see story)

the computing device configured to provide personal attributes comprising any of a picture, name, and location of members in a vicinity of one another to permit connections and exchange of contact information between said members, wherein the first and second users are members of a same social network, and the computing device is operable to disclose social network attributes including a picture, name, and location of first and second users in the vicinity or within a particular distance from one another for the purpose of connecting members.	computing device configured to provide personal attributes comprising any of a picture, name, and location of members

With each match you can scroll down and view their profile information. Each match starts with the members main profile photo which also shows their first name, age, job, and education. A blue checkmark icon by the age indicates that the main profile photo has been verified as the person who created the account. In the top left corner an Instagram and Spotify icon may be present showing that they have connecting those accounts. As you continue to scroll down you can read the About Me section and view the profile attributes they have filled out. This includes the basic profile information which are displayed as badges. Additional profile photos will follow (if they have any), followed by any Move Maker questions they have filled out. Near the bottom you will find their Instagram and Spotify feeds. The bottom of the profile will show the users city and the distance from your current location. At this point you can then swipe or tap/click on the X or check mark. A "Block & Report" option is also available. |

32.   Bumble Holding is the listed distributing company for the Bumble app on the Apple App Store and the Google Play Store. Bumble also markets and distributes the Bumble app. Thus, both are directly infringing the '875 Patent by making, using, selling, offering to sell, or importing the Bumble system.

33.   Bumble also indirectly infringes the '875 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Bumble app in the United States.

34.   Bumble took the above actions intending to cause infringing acts by others.

35.   Bumble also indirectly infringes the '875 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Bumble's app and interacting with the servers associated with Bumble's app. These software components are, for example, the Bumble app, and the download package that contains the Bumble app for interacting with Bumble Trading's servers. Bumble's end-users directly infringed the '875 Patent by, for example, installing and using the Bumble app in the United States to use the Bumble system in the United States and Bumble servers in the United States. These software components are known by Bumble to be especially made or adapted for use in Bumble's infringing system.

36.   Bumble has known these components to be especially made or especially adapted for use in infringement of the '875 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

37.   To the extent that any Bumble Trading's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies, or Badoo Software, that company also directly infringes.

38.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '875 Patent by inducing infringement by others, such as Bumble Trading

and Bumble Trading's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Bumble Trading with the technical implantation of the Bumble app, and/or encouraging and instructing end-user customers to install and use the Bumble app in the United States.

39.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '875 in the same ways as described above with respect to Bumble Trading.

40.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '875 Patent by contributing to infringement by others, such as Bumble Trading and Bumble Trading's end-users, by directing, controlling, or assisting Bumble with the technical implantation of the Bumble app, providing within the United States software components for operating Bumble's app and interacting with the servers associated with Bumble's app. These software components are, for example, the Bumble app, and the download package that contains the Bumble app for interacting with Bumble's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Bumble's infringing system.

41.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '875 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

c.   INFRINGEMENT OF THE '267 PATENT

42.   On June 11, 2019, U.S. Patent No. 10,321,267 ("the '267 patent"), entitled "Location-Based Discovery Of Network Members" was duly and legally issued by the U.S. Patent and Trademark Office. Wireless Discovery owns the '267 patent by assignment.

43.   The '267 patent's Abstract states, "A technique for allowing members of the same social network using mobile devices to discover others in the vicinity by personal attributes and in specific picture(s) and name for the purpose of connecting, and the ability to use functions provided by a social network such as SMS, e-mail, chat/instant messaging, multimedia, or video by using unique hardware identification of each member mobile device and personal login information that are stored in a network server computing device; and associating the unique apparatus of the members' hardware with the members' personal profile such that when a search is initiated between members, the results contain the members' profile's picture(s), name, location and additional information as stored in the profiles. The proximity of the users is determined by static or dynamic location of the actual device location identified through mobile radio frequency location technology and internet IP information and saved in the user profile.

44.   The following chart illustrates how features of Bumble meet the claims of the '267 patent literally or under the Doctrine of Equivalents:

Claim Language	Bumble Evidence
A system comprising:	
a computing device configured to communicate with various mobile and terminal devices to manage introduction and connection of members belonging to a same network by sharing personal attributes between members;	Bumble comprises servers (a computing device) which allow communication between a plurality of members of a social network for any of connecting through said social network. We want you to be able to access Bumble wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by the Bumble group. Data collected by advertising partners may also be held outside the European

a first mobile communications device communicatively linked to said computing device; and a second mobile communications device communicatively linked to said computing device,	**The server communicates with mobile phone** If you turn these features on, when you use your ==cell phone==, we will collect information about WiFi access points as well as other location information about your longitude and latitude and may save
wherein said computing device provides access to stored user profile information about a first user and a second user,	**the server provides online registration to store personal attribute information** When you download the App and create an account ("Account"), we may collect certain information ("Registration Information") about you, such as: • Name; • Username; • Email address; • Cell phone number; • Gender identity; • Date of birth; • Sexual preference; • Photographs; • Location; and • Login information and friend lists for social media accounts that you connect to your Bumble Account (this could include, for example, your Facebook and Instagram accounts ("Social Media Accounts").
wherein said computing device is configured to store static locations of members and receive information identifying current dynamic locations of all members in said network, (Column 12, lines 61-65) The vicinity and determination of the proximity is based on either static or dynamic user location. The static location is what the user enters during registration and saved in his/her profile, or obtained through API from another social network if the user elected to sign up to the service with another social network credentials. The dynamic location is	**the server provides online registration to store static locations of members** **Registration Information** When you download the App and create an account ("Account"), we may collect certain information ("Registration Information") about you, such as: • Name; • Username; • Email address; • Cell phone number; • Gender identity; • Date of birth; • Sexual preference; • Photographs; • ==Location==; and • Login information and friend lists for social media accounts that you connect to your Bumble Account (this could include, for example, your Facebook and Instagram accounts ("Social Media Accounts").

	Bumble receive information identifying current dynamic locations of all members in said network If you turn these features on, when you use your cell phone, we will collect information about WiFi access points as well as other location information about your longitude and latitude and may save your device's coordinates to offer certain features to you. This information helps us identify your physical location and we may use it to personalize the App and make it easier for you to interact with other Users, by enabling the information to be displayed and shared with other members choosing to view "nearby" posts.
wherein said computing device is configured to calculate and determine a proximity of user locations,	Bumble is an APP based on Android or iPhone App. 1. iPhone app — settings, privacy, location services, Badoo 2. Android — settings, location, Badoo, permissions, location Bumble can use Wi-fi RTT API to calculate and determine a proximity of user locations You can use the Wi-Fi location functionality provided by the Wi-Fi RTT (Round-Trip-Time) A (/reference/android/net/wifi/rtt/package-summary) to measure the distance to nearby RTT-capa Wi-Fi access points and peer Wi-Fi Aware (/guide/topics/connectivity/wifi-aware) devices.
wherein said computing device is configured to send to said first user upon inquiring of other members in said network of said first user, personal attributes of all other members based on proximity calculations to select members that said first user may wish to connect with, and to send to said second mobile communication device an invitation on behalf of said first user for said second user to accept connecting with said first user,	send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user With Bumble a match is required before you can communicate with a member. A match happens after two users have mutually right-swiped one another. When a match does happen both members will receive a push notification on their phones (or an email if you use the website). At that point what follows depends on the user's gender.
wherein said computing device is configured to communicatively connect said first user and said second user,	The server communicates with mobile phone If you turn these features on, when you use your cell phone, we will collect information about WiFi access points as well as other location information about your longitude and latitude and may save

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wherein said computing device is configured to locate information about said second user from a social network storage file of said second user, and transmit this information to said first mobile communications device, wherein the first user and the second user are members of a same social network, and the computing device is to disclose non-anonymous social network attributes including a picture, name, and location of the first user and the second user in a vicinity or within a predetermined distance from one another for the purpose of connecting members of the same social network based in part on proximity calculations between connecting members,	computing device configured to provide personal attributes comprising any of a picture, name, and location of members With each match you can scroll down and view their profile information. Each match starts with the members main profile photo which also shows their first name, age, job, and education. A blue checkmark icon by the age indicates that the main profile photo has been verified as the person who created the account. In the top left corner an Instagram and Spotify icon may be present showing that they have connecting those accounts. As you continue to scroll down you can read the About Me section and view the profile attributes they have filled out. This includes the basic profile information which are displayed as badges. Additional profile photos will follow (if they have any), followed by any Move Maker questions they have filled out. Near the bottom you will find their Instagram and Spotify feeds. The bottom of the profile will show the users city and the distance from your current location. At this point you can then swipe or tap/click on the X or check mark. A "Block & Report" option is also available.

wherein said computing device permits discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by said first user, wherein said computing device permits said discoverable members to have their respective devices unconnected to an internet connection service at said time of the search being conducted by said first user, and wherein any of turned off devices and disconnected devices is discoverable by said computer device as said internet connection service is configured to report said any of turned off devices and disconnected devices as discoverable based on a latest static and dynamic location in proximity to said first user.	discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by said first user, wherein said computing device permits said discoverable members to have their respective devices unconnected to an internet connection service at said time of the search being conducted by said first user. **Can I use Bumble without giving location permissions?** Last updated 7 months ago (Alice) At this time you do have to grant Bumble location permissions while the app is in use in order to be able to swipe on folks in your area. However, if you want to turn off your location you will still able to interact with your current matches and others will see your last known location displayed on your profile.

45.   Bumble Holding is the listed distributing company for the Bumble app on the Apple App Store and the Google Play Store. Bumble also markets and distributes the Bumble app. Thus, both are directly infringing the '267 Patent by making, using, selling, offering to sell, or importing the Bumble system.

46.   Bumble also indirectly infringes the '267 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Bumble app in the United States.

47.   Bumble took the above actions intending to cause infringing acts by others.

48.   Bumble also indirectly infringes the '267 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Bumble's app and interacting with the servers associated with Bumble's app. These software

components are, for example, the Bumble app, and the download package that contains the Bumble app for interacting with Bumble Trading's servers. Bumble Trading's end-users directly infringed the '267 Patent by, for example, installing and using the Bumble app in the United States to use the Bumble system in the United States and Bumble servers in the United States. These software components are known by Bumble to be especially made or adapted for use in Bumble's infringing system.

49.   Bumble has known these components to be especially made or especially adapted for use in infringement of the '267 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

50.   To the extent that any Bumble's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, that company also directly infringes.

51.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '267 Patent by inducing infringement by others, such as Bumble Trading and Bumble Trading's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Bumble with the technical implantation of the Bumble app, and/or encouraging and instructing end-user customers to install and use the Bumble app in the United States.

52.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '267 in the same ways as described above with respect to Bumble.

53.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '267 Patent by contributing to infringement by others, such as Bumble

Trading and Bumble Trading's end-users, by directing, controlling, or assisting Bumble with the technical implantation of the Bumble app, providing within the United States software components for operating Bumble's app and interacting with the servers associated with Bumble's app. These software components are, for example, the Bumble app, and the download package that contains the Bumble app for interacting with Bumble's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Bumble's infringing system.

54.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '267 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

d.   INFRINGEMENT OF THE '397 PATENT

55.   On June 25, 2019, U.S. Patent No. 10,334,397 ("the '397 patent"), entitled "Interaction tracking and organizing system" was duly and legally issued by the U.S. Patent and Trademark Office. Wireless Discovery owns the '397 patent by assignment.

56.   The '397 patent's Abstract states, " server that cross-references a first user's device location with registered members in a spatial proximity of the first user's device and returns the results by disclosing personal user attributes including pictures and names of all members in the spatial proximity of the first user's device. The first user who initiated the inquiry may select from the results returned any discovered user he/she wishes to connect with and send a form of invitation to connect using network available tools such as email, SMS, text or any customized invitation form. The invitation to connect to the inquiring user includes his/her personal attributes including a picture and name. The discovered member who received the invitation may accept, ignore, or

decline connecting with the inquiring user. The first user may also receive an invitation from the server to accept, ignore, or decline connecting with the discovered member."

57.   The following chart illustrates how features of Bumble meet the claims of the '397 patent literally or under the Doctrine of Equivalents:

Claim Language	Bumble Evidence
A server configured to communicate with a first communication device of a first user and a second communication device of a second user over communication links comprising a cellular network, wherein the server comprises a processor configured to:	The server communicates with mobile phone If you turn these features on, when you use your **cell phone,** we will collect information about WiFi access points as well as other location information about your longitude and latitude and may save
store in a data storage device a first profile associated with the first user and a second profile associated with a second user, both the first and the second profile	the server provides online registration to store personal attribute information When you download the App and create an account ("Account"), we may collect certain information ("Registration Information") about you, such as: • Name; • Username; • Email address; • Cell phone number; • Gender identity; • Date of birth; • Sexual preference; • Photographs; • Location; and • Login information and friend lists for social media accounts that you connect to your Bumble Account (this could include, for example, your Facebook and Instagram accounts ("Social Media Accounts").

comprises at least a picture and a name of their respective users thereby automatically eliminating anonymous communication of the first profile and the second profile between member devices without intervention by the first user or the second user;	
associate each member profile with a unique hardware identification associated with the member devices; identify a unique ID of a second member in the vicinity and spatial proximity of a first member and provide the first member with the profile of the second member comprising a	**Bumble user has a Bumble account** Bumble can be accessed from their website and can be found on Google Play for Android and the Apple App store for iOS. You have the option to create a Bumble account with your phone number or by connecting your Facebook account. If you use a phone number you will be required to verify it **Bumble is an APP based on Android or iPhone App.** 1. iPhone app — settings, privacy, location services, Badoo 2. Android — settings, location, Badoo, permissions, location a unique hardware identification associated with Bumble account in Android Determine if AccountManager is for you Applications typically try to remember the user using one of three techniques: 1. Ask the user to type in a username. 2. Retrieve a unique device ID to remember the device. 3. Retrieve a built-in account from AccountManager (/reference/android/accounts/AccountManager).

picture and name to facilitate a connection between both members;	With Discovery, Bumble shows you people in or very close to your location that meet your match criteria. Once you've swiped through all of the people in your area, Bumble will automatically find other users in places nearby. Bumble doesn't limit the amount of people you're able to swipe on. However, if you have narrow search criteria in your Settings (accessed from your profile), you may be limiting the amount of people you can view. Match preferences available include: With Bumble a match is required before you can communicate with a member. A match happens after two users have mutually right-swiped one another. When a match does happen both members will receive a push notification on their phones (or an email if you use the website). At that point what follows depends on the user's gender.
send the second member the profile of the first member including the picture and name upon the first member initiating an invite to the second member to connect over a networking service; inform the first member if the second member has accepted or rejected the invite to connect initiated by the first member; and once the second member accepts the invite of the first member, store the	computing device configured to provide personal attributes comprising any of a picture, name, and location of members With each match you can scroll down and view their profile information. Each match starts with the members main profile photo which also shows their first name, age, job, and education. A blue checkmark icon by the age indicates that the main profile photo has been verified as the person who created the account. In the top left corner an Instagram and Spotify icon may be present showing that they have connecting those accounts. As you continue to scroll down you can read the About Me section and view the profile attributes they have filled out. This includes the basic profile information which are displayed as badges. Additional profile photos will follow (if they have any), followed by any Move Maker questions they have filled out. Near the bottom you will find their Instagram and Spotify feeds. The bottom of the profile will show the users city and the distance from your current location. At this point you can then swipe or tap/click on the X or check mark. A "Block & Report" option is also available.

connectivity between both members in the data storage device and facilitate a chat feature between them using respective devices connected to the server,	
wherein the first user and the second user are members of a same social network, and the processor is to disclose non-anonymous social network attributes including a picture, name, and location of the first user and the second user in a vicinity or within a predetermined distance from one another for the purpose of connecting members of the same social network based in part on proximity calculations	With each match you can scroll down and view their profile information. Each match starts with the members main profile photo which also shows their first name, age, job, and education. A blue checkmark icon by the age indicates that the main profile photo has been verified as the person who created the account. In the top left corner an Instagram and Spotify icon may be present showing that they have connecting those accounts. As you continue to scroll down you can read the About Me section and view the profile attributes they have filled out. This includes the basic profile information which are displayed as badges. Additional profile photos will follow (if they have any), followed by any Move Maker questions they have filled out. Near the bottom you will find their Instagram and Spotify feeds. The bottom of the profile will show the users city and the distance from your current location. At this point you can then swipe or tap/click on the X or check mark. A "Block & Report" option is also available.

between connecting members,	
wherein the server permits discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by the first user, wherein the server permits the discoverable members to have their respective devices unconnected to an internet connection service at the time of the search being conducted by the first user, and wherein any of turned off devices and disconnected devices is discoverable by the server as the internet connection service is configured to report the any of turned off devices and	**Can I use Bumble without giving location permissions?** Last updated 7 months ago (Alice) At this time you do have to grant Bumble location permissions while the app is in use in order to be able to swipe on folks in your area. However, if you want to turn off your location you will still able to interact with your current matches and others will see your last known location displayed on your profile.

disconnected devices as discoverable based on a latest static and dynamic location in proximity to the first user.	

58.   Bumble Holding is the listed distributing company for the Bumble app on the Apple App Store and the Google Play Store. Bumble also markets and distributes the Bumble app. Thus, both are directly infringing the '397 Patent by making, using, selling, offering to sell, or importing the Bumble system.

59.   Bumble also indirectly infringes the '397 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Bumble app in the United States.

60.   Bumble took the above actions intending to cause infringing acts by others.

61.   Bumble also indirectly infringes the '397 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Bumble's app and interacting with the servers associated with Bumble's app. These software components are, for example, the Bumble app, and the download package that contains the Bumble app for interacting with Bumble's servers. Bumble's end-users directly infringed the '397 Patent by, for example, installing and using the Bumble app in the United States to use the Bumble system in the United States and Bumble servers in the United States. These software components are known by Bumble to be especially made or adapted for use in Bumble's infringing system.

62.   Bumble has known these components to be especially made or especially adapted for use in infringement of the '397 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

63.   To the extent that any Bumble's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, or that company also directly infringes.

64.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '397 Patent by inducing infringement by others, such as Bumble Trading and Bumble Trading's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Bumble with the technical implantation of the Bumble app, and/or encouraging and instructing end-user customers to install and use the Bumble app in the United States.

65.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '397 in the same ways as described above with respect to Bumble.

66.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '397 Patent by contributing to infringement by others, such as Bumble Trading and Bumble Trading's end-users, by directing, controlling, or assisting Bumble with the technical implantation of the Bumble app, providing within the United States software components for operating Bumble's app and interacting with the servers associated with Bumble's app. These software components are, for example, the Bumble app, and the download package that contains the Bumble app for interacting with Bumble's servers. These software components are known by

Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Bumble's infringing system.

67.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '397 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

V.   THE BADOO APP INFRINGES WIRELESS DEVICES' ASSERTED PATENTS

a. INFRINGEMENT OF THE '024 PATENT

68.   The following chart illustrates how features of Badoo meet the claims of the '024 patent literally or under the Doctrine of Equivalents:

Claim Language	Badoo Evidence
1. A system comprising:	Badoo is a system Badoo is a meeting place for adults, and we provide that service by operating a social network site offering users the opportunity to connect to our global community of users. By joining Badoo, you enter a legal
a server configured to communicate personal information between a first user and a second user, the first user using a respective first mobile communications device and the second user using a respective second	Badoo comprises servers which can be accessed by users. We want you to be able to access Badoo wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by Badoo. Data The server communicates with mobile phone

mobile communications device each connected to a mobile telecommunications provider network and each also connected to a short range wireless communication protocol through an ad hoc wireless network;	Badoo offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users. Each mobile phone can also connected to a short range wireless communication protocol through an ad hoc wireless network; When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information
the server in communication with the mobile telecommunications provider network, and configured to provide access to stored user profile information about the first user and the second user, respectively, including personal attribute information and a mobile communications device address;	the server provides online registration to store personal attribute information To join the Badoo network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your email address, your gender, your date of birth, your location details. You also have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update (other than your email address and gender) your information at any time by just And a mobile communications device address experience, we require users to verify their accounts and might ask for your phone number. We want to make sure you are not a robot! And we also
the server configured to receive from the first mobile communications device a received unique ad hoc network identifier for the second mobile communications device received by the first mobile communications	Badoo is an APP based on Android or iPhone App. 1. iPhone app — settings, privacy, location services, Badoo 2. Android — settings, location, Badoo, permissions, location Android platform provide Bluetooth communication API (Using the short range communication protocol), The device can communicate by Bluetooth communication API. A first communication device can search other device through Bluetooth (a kind of ad hoc network), the first

device from the second mobile communications device responsive to a search by the first mobile communications device using the short range communication protocol for the presence of the second mobile communications device on the ad hoc network;	communication device can get MAC address (unique ad hoc network identifier) of the second communication device. The Android platform includes support for the Bluetooth network stack, which allows a device to wirelessly exchange data with other Bluetooth devices. The application framework provides access to the Bluetooth functionality through the Android Bluetooth APIs. These APIs let applications wirelessly connect to other Bluetooth devices, enabling point-to-point and multipoint wireless features. Using the **BluetoothAdapter** (/reference/android/bluetooth/BluetoothAdapter), you can find remote Bluetooth devices either through device discovery or by querying the list of paired devices. requests by being *discoverable*. If a device is discoverable, it responds to the discovery request by sharing some information, such as the device's name, its class, and its unique MAC address. Using this information, the device that is performing the discovery process can then choose to initiate a connection to the discovered device.
the server configured to receive from the first mobile communications device the unique ad hoc network identifier of the second mobile communications device and to send to the second mobile communications device, using the unique ad hoc network identifier, an invitation to accept personal attribute information from, or share personal attribute information with,	The Android provide a service offers a client -server interface that allows App to send the unique ad hoc network identifier of the second mobile communications device and to send to the second mobile communications device, using the unique ad hoc network identifier. . A bound service offers a client-server interface that allows components to interact with the service, send requests, receive results, and even do so across processes with interprocess communication (IPC). A bound service runs only as long as another application component is bound to it. Multiple components can bind to the service at once, but when all of them unbind, the service is destroyed.

the first user, upon receipt of permission from the second user to receive personal attribute information about, or share personal attribute information with, the first user; and	**public class ConnectivityManager** The primary responsibilities of this class are to: 1. Monitor network connections (Wi-Fi, GPRS, UMTS, etc.) 2. Send broadcast intents when network connectivity changes 3. Attempt to "fail over" to another network when connectivity to a network is lost 4. Provide an API that allows applications to query the coarse-grained or fine-grained state of the available networks 5. Provide an API that allows applications to request and select networks for their data traffic
the server configured to connect the first user and the second user through the mobile telecommunications provider network for personal communication between the first user and the second user, without the first user and the second user first connecting for personal communication through the ad hoc network wherein the server is configured to receive from the first mobile communications device the unique ad hoc network identifier for the second mobile communications device, and locate	The server configured to connect the first user and the second user through the mobile telecommunications provider network for personal communication between the first user and the second user, without the first user and the second user first connecting for personal communication through the ad hoc network Most network-connected Android apps use HTTP to send and receive data. the server is configured to receive from the first mobile communications device the unique ad hoc network identifier for the second mobile communications device, and locate information about the second user from a social network file of the second user, including a name and image of the second user, and transmit this information to the first mobile communications device **4** **Search for new people to befriend.** Tap on the "People Nearby" tab to find other Badoo members nearest your current location. You can personalize **5** **View a user's profile page.** Tap on the profile picture of a user to access to his or her profile page. You can like, favorite the selected user, or chat with him or her by sending a message through the profile page.

information about the second user from a social network file of the second user, including a name and image of the second user, and transmit this information to the first mobile communications device	**8** **Express your interest in new people using the Encounter game.** Tap the "Encounters" tab on the features list to start the game. You can browse the images and profiles of new people, and express your intention of meeting each of them. Badoo will then show different users' photos one by one. You can express your intention of meeting these people by pressing the "Yes," "No," or "Maybe" button. **13** **Find the right person for you.** Tap on the "Mutual" tab to open a list of users who have liked you and you have liked back during the Encounter game. You just might really hit it off with someone on this list!

69.   One or more of the Badoo Entities market and distribute the Badoo app. Thus, such Badoo entities are directly infringing the '024 Patent by making, using, selling, offering to sell, or importing the Badoo system.

70.   Badoo also indirectly infringes the '024 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Badoo app in the United States.

71.   Badoo took the above actions intending to cause infringing acts by others.

72.   Badoo also indirectly infringes the '024 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Badoo's app and interacting with the servers associated with Badoo's app. These software components are, for example, the Badoo app, and the download package that contains the Badoo app for interacting with Badoo's servers. Badoo's end-users directly infringed the '024 Patent by, for example, installing and using the Badoo app in the United States to use the Badoo system in

the United States and Badoo servers in the United States. These software components are known by Badoo to be especially made or adapted for use in Badoo's infringing system.

73.   Badoo has known these components to be especially made or especially adapted for use in infringement of the '024 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

74.   To the extent that any Badoo's servers are owned or controlled by any other company, including Bumble Trading, Bumble Holding, that company also directly infringes.

75.   To the extent that any Badoo's servers are owned or controlled by any other company, including Bumble Trading, Bumble Holding, that company also indirectly infringe the '024 Patent by inducing infringement by others, such as Badoo and Badoo's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Badoo with the technical implantation of the Badoo app, and/or encouraging and instructing end-user customers to install and use the Badoo app in the United States.

76.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '024 Patent by contributing to infringement by others, such as Badoo and Badoo's end-users, by directing, controlling, or assisting Badoo with the technical implantation of the Badoo app, providing within the United States software components for operating Badoo's app and interacting with the servers associated with Badoo's app. These software components are, for example, the Badoo app, and the download package that contains the Badoo app for interacting with Badoo's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Badoo's infringing system.

77.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of

the '024 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

b. INFRINGEMENT OF THE '875 PATENT

78.   The following chart illustrates how features of Badoo meet the claims of the '875 patent:

Claim Language	Badoo Evidence
A system comprising:	Badoo is a system Badoo is a meeting place for adults, and we provide that service by operating a social network site offering users the opportunity to connect to our global community of users. By joining Badoo, you enter a legal
a computing device configured to allow communication between a plurality of members of a social network for any of connecting through said social network and exchanging personal information between a first user and a second user, the first user using a respective first mobile communications device and	Badoo comprises servers (a computing device) which allow communication between a plurality of members of a social network for any of connecting through said social network. We want you to be able to access Badoo wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by Badoo. Data The server communicates with mobile phone Badoo offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users.

the second user using a respective second mobile communications device each operatively connected to any of a mobile telecommunications provider network and an internet connection to access said computing device;	
the computing device in communication with said first user and said second user through said first mobile communications device and said second mobile communications device, wherein said computing device connects said first mobile communications device and said second mobile communications device to the internet using any of the mobile	each operatively connected to any of a mobile telecommunications provider network and an internet connection to access said computing device Most network-connected Android apps use HTTP to send and receive data. Each mobile phone can also connected through a Wi-Fi connection; When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information

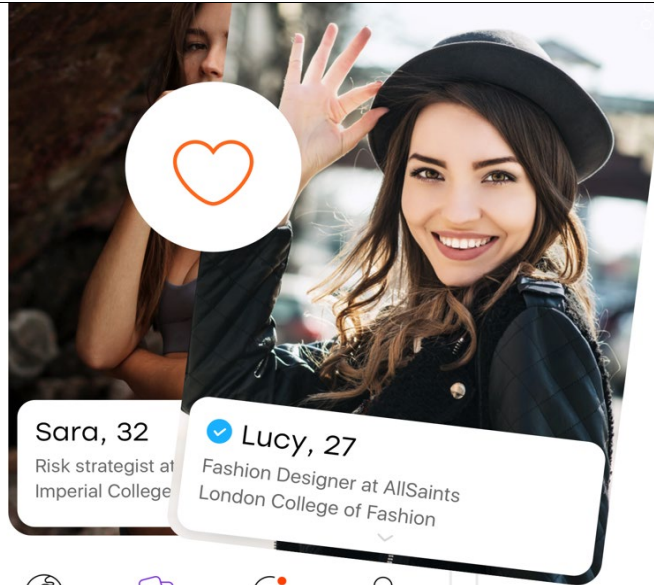|	
telecommunications provider network and a Wi-Fi connection;	
the computing device configured to provide access to stored user profile information relating to said first user and said second user, respectively, wherein said stored user profile information comprises any of a picture, name, and location of a respective user;	the server provides online registration to store personal attribute information, wherein said stored user profile information comprises any of a picture, name, and location of a respective user; To join the Badoo network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your email address, your gender, your date of birth, your location details. You also have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update (other than your email address and gender) your information at any time by just
the computing device configured to receive an inquiry from said first user about members in said social network who are close by in proximity to a current location of said first user to permit connection through said social network and for	When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information about your longitude and latitude. That information helps us identify your physical location so that it can be displayed and shared with other members choosing to view "nearby" posts. 4 **Search for new people to befriend.** Tap on the "People Nearby" tab to find other Badoo members nearest your current location. You can personalize

exchanging contact information between the users;	
the computing device configured to return said inquiry by providing a user profile information of said members, wherein said user profile information comprises attributes comprising any of a picture, name, and location of a respective member, and wherein said computer device reports to said first user said attributes of all members who are close by in proximity to said current location of said first user;	**5** **View a user's profile page.** Tap on the profile picture of a user to access to his or her profile page. You can like, favorite the selected user, or chat with him or her by sending a message through the profile page.
the computing device configured to receive information identifying locations of the first user and cross reference with	When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information about your longitude and latitude. That information helps us identify your physical location so that it can be displayed and shared with other members choosing to view "nearby" posts.

any of a location of said second mobile communications device, and locations of multiple users that are close by in proximity to said current location of said first user;	
the computing device configured to receive a unique device hardware identifier from each mobile communication device from each linked member in said social network to associate and link to a respective member profile to authenticate said respective member as a linked member;	Badoo is an APP based on Android or iPhone App. 1. iPhone app — settings, privacy, location services, Badoo 2. Android — settings, location, Badoo, permissions, location Android platform provide Wi-Fi Aware APIs to sent message to another device, the message includes an identifier. Embedding an identifier in a message implies modifying the message by identifier (for example, as the first couple of bytes).
the computing device configured to determine proximity of the locations of the first and second mobile communicatio	send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user

n devices and other communication devices of other users to one another and to send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user;	**8** **Express your interest in new people using the Encounter game.** Tap the "Encounters" tab on the features list to start the game. You can browse the images and profiles of new people, and express your intention of meeting each of them. Badoo will then show different users' photos one by one. You can express your intention of meeting these people by pressing the "Yes," "No," or "Maybe" button. **13** **Find the right person for you.** Tap on the "Mutual" tab to open a list of users who have liked you and you have liked back during the Encounter game. You just might really hit it off with someone on this list!
the computing device configured to provide services between users for personal communication, the personal communication comprising services including one or more of SMS, E-mail, chat/instant messaging, multimedia, voice, or video;	the personal communication comprising services include chat, message **6** **Chat with another Badoo user.** Tap on the "Chat now" button at the top of the user's profile page to start chatting with the user if he or she is online. If you see a green radio button next to the user's profile picture and name, it indicates that the user is online and can start chatting instantly. **7** **Send your friend an offline message.** If the radio button next to the user's profile picture is gray, it indicates that the user is offline, but you can still send him or her a message using the same chat option. Tap on "Chat now" and type your message in the field then send your message by tapping on "Send." **11** **View and read messages.** Tap the "Message" tab to view and manage all messages received, sent, unread, and stored. Reply to or chat with Badoo users through the instant messaging feature.

the computing device configured to provide personal attributes comprising any of a picture, name, and location of members in a vicinity of one another to permit connections and exchange of contact information between said members,	computing device configured to provide personal attributes comprising any of a picture, name, and location of members
wherein the first and second users	Badoo is a social networkwork site

are members of a same social network, and the computing device is operable to disclose social network attributes including a picture, name, and location of first and second users in the vicinity or within a particular distance from one another for the purpose of connecting members.

disclose social network attributes including a picture, name, and location of first and second users in the vicinity |

79.   One or more of the Badoo Entities market and distribute the Badoo app. Thus, such Badoo entities are directly infringing the '875 Patent by making, using, selling, offering to sell, or importing the Badoo system.

80.   Badoo also indirectly infringes the '875 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Badoo app in the United States.

81.   Badoo took the above actions intending to cause infringing acts by others.

82.   Badoo also indirectly infringes the '875 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Badoo's app and interacting with the servers associated with Badoo's app. These software components are, for example, the Badoo app, and the download package that contains the Badoo app for interacting with Badoo's servers. Badoo's end-users directly infringed the '875 Patent by, for example, installing and using the Badoo app in the United States to use the Badoo system in the United States and Badoo servers in the United States. These software components are known by Badoo to be especially made or adapted for use in Badoo's infringing system.

83.   Badoo has known these components to be especially made or especially adapted for use in infringement of the '875 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.
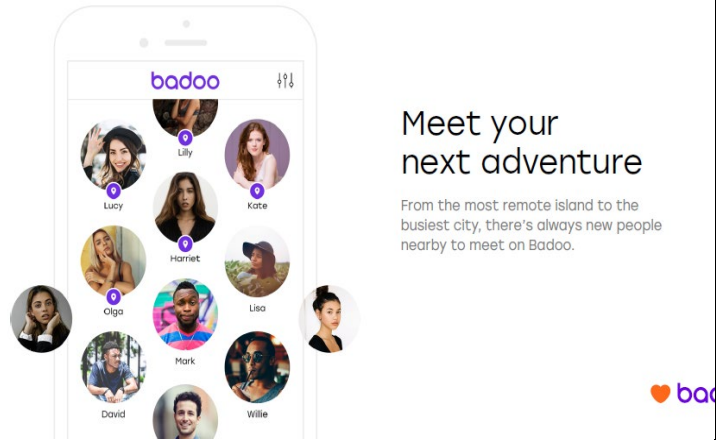
84.   To the extent that any Badoo's servers are owned or controlled by any other company, including Bumble Trading, Bumble Holding, that company also directly infringes.

85.   To the extent that any Badoo's servers are owned or controlled by any other company, including Bumble Trading, Bumble Holding, that company also indirectly infringe the '875 Patent by inducing infringement by others, such as Badoo and Badoo's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Badoo with the technical implantation of the Badoo app, and/or encouraging and instructing end-user customers to install and use the Badoo app in the United States.

86.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '875 Patent by contributing to infringement by others, such as Badoo and Badoo's end-users, by directing, controlling, or assisting Badoo with the technical implantation of the Badoo app, providing within the United States software components for operating Badoo's app and interacting with the servers associated with Badoo's app. These software components are, for

example, the Badoo app, and the download package that contains the Badoo app for interacting

with Badoo's servers. These software components are known by Badoo Trading, Badoo Limited,

Badoo Technologies, and Badoo Software to be especially made or adapted for use in Badoo's

infringing system.

87.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have

known these components to be especially made or especially adapted for use in infringement of

the '875 patent and that these components are not a staple article or commodity of commerce

suitable for substantial non-infringing use

c. INFRINGEMENT OF THE '267 PATENT

88.   The following chart illustrates how features of Badoo meet the claims of the '267

patent:

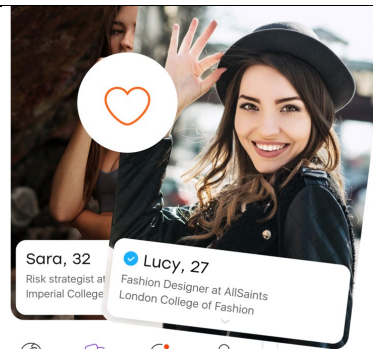| Claim Language	Badoo Evidence
A system comprising:	
a computing device configured to communicate with various mobile and terminal devices to manage introduction and connection of members belonging to a same network by sharing personal attributes between members;	Badoo comprises servers (a computing device) which can be accessed by users. We want you to be able to access Badoo wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by Badoo. Dat

a first mobile communications device communicatively linked to said computing device; and a second mobile communications device communicatively linked to said computing device,	The server communicates with mobile phone Badoo offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop tha allows you to share your location with other users.
wherein said computing device provides access to stored user profile information about a first user and a second user,	the server provides online registration to store personal attribute information To join the Badoo network you will have to complete our online registratio form, where we may ask you to provide us with information about you suc as your name, your email address, your gender, your date of birth, your location details. You also have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update (other than your email address and gender) your information at any time by just
wherein said computing device is configured to store static locations of members and receive information identifying current dynamic locations of all members in said network, (Column 12, lines 61-65) The vicinity and determination of the proximity is based on either static or dynamic user location. The static location is what the user enters during registration and saved in his/her profile, or obtained through API from another social network if the user elected to sign up to the service with another social network credentials. The dynamic location i	the server provides online registration to store static locations of members To join the Badoo network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your email address, your gender, your date of birth, your location details. You also have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update (other than Badoo receive information identifying current dynamic locations of all members in said network When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information about your longitude and latitude. That information helps us identify your physical location so that it can be displayed and shared with other member choosing to view "nearby" posts.
wherein said computing device is configured to calculate and	Badoo is an APP based on Android or iPhone App.

determine a proximity of user locations,	1. iPhone app — settings, privacy, location services, Badoo 2. Android — settings, location, Badoo, permissions, location Badoo can use Wi-fi RTT API to calculate and determine a proximity of user locations You can use the Wi-Fi location functionality provided by the Wi-Fi RTT (Round-Trip-Time) API (/reference/android/net/wifi/rtt/package-summary) to measure the distance to nearby RTT-capable Wi-Fi access points and peer Wi-Fi Aware (/guide/topics/connectivity/wifi-aware) devices.
wherein said computing device is configured to send to said first user upon inquiring of other members in said network of said first user, personal attributes of all other members based on proximity calculations to select members that said first user may wish to connect with, and to send to said second mobile communication device an invitation on behalf of said first user for said second user to accept connecting with said first user,	4 **Search for new people to befriend.** Tap on the "People Nearby" tab to find other Badoo members nearest your current location. You can personalize 5 **View a user's profile page.** Tap on the profile picture of a user to access to his or her profile page. You can like, favorite the selected user, or chat with him or her by sending a message through the profile page.
wherein said computing device is configured to communicatively connect said first user and said second user,	The server communicates with mobile phone Badoo offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users.

wherein said computing device is configured to locate information about said second user from a social network storage file of said second user, and transmit this information to said first mobile communications device,	
wherein the first user and the second user are members of a same social network, and the computing device is to disclose non-anonymous social network attributes including a picture, name, and location of the first user and the second user in a vicinity or within a predetermined distance from one another for the purpose of connecting members of the same social network based in part on proximity calculations between connecting members,	Badoo is a social networkwork site disclose social network attributes including a picture, name, and location of first and second users in the vicinity
wherein said computing device permits discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by said first user, wherein said computing	discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by said first user, wherein said computing device permits said discoverable members to have their respective devices unconnected to an internet connection

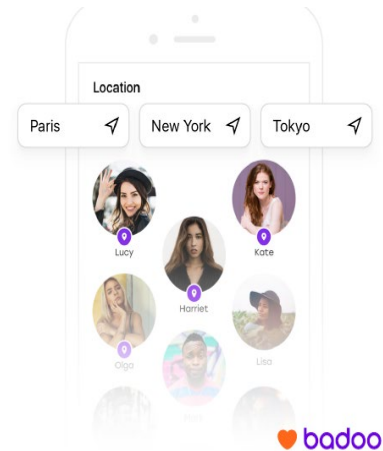|	
device permits said discoverable members to have their respective devices unconnected to an internet connection service at said time of the search being conducted by said first user, and wherein any of turned off devices and disconnected devices is discoverable by said computer device as said internet connection service is configured to report said any of turned off devices and disconnected devices as discoverable based on a latest static and dynamic location in proximity to said first user.	service at said time of the search being conducted by said first user. You can turn your online status on or off by going to your profile settings and select 'Yes' or 'No' in the section 'Show my online status'. any of turned off devices and disconnected devices is discoverable by said computer device as said internet connection service is configured to report said any of turned off devices and disconnected devices as discoverable based on a latest static and dynamic location in proximity to said first user. Before you arrive, server of Badoo provides a latest static location of user of the place you plan to arrive .

89.   One or more of the Badoo entities market and distribute the Badoo app. Thus, such Badoo entities are directly infringing the '267 Patent by making, using, selling, offering to sell, or importing the Badoo system.

90.   Badoo also indirectly infringes the '267 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Badoo app in the United States.

91.   Badoo took the above actions intending to cause infringing acts by others.

92.   Badoo also indirectly infringes the '267 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Badoo's app and interacting with the servers associated with Badoo's app. These software components are, for example, the Badoo app, and the download package that contains the Badoo app for interacting with Badoo's servers. Badoo's end-users directly infringed the '267 Patent by, for example, installing and using the Badoo app in the United States to use the Badoo system in the United States and Badoo servers in the United States. These software components are known by Badoo to be especially made or adapted for use in Badoo's infringing system.

93.   Badoo has known these components to be especially made or especially adapted for use in infringement of the '267 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

94.   To the extent that any Badoo's servers are owned or controlled by any other company, including Bumble Trading, Bumble Holding, that company also directly infringes.

95.   To the extent that any Badoo's servers are owned or controlled by any other company, including Bumble Trading, Bumble Holding, that company also indirectly infringe the '267 Patent by inducing infringement by others, such as Badoo and Badoo's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Badoo with the technical implantation of the Badoo app, and/or encouraging and instructing end-user customers to install and use the Badoo app in the United States.

96.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '267 Patent by contributing to infringement by others, such as Badoo and Badoo's end-users, by directing, controlling, or assisting Badoo with the technical implantation of the Badoo app, providing within the United States software components for operating Badoo's app and interacting with the servers associated with Badoo's app. These software components are, for example, the Badoo app, and the download package that contains the Badoo app for interacting with Badoo's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Badoo's infringing system.

97.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '267 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

d. INFRINGEMENT OF THE '397 PATENT

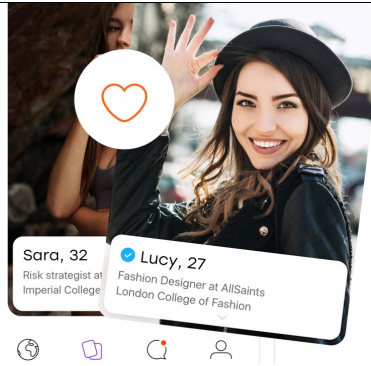98.   The following chart illustrates how features of Badoo meet the claims of the '397 patent:

Claim Language	Badoo Evidence
A server configured to communicate with a first communication device of a first user and a second communication device of a second user over communication	The server communicates with mobile phone Badoo offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users.

links comprising a cellular network, wherein the server comprises a processor configured to:	
store in a data storage device a first profile associated with the first user and a second profile associated with a second user, both the first and the second profile comprises at least a picture and a name of their respective users thereby automatically eliminating anonymous communication of the first profile and the second profile between member devices without intervention by the first user or the second user;	the server provides online registration to store personal attribute information To join the Badoo network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your email address, your gender, your date of birth, your location details. You also have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update (other than your email address and gender) your information at any time by just
associate each member profile with a unique hardware	Badoo user has a Badoo account

identification associated with the member devices; identify a unique ID of a second member in the vicinity and spatial proximity of a first member and provide the first member with the profile of the second member comprising a picture and name to facilitate a connection between both members;	**2 Log into your Badoo account.** Tap on "Sign in with Badoo" at the bottom then enter your email address, or phone number, and password in the required fields. Tap on the "Sign in" button to log into your Badoo account. Badoo is an APP based on Android or iPhone App. 　1. iPhone app — settings, privacy, location services, Badoo 　2. Android — settings, location, Badoo, permissions, location a unique hardware identification associated with Badoo account in Android Determine if AccountManager is for you Applications typically try to remember the user using one of three techniques: 　1. Ask the user to type in a username. 　2. Retrieve a unique device ID to remember the device. 　3. Retrieve a built-in account from AccountManager (/reference/android/accounts/AccountManager). **4 Search for new people to befriend.** Tap on the "People Nearby" tab to find other Badoo members nearest your current location. You can personalize **5 View a user's profile page.** Tap on the profile picture of a user to access to his or her profile page. You can like, favorite the selected user, or chat with him or her by sending a message through the profile page.
send the second member the profile of the first member including the picture and name upon the first member initiating an invite to the second member to connect over a networking service;	**8 Express your interest in new people using the Encounter game.** Tap the "Encounters" tab on the features list to start the game. You can browse the images and profiles of new people, and express your intention of meeting each of them. Badoo will then show different users' photos one by one. You can express your intention of meeting these people by pressing the "Yes," "No," or "Maybe" button.

inform the first member if the second member has accepted or rejected the invite to connect initiated by the first member; and	**9** **See the status of the Encounter game.** Tap on either the "Like you" tab or the "You like" tab to view a list of your liked people and the people who liked you during the Encounter game. • To see the most recent likes, you need to play Encounter or enable Superpowers, a paid feature on Badoo.
once the second member accepts the invite of the first member, store the connectivity between both members in the data storage device and facilitate a chat feature between them using respective devices connected to the server,	**13** **Find the right person for you.** Tap on the "Mutual" tab to open a list of users who have liked you and you have liked back during the Encounter game. You just might really hit it off with someone on this list!
wherein the first user and the second user are members of a same social network, and the processor is to disclose non-anonymous social network attributes including a picture, name,	Badoo is a social networkwork site Badoo is a meeting place for adults, and we provide that service by operating a social network site offering users the opportunity to connect to our global community of users. By joining Badoo, you enter a legal disclose social network attributes including a picture, name, and location of first and second users in the vicinity

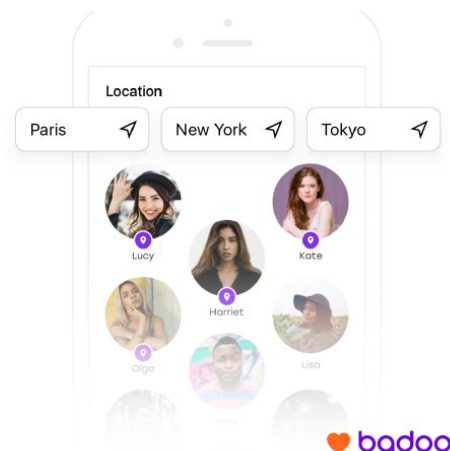|	
and location of the first user and the second user in a vicinity or within a predetermined distance from one another for the purpose of connecting members of the same social network based in part on proximity calculations between connecting members,	
wherein the server permits discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by the first user, wherein the server permits the discoverable members to have their respective devices unconnected to an internet connection service at the time of the search being	You can turn your online status on or off by going to your profile settings and select 'Yes' or 'No' in the section 'Show my online status'. Before you arrive, server of Badoo provides a latest static location of user of the place you plan to arrive .

conducted by the first user, and wherein any of turned off devices and disconnected devices is discoverable by the server as the internet connection service is configured to report the any of turned off devices and disconnected devices as discoverable based on a latest static and dynamic location in proximity to the first user.	

99.   One or more of the Badoo entities market and distribute the Badoo app. Thus, such Badoo entities are directly infringing the '397 Patent by making, using, selling, offering to sell, or importing the Badoo system.

100.   Badoo also indirectly infringes the '397 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Badoo app in the United States.

101.   Badoo took the above actions intending to cause infringing acts by others.

102.   Badoo also indirectly infringes the '397 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Badoo's app and interacting with the servers associated with Badoo's app. These software

components are, for example, the Badoo app, and the download package that contains the Badoo app for interacting with Badoo's servers. Badoo's end-users directly infringed the '397 Patent by, for example, installing and using the Badoo app in the United States to use the Badoo system in the United States and Badoo servers in the United States. These software components are known by Badoo to be especially made or adapted for use in Badoo's infringing system.

103.   Badoo has known these components to be especially made or especially adapted for use in infringement of the '397 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

104.   To the extent that any Badoo's servers are owned or controlled by any other company, including Bumble Trading, Bumble Holding, that company also directly infringes.

105.   To the extent that any Badoo's servers are owned or controlled by any other company, including Bumble Trading, Bumble Holding, that company also indirectly infringe the '397 Patent by inducing infringement by others, such as Badoo and Badoo's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Badoo with the technical implantation of the Badoo app, and/or encouraging and instructing end-user customers to install and use the Badoo app in the United States.

106.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '397 Patent by contributing to infringement by others, such as Badoo and Badoo's end-users, by directing, controlling, or assisting Badoo with the technical implantation of the Badoo app, providing within the United States software components for operating Badoo's app and interacting with the servers associated with Badoo's app. These software components are, for example, the Badoo app, and the download package that contains the Badoo app for interacting with Badoo's servers. These software components are known by Badoo Trading, Badoo Limited,

Badoo Technologies, and Badoo Software to be especially made or adapted for use in Badoo's infringing system.

107.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '397 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

VI.   THE CHAPPY APP INFRINGES WIRELESS DEVICES' ASSERTED PATENTS

a.   INFRINGEMENT OF THE '024 PATENT

108.   The following chart illustrates how features of Chappy meet the claims of the '024 patent literally or under the Doctrine of Equivalents:

Claim Language	Chappy Evidence
A system comprising:	Chappy is a system Chappy is a meeting place for adults, and we provide that service by operating a social network site offering users the opportunity to connect to our global community of users. By
a server configured to communicate personal information between a first user and a second user, the first user using a respective first mobile communications device and the second user using a respective second mobile communications device each	Chappy comprises servers which can be accessed by users. We want you to be able to access Chappy wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is The server communicates with mobile phone Our servers will automatically record information ("Log and Usage Data") created by your use of Chappy, which again helps us to improve our service. Log and Usage Data may include information such as your IP address, access times and your mobile carrier. Each mobile phone can also connected to a short range wireless communication protocol through an ad hoc wireless network;

connected to a mobile telecommunications provider network and each also connected to a short range wireless communication protocol through an ad hoc wireless network;	Chappy functions to work, we may collect your device's geolocation data and save your device's coordinates, WiFi access points as well as other location information about your longitude and latitude. We may also use your device's geolocation information to personalise

the server in communication with the mobile telecommunications provider network, and configured to provide access to stored user profile information about the first user and the second user, respectively, including personal attribute information and a mobile communications device address;	the server provides online registration to store personal attribute information, And a mobile communications device address (Cell phone number)
	
	Chappy is a meeting platform for gay men. To access and use Chappy, you will need to create an account ("Account"). You can do this by logging into your Facebook account, which will allow us to receive certain information about you, such as your:
	
	    name;
	    gender;
	    photographs;
	    email address;
	    date of birth;
	    Facebook friend list;
	    work history;
	    education history;
	    location; and
	    the pages that you have "liked" on Facebook

the server configured to receive from the first mobile communications device a received unique ad hoc network identifier for the second mobile communications	Chappy is an APP based on Android or iPhone App.
	
	services but wish to turn them off, you can do so by the following methods:
	
	    iPhone – settings, location services, off.
	
	    Android – profile, privacy, on.

device received by the first mobile communications device from the second mobile communications device responsive to a search by the first mobile communications device using the short range communication protocol for the presence of the second mobile communications device on the ad hoc network;	Android platform provide Bluetooth communication API (Using the short range communication protocol), The device can communicate by Bluetooth communication API. A first communication device can search other device through Bluetooth (a kind of ad hoc network), the first communication device can get MAC address (unique ad hoc network identifier) of the second communication device. The Android platform includes support for the Bluetooth network stack, which allows device to wirelessly exchange data with other Bluetooth devices. The application framework provides access to the Bluetooth functionality through the Android Blueto APIs. These APIs let applications wirelessly connect to other Bluetooth devices, enab point-to-point and multipoint wireless features. Using the **BluetoothAdapter** (/reference/android/bluetooth/BluetoothAdapter), you can find remote Bluetooth devices either through device discovery or by querying the list of paired devices. requests by being *discoverable*. If a device is discoverable, it responds to the discovery request by sharing some information, such as the device's name, its class, and its uniq MAC address. Using this information, the device that is performing the discovery process can then choose to initiate a connection to the discovered device.
the server configured to receive from the first mobile communications device the unique ad hoc network identifier of the second mobile communications device and to send to the second mobile communications device, using the unique ad hoc network identifier, an invitation to accept personal attribute information from,	The Android provide a service offers a client -server interface that allows App to send the unique ad hoc network identifier of the second mobile communications device and to send to the second mobile communications device, using the unique ad hoc network identifier. . A bound service offers a client-server interface that allows components to interact with the service, send requests, receive results, and even do so across processes with interprocess communication (IPC). A bound service runs only as long as another application component is bound to it. Multiple components can bind to the service at once, but when all of them unbind, the service is destroyed.

or share personal attribute information with, the first user, upon receipt of permission from the second user to receive personal attribute information about, or share personal attribute information with, the first user; and	**public class ConnectivityManager** The primary responsibilities of this class are to: 1. Monitor network connections (Wi-Fi, GPRS, UMTS, etc.) 2. Send broadcast intents when network connectivity changes 3. Attempt to "fail over" to another network when connectivity to a network is lost 4. Provide an API that allows applications to query the coarse-grained or fine-grained state of the available networks 5. Provide an API that allows applications to request and select networks for their data traffic
the server configured to connect the first user and the second user through the mobile telecommunications provider network for personal communication between the first user and the second user, without the first user and the second user first connecting for personal communication through the ad hoc network wherein the server is configured to receive from the first mobile communications device the unique ad hoc network identifier for the	The server configured to connect the first user and the second user through the mobile telecommunications provider network for personal communication between the first user and the second user, without the first user and the second user first connecting for personal communication through the ad hoc network Most network-connected Android apps use HTTP to send and receive data. the server is configured to receive from the first mobile communications device the unique ad hoc network identifier for the second mobile communications device, and locate information about the second user from a social network file of the second user, including a name and image of the second user, and transmit this information to the first mobile communications device We may collect information about your device when you use Chappy, including the unique device identifier, device model, operating system, and MAC address.

second mobile communications device, and locate information about the second user from a social network file of the second user, including a name and image of the second user, and transmit this information to the first mobile communications device	We want to show you the profiles of guys who are around you. (the profile includes name and image) Chappy works on mutual connections. If you had swiped right to a profile from Chappy's roulette-type matching feature, and that member had also swiped right on yours, both of you will get a ~~notification~~ Scout that you matched with each other. You and that member will now belong to each other's message inboxes and you can start a conversation. Unfortunately, that's the only way to contact another Swipe through all of the people means user browse the profile of people nearby.

109.   Chappy Limited previously offered the Chappy app. It is believed that Bumble Holding, the listed distributing company for the Bumble app on the Apple App Store and the Google Play Store, now offers the Chappy app or the functionality of the Chappy app on its Bumble app. Bumble also markets and distributes the Bumble app. Thus, based on information and belief, all are directly infringing the '024 Patent by making, using, selling, offering to sell, or importing the Chappy/Bumble system.

110.   Chappy/Bumble also indirectly infringes the '024 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Chappy/Bumble app in the United States.

111.   Chappy/Bumble took the above actions intending to cause infringing acts by others.

112.   Chappy/Bumble also indirectly infringes the '024 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Chappy/Bumble's app and interacting with the servers associated with Chappy/Bumble's app. These software components are, for example, the Chappy/Bumble app, and the download package that contains the Chappy/Bumble app for interacting with Chappy/Bumble's servers. Chappy/Bumble's end-users directly infringed the '024 Patent by, for example, installing and using the Chappy/Bumble app in the United States to use the Chappy/Bumble system in the United States and Chappy/Bumble servers in the United States. These software components are known by Chappy/Bumble to be especially made or adapted for use in Chappy/Bumble's infringing system.

113.   Chappy/Bumble has known these components to be especially made or especially adapted for use in infringement of the '024 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

114.   To the extent that any Chappy/Bumble's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, or that company also directly infringes.

115.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '024 Patent by inducing infringement by others, such as Chappy/Bumble and Chappy/Bumble's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Chappy/Bumble with the technical implantation of the Chappy/Bumble app, and/or encouraging and instructing end-user customers to install and use the Chappy/Bumble app in the United States.

116.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo

Technologies, and Badoo Software were aware of the '024 in the same ways as described above with respect to Chappy/Bumble.

117.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '024 Patent by contributing to infringement by others, such as Chappy/Bumble and Chappy/Bumble's end-users, by directing, controlling, or assisting Chappy/Bumble with the technical implantation of the Chappy/Bumble app, providing within the United States software components for operating Chappy/Bumble's app and interacting with the servers associated with Chappy/Bumble's app. These software components are, for example, the Chappy/Bumble app, and the download package that contains the Chappy/Bumble app for interacting with Chappy/Bumble's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Chappy/Bumble's infringing system.

118.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '024 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

b. INFRINGEMENT OF THE '875 PATENT

119.   The following chart illustrates how features of Chappy meet the claims of the '875 patent literally or under the Doctrine of Equivalents:

Claim Language	Chappy Evidence
A system comprising:	Chappy is a system Chappy is a meeting place for adults, and we provide that service by operating a social network site offering users the opportunity to connect to our global community of users. By

a computing device configured to allow communication between a plurality of members of a social network for any of connecting through said social network and exchanging personal information between a first user and a second user, the first user using a respective first mobile communications device and the second user using a respective second mobile communications device each operatively connected to any of a mobile telecommunications provider network and an internet connection to access said computing device;	Chappy comprises servers which can be accessed by users. We want you to be able to access Chappy wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is The server communicates with mobile phone Our servers will automatically record information ("Log and Usage Data") created by your use of Chappy, which again helps us to improve our service. Log and Usage Data may include information such as your IP address, access times and your mobile carrier.
the computing device in	each operatively connected to any of a mobile telecommunications provider network and an internet connection to access said computing device

communication with said first user and said second user through said first mobile communications device and said second mobile communications device, wherein said computing device connects said first mobile communications device and said second mobile communications device to the internet using any of the mobile telecommunications provider network and a Wi-Fi connection;	Most network-connected Android apps use HTTP to send and receive data. Each mobile phone can also connected through a Wi-Fi connection; Chappy functions to work, we may collect your device's geolocation data and save your device's coordinates, WiFi access points as well as other location information about your longitude and latitude. We may also use your device's geolocation information to personalise
the computing device configured to provide access to stored user profile information relating to said first user and said second user, respectively, wherein said stored user profile	the server provides online registration to store personal attribute information, wherein said stored user profile information comprises any of a picture, name, and location of a respective user;

information comprises any of a picture, name, and location of a respective user;	Chappy is a meeting platform for gay men. To access and use Chappy, you will need to create an account ("Account"). You can do this by logging into your Facebook account, which will allow us to receive certain information about you, such as your:
	
	    name;
	    gender;
	    photographs;
	    email address;
	    date of birth;
	    Facebook friend list;
	    work history;
	    education history;
	    location; and
	    the pages that you have "liked" on Facebook

the computing device configured to receive an inquiry from said first user about members in said social network who are close by in proximity to a current location of said first user to permit connection through said social network and for exchanging contact information between the users;	We want to show you the profiles of guys who are around you. (the profile includes name and image)
the computing device configured to return said inquiry by	

providing a user profile information of said members, wherein said user profile information comprises attributes comprising any of a picture, name, and location of a respective member, and wherein said computer device reports to said first user said attributes of all members who are close by in proximity to said current location of said first user;	Chappy works on mutual connections. If you had swiped right to a profile from Chappy's roulette-type matching feature, and that member had also swiped right on yours, both of you will get a notification that you matched with each other. You and that member will now belong to each other's message inboxes and you can start a conversation. Unfortunately, that's the only way to contact another Swipe through all of the people means user browse the profile of people nearby.
the computing device configured to receive information identifying locations of the first user and cross reference with any of a location of said second mobile communications device, and locations of multiple users that are close by in	We want to show you the profiles of guys who are around you. To do this, and to enable other Chappy functions to work, we may collect your device's geolocation data and save your device's coordinates, WiFi access points as well as other location information about your longitude and latitude. We may also use your device's geolocation information to personalise Chappy and make it easier for you to interact with other users. If you have enabled location

proximity to said current location of said first user;	
the computing device configured to receive a unique device hardware identifier from each mobile communication device from each linked member in said social network to associate and link to a respective member profile to authenticate said respective member as a linked member;	Chappy is an APP based on Android or iPhone App. services but wish to turn them off, you can do so by the following methods: iPhone – settings, location services, off. Android – profile, privacy, on. Chappy privacy terms (Page 7) Android platform provide Wi-Fi Aware APIs to sent message to another device, the message includes an identifier. Embedding an identifier in a message implies modifying the message by identifier (for example, as the first couple of bytes).
the computing device configured to determine proximity of the locations of the first and second mobile communication devices and other communication devices of other users to one another and to send to the second mobile communicatio	Chappy works on mutual connections. If you had swiped right to a profile from Chappy's roulette-type matching feature, and that member had also swiped right on yours, both of you will get a notification that you matched with each other. You and that member will now belong to each other's message inboxes and you can start a conversation. Unfortunately, that's the only way to contact another

ns device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user;	
the computing device configured to provide services between users for personal communication, the personal communication comprising services including one or more of SMS, E-mail, chat/instant messaging, multimedia, voice, or video;	the personal communication comprising services include chat, message You can use Chappy to find someone to date or to just make friends with. When you open Chappy, you will be shown the profiles of other Chappy users. You can swipe right on a user's profile to indicate that you like them, or left if you do not. If you and another guy both swipe right, you will be able to message each other using the chat function.

the computing device configured to provide personal attributes comprising any of a picture, name, and location of members in a vicinity of one another to permit connections and exchange of contact information between said members, wherein the first and second users are members of a same social network, and the computing device is operable to disclose social network attributes including a picture, name, and location of first and second users in the vicinity or within a particular distance from one another for the purpose of connecting members.	Profiles in Chappy feature very few details about the members. At the gScout view, a member's photo gallery or profile picture (if the member only has one photo) take up the whole screen, with the member's name and age at the bottom. When you scroll down, you will see an 'About Me' paragraph which is personally written by the member. There is also an indicator of how near or far (kilometres away) you are from that member.	computing device configured to provide personal attributes comprising any of a picture, name, and location of members

120.   Chappy previously offered the Chappy app. It is believed that Bumble Holding, the listed distributing company for the Bumble app on the Apple App Store and the Google Play Store, now offers the Chappy app or the functionality of the Chappy app on its Bumble app. Bumble also markets and distributes the Bumble app. Thus, based on information and belief, all are directly infringing the '875 Patent by making, using, selling, offering to sell, or importing the Chappy/Bumble system.

121.   Chappy/Bumble also indirectly infringes the '875 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Chappy/Bumble app in the United States.

122.   Chappy/Bumble took the above actions intending to cause infringing acts by others.

123.   Chappy/Bumble also indirectly infringes the '875 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Chappy/Bumble's app and interacting with the servers associated with Chappy/Bumble's app. These software components are, for example, the Chappy/Bumble app, and the download package that contains the Chappy/Bumble app for interacting with Chappy/Bumble's servers. Chappy/Bumble's end-users directly infringed the '875 Patent by, for example, installing and using the Chappy/Bumble app in the United States to use the Chappy/Bumble system in the United States and Chappy/Bumble servers in the United States. These software components are known by Chappy/Bumble to be especially made or adapted for use in Chappy/Bumble's infringing system.

124.   Chappy/Bumble has known these components to be especially made or especially adapted for use in infringement of the '875 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

125.   To the extent that any Chappy/Bumble's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, or that company also directly infringes.

126.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '875 Patent by inducing infringement by others, such as Chappy/Bumble and Chappy/Bumble's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Chappy/Bumble with the technical implantation of the Chappy/Bumble app, and/or encouraging and instructing end-user customers to install and use the Chappy/Bumble app in the United States.

127.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '875 in the same ways as described above with respect to Chappy/Bumble.

128.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '875 Patent by contributing to infringement by others, such as Chappy/Bumble and Chappy/Bumble's end-users, by directing, controlling, or assisting Chappy/Bumble with the technical implantation of the Chappy/Bumble app, providing within the United States software components for operating Chappy/Bumble's app and interacting with the servers associated with Chappy/Bumble's app. These software components are, for example, the Chappy/Bumble app, and the download package that contains the Chappy/Bumble app for interacting with Chappy/Bumble's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Chappy/Bumble's infringing system.

129.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '875 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

c.   INFRINGEMENT OF THE '267 PATENT

130.   The following chart illustrates how features of Chappy meet the claims of the '267 patent literally or under the Doctrine of Equivalents:

Claim Language	Chappy Evidence
A system comprising:	
a computing device configured to communicate with various mobile and terminal devices to manage introduction and connection of members belonging to a same network by sharing personal attributes between members;	Chappy comprises servers (a computing device) which allow communication between a plurality of members of a social network for any of connecting through said social network. We want you to be able to access Chappy wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is
a first mobile communications device communicatively linked to said computing device; and a second mobile communications device communicatively linked to said computing device,	The server communicates with mobile phone Our servers will automatically record information ("Log and Usage Data") created by your use of Chappy, which again helps us to improve our service. Log and Usage Data may include information such as your IP address, access times and your mobile carrier.
wherein said computing device provides access to stored user	the server provides online registration to store personal attribute information

profile information about a first user and a second user,	Chappy is a meeting platform for gay men. To access and use Chappy, you will need to create an account ("Account"). You can do this by logging into your Facebook account, which will allow us to receive certain information about you, such as your: name; gender; photographs; email address; date of birth; Facebook friend list; work history; education history; location; and the pages that you have "liked" on Facebook
wherein said computing device is configured to store static locations of members and receive information identifying current dynamic locations of all members in said network, (Column 12, lines 61-65) The vicinity and determination of the proximity is ba on either static or dynamic user location. The static locat is what the user enters during registration and saved his/her profile, or obtained through API from another so network if the user elected to sign up to the service v another social network credentials. The dynamic locatio	**the server provides online registration to store static locations of members** Chappy is a meeting platform for gay men. To access and use Chappy, you will need to create an account ("Account"). You can do this by logging into your Facebook account, which will allow us to receive certain information about you, such as your: name; gender; photographs; email address; date of birth; Facebook friend list; work history; education history; location; and the pages that you have "liked" on Facebook **Bumble receive information identifying current dynamic locations of all members in said network** Chappy functions to work, we may collect your device's geolocation data and save your device's coordinates, WiFi access points as well as other location information about your longitude and latitude. We may also use your device's geolocation information to personalise

wherein said computing device is configured to calculate and determine a proximity of user locations,	Chappy is an APP based on Android or iPhone App. services but wish to turn them off, you can do so by the following methods: iPhone – settings, location services, off. Android – profile, privacy, on. Chappy can use Wi-fi RTT API to calculate and determine a proximity of user locations You can use the Wi-Fi location functionality provided by the Wi-Fi RTT (Round-Trip-Time) API (/reference/android/net/wifi/rtt/package-summary) to measure the distance to nearby RTT-capable Wi-Fi access points and peer Wi-Fi Aware (/guide/topics/connectivity/wifi-aware) devices.
wherein said computing device is configured to send to said first user upon inquiring of other members in said network of said first user, personal attributes of all other members based on proximity calculations to select members that said first user may wish to connect with, and to send to said second mobile communication device an invitation on behalf of said first user for said second user to accept connecting with said first user,	send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user We want to show you the profiles of guys who are around (the profile includes name and image) Chappy works on mutual connections. If you had swiped right to a profile from Chappy's roulette-type matching feature, and that member had also swiped right on yours, both of you will get a notification that you matched with each other. You and that member will now belong to each other's message inboxes and you can start a conversation. Unfortunately, that's the only way to contact another
wherein said computing device is configured to communicatively connect said first user and said second user,	The server communicates with mobile phone Our servers will automatically record information ("Log and Usage Data") created by your use of Chappy, which again helps us to improve our service. Log and Usage Data may include information such as your IP address, access times and your mobile carrier.

wherein said computing device is configured to locate information about said second user from a social network storage file of said second user, and transmit this information to said first mobile communications device, wherein the first user and the second user are members of a same social network, and the computing device is to disclose non-anonymous social network attributes including a picture, name, and location of the first user and the second user in a vicinity or within a predetermined distance from one another for the purpose of connecting members of the same social network based in part on proximity calculations between connecting members,	Profiles in Chappy feature very few details about the members. At the IgScout member only has one photo) take up the whole screen, with the member's name and age at the bottom. When you scroll down, you will see an 'About Me' paragraph which is personally written by the member. There is also an indicator of how near or far (kilometres away) you are from that member. computing device configured to provide personal attributes comprising any of a picture, name, and location of members
wherein said computing device permits discoverable members to have their respective devices	discoverable members to have their respective devices turned on or turned off at a time of a search being

turned on or turned off at a time of a search being conducted by said first user, wherein said computing device permits said discoverable members to have their respective devices unconnected to an internet connection service at said time of the search being conducted by said first user, and wherein any of turned off devices and disconnected devices is discoverable by said computer device as said internet connection service is configured to report said any of turned off devices and disconnected devices as discoverable based on a latest static and dynamic location in proximity to said first user.	conducted by said first user, wherein said computing device permits said discoverable members to have their respective devices unconnected to an internet connection service at said time of the search being conducted by said first user. Chappy and make it easier for you to interact with other users. If you have enabled location services but wish to turn them off, you can do so by the following methods: iPhone – settings, location services, off. Android – profile, privacy, on. Even if you have disabled location settings, we may still determine your city, state, and country location based on your IP address (but not your exact location).

131.   Chappy previously offered the Chappy app. It is believed that Bumble Holding, the listed distributing company for the Bumble app on the Apple App Store and the Google Play Store, now offers the Chappy app or the functionality of the Chappy app on its Bumble app. Bumble also markets and distributes the Bumble app. Thus, based on information and belief, all are directly infringing the '267 Patent by making, using, selling, offering to sell, or importing the Chappy/Bumble system.

132.   Chappy/Bumble also indirectly infringes the '267 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Chappy/Bumble app in the United States.

133.   Chappy/Bumble took the above actions intending to cause infringing acts by others.

134.   Chappy/Bumble also indirectly infringes the '267 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Chappy/Bumble's app and interacting with the servers associated with Chappy/Bumble's app. These software components are, for example, the Chappy/Bumble app, and the download package that contains the Chappy/Bumble app for interacting with Chappy/Bumble's servers. Chappy/Bumble's end-users directly infringed the '267 Patent by, for example, installing and using the Chappy/Bumble app in the United States to use the Chappy/Bumble system in the United States and Chappy/Bumble servers in the United States. These software components are known by Chappy/Bumble to be especially made or adapted for use in Chappy/Bumble's infringing system.

135.   Chappy/Bumble has known these components to be especially made or especially adapted for use in infringement of the '267 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

136.   To the extent that any Chappy/Bumble's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, or that company also directly infringes.

137.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '267 Patent by inducing infringement by others, such as Chappy/Bumble and Chappy/Bumble's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Chappy/Bumble with the technical implantation of the Chappy/Bumble app, and/or encouraging and instructing end-user customers to install and use the Chappy/Bumble app in the United States.

138.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo

Technologies, and Badoo Software were aware of the '267 in the same ways as described above with respect to Chappy/Bumble.

139.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '267 Patent by contributing to infringement by others, such as Chappy/Bumble and Chappy/Bumble's end-users, by directing, controlling, or assisting Chappy/Bumble with the technical implantation of the Chappy/Bumble app, providing within the United States software components for operating Chappy/Bumble's app and interacting with the servers associated with Chappy/Bumble's app. These software components are, for example, the Chappy/Bumble app, and the download package that contains the Chappy/Bumble app for interacting with Chappy/Bumble's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Chappy/Bumble's infringing system.

140.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '267 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

d. INFRINGEMENT OF THE '397 PATENT

141.   The following chart illustrates how features of Chappy meet the claims of the '397 patent literally or under the Doctrine of Equivalents:

Claim Language	Chappy Evidence
A server configured to communicate with a first communication device of a first user and a second communication device of a second user over communication links comprising a cellular network, wherein the server comprises a processor configured to:	Chappy comprises servers (a computing device) which allow communication between a plurality of members of a social network for any of connecting through said social network. We want you to be able to access Chappy wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is The server communicates with mobile phone Our servers will automatically record information ("Log and Usage Data") created by your use of Chappy, which again helps us to improve our service. Log and Usage Data may include information such as your IP address, access times and your mobile carrier.
store in a data storage device a first profile associated with the first user and a second profile associated with a second user, both the first and the second profile comprises at least a picture and a name of their respective users thereby automatically eliminating anonymous communication of the first	the server provides online registration to store personal attribute information Chappy is a meeting platform for gay men. To access and use Chappy, you will need to create an account ("Account"). You can do this by logging into your Facebook account, which will allow us to receive certain information about you, such as your: name; gender; photographs; email address; date of birth; Facebook friend list; work history; education history; location; and the pages that you have "liked" on Facebook

profile and the second profile between member devices without intervention by the first user or the second user;	
associate each member profile with a unique hardware identification associated with the member devices; identify a unique ID of a second member in the vicinity and spatial proximity of a first member and provide the first member with the profile of the second member comprising a picture and name to facilitate a connection between both members;	Chappy user has a Chappy account The information we collect about you when you create an Account will be used to create your profile ("Profile"). You also have the opportunity to provide other details about yourself, but Chappy is an APP based on Android or iPhone App. services but wish to turn them off, you can do so by the following methods: iPhone – settings, location services, off. Android – profile, privacy, on. a unique hardware identification associated with Chappy account in Android Determine if AccountManager is for you Applications typically try to remember the user using one of three techniques: 1. Ask the user to type in a username. 2. Retrieve a unique device ID to remember the device. 3. Retrieve a built-in account from AccountManager (/reference/android/accounts/AccountManager). We want to show you the profiles of guys who are around you. (the profile includes name and image)
send the second member the profile of the first member including the picture and	computing device configured to provide personal attributes comprising any of a picture, name, and location of members

name upon the first member initiating an invite to the second member to connect over a networking service; inform the first member if the second member has accepted or rejected the invite to connect initiated by the first member; and once the second member accepts the invite of the first member, store the connectivity between both members in the data storage device and facilitate a chat feature between them using respective devices connected to the server,	Profiles in Chappy feature very few details about the members. At the initial view, a member's photo gallery or profile picture (if the member only has one photo) take up the whole screen, with the member's name and age at the bottom. When you scroll down, you will see an 'About Me' paragraph which is personally written by the member. There is also an indicator of how near or far (kilometres away) you are from that member.	Chappy Review August 2020(page 5)
wherein the first user and the second user are members of a same social		

network, and the processor is to disclose non-anonymous social network attributes including a picture, name, and location of the first user and the second user in a vicinity or within a predetermined distance from one another for the purpose of connecting members of the same social network based in part on proximity calculations between connecting members,	Chappy works on mutual connections. If you had swiped right to a profile from Chappy's roulette-type matching feature, and that member had also swiped right on yours, both of you will get a notification that you matched with each other. You and that member will now belong to each other's message inboxes and you can start a conversation. Unfortunately, that's the only way to contact another
wherein the server permits discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by the first user, wherein the server permits the discoverable members to	discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by said first user, wherein said computing device permits said discoverable members to have their respective devices unconnected to an internet connection service at said time of the search being conducted by said first user.

have their respective devices unconnected to an internet connection service at the time of the search being conducted by the first user, and wherein any of turned off devices and disconnected devices is discoverable by the server as the internet connection service is configured to report the any of turned off devices and disconnected devices as discoverable based on a latest static and dynamic location in proximity to the first user.	Chappy and make it easier for you to interact with other users. If you have enabled location services but wish to turn them off, you can do so by the following methods:
	
	    iPhone – settings, location services, off.
	
	    Android – profile, privacy, on.
	
	Even if you have disabled location settings, we may still determine your city, state, and country location based on your IP address (but not your exact location).

142.   Chappy previously offered the Chappy app. It is believed that Bumble Holding, the listed distributing company for the Bumble app on the Apple App Store and the Google Play Store, now offers the Chappy app or the functionality of the Chappy app on its Bumble app. Bumble also markets and distributes the Bumble app. Thus, based on information and belief, all

are directly infringing the '397 Patent by making, using, selling, offering to sell, or importing the Chappy/Bumble system.

143.   Chappy/Bumble also indirectly infringes the '397 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Chappy/Bumble app in the United States.

144.   Chappy/Bumble took the above actions intending to cause infringing acts by others.

145.   Chappy/Bumble also indirectly infringes the '397 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Chappy/Bumble's app and interacting with the servers associated with Chappy/Bumble's app. These software components are, for example, the Chappy/Bumble app, and the download package that contains the Chappy/Bumble app for interacting with Chappy/Bumble's servers. Chappy/Bumble's end-users directly infringed the '397 Patent by, for example, installing and using the Chappy/Bumble app in the United States to use the Chappy/Bumble system in the United States and Chappy/Bumble servers in the United States. These software components are known by Chappy/Bumble to be especially made or adapted for use in Chappy/Bumble's infringing system.

146.   Chappy/Bumble has known these components to be especially made or especially adapted for use in infringement of the '397 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

147.   To the extent that any Chappy/Bumble's servers are owned or controlled by any other company, includingBadoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, or that company also directly infringes.

148.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '397 Patent by inducing infringement by others, such as Chappy/Bumble

and Chappy/Bumble's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Chappy/Bumble with the technical implantation of the Chappy/Bumble app, and/or encouraging and instructing end-user customers to install and use the Chappy/Bumble app in the United States.

149.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '397 in the same ways as described above with respect to Chappy/Bumble.

150.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '397 Patent by contributing to infringement by others, such as Chappy/Bumble and Chappy/Bumble's end-users, by directing, controlling, or assisting Chappy/Bumble with the technical implantation of the Chappy/Bumble app, providing within the United States software components for operating Chappy/Bumble's app and interacting with the servers associated with Chappy/Bumble's app. These software components are, for example, the Chappy/Bumble app, and the download package that contains the Chappy/Bumble app for interacting with Chappy/Bumble's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Chappy/Bumble's infringing system.

151.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, have known these components to be especially made or especially adapted for use in infringement of the '397 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

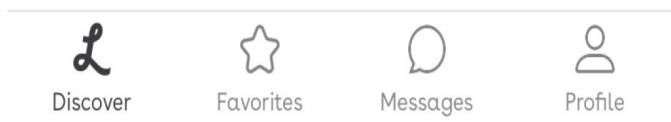## VII.   THE LUMEN APP INFRINGES WIRELESS DEVICES' ASSERTED PATENTS

a. INFRINGEMENT OF THE '024 PATENT

152.   The following chart illustrates how features of Lumen meet the claims of the '024

patent literally or under the Doctrine of Equivalents:

Claim Language	Lumen Evidence
A system comprising:	Lumen is a system Lumen is a meeting place for adults aged 50 or over, and we provide that service by operating a social network site offering users the opportunity to connect to our global community of users.
a server configured to communicate personal information between a first user and a second user, the first user using a respective first mobile communications device and the second user using a respective second mobile communications device each connected to a mobile telecommunications provider network and each also connected to a short range wireless communication protocol through an ad hoc wireless network;	Lumen comprises servers which can be accessed by users. We want you to be able to access Lumen wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by Lumen. We ensure that the data is adequately protected by ensuring that valid, legal The server communicates with mobile phone Lumen offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users. Each mobile phone can also connected to a short range wireless communication protocol through an ad hoc wireless network; When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information about your longitude and latitude. That
the server in communication with the mobile telecommunications provider network, and configured to provide access to	the server provides online registration to store personal attribute information, And a mobile communications device address

stored user profile information about the first user and the second user, respectively, including personal attribute information and a mobile communications device address;	To join the Lumen network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your gender, your date of birth, your occupation, your location details and what you're looking for on Lumen. We will also ask you to provide 3 photos and to write at least 200 characters of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other than your gender) at any time by just logging in to Lumen. You can contact Lumen's Customer
the server configured to receive from the first mobile communications device a received unique ad hoc network identifier for the second mobile communications device received by the first mobile communications device from the second mobile communications device responsive to a search by the first mobile communications device using the short range communication protocol for the presence of the second mobile communications device on the ad hoc network;	Lumen is an APP based on Android or iPhone App. If you have enabled location services, but wish to turn it off, you can do so by the following methods: 1. iPhone app — settings, privacy, location services, Bumble 2. Android — settings, location, Bumble, permissions, location Android platform provide Bluetooth communication API (Using the short range communication protocol), The device can communicate by Bluetooth communication API. A first communication device can search other device through Bluetooth (a kind of ad hoc network), the first communication device can get MAC address (unique ad hoc network identifier) of the second communication device. The Android platform includes support for the Bluetooth network stack, which allows a device to wirelessly exchange data with other Bluetooth devices. The application framework provides access to the Bluetooth functionality through the Android Bluetooth APIs. These APIs let applications wirelessly connect to other Bluetooth devices, enabling point-to-point and multipoint wireless features. Using the BluetoothAdapter (/reference/android/bluetooth/BluetoothAdapter), you can find remote Bluetooth devices either through device discovery or by querying the list of paired devices. requests by being discoverable. If a device is discoverable, it responds to the discovery request by sharing some information, such as the device's name, its class, and its unique MAC address. Using this information, the device that is performing the discovery process can then choose to initiate a connection to the discovered device.

the server configured to receive from the first mobile communications device the unique ad hoc network identifier of the second mobile communications device and to send to the second mobile communications device, using the unique ad hoc network identifier, an invitation to accept personal attribute information from, or share personal attribute information with, the first user, upon receipt of permission from the second user to receive personal attribute information about, or share personal attribute information with, the first user; and	The Android provide a service offers a client -server interface that allows App to send the unique ad hoc network identifier of the second mobile communications device and to send to the second mobile communications device, using the unique ad hoc network identifier. . A bound service offers a client-server interface that allows components to interact with the service, send requests, receive results, and even do so across processes with interprocess communication (IPC). A bound service runs only as long as another application component is bound to it. Multiple components can bind to the service at once, but when all of them unbind, the service is destroyed. `public class ConnectivityManager` The primary responsibilities of this class are to: 1. Monitor network connections (Wi-Fi, GPRS, UMTS, etc.) 2. Send broadcast intents when network connectivity changes 3. Attempt to "fail over" to another network when connectivity to a network is lost 4. Provide an API that allows applications to query the coarse-grained or fine-grained state of the available networks 5. Provide an API that allows applications to request and select networks for their data traffic
the server configured to connect the first user and the second user through the mobile telecommunications provider network for personal communication	The server configured to connect the first user and the second user through the mobile telecommunications provider network for personal communication between the first user and the second user, without the first user and the second user first connecting for personal communication through the ad hoc network Most network-connected Android apps use HTTP to send and receive data.

between the first user and the second user, without the first user and the second user first connecting for personal communication through the ad hoc network wherein the server is configured to receive from the first mobile communications device the unique ad hoc network identifier for the second mobile communications device, and locate information about the second user from a social network file of the second user, including a name and image of the second user, and transmit this information to the first mobile communications device	the server is configured to receive from the first mobile communications device the unique ad hoc network identifier for the second mobile communications device, and locate information about the second user from a social network file of the second user, including a name and image of the second user, and transmit this information to the first mobile communications device If a particular group member catches your eye, simply tap their profile icon, and you can message them directly or view their profile: You can see profiles of users who match your basic search criteria in the "Discover" section, which you can access by tapping the Lumen icon in the navigation bar at the bottom of your screen: Discover Favorites Messages Profile Profiles are screened by gender, age and distance, which you can adjust in the "filters" section:

153.   Lumen offers the Lumen app per the Google App Store. It is believed that one or more of Bumble Holding, Bumble Trading Thus, based on information and belief, all are directly infringing the '024 Patent by making, using, selling, offering to sell, or importing the Lumen system.

154.   Lumen also indirectly infringes the '024 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Lumen app in the United States.

155.   Lumen took the above actions intending to cause infringing acts by others.

156.   Lumen also indirectly infringes the '024 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Lumen's app and interacting with the servers associated with Lumen's app. These software components are, for example, the Lumen app, and the download package that contains the Lumen app for interacting with Lumen's servers. Lumen's end-users directly infringed the '024 Patent by, for example, installing and using the Lumen app in the United States to use the Lumen system in the United States and Lumen servers in the United States. These software components are known by Lumen to be especially made or adapted for use in Lumen's infringing system.

157.   Lumen has known these components to be especially made or especially adapted for use in infringement of the '024 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

158.   To the extent that any Lumen's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, that company also directly infringes.

159.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '024 Patent by inducing infringement by others, such as Lumen and Lumen's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Lumen with the technical implantation of the Lumen app, and/or encouraging and instructing end-user customers to install and use the Lumen app in the United States.

160. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '024 in the same ways as described above with respect to Lumen.

161. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '024 Patent by contributing to infringement by others, such as Lumen and Lumen's end-users, by directing, controlling, or assisting Lumen with the technical implantation of the Lumen app, providing within the United States software components for operating Lumen's app and interacting with the servers associated with Lumen's app. These software components are, for example, the Lumen app, and the download package that contains the Lumen app for interacting with Lumen's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Lumen's infringing system.

162. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, have known these components to be especially made or especially adapted for use in infringement of the '024 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.
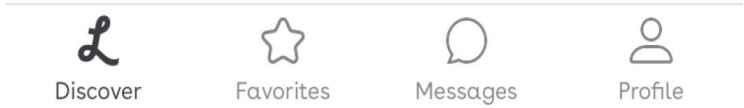
b. INFRINGEMENT OF THE '875 PATENT

163. The following chart illustrates how features of Lumen meet the claims of the '875 patent literally or under the Doctrine of Equivalents:

Claim Language	Lumen Evidence
A system comprising:	Lumen is a system Lumen is a meeting place for adults aged 50 or over, and we provide that service by operating a social network site offering users the opportunity to connect to our global community of users.

a computing device configured to allow communication between a plurality of members of a social network for any of connecting through said social network and exchanging personal information between a first user and a second user, the first user using a respective first mobile communications device and the second user using a respective second mobile communications device each operatively connected to any of a mobile telecommunications provider network and an internet connection to access said computing device;	Lumen comprises servers which can be accessed by users. We want you to be able to access Lumen wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by Lumen. We ensure that the data is adequately protected by ensuring that valid, legal The server communicates with mobile phone Lumen offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users.
the computing device in communicatio	each operatively connected to any of a mobile telecommunications provider network and an internet connection to access said computing device

n with said first user and said second user through said first mobile communications device and said second mobile communications device, wherein said computing device connects said first mobile communications device and said second mobile communications device to the internet using any of the mobile telecommunications provider network and a Wi-Fi connection;	Most network-connected Android apps use HTTP to send and receive data. Each mobile phone can also connected through a Wi-Fi connection; When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information about your longitude and latitude. That
the computing device configured to provide access to stored user profile information relating to said first user and said second user, respectively, wherein said stored user profile information	the server provides online registration to store personal attribute information, wherein said stored user profile information comprises any of a picture, name, and location of a respective user; To join the Lumen network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your gender, your date of birth, your occupation, your location details and what you're looking for on Lumen. We will also ask you to provide 3 photos and to write at least 200 characters of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other than your gender) at any time by just logging in to Lumen. You can contact Lumen's Customer

comprises any of a picture, name, and location of a respective user;	
the computing device configured to receive an inquiry from said first user about members in said social network who are close by in proximity to a current location of said first user to permit connection through said social network and for exchanging contact information between the users;	You can see profiles of users who match your basic search criteria in the "Discover" section which you can access by tapping the Lumen icon in the navigation bar at the bottom of your screen: ℒ ☆ ◯ 👤 Discover Favorites Messages Profile Profiles are screened by gender, age and distance, which you can adjust in the "filters" section: From there, you can tap on their photo to check out their profile, or tap the yellow "Start a conversation" button to send a message.
the computing device configured to return said inquiry by providing a user profile information of said members, wherein said user profile information comprises attributes comprising any of a	If a particular group member catches your eye, simply tap their profile icon, and you can message them directly or view their profile:

picture, name, and location of a respective member, and wherein said computer device reports to said first user said attributes of all members who are close by in proximity to said current location of said first user;	
the computing device configured to receive information identifying locations of the first user and cross reference with any of a location of said second mobile communications device, and locations of multiple users that are close by in proximity to said current location of said first user;	When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information about your longitude and latitude. That information helps us identify your physical location so that we can display other members who are within a certain distance to you.
the computing device configured to receive a unique device hardware identifier from	Lumen is an APP based on Android or iPhone App. If you have enabled location services, but wish to turn it off, you can do so by the following methods: 1. iPhone app — settings, privacy, location services, Bumble 2. Android — settings, location, Bumble, permissions, location

each mobile communication device from each linked member in said social network to associate and link to a respective member profile to authenticate said respective member as a linked member;	Android platform provide Wi-Fi Aware APIs to sent message to another device, the message includes an identifier. Embedding an identifier in a message implies modifying the message by identifier (for example, as the first couple of bytes).
the computing device configured to determine proximity of the locations of the first and second mobile communication devices and other communication devices of other users to one another and to send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information	send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user Users have 3 days to respond to your first message, and Premium members can extend that window by an additional 24 hours. Your icebreaker must be *at least* 50 characters, which is to encourage a more meaningful start to the conversation than "hey."

with, the first user;	
the computing device configured to provide services between users for personal communication, the personal communication comprising services including one or more of SMS, E-mail, chat/instant messaging, multimedia, voice, or video;	the personal communication comprising services include message From there, you can tap on their photo to check out their profile, or tap the yellow "Start a conversation" button to send a message.

the computing device configured to provide personal attributes comprising any of a picture, name, and location of members in a vicinity of one another to permit connections and exchange of contact information between said members, wherein the first and second users are members of a same social network, and the computing device is operable to disclose social network attributes including a picture, name, and location of first and second users in the vicinity or within a particular distance from one another for the purpose of connecting members.	computing device configured to provide personal attributes comprising any of a picture, name, and location of members To join the Lumen network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your gender, your date of birth, your occupation, your location details and what you're looking for on Lumen. We will also ask you to provide 3 photos and to write at least 200 characters of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other than your gender) at any time by just logging in to Lumen. You can contact Lumen's Customer

164.   Lumen offers the Lumen app per the Google App Store. It is believed that one or more of Bumble Holding, Bumble Trading, or also markets and distributes the Lumen app. Thus, based on information and belief, all are directly infringing the '875 Patent by making, using, selling, offering to sell, or importing the Lumen system.

165.   Lumen also indirectly infringes the '875 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Lumen app in the United States.

166.   Lumen took the above actions intending to cause infringing acts by others.

167.   Lumen also indirectly infringes the '875 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Lumen's app and interacting with the servers associated with Lumen's app. These software components are, for example, the Lumen app, and the download package that contains the Lumen app for interacting with Lumen's servers. Lumen's end-users directly infringed the '875 Patent by, for example, installing and using the Lumen app in the United States to use the Lumen system in the United States and Lumen servers in the United States. These software components are known by Lumen to be especially made or adapted for use in Lumen's infringing system.

168.   Lumen has known these components to be especially made or especially adapted for use in infringement of the '875 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

169.   To the extent that any Lumen's servers are owned or controlled by any other company, includingBadoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, or that company also directly infringes.

170.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '875 Patent by inducing infringement by others, such as Lumen and

Lumen's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Lumen with the technical implantation of the Lumen app, and/or encouraging and instructing end-user customers to install and use the Lumen app in the United States.

171.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '875 in the same ways as described above with respect to Lumen.

172.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '875 Patent by contributing to infringement by others, such as Lumen and Lumen's end-users, by directing, controlling, or assisting Lumen with the technical implantation of the Lumen app, providing within the United States software components for operating Lumen's app and interacting with the servers associated with Lumen's app. These software components are, for example, the Lumen app, and the download package that contains the Lumen app for interacting with Lumen's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Lumen's infringing system.

173.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, have known these components to be especially made or especially adapted for use in infringement of the '875 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

c.   INFRINGEMENT OF THE '267 PATENT

174.   The following chart illustrates how features of Lumen meet the claims of the '267

patent literally or under the Doctrine of Equivalents:

Claim Language	Lumen Evidence
A system comprising:	
a computing device configured to communicate with various mobile and terminal devices to manage introduction and connection of members belonging to a same network by sharing personal attributes between members;	Lumen comprises servers (a computing device) which allow communication between a plurality of members of a social network for any of connecting through said social network. We want you to be able to access Lumen wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by Lumen. We ensure that the data is adequately protected by ensuring that valid, legal
a first mobile communications device communicatively linked to said computing device; and a second mobile communications device communicatively linked to said computing device,	The server communicates with mobile phone Lumen offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users.
wherein said computing device provides access to stored user profile information about a first user and a second user,	the server provides online registration to store personal attribute information

	To join the Lumen network you will have to complete our online registration form, where we may ask you to ==provide us with information about you such as your name, your gender, your date of birth, your occupation, your location details and what you're looking for on Lumen.== We will also ask you ==to provide 3 photos== and to ==write at least 200 characters== of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other than your gender) at any time by just logging in to Lumen. You can contact Lumen's Customer
wherein said computing device is configured to store static locations of members and receive information identifying current dynamic locations of all members in said network, (Column 12, lines 61-65) The vicinity and determination of the pr on either static or dynamic user location. Th is what the user enters during registratic his/her profile, or obtained through API fro network if the user elected to sign up to another social network credentials. The dyn	the server provides online registration to store static locations of members To join the Lumen network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your gender, your date of birth, your occupation, ==your location details== and what you're looking for on Lumen. We will also ask you to provide 3 photos and to write at least 200 characters of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your ==user profile==, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other Lumen receive information identifying current dynamic locations of all members in said network When you use your mobile or the desktop application, we will ==collect information about WiFi access points as well as other location information about your longitude and latitude.== That information helps us ==identify your physical location== so that we can ==display other members who are within a certain distance to you.==
wherein said computing device is configured to calculate and determine a proximity of user locations,	Lumen is an APP based on Android or iPhone App. If you have enabled location services, but wish to turn it off, you can do so by the following methods: 1. iPhone app — settings, privacy, location services, Bumble 2. Android — settings, location, Bumble, permissions, location Lumen can use Wi-fi RTT API to calculate and determine a proximity of user locations You can use the Wi-Fi location functionality provided by the Wi-Fi (/reference/android/net/wifi/rtt/package-summary) to ==measure the dist== Wi-Fi access points and peer Wi-Fi Aware (/guide/topics/connectivity Wi-Fi location: ranging with RTT/Android Developers

wherein said computing device is configured to send to said first user upon inquiring of other members in said network of said first user, personal attributes of all other members based on proximity calculations to select members that said first user may wish to connect with, and to send to said second mobile communication device an invitation on behalf of said first user for said second user to accept connecting with said first user,	send to the second mobile communications device an invitation to connect to said first user or accept personal attribute information, or share personal attribute information with, the first user Users have 3 days to respond to your first message, and Premium members can extend that window by an additional 24 hours. Your icebreaker must be *at least* 50 characters, which is to encourage a more meaningful start to the conversation than "hey."
wherein said computing device is configured to communicatively connect said first user and said second user,	The server communicates with mobile phone Lumen offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users.

wherein said computing device is configured to locate information about said second user from a social network storage file of said second user, and transmit this information to said first mobile communications device, wherein the first user and the second user are members of a same social network, and the computing device is to disclose non-anonymous social network attributes including a picture, name, and location of the first user and the second user in a vicinity or within a predetermined distance from one another for the purpose of connecting members of the same social network based in part on proximity calculations between connecting members,	computing device configured to provide personal attributes comprising any of a picture, name, and location of members To join the Lumen network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your gender, your date of birth, your occupation, your location details and what you're looking for on Lumen. We will also ask you to provide 3 photos and to write at least 200 characters of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other than your gender) at any time by just logging in to Lumen. You can contact Lumen's Customer Lumen receive information identifying current dynamic locations of all members in said network When you use your mobile or the desktop application, we will collect information about WiFi access points as well as other location information about your longitude and latitude. That information helps us identify your physical location so that we can display other members who are within a certain distance to you.

wherein said computing device permits discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by said first user, wherein said computing device permits said discoverable members to have their respective devices unconnected to an internet connection service at said time of the search being conducted by said first user, and wherein any of turned off devices and disconnected devices is discoverable by said computer device as said internet connection service is configured to report said any of turned off devices and disconnected devices as discoverable based on a latest static and dynamic location in proximity to said first user.	If you have enabled location services, but wish to turn them off, you can do so by the following methods: 1. iPhone app — settings, privacy, location services, Lumen 2. Android — settings, location, Lumen, permissions, location

175.   Lumen offers the Lumen app per the Google App Store. It is believed that one or more of Bumble Holding, Bumble Trading, or also markets and distributes the Lumen app. Thus, based on information and belief, all are directly infringing the '267 Patent by making, using, selling, offering to sell, or importing the Lumen system.

176.   Lumen also indirectly infringes the '267 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Lumen app in the United States.

177.   Lumen took the above actions intending to cause infringing acts by others.

178.   Lumen also indirectly infringes the '267 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Lumen's app and interacting with the servers associated with Lumen's app. These software components are, for example, the Lumen app, and the download package that contains the Lumen app for interacting with Lumen's servers. Lumen's end-users directly infringed the '267 Patent by, for example, installing and using the Lumen app in the United States to use the Lumen system in the United States and Lumen servers in the United States. These software components are known by Lumen to be especially made or adapted for use in Lumen's infringing system.

179.   Lumen has known these components to be especially made or especially adapted for use in infringement of the '267 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

180.   To the extent that any Lumen's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, or that company also directly infringes.

181.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '267 Patent by inducing infringement by others, such as Lumen and Lumen's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Lumen with the technical implantation of the Lumen app, and/or encouraging and instructing end-user customers to install and use the Lumen app in the United States.

182.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '267 in the same ways as described above with respect to Lumen.

183.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '267 Patent by contributing to infringement by others, such as Lumen and Lumen's end-users, by directing, controlling, or assisting Lumen with the technical implantation of the Lumen app, providing within the United States software components for operating Lumen's app and interacting with the servers associated with Lumen's app. These software components are, for example, the Lumen app, and the download package that contains the Lumen app for interacting with Lumen's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Lumen's infringing system.
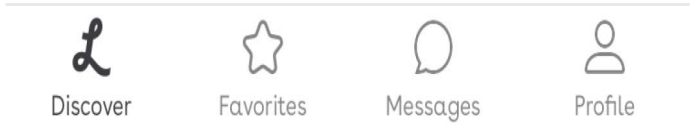
184.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, have known these components to be especially made or especially adapted for use in infringement of the '267 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

d. INFRINGEMENT OF THE '397 PATENT

185.   The following chart illustrates how features of Lumen meet the claims of the '397 patent literally or under the Doctrine of Equivalents:

Claim Language	Bumble Evidence
A server configured to communicate with a first communication device of a first user and a second communication device of a second user over communication links comprising a cellular network, wherein the server comprises a processor configured to:	Lumen comprises servers (a computing device) which allow communication between a plurality of members of a social network for any of connecting through said social network. We want you to be able to access Lumen wherever you happen to be in the world. To enable us to provide that service, we operate a global network of servers including in the US, Hong Kong, Czech Republic and Russia. The hardware is located in third-party data centres but is owned by Lumen. We ensure that the data is adequately protected by ensuring that valid, legal The server communicates with mobile phone Lumen offers you the opportunity to stay in touch with the friends and contacts you've made no matter where you are. You can do this by using your mobile phone or by downloading an application to your desktop that allows you to share your location with other users.
store in a data storage device a first profile associated with the first user and a second profile associated with a second user, both the first and the second profile comprises at least a picture and a name of their respective users thereby automatically	the server provides online registration to store personal attribute information To join the Lumen network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your gender, your date of birth, your occupation, your location details and what you're looking for on Lumen. We will also ask you to provide 3 photos and to write at least 200 characters of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other than your gender) at any time by just logging in to Lumen. You can contact Lumen's Customer

eliminating anonymous communication of the first profile and the second profile between member devices without intervention by the first user or the second user;	
associate each member profile with a unique hardware identification associated with the member devices; identify a unique ID of a second member in the vicinity and spatial proximity of a first member and provide the first member with the profile of the second member comprising a picture and name to facilitate a connection between both members;	Lumen user has a Lumen account For safety and security and to ensure you have the best possible user experience, we require users to verify their accounts and might ask for your phone number. We want to make sure you Lumen is an APP based on Android or iPhone App. If you have enabled location services, but wish to turn it off, you can do so by the following methods: 1. iPhone app — settings, privacy, location services, Bumble 2. Android — settings, location, Bumble, permissions, location a unique hardware identification associated with Lumen account in Android Determine if AccountManager is for you Applications typically try to remember the user using one of three techniques: 1. Ask the user to type in a username. 2. Retrieve a unique device ID to remember the device. 3. Retrieve a built-in account from AccountManager (/reference/android/accounts/AccountManager).

	You can see profiles of users who match your basic search criteria in the "Discover" section, which you can access by tapping the Lumen icon in the navigation bar at the bottom of your screen: Discover Favorites Messages Profile Profiles are screened by gender, age and distance, which you can adjust in the "filters" section:
send the second member the profile of the first member including the picture and name upon the first member initiating an invite to the second member to connect over a networking service; inform the first member if the second member has accepted or rejected the invite to connect initiated by the first member; and once the second member accepts the invite of the	Users have 3 days to respond to your first message, and Premium members can extend that window by an additional 24 hours. Your icebreaker must be *at least* 50 characters, which is to encourage a more meaningful start to the conversation than "hey." computing device configured to provide personal attributes comprising any of a picture, name, and location of members To join the Lumen network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your gender, your date of birth, your occupation, your location details and what you're looking for on Lumen. We will also ask you to provide 3 photos and to write at least 200 characters of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other than your gender) at any time by just logging in to Lumen. You can contact Lumen's Customer

first member, store the connectivity between both members in the data storage device and facilitate a chat feature between them using respective devices connected to the server,	
wherein the first user and the second user are members of a same social network, and the processor is to disclose non-anonymous social network attributes including a picture, name, and location of the first user and the second user in a vicinity or within a predetermined distance from one another for the purpose of connecting members of the same social network based in part on proximity	To join the Lumen network you will have to complete our online registration form, where we may ask you to provide us with information about you such as your name, your gender, your date of birth, your occupation, your location details and what you're looking for on Lumen. We will also ask you to provide 3 photos and to write at least 200 characters of text about yourself. You have the opportunity to provide other details about yourself, but these are optional. Because you control your user profile, these details are available to you at any time by accessing your "Profile" page, which gives you the chance to correct or update your information (other than your gender) at any time by just logging in to Lumen. You can contact Lumen's Customer

calculations between connecting members,	
wherein the server permits discoverable members to have their respective devices turned on or turned off at a time of a search being conducted by the first user, wherein the server permits the discoverable members to have their respective devices unconnected to an internet connection service at the time of the search being conducted by the first user and wherein any of turned off devices and disconnected devices is discoverable by the server as the internet connection service is configured to report the any of turned off	If you have enabled location services, but wish to turn them off, you can do so by the following methods: 1. iPhone app — settings, privacy, location services, Lumen 2. Android — settings, location, Lumen, permissions, location

devices and disconnected devices as discoverable based on a latest static and dynamic location in proximity to the first user.	

186.   Lumen offers the Lumen app per the Google App Store. It is believed that one or more of Bumble Holding, Bumble Trading, or also markets and distributes the Lumen app. Thus, based on information and belief, all are directly infringing the '397 Patent by making, using, selling, offering to sell, or importing the Lumen system.

187.   Lumen also indirectly infringes the '397 Patent by inducing infringement by others, such as end-user customers, by for example encouraging and instructing end-user customers to install and use the Lumen app in the United States.

188.   Lumen took the above actions intending to cause infringing acts by others.

189.   Lumen also indirectly infringes the '397 Patent by contributing to infringement by others, such as end-users, by providing within the United States software components for operating Lumen's app and interacting with the servers associated with Lumen's app. These software

components are, for example, the Lumen app, and the download package that contains the Lumen app for interacting with Lumen's servers. Lumen's end-users directly infringed the '397 Patent by, for example, installing and using the Lumen app in the United States to use the Lumen system in the United States and Lumen servers in the United States. These software components are known by Lumen to be especially made or adapted for use in Lumen's infringing system.

190.   Lumen has known these components to be especially made or especially adapted for use in infringement of the '397 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

191.   To the extent that any Lumen's servers are owned or controlled by any other company, including Badoo Trading, Badoo Limited, Badoo Technologies Limited, Badoo Software Limited, or that company also directly infringes.

192.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software, also indirectly infringe the '397 Patent by inducing infringement by others, such as Lumen and Lumen's end-user customers, by, for example, encouraging, instructing, directing, controlling, and/or assisting Lumen with the technical implantation of the Lumen app, and/or encouraging and instructing end-user customers to install and use the Lumen app in the United States.

193.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software took the above actions intending to cause infringing acts by others. Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software were aware of the '397 in the same ways as described above with respect to Lumen.

194.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software also indirectly infringe the '397 Patent by contributing to infringement by others, such as Lumen and Lumen's end-users, by directing, controlling, or assisting Lumen with the technical implantation

of the Lumen app, providing within the United States software components for operating Lumen's app and interacting with the servers associated with Lumen's app. These software components are, for example, the Lumen app, and the download package that contains the Lumen app for interacting with Lumen's servers. These software components are known by Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software to be especially made or adapted for use in Lumen's infringing system.

195.   Badoo Trading, Badoo Limited, Badoo Technologies, and Badoo Software have known these components to be especially made or especially adapted for use in infringement of the '397 patent and that these components are not a staple article or commodity of commerce suitable for substantial non-infringing use.

IX.   PRAYERS FOR RELIEF

WHEREFORE Plaintiff respectfully requests that this Court:

i.   Enter judgment that Defendants have infringed the '024, '875, '267, and '397 patents;

ii.   Award Plaintiff damages in an amount sufficient to compensate Plaintiff for Defendant's infringement of the '024, '875, '267, and '397 patents, in an amount no less than a reasonable royalty and lost profits, together with prejudgment and post-judgment interest and costs under 35 U.S.C. § 284;

iii.   Award Plaintiff an accounting for acts of infringement not presented at trial and an award by the Court of additional damage for any such acts of infringement;

iv.   Declare this case to be "exceptional" under 35 U.S.C. § 285 and award Plaintiff its attorneys' fees, expenses, and costs incurred in this action;

v. Declare Defendants' infringement of the '024, '875, '267, and '397 patents to be willful and award treble damages, including attorneys' fees, expenses, and costs incurred in this action and an increase in the damage award pursuant to 35 U.S.C. § 284;

vi. Enter a preliminary and permanent injunction against Defendants to cease all infringing activity; and,

vii. Award Plaintiff such other and further relief as this Court deems just and proper.

X.   JURY DEMAND

Plaintiff hereby requests a trial by jury on issues so triable by right.

Respectfully submitted,

Ramey & Schwaller, LLP

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Attorneys for Wireless Devices LLC

CERTIFICATE OF CONFERENCE

The undersigned hereby certifies that on January 8, 2021, Counsel for Plaintiff notified Counsel for Defendants that Plaintiff was filing a First Amended Complaint. Defendants' counsel was unopposed.

/s/William P. Ramey, III
William P. Ramey, III

CERTIFICATE OF SERVICE

The undersigned hereby certifies that January 11, 2021, the foregoing document was served on all counsel of record who have consented to electronic service via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/William P. Ramey, III
William P. Ramey, III