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Klesper et al.

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(54) **DYNAMIC ACCESS MODE DETERMINATION FOR EMERGENCY SERVICE CALLS**

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(22) Filed: **May 16, 2006**

(51) **Int. Cl.**
H04M 11/04 (2006.01)
H04M 1/00 (2006.01)
H04W 72/00 (2009.01)

(52) **U.S. Cl.** **455/404.1**; 455/521; 455/450; 379/37

(58) **Field of Classification Search** 455/404.1, 455/450, 521; 379/37–51
See application file for complete search history.

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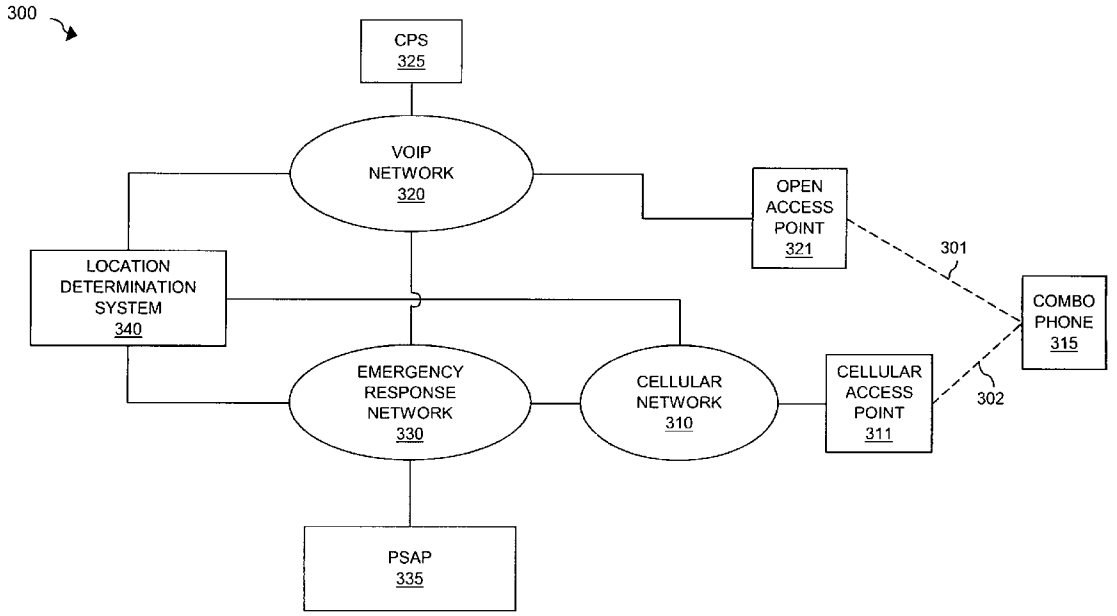
Primary Examiner — Erika Gary
Assistant Examiner — Michael Mapa

(57) **ABSTRACT**

A call system comprising an interface system configured to receive a call request, and a processing system coupled to the interface system and configured operate in a current mode of a plurality of modes, to determine if the call is for an emergency service while in the current mode, if the call is for the emergency service determine a preferred mode for the call from a one of the plurality of modes, and initiate the call in the preferred mode.

22 Claims, 6 Drawing Sheets



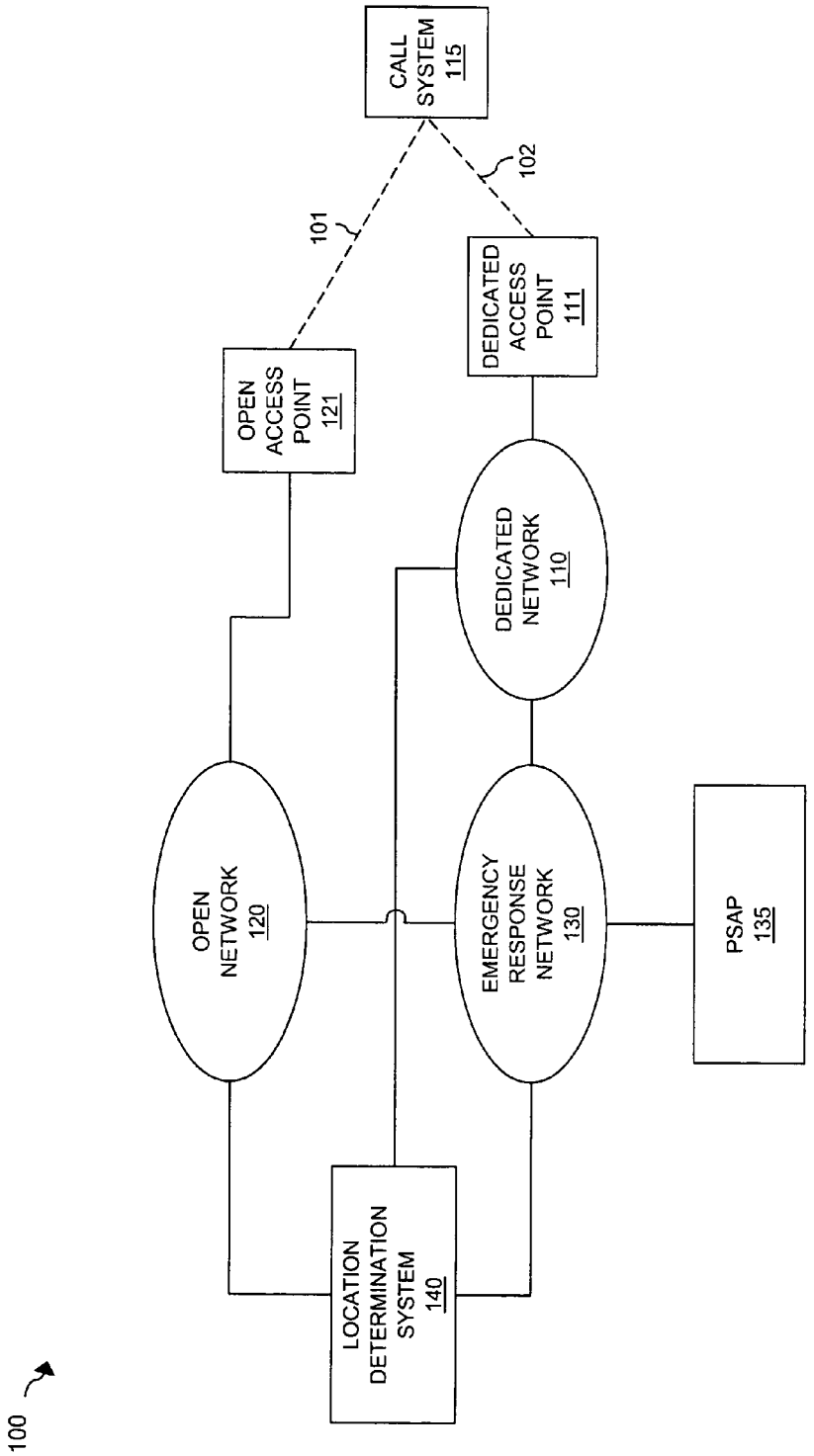

100
OPEN NETWORK 120
LOCATION DETERMINATION SYSTEM 140
OPEN ACCESS POINT 121
101
CALL SYSTEM 115
102
DEDICATED ACCESS POINT 111
DEDICATED NETWORK 110
EMERGENCY RESPONSE NETWORK 130
PSAP 135

FIG. 1

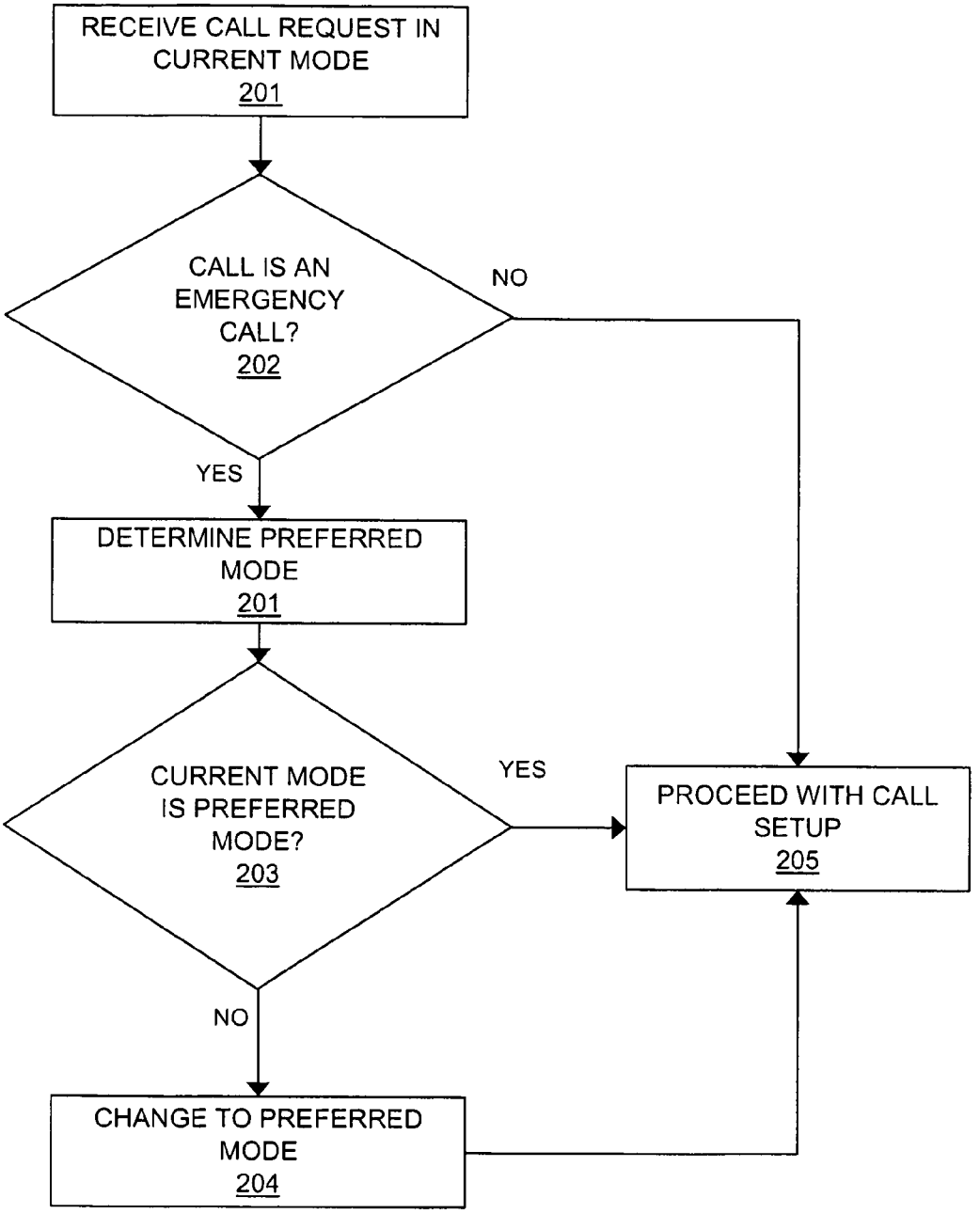

RECEIVE CALL REQUEST IN CURRENT MODE
201
CALL IS AN EMERGENCY CALL?
202
NO
YES
DETERMINE PREFERRED MODE
201
CURRENT MODE IS PREFERRED MODE?
203
YES
PROCEED WITH CALL SETUP
205
NO
CHANGE TO PREFERRED MODE
204

FIG. 2

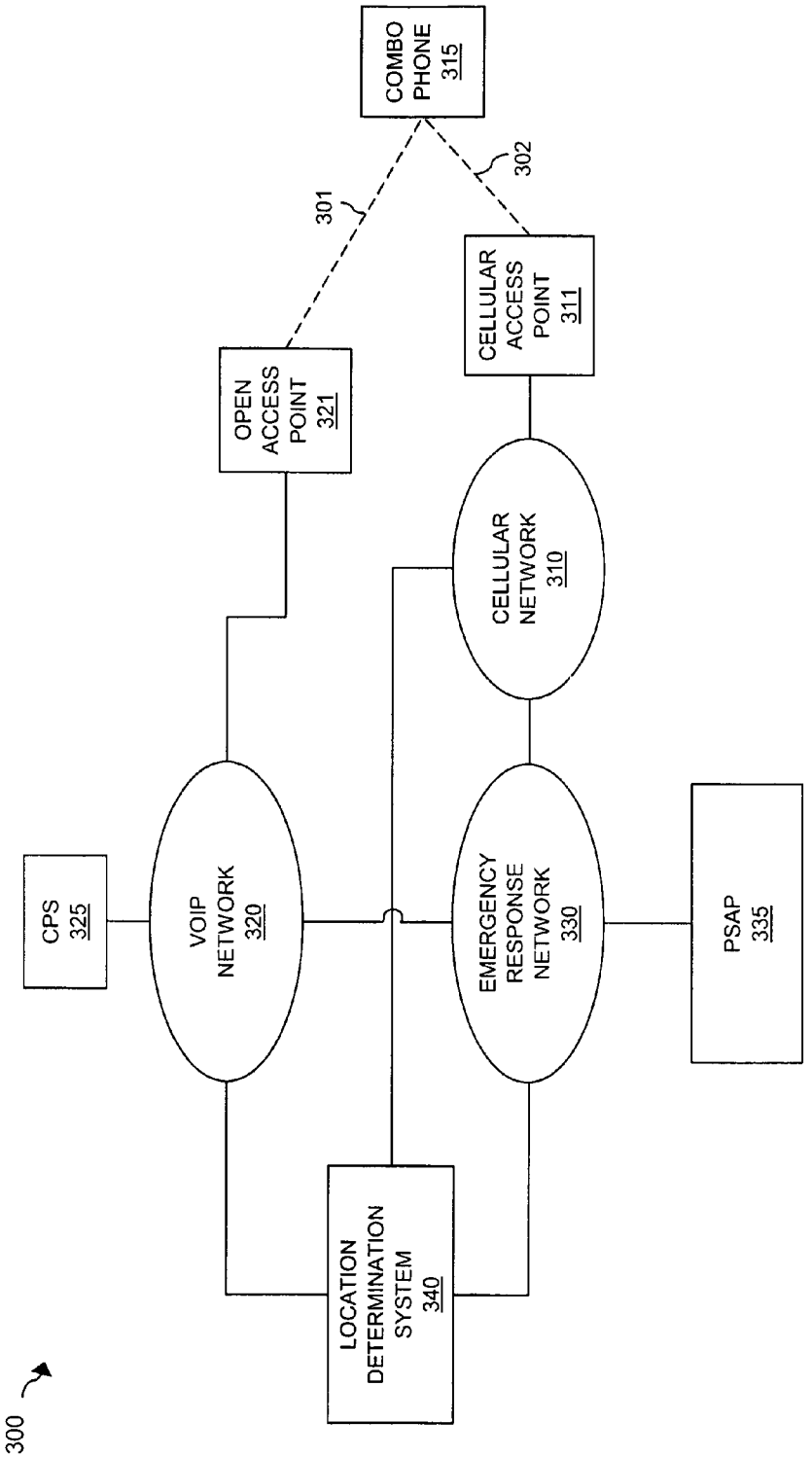

300
CPS
325
VOIP
NETWORK
320
OPEN
ACCESS
POINT
321
301
COMBO
PHONE
315
302
CELLULAR
ACCESS
POINT
311
CELLULAR
NETWORK
310
LOCATION
DETERMINATION
SYSTEM
340
EMERGENCY
RESPONSE
NETWORK
330
PSAP
335

FIG. 3

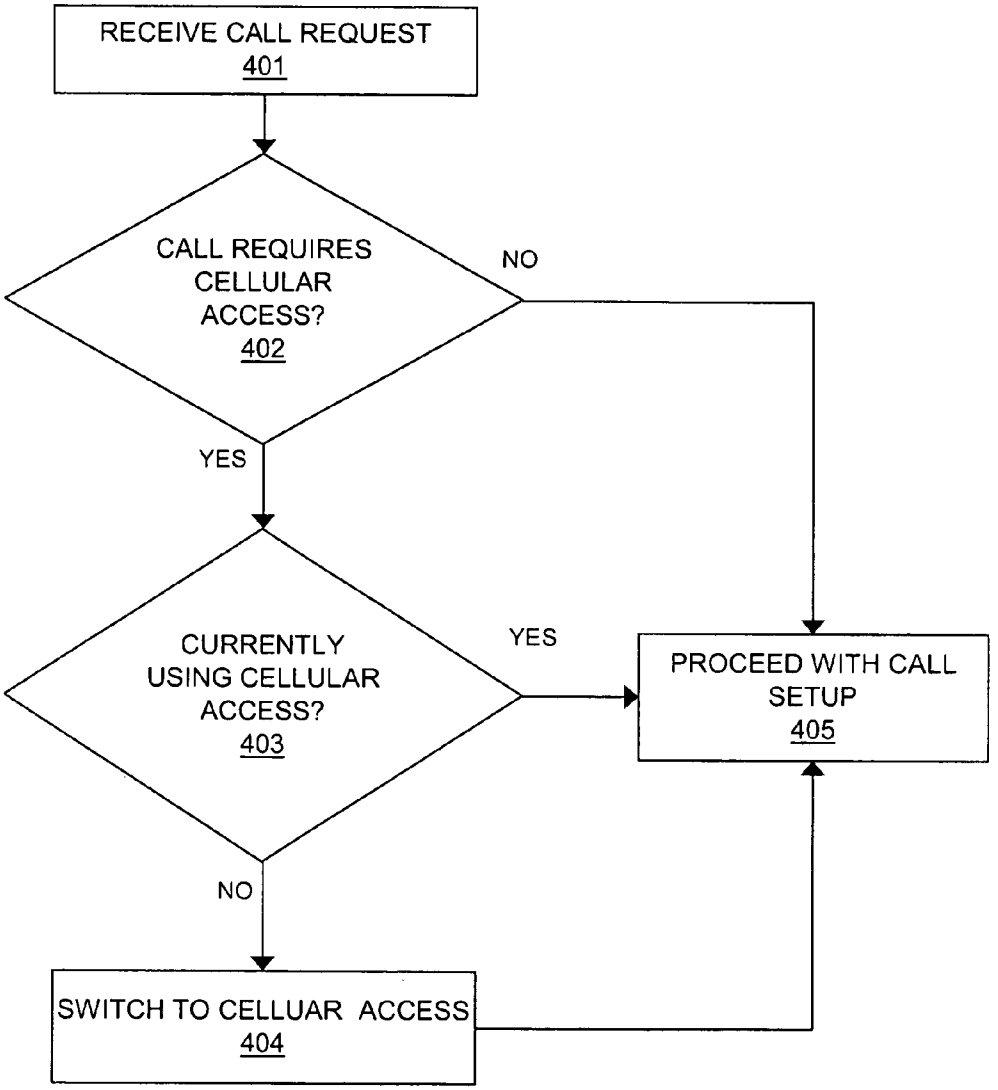

RECEIVE CALL REQUEST
401
CALL REQUIRES CELLULAR ACCESS?
402
NO
YES
CURRENTLY USING CELLULAR ACCESS?
403
YES
PROCEED WITH CALL SETUP
405
NO
SWITCH TO CELLUAR ACCESS
404

FIG. 4

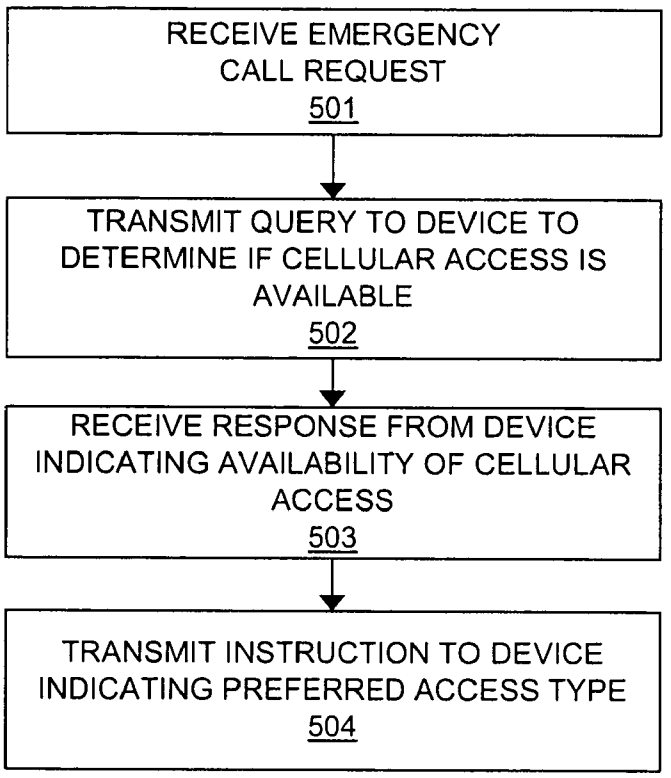

RECEIVE EMERGENCY CALL REQUEST
501
TRANSMIT QUERY TO DEVICE TO DETERMINE IF CELLULAR ACCESS IS AVAILABLE
502
RECEIVE RESPONSE FROM DEVICE INDICATING AVAILABILITY OF CELLULAR ACCESS
503
TRANSMIT INSTRUCTION TO DEVICE INDICATING PREFERRED ACCESS TYPE
504

FIG. 5

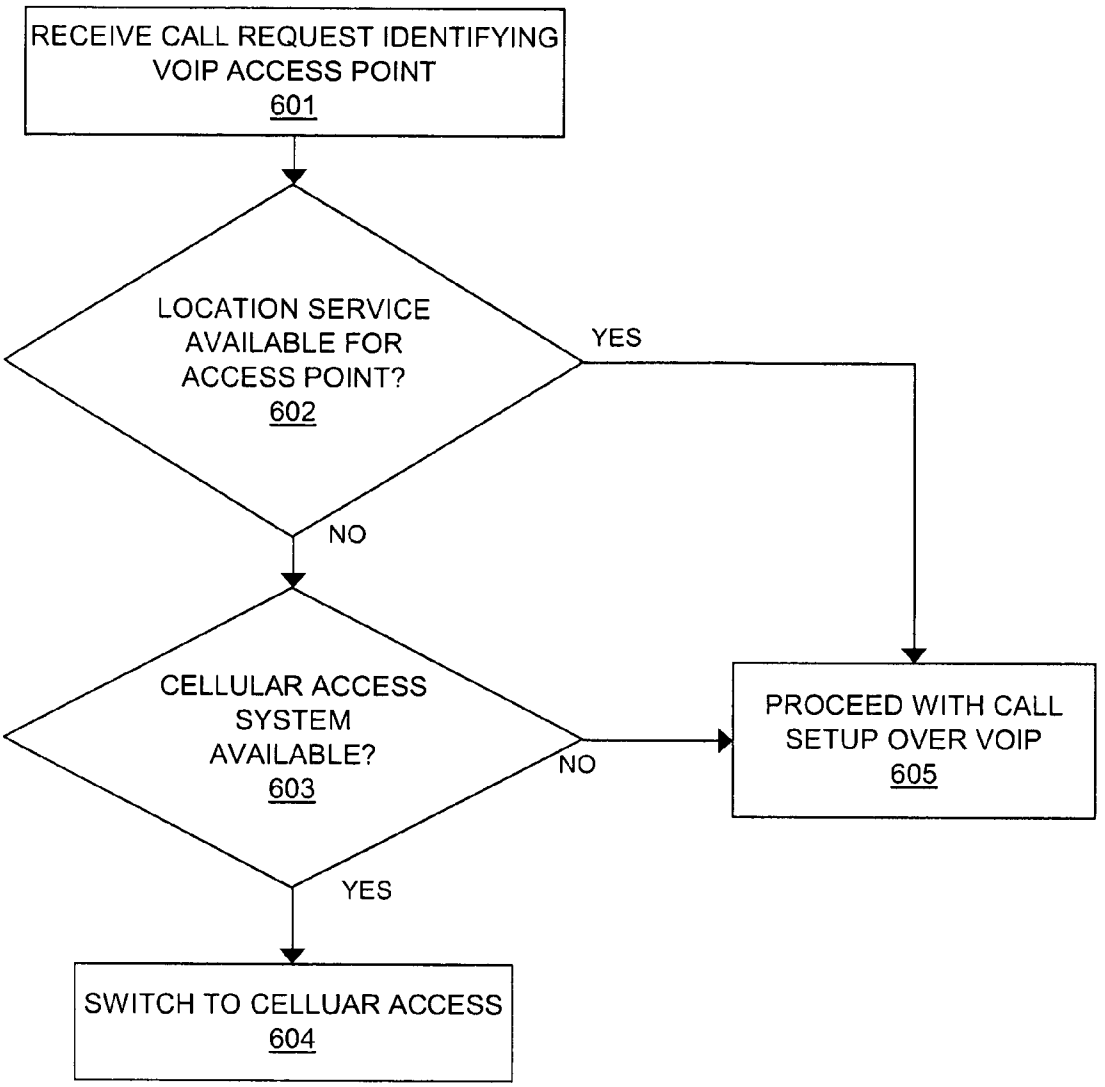

RECEIVE CALL REQUEST IDENTIFYING VOIP ACCESS POINT
601
LOCATION SERVICE AVAILABLE FOR ACCESS POINT?
602
YES
NO
CELLULAR ACCESS SYSTEM AVAILABLE?
603
NO
YES
PROCEED WITH CALL SETUP OVER VOIP
605
SWITCH TO CELLUAR ACCESS
604

FIG. 6

DYNAMIC ACCESS MODE DETERMINATION FOR EMERGENCY SERVICE CALLS

RELATED APPLICATIONS

Not applicable

FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable

MICROFICHE APPENDIX

Not applicable

BACKGROUND OF THE INVENTION

1. Field of the Invention

The invention is related to telecommunication technologies, and in particular, to emergency service call handling and provisioning technologies.

2. Description of the Prior Art

In the past, wireless telecommunication services were commonly provided over dedicated access systems, such as TDMA, CDMA, and GSM networks. Over time, robust emergency service capabilities were integrated into the aforementioned dedicated access systems. For instance, when an end user dials 911 using a wireless handset, the user can be reliably connected through a dedicated access system to a public service answering point (PSAP). Other emergency services, such as call back number provisioning and location determination services, are also provided to users communicating over dedicated access systems.

Recently, telecommunication carriers and providers have begun to offer services over open access systems, such as WiFi and WiMax. Open access systems are typically designed for general purpose data access. For example, users often times gain Internet connectivity via WiFi access. Users can then utilize applications that run on top of the data or network connection. Thus, a voice application such as Voice over Internet Protocol (VoIP) calling is just one application among many that run over open access systems.

In contrast, dedicated access systems are designed primarily for voice communication services. Although many dedicated access systems now support data services, voice service remains the main focus of most dedicated access systems. As a result, voice service provided over dedicated access systems is generally more reliable and of a higher quality than voice service provided over open access systems.

In another recent development, telecommunication service providers have begun to offer dual-mode handsets that are capable of accessing voice services over both dedicated access systems and open access systems. For example, a dual-mode handset can be configured to communicate with a CDMA network when outside the home, yet switch to communicating with a WiFi network when inside the home.

One drawback to current dual-mode access capabilities is that many service providers lack the ability to provide robust emergency call services to users placing emergency calls over open access systems. For example, location determination services and call back number provisioning for calls over open access systems are less reliable than for calls placed over dedicated access systems. While many handsets contain global positioning functionality, users oftentimes turn-off such features. In addition, the general call quality and reliability of open access calls are less than those placed over dedicated

access systems. Due to the fact that a large number of emergency service calls are placed from within a home or enterprise, it is crucial that dual-mode handset users have access to high quality and highly reliable emergency call services.

SUMMARY OF THE INVENTION

An embodiment of the invention helps solve the above problems and other problems by providing a call system and method capable of determining a preferred mode of access or operation for an emergency service call prior to initiating the call when multiple modes could be available for the call. In such a manner, the best mode of access or operation can be provided for the call, rather than relegating a call to substandard service due to a default or current operating mode. As a result, emergency services, such as location determination capabilities, are improved.

In an embodiment of the invention, a call system comprises an interface system configured to receive a call request and a processing system coupled to the interface system and configured operate in a current mode of a plurality of modes, to determine if the call is for an emergency service while in the current mode, if the call is for the emergency service determine a preferred mode for the call from a one of the plurality of modes, and initiate the call in the preferred mode.

In an embodiment of the invention, the processing system is configured to change the current mode to the preferred mode if the current mode is not the preferred mode.

In an embodiment of the invention, the processing system is configured to determine the preferred mode based on whether location services are available for the call in the current mode.

In an embodiment of the invention, the processing system is configured to determine if the preferred mode is available and wherein the processing system is configured to remain in the current mode and initiate the call in the current mode if the preferred mode is not available.

In an embodiment of the invention, the emergency service comprises 911 service.

In an embodiment of the invention, the plurality of modes comprises an open access mode and a dedicated access mode.

In an embodiment of the invention, the open access mode comprises a Wi-fi mode.

In an embodiment of the invention, the dedicated access mode comprises a cellular access mode.

In an embodiment of the invention, the cellular access mode comprises a code division multiple access (CDMA) mode.

In an embodiment of the invention, the cellular access mode comprises a global service mobile (GSM) access mode.

In an embodiment of the invention, a method of operating a call system comprises receiving a call request in a current mode of a plurality of modes, determining if the call is for an emergency service while in the current mode, if the call is for the emergency service determining a preferred mode for the call from a one of the plurality of modes; and initiating the call in the preferred mode.

BRIEF DESCRIPTION OF THE DRAWINGS

The same reference number represents the same element on all drawings.

FIG. **1** illustrates a communication network in an embodiment of the invention.

FIG. **2** illustrates the operation of a call system in an embodiment of the invention.

FIG. **3** illustrates a communication network in an embodiment of the invention.

FIG. **4** illustrates the operation of a call system in an embodiment of the invention.

FIG. **5** illustrates the operation of a call processing system in an embodiment of the invention.

FIG. **6** illustrates the operation of a call processing system in an embodiment of the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

FIGS. **1-6** and the following description depict specific embodiments of the invention to teach those skilled in the art how to make and use the best mode of the invention. For the purpose of teaching inventive principles, some conventional aspects have been simplified or omitted. Those skilled in the art will appreciate variations from these embodiments that fall within the scope of the invention. Those skilled in the art will appreciate that the features described below can be combined in various ways to form multiple embodiments of the invention. As a result, the invention is not limited to the specific embodiments described below, but only by the claims and their equivalents.

FIG. **1** illustrates communication network **100** in an embodiment of the invention. Communication network **100** includes call system **115** in communication with open access point **121** over open access link **101**. Call system **115** is also in communication with dedicated access point **111** over dedicated access link **102**. Access links **101** and **102** could be wireless links. Open access point **121** is operatively coupled to open network **120**. Dedicated access point **111** is operatively coupled to dedicated network **110**. Open network **120** is operatively coupled to emergency response network **130** and location determination system **140**. Similarly, dedicated network **110** is operatively coupled to emergency response network **130** and location determination system **140**. Emergency response network **130** is operatively coupled to public safety answering point (PSAP) **135** and location determination system **140**.

Call system **115** could be any system or collection of systems capable operating in multiple modes. In an open access mode, call system **115** could be capable of placing voice calls over open network **120**. In a dedicated access mode, call system **115** could be capable of placing calls over dedicated network **110**. Open access point **121** could be any access system capable of interfacing between call system **115** and open network **120**. Dedicated access point **111** could be any access system capable of interfacing between call system **115** and dedicated network **110**. Call system **115** could include an interface system for receiving user inputs, as well as for interfacing with open access point **121** and dedicated access point **111**. Call system **115** could also include a processing system capable of performing call processing functions. It should be appreciated that call systems are well known in the art.

Open network **120** could be any service network capable of providing call services to call system **115** through open access point **121**. In addition, open network **120** could be any service network capable of terminating emergency service calls from call system **115** to emergency response network **130**. Open network **120** could also be capable of interfacing with location determination system **140** to provide the geographic location of call system **115** to emergency response network **130**, an in turn, PSAP **135**. It should be understood that open network **120** and dedicated network **110** could operate separately to terminate emergency service calls to emergency response network **130**. However, open network **120** and dedicated network **110** could operate in a tandem or cooperative manner to handle emergency service calls.

Likewise, dedicated network **110** could be any network capable of providing call services to call system **115** through dedicated access point **111**. In addition, dedicated network **110** could be capable of terminating emergency service calls from call system **115** to emergency response network **130**. Dedicated network **110** could also be capable of interfacing with location determination system **140** to determine and provide the geographic location of call system **115** to emergency response network **130** and PSAP **135**.

Emergency response network **130** could be any network or collection of networks capable of interfacing with open network **120** and dedicated network **110** to terminate emergency service calls to PSAP **135**. In addition, emergency response network **130** could be capable of interfacing with location determination system **140** to provide the geographic location of call system **115** to PSAP **135**. Location determination system **140** could be any system or collection of systems capable of determining the geographic location of a call.

FIG. **2** illustrates the operation of call system **115** in an embodiment of the invention. To begin, call system **115** receives a call request for a call while operating in a current mode of either the open access mode or the dedicated access mode (Step **201**). The call request could be, for example, a user input. Examples of user inputs include dialed numbers, graphic selections, quick buttons, or the like.

Continuing with FIG. **2**, call system **115** processes the call request to determine if the call is an emergency service call (Step **202**). Whether a call is an emergency service call could be indicated in the call request, such as by a digit string. An example is 911. An emergency service could also be indicated by other dialed numbers, such as a 7 or 10 digit dialing code, as well as by graphic selections, quick buttons, or the like.

If the call is an emergency service call, call system **115** determines the preferred mode for the call (Step **201**). For instance, the preferred mode could be either the open access mode or the dedicated access mode.

Next, call system **115** determines if the current mode is the same mode as the preferred mode (Step **203**). If so, call system **115** proceeds with call setup for the call while operating in the current mode (Step **205**), including initiating the call to either open network **120** or dedicated network **110**. If the current mode is not the same mode as the preferred mode, call system **115** changes the current mode of operation to the preferred mode (Step **204**) and then initiates the call in the preferred mode (Step **205**).

Once the call has been initiated from call system **115**, either open network **120** or dedicated network **110** routes the call to emergency response network **130**. It should also be understood that open network **120** or dedicated network **110** communicates with location determination system **140** to provide the geographic location of call system **115** to emergency response network **130**. In response, emergency response network **130** selects the appropriate PSAP for the call, which in this example is illustrated as PSAP **135**, and routes the all to the selected PSAP. In addition, geographic location information is provided to PSAP **135** for call system **115**. It should be understood that the geographic location information could be a key used by PSAP **135** to query location determination system **140** for the actual geographic information for a particular call. Other variations of providing location information to PSAP **135** are possible.

Advantageously, communication network **100** provides for a call system determining a preferred access mode of operation for an emergency service call, rather than placing the call

over in a default of current mode when the current mode could be deficient. In this manner, user can enjoy high quality emergency call services, such as location determination services, without the burden of manually changing the mode of operation of a call system.

FIG. **3** illustrates communication network **300** in an embodiment of the invention. Communication network **300** includes combo phone **315** in communication with open access point **321** over open access link **301**. Combo phone **315** is also in communication with cellular access point **311** over cellular access link **302**. Access links **301** and **302** could be wireless links. Open access point **321** is operatively coupled to Voice Over Internet Protocol (VOIP) network **320**, which includes call processing system (CPS) **325**. Open access point **321** could be, for example, a WiFi or WiMax access point, as well as other types of open access points. Cellular access point **311** is operatively coupled to cellular network **310**. VOIP network **320** is operatively coupled to emergency response network **330** and location determination system **340**. Similarly, cellular network **310** is operatively coupled to emergency response network **330** and location determination system **340**. Emergency response network **330** is operatively coupled to public safety answering point (PSAP) **335** and location determination system **340**.

Combo phone **315** could be any system or collection of systems capable operating in multiple modes. In an open access mode, combo phone **315** could be capable of placing voice calls over VOIP network **320**. In a cellular access mode, combo phone **315** could be capable of placing calls over cellular network **310**. Open access point **321** could be any access system capable of interfacing between combo phone **315** and VOIP network **320**. In an example, open access point **321** could comprise a Wi-Fi base station or modem or a Wi-Max base station transceiver. Link **301** could comprise a Wi-Fi or Wi-Max wireless link. Cellular access point **311** could be any access system capable of interfacing between combo phone **315** and cellular network **310**. In an example, cellular access point **311** could be a cellular base station or tower. In another example, link **302** could comprise a code division multiple access (CDMA) link or a general service mobile (GSM) link, as well as other types of links. Combo phone **315** could also be referred to as a dual mode phone, handset, subscriber terminal, communication device, or the like. Combo phone **315** could include an interface system for receiving user inputs, as well as for interfacing with open access point **321** and cellular access point **311**. Combo phone **315** could also include a processing system capable of executing software to operate as described or FIGS. **4-6** below. It should be appreciated that the processing system could be implemented general purpose hardware, firmware, or specialized circuitry. It should also be appreciated that combo phones, as well as other types of call systems, are well known in the art.

VOIP network **320** could be any service network capable of providing call services to combo phone **315** through open access point **321**. In addition, VOIP network **320** could be any service network capable of terminating emergency service calls from combo phone **315** to emergency response network **330**. VOIP network **320** could also be capable of interfacing with location determination system **340** to provide the geographic location of combo phone **315** to emergency response network **330**, an in turn, PSAP **335**. CPS **325** could be any system or collection of systems capable of providing call processing for calls in VOIP network **320**. For example, CPS **325** could provide call origination, termination, or forwarding services. Other services include call discrimination functions. In an example, CPS **325** could comprise a session initiation protocol (SIP) server or H.323 server.

Likewise, cellular network **310** could be any network capable of providing call services to combo phone **315** through cellular access point **311**. In addition, cellular network **310** could be capable of terminating emergency service calls from combo phone **315** to emergency response network **330**. Cellular network **310** could also be capable of interfacing with location determination system **340** to determine and provide the geographic location of combo phone **315** to emergency response network **330** and PSAP **335**.

It should be understood that VOIP network **320** and cellular network **310** could operate separately to terminate emergency service calls to emergency response network **330**. However, VOIP network **320** and cellular network **310** could operate in a tandem or cooperative manner to handle emergency service calls.

Emergency response network **330** could be any network or collection of networks capable of interfacing with VOIP network **320** and cellular network **310** to terminate emergency service calls to PSAP **335**. In addition, emergency response network **330** could be capable of interfacing with location determination system **340** to provide the geographic location of combo phone **315** to PSAP **335**. Location determination system **340** could be any system or collection of systems capable of determining the geographic location of a call.

FIG. **4** illustrates the operation of combo phone **315** in an embodiment of the invention. To begin, combo phone **315** receives a call request for a call while operating in a current mode of either the open access mode or the cellular access mode (Step **401**). The call request could be, for example, a user input. Examples of user inputs include dialed numbers, graphic selections, quick buttons, or the like.

Continuing with FIG. **4**, combo phone **315** processes the call request to determine if the call is an emergency service call and requires cellular access (Step **402**). Whether a call is an emergency service call could be indicated in the call request, such as by a digit string. An example is 911. An emergency service could also be indicated by other dialed numbers, such as a 7 or 10 digit dialing code, as well as by graphic selections, quick buttons, or the like.

If the call is an emergency service call, combo phone **315** determines whether or not the current mode is the cellular access mode (Step **403**). If the current mode is cellular, combo phone **315** proceeds with call setup for the call while operating in the cellular mode (Step **405**), including initiating the call to cellular network **310**. If the current mode is not the cellular mode, combo phone **315** changes the current mode of operation to the cellular mode (Step **404**) and then initiates the call in the cellular mode (Step **405**).

Once the call has been initiated from combo phone **315**, cellular network **310** routes the call to emergency response network **330**. Cellular network **310** communicates with location determination system **340** to provide the geographic location of combo phone **315** to emergency response network **330**. In response, emergency response network **330** selects the appropriate PSAP for the call, which in this example is illustrated as PSAP **335**, and routes the all to the selected PSAP. In addition, geographic location information is provided to PSAP **335** for combo phone **315**. It should be understood that the geographic location information could be a key used by PSAP **335** to query location determination system **340** for the actual geographic information for a particular call. Other variations of providing location information to PSAP **335** are possible.

FIG. **5** illustrates the operation of a CPS **325** in an embodiment of the invention. In this embodiment, it is assumed that

the current mode of combo phone **315** is an open access mode and it is also assumed that combo phone **315** interfaces with VOIP network **320** and CPS **325** to establish voice calls. It should be understood that combo phone **315** communications with VOIP network **320** and CPS **325** over open access point **321**.

In this embodiment, CPS **325** receives a call request from combo phone **315** (Step **501**). The call request could indicate a service, such as by a digit string, phone number, or other such identifier. The call request could be, for example, a SIP INVITE message. CPS **325** processes the call request to determine whether or not the call is for an emergency service. If the call is for an emergency service, such as 911, CPS **325** transmits a query to combo phone **315** requesting information regarding the availability of cellular access (Step **502**). Combo phone **315** responsively determines whether or not cellular access is presently available and returns a response indicating the result, which is received by CPS **325** (Step **503**). Based upon the result, CPS **325** determines a preferred access mode for the emergency service call and transmits a response to combo phone **315** indicating the preferred mode (Step **504**).

It should be appreciated that, if cellular access is not available at the time of the call, CPS **325** could instruct combo phone **315** to remain in the open access mode for the call. Alternatively, if cellular access is available for the call, CPS **325** could instruct combo phone **315** to switch to the cellular access. In such a case, CPS **325** could initiate a call hand-off to cellular network **310** in the event that an initial call leg has already been established to VOIP network **320**. Optionally, CPS **325** could instruct combo phone **315** to end the current call session and initiate a new emergency service call to cellular network **310**. In a further option, CPS **325** could query a device in cellular network **310** or emergency response network **330** to confirm whether or not the new emergency service call is eventually initiated and established. In a successful case CPS **325** could continue normal operations without modification. In an unsuccessful case whereby the new emergency service call fails to be initiated or established, CPS **325** could itself initiate a call-back to combo phone **315**. Upon establishing the first call-back call leg through VOIP network **320** to combo phone **315**, CPS **325** establish a second call leg from VOIP network **320** to emergency response network **330**, and in turn, to PSAP **335**.

FIG. **6** illustrates the operation of CPS **325** in an embodiment. In this embodiment, it is assumed that the current mode of combo phone **315** is an open access mode or VOIP mode and that combo phone **315** interfaces with VOIP network **320** and CPS **325** to establish voice calls. It should be understood that combo phone **315** communications with VOIP network **320** and CPS **325** over open access point **321**.

Turning to FIG. **6**, CPS **325** receives a call request, such as a SIP INVITE message, from combo phone **315** (Step **601**). In this embodiment, the call request identifies open access point **321**. It should be understood that multiple access points could exist, and therefore the call request could uniquely identify open access point **321**. It should further be understood that combo phone **315** could move or roam between multiple access points, and therefore CPS **325** could determine the present access point dynamically at the time of the call. Open access point **321** could be identified by a label, a network address, a media access control (MAC) address, or the like.

CPS **325** responsively processes the identity of access point **321** to determine if location services are available for that particular access point (Step **602**). For example, the geographic location of some access points could be pre-provisioned in location determination system **340**, while other access points may not be registered. In one example, CPS **325** queries location determination system **340** to determine if location services are available for open access point **321**.

If location services are available for open access point **321**, CPS **325** instructs combo phone **315** to proceed with the call in VOIP mode (Step **605**). If location services are not available for open access point **321**, CPS **325** queries combo phone **315** as to the availability of cellular access (Step **603**). If cellular access is not available, CPS **325** instructs combo phone **315** to proceed with the call in VOIP mode (Step **605**). If cellular access is available, CPS **325** instructs combo phone **315** to switch to cellular access and place a new emergency service call over cellular access point **311** to cellular network **310**. It should be understood that CPS **325** could initiate a call hand-off to cellular network **310** in the event that an initial call leg has already been established to VOIP network **320**. Optionally, CPS **325** could instruct combo phone **315** to end the current call session and initiate a new emergency service call to cellular network **310**. In a further option, CPS **325** could query a device in cellular network **310** or emergency response network **330** to confirm whether or not the new emergency service call is eventually initiated and established. In a successful case CPS **325** could continue normal operations without modification. In an unsuccessful case whereby the new emergency service call fails to be initiated or established, CPS **325** could itself initiate a call-back to combo phone **315**. Upon establishing the first call-back call leg through VOIP network **320** to combo phone **315**, CPS **325** establish a second call leg from VOIP network **320** to emergency response network **330**, and in turn, to PSAP **335**.

Advantageously, communication network **300** provides for a call system determining a preferred access mode of operation for an emergency service call rather than placing the call over in a default of current mode when the current mode could be deficient. In this manner, user can enjoy high quality emergency call services, such as location determination services, without the burden of manually changing the mode of operation of a call system.

What is claimed is:

1. A call system comprising:

a communication device configured to operate in a plurality of modes; and

a call processing system configured to receive a call request transferred from the communication device over a communication network while the communication device is in a current mode and, in response to receiving the call request:

to determine an availability of location services for each of the plurality of modes including determining if a location of an access point associated with at least one of the plurality of modes is known, to determine if the call is for an emergency service while in the current mode, if the call is for the emergency service determine a preferred mode for the call from the plurality of modes based on at least the availability of the location services for each of the plurality of modes, and to transfer instructions to the communication device to initiate the call in the preferred mode.

2. The call system of claim **1** wherein the communication device is configured to change the current mode to the preferred mode if the current mode is not the preferred mode.

3. The call system of claim **1** wherein the call processing system is configured to determine if the preferred mode is available and wherein the communication device is configured to remain in the current mode and initiate the call in the current mode if the preferred mode is not available.

4. The call system of claim **1** wherein the emergency service comprises 911 service.

5. The call system of claim **1** wherein the plurality of modes comprises an open access mode and a dedicated access mode.

6. The call system of claim **5** wherein the open access mode comprises a Wi-fi mode.

7. The call system of claim **6** wherein the dedicated access mode comprises a cellular access mode.

8. The call system of claim **7** wherein the cellular access mode comprises a code division multiple access (CDMA) mode.

9. The call system of claim **7** wherein the cellular access mode comprises a global service mobile (GSM) access mode.

10. A method of operating a call processing system, the method comprising:

receiving a call request from a communication device over a communication network while the communication device is in a current mode of a plurality of modes;

in response to receiving the call request:

determining an availability of location services for each of the plurality of modes including determining if a location of an access point associated with at least one of the plurality of modes is known;

determining if the call is for an emergency service while in the current mode;

if the call is for the emergency service determining a preferred mode for the call from the plurality of modes based on at least the availability of location services; and

transferring instructions to the communication device directing the communication device to initiate the call in the preferred mode.

11. The method of claim **10** further comprising the communication device changing the current mode to the preferred mode if the current mode is not the preferred mode.

12. The method of claim **10** further comprising determining if the preferred mode is available, and transferring instructions to the communication device directing the communication device to remain in the current mode and initiate the call in the current mode if the preferred mode is not available.

13. The method of claim **10** wherein the emergency service comprises 911 service.

14. The method of claim **10** wherein the plurality of modes comprises an open access mode and a dedicated access mode.

15. The method of claim **14** wherein the open access mode comprises a Wi-fi mode.

16. The method of claim **15** wherein the dedicated access mode comprises a cellular access mode.

17. The method of claim **16** wherein the cellular access mode comprises a code division multiple access (CDMA) mode.

18. The method of claim **16** wherein the cellular access mode comprises a global service mobile (GSM) access mode.

19. The call system of claim **1** wherein the communication device is configured to determine if the preferred mode is available and wherein the communication device is configured to remain in the current mode and initiate the call in the current mode if the preferred mode is not available.

20. The method of claim **10** further comprising the communication device determining if the preferred mode is available, and remaining in the current mode and initiating the call in the current mode if the preferred mode is not available.

21. The call system of claim **1** wherein the call processing system is further configured to:

determine if the communication device successfully establishes the call in the preferred mode; and

transfer instructions to the communication device to initiate the call in a mode other than the preferred mode if the communication device does not successfully establish the call in the preferred mode.

22. The method of claim **10** further comprising:

determining if the communication device successfully establishes the call in the preferred mode; and

transferring instructions to the communication device to initiate the call in a mode other than the preferred mode if the communication device does not successfully establish the call in the preferred mode.

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