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Magnuson et al.

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(54) **ROUTER COLLABORATION**

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(73) Assignee: **CRADLEPOINT, INC.**, Boise, ID (US)

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Related U.S. Application Data

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(51) **Int. Cl.**

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H04L 12/56	(2006.01)
H04L 12/701	(2013.01)
H04B 1/3877	(2015.01)
H04L 12/773	(2013.01)
H04B 1/3827	(2015.01)

(52) **U.S. Cl.**

CPC ***H04L 45/00*** (2013.01); ***H04B 1/3877*** (2013.01); ***H04L 45/60*** (2013.01); *H04B 1/3827* (2013.01)

(58) **Field of Classification Search**

CPC H04B 1/3827; H04B 1/3877; H04L 45/60; H04L 45/00

See application file for complete search history.

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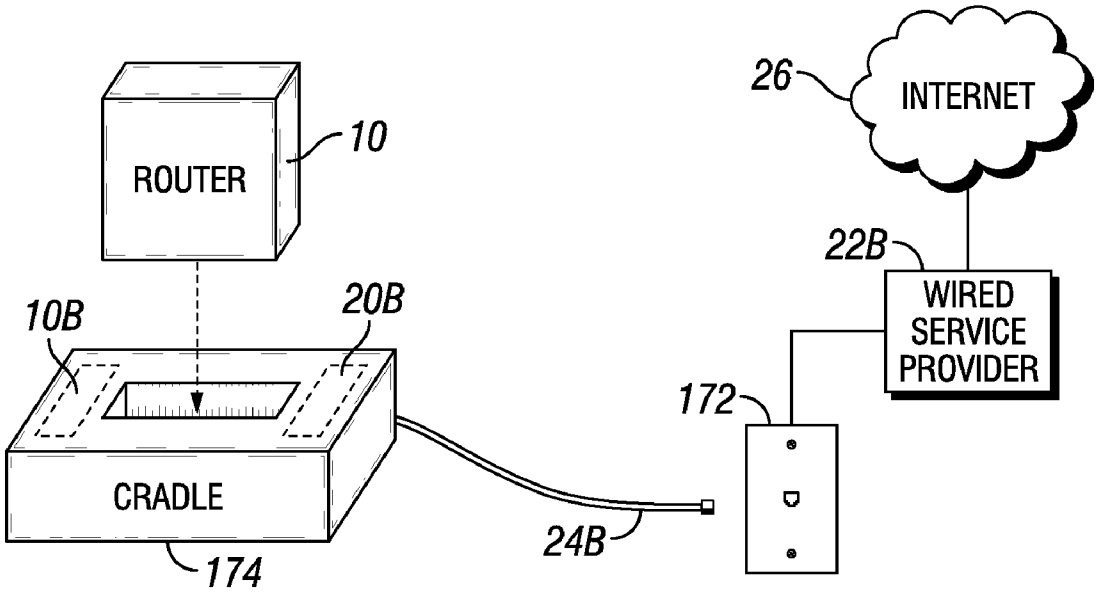
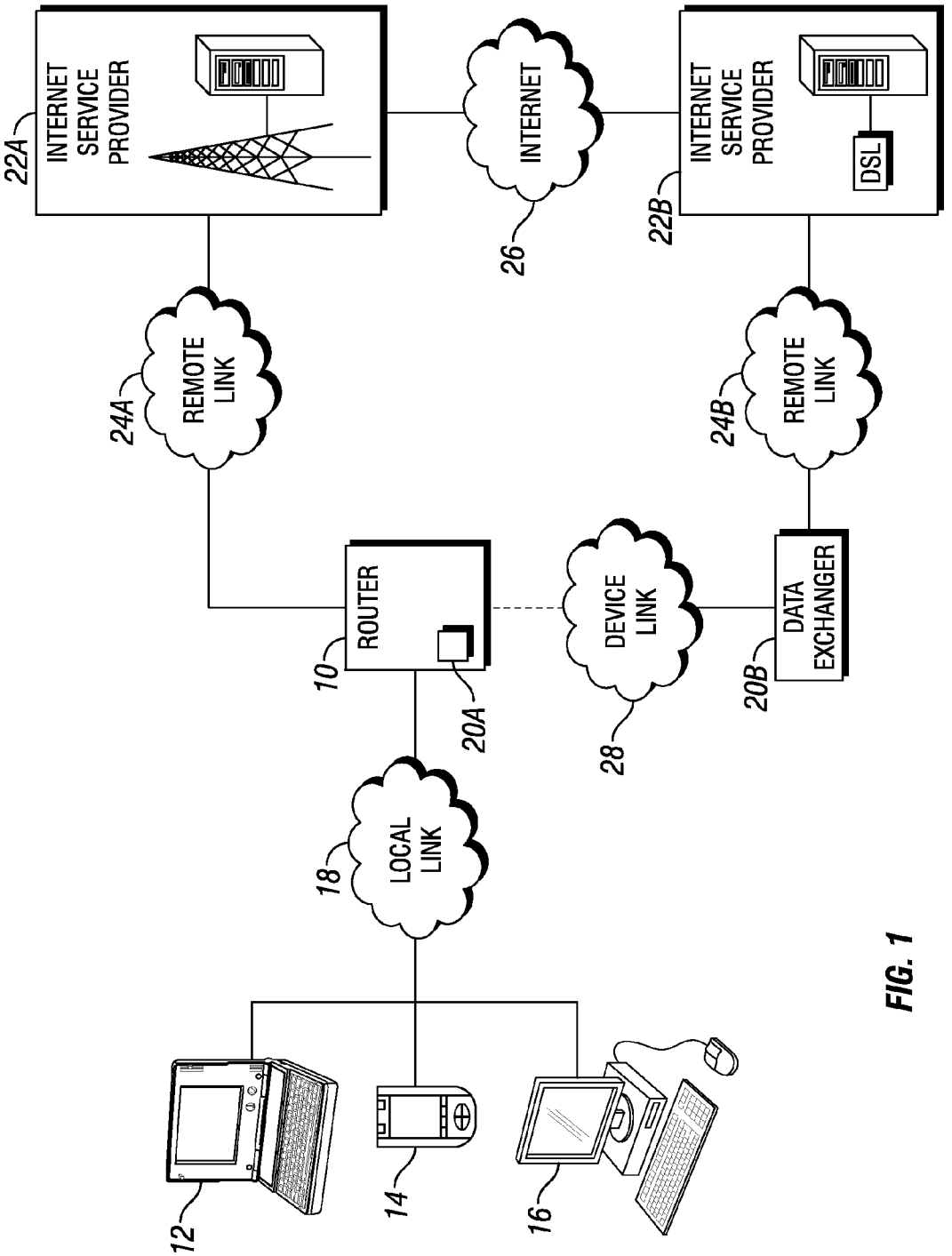
(57) **ABSTRACT**

A router system is disclosed. The router system comprises a wireless router and a cradle comprising a router interface configured to receive the router. One or more connections are positioned at the router interface for communicating with the router. Methods and systems for communicating between a router and the internet are also disclosed.

29 Claims, 5 Drawing Sheets

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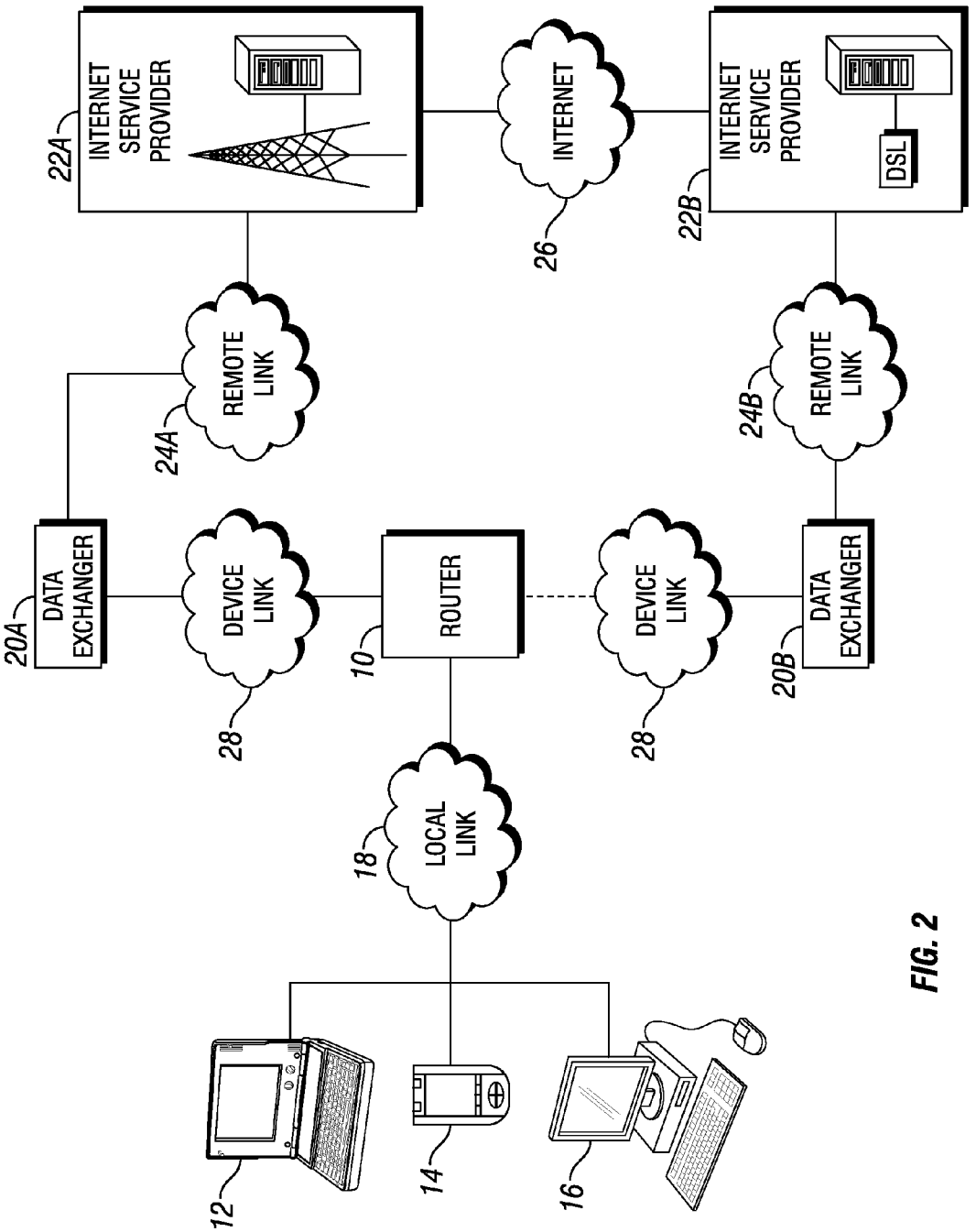
22A
INTERNET
26
INTERNET SERVICE PROVIDER
DSL
22B
REMOTE LINK
24A
REMOTE LINK
24B
ROUTER
10
20A
DEVICE LINK
28
DATA EXCHANGER
20B
LOCAL LINK
18
12
14
16

FIG. 1


INTERNET SERVICE PROVIDER
22A
INTERNET
26
INTERNET SERVICE PROVIDER
22B
DSL
REMOTE LINK
24A
REMOTE LINK
24B
DATA EXCHANGER
20A
DEVICE LINK
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ROUTER
10
DEVICE LINK
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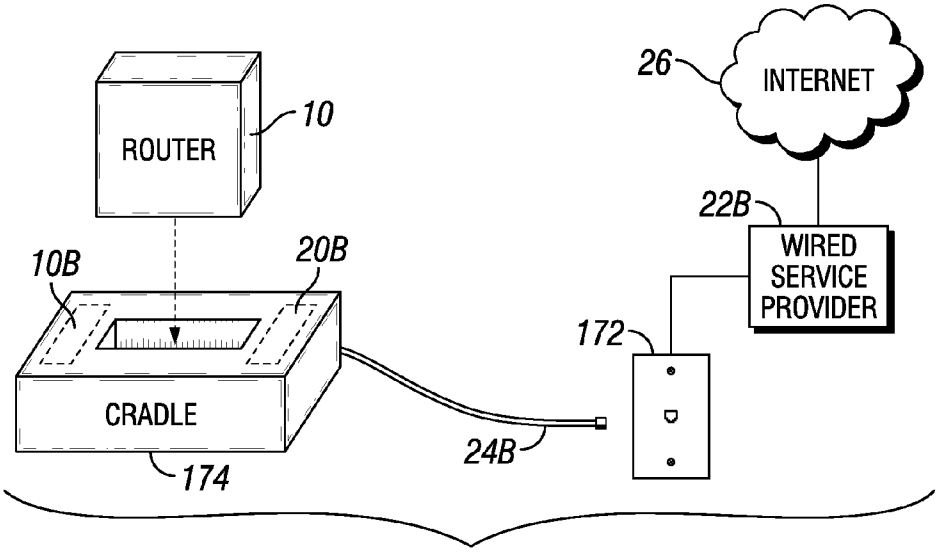
DATA EXCHANGER
20B
LOCAL LINK
18
12
14
16

FIG. 2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ROUTER
10
22B
WIRED SERVICE PROVIDER
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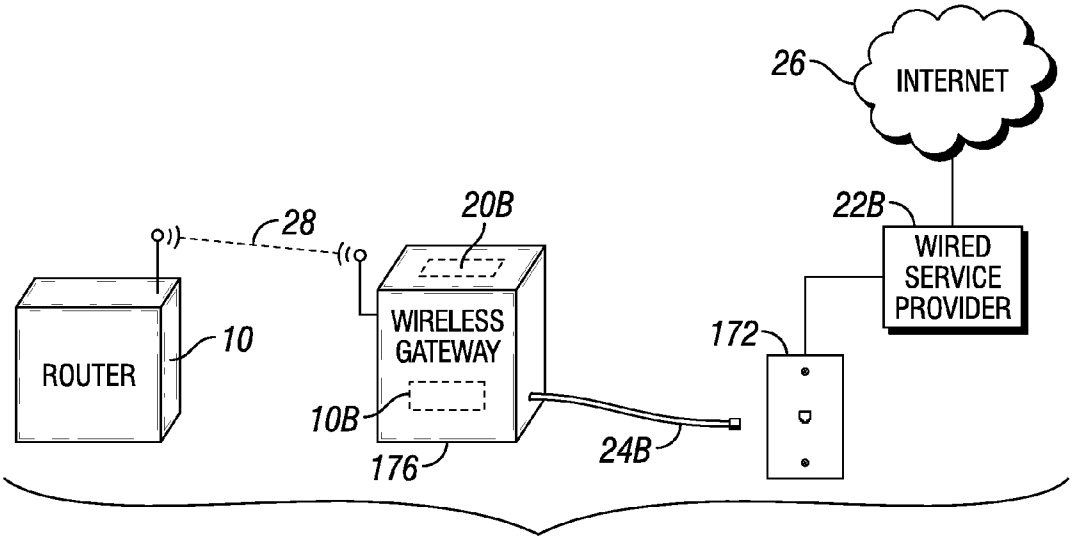
20B
172
CRADLE
24B
174

FIG. 3


26
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22B
WIRED SERVICE PROVIDER
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20B
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24B
176

FIG. 4

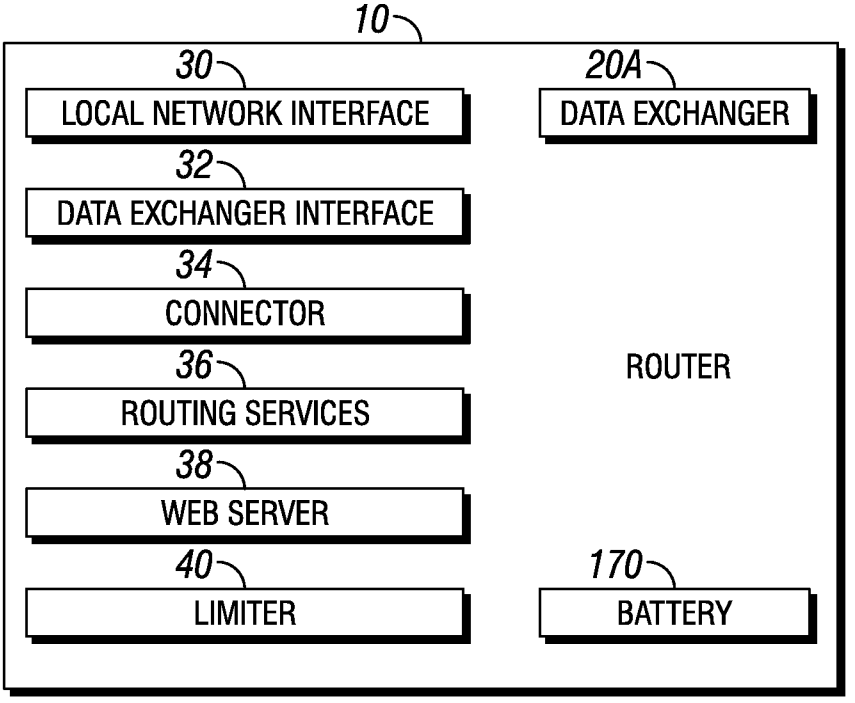
10
30
LOCAL NETWORK INTERFACE
20A
DATA EXCHANGER
32
DATA EXCHANGER INTERFACE
34
CONNECTOR
36
ROUTING SERVICES
ROUTER
38
WEB SERVER
40
LIMITER
170
BATTERY

FIG. 5

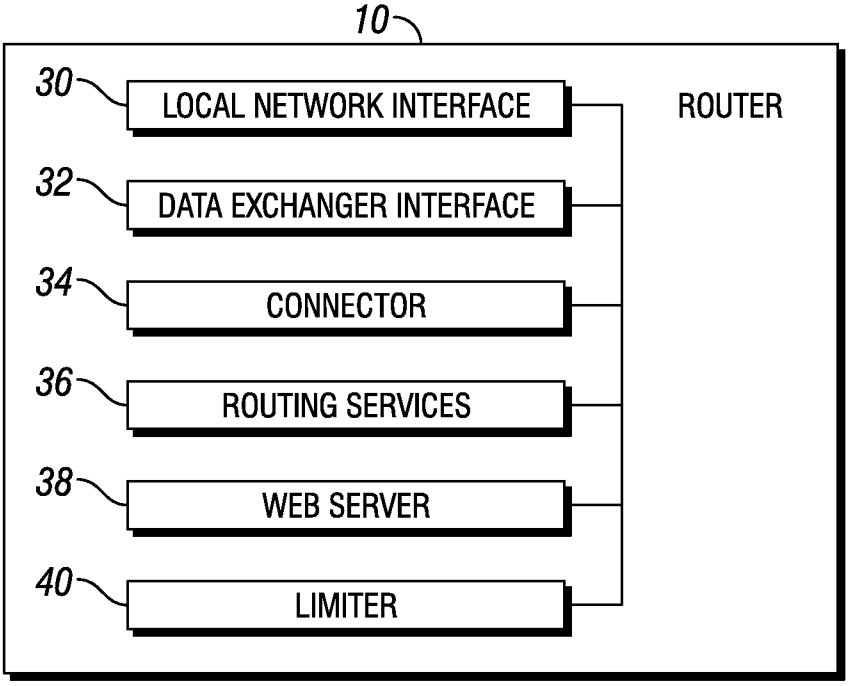
10
30
LOCAL NETWORK INTERFACE
ROUTER
32
DATA EXCHANGER INTERFACE
34
CONNECTOR
36
ROUTING SERVICES
38
WEB SERVER
40
LIMITER

FIG. 6

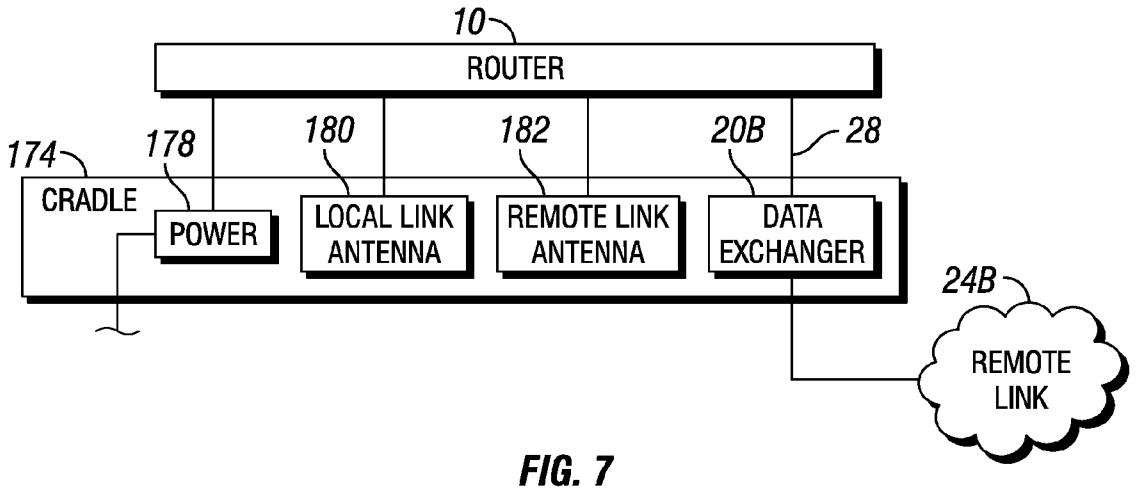
10
ROUTER
174
178
180
182
20B
28
CRADLE
POWER
LOCAL LINK ANTENNA
REMOTE LINK ANTENNA
DATA EXCHANGER
24B
REMOTE LINK

FIG. 7

ROUTER COLLABORATION

The present disclosure claims priority to U.S. Provisional Application No. 61/266,949, filed on Dec. 4, 2009, the disclosure of which is hereby incorporated by reference in its entirety.

BACKGROUND

Routers allow client devices in a local area network (LAN) to access a wide area network (WAN). Connections between client devices and the router may be wired or wireless. Similarly, connections between the router and the Wide Area Network may be wired or wireless. Wireless connections to the WAN may be through a cellular network.

Portable, wireless routers are well known in the art. Such routers can connect to the internet using a data exchanger. The router can provide a wireless link to local client devices. In addition, the router may provide a wireless link to an internet service provider. However, wireless links to internet service providers can sometimes provide relatively slow data transfer and/or be costly to use.

In addition, wireless routers may suffer from poor signal strength between the router and the client devices and/or the internet service provider. Further, the router may run on batteries that are rechargeable, or need to operate continuously for a period of time that is longer than some batteries will allow.

The present disclosure is directed to addressing on or more of the problems discussed above.

SUMMARY

An embodiment of the present disclosure is direct to a method for communicating between a router and the internet. The method comprises establishing a first remote link between the router and an internet service provider using a primary data exchanger. A second remote link is established between the router and an internet service provider using an alternate data exchanger. The alternate data exchanger is embedded in a cradle configured to receive the router.

Another embodiment of the present disclosure is directed to a router system. The router system comprises a wireless router comprising a data exchanger interface and a cradle configured to hold the wireless router. The cradle comprises an alternate data exchanger embedded in the cradle. The data exchanger interface is configured to communicate with the alternate data exchanger when the router is positioned in the cradle.

Yet another embodiment of the present disclosure is directed to a router cradle. The router cradle comprises a router interface configured to receive a router. One or more connections are positioned at the router interface for communicating with the router.

Another embodiment of the present disclosure is directed to a router system. The router system comprises a wireless router and a cradle comprising a router interface configured to receive the router. One or more connections are positioned at the router interface for communicating with the router.

Still another embodiment of the present disclosure is direct to a method for communicating between a router and the internet. The method comprises establishing a first remote link between the router and an internet service provider using a primary data exchanger. A second remote link is established between the router and an internet service provider using an alternate data exchanger. The alternate data exchanger is embedded in a wireless gateway. The router is configured to automatically establish the second remote link when in communication range of the wireless gateway.

DESCRIPTION OF THE DRAWINGS

FIGS. **1** and **2** are block diagrams of systems comprising a router, according to embodiments of the present disclosure.

FIG. **3** is a schematic drawing illustrating a router system comprising a router and a cradle, according to an embodiment of the present disclosure.

FIG. **4** is a schematic drawing illustrating a router system comprising a router and a wireless gateway, according to an embodiment of the present disclosure.

FIGS. **5** and **6** are block diagrams of routers, according to embodiments of the present disclosure.

FIG. **7** is a block diagram of a router system comprising a cradle, according to an embodiment of the present disclosure.

While the disclosure is susceptible to various modifications and alternative forms, specific embodiments have been shown by way of example in the drawings and will be described in detail herein. However, it should be understood that the disclosure is not intended to be limited to the particular forms disclosed. Rather, the intention is to cover all modifications, equivalents and alternatives falling within the spirit and scope of the disclosure as defined by the appended claims.

DETAILED DESCRIPTION

Embodiments of the present disclosure allow a user to connect to the internet using a device such as an internet enabled cellular telephone, wireless modem or other cellular data access device. With a router, multiple users of computing devices, such as lap top computers, desktop computers, and personal digital assistants (PDAs), can access the internet simultaneously through the data capabilities of the cellular data access device. The combination of the router and the cellular data access device can provide an internet-connected local wireless network anywhere that there is cellular data coverage.

FIG. **1** illustrates exemplary environment **1** in which various embodiments of the present disclosure may be implemented. Environment **1** includes router **10**, client devices **12**, **14**, and **16** and local link **18**. Router **10**, discussed in more detail later, represents generally a device capable of routing network communications between client devices **12**, **14**, and **16** and internet **26** via a data exchanger **20**A. Client devices **12**, **14**, and **16** represent generally any computing devices capable of communicating with router **10**.

Local link **18** interconnects router **10** and client devices **12**, **14**, **16**. Local link **18** represents generally a cable, wireless, or remote link via a telecommunication link, an infrared link, a radio frequency link, or any other connector or system that provides electronic communication between devices **10**, **12**, **14**, and **16**. In FIG. **1**, the path followed by link **18** between devices **10**, **12**, **14**, and **16** represents the logical communication path between these devices, not necessarily the physical path between the devices. Devices **10**, **12**, **14**, and **16** can be connected at any point and the appropriate communication path established logically between the devices.

Data exchanger **20**A represents generally any combination of hardware and/or programming that can be utilized by router **10** to connect to a remote network such as the internet. In the example of FIG. **1**, the data exchanger **20**A and router **10** are incorporated within the same device and can be connected, for example, by using internal connections. In an embodiment, the data exchanger may take the form of a

separate device card that can be inserted into a slot provided by router **10**, or otherwise connected to the router **10** through an I/O port. Alternatively, the data exchanger may be fully integrated into router **10**.

FIG. **2** illustrates another embodiment that is similar to FIG. **1**, except that data exchanger **20**A is separate from the router **10**. For example, the data exchanger **20**A can be an internet enabled cellular telephone. In the embodiment illustrated in FIG. **2**, device link **28** interconnects router **10** and data exchanger **20**A. Device link **28** represents generally any combination of a cable, wireless, or remote connection via a telecommunication link, an infrared link, a radio frequency link, or any other connector or system that provides electronic communication between devices **10** and **20**A. As examples, device link **28** may incorporate a physical connection such as a USB cable or direct connection between USB connectors, or radio waves carrying Bluetooth communications.

The data exchangers **20**A employed in the embodiments of the present disclosure can be any suitable type of data exchanger that will provide the desired connection to the internet. Examples of data exchangers include but are not limited to DSL modems, cable modems and cellular data modems.

Referring again to FIG. **1**, service provider **22**A represents generally any infrastructure configured to provide internet related data services to subscribers such as an owner of data exchanger **20**A. For example, where data exchanger **20**A is an internet enabled cellular telephone or cellular modem, service provider **22**A may be a cellular telephone service provider capable of providing voice and data services to subscribers allowing access to internet **26**. Where data exchanger **20**A is a DSL or cable modem, service provider **22** may be a more traditional internet service provider (ISP) providing data access to internet **26** through wired means.

Remote link **24** interconnects data exchanger **20**A and service provider **22**A and represents generally any combination of a cable, wireless, or remote connection via a telecommunication link, an infrared link, a radio frequency link, or any other connector or system that provides electronic communication between data exchanger **20**A and service provider **22**A. Remote link **24**A may represent an intranet, an internet, or a combination of both.

As shown in FIG. **1**, the router **10** provides a local link **18** so that client devices **12**, **14**, **16** can communicate with the internet **26** via remote link **24**A. If the remote link **24**A is a wireless radio connection, then the router **10** may be easily moved and used by client devices **12**, **14**, **16** in various locations, or while in motion.

However, in some situations, communication through an alternate remote link would be preferable. For example, when a router **10** is in use and there is an alternative remote link available, the alternative remote link may provide faster data transmission rates or less expensive transmission, or have some other preferential aspect of use. It would be advantageous if the router **10** could use the alternate remote link when the alternate remote link is available and preferred.

As shown in FIGS. **1** and **2**, in order to provide connections to alternate remote links, router **10** has an alternate device link **28** that provides a connection to an alternate data exchanger **20**B, according to an embodiment of the present disclosure. This alternate data exchanger **20**B works through an alternate remote link **24**B, and alternate service provider **22**B to provide access to the internet **26**.

In an embodiment, when alternate data exchanger **20**B is not available, then router **10** can communicate with the internet **26** through the primary remote link **24**A. However when alternate data exchanger **20**B is available, router **10** may use alternate device link **28** to access the internet **26**.

For example, as illustrated in FIG. **3**, the alternate data exchanger **20**B may be embedded in a cradle **174**. When router **10** is placed in the cradle, a data connection can be made between the router **10** and the cradle **174**. That connection can provide the device link **28**, allowing the router **10** to communicate with the alternate data exchanger **20**B. The cradle **174** can also include a remote link **24**B, which in this example, is a wired connection to a wall jack **172** that provides wired connection to a wired service provider **22**B. For example, this may be a DSL or a cable internet service provider.

In an embodiment, client devices **12**, **14**, **16** can remain connected to the router **10** through the local link **18** when router **10** switches between using data exchanger **20**A and data exchanger **20**B, and can thus still have access to the internet **26**. Thus, if desired, access to the internet for the client devices **12**, **14**, **16** can remain constant, or substantially constant, whether the router **10** uses the primary remote link **24**A or the alternate remote link **24**B, or a combination of the primary and alternate remote links **24**A, **24**B.

In another example configuration, as shown in FIG. **4**, the router **10** may communicate wirelessly with a wireless gateway **176**. The router **10** can behave as a client or peer to the wireless gateway **176**. The wireless gateway **176** has an embedded data exchanger **20**B and communicates with the internet **26** in a manner comparable to the cradle **174**, as shown in FIG. **3** and described above. In an embodiment, the router **10** may be within communication range of the wireless gateway **176**, and not in physical contact with the wireless gateway **176**. The router **10** and the wireless gateway **176** may be preconfigured to establish a secure connection when router **10** and wireless gateway **176** are within range of communication.

FIG. **5** is a block diagram illustrating exemplary physical and logical components of router **10**, according to an embodiment of the present disclosure. As described above, router **10** represents generally any combination of hardware and/or programming capable functioning as a router for directing network communications between client devices on the local network, or between client devices and the internet via a data exchanger such as an internet enabled cellular telephone, cellular modem, DSL modem, or cable modem.

In the example of FIG. **5**, router **10** includes local network interface **30** and data exchanger interface **32**. Local network interface **30** represents generally any combination of hardware and/or program instructions capable of supplying a communication interface between router **10** and client devices **12**, **14**, and **16** shown in FIGS. **1** and **2**.

Data exchanger interface **32** represents any combination of hardware and/or programming enabling data to be communicated between router **10** and a data exchanger **20**A and/or **20**B shown in FIGS. **1** and **2**.

For example, interfaces **30** and **32** may include a transceiver operable to exchange network communications utilizing a wireless protocol such as ultrawideband (UWB), Bluetooth, or 802.11. Alternatively, interfaces **30** and **32** may include physical ports or other physical connection points enabling wired communication.

In an embodiment, as illustrated in FIG. **5**, router **10** can also include an embedded data exchanger **20** in addition to the data exchanger interface **32**. As shown in FIG. **1**, data exchanger **20** allows router **10** to connect directly to ISP **22**A via remote link **24**A, as opposed to employing a separate data exchanger device. In the case of a data exchanger being embedded in router **10**, router **10** can include a data exchanger

interface such as, for example, a slot for a device card, such as a cellular modem, or the like, which allows communication with the embedded data exchanger. Alternatively, the embedded data exchanger can be fully integrated into the router, in which case the data exchanger interface may be replaced with internal device connections.

In an embodiment, router **10** can also include router services **36** and web server **38**. Routing services **36** represents generally any combination of hardware and/or programming for routing network communication received through network interface **30** to be transmitted by data exchanger **20** to internet **26**. Routing services **36** can also be responsible for routing inbound network communications received from internet **26** and directed via network interface **30** to a specified client device **12**, **14**, or **16**. Outbound and inbound network communications, for example can be IP (internet protocol) packets directed to a target on internet **26** or to a particular network device **12**, **14**, or **16** on a local area network.

Web server **38** represents generally any combination of hardware and/or programming capable of serving interfaces such as web pages to client devices **12**, **14**, and **16**. Such web pages may include web pages that when displayed by a network device allows a user to provide or otherwise select settings related to the operation of router **10**.

Router **10** can optionally include a connector **34**. Connector **34** represents generally any combination of hardware and/or programming for sending a signal to data exchangers **20**A, **20**B to establish a data connection with service providers **22**A, **22**B, so that access can be made to internet **26**. For example, where a data exchanger **20**A or **20**B is a cellular telephone, connector **34** may send a signal causing the cellular telephone to establish a data link with service provider **22**A or **22**B. In an embodiment, the router **10** does not include a connector **34**. In an embodiment, the hardware and/or programming for establishing a data connection with a service provider is included in, for example, a cellular modem that is employed as the data exchanger **20**, which may be incorporated into router **10**, as described above.

The router can optionally include a limiter **40**. Limiter **40** represents generally any combination of hardware and/or programming capable of distinguishing among the users of devices such as client devices **12**, **14**, and **16**, and applying different internet access rules for different users. For example, certain internet access rules may apply to the owner of router **10**. In this context, the term owner refers to an individual or entity that is a subscriber with respect to a service provider such as service provider **22** shown in FIGS. **1** and **2**. The owner typically has physical possession or otherwise has control of router **10**. Other internet access rules can apply to users authorized by the owner. Yet other internet access rules apply to anonymous users. Where network interface **30** provides for a wireless connection with client devices, a user of a particular client device might not be known by the owner. As such, internet access rules for such users may be quite limiting. The limiter **40** and operation thereof are discussed in greater detail in U.S. patent application Ser. No. 11/673,956, filed Feb. 12, 2007, in the name of Pat Sewall, et al., the disclosure of which is hereby incorporated by reference in its entirety.

In an embodiment, router **10** may include a battery **170** or other form of self contained source of power to provide electrical power for the router **10** to function.

In an embodiment, one or more of the functions shown in FIGS. **5** and **6** may not be included. For example, router **10** can include a local network interface **30**, a data exchanger interface **32**, a connector **34**, routing services **36**, a web server **38** and a data exchanger **20**, but not a limiter **40**. As shown in FIGS. **2** and **6**, and described above, router **10** may not have an embedded or enclosed data exchanger **20**, but instead may employ an external data exchanger **20** that is connected to the router through a device link **28**. Device link **28** may be any suitable link, such as a cable, or a direct physical connection between the data exchanger **20** and the router **10**, or a form of wireless communication.

In an embodiment, as shown in FIG. **7**, cradle **174** may provide functions in addition to those already described above. As mentioned above, the router **10** and cradle **174** can be configured so that when router **10** is placed into the cradle **174**, a connection is made between the cradle **174** and the router **10**, thereby connecting the router **10** to the alternate data exchanger **20**B. In addition to the connection between the router **10** and the alternate data exchanger **20**B, there may also be a connection to a power source **178**, which provides power to operate the router **10** and/or to recharge the battery **170** located in the router **10**. The cradle **174** may also be outfitted with a local link antenna **180** and a remote link antenna **182**. These antennas **180**, **182** may substitute for, or work in concert with, antennas embedded in the router **10**, or in the device link **28** attached to or embedded in the router **10**, in order to increase the signal strength of the local link **18** and the remote link **24**. In an embodiment, the benefits, such as increased signal strength, connection to a power source, and/or connection to an alternate data exchanger can occur simply by placing the router **10** in the cradle **174**. The client devices may be unaware of any change, and no change in configuration of the client devices is generally performed.

In yet another alternative configuration, the cradle **174** may contain one or more of the features shown in FIG. **7** in any combination. For example, the cradle **174** may comprise all of the features shown in FIG. **7**, with the exception that cradle **174** does not contain data exchanger **20**B or employ the associated remote link **24**B. In this situation, the cradle **174** provides no alternative connection to the internet **26**. However, when the router **10** is docked in the cradle **174**, the battery **170** is recharged, the router **10** can operate indefinitely from line power, and the signal strength of the local link **18** or the remote link **24**A, or both, is improved through the use of the local link antenna **180** and the remote link antenna **182** embedded or otherwise attached to the cradle **174**. In yet another embodiment, the cradle comprises the power source and antennas **180** and **182**, but instead of comprising an embedded data exchanger, the cradle provides a wireless or wired connection to a nearby home router (not shown) and/or data exchanger.

Referring to FIGS. **3** and **4**, cradle **174** or wireless gateway **176** may optionally comprise a wired or wireless router **10**B. This embodiment allows cradle **174** or wireless gateway **176** to perform typical wireless router functions for other client devices, whether or not the router **10** is connected to the cradle **174** or wireless gateway **176**. Router **10**B is shown in FIGS. **3** and **4** as being separate from data exchanger **20**B in the cradle **174** and wireless gateway **176**. In an alternate embodiment, router **10**B can be embedded together with data exchanger **20**B in cradle **174** or wireless gateway **176**. One of ordinary skill in the art would readily be able to embed a router **10**B in a cradle or wireless gateway.

The schematic diagrams of the figures illustrate exemplary environments in which embodiments of the present disclosure may be implemented. Implementation, however, is not limited to these environments. The diagrams of the figures show the architecture, functionality, and operation of various embodiments of the present disclosure. A number of the blocks are defined as programs. Each of those blocks may represent in whole or in part a module, segment, or portion of

code that comprises one or more executable instructions to implement the specified logical function(s). Each block may represent a circuit or a number of interconnected circuits to implement the specified logical function(s).

Also, the present disclosure can be embodied in any computer-readable media for use by or in connection with an instruction execution system such as a computer/processor based system or an ASIC (Application Specific Integrated Circuit) or other system that can fetch or obtain the logic from computer-readable media and execute the instructions contained therein. "Computer-readable media" can be any media that can contain, store, or maintain programs and data for use by or in connection with the instruction execution system. Computer readable media can comprise any one of many physical media such as, for example, electronic, magnetic, optical, electromagnetic, or semiconductor media. More specific examples of suitable computer-readable media include, but are not limited to, a portable magnetic computer diskette such as floppy diskettes or hard drives, a random access memory (RAM), a read-only memory (ROM), an erasable programmable read-only memory, or a portable compact disc.

What is claimed is:

1. A method for communicating between a router and the Internet, the method comprising:

establishing a first remote link between the router and a first internet service provider using a primary data exchanger comprising hardware and programming that can be used by the router to connect to the Internet, and wherein the router is configured to route network communications between at least one client device and the Internet via a data exchanger interface, and the first remote link is cellular;

connecting the router to a cradle; and

establishing a second remote link between the router and a second internet service provider using an alternate data exchanger, the alternate data exchanger being embedded in the cradle and comprising hardware and programming that can be used by the router to connect to the Internet, the alternate data exchanger establishing a data connection with the second internet service provider, and the cradle being configured to receive the router.

2. The method of claim **1**, wherein the first remote link is established when the alternate data exchanger is not available.

3. The method of claim **1**, wherein the primary data exchanger is embedded in the router.

4. The method of claim **3**, wherein the router further comprises a data exchanger interface, the router communicating with the alternate data exchanger through the data exchanger interface.

5. The method of claim **1**, wherein the second remote link is automatically established when the router is positioned in the cradle.

6. The method of claim **5**, wherein the router comprises a battery, and wherein the cradle comprises a power source that charges the battery.

7. A router system, comprising:

(a) a wireless router comprising a data exchanger interface, wherein the wireless router is configured to route network communications between at least one client device and the Internet via the data exchanger interface and a first remote link, and the first remote link is cellular; and

(b) a cradle configured to hold the wireless router, the cradle comprising an alternate data exchanger embedded in the cradle and further comprising hardware and programming that can be used by the wireless router to connect the wireless router to the Internet via a second remote link, the alternate data exchanger establishing a data connection with an internet service provider, the data exchanger interface comprising hardware and programming that can be used to communicate data between the wireless router and the alternate data exchanger when the wireless router is positioned in the cradle.

8. The router system of claim **7**, wherein the router further comprises a primary data exchanger embedded in the router, the primary data exchanger comprising hardware and programming that can be used by the wireless router to connect to the Internet.

9. The router system of claim **8**, wherein the primary data exchanger is configured to direct network communications to an internet service provider.

10. The router system of claim **8**, wherein the primary data exchanger is a cellular modem.

11. The router system of claim **7**, wherein the wireless router further comprises an antenna in communication with the at least one client device, and wherein the cradle comprises a local link antenna, the local link antenna increasing a signal strength of the antenna of the wireless router.

12. The router system of claim **7**, wherein the cradle comprises a remote link antenna, the remote link antenna increasing a signal strength of the first remote link.

13. The router system of claim **7**, wherein the router comprises a battery, and wherein the cradle comprises a power source that charges the battery.

14. The router system of claim **7**, further comprising a router embedded in the cradle, the router routing network communications between the at least one client device and the Internet when the wireless router is not positioned within the cradle and the router routing network communications between the at least one client device and the Internet when the wireless router is positioned within the cradle.

15. A router cradle, comprising:

a router interface configured to receive a cellular wireless router configured to route network communications between at least one client device and the Internet via a first remote link;

a data exchanger comprising hardware and programming that can be used by the cellular wireless router to connect the cellular wireless router to the Internet via a second remote link, the data exchanger establishing a data connection with an internet service provider; and

one or more connections positioned at the router interface, the connections comprising hardware that can be used to communicate between the router cradle and the cellular wireless router.

16. The cradle of claim **15**, further wherein the data exchanger is embedded in the cradle.

17. The cradle of claim **15**, further comprising a local link antenna, the local link antenna increasing a signal strength of an antenna of the cellular wireless router when received within the router interface.

18. The cradle of claim **15**, further comprising a remote link antenna, the remote link antenna increasing a signal strength of the first remote link.

19. The cradle of claim **15**, further comprising a connection to a power source, the connection configured to provide power to a cellular wireless router received in the router interface.

20. The cradle of claim **15**, further comprising a router embedded in the cradle, the router routing network communications between the at least one client device and the Internet when the wireless router is not positioned within the cradle and the router routing network communications

between the at least one client device and the Internet when the wireless router is positioned within the cradle.

21. The cradle of claim **15**, further configured to provide a wireless or wired connection to a second router.

22. A router system, comprising:

(a) a wireless router comprising a first data exchanger comprising hardware and programming that can be used by the wireless router to connect to the Internet and configured to route network communications between at least one client device and the Internet via a first remote link; and

(b) a cradle comprising a router interface and a second data exchanger, comprising hardware and programming that can be used by the wireless router to connect to the Internet, the second data exchanger establishing a data connection with an internet service provider, the router interface configured to receive the wireless router, and the cradle having one or more connections positioned at the router interface for communicating with the wireless router.

23. The system of claim **22**, wherein the cradle further comprises a data exchanger embedded in the cradle.

24. The system of claim **22**, wherein the wireless router further comprises an antenna in communication with the at least one client device, and wherein the cradle further comprises a local link antenna, the local link antenna increasing a signal strength of the antenna of the wireless router.

25. The system of claim **22**, wherein the cradle further comprises a remote link antenna, the remote link antenna increasing a signal strength of the first remote link.

26. The system of claim **22**, wherein the cradle further comprises a connection to a power source, the connection configured to provide power to the router when it is received in the router interface.

27. The system of claim **22**, wherein the cradle further comprises a router embedded in the cradle, the router routing network communications between the at least one client device and the Internet when the wireless router is not positioned within the cradle and the router routing network communications between the at least one client device and the Internet when the wireless router is positioned within the cradle.

28. A method for communicating between a router and the Internet, the method comprising:

establishing a first remote link between the router and a first internet service provider using a primary data exchanger comprising hardware and programming that can be used by the router to connect to the Internet, wherein the router is configured to route network communications between at least one client device and the Internet via the first remote link; and

establishing a second remote link between the router and a second internet service provider using an alternate data exchanger comprising hardware and programming that can be used by the router to connect to the Internet, the alternate data exchanger establishing a data connection with the second internet service provider, the alternate data exchanger being embedded in a wireless gateway, the router being configured to communicate wirelessly with the wireless gateway and being further configured to automatically establish the second remote link when in communication range of the wireless gateway.

29. The method of claim **28**, wherein the wireless gateway comprises a router.

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