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(54) **ROUTER-BASED HOME NETWORK SYNCHRONIZATION**

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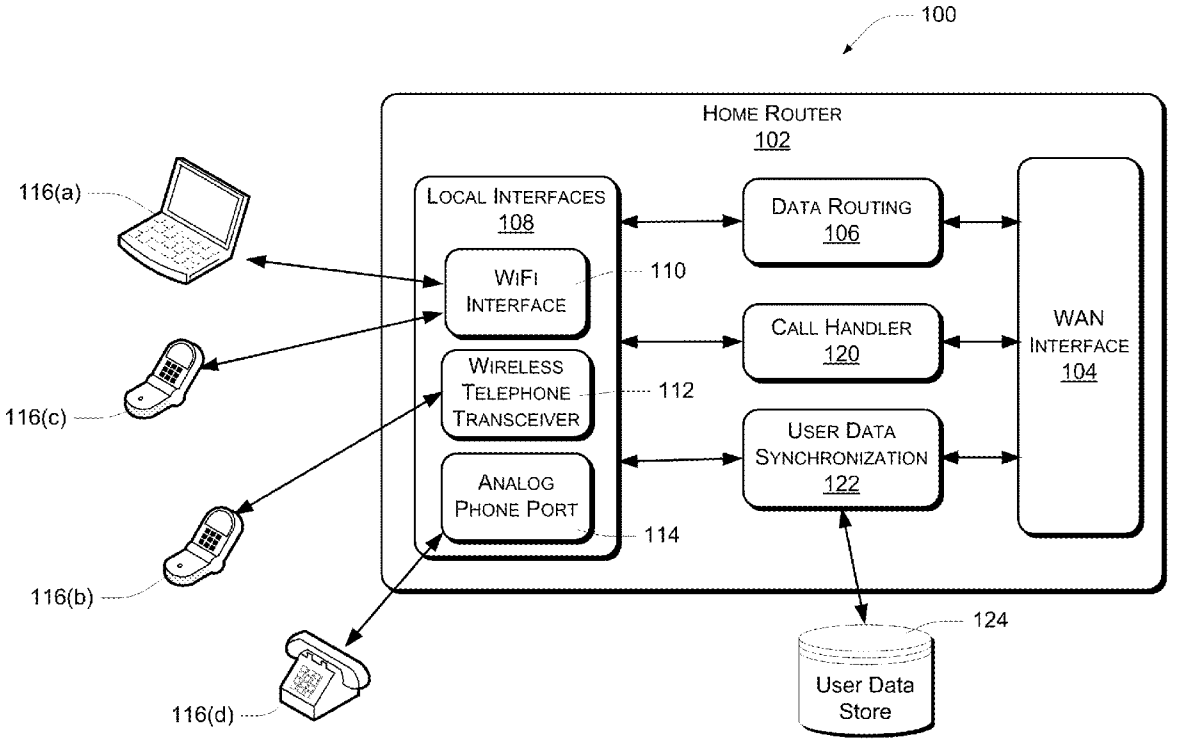
(57) **ABSTRACT**

Described herein is a home data router and a plurality of home communication devices that utilize the home data router for voice and data connectivity. The home data router includes functionality for synchronizing user-added data items across the plurality of home communication devices. Such user-added data items can include things like contacts, addresses, telephone numbers, events, calendar items, notes, and other information that might be useful to have stored in individual home communication devices.



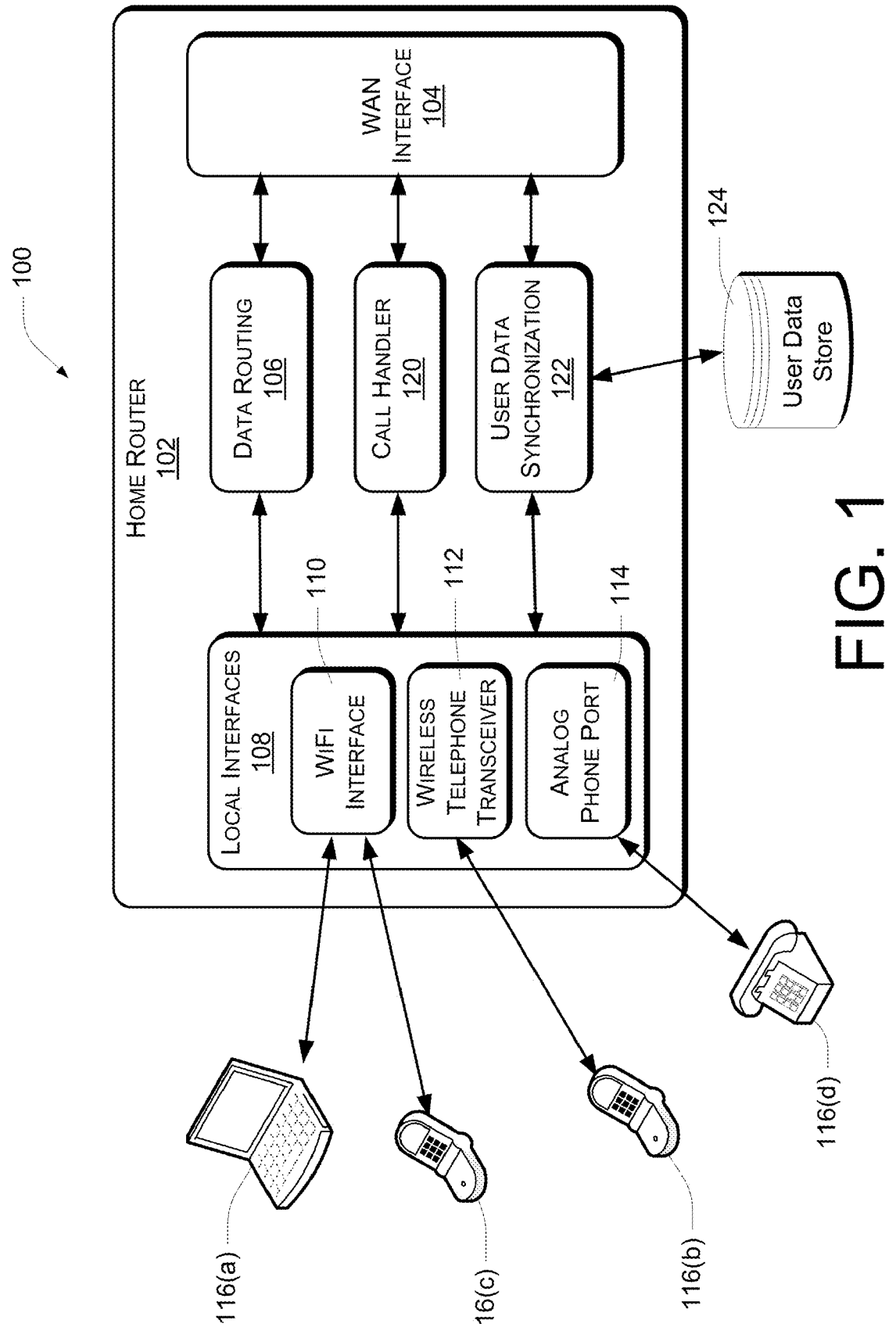

100
HOME ROUTER
102
WAN INTERFACE
104
DATA ROUTING
106
CALL HANDLER
120
USER DATA SYNCHRONIZATION
122
124
User Data Store
LOCAL INTERFACES
108
WIFI INTERFACE
110
WIRELESS TELEPHONE TRANSCEIVER
112
ANALOG PHONE PORT
114
116(a)
116(c)
116(b)
116(d)

FIG. 1

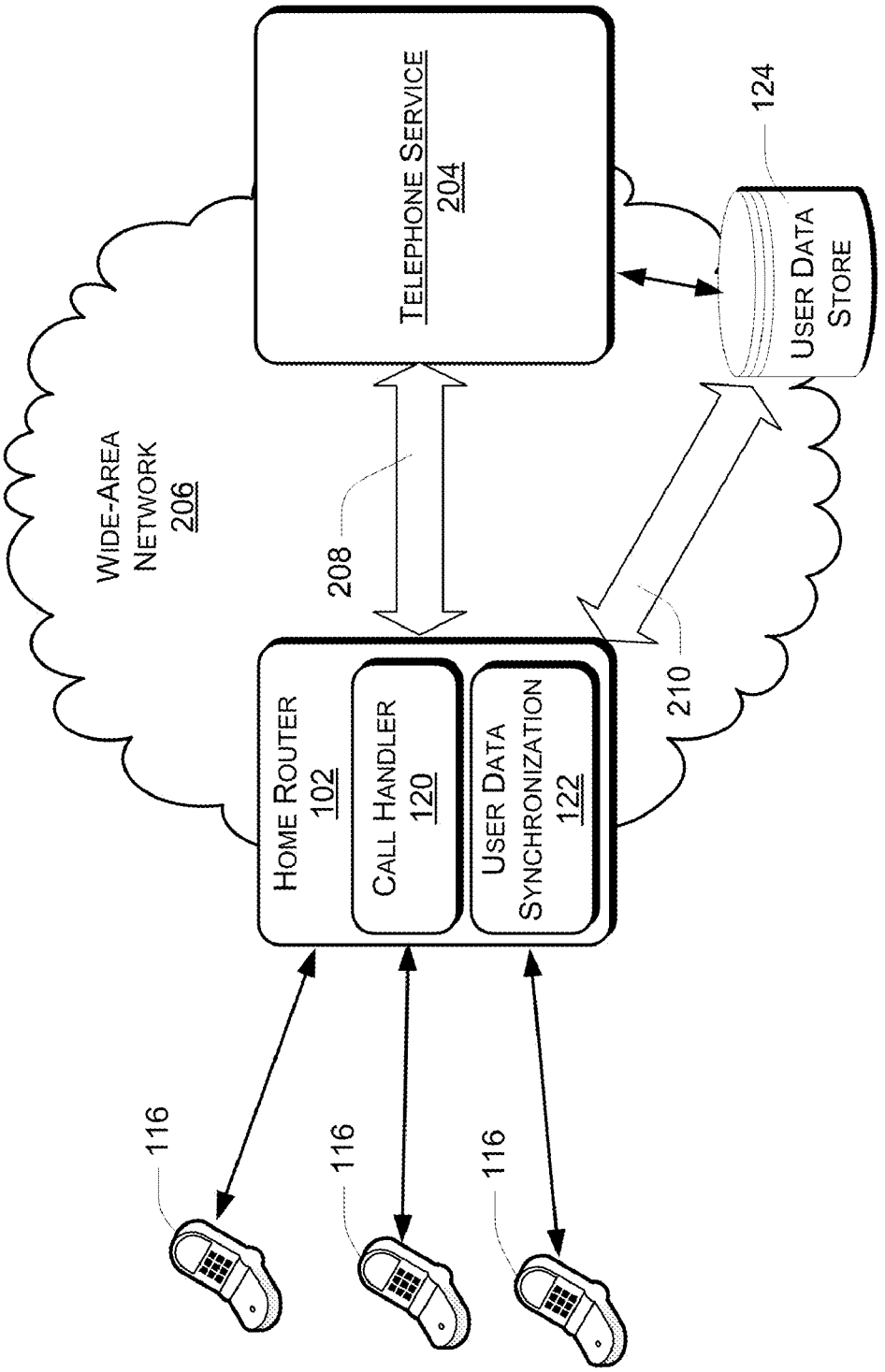

TELEPHONE SERVICE
204
124
USER DATA STORE
WIDE-AREA NETWORK
206
208
210
HOME ROUTER
102
CALL HANDLER
120
USER DATA SYNCHRONIZATION
122
116
116
116

FIG. 2

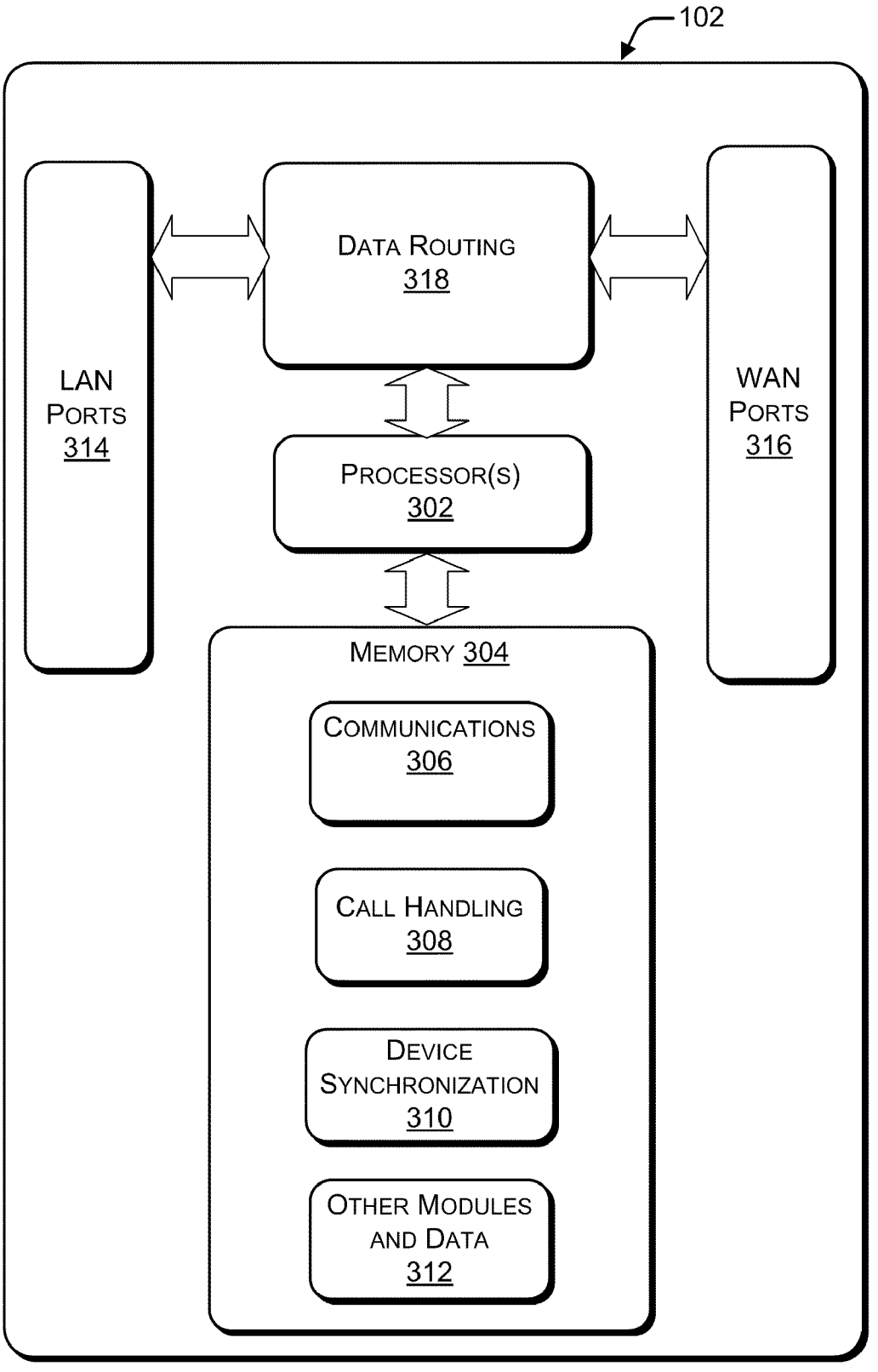

102
LAN PORTS 314
DATA ROUTING 318
WAN PORTS 316
PROCESSOR(S) 302
MEMORY 304
COMMUNICATIONS 306
CALL HANDLING 308
DEVICE SYNCHRONIZATION 310
OTHER MODULES AND DATA 312

FIG. 3

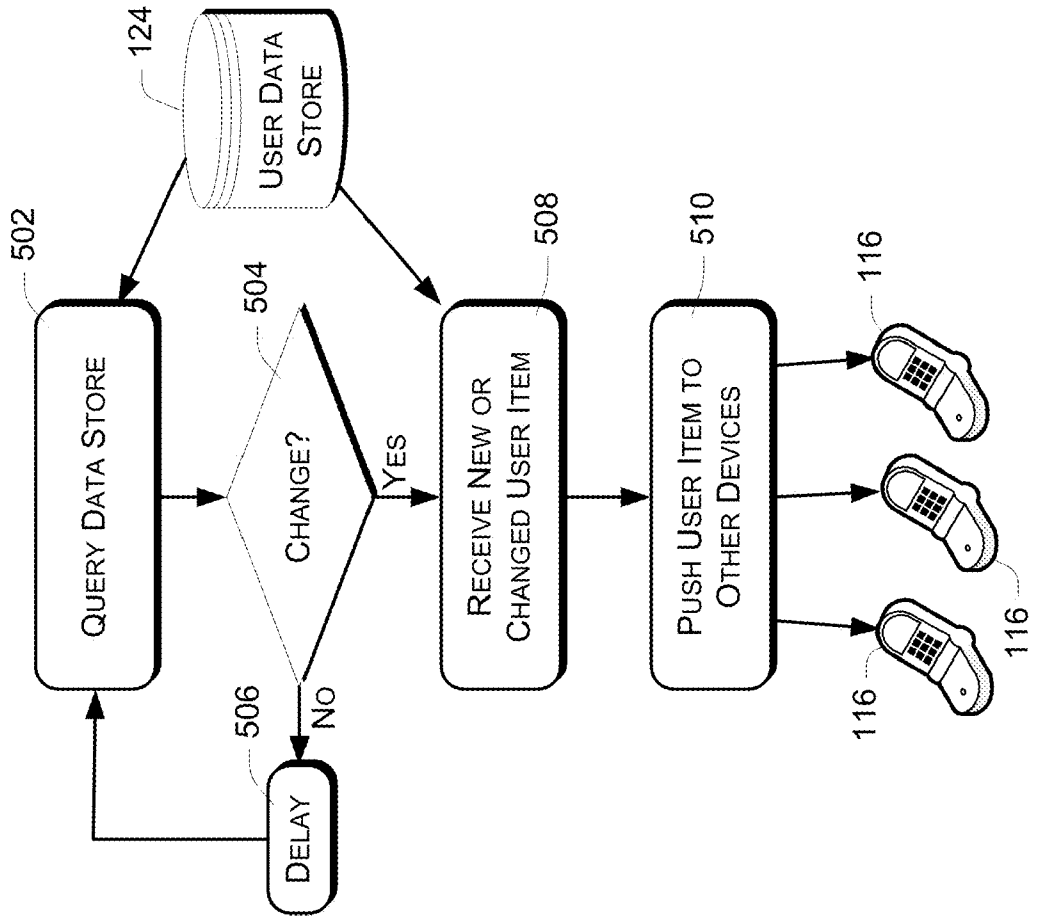

124
USER DATA STORE
502
QUERY DATA STORE
504
CHANGE?
YES
NO
506
DELAY
508
RECEIVE NEW OR CHANGED USER ITEM
510
PUSH USER ITEM TO OTHER DEVICES
116
116
116

FIG. 5

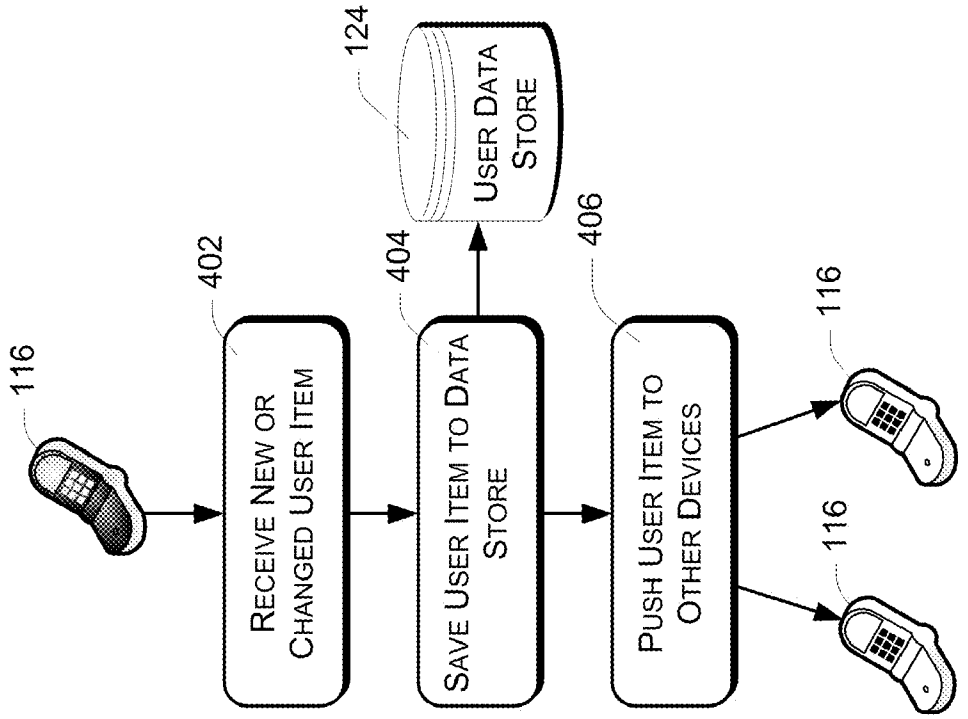

116
402
RECEIVE NEW OR CHANGED USER ITEM
404
SAVE USER ITEM TO DATA STORE
124
USER DATA STORE
406
PUSH USER ITEM TO OTHER DEVICES
116
116

FIG. 4

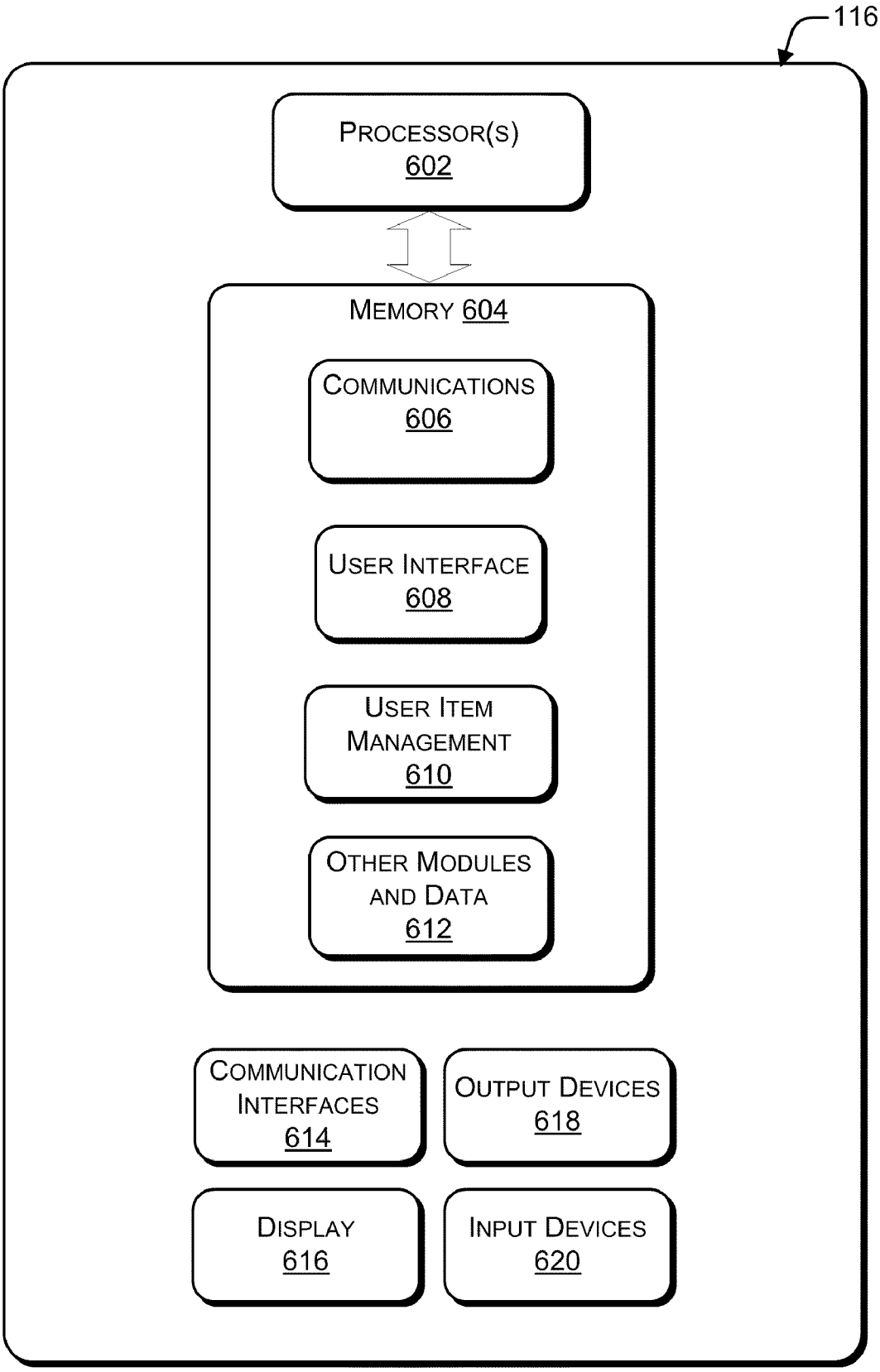

116
PROCESSOR(S)
602
MEMORY 604
COMMUNICATIONS
606
USER INTERFACE
608
USER ITEM
MANAGEMENT
610
OTHER MODULES
AND DATA
612
COMMUNICATION
INTERFACES
614
OUTPUT DEVICES
618
DISPLAY
616
INPUT DEVICES
620

FIG. 6

ROUTER-BASED HOME NETWORK SYNCHRONIZATION

RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Application No. 61/264,627, entitled "Connected Home" and filed on Nov. 25, 2009. Application No. 61/264,627 is fully incorporated herein by this reference.

BACKGROUND

[0002] The lines between different types of communications continue to blur as more and more communications and media transfers take place over common digital networks such as the Internet. In the past, there were different channels for different types of messaging. In particular, voice communications used to take place primarily over dedicated, wired telephone systems. More recently, voice communications have used dedicated wireless technologies such as cellular networks. Even more recently, however, various types of networks are being used for many different types of media exchanges. For example, the public Internet can be used for many different types of communications, including voice communications. Similarly, cellular networks are increasingly being used to convey non-voice data to and from portable devices, including data and content that is normally thought of as belonging to the Internet. In effect, many different networks and networking technologies are being joined and fused, to create a single world-wide data network.

[0003] Despite the trend for commonality in data formats, protocols, and media, home consumer devices often cling to older, dedicated technologies. Home telephones, for example, are often stand-alone systems that communicate primarily using legacy, wired telephone infrastructures. Although wireless home telephones are widely used, they normally are not part of the more integrated infrastructure and information corpus with which our cellular phones and personal computers communicate.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] The detailed description is set forth with reference to the accompanying figures, in which the left-most digit of a reference number identifies the figure in which the reference number first appears. The use of the same reference numbers in different figures indicates similar or identical items or features.

[0005] FIG. **1** is a diagrammatic representation of a first exemplary home communications system.

[0006] FIG. **2** is a diagrammatic representation of a second exemplary home communications system.

[0007] FIG. **3** is a simplified block diagram of an exemplary home router.

[0008] FIGS. **4** and **5** are flowcharts showing exemplary synchronization procedures.

[0009] FIG. **6** is a simplified block diagram of an exemplary local communications device.

DETAILED DESCRIPTION

[0010] Described herein are components, devices, and techniques for integrating home telephones and other voice communications devices with the larger communications and information infrastructure that is now available. A network router connects to a communications infrastructure such as the Internet and also communicates with local communications devices such as handheld voice communication devices or handsets. The router has one or more local ports that communicate with the voice communication devices. The local ports can include a wireless network access point, wired analog telephone ports, a wireless telephone transceiver such as a DECT digital telephone transceiver, and/or other types of dedicated or networked ports such as Ethernet ports. In addition to normal network routing functionality for use in conjunction with various types of networked computer devices, the router acts as a telecommunications base station for associated voice communications devices, and includes synchronization features or logic to synchronize user-added information across such devices. The user-added information may include things like contact/address information, calendar events, notes, tasks, photographs, and similar types of user-added or user-specific information that might be useful to have available at the devices.

Overview

[0011] FIG. **1** shows relevant components of a home communications system **100** in accordance with various embodiments. System **100** includes an integrated home router and telecommunications base station **102** (referred to below as home router **102**). Home router **102** has conventional network and Internet routing features, as well as other capabilities such as wireless telephone base station capabilities.

[0012] Home router **102**, in the embodiment of FIG. **1**, includes a wide-area network (WAN) interface or port **104**, data routing logic **106**, and one or more local communication interfaces or ports **108**.

[0013] WAN interface **104** can comprise an Ethernet communications port for connection to an Internet data source or other wide-area network source. Other types of network interfaces might also be utilized. In some embodiments, WAN interface **104** can be a radio or other wireless transceiver that transmits and receives radio frequency communications via an antenna. The radio interface may facilitate wireless connectivity between the home router **102** and various cell towers, base stations and/or wide area access points.

[0014] Local communication interfaces **108** can comprise various types of wired and wireless interfaces, configured for communication with a plurality of local devices such as computers, gaming consoles, media players, servers, other computer-like devices, and voice communication devices. Local interfaces **108** include any one or more of an Ethernet interface, wireless LAN interface, a near field interface, a DECT chipset, or an interface for an RJ-11 or RJ-45 port. The wireless LAN interface can include a Wi-Fi interface or a Wi-Max interface, or a Bluetooth interface that performs the function of transmitting and receiving wireless communications using, for example, the IEEE 802.11, 802.16 and/or 802.20 standards. For instance, home router **102** can use a Wi-Fi interface to communicate directly with a nearby device. The near field interface can include a Bluetooth® interface or RFID for transmitting and receiving near field radio communications via a near field antenna. For example, the near field interface may be used for functions, as is known in the art, such as communicating directly with nearby devices that are also, for instance, Bluetooth® or RFID enabled. A reader/interrogator may be incorporated into home router **102**.

[0015] In this example, local communication interfaces **108** include a wireless network interface or access point **110**, also referred to as a Wi-Fi access point. Wireless network interface **110** can be an IEEE 802.11x wireless interface,

access point, or transceiver, for connection to various different types of computers and other devices.

[0016] Local communication interfaces **108** can also comprise a wireless digital telephone transceiver or interface **112** and one or more wired, analog telephone ports or interfaces **114**. Wireless digital telephone interface **112** can be a DECT digital telephone interface for communication with multiple digital handsets or other DECT-compliant devices. Analog telephone interfaces **114** are legacy wired telephone ports, referred to as POTS ("Plain Old Telephone Service") interfaces.

[0017] A variety of handsets, handheld voice communications devices, and other local devices **116** can be associated with home router **102**. The example of FIG. **1** includes a computer **116**(*a*) as an example of a computing device that might connect by Wi-Fi to home router **102**, using Wi-Fi interface **110**. Computer **116**(*a*) can have voice capabilities, allowing voice-over-IP (VoIP) telephony through home router **102**.

[0018] Telephone handsets **116**(*b*), **116**(*c*), and **116**(*d*) are examples of local voice communication devices or handsets that can be associated with home router **102**. Communication device **116**(*b*) is a digital telephone or DECT handset that connects to home router **102** through wireless digital telephone interface **112**. Communication device **116**(*c*) is an example of a VoIP handset that connects through Wi-Fi interface **110** for voice communications. Communication device **116**(*d*) is an example of a legacy telephone or handset that connects to home router **102** through one of its analog interfaces **114**.

[0019] The local computing devices **116** are merely examples of many different types of devices that may utilize the connectivity and services of home router **102**. Other devices, having different combinations of communications technologies, may also be used. For example, personal digital assistants (PDA), cell phones, smartphones, and other devices having various functionality and features may be associated for communications through home router **102**. Furthermore, cellular devices and other communications or computing devices may also have Wi-Fi or DECT capabilities for use with home router **102**. In addition, home router **102** may include other types of wired and wireless local communication interfaces **108**, as noted above, through which different local devices might connect.

[0020] In conjunction with home router **102**, local devices **116** comprise a private home network, such as a local area network (LAN) or personal area network (PAN). As discussed above, communications over the home network may be wired, wireless, or both. Also, communications devices **116** of the home network may utilize any sort of communication protocol known in the art for sending and receiving messages, such as the Transmission Control Protocol/Internet Protocol (TCP/IP), the Hypertext Transfer Protocol (HTTP), and/or the Session Initiation Protocol (SIP). In one embodiment, communications related to telephony conform to SIP for later transmission by the home router **102** to a telephonic service provider network. Communications also conform to TCP/IP and/or HTTP for transmission across the home network.

[0021] WAN interface **104** can be connected to a wide-area network such as the Internet, often through an Internet Service Provider (ISP). Data routing logic **106** routes data between the wide-area network and the various devices **116** that are connected to or associated with home router **102**, using the standards and protocols mentioned above. WAN interface **104** is also capable of communicating with a telephone service or telephonic service provider network to facilitate voice communications between local devices **116** and remote telephonic devices. Some telephonic service providers might be accessible through the Internet using VoIP technology, while others might be accessible over proprietary and private networks. In some cases, WAN interface **104** can connect to a private telephonic service provider network using secure encryption technology such as a virtual private network (VPN) tunnel.

[0022] Local devices **116** can place and receive voice calls through home router **102**. In some cases, the local device might simply use home router **102** as a data conduit for voice data. This might be the case with computer **116**, which might have VoIP client software for placing and receiving telephone calls in conjunction with an Internet-based telephonic service provider. Handheld devices such as **116**(*b*) and **116**(*c*) might similarly have self-contained capabilities for placing and receiving voice calls once they have Internet connectivity.

[0023] Home router **102** can also, or alternatively, have an internal call handler **120** that makes and receives voice calls and connects them with an appropriate one of local devices **116**. Specifically, call handler **120** facilitates voice calls with local devices **116** and through the one or more local communication interfaces **108** and the wide-area network interface **104**. In this situation, the VoIP or other telephonic software is implemented largely within home router **102**. Local devices **116** act as clients to call handler **120**, communicating with call handler **120** through local communication interfaces **108**. Call handler **120** in turn communicates with a telephonic service provider through WAN interface **104**. In the case of analog telephone **116**(*d*), call handler **120** facilitates voice calls with analog telephone **118**(*c*) through the one or more analog telephone ports **114**.

[0024] The logic and software for establishing and controlling voice calls can be distributed between home router **102** and local devices **116** in different ways. Whether communications are controlled by local devices **116**, or by call handler **120** of home router **102**, IMS (IP Multimedia Subsystem) and SIP protocols can be used to implement voice and other types of communications.

[0025] Home router **102** also has a user data synchronization module or logic **122**. Synchronization logic **122** is configured to access user-added information items from a user data store **124** and to synchronize user-added information items across the plurality of local devices **116**, through the one or more local communication interfaces **108**.

[0026] User-added information items can comprise a variety of data objects, representing specific items of information added by or specific to users or a household of users, such as contacts and address book information, notes, pictures, etc.

[0027] In the illustrated embodiment of FIG. **1**, user-added information items are stored in database **124**, which is external and accessible to home router **102**. However, user-added information **124** could also be stored in a database internal to home router **102**.

[0028] User-added information **124** can be entered and maintained in different ways, including by manual entry using any one of local devices **116**. For example, individual handsets can have user interfaces that allow users to enter specific information such as telephone numbers, addresses, etc. Once entered at an individual handset, the information is conveyed through local communication interfaces **108** to syn-

chronization logic **122**, which in turn updates user data store **124** and pushes the new information to any other local communication devices **116** associated with home router **102**. Alternatively, each of local communication devices **116** may periodically poll home router **102** to detect any changes in user-added information and to update its local information accordingly. Thus, within a short time, all of the local communication devices are updated to contain the same information.

[0029] Specific examples of user-added information can include, without limitation:

[0030] a. calendar events;

[0031] b. messages;

[0032] c. contacts;

[0033] d. photographs;

[0034] e. audio;

[0035] f. notes;

[0036] g. tasks;

[0037] h. email;

[0038] i. voicemail;

[0039] j. logs;

[0040] k. personal locations; and

[0041] l. configuration.

[0042] User data store **124** can take many forms, from a simple memory structure to a complex application with flexible application programming interfaces (APIs). In the embodiment described herein, user data store **124** is implemented as a network-based service, accessible over either a local-area network or a wide-area network using APIs.

[0043] FIG. **2** shows another example of how a home communications system **200** might be implemented to synchronize user-added information across various local devices. In this example, home communications system **200** includes home router **102**, as already described. For simplicity, only the call handler **120** and synchronization logic **122** of home router **102** are shown here.

[0044] Home router **102** forms a base station for local devices **116**, which in this example can be wireless (using DECT, or Wi-Fi interfaces) handsets designed for specific compatibility with the call handling and user data synchronization features of home router **102**. They form part of a home network as described above with reference to FIG. **1**, and connect to home router **102** through local communication interfaces **108**.

[0045] System **200** includes a telecommunications service or telephonic service provider network **204**, implemented by a telephone service provider. Telephone service **204** can be a VoIP-based service, a cellular network, or any other type of telephonic service with access to the world-wide telephonic infrastructure. In various embodiments, the service provider network **204** is associated with a service provider, such as a provider of telecommunication services, data services, messaging services, mobile cellular services, etc. The service provider network **204** can be a private network of that service provider and might include cellular data and communication networks.

[0046] In this example, home router **102** and its call handler **120** communicate with telephone service **204** through a wide-area network **206**. Wide-area network **206** represents any one or more networks known in the art, such as cellular networks and/or data networks, including wide area networks (WANs), LANs, PANs, and/or the Internet. A connection between the home router **102** and the service provider network **204** may be through a number of routers, base stations, and/or devices acting as bridges between cellular and data networks. Communications between the home router **102** and the service provider network **204** may utilize any sort of communication protocol known in the art for sending and receiving messages, such as TCP/IP and/or HTTP. In some embodiments, wide-area network **206** also includes an Internet service provider (ISP) providing Internet connectivity to the home router **102**. In many embodiment, wide-area network **206** can be thought of simply as the Internet.

[0047] In many embodiments, home router **102** communicates with telephone service **204** using a secure tunnel **208**, established through the Internet or other wide-area network using virtual private network (VPN) technologies. This ensures data security and privacy.

[0048] As noted above, user data store **124** can be located remotely from home router **102**. In the example of FIG. **2**, user data store **124** is accessible through wide-area network **206**. Access to user added data **124** can be through another secure VPN tunnel **210**, or using some other secure data exchange protocol. Alternatively, user-added data **124** might be part of and accessible through telephone service **204**.

Example Systems

[0049] FIG. **3** illustrates a simplified, component level view of an example home router **102**, in accordance with various embodiments. As shown, the home router **102** includes a one or more processors **302** and memory **304**.

[0050] In some embodiments, the processor(s) **302** is a central processing unit (CPU), a graphics processing unit (GPU), or both CPU and GPU, or other processing unit or component known in the art.

[0051] Generally, memory **304** contains computer-readable instructions that are accessible and executable by processor **302**. Memory **304** may comprise a variety of computer readable storage media, including both volatile and non-volatile storage media (e.g., RAM, ROM, Flash Memory, miniature hard drive, memory card, or the like). Additionally, in some embodiments, memory **304** includes one or more SIM (subscriber identity module, not shown) cards, which are removable memory cards used to identify a user of the home router **102** to the telephone service **204**.

[0052] Any number of program modules can be stored in the memory, including by way of example, an operating system, one or more applications, other program modules, and program data. Each of such program modules and program data (or some combination thereof) is executable by processor **302** to implement all or part of the logic and functionality described herein. Specific relevant examples of possible program modules are shown in FIG. **3**, but others may also be utilized to perform various functions described herein. Note that the described functions can also be implemented in other ways within home router **102**, such as with various types of hardwired logic or firmware. In addition, the various functions and responsibilities may be segregated or distributed in different ways. The arrangement of FIG. **3** is just one example of how these functions might be implemented.

[0053] In this example, relevant modules of memory **304** include a communications module **306**, a call handling module **308**, a device synchronization module **310**, and other modules and data **312**. The functions of these modules will be described in more detail below.

[0054] Home router **102** also has LAN ports **314**, one or more WAN ports **316**, and data routing logic **318**. LAN ports **314** are various local network ports, including Ethernet ports

and the local device ports **108** described with reference to FIG. **1**. WAN ports **316** can also be one or more Ethernet ports, and correspond to the WAN interface **104** of FIG. **1**. Data routing logic **318** routes IP packets or other network data between WAN ports **316** and LAN ports **314**, in accordance with known protocols. Data routing logic **318** is shown as being a discrete component, but alternatively can be executed by processor(s) **302** as a program module contained and stored within memory **304**.

[0055] Referring now to both FIG. **2** and FIG. **3**, in the described embodiment communications module **306** comprises one or more program modules configured to manage communications and data routing between the various local communications devices **116**. Call handling module **308** comprises one or more program modules configured to manage voice calls between local communication devices **116** and telephone service **204**. Device synchronization module **310** comprises one or more program modules configured to synchronize user-added data and information, as described above, between local communications devices and user data store **124**. In some embodiments, device synchronization module **310** may be configured to pro-actively notify local communications devices **116** of any new or changed user-added data and information, and to therefore push this information to local communications devices **116**. In other embodiments, a pull model might be utilized, wherein device synchronization module **310** responds to periodic queries from the local devices **116** to provide the user-added information to local devices **116**.

[0056] As mentioned above, user data store **124** can be part of the telephone service network **204** and accessible through telephone service network **204**. Alternatively, user data store **124** can be a local device or server, accessible through one of LAN ports **314**. In some embodiments, there may not be a central store such as user data store **124**. Rather, user-added information might simply be stored on local communications devices **116**, and propagated from one to the rest of the local communications devices **116** upon any change to the user-added information. In still other embodiments, home router **102** itself may contain the user-added data store.

[0057] FIGS. **4** and **5** show functions performed by device synchronization module **310**. In FIG. **4**, at block **402**, synchronization module **310** receives a new or changed user item from a local communications device **116**. This is normally in response to a user entering or changing some information item using local communications device **116**, such as the user entering contact or calendar information via local communications device **116**. In response to receiving the new or changed user item, at block **404** synchronization module **310** saves the new or changed user item to user data store **124**. In some embodiments, this is accomplished by issuing appropriate network API calls to a remote server. In other embodiments, this might be accomplished by simply referencing a data structure internal to home router **102**. Also in response to receiving the new or changed user item, at block **406** synchronization module **310** pushes or sends the new or changed user item to other local communications devices **116**, so that all local communications devices have the same information.

[0058] FIG. **5** illustrates a situation in which a user item might be changed on user data store **124** independently of any of local communication devices **116**. This might happen, for example, when user data store is implemented as an Internet-based service accessible over the Internet from various computers. In this situation, a device other than local communications devices **102** might be used to create or alter user items within user data store **124**. In order to accommodate this scenario, synchronization module **310**, at block **502**, periodically queries user data store **124** to determine whether any changes of occurred in user-added data. If no changes have occurred, as indicated by decision block **504**, the query is repeated after an appropriate time delay **506**. If a change has occurred, block **508** is performed, comprising receiving the new or changed data item. In block **510**, synchronization module **310** pushes the changed user item to all of local communications devices **116**.

[0059] FIG. **6** illustrates a component level view of an example local communications device **116** in accordance with various embodiments. As shown, the device **116** may include one or more processors **602** and memory **604**.

[0060] In some embodiments, the processor(s) **602** is a central processing unit (CPU), a graphics processing unit (GPU), or both CPU and GPU, or other processing unit or component known in the art.

[0061] Generally, memory **604** contains computer-readable instructions that are accessible and executable by processor **602**. Memory **604** may comprise a variety of computer readable storage media, including both volatile and non-volatile storage media (e.g., RAM, ROM, Flash Memory, miniature hard drive, memory card, or the like). Additionally, in some embodiments, memory **304** includes one or more SIM (subscriber identity module, not shown) cards, which are removable memory cards used to identify a user communications device **116** to a telephone service or service provider.

[0062] Any number of program modules can be stored in the memory, including by way of example, an operating system, one or more applications, other program modules, and program data. Each of such program modules and program data (or some combination thereof) is executable by processor **602** to implement all or part of the logic and functionality described herein. Specific relevant examples of possible program modules are shown in FIG. **6**, but others may also be utilized to perform various functions described herein. Note that the described functions can also be implemented in other ways within communications device **116**, such as with various types of hardwired logic or firmware. In addition, the various functions and responsibilities may be segregated or distributed in different ways. The arrangement of FIG. **6** is just one example of how these functions might be implemented.

[0063] In this example, relevant modules of memory **604** include a communications module **606**, a user interface module **608**, a user item management module **610**, and other modules and data **612**.

[0064] Communications module **606** comprises communications comprises one or more program modules configured to manage communications and data routing between the local communications device **116** and home router **102**. User interface module **608** comprises one or more program modules configured to interact with a user, allowing the user to make and receive calls, to receive notifications and other information, and to enter or change information such as user-added information items.

[0065] User item management module **610** comprises one or more program modules configured to manage local storage of user information items and to coordinate exchange of user information items with home router **102**. For example, user item management module **610** may receive push notifications from home router **102**, indicating new or changed user infor-

mation items. User item management module **610** responds to such notifications by obtaining or receiving the new or changed user information items and storing them locally. Alternatively, user item management module **610** may periodically poll home router **102** to determine whether there are any new or changed user information items. If it finds that there are such new or changed user information items, user item management module may obtain or receive the new or changed user information items and store them locally.

[0066] The other modules and data **612** are modules for enabling voice and data communications to and from the device **116** as well as other modules for any other number of device functions for telecommunications, media, and computing devices known in the art.

[0067] Local communications device **116** further includes one or more communications interfaces **614**, a display **616**, output devices **618**, and input devices **620**.

[0068] In various embodiments, the communication interfaces **614** are any sort of interfaces known in the art, such as any one or more of an Ethernet interface, wireless LAN interface, a near field interface, a DECT chipset, or an interface for an RJ-11 or RJ-45 port. The a wireless LAN interface can include a Wi-Fi interface or a Wi-Max interface, or a Bluetooth interface that performs the function of transmitting and receiving wireless communications using, for example, the IEEE 802.11, 802.16 and/or 802.20 standards. For instance, the device **116** can use a Wi-Fi interface to communicate directly with home router **116**. The near field interface can include a Bluetooth® interface or RFID for transmitting and receiving near field radio communications via a near field antenna. For example, the near field interface may be used for functions, as are known in the art, such as communicating directly with nearby devices that are also, for instance, Bluetooth® or RFID enabled. A reader/interrogator may be incorporated into device **116**.

[0069] In various embodiments, the display **616** is a liquid crystal display or any other type of display commonly used in telecommunication devices. For example, display **616** may be a touch-sensitive display screen, and can then also act as an input device or keypad, such as for providing a soft-key keyboard, navigation buttons, or the like.

[0070] In some embodiments, the output devices **618** include any sort of output devices known in the art, such as a display (already described as display **616**), speakers, a vibrating mechanism, or a tactile feedback mechanism. Output devices **618** also include ports for one or more peripheral devices, such as headphones, peripheral speakers, or a peripheral display.

[0071] In various embodiments, input devices **620** include any sort of input devices known in the art. For example, input devices **620** may include a microphone, a keyboard/keypad, or a touch-sensitive display (such as the touch-sensitive display screen described above). A keyboard/keypad may be a push button numeric dialing pad (such as on a typical telecommunication device), a multi-key keyboard (such as a conventional QWERTY keyboard), or one or more other types of keys or buttons, and may also include a joystick-like controller and/or designated navigation buttons, or the like.

[0072] Although the subject matter has been described in language specific to structural features and/or methodological acts, it is to be understood that the subject matter defined in the appended claims is not necessarily limited to the specific features or acts described. Rather, the specific features and acts are disclosed as exemplary forms of implementing the claims.

We claim:

1. A telecommunications base station comprising:
- one or more wireless interfaces configured for communication with a plurality of handheld voice communication devices;
- a communications port capable of communicating with a telephone service;
- a call handler that facilitates voice calls with the handheld voice communication devices through the one or more wireless interfaces, the communications port, and the telephone service; and
- synchronization logic configured to access user-added information and to synchronize the user-added information across the plurality of handheld voice communication devices through the one or more wireless interfaces.

2. A telecommunications base station as recited in claim **1**, wherein the communications port is a wide-area network port configured for connection to the Internet.

3. A telecommunications base station as recited in claim **1** wherein:
- the communications port is a wide-area network port configured for connection to the Internet;
- the telecommunications base station further comprises data routing logic to route data to and from the Internet; and
- the one or more wireless interfaces comprises a wireless network access point that connects local wireless devices to the Internet.

4. A telecommunications base station as recited in claim **1**, the synchronization logic being further configured to receive new user-added information from the plurality of handheld voice communications devices and in response to synchronize the new user-added information across the plurality of handheld voice communication devices.

5. A telecommunications base station as recited in claim **1**, the synchronization logic being further configured to access the user-added information from a remote server over a wide area network.

6. A telecommunications base station as recited in claim **1**, the synchronization logic being further configured to access the user-added information from a local server or local data store.

7. A telecommunications base station as recited in claim **1**, wherein the user-added information comprises one or more of the following:
- calendar events;
- messages;
- contacts;
- photographs;
- audio;
- notes;
- tasks;
- email;
- voicemail;
- logs;
- personal locations; and
- configuration.

8. A telecommunications base station as recited in claim **1**, the one or more wireless interfaces comprising one or more of a wireless network access point, a DECT digital telephone transceiver, and a wireless telephone transceiver.

9. A telecommunications base station as recited in claim **1**, further comprising one or more analog telephone ports for connection to analog telephones, wherein the call handler facilitates voice calls with the analog telephones through the one or more analog telephone ports, the communications port, and the telephone service.

10. A data router comprising:

a plurality of wireless data interfaces configured to communicate with a plurality of local devices; and

synchronization logic configured to receive user-added information via a first of the wireless data interfaces from a first of the local devices and to synchronize the user-added information via a second of the wireless data interfaces with a second of the local devices.

11. A data router as recited in claim **10**, wherein the synchronization logic is configured to push the user added information to the second of the local devices.

12. A data router as recited in claim **10**, wherein the synchronization logic is configured to respond to periodic queries from the second of the local devices to provide the user-added information to the second of the local devices.

13. A data router as recited in claim **10**, further comprising:

a wide-area network port for connection to a wide-area data network;

said one or more wireless data interfaces comprising a wireless network access point; and

routing logic configured to route data between the plurality of local devices and the wide-area data network.

14. A data router as recited in claim **10**, further comprising a call handler that facilitates voice calls with the local devices through the one or more wireless data interfaces and the wide-area network.

15. A data router as recited in claim **10**, further comprising:

a call handler that facilitates voice calls with the local devices through the one or more wireless data interfaces and the wide-area network; and

the one or more wireless interfaces further comprising one or more of a wireless network access point, a DECT digital telephone transceiver, and a wireless telephone transceiver.

16. A data router as recited in claim **10**, further comprising:

a call handler that facilitates voice calls with the local devices through the one or more wireless data interfaces and the wide-area network; and

the one or more wireless interfaces further comprising a wireless telephone transceiver.

17. A data router as recited in claim **10**, the synchronization logic being further configured to access user-added information from a server or data store and to synchronize the accessed user-added information across the local devices.

18. A data router as recited in claim **10**, the synchronization logic being further configured to access the user-added information from a remote server over the wide area data network.

19. A data router as recited in claim **10**, the synchronization logic being further configured to access the user-added information from a local server or local data store.

20. A data router as recited in claim **10**, wherein the user-added information comprises one or more of the following:

calendar events;
messages;
contacts;
photographs;
audio;
notes;
tasks;
email;
voicemail;
logs;
personal locations; and
configuration.

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