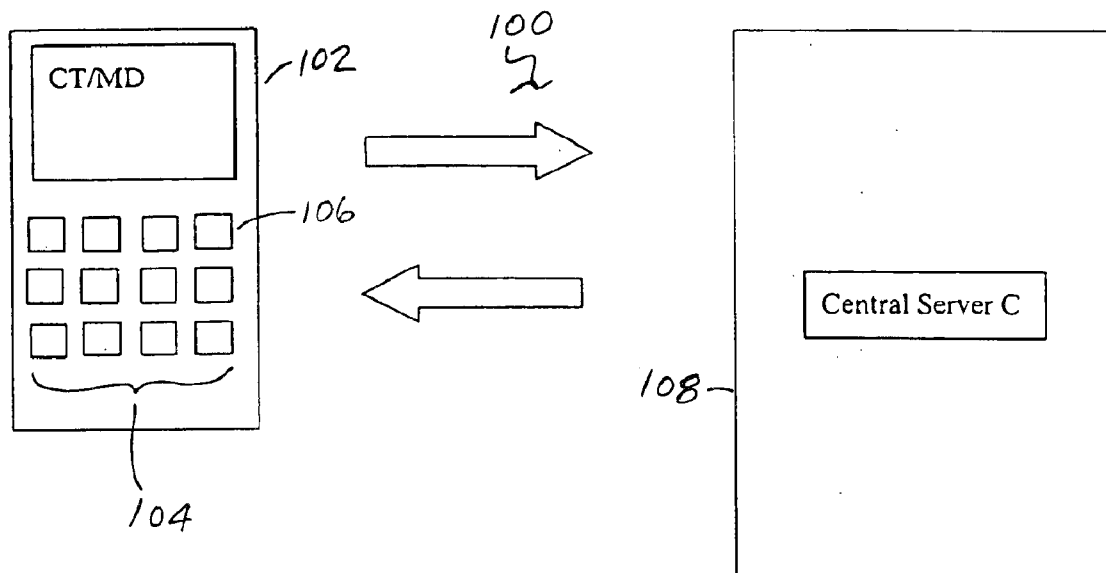




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Rao et al.(10) **Pub. No.: US 2014/0006540 A1**(43) **Pub. Date: Jan. 2, 2014**(54) **CLOUD STORAGE AND PROCESSING
SYSTEM FOR MOBILE DEVICES,
CELLULAR PHONES, AND SMART DEVICES****Publication Classification**(51) **Int. Cl.**
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(US)(21) Appl. No.: **13/775,150**(22) Filed: **Feb. 23, 2013****Related U.S. Application Data**(63) Continuation-in-part of application No. 10/878,666,
filed on Jun. 28, 2004, which is a continuation of
application No. 09/597,607, filed on Jun. 20, 2000,
now Pat. No. 6,882,859, which is a continuation-in-
part of application No. 09/281,739, filed on Jun. 4,
1999, now Pat. No. 6,169,789.(57) **ABSTRACT**

A cloud or network server based storage and processing system for portable electronic devices including mobile devices and cellular telephones is disclosed. The server based data, applications and user interface components may overcome limited local storage and processing on mobile devices. Cloud server data may be accessible from multiple mobile devices or applications. Data acquired from a mobile device's built-in digital camera may be digitized, edited, and processed locally or by network servers. The servers store or provide email, voicemail, music, photos, videos, documents, spreadsheets, books, applications, configuration settings, and send and receive data to multiple network servers or mobile devices. Data may be saved to and downloaded from private cloud intranet servers or public cloud Internet servers. A mobile device may access a network server using a central multichannel multiplexing transmit/receive device or access point. Networked data may be secured. Authentication may include user names and passwords.



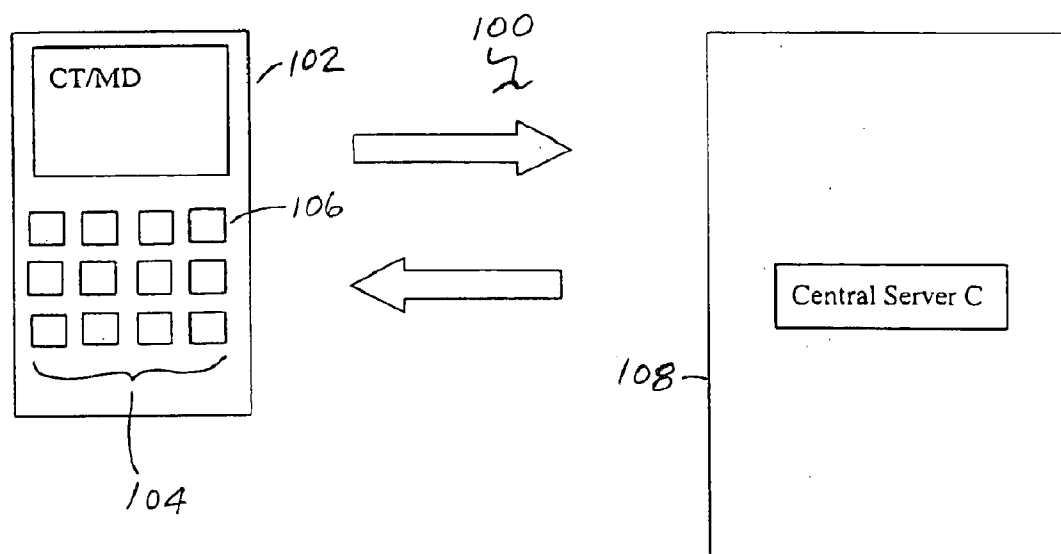


FIG. 1

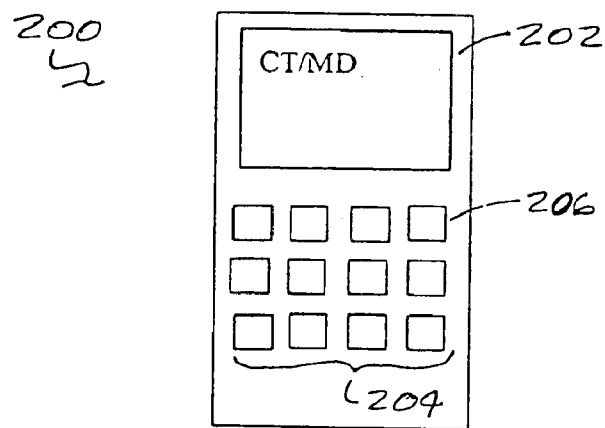


FIG. 2

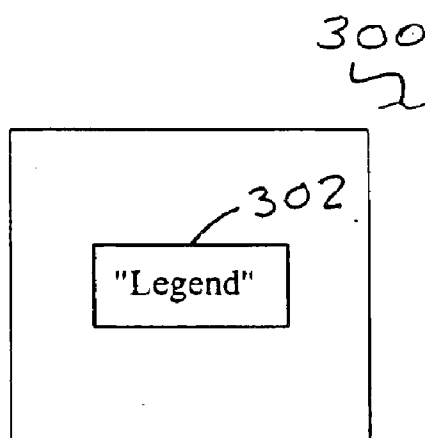


FIG. 3

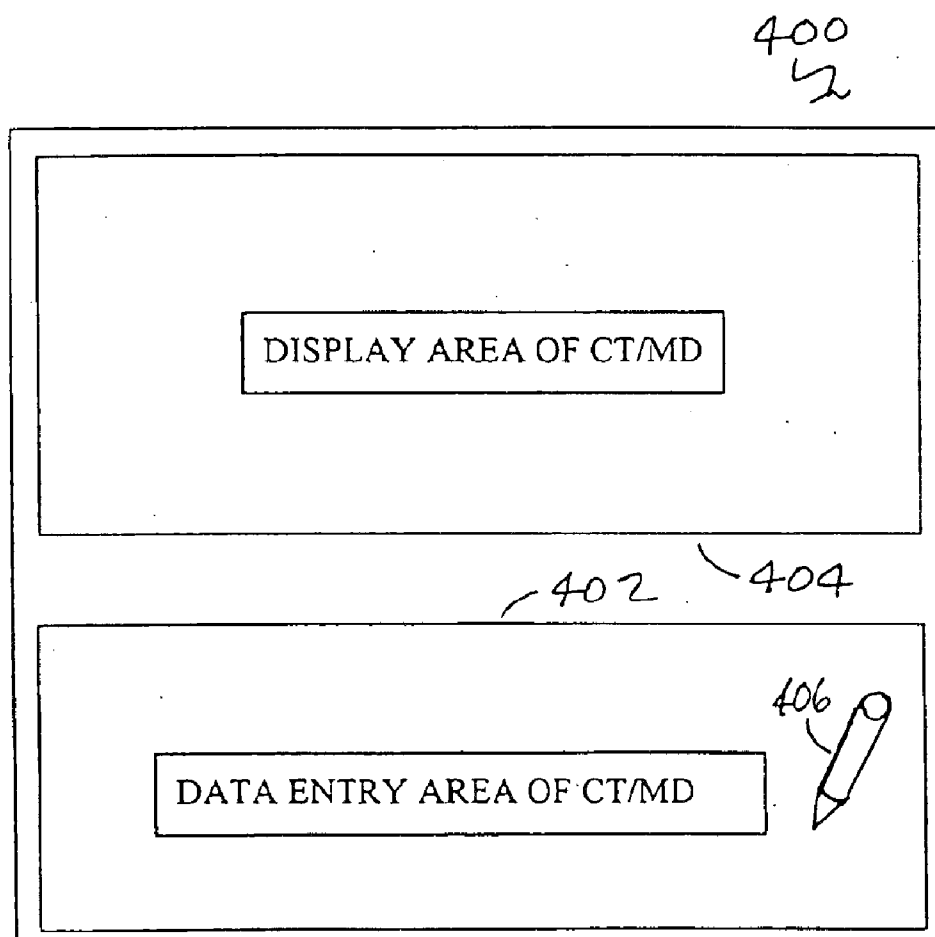


FIG. 4

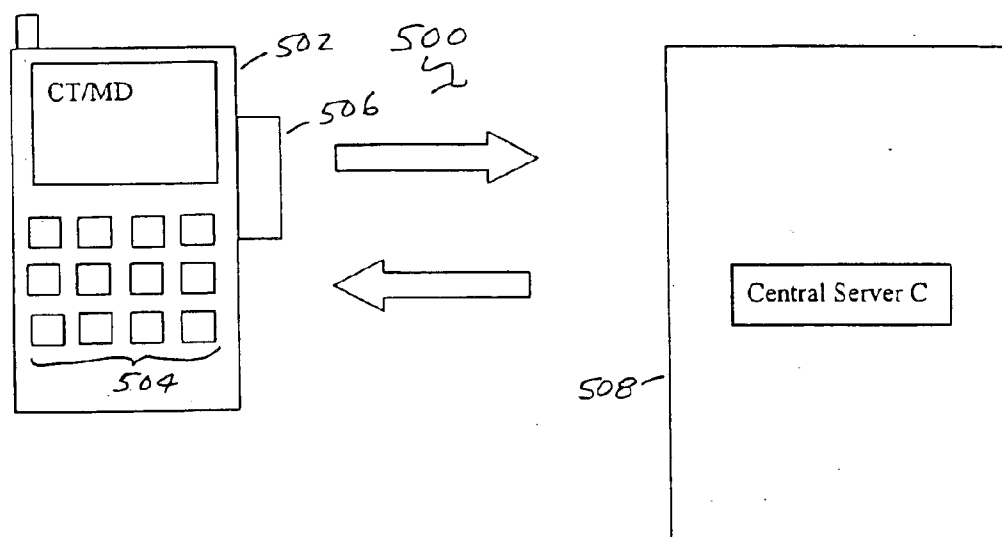


FIG. 5

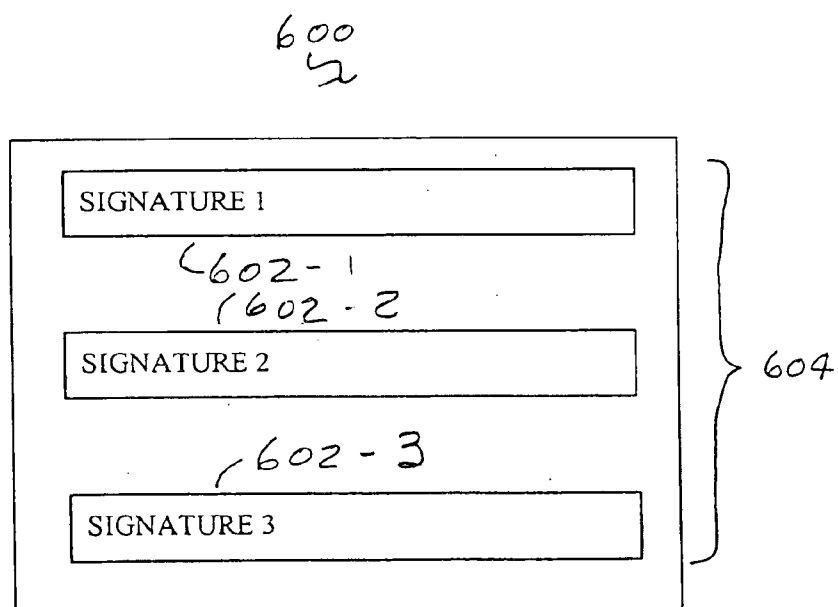


FIG. 6

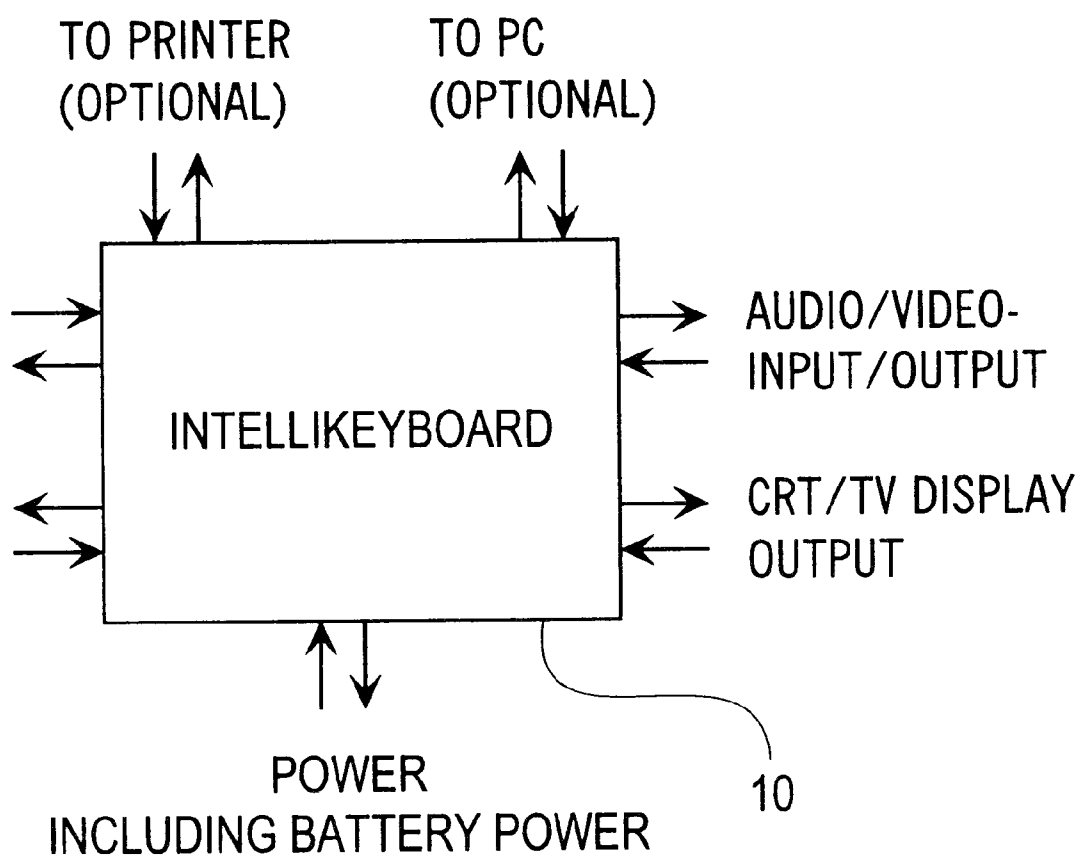


FIG. 7

DISPLAY	TELEPHONY MAY INCLUDE BUILT-IN MICROPHONE AND SPEAKERS	INPUT BLOCK RECEIVER BLOCK DECODER BLOCK INPUT BUFFER BLOCK INPUT CONTROLLER BLOCK PROCESSOR BLOCK DATA COMPRESSION BLOCK OUTPUT BUFFER BLOCK OUTPUT CONTROLLER BLOCK ENCODER BLOCK TRANSMISSION BLOCK MEMORY BLOCK DATA STORAGE BLOCK PROGRAMMABLE LOGIC BLOCK	TRANSMIT/RECEIVE FUNCTION OR MODEM WHICH MAY OPERATE THROUGH EITHER WIRED OR WIRELESS MEANS
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FIG. 8

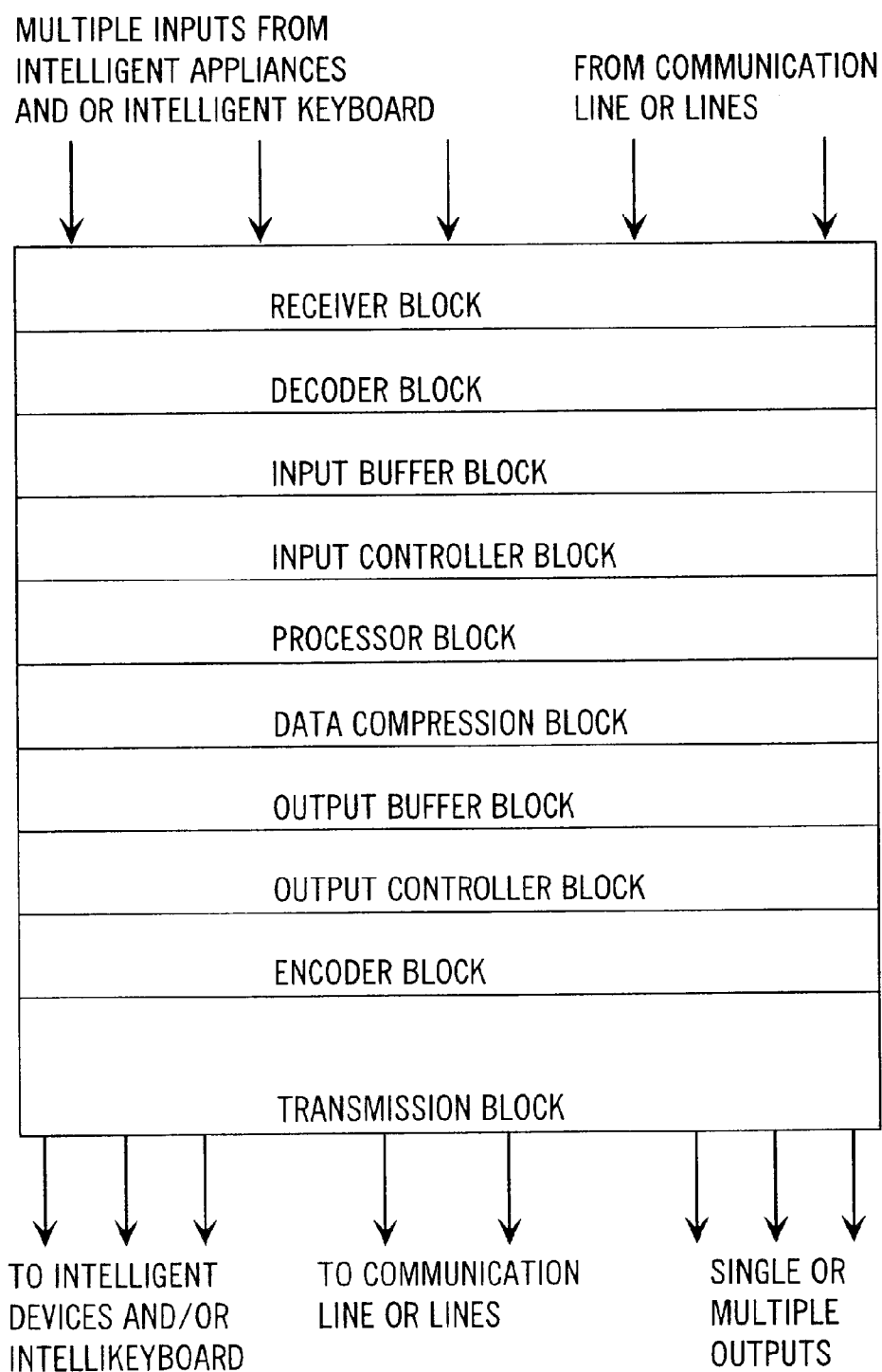


FIG. 9

SENDING DATA:

CODE	INFORMATION	CODE
------	-------------	------

RECEIVING DATA:

DECODE	INFORMATION	DECODE
--------	-------------	--------

FIG. 10

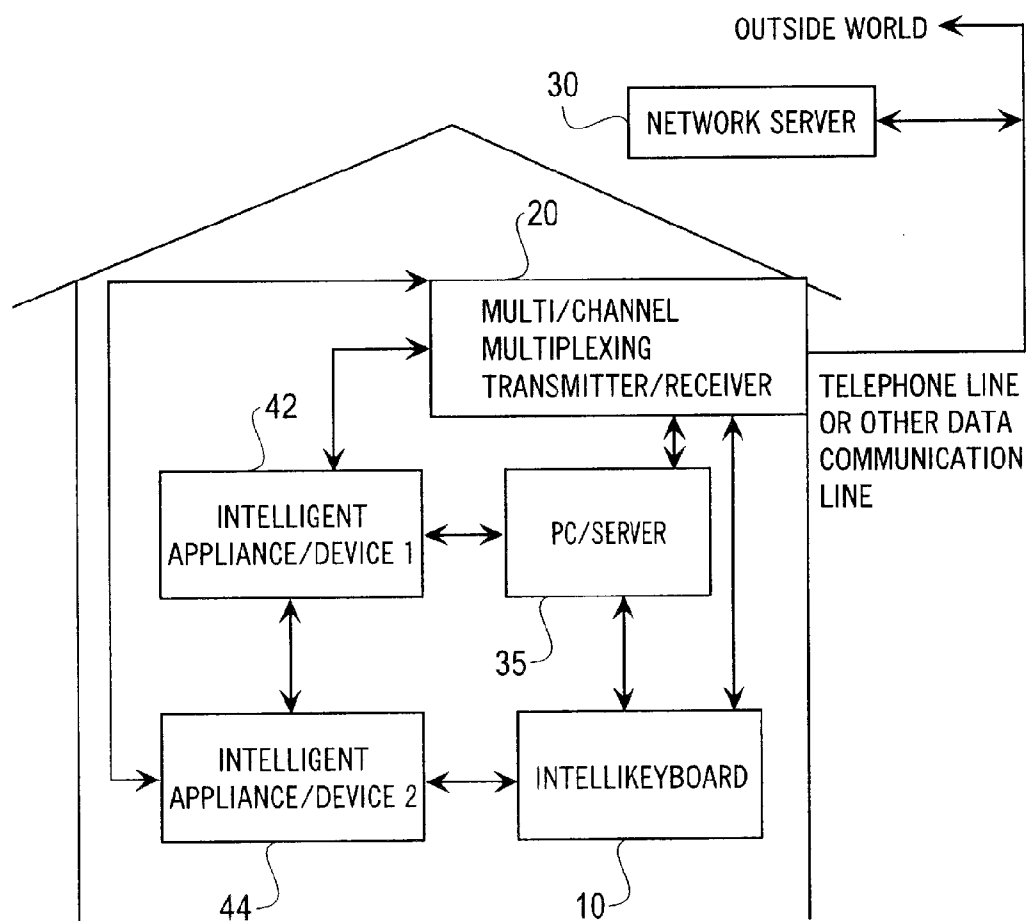


FIG. 11

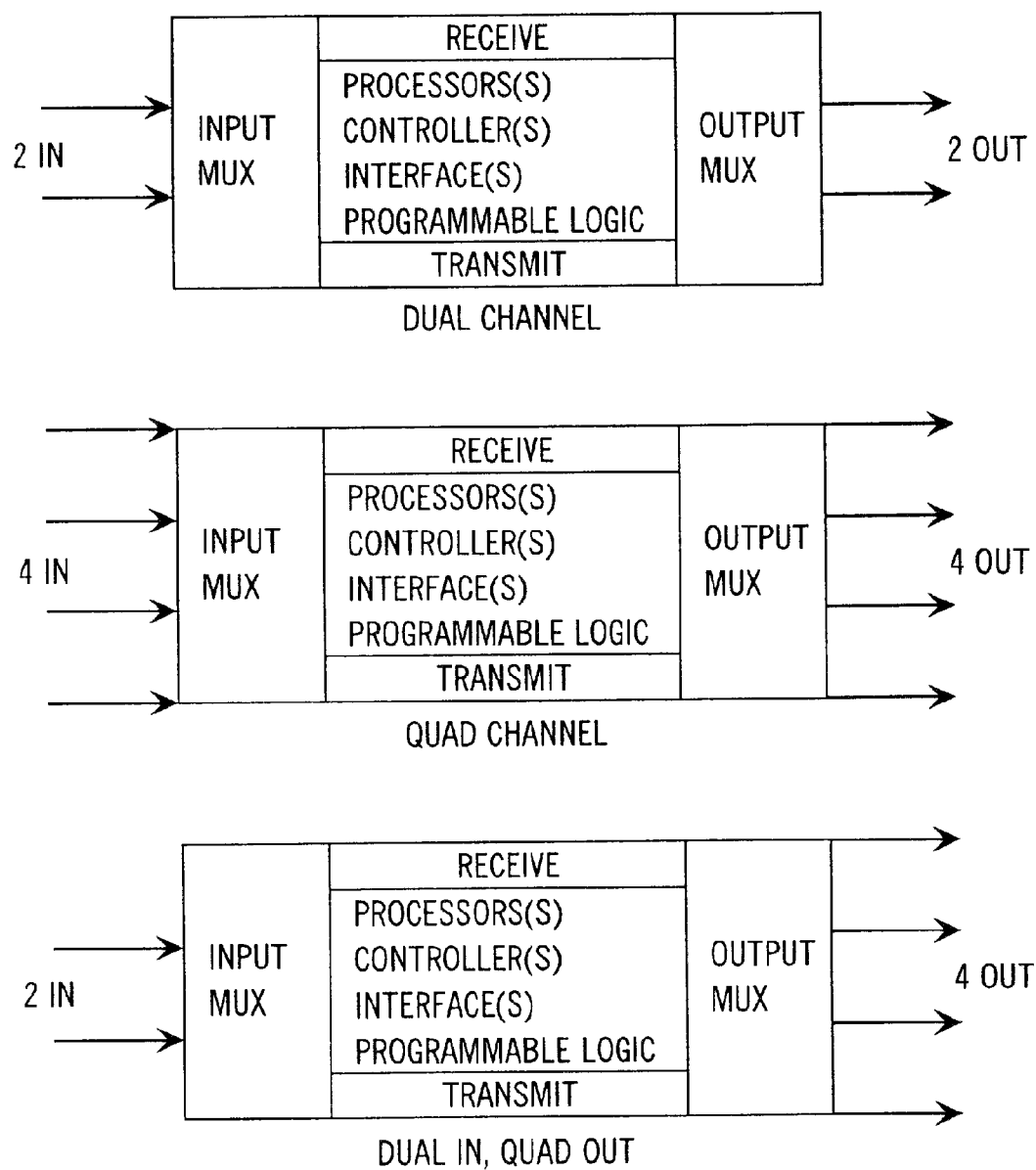


FIG. 12

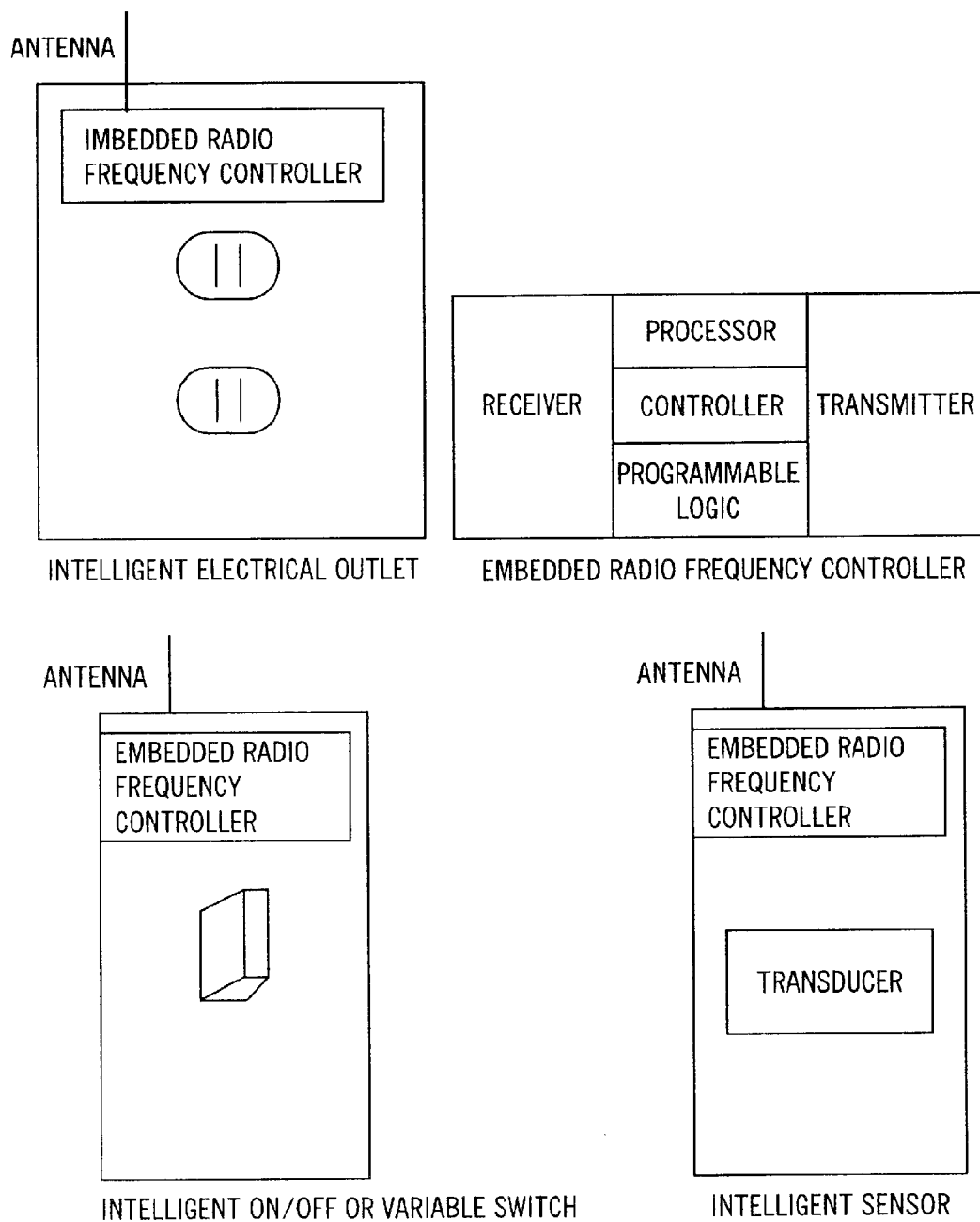


FIG. 13

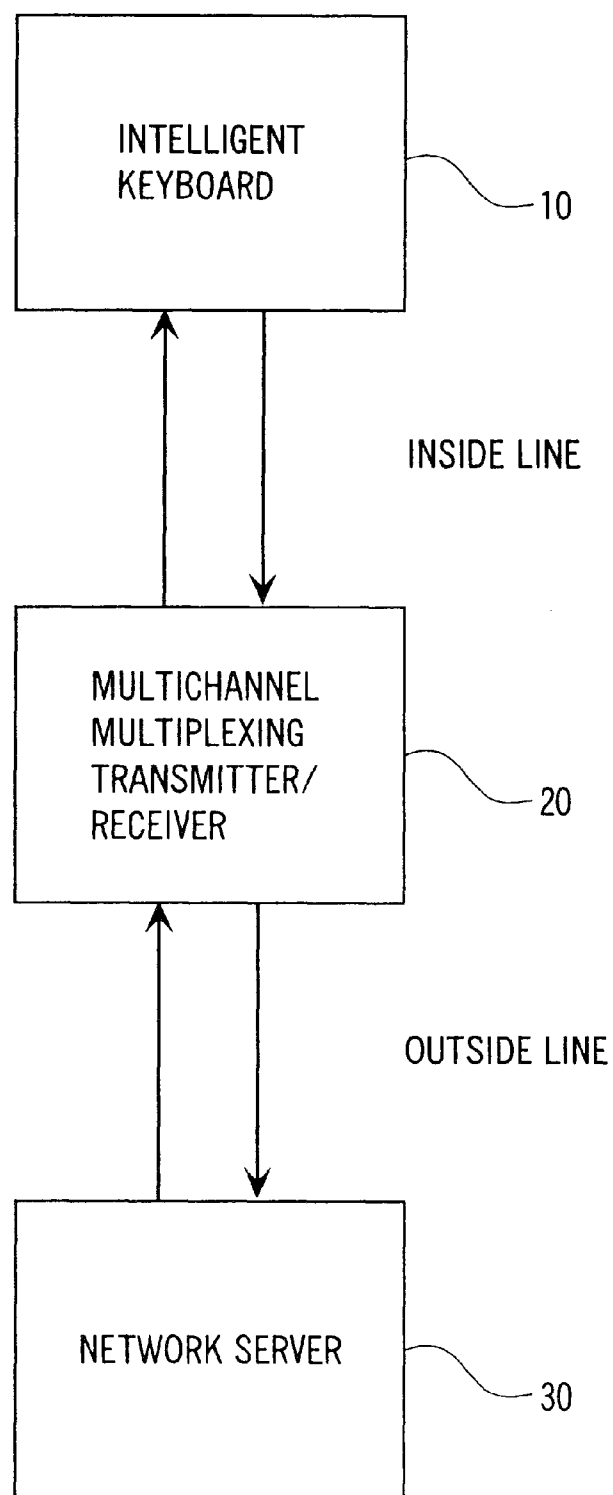


FIG. 14

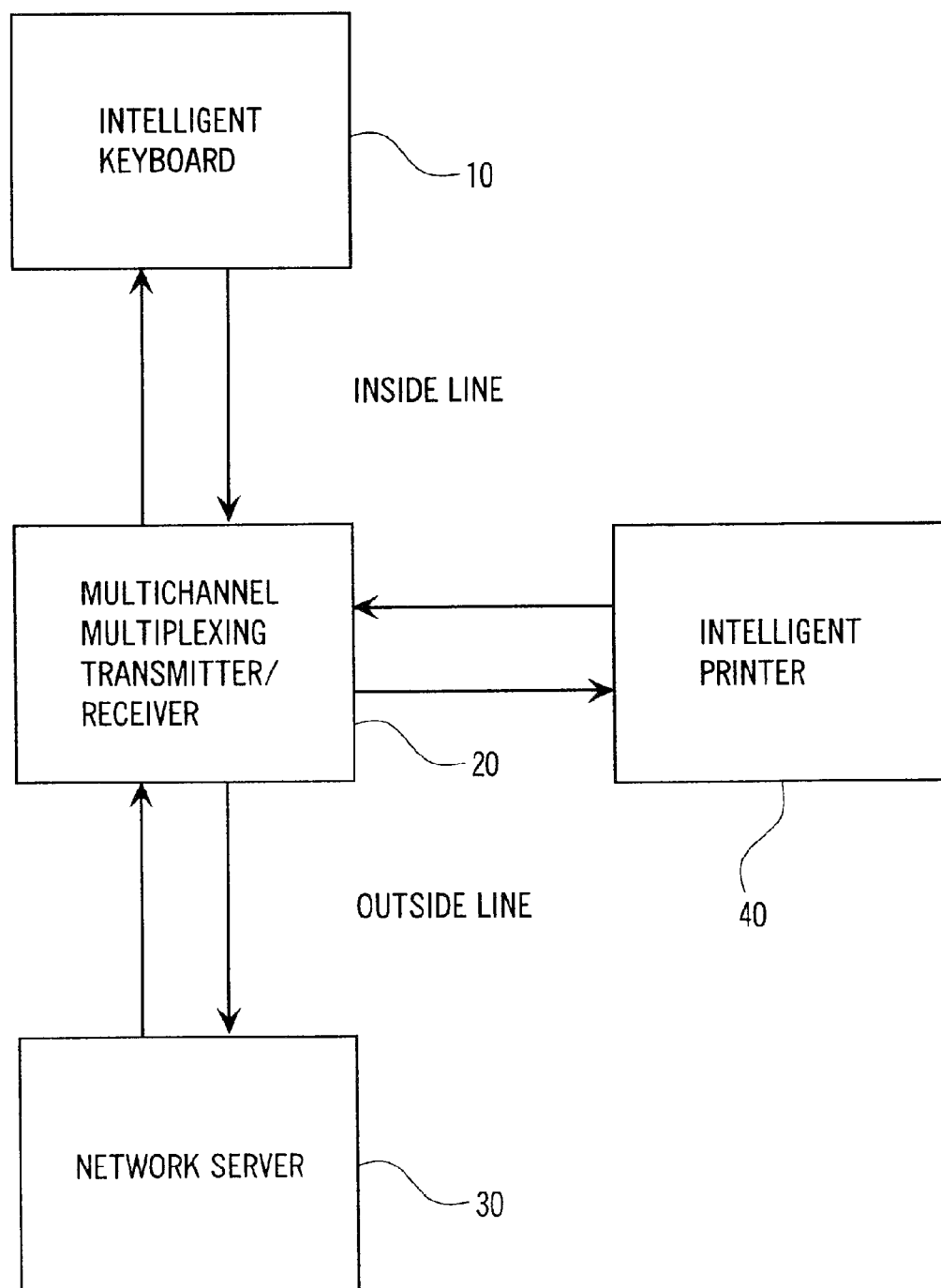


FIG. 15

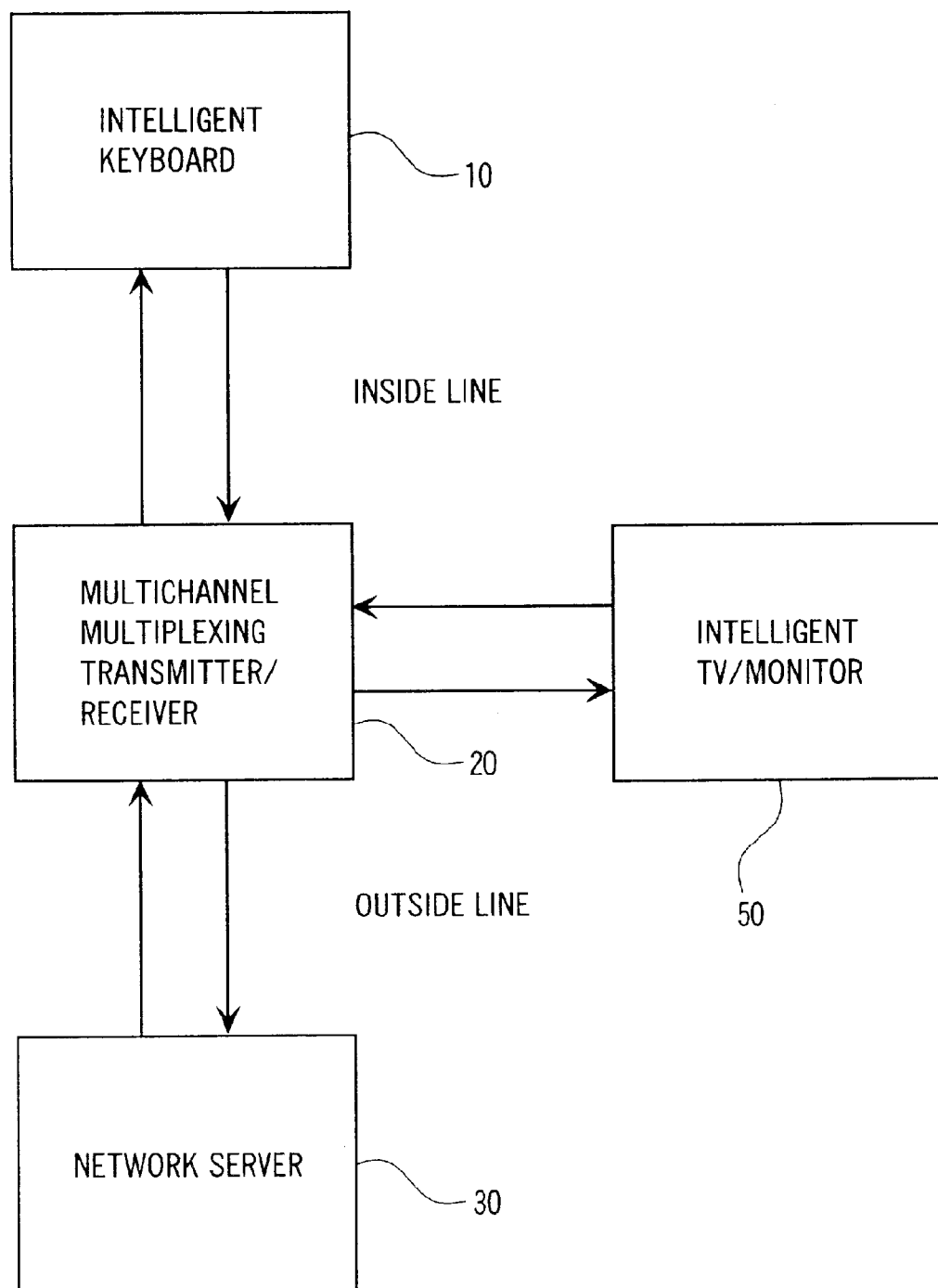


FIG. 16

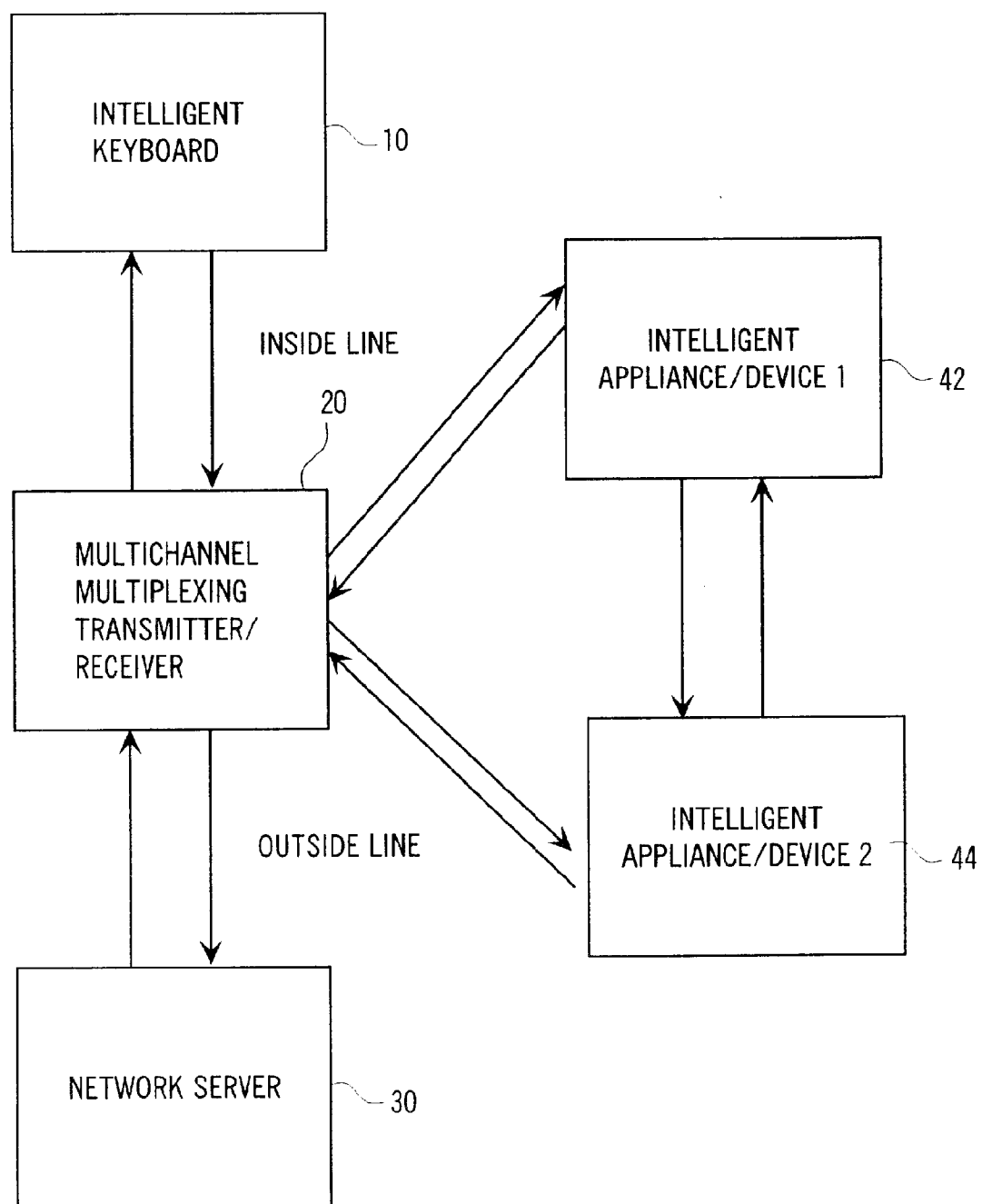


FIG. 17

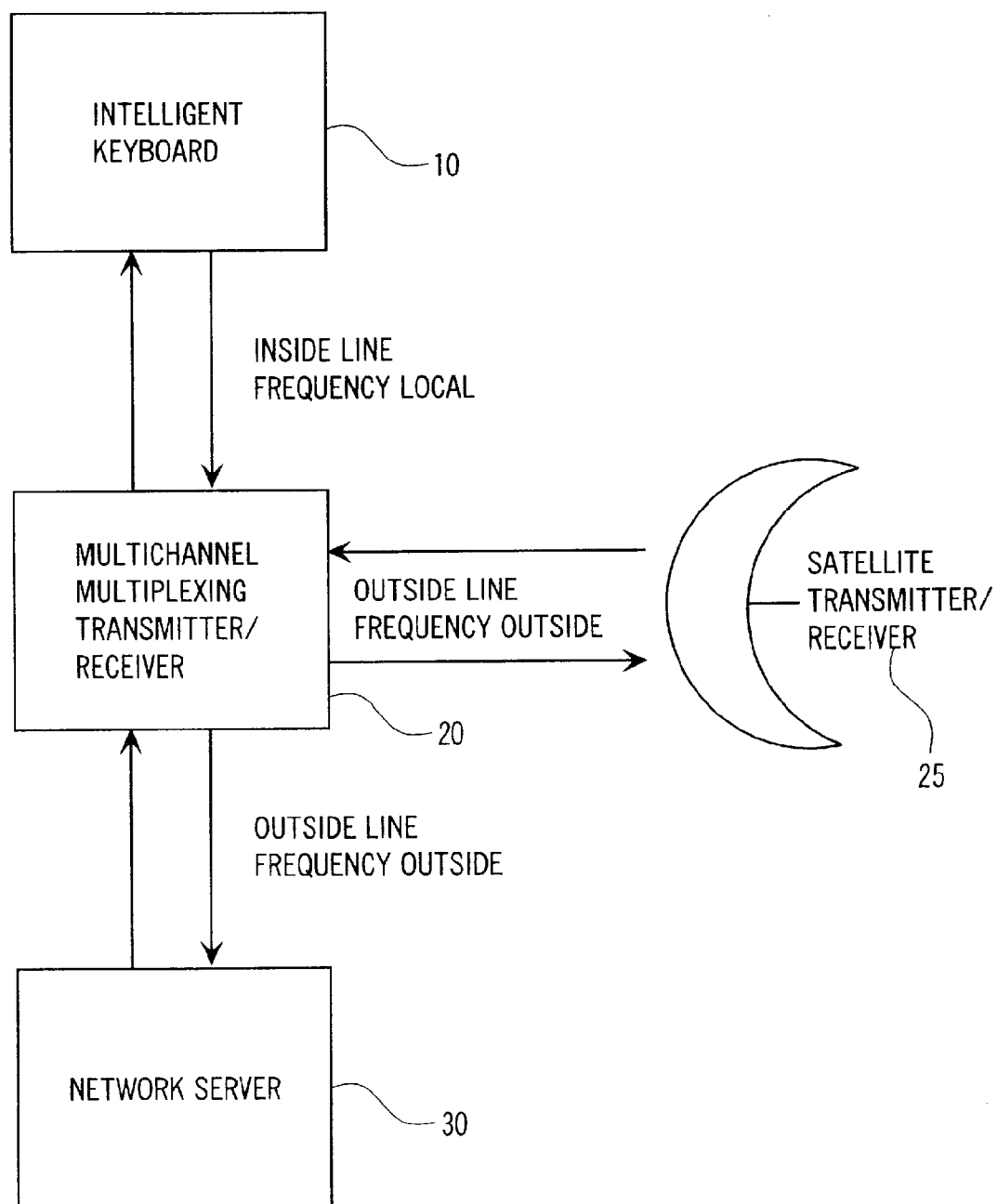


FIG. 18

**CLOUD STORAGE AND PROCESSING
SYSTEM FOR MOBILE DEVICES,
CELLULAR PHONES, AND SMART DEVICES**

**CROSS REFERENCE TO RELATED PATENT
APPLICATIONS**

[0001] The present application is a continuation-in-part of U.S. patent application Ser. No. 10/878,666 filed Jun. 28, 2004, which is a continuation of U.S. patent application Ser. No. 09/597,607, filed Jun. 20, 2000, now U.S. Pat. No. 6,882,859 issued Apr. 19, 2005, which is a continuation-in-part of U.S. patent application Ser. No. 09/281,739 filed Jun. 4, 1999, now U.S. Pat. No. 6,169,789, issued Jan. 2, 2001; the present application claims priority to all the above referenced patents and applications.

BACKGROUND

[0002] Currently the key pad buttons on a cellular telephone/mobile device (CT/MD) pose a limitation in inputting broad based queries. There are only 12 non-control buttons on many CT/MDs. Even where there are more, there are so few that inputting even as little as the letter-number ASCII set is not really practical. For example, in the present art there have been attempts to expand the number of keys, such as treating the numeric keys as numbers unless a code is entered, such as “*#” or the like, then treating a “2” as an “a”, “2-2” as a “b”, and “2-2-2” as a “c”. Entering “2” three times to form a “c” is both confusing and slow, and such approaches have not been popular. If a mixed string of letters and numbers are desired, the three “2”s may have to be delimited with, for example, “#”, and the process becomes increasingly more unwieldy. There has been some success in using a computer, especially a computer operating with “fuzzy logic”, to extract the probable combination of letters in a numeric string, exemplified by an interactive directory for finding the telephone extension number of an employee by “spelling” the employee’s name on a numeric key pad. This is a satisfactory solution only in limited cases. Numeric reduction of this type has not been generally used except for telephone directories and similar purposes.

[0003] This disclosure relates generally to a Portable Electronic Device, including a Mobile Device (MD), Cellular Telephone (CT), and/or Intellikeyboard (IK), which can execute complex tasks previously resident on the personal computer, workstation, server, or a mainframe computer; more particularly, the Portable Electronic Device leverages the tremendous power of both the Intranet and the Internet. Intelligent telephony, appliances, devices, and equipment will find increasing use in modern society. There is a need for one single universal, handheld, lightweight, transportable, intelligent device that can compute, command, and control all these intelligent devices.

[0004] The Portable Electronic Device is lightweight and portable. The Portable Electronic Device consists of an optional built-in or external display, a microphone, speaker, high speed transmit/receive device, such as a modem, in addition to a full function keyboard. The Portable Electronic Device may have additional input/output ports for plugging in auxiliary devices such as a digital camera, printer, and other devices through either wired or wireless means. The Portable Electronic Device has a transmitter, receiver, a digital signal processor(s), other processors, controller, display electronics and audio/video electronics. These functional blocks may be

implemented using standard electronic, mechanical, or electromechanical components or custom electronic, mechanical, or electromechanical components by those knowledgeable in the art.

[0005] The Portable Electronic Device is able to leverage the computing power of the network or local server to process data. The Portable Electronic Device serves as a transmit and receive hub. Thus, the Portable Electronic Device is able to access a network or local server or an intelligent peripheral device to perform any operation or function.

[0006] The Portable Electronic Device is able to transmit data inputted by the user to the network or local server or other devices for further processing. A user may input data into the Portable Electronic Device by typing on the keyboard, inputting voice or sound through the Portable Electronic Device’s speaker, touching the screen of the display on the Portable Electronic Device, using a mouse that interfaces with the Portable Electronic Device, using a pen that interfaces with the Portable Electronic Device, or through another method or device that interfaces with the Portable Electronic Device. This data and commands generated by the Portable Electronic Device may be sent to the local network server or other devices for further processing. The Portable Electronic Device is able to retrieve data processed by the local or network server or other devices. The Portable Electronic Device can then perform further processing or output this data through the optional display, the speaker, or another device that interfaces with the Portable Electronic Device.

[0007] Multiple intelligent equipment, intelligent appliances, televisions, printers and other devices can be accessed by a single Portable Electronic Device or multiple Portable Electronic Devices either through a local/network server or directly. Unique addressing identification of each intelligent device, sequencing of instructions, execution of commands will be performed via a common set of protocols and procedures that reside on a local or network server or on other intelligent devices.

[0008] Multiple Portable Electronic Devices may coexist in an environment to access a common set of intelligent equipment, intelligent appliances, televisions, printers, and other devices. Multiple Portable Electronic Devices will operate in this common environment without conflict by leveraging a common set of protocols that reside on the local or network server and the Portable Electronic Device.

[0009] The Portable Electronic Device with a built-in transmit/receive device, may access standard telephone lines or other communication lines to communicate with other intelligent devices that may be either resident locally or located across an Intranet or the Internet. This two way communication may be either wired or wireless. The Portable Electronic Device has the ability to dial-up and connect with a communication line or another intelligent appliance. The Portable Electronic Device may also work in tandem with other modems and transmit/receive devices that may exist in other appliances or work with a central host modem or transmit/receive unit.

[0010] The Portable Electronic Device combines transmitting and receiving information, performing standard computing functions through use of a network or local server, interacting and commanding many intelligent peripheral devices around the home or office through wired or wireless means, telephony, handwriting recognition, barcode creating, reading and printing; magnetic stripe creating, reading and printing; electronic mail, which may include audio, text/graphics,

and video; mass storage device and display features, video input/output, imaging, audio input/output, voice mail capability, voice synthesis, language translation with text to voice and voice to text capability built into one multi-function device.

[0011] The Portable Electronic Device may also serve as a base station or individual station for telephony able to operate with a built-in or detachable handset. It can also operate with multiple telephones and handsets. In this mode, the Portable Electronic Device can convert voice to text, text to voice, or voice to voice in the same language or in another language. With the large computing/processing power of the local or network server the possibility to conduct live conversation in same or two or more different languages is feasible. Also text transcription of voice conversations and the reverse is possible. The Portable Electronic Device may also include the option to have the keys in its keyboard be inscribed in Braille for individuals that are visually impaired. The Portable Electronic Device may be limited to some or all of the features described above or may include all the features described above based on the options desired by the user.

[0012] In this age of the Intranet and the Internet, there is a trend for the computing power and software protocols to move away from the user location, such as the personal computer, to the local server/network server. The Portable Electronic Device may use the local server/network server to perform complex operations, such as language translation. In addition, the Portable Electronic Device may have some language translation capability resident in itself via language translation modules that may be easily plugged in and out of the Portable Electronic Device.

[0013] The Portable Electronic Device for the first time integrates currently available functions such as transmitting keystrokes to a computing device with transmitting and receiving information, performing standard computing functions through use of a network or local server, interacting and commanding many intelligent peripheral devices around the home or office through wired or wireless means, telephony, handwriting recognition, barcode creating, reading and printing; magnetic stripe creating, reading and printing; electronic mail, which may include audio, text/graphics, and video mass storage device and display features, video input/output, imaging, audio input/output, voice mail capability, voice synthesis, language translation, with text to voice and voice to text capability, and other high speed communication features that may be either wired or wireless. For example, the Portable Electronic Device can interact with various intelligent peripherals and appliances, through either wired or wireless means, to print, scan, fax, copy or perform other functions.

SUMMARY

[0014] It is an embodiment of the present disclosure to provide a scheme by which the limitations of a key pad are overcome and the key pad is enhanced. The scheme uses a local or network server.

[0015] The protocols for configuring each key to a specific function or variable set of functions are stored in a Server C. The protocols for all keys may be stored on Server C similarly. The menu for any macro function can be stored on this Server C. Server C may be part of a local loop or located on the internet.

[0016] In an embodiment of the present disclosure, displays, such as small LCD displays, are mounted on the top of the keys and connected to a matrix addressing system. When

a key is reconfigured, such as from an English language "A" to some Japanese character, the legend displayed on the key with the small display is changed accordingly.

[0017] In another embodiment of the present disclosure, the keyboard is displayed in the display window of a computing device, such as a hand held wireless device. The term wireless device includes entertainment/game machines. The screen of the wireless device is touch sensitive, so the user can type on the screen as if it were a standard keyboard.

[0018] In another embodiment of the present disclosure, the keyboard is displayed on a separate screen in the position of and replacing the keyboard on a device, such as a hand held wireless device. This screen is touch sensitive, so the user may type on it as if it were a keyboard.

[0019] In another embodiment of the present disclosure, the keys on any of the above keyboards, as well as on keyboards of the present disclosure generally, have a sound output, such as a voice output. In this way visually impaired or persons with similar concerns can listen to what keys are being depressed.

[0020] Other embodiments, features and advantages of the present disclosure will become apparent from the following detailed description when taken in conjunction with the accompanying drawings.

[0021] An embodiment of the present disclosure is to enable the basic Portable Electronic Device, which possesses the electronics and computing power to transmit data to and receive data from either a network server (the network server can be a PC) or intelligent peripheral or intelligent appliance through either wired or wireless means, to serve as a transmit and receive hub. Using the computing power resident on the network server a user can perform all standard computing functions from the Portable Electronic Device. The Portable Electronic Device has a transmitter, receiver, a digital signal processor, controller, display electronics and audio electronics which are available as chips. These chips may be standard integrated circuits or custom built. There can be a modem or a transmit/receive device built into the Portable Electronic Device. This modem or transmit/receive device can operate through either wired or wireless means.

[0022] Another embodiment of the present disclosure is to enable the Portable Electronic Device to interact and command many intelligent peripheral devices around the home or office through either wired or wireless means and thus serve as a universal keyboard. By using the processing power of the network server, the Portable Electronic Device can assign an identification number to each peripheral or appliance. With this unique identification number and the processing capability of the network server, the Portable Electronic Device can then control that particular appliance or peripheral. All the appliances and peripherals will subscribe to the same protocols such that they will be able to communicate with each other and be able to execute instructions. The intelligent appliances and Portable Electronic Devices may operate with a common Operating System that may be either proprietary or an industry standard.

[0023] Yet Another embodiment of the present disclosure is to enable a communication and control scheme of intelligent appliances and peripherals using the Portable Electronic Device. The Central multichannel multiplexing transmit/receive device may receive inputs from the local intelligent appliances and route these inputs to the network server/outside world. Conversely, the Central multichannel multiplexing transmit/receive device may receive inputs from the out-

side world/network server and route these inputs to the local intelligent appliances. The Central multichannel multiplexing transmit/receive device is also able to facilitate communication between the local intelligent appliances. The Central multichannel multiplexing transmit/receive device or functional block may have multiple input and output channels, such that sequential/simultaneous addressing and communication with numerous intelligent appliances and communication paths is possible. The Portable Electronic Device is one element that would serve as a universal keyboard/command, compute, and control unit within this environment. It is anticipated that the Central multichannel multiplexing transmit/receive device would exist in each home/office environment to facilitate the overall scheme described in this Portable Electronic Device system. The Central multichannel multiplexing transmit/receive device may be built in multiple configurations. The Central multichannel multiplexing transmit/receive device may be configured with the desired number of input and output channels. The Central multichannel multiplexing modem can be implemented by those knowledgeable in the art utilizing the electronic functional blocks described in this Portable Electronic Device system. The Central multichannel multiplexing transmit/receive device may work in tandem with an embedded transmit/receive device that may exist in each intelligent appliance. Thus, there may exist within the home/office environment a hierarchy of transmit/receive devices:

[0024] 1. An embedded transmit/receive device may exist in each intelligent appliance.

[0025] This embedded transmit/receive device may have multiple inputs/outputs facilitating communication between other intelligent appliances and the central transmit/receive device or directly with the outside world.

[0026] 2. A central transmit/receive device that will exist in the home/office environment such that it may communicate with numerous intelligent appliances and the outside world.

[0027] 3. The ability to convert passive electrical outlets and switches that could communicate within this environment and be controlled by an Portable Electronic Device or other means.

[0028] 4. A universal Portable Electronic Device that will facilitate the command, compute and control of all intelligent appliances and systems within the home/office environment.

[0029] Another embodiment of the present disclosure is to enable the Portable Electronic Device, which has a speaker and microphone to facilitate interaction between voice recognition software resident on the network server and the Portable Electronic Device. The Portable Electronic Device is also capable of outputting sound. It is also able to convert sound to data that can be transmitted to a network server. By using the voice recognition software resident on the network server, Portable Electronic Device can convert text data into voice and broadcast voice through a speaker mechanism.

[0030] Another embodiment of the present disclosure is to enable the Portable Electronic Device's display to send data to and receive data from the network server. This display is capable of showing text, graphics or other data.

[0031] Another embodiment of the present disclosure is to enable the Portable Electronic Device to transmit inputs from either the keypad, display or voice inputs (sound) picked up from the microphone to the network server or intelligent peripheral or intelligent appliance for processing (through either wired or wireless means). Thus, one may either send data to software resident on the network server or intelligent

peripheral or intelligent appliance through the keypad, through voice commands, or through the display by touching the screen.

[0032] Another embodiment of the present disclosure is to enable the Portable Electronic Device to receive and transmit information through a modem, a telephone line, an ethernet line or other form of data communication. These inputs and outputs are then processed by a network server or local server and are relayed back to the Portable Electronic Device and/or the display. The Portable Electronic Device can use its modem to transmit data to and receive data from a network server or "intelligent" peripheral or appliance through either wired or wireless means. In this scenario, the network server may perform any computation that is necessary. Intelligent peripherals and appliances will interact with the Portable Electronic Device through either wired or wireless means.

[0033] For example, wireless communication may be achieved through either radio frequency, in which line of sight is not required, or through infrared, in which line of sight is required. For wireless operation, a radio frequency transmit/receive device or functional block can be built into the Portable Electronic Device. The radio frequency transmit/receive device or functional block allows the Portable Electronic Device, which uses the computing power of the network server, to interface and control other intelligent peripherals or intelligent appliances. The radio frequency modem can be either single or multi-channel. This means that the radio frequency transmit/receive device or functional block which is built into the Portable Electronic Device can receive all of its input from the Portable Electronic Device or it can receive many different inputs from various intelligent appliances and peripherals simultaneously. The radio frequency may be in any range that is FCC approved, including spread spectrum.

[0034] Another embodiment of the present disclosure is to enable the Portable Electronic Device to be connected to a local area network or wide area network, including the Internet, through either wired or wireless means, to receive inputs of text and/or voice and to send outputs of text or voice depending on the user's choice. Voice sent to a network server could be stored as a data file.

[0035] Another embodiment of the present disclosure is to enable the Portable Electronic Device to work in tandem with a network server to receive text or voice data and process these inputs for audio output. The primary computing power/protocols and software reside on the server.

[0036] Voice includes spoken, as well as, other audio and/or audible tones inclusive of music/sound.

[0037] Another embodiment of the present disclosure is to enable the Portable Electronic Device to have options and attachments added to it. For instance, the Portable Electronic Device can have more processing power such that it can perform basic computations and will not have to directly communicate with the network server to perform certain functions. For example, Portable Electronic Device can possess more processing power so that it can assign an identification number to various appliances and peripherals, recognize various appliances and peripherals and so that it can assign instructions for these appliances and peripherals to execute. Additionally, other features such as data storage can be added to the Portable Electronic Device. A module or storage device can be built into the Portable Electronic Device to record and store data and voice. For example, this can be accomplished by using a PCMCIA card. The Portable Electronic Device can also be connected to a mouse, CD-ROM,

printer, CRT/TV by either wired or wireless means. As an option a scanner may interface with the Portable Electronic Device so that documents can then be sent to the network server for further processing.

[0038] An embodiment of the Portable Electronic Device System is to enable a user to use voice commands to access the Internet and at the same time command intelligent peripherals and appliances through either wired or wireless means.

[0039] Another embodiment of the present disclosure is to combine transmitting and receiving information, performing standard computing functions through use of a network or local server, interacting, and commanding many intelligent peripheral devices around the home or office through wired or wireless means, telephony, handwriting recognition, barcode creation, reading and printing; magnetic stripe creating, reading and printing; electronic mail, which may include audio, text/graphics, and video; mass storage device and display features, video input/output, imaging, audio input/output, voice mail capability, voice synthesis, language translation with text to voice and voice to text capability, and other high speed communication features that may be either wired or wireless into one device.

[0040] Yet another embodiment of the present disclosure is to enable a user to translate voice in one language to text or voice in another language. This can be accomplished either by using language translation modules which fit into the Portable Electronic Device or by using the software capabilities of the local or network server. The output can be in audio, display/video format or the Portable Electronic Device can command an intelligent peripheral such as a printer to convert this output into hard copy format.

[0041] Yet another embodiment of the present disclosure is to enable a user to translate text in one language to text or voice in another language. This can be accomplished by either using language translation modules which fit into the Portable Electronic Device or by using the software capabilities of the local or network server. The output can be in audio, display/video format, or the Portable Electronic Device can command an intelligent peripheral such as a printer to convert this output into hard copy format.

[0042] Yet another embodiment of the present disclosure is to enable users to communicate with and command the Portable Electronic Device remotely, through either the Internet or through a data communication line such as a telephone line.

[0043] Still another embodiment of the present disclosure is to enable a user to command the Portable Electronic Device through voice commands. As an example, a user could dictate a message to the Portable Electronic Device in any language.

[0044] Yet another embodiment of the present disclosure is to enable the Portable Electronic Device to be able to interact with other intelligent peripherals or intelligent appliances. This could involve, for instance, interacting with an intelligent television to output the keystrokes that are typed on the Portable Electronic Device.

[0045] Yet another embodiment of the present disclosure is to enable the Portable Electronic Device to interact with other devices through either wired or wireless means.

[0046] Still another embodiment of the Portable Electronic Device is to enable the device to work in conjunction with a local or network server to receive text, voice, or other data and process these inputs for either editing, audio, video, and other data output.

[0047] A embodiment of the Portable Electronic Device is to use the computing power of the local or network server to perform complex tasks. As an example, a local server may be a personal computer.

[0048] Another unique feature of the Portable Electronic Device is that it has a built-in communication functional block such as a high speed transmit/receive device. This high speed transmit/receive function enables the Portable Electronic Device to access the network at very high data rates that are necessary in order to transmit and receive data from other devices or from the network. The ability to transmit/receive may reside within the keyboard or be external to it. This access to the Internet, the Intranet, cable network, wireless network, or other networks may be via wired or wireless means. As an example, the Portable Electronic Device may receive/transmit through a wireless satellite network. It is anticipated that many intelligent appliances will have a common transmit/receive function that would operate under common industry standards and protocols. These standards would apply both for the hardware and the software implementation. These transmit/receive functional blocks will be part of the hardware of many intelligent appliances/devices.

[0049] Another embodiment of the Portable Electronic Device is that it could serve as the base station or as a handset for telephony with the ability to operate with multiple telephone handsets. This will enable the user to transmit and receive using voice and selectively display as needed. The telephony may be either wired or wireless.

[0050] In accordance with another embodiment of the Portable Electronic Device System the Portable Electronic Device may have options and other devices added on to it. For example, extra data/mass storage devices can interact with the Portable Electronic Device. This will allow local archival of confidential and sensitive messages and data, while at the same time will enable the user to access certain types of data since it is resident locally rather than on the network.

[0051] Another embodiment of the Portable Electronic Device is that it can take inputs of written word or spoken word and output a synthesized voice through its speakers. The database that contains the intonation and phonetic character of the voice can reside either in specialized modules which fit into the Portable Electronic Device, or on the local or network server, or on the Portable Electronic Device itself. Various synthesized voices can be selected ranging from your own to someone else's. As an example, you could record some selected sounds and it would recognize your voice patterns and synthesize it. This allows text to be outputted as speech in your own voice or another voice.

[0052] Another embodiment of the present disclosure is to enable the Portable Electronic Device to capture images from books, blackboards, white boards, paper easel boards, and other displays to either print, process, transmit, or store for future use. As an example, the Portable Electronic Device may have an image capture capability through a digital camera. The image capture capability may either be built-in, or be in an optional attachment or be part of a peripheral device that works in tandem with the Portable Electronic Device. In this scenario, the Portable Electronic Device can digitize the text/drawings or other information displayed on a book, sheet of paper, blackboard, white board, paper easel, or other forms of display for archival, further processing, or transmission via a network to other locations/devices.

[0053] Another embodiment of the present disclosure is to enable the Portable Electronic Device to use its digital cam-

era, which can be an attachment or can be built into the Portable Electronic Device, to digitize an image. This image can then be converted to either voice or text. As an example, if the digital camera took a digitized image of a page in a book which might be inconvenient to scan in through a page-feed scanner, as opposed to a flat-bed scanner, it could then convert this image into text and store this as a text document, process this information further, could convert the image into voice for further processing, or output the voice through the speakers.

[0054] Another embodiment of the present disclosure is to automatically add subtitles/text to a video clip, which may be displayed continuously or frame by frame. The Portable Electronic Device converts the voice from the video clip into text and is able to display this text/subtitle on a CRT or display in any or multiple languages. As an example, this option would be of great benefit to individuals who are hearing impaired. Another example of the benefit of this textual display is the ability for those watching a movie in one language to hear the sound in that language but view the text/subtitles on the screen in a different language.

[0055] Another embodiment of the present disclosure is to recognize alpha-numeric text to create barcodes. The Portable Electronic Device can also read barcodes to create alpha-numeric text. With a barcode reader attachment which may be wired or wireless the Portable Electronic Device serves as a vehicle either to print barcode labels or to store the digitized barcode information for further processing.

[0056] Another embodiment of the present disclosure is to enable the Portable Electronic Device to serve as a point of sale terminal that can read magnetically coated information from credit cards. In this configuration, the Portable Electronic Device will have a built-in feature or an external attachment where a credit card can be swiped across a reader that would be able to read magnetically coated information from the credit card for transmission, verification, transaction, and confirmation. The Portable Electronic Device, as an example, may be used in stores to conduct transactions. By interacting, and commanding an intelligent printer, the Portable Electronic Device would be able to print. It is also anticipated that the Portable Electronic Device would be able to facilitate home banking, home shopping via this feature with the ability to provide printed receipts or storage of relevant information on a local and/or network server.

[0057] Another embodiment of the present disclosure is to enable a user to input handwritten text in any specific language and have the Portable Electronic Device output text in the same or another language in a standardized format in any font for either display, transmission, or further processing. The Portable Electronic Device can perform the reverse operation of converting standardized text in any specific language to handwritten text in the same or a different language. It is anticipated that independent third parties would develop handwriting pattern recognition algorithms based on sampling and digitizing various types of handwriting patterns in a specific language with the object of creating a lookup table that would provide a corresponding standardized textual equivalent. These types of handwriting recognition databases may be created for English and all other languages with a textual equivalent in each language. Cross-linking of these different handwriting language databases allows for language translation of handwritten text into the same language or another language's textual equivalent. As a result, it is also possible to have the conversion of handwritten text in one

language to handwritten text in another language. If the user desires to use his own handwriting for output, the user can input a sample document of his handwriting to the Portable Electronic Device. The Portable Electronic Device can then store the handwriting pattern and various handwritten letters of the alphabet in a look-up table or database. The Portable Electronic Device can use this database and optical character recognition/handwriting pattern recognition algorithms to output a text document in the user's handwriting. It is also possible to convert handwritten text into voice and the reverse process of voice into handwritten text in the same or a different language. The software, protocols, handwriting recognition algorithms and databases to perform this function may reside in the Portable Electronic Device or on a local or network server which the Portable Electronic Device interacts with.

[0058] Another embodiment of the present disclosure is to provide complete portability such that the Portable Electronic Device can be used locally or globally. A Portable Electronic Device may be personalized and used anywhere in the world by plugging into a communication line to access various intelligent appliances and devices.

[0059] Another embodiment of the present disclosure is to enable handheld personal computers and other similar portable or desktop devices to incorporate some or all of the features claimed for the Portable Electronic Device.

[0060] Another embodiment of the present disclosure is that an embedded multichannel transmit/receive device or functional device may be incorporated into various intelligent appliances including a handheld PC. The embedded transmit/receive function allows the communication among various intelligent appliances and is configured to work in tandem with a Central multichannel multiplexing transmit/receive device.

[0061] Another embodiment of the present disclosure is that a Central multichannel multiplexing transmit/receive device will be an integral part of a local or wide area network working as a central controller or communications server. In this capacity, it is able to control a number of intelligent client appliances within its local sphere of control or Radio Frequency (RF) range. In this capacity as a communications server this unit unlike a PC or other standard servers may not have full range of computing capabilities but a limited set that enables it to serve in sequencing and scheduling the transmit/receive functions.

[0062] Another embodiment of the present disclosure is to define a transmit/receive functional block that can be single input or multiple input with either a single or multiple outputs that may be accessed sequentially or simultaneously. Conceptually the transmit/receive functional block may be executed in two forms: 1) as an embedded transmit/receive function that would reside in an intelligent appliance or device 2) as a central multichannel multiplexing unit that could work in association with a number of embedded transmit/receivers, to schedule and sequence communication traffic.

[0063] Another embodiment of the present disclosure is that the embedded transmit/receive function and the central multichannel multiplexing transmit/receive functional block concept can be executed at a printed circuit board level or as a multichip single package or as a single chip monolithic IC solution. This solution can be an integral part of every intelligent appliance, personal computer, servers, and other

devices to enable intelligent appliances to communicate within a local or wide area network or across the Internet.

[0064] Another embodiment of the present disclosure is to enable the ubiquitous wall electrical sockets, switches, sensors, and other similar devices to be turned into intelligent units capable of being controlled by the Portable Electronic Device and functioning smartly within an intelligent local or wide area network. This is accomplished by an embedded radio frequency controller. The functional block level concept for executing this radio frequency controller as a single chip monolithic IC solution is outlined.

[0065] The Portable Electronic Device, System, embodiments, variations, and features thereof will be more readily apparent from the following detailed descriptions and appended claims when used in conjunction with the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0066] The accompanying drawings, being incorporated in and forming a part of this specification, illustrate embodiments of the disclosure and, together with the description, serve to explain the principles of the present disclosure:

[0067] FIG. 1 is an embodiment of the present disclosure showing a CT/MD with a reconfigurable keyboard communicating with a Central Server C.

[0068] FIG. 2 is an embodiment of the present disclosure showing a CT/MD with display devices on the keys for defining the function of the key dynamically.

[0069] FIG. 3 is an embodiment of the present disclosure showing a key with a screen or display thereon for containing a legend.

[0070] FIG. 4 is an embodiment of the present disclosure showing a wireless device having a screen for containing a keypad which is accessed by a pointer, such as a stylus.

[0071] FIG. 5 is an embodiment of the present disclosure showing a wireless device having a microphone for allowing voice entries for language translation.

[0072] FIG. 6 is an embodiment of the present disclosure showing how users of the present disclosure who are physically separated can collaborate in a signing ceremony.

[0073] FIG. 7 is a system level input/output configuration block diagram of the Portable Electronic Device. In addition to its normal keyboard functions, display, and other features, the Portable Electronic Device has the ability to interface with a telephone line, to other networks, to Ethernet or to other data communication paths, either by wired or by wireless. Note that all arrows on FIG. 7 can signify either wired or wireless data communication paths. The Portable Electronic Device may have a built-in embedded transmit/receive device/function or may interface with an external transmit/receive device either of which may be wired or wireless, either radio frequency or infrared. The input/output functions of the Portable Electronic Device described in this figure can be executed by those knowledgeable in the art and reduced to actual practice.

[0074] FIG. 8 is a detailed block diagram of the Portable Electronic Device that highlights the display, telephony, transmit/receive function, and other specialized functions which can be implemented as hardware and/or software by those knowledgeable in the art and reduced to practice.

[0075] FIG. 9 is an embedded transmit/receive function diagram that describes one of the possible schemes and detailed functional blocks that would be part of an embedded transmit/receive function. It is anticipated that many intelligent appliances will have an imbedded transmit/receive func-

tion that complies with established industry standard hardware and software protocols that are expected to emerge. The figure shows multiple inputs and multiple outputs that would allow each intelligent appliance to sequentially/simultaneously interface with more than one intelligent appliance or Portable Electronic Device. The Portable Electronic Device itself is an intelligent device that would have the same embedded transmit/receive function.

[0076] FIG. 10 is a simplified block diagram showing a method to transmit, receive and identify that would allow the coding of information, transmitted by an intelligent device such that this information received by another device can be decoded and identified to its unique source from which the data was transmitted.

[0077] FIG. 11 shows a global scheme of how multiple intelligent devices and the Portable Electronic Device coexist in an office/home environment with each other, the PC/server, the network server, and the outside world. This drawing shows a central multichannel multiplexing transmit/receive device that is able to receive inputs from various intelligent appliances and channel the routing and transmission for efficient communication between various intelligent appliances. Note that all lines represent either radio frequency paths, infrared paths, or another form of wired or wireless data communication.

[0078] FIG. 12 shows how the central multichannel multiplexing transmit/receive device/function could be implemented as a hardware system in a box or as an integrated system level silicon solution in the form of a single chip/multi-chip single packaged integrated circuit. Many combinations of inputs and outputs are possible as shown in FIG. 12. Note that the transmitter/receiver may be either wired or wireless.

[0079] All the figures are for illustrative purposes and the number of inputs and outputs is not to be construed as limited by the examples shown in the Figures. In addition, the feature of programming provides for added flexibility. Further, each of the input/output channels could be hardwired designed or software programmable to interface with various types of input/output data communication lines.

[0080] FIG. 13 shows how the ubiquitous electrical outlet and the electrical switch could be made to be intelligent by having an embedded radio frequency controller. The embedded radio frequency controller allows the Portable Electronic Device and/or other intelligent appliances to efficiently and intelligently interact with the electrical outlet and the electrical switch. The electrical wiring may serve as an antenna. By extension this concept may be applied to other appliances that are either active or passive. In addition, the existing base of electrical outlets/switches could have an intelligent plug-in module to turn these hitherto passive outlets into active intelligent outlets/switches. The embedded RF controller may have programmable features built-in to provide added options. Note that the antenna may be part of the intelligent electrical switch or intelligent electrical socket or intelligent sensor or it may use the internal wiring of the house as an antenna.

[0081] FIG. 14, FIG. 15, FIG. 16, FIG. 17 and FIG. 18 show additional block diagrams of a Portable Electronic Device system.

DETAILED DESCRIPTION OF ILLUSTRATIVE EMBODIMENTS

[0082] The present disclosure provides means for more easily and intuitively assigning, for example, key values to a wireless device such as to a key associated with the wireless device. The present disclosure also provides means for compressing or expanding the keys on an entry system such as a wireless device or wireless computing device to more efficiently provide keys needed for entry or other reasons, such as sound, in a desired space.

[0083] The present disclosure uses a Central Server C providing the software routines and other support for realizing the improved input key means for a wireless device or for a wireless computing device.

[0084] Thus the Server C contains a number of menus for different applications comprising of assigned values for each key function.

[0085] 1. Individual Key->may take one or more values that are programmable.

[0086] 2. Full set or subset of keys->may take one or more values that are programmable.

[0087] 3. The individual or subset or full set of keys->is programmable to perform assigned functions.

[0088] 4. The above individual or subset or full set of keys in combination may comprise a menu to perform various customizable functions.

[0089] 5. The identity of each programmed value for a key, set of keys or full set of keys is stored in the Server C.

[0090] 6. The menus, sub menus and individual key functions are stored in Server C and may be accessed for use by wired or wireless means. They can be dynamically changed as defined by the user's needs.

[0091] 7. The user may easily go from one set of functions or menus to another set of functions or menus by selecting an option from the CT/MD.

[0092] 8. The menus or functions may coexist on the CT/MD. One function or menu may go to the background and one may be in the foreground. One set may be primary and the others secondary or a hierarchy of functions/menus may be maintained, such as with a windowing of templates, where the user may change templates in the same manner as changing windows on a personal computer (PC).

[0093] 9. Server C manages the delivery of these functions to the CT/MD and also maintains a history.

[0094] 10. This same process is extendible to pen based inputs where certain figures or icons or strokes may be designated to indicate certain functions or menus that are stored on the Server C and delivered as needed by a command from the CT/MD.

[0095] 11. This same process is extendible to voice based input commands and output where each voice command or output means a certain function or a menu that is stored in Server C. The voice recognition function in addition may add more functionality to respond to a given voice. The voices may be in different languages.

[0096] 12. The same process may be extendible to sounds rather than voice; for example, the sound of a bell.

[0097] In addition the CT/MD may contain electronics and process capability to internally store the various programmable key functions or menus such that different functions and menus may be chosen as the need arises.

[0098] In addition, the web server may be shrunk into a microchip that can be part of the internal electronics of the CT/MD, in which case a local or network server may or may

not be needed. In this event the features described above for programming and describing each key or input/output could be handled by the internal web server independently or in conjunction with a local or network Server C.

[0099] If a user initiates communication with a particular device, i.e., if a user selects a particular device, the system may understand the context and may change the keypad automatically. Thus the system may perform context-aware keypad changes. This context may be based upon location, the devices communicated with, devices present in its local environment, or other factors

[0100] FIG. 1 illustrates a wireless system **100** with a CT/MD **102** having a dynamically reconfigurable keypad **104**. Such a keypad **104** provides the ability to define macro keys not included with the standard alphanumeric keypad. In FIG. 1, a CT/MD **102** which seems standard has display devices mounted on each key **106**, so that the legend appearing on the key **106** is configurable in software such as from Central Server C **108** without requiring external physical changes.

[0101] FIG. 2 illustrates a wireless device **200** such as a CT/MD having a display **202** and a key pad **204**. The key pad **204** has keys such as key **206** which are assignable as desired in software.

[0102] The user may choose to reassign a key on the wireless device to represent a particular function. For example, the user could assign a key to serve as a garage door opener. The user may also use this functionality for universal language capability, such as to change an English keypad to serve as a Japanese keypad. The display mounted on the key may be used to change the keypad template, such as by introducing a Japanese character on the key replacing the English letter "A" or a macro such as "open garage door".

[0103] FIG. 3 shows an embodiment of the present disclosure in the form of a key **300** such as a key that might be found on a multifunction keyboard. In FIG. 3, the key **300**, such as a key from a multi-function keypad, is composed of a liquid crystal display (LCD) which can be modified with electrical inputs only. In this manner, as new templates are used, the key **300** will immediately reflect these changes. Thus, when a key **300** is reassigned a new name and function, the key's new name can become apparent to the user as a legend **302** on the key **300** itself.

[0104] The LCD or similar display need not form a part of the key. A clear button made of, for example, plastic may encase a LCD type display which may or may not be touch sensitive; that is, a touch sensitive LCD. As new templates are loaded, the LCD display is modified to reflect these changes.

[0105] FIG. 4 shows an embodiment of the present disclosure with a CT/MD **400**. FIG. 4 shows the CT/MD **400** having a dynamic key pad **402** such as a touch sensitive LCD panel. The CT/MD **400** optionally includes a liquid crystal display (LCD) **404**. If a writing area is present then new templates can be loaded with, for example, selectable icons, and a stylus **406** can be used to choose the various keys.

[0106] Server Based, Remote Handwriting Recognition.

[0107] Handwriting recognition may be processing intensive. Wireless devices may not have the processing capability to perform advanced handwriting recognition techniques within a reasonable time. The wireless devices can offload handwriting recognition functions to a central server. The server may then transmit the recognized characters back to the wireless device, such as screen **402**.

[0108] This could serve also as a signature authentication or finger print authentication mechanism. A scanner could be used to perform finger print authentication. Such authentication could take place remotely on a Central Server C 108.

[0109] FIG. 5 illustrates a wireless system 500 which is an embodiment of the present disclosure. In FIG. 5, a wireless device 502 transmits an image of the text that has been captured from the writing area 504. This may be a bit map image or it could be in a standard format that both the wireless device 502 and Central Server C 508 understand.

[0110] The wireless device 502 establishes a wireless connection with the Central Server C 508 and transmits the image in a standard format. The Server C 508 then performs the processing on the image and converts it into a format of standard recognized characters which the wireless device 502 understands. The server 508 thus takes an image format of the inputted information and converts it into another format of known characters. After this processing is complete the server C 508 can then transmit the converted format back to the wireless device 502. The server C 508 could also perform language translation on the inputted information. A microphone 506 at the wireless device 502 accepts voice. Voice clips may be transferred to the server 508 and converted to text using voice recognition software at the server 508. Alternatively, language translation may be performed on the voice file for voice based language translation. After the server 508 has performed these processing steps, voice files or text may be sent back to the wireless device 502.

[0111] The system 500 can also be used for user authentication such as with finger print, eye print, or password authentication.

[0112] Authentication:

[0113] Additionally, the key pad 400/stylus 406 interface could be redefined so that a finger print could be taken for image authentication. This image would be used, for example, for user authentication. The software for recognizing a finger print could reside on a network server 508 or on the hand held device 502.

[0114] The present disclosure allows for handwriting recognition and can be used for authentication. The recognition software can be on the network server or on the hand held device. The present disclosure also allows for the person to speak to a cell phone/hand held device and access remote macros. For example, by stating "open garage". This command could connect to a network server 508 which would then authenticate the voice. Since voice recognition could be burdensome, this operation could be performed on a networked server 508 or on the hand held device 502. Once the voice has been recognized through voice recognition software, the command will be performed.

[0115] In FIG. 6, an embodiment of an input pad such as a touch sensitive screen 600 of another part of the disclosure allows for collaborating. The present disclosure allows screens such as screen 600 to be viewed interactively for interacting from separate devices. For example, if three screens such as screens 602-1, 602-2, 602-3 are used to sign a document from different places, signatures 602 can be on separate screens 600 and optionally displayed on other screens as well. Each screen can be watched separately, with signing being done in parallel or sequentially on the separate screens. This allows the signatures displayed on screens 602 to be placed on a virtual document 604 for interactive verification. Each signature displayed on screens 602 can have a different trust level. The escrow agent is Server C 508.

[0116] The present disclosure has been described with a number of features and advantages. For example, one embodiment of the present disclosure provides a keyboard device including a plurality of configurable keys and a central server where the central server includes means for dynamically configuring a legend on a selected key from the configurable keys, means for detecting an actuation (selection) of the selected key with the legend, and means for associating the actuation of the selected key with the legend on the selected key. The central server could be remote or local to the keyboard device.

[0117] The keys in the keyboard typically could be LCDs for displaying the respective legends, and desirably are touch sensitive.

[0118] The keyboard device could be voice based, sound based or macro based, including key, sound or voice. The keyboard device could be wireless, such as a cellular telephone or mobile device. The keyboard device could be non-wireless.

[0119] Referring now to FIG. 1, the Portable Electronic Device may have multiple inputs and outputs which may be connected through either wired or wireless means. Additional inputs and outputs may be added as needed to make the Portable Electronic Device a multifunction universal keyboard. The added features may be external or built-in.

[0120] Referring to FIG. 1, the Portable Electronic Device may have an optional built in scanner mechanism such that the Portable Electronic Device can be used as a handheld scanner. This built-in scan mechanism may be arranged along any edge of the Portable Electronic Device to allow for page scanning, or other document scanning by dragging or sweeping the Portable Electronic Device edgewise, across the document. The scanned images may be displayed on a built-in screen of the Portable Electronic Device or transmitted for further processing/display on other intelligent devices.

[0121] Referring, to FIG. 1, the Portable Electronic Device may also have a built-in CD-ROM capability with insertion/removal of CD along any edge of the Portable Electronic Device. The compact disc diameter may vary and may be customized to a smaller diameter to fit into the Portable Electronic Device and meet any size constraints. Similarly, along another edge of the Portable Electronic Device it is possible to have a slot for a floppy disk drive or other ports.

[0122] Referring to FIG. 1, the Portable Electronic Device may have a built-in microphone and speaker to facilitate speaking directly into the Portable Electronic Device as we normally do into a telephone handset and also listening to its sound output. In addition, the Portable Electronic Device may have optional attachments to provide other standard telephony features.

[0123] Referring now to FIG. 8, the Portable Electronic Device comprises a keyboard, a display, a microphone, a speaker, telephony, transmit/receive device, with optional input/output ports. The telephony feature may work either with an intelligent telephone/base station or with a local or network server. Data may be inputted via the keyboard, a touch screen display, or through voice. Processing may be performed within the Portable Electronic Device or by the local or network server or other intelligent devices.

[0124] Referring now to FIG. 9, illustrates the Central multichannel multiplexing transmit/receive device, and the electronics/components of the Central multichannel multiplexing, transmit/receive device: an input block, receiver block, decoder block, input buffer block, input controller block,

processor block, data compression block, output buffer block, output controller block, encoder block, and transmission block. Shown in this Figure are multiple inputs from various intelligent appliances and/or the Portable Electronic Device. The input block comprises of multiple channels that will route the data to the receiver. The receiver electronics is capable of receiving data and identifying the source of each data packet. The receiver block is capable of receiving inputs simultaneously or sequentially from various sources. The data received from the receiver block may be in an encoded form in which case the decoder block decodes the data for further processing. Simultaneous and/or sequential data packets from multiple sources are stored and queued for further processing in the input buffer block. The input controller block decides which packet of information needs to be processed next and sends the appropriate packet of data for further processing by the processor block. After the data is processed by the processor, it is now ready for transmission. However, to achieve high speed transmission the data compression block compresses the data. The data is now stored in the output buffer block awaiting specific instructions by the output controller block. The encoder block encodes the packet of data such that it reaches the unique appliance or device for which it is intended. The transmission block transmits the data in sequence to the intended appliance or device or for further processing via a standard communication line or a RF data path. Those knowledgeable in the art can implement each of the specific functional blocks utilizing standard electronic components or custom components. These components may be configured to perform parallel processing for various data streams. For example, when four channel capabilities are desired, four separate processor components may be used or a four channel monolithic processor specifically designed for this purpose may be used.

[0125] Referring now to FIG. 10, this figure shows a simplified block diagram by which an identifying string could be attached to real data. This identifying string will precede actual data transmission and will also be sent after the actual data transmission. In other words, packets of real data are embedded in between two identifying strings. These identifying strings uniquely define the source of the data and the destination of the data.

[0126] Thus the intelligent appliance sending the data is uniquely identified and the intelligent appliance receiving the data is uniquely identified. The periodicity at which the identifying strings could be appended to actual data will depend on the level of accuracy, security, and the speed of transmission desired. The actual data may be encrypted. These protocols ensure that the correct intelligent appliance is being addressed at all times. In addition, the user may be able to set a unique identification number and addressing sequence of his choice for each intelligent appliance or device.

[0127] Referring now to FIG. 11, this figure shows a system level scheme that describes the various communication and data paths between various intelligent appliances, the central multichannel multiplexing transmit/receive device, the local or network server, and the Portable Electronic Device. When sending data, intelligent appliances and devices are expected to subscribe to common, industry standard protocols that establish the identity of each intelligent appliance/device and the unique way to address each intelligent appliance/device. These protocols ensure that the correct intelligent appliance/device is being addressed at all times. In addition, the user

may be able to set a unique identification number and addressing sequence of their choice for each intelligent appliance/device.

[0128] The Central multichannel multiplexing transmit/receive device may receive inputs from the local intelligent appliances and route these inputs to the network server/outside world. Conversely, the Central multichannel multiplexing transmit/receive device may receive inputs from the outside world/network server and route these inputs to the local intelligent appliances. The Central multichannel multiplexing transmit/receive device is also able to facilitate communication between the local intelligent appliances. The Central multichannel multiplexing transmit/receive may have multiple input and output channels such that sequential and simultaneous addressing and communication with numerous intelligent appliances and communication paths is possible.

[0129] The Portable Electronic Device is one element that would serve as a universal keyboard/command and control unit within this environment. It is anticipated that the Central multichannel multiplexing transmit/receive device would exist in each home/office environment to facilitate the overall scheme described in this Portable Electronic Device system. The Central multichannel multiplexing transmit/receive device may be built in multiple configurations. The Central multichannel multiplexing transmit/receive device may be configured with the desired number of input and output channels. The Central multichannel multiplexing transmitter/receiver can be implemented by those knowledgeable in the art utilizing the electronic functional blocks described in this Portable Electronic Device system.

[0130] The Central multichannel multiplexing transmit/receive device may work in tandem with an embedded transmit/receive device that may exist in each intelligent appliance. Thus, there exists within the home/office environment a hierarchy of transmit/receive devices:

[0131] 1. An embedded transmit/receive device may exist in each intelligent appliance. This embedded transmit/receive device may have multiple inputs/outputs facilitating communication between other intelligent appliances and the central transmit/receive device or directly with the outside world.

[0132] 2. A central multichannel multiplexing transmit/receive device that will exist in the home/office environment such that it may communicate with numerous intelligent appliances and the outside world.

[0133] 3. The ability to convert passive electrical outlets and switches that could communicate within this environment and be controlled by an Portable Electronic Device or other means.

[0134] 4. A universal Portable Electronic Device that will facilitate the command, compute and control of all intelligent appliances and systems within the home/office environment.

[0135] Referring now to FIG. 12, which describes a multichannel multiplexing transmit/receive device, the transmit/receive controller electronics block diagram can be implemented by those skilled in the art with either standard or custom electronics. The entire controller electronics may be a single chip integrated circuit. It is anticipated that all intelligent appliances would utilize this block diagram as a universal and requisite embedded feature. This embedded transmit/receive function may come in multiple configurations of inputs and outputs. In dual channel configuration, the multiplexing transmit/receive device has two inputs and two out-

puts. This will allow an intelligent appliance to sequentially or simultaneously be addressed by the Portable Electronic Device for either sequential or simultaneous output. Similarly, this same block diagram concept is executable for a Central multichannel multiplexing transmit/receive device.

[0136] Referring now to FIGS. 3, 4, 5, and 6, the following examples serve to demonstrate the workings of the Portable Electronic Device, intelligent appliances, and the central multichannel multiplexing transmitter/receiver:

Example 1

[0137] A telephone call may be initiated or received using the Portable Electronic Device. A user may activate the Portable Electronic Device and put it into the telephony mode. Immediately, the Portable Electronic Device is in RF communication with the central multichannel multiplexing transmitter/receiver located in the local area network. The central multichannel multiplexing transmitter/receiver will connect with the outside line and complete the connection. Let us say at some point in the conversation the capability of the local server or network server is desired. The Portable Electronic Device can send a RF command to the central multichannel multiplexing transmitter/receiver to bring the server on-line and into the communication loop. The server may be used to record the conversation or to have the conversation translated into another language using the extensive language translation capabilities resident on the local/network server. Conversations could be conducted in two or more languages.

Example 2

[0138] If at any time during the conversation a printout is desired an intelligent printer can be activated by the Portable Electronic Device to initiate and execute the job. This is accomplished by sending an RF signal from the Portable Electronic Device to the intelligent printer via the central multichannel multiplexing transmitter/receiver. The intelligent printer is now in the loop and is executing the tasks immediately or queuing and scheduling the task.

Example 3

[0139] The text, graphics, and video may be activated by the Portable Electronic Device and viewed on a built-in screen or viewed on an intelligent TV screen by patching the intelligent TV screen into the communication loop.

Example 4

[0140] Multichannel capability and the ability to multiplex the inputs/outputs sequentially or simultaneously for use by a number of intelligent appliances is possible. This multichannel multiplexing capability may exist within each intelligent appliance. The ability to incorporate this feature is driven by need and cost. The advantage is that this feature allows each intelligent appliance and the whole local area network to be used efficiently and effectively by allowing queuing and scheduling of various tasks. The queuing and scheduling tasks is real time and there may be different levels of queuing and scheduling capabilities resident in each intelligent appliance and the local area network.

[0141] Certain levels of queuing and scheduling capabilities may exist in the intelligent appliance, another level of capabilities may exist in the central multichannel multiplexing transmitter/receiver and yet another level of capability may exist in the local or network server. The level of capabil-

ity to queue, schedule, process, receive, and transmit data depends on the number of input and output channels, the size of the data buffer and whether the inputs and outputs can be multiplexed. It is also possible to define and dedicate certain channels for various pre-defined or programmable tasks only. The embedded transmitter/receiver function and the central multichannel multiplexing transmitter/receiver can be built to have a combination of various input and output channels with and without multiplexing capability. The basic concept of how these electronic functional blocks can be executed at either the board level or chip level is described. As an example, a quad-in and quad-out transmitter/receiver can have one channel dedicated for telephony, another channel dedicated for TV, another channel for printers, and a channel for security or it is possible to have certain channels multiplexed for use by a number of intelligent appliances.

Example 5

[0142] The transmission/reception is within the FCC prescribed frequency domain for intelligent appliances. The transmitter/receiver electronics and ICs are designed to conform to the prescribed standards. However, within the local or wide area network significant RF traffic from numerous intelligent appliances may be present with the potential for crosstalk and other problems. To avoid this crosstalk, packets of RF data sent by each intelligent appliance are coded and transmitted in such a way that periodically there will be an identifying string of data that clearly defines the source of the data and the destination. The periodicity of this identifying string data, the length and complexity of this identifying string data, and the encryption of actual data is driven by the level of accuracy and the level of security desired. This ability to encode and decode identifying strings from each appliance allows multiple intelligent appliances to use the same RF frequency domain and co-exist within a local area network. The implementation of this concept requires the hardware described and a pre-defined set of software protocols that may be either industry standard or custom.

Example 6

[0143] The central multichannel multiplexing transmitter/receiver may either connect with the outside world through the wire or by wireless or satellite means. It is possible that this central multichannel multiplexing transmitter/receiver may communicate in one defined frequency domain within the local or wide area network with all intelligent appliances that are part of this network and at a same or different frequency domain with the outside world. By extension the reverse concept is also claimed. In this scenario, where there may be a need for two different frequencies of communication the transmitter/receiver electronics and chip level solutions can be designed to accommodate for this requirement.

Example 7

[0144] Referring now to FIG. 13, the figure consists of an intelligent electrical outlet with a built-in radio frequency controller. The radio frequency controller has the ability to receive inputs and transmit Output such that the electrical outlet can be controlled by the Portable Electronic Device or other means. The radio frequency controller consists of the transmit/receive function and the control function which includes the ability to turn the outlet on and off and perform other variable and programmable control functions. The radio

frequency controller consists of a receiver, a processor, controller, programmable logic, and a transmitter. The radio frequency controller electronics may be implemented by those skilled in the art using, either standard or custom electronics. The entire controller electronics may be implemented as a monolithic single chip integrated circuit. A block diagram concept of how this embedded RF controller can be implemented at a chip level is shown in FIG. 13. The radio frequency controller can be incorporated on all new electrical outlets and switches to be made in the future such that they are all intelligent electronic outlets and intelligent electrical switches. Alternatively, a plug-in module may be configured to make existing electrical outlets and electrical switches intelligent. Additionally, this concept of an embedded RF controller may be extended to other sensors that would sense such things as light, temperature, and pressure, smoke, to name a few. The radio frequency controller consists of the transmit/receive function and the control function which includes the ability to turn the switch on and off. It is possible to assign a unique identification to each electrical outlet and each electrical switch to uniquely address and control these units using the Portable Electronic Device.

[0145] More detailed examples of the aspects of the present Portable Electronic Device System will now be described.

Example 8

[0146] FIG. 14 consists of three distinct blocks, Block 10 being the Portable Electronic Device block, Block 20 being the Multichannel Multiplexing Transmitter/Receiver, and Block 30 being the Network Server, all connected by wired or wireless means.

[0147] This example describes the use of the Portable Electronic Device in the telephony mode. Telephony for voice or data transmission may be initiated by selecting the telephony mode on the Portable Electronic Device. This may be activated by voice or key command.

[0148] The telephony connection may be wired or wireless. The connection is completed between the Portable Electronic Device and the central multichannel multiplexing transmitter/receiver located in the loop. The transmitter/receiver in turn establishes a connection to an outside line for either dialup or Internet access. In this mode, two-way voice or data transmission may be conducted. In addition, specific advance use of language translation capability may be brought online by connecting to a network server on which resides an extensive database capability to translate from one language to another by recognizing the speech patterns of either speaker. Using this database capability the network server is able to provide speech in any selected language at either end. As an example, a speaker conversing in English at one end may have his speech translated to Japanese at the other end. Similarly, the reverse translation can be performed. The server could record the conversations if desired by selecting a record feature.

Example 9

[0149] FIG. 15 consists of four distinct blocks, Block 10 being the Portable Electronic Device block, Block 20 being the Multichannel Multiplexing Transmitter/Receiver, Block 30 being the Network Server, and Block 40 being an Intelligent Printer, all connected by wired or wireless means.

[0150] In this example, a textual transcript of any telephonic conversations could be generated in any selected language using the extensive mapping capabilities for language

translation resident on the network server. These features would provide real-time voice translation and transcription capabilities. The text may be printed at either end in a desired language using an Intelligent Printer. Once the Intelligent Printer is part of the loop, it may execute tasks immediately or queue and/or schedule the tasks.

Example 10

[0151] FIG. 16 consists of four distinct blocks, Block 10 being the Portable Electronic Device block, Block 20 being the Multichannel Multiplexing Transmitter/Receiver, Block 30 being the Network Server, and Block 50 being an Intelligent TV/Monitor, all connected by wired or wireless means.

[0152] The text, graphics, and video may be activated by the Portable Electronic Device and viewed on a built-in screen or viewed on an intelligent TV/monitor screen by patching the intelligent TV/monitor screen into the communication loop.

Example 11

[0153] FIG. 17 consists of five distinct blocks, Block 10 being the Portable Electronic Device block, Block 20 being the Multichannel Multiplexing Transmitter/Receiver, Block 30 being the Network Server, Block 42 being an Intelligent Appliance/Device, and Block 44 being another Intelligent Appliance/Device, all connected by wired or wireless means.

[0154] Multichannel capability and the ability to multiplex the inputs/outputs sequentially or simultaneously for use by a number of intelligent appliances is possible. This multichannel multiplexing capability may exist within each intelligent appliance. The ability to incorporate this feature is driven by need and cost. The advantage is that this feature allows each intelligent appliance and the whole local area network to be used efficiently and effectively by allowing queuing and scheduling of various tasks. The queuing and scheduling tasks is real time and there may be different levels of queuing and scheduling capabilities resident in each intelligent appliance and the local area network.

[0155] Certain levels of queuing and scheduling capabilities may exist in the intelligent appliance, another level of capabilities may exist in the central multichannel multiplexing transmitter/receiver and yet another level of capability may exist in the local or network server. The level of capability to queue, schedule, process, receive, and transmit data depends on the number of input and output channels, the size of the data buffer, and whether the inputs and outputs can be multiplexed.

[0156] It is also possible to define an embedded transmitter/receiver function with multiple channels with and without multiplexing capability. The basic concept of how these electronic functional blocks can be executed at either the board level or chip level is described. As an example, a quad-in and quad-out transmitter/receiver can have one channel dedicated for telephony, another channel dedicated for TV, another channel for printers, and a channel for security. As an option, specific channels may be multiplexed for use by a number of intelligent appliances.

[0157] In specific, referring to FIG. 17, the multichannel multiplexing transmitter/receiver is described with four channels, one channel being dedicated for two-way communication with the Portable Electronic Device, another channel dedicated for two-way communication with the network server, and two other channels each dedicated for two com-

munication with two different intelligent appliances. in this quad configuration, the multichannel multiplexing transmitter/receiver can interact with four different entities having the capability to schedule or process the data real time. Similarly, each of the Intelligent Appliances/Devices may have some built-in capabilities for communication directly with the Portable Electronic Device or through the Multichannel Multiplexing Transmitter/Receiver.

Example 12

[0158] Once again referring to FIG. 17, it is possible for a unique identification to be assigned to each Intelligent Appliance/Device to maintain communication protocols. Intelligent Appliance/Device 1 would have a specific beginning and ending code that uniquely identifies it. Whenever data is received by the Portable Electronic Device or any other device on the network it would be able to identify the source. If Intelligent Appliance/Device 1 has transmitted certain data the Portable Electronic Device would identify the source or the multichannel multiplexing transmitter/receiver could queue or transmit the data to the uniquely designated appliance.

[0159] The wireless transmission/reception is within the FCC prescribed frequency domain for intelligent appliances. The wireless transmitter/receiver electronics and ICs are designed to conform to the prescribed standards. However, within the local or wide area network significant RF traffic from numerous intelligent appliances may be present with the potential for crosstalk and other problems. To avoid this crosstalk, packets of RF data sent by each intelligent appliances are coded and transmitted in such a way that periodically there will be an identifying string of data that clearly defines the source of the data and the destination. The periodicity of this identifying string data, the length and complexity of this identifying string data, and the encryption of actual data is driven by the level of accuracy and the level of security desired. This ability to encode and decode identifying strings from each appliance allows multiple intelligent appliances to use the same RF frequency domain and co-exist within a local area network. The implementation of this concept requires the hardware described and a pre-defined set of software protocols that may be either industry standard or custom.

Example 13

[0160] Referring to FIG. 18 which shows a block diagram of intelligent devices communicating within the network at a specific frequency of F_{local} and with the outside world via satellite transmitter receiver, indicated as 12, at a different frequency of $F_{outside}$.

[0161] The central multichannel multiplexing transmitter/receiver may either connect with the outside world through the wire or by wireless or satellite means. It is possible that this central multichannel multiplexing transmitter/receiver may communicate in one defined frequency domain within the local or wide area network with all Intelligent Appliances that are part of this network and at same or different frequency domain with the outside world. By extension the reverse concept is also claimed. In this scenario, where there may be a need for two different frequencies of communication the transmitter/receiver electronics and chip level solutions can be designed to accommodate for this multiple frequency requirement.

Example 14

[0162] Referring now to FIG. 13, the figure consists of an intelligent electrical outlet with a built-in radio frequency controller. The radio frequency controller has the ability to receive inputs and transmit output such that the electrical outlet can be controlled by the Portable Electronic Device or other means. The radio frequency controller consists of the transmit/receive function and the control function including the ability to turn the outlet on and off and perform other variable and programmable control functions. The radio frequency controller consists of a receiver, a processor, controller, programmable logic, and a transmitter. The radio frequency controller electronics may be implemented by those skilled in the art using either standard or custom electronics. The entire controller electronics may be implemented as a monolithic single chip integrated circuit

[0163] A block diagram concept of how this embedded RF controller can be implemented at a chip level is shown in FIG. 13. The radio frequency controller can be incorporated on all new electrical outlets and switches to be made in the future, such that they are all intelligent electronic outlets and intelligent electrical switches. Alternatively, a plug-in module may be configured to make existing electrical outlets and electrical switches intelligent. Additionally, this concept of an embedded RF controller may be extended to other sensors that would sense such things as light, temperature, and pressure, smoke, to name a few. The radio frequency controller consists of the transmit/receive function and the control function including at a minimum, the ability to turn the switch on and off. It is possible to assign a unique identification to each electrical outlet and each electrical switch to uniquely address and control these units using the Portable Electronic Device.

[0164] Thus, while the Portable Electronic Device System has been described with reference to specific embodiments and applications, the description is illustrative of the Portable Electronic Device System and is not to be construed as limiting the Portable Electronic Device System. Various modifications and applications may occur to those skilled in the art without departing from the true spirit and scope of the Portable Electronic Device System as defined by the appended claims.

[0165] 1. The Portable Electronic Device, may have the ability to communicate with other intelligent devices and appliances through either wired or wireless means. The Portable Electronic Device system configuration may combine the standard keyboard functions, display functions, transmit and receive functions, telephony functions, fax and scan functions, voice and speech recognition functions, in addition to serving as a universal command and control unit for appliances and devices that operate using electrical power.

[0166] 2. The system level configuration for the command and control of multiple intelligent appliances utilizing the Portable Electronic Device, an embedded transmit/receive function that would exist within each intelligent appliance or device, and a Central multichannel multiplexing transmit/receive device that would be part of a local or wide area network within the home or office. A board level, multichip single package and/or single chip monolithic integrated circuit implementation of the embedded transmit/receive function and the central multichannel multiplexing function is also claimed. The Central multichannel multiplexing transmit/receive device is capable of multiplexing inputs/outputs from a number of intelligent appliances/devices and commu-

nicating via the built-in transmit/receive function across various communication paths and/or lines.

[0167] 3. The system level configuration where the Portable Electronic Device and the Central multichannel multiplexing transmit/receive device can work in tandem with a local or network server to perform various computing, data processing, and data transmission functions, inclusive of text, graphics, audio, and video.

[0168] 4. The basic Portable Electronic Device has the electronics and computing power to transmit data to and receive data from either a network or local server, which may be a personal computer, or intelligent peripheral or intelligent appliance through either wired or wireless means. The Portable Electronic Device may serve as a transmit and receive hub. Using the computing power resident on the local or network server or other intelligent devices, a user can perform all standard computing functions from the Portable Electronic Device.

[0169] 5. The Portable Electronic Device is a device with a speaker and is capable of facilitating interaction between voice recognition software resident on the network server, local server, or on the intelligent appliance and the Portable Electronic Device. Portable Electronic Device is capable of outputting sound. It is also able to convert sound to data that can be transmitted to a local or network server.

[0170] 6. Portable Electronic Device may have a built-in display or operate with an external display. This Portable Electronic Device is capable of displaying data being sent to or received from the local or network server or other intelligent appliances. This display is capable of showing text, graphics or other data.

[0171] 7. Portable Electronic Device has a transmitter, receiver, a digital signal processor, controller, and display electronics and audio electronics which may be implemented with standard or custom components by those knowledgeable in the art. By using the voice recognition software resident on the local or network server, Portable Electronic Device can convert text data into voice and broadcast voice through a speaker mechanism.

[0172] 8. There can be a transmit/receive functional block built into the Portable Electronic Device. The Portable Electronic Device can operate through either wired or wireless means.

[0173] 9. The Portable Electronic Device need not have an operating system, but is capable of operating, with a built-in operating system or an operating system resident on a local or network server or other intelligent devices.

[0174] 10. The Portable Electronic Device is capable of transmitting inputs from either the keypad, display or voice inputs picked up from the microphone to the local server or network server or intelligent peripheral or intelligent appliance for processing, through either wired or wireless means. Voice includes spoken as well as other audio and/or audible tones inclusive of music/sound. Thus one may either send data to software resident on the local server or network server or intelligent peripheral or intelligent appliance through the keypad on the Portable Electronic Device, through voice commands, through the display by touching the screen, through a pen which interacts with the display, or through another device which interfaces with the Portable Electronic Device.

[0175] 11. Portable Electronic Device is capable of taking input and output through a transmit/receive functional block, a telephone line, an ethernet line or other form of data com-

munication. These inputs and outputs are then processed by a local or network server and are relayed back to Portable Electronic Device and/or the display.

[0176] 12. Portable Electronic Device can be hooked to a local area network or wide area network, including, the Internet, through either wired or wireless means, to receive inputs of text and/or voice and to send outputs of text or voice depending on the user's choice. Voice sent to a local or network server could be stored as a data file. Voice may be in any language since the Portable Electronic Device leverages the language capabilities of the local or network server.

[0177] 13. Portable Electronic Device may also work in tandem with a local or network server to receive text or voice data and process these inputs for audio output. The primary computing power/protocols and software reside on the server.

[0178] 14. The Portable Electronic Device is capable of interacting and commanding many intelligent peripheral devices around the home or office through either wired or wireless means and thus is a universal keyboard. By using the processing power of the local or network server, the Portable Electronic Device can assign/reassign an identification number to each peripheral or appliance. With this unique identification number and the processing capability of the local or network server, the Portable Electronic Device can then control that particular intelligent appliance or other peripheral devices. The intelligent appliances will have programming capability to set or change identification and encryption. This programming capability can be easily accessed and controlled by the Portable Electronic Device. This will allow the Portable Electronic Device to re-configure various intelligent appliances as needed by the user. All the appliances and peripherals will subscribe to the same protocols such that they will be able to communicate to each other and execute instructions. A user may also use the programming capability of the Portable Electronic Device to assign a password or other security measures, such as data encryption to a particular intelligent appliance. Thus, unauthorized control of intelligent devices will be prevented.

[0179] 15. The Portable Electronic Device can use its transmit/receive device to transmit data to and receive data from a local or network server or intelligent peripheral or appliance through either wired or wireless means. In this scenario, the local or network server will perform any computation that is necessary. The transmit/receive can be either single or multichannel. This means that the transmit/receive device which is built into the Portable Electronic Device can receive all of its input from the Portable Electronic Device or it can receive many different inputs from various intelligent appliances and peripherals simultaneously or sequentially.

[0180] 16. Other features and options may be added to the Portable Electronic Device. For example, the Portable Electronic Device can possess more processing power such that it can perform basic computations and will not have to directly communicate with the local or network server to perform certain functions. For example, Portable Electronic Device may possess more processing power so that it can assign an identification number to various appliances and peripherals, recognize various appliances and peripherals and so that it can assign instructions for these appliances and peripherals to execute. Other features such as data storage can be added to the Portable Electronic Device. A module or storage device can be built in to the Portable Electronic Device to record and store data and voice. For example, this can be accomplished by using a PCMCIA card. Portable Electronic Device can be

connected to a mouse, electronic pen, CD-ROM, printer, CRT/TV by either wired or wireless means. As an option a scanner may interface with the Portable Electronic Device so that documents can then be sent to the local or network server for further processing. Another option is to enable a printer to interface with the Portable Electronic Device to print data locally.

[0181] 17. The transmit/receive controller electronics block diagram, as shown in FIG. 12, can be implemented by those skilled in the art with either standard or custom electronics. The entire controller electronics may be a single chip integrated circuit. It is anticipated that all intelligent appliances would utilize this block diagram as a universal and requisite embedded feature. As described in FIG. 12, this embedded transmit/receive function may come in multiple configurations of inputs and outputs. In dual channel configuration, the multiplexing transmit/receive device has two inputs and two outputs. This will allow an intelligent appliance to sequentially or simultaneously be addressed by the Portable Electronic Device for either sequential or simultaneous output. In addition, it is possible for the multichannel multiplexing transmit/receive function to be incorporated on a mother board or a daughter board of a personal computer, server, or other computing/processing device.

[0182] 18. The Portable Electronic Device, the multiplexing transmit/receive device, and the system configuration and protocols described in this Portable Electronic Device system allow the Portable Electronic Device to fully serve as a universal command and control module. As an example, the Portable Electronic Device can serve as a telephone. As another example, the Portable Electronic Device can turn lights on and off in a particular location of a house. As another example, the Portable Electronic Device can accept voice input and through the Portable Electronic Device's use of the processing power of the local server or network server or other intelligent device, the Portable Electronic Device can convert this voice into text for printing by an intelligent printer. As another example, the Portable Electronic Device may interact with a diversity of electronic equipment, such as garage doors, security systems, printers, televisions, washing machines, ovens, stove tops, personal computers, and other electronic devices. The Portable Electronic Device can have its own antenna.

[0183] 19. The Portable Electronic Device may have a keyboard configuration that provides either a partial or a full function keyboard which can be folded or collapsed to achieve a compact size and portability. The optional display, which may be built-in or external to the Portable Electronic Device, may also be folded or collapsed to achieve a compact size and portability. The Portable Electronic Device, unlike a personal digital assistant or handheld PC, need not have large computing and processing power built into it since it leverages its basic communication capabilities with the processing and computing power resident on the local or network server or other intelligent devices.

[0184] 20. The Portable Electronic Device can command and control each and every electrical outlet or switch through either wired or wireless means. Refer to FIG. 13. Each electrical outlet and/or switch may be configured to have a radio frequency transmit/receive controller and associated electronics built into it which would enable the Portable Electronic Device to communicate and control each outlet and switch. The electrical outlet may have its own antenna or it may use the wiring of the house as its antenna for communi-

cation with the Portable Electronic Device and/or other devices. This can be accomplished by having a unique identification number for each outlet and switch which can be programmed by the user. The Portable Electronic Device not only addresses, commands, and controls intelligent appliances and devices, it can also interface with each electrical outlet, electrical switch, and sensors thereby controlling appliances and devices that may traditionally not have had these intelligent functions built-in.

[0185] The Portable Electronic Device can operate as a universal compute, command, and control module that interfaces either through wired or wireless means with a number of intelligent appliances, personal computers, work-stations, servers, televisions, printers, smart devices, intelligent devices, telephones, or other devices. The Portable Electronic Device has the ability to transmit and receive voice, text, graphics, and other data through either wired or wireless means. The Portable Electronic Device may work in tandem with a local or network server to perform standard computing functions, serve as a command and control unit, perform standard telephony functions, transmit and receive electronic mail, voice mail, video, and audio. The system also anticipates the need for multichannel and sequential/simultaneous tasking and interfaces with numerous intelligent appliances and devices.

[0186] The foregoing descriptions of specific embodiments of the present disclosure have been presented for purposes of illustration and description. They are not intended to be exhaustive or to limit the disclosure to the precise forms disclosed, and it should be understood that many modifications and variations are possible in light of the above teaching. The embodiments were chosen and described in order to best explain the principles of the present disclosure and its practical application, to thereby enable others skilled in the art to best utilize the present disclosure and various embodiments, with various modifications, as are suited to the particular use contemplated. It is intended that the scope of the disclosure be defined by the Claims appended hereto and their equivalents.

What is claimed is:

1. A system for accessing and storing data using mobile devices and servers comprising:

a network accessible server, wherein the network accessible server comprises a data storage medium communicatively coupled to the server and a high speed transmit and receive component connected to one or more networks;

a first mobile device, wherein the first mobile device comprises one or more processors, a touch screen display, a keyboard, a memory, a camera housed in an integrated device, and wherein the camera, keyboard, display are communicatively coupled to the at least one processor;

and wherein the first mobile device captures an image using the camera on the first mobile device, wherein the image is stored locally on the first mobile device, wherein the image is sent to the network server using Internet Protocol in one or more data packets, wherein the network server stores the image in memory, wherein the stored image is associated with the first mobile device identification number and/or text, and wherein the stored image is associated with a user.

2. The system of claim 1, wherein first mobile device includes a telephony function, wherein voicemail related to

the first mobile device or user is stored on the server, and wherein the first mobile device may download voicemail from the server.

3. The system of claim 2, wherein the server executes voice to text translation of the voicemail to produce an output including recognized text of the spoken audio in the voicemail, wherein the server sends to the first mobile device one or more data packets comprising the recognized text, and wherein the first mobile device is configured to display the recognized text of the voicemail.

4. The system of claim 1, wherein the first mobile device captures a plurality of images, wherein the first mobile device queues and schedules the transmit of the images to the server based on one or more of the following: the number of input and output channels, the size of the data buffer or whether the inputs and outputs can be multiplexed.

5. The system of claim 4, wherein a second mobile device downloads from the server the first image.

6. The system of claim 1, wherein a video created on the first mobile device is sent to the server and wherein the server stores the video in memory for archival.

7. The system of claim 6, wherein a second mobile device downloads from the server the video created on the first mobile device.

8. The system of claim 1, further comprising a software application stored in a non-transitory computer readable medium, wherein the first mobile device downloads the application from a server, wherein the processor on the first mobile device executes the application, wherein the application allows for image capture of a blackboard, wall, or other physical content using the camera, wherein the captured content is stored in a memory communicatively coupled to the first mobile device, wherein the content is sent to the server using the radio on the first mobile device, wherein the first mobile device radio is configured to communicate on a wireless local area network (WLAN), wherein the data is secured at the server, wherein the level of security desired is configurable, and wherein server delivers the content to a plurality of electronic devices at an Internet accessible location based on the security configuration.

9. The system of claim 8, further comprising a Internet accessible server, wherein the server is configured to store data received by a plurality of mobile devices; and wherein the mobile device is configured to record audio data using a microphone built-in to the mobile device, wherein the mobile device is configured to send audio data created on the device to the server in a plurality of data packets, using a wireless network and Internet Protocol.

10. The system of claim 9, further comprising a separate portable electronic device, wherein the portable electronic device is configured to download the audio data created on the mobile device from the Internet accessible server, and wherein one or more servers performs voice to text translation on the device, and wherein one or more server or the mobile device performs language translation of the text from a first language to a second language.

11. The system of claim 1, wherein the mobile device is configured to access a plurality of applications available on the network accessible server, wherein the mobile device is configured to display a legend or toolbar on the display.

12. The system of claim 1, wherein the network accessible server stores configurations related to the mobile device, wherein the configurations comprising data related to user interface components including backgrounds or foregrounds.

13. A method for capturing and storing digital data using a wireless phone and network server, comprising:

capturing an image using a camera on the mobile device; storing the image in the memory of the mobile device; processing the image on the mobile device; and sending the image from the mobile device to a network accessible server;

14. The method of claim 13, wherein the recognized content includes one or more of the following: text, drawings, or content on paper.

15. The method of claim 13, comprising: reading a barcode on a paper, processing the barcode information, and sending the barcode information to a network server.

16. The method of claim 13, further comprising: recognizing the text by image recognition software on the server.

17. The method of claim 13, further comprising: capturing an image of a paper, sending the image to a server, and recognizing bank related information on the paper.

18. The method of claim 13, further comprising: setting a security level with a captured data, requesting a authentication response, wherein the authentication response may include voice, fingerprint, password, or handwriting.

19. A system for wireless data storage for portable electronic devices using a home MMTR device which functions as both a transmit and receive device and a data storage device comprising:

a portable electronic device, comprising a touch screen display, a camera, and wherein the portable electronic device is configured to download and store data on the local network accessible server using a wireless local area network (WLAN) connection; a central multichannel multiplexing transmit and receive (MMTR) device comprising a plurality of wireless transmit and receive units, a processor, and a memory; wherein the MMTR is configured for operation in a home, wherein the MMTR is configured as a transmit and receive access point or hub for a plurality of portable electronic devices located in the home, wherein the MMTR is configured to accept transmit and receive connections from a plurality of portable electronic devices in the home on a first local frequency configured for the WLAN, wherein the MMTR is configured to transmit and receive to a public Internet network using one or more ports located on the MMTR; and wherein the MMTR is configured as to function as a network accessible server for data storage accessible by portable electronic devices connected to the local WLAN; and wherein the portable electronic device stores data on MMTR.

20. The system of claim 19, wherein the MMTR is configured to communicate using an Ethernet connection, wherein the MMTR is configured for simultaneously transmit and receive of data using a plurality of radios, wherein a plurality of portable electronic devices is connected to the MMTR, wherein each portable electronic device is identified with a unique identifier.

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