

[0001] DATA TRANSFER BETWEEN WIRELESS DEVICES

[0002] TECHNICAL FIELD

[0003] This present disclosure relates to wireless communications.

[0004] BACKGROUND

[0005] Functionality allowing transfer of data (such as files and media) between devices is a common feature available in both fixed and wireless devices today. In current devices, data transfers are performed using an application such as email or MMS, and the transfers involve a suitable access technology configuration such as General Packet Radio Service (GPRS) or Wireless Local Area Network (WLAN). Over the years, the sophistication of the user interfaces supporting these data transfers has increased steadily. Recently, the emergence of touch screen and multi-touch technology has simplified the user experience considerably. This is illustrated in, for example, devices such as Apple's iPhone and iPod Touch.

[0006] Despite recent user interface advances, file transfer can still be a cumbersome, multi-step task in many implementations. For example, many technologies involve a fragmented approach to access technology configuration options and manipulation of files (such as attachments). These shortcomings inhibit more regular use of file transfer schemes in spontaneous scenarios. Therefore, simplified approaches to data transfer between devices are required.

[0007] SUMMARY

[0008] The present disclosure relates to transfer of data between a sending wireless transmit /receive units (WTRU) in proximity to a target WTRU. A user taps on a touchscreen at the sending WTRU where a file to be transferred is displayed. The

user drags the file on the sending WTRU in the direction of the target WTRU. The sending WTRU determines that the file should be sent to the target WTRU based on environment information, such as locations of surrounding WTRUs (including the target WTRU). Before sending the file to the target WTRU, the sending WTRU may encrypt the file such that it may be decrypted only by the target WTRU. During file transfer, the displays of the sending and target WTRUs reflect the progress of the transfer.

[0009] BRIEF DESCRIPTION OF THE DRAWINGS

[0010] A more detailed understanding may be had from the following description, given by way of example in conjunction with the accompanying drawings wherein:

[0011] Figure 1 shows transfer of data from a sending wireless transmit receive unit (WTRU) to a receiving WTRU in accordance with an embodiment;

[0012] Figure 2 shows input data used by a sending WTRU to determine a target WTRU, and configuration data generated by the sending WTRU to transmit to the target WTRU in accordance with an embodiment;

[0013] Figure 3 shows generation of encryption data used to securely transmit data from a sending WTRU to a target WTRU in accordance with an embodiment;

[0014] Figure 4 shows a user dragging a file on the touchscreen of a sending WTRU to initiate transfer to a target WTRU in accordance with an embodiment;

[0015] Figure 5 shows the displays of a sending WTRU and a target WTRU indicating the transfer of a file in accordance with an embodiment;

[0016] Figure 6 shows a user dragging a file on the touchscreen of a sending WTRU to initiate transfer to a target WTRU in accordance with an embodiment; and

[0017] Figure 7 shows a user using one or more dragging motions to send a file from a sending WTRU to multiple target WTRUs in accordance with an embodiment.

[0018] DETAILED DESCRIPTION

[0019] When referred to hereafter, the terminology "wireless transmit/receive unit (WTRU)" includes but is not limited to a user equipment (UE), a mobile station, a fixed or mobile subscriber unit, a pager, a cellular telephone, a personal digital assistant (PDA), a computer, a "smart phone," or any other type of user device capable of operating in a wireless environment. When referred to hereafter, the terminology "base station" includes but is not limited to a Node-B, a site controller, an access point (AP), or any other type of interfacing device capable of operating in a wireless environment. A WTRU may include hardware and software modules including application software, touchscreen/display technology, driver technology, and access/networking technology. A WTRU may include an application processor running an operating system (OS) such as Windows, Linux, or mobile-specific OS interfaced with a number of peripheral devices such as baseband/radio chips. A WTRU may include one or modems, capable of communicating using technologies including 2G and 3G cellular technologies, Bluetooth, and WiFi/Wireless Local Area Network (WLAN) technologies.

[0020] In addition to communication peripherals, a WTRU may include a single-touch or multi-touch touchscreen display based on resistive, surface acoustic wave, capacitive, projected capacitance, strain gauge, optical imaging, dispersive signaling, or acoustic pulse recognition technologies. The WTRU may also include motion-detection information such as an accelerometer or gyroscope. Peripheral devices may connect to the application processor of a WTRU through physical interfaces such as Serial Peripheral Interface (SPI) and shared memory. The application processor provides support for peripheral devices through drivers and general application software.

[0021] Figure 1 shows transfer of data from a sending wireless transmit receive unit (WTRU) to a receiving WTRU in accordance with an embodiment. In addition to the features of a WTRU as described above, Figure 1 shows that the sending and receiving WTRUs include an application processor, a communications peripheral, and a

touchscreen/display peripheral. In each WTRU, the touchscreen and communications peripheral are physically connected to the application processor. The sending and receiving WTRUs are separated by a communications environment which facilitates communication (including file transfer) between the two devices. The communications environment may include other similar and similarly equipped WTRUs (not depicted). The communications peripherals of the WTRUs may implement technologies such as Wireless Personal Area Network (WPAN) (IEEE 802.15), Bluetooth, Wireless Universal Serial Bus (W-USB), or WiFi/WLAN (IEEE 802.11x) in ad-hoc mode. The application processors of the WTRUs are equipped with software including but not limited to an operating system/kernel (such as Linux, Windows, or other), middleware, and applications. The operating systems include drivers which provide support for both the touchscreen and communications peripheral as well as a file system for supporting stored media.

[0022] As seen in Figure 1, both of the sending and receiving WTRUs include a software module for facilitating file transfer. The module is labeled “TapApp” in Figure 1. In various embodiments, this module may be implemented as a native application, as a Java, Java Mobile Edition (ME), or other Java-based application, or some other form of application on the device. The module may be a standalone application, or may be tightly bound with the middleware. The module may be implemented to operate in an “always on” fashion. Alternatively, the file transfer module may be implemented as a plug-in application that may be specifically launched by the user as required in the typical manner. The file transfer module may include a user interface that displays the current state of the application, including whether the application is in a send mode or a receive mode. When operating in a send mode, the module will allow the user to access and display a file for transfer on the display screen. The files may include media files such as digital photographs, videos, and audio files. When operating in receive mode, the module may provide a touch point on the screen. Alternatively, it may illuminate a

touch point in response to the user touching the screen. When the user touches the touch point, the module turns on underlying functionality to receive a transmitted file.

[0023] The file transfer application is launched automatically as the WTRU turns on, or by user action (Figure 1, item 1). Following launch and periodically thereafter, the application may solicit information from the communication peripheral about the active devices in the local environment. A configuration variable may be provided that allows the end user to define a search radius in which to perform the search. The search radius may be defined in terms of distances such as 1m, 2m, 3m, etc. Devices outside this search radius will be excluded from any reports. This information will be updated and provided to the file transfer application throughout the application lifetime and automatically upon the application entering a send state. This environment information, along with other input information, is used to uniquely discriminate the target device during a send operation.

[0024] In an embodiment, the file transfer application may include pre-programmed knowledge of neighbor device locations. This may be accomplished through a manual configuration or automatic configuration method, and may be based on a localization method. Alternatively, a mesh network or sensor network that includes both the sending and receiving WTRUs as well as additional elements may be used. Such a network may facilitate the accurate determination of the location and identity of each device. Such a network may network may be comprised of an overhead of sensor, and/or may include only the devices present in the physical proximity.

[0025] Through user action, send and receive operations may be initiated (Figure 1, item 2). The user may initiate a second action on an identified media element, using a tap, push, and release interaction as described in further detail hereinafter, or through some other interaction. At the receiving WTRU, the user touches and holds the screen for the duration of the file transfer. (Figure 1, item 2). The touch interaction at the receiving WTRU may result in a radio signal transmission to the sending WTRU. The signal may be received by the WTRU, and a report may be communicated to the

file transfer application. The file transfer application may use the information in the report to determine which target device to transfer the file to.

[0026] After the user interacts with the touchscreen of the sending WTRU, the motions (which may be the tap, push, and release interaction described in more detail below) are translated into software signals by the touchscreen/display driver. (Figure 1, item 3). This information is then delivered to the file transfer application. The file transfer application will use this information to determine a target device to transfer the file to. Touchscreen information provided by the device driver may include but not necessarily limited to: file reference, speed, pressure, acceleration, timing information, and direction.

[0027] The file transfer application processes file reference information to identify the pertinent file as stored in the device file management system. (Figure 1, element 4). This may involve processing by the operating system/kernel with the file system on a storage media in the WTRU.

[0028] The file transfer application then identifies the target WTRU for the file transfer (Figure 1, item 5). To do this, the file transfer application takes a number of inputs into account, including: environment information, receiver information, and touchscreen information. If the WTRU includes an accelerometer and related drivers, then device orientation may be provided as an input. The file transfer application generates configuration information and target transmission instructions relating to the file to be transferred. The configuration information may include settings for attributes such as power level, antenna orientation, and security parameters. The configuration information and transmission instructions may be provided to the network stack and the communication peripheral/access device drivers.

[0029] Configuration and transmission instructions are then communicated to the communications peripheral (Figure 1, item 6). These instructions may impact the configuration of the Layer 2/3 and baseband components, such as power settings. They may also impact the configuration of the analog and radio frequency components of the

peripheral, such as antenna orientation. The file transfer application may control the manner in which the file is transmitted to the target by breaking the file to be transferred into blocks corresponding to the manner in which an image representing the file should appear at the destination. Information relating to how the blocks may be segmented may be added to the blocks. Additionally, information providing guidance as to how the blocks should be displayed may be added to the blocks. This additional information may be used at the receiving WTRU to facilitate rendering the progress of the file transfer. For example, this information may be used to show progress at the receiving WTRU as shown in Figure 5.

[0030] The file is then transferred to the target WTRU (Figure 1, item 7). Upon receipt of the file and possibly display information at the target WTRU, this information may be stored in the local file system and an indication of receipt provided to the file transfer application in the target WTRU (Figure 1, item 8). The file transfer application then accesses the file system in order to obtain the transferred file or components thereof as well the associated display information if available (Figure 1, item 9). The file transfer application then interacts with the underlying touchscreen/display drivers (via the operating system) in order to render the received file on the local display (Figure 1, item 10). This may be performed as described below with reference to Figure 5. Upon receipt or during receipt of the file, the user of the target WTRU may remove their finger from the display screen (Figure 1, item 11). This may interrupt the perceived file transfer. However, if the user returns their finger to the screen within a time interval, then the perceived file transfer will continue. Upon completion, a graphical representation of the transferred file will be rendered on the receiving device. The representation on the receiving WTRU may be similar to the representation that was rendered on the sending WTRU prior to transfer.

[0031] Figure 2 shows input data used by a sending WTRU to determine a target WTRU, and configuration data generated by the sending WTRU to transmit to the target WTRU. As shown in Figure 2, inputs include environment information, receiver

information, touchscreen information, and other information such as orientation information. Outputs include configuration and/or transmission instructions such as indications of power level, antenna orientation, or security parameters.

[0032] Figure 3 shows a method for generating transmission instructions for secure file transfer. Secure file transfer is necessary so that only a selected target WTRU may receive the file from the sending WTRU. In order to secure short range file transfers, physical layer security mechanisms may be employed. File data should be transmitted only so far as the minimal set of users in the environment, although it is possible that data may go further. To counteract this, the file transfer application may be able to add a layer of security to the file data transmission, such that the WTRUs outside of the local group of WTRUs are excluded from receiving the transmission.

[0033] Secure file transfer may be based on the uniqueness and reciprocity of the wireless channels involved. Location information for a particular terminal may be associated with a channel impulse response from that terminal, which is also unique (although variable). This is then used to generate a unique secret key stream for that location. To generate a unique secret key stream, joint-randomness-not-shared-with-others (JRNSO) technology may be used. A common cipher source is seeded with this key and the information for the target WTRU is encrypted with it. The cipher source may be based on, for example, Advanced Encryption Standard (AES) technology. Additionally and/or alternatively, channel impulse response information may also be used to authenticate the message.

[0034] As shown in Figure 3, associations between locations and channels are generated. Inputs provided to determine these associations include static (i.e., slowly changing) environment information such as physical locations of WTRUs in a network and radio channels used by WTRUs in the network. Additionally, secret key bits are generated based on channel impulse response information. This may be performed by a separate channel-based key generation unit, and may be performed for all WTRUs on the network. Touchpad information is also provided to dynamically

match a target WTRU. When required by touchpad information, a particular WTRU is selected from a list of available WTRUs. This may be based on the directionality of the sending WTRU. After a target WTRU is selected, a channel based key stream corresponding to the target WTRU is selected, and is communicated along with appropriate transmission instructions. This has the result that only the selected WTRU is able to receive the data, as it is the only WTRU that has the required channel-based key.

[0035] Figure 4 shows a user dragging a file on the touchscreen of a sending WTRU to initiate transfer to a target WTRU. The WTRU receiving the file may be in relatively close proximity to WTRU sending the file. Three points in time are shown in Figure 4. At the first point in time, a user is interacting with their WTRU, which has a touchscreen interface. A graphical representation of a file to be transferred is shown on the screen of the WTRU. In the example shown in Figure 4, the file in question is a digital photograph. The file transfer is performed through a simple three step hand (or finger) motion (i.e. tap, push, release). In the first step (Figure 4, item 1) the user “taps” the touchscreen where the file to be transferred is shown. In a single motion (Figure 4, item 2) the user “pushes” the graphical representation of the file in the direction of a target WTRU to which the file transfer is intended. In the final step (Figure 4, item 3), again as part of the same motion the user removes their finger (“release”) from the representation of the file on the touchscreen. While the file is “pushed,” its representation follows the path of the user’s finger. After the “release,” the touchscreen shows the file continuing to move in the direction indicated during the push, until the representation of the file has moved off of the screen. After the file is no longer shown on the screen, it may optionally be removed from the internal storage of the sending WTRU. While the user performs the tap, push, and release interactions with the WTRU, an underlying access technology is enabled and configured in accordance with a mapping between the user applied touchscreen attributes (such as

direction and speed) and specific access technology attributes. The end result is the transfer of the file to the target device.

[0036] Figure 5 shows the displays of a sending WTRU and a target WTRU indicating the transfer of a file. In the example shown in Figure 5, the file in question is a digital photograph. If the file to be sent is a digital photograph, the touchscreen may display a scaled version of the photograph for interaction with the user. Figure 5 shows two points in time. At point 1, the file is being transferred from the sending WTRU to the receiving WTRU. On the sending WTRU, the touchscreen shows the graphical representation of the file disappearing from the sending side. On the receiving WTRU, the touchscreen shows the graphical representation of the file appearing from the receiving side. As the file disappears from the sending WTRU and appears on the receiving WTRU, each WTRU will display a portion of the file. The sending WTRU will show an increasingly smaller share of the file and the receiving WTRU will shown an increasingly larger share of the file, such that portions of the file on the two WTRUs in the aggregate always show the entire file. This creates the impression in the viewer that the motion of the file is carrying the file from the sending WTRU to the receiving WTRU. This may occur at different speeds in different embodiments. In some embodiments, this may occur too quickly to be observed by the users. As the transfer occurs, the underlying file transfer mechanism prioritizes the transfer of file data in order to facilitate this depiction of the transfer. Alternatively, or through a hybrid technique, the progress of the transfer may be represented graphically at the application level as a progressive and contiguous transfer experience, while the underlying file transfer occurs at a different rate. For example, the WTRUs may show that the transfer is progressive and ongoing although the file transfer is in fact already complete.

[0037] At time point 2 (Figure 5, item 2), the sending WTRU no longer displays the file on the touchscreen, and the receiving WTRU shows the entire graphical representation of the file. Upon receipt of the complete file, the user of the receiving

WTRU removes their hand or finger from the touchscreen. This results in an acknowledgment being returned to the sending WTRU. If the transfer is implemented at an application level, the acknowledgement may be sent at the application level. After the user removes their hand from the screen, then the file becomes available for further transfer to other WTRUs. If file transfer is implemented at an application level, the application would at this time transition from a “receive” state and into a general application state.

[0038] Figure 6 shows a user dragging a file on the touchscreen of a sending WTRU to initiate transfer to a target WTRU. In the example shown in Figure 6, the user of a sending WTRU pushes the graphical representation of the file to be transferred towards the top right corner of the WTRU touchscreen. In this example, the target receiver (not depicted) is perceived by the user to be in the pushed direction relative to the WTRU. Figure 6 depicts a tap (Figure 6, item 1), push (Figure 6, item 2), and release (Figure 6, item 3). While the tap, push, and release interactions are similar to those shown in Figure 4, the interactions shown in Figure 6 may result in an alternative action on the access interface based on, for example, antenna orientation.

[0039] Figure 7 shows a user using one or more dragging motions to send a file from a sending WTRU to multiple target WTRUs. At a first point in time (Figure 7, item 1), the user performs a multi-tap on a graphical representation of a file on the touchscreen of their WTRU. Two replicas of the graphical representation are then created and shown on the touchscreen of the WTRU (Figure 7, item 2). At this time, the original graphical representation will appear and behave “locked,” such that further taps on it by the user will have no result. As seen in Figure 7, the two replicas are smaller than the original representation. In various embodiments, they may be other sizes, including being the same size or larger sizes than the original representation, or may possess other graphical attributes to differentiate them visually from the original representation. The two replicas may then be pushed to initiate transfer to two or more receiving WTRUs (Figure 7, item 2). The push or multiple pushes may be performed by

the user using two fingers on one hand or by using one finger from two hands. The user then releases (Figure 7, item 3). This results in the file being transferred to two or more different devices in correlative locations to the finger motion push or pushes.

[0040] Although features and elements are described above in particular combinations, each feature or element can be used alone without the other features and elements or in various combinations with or without other features and elements. The methods or flow charts provided herein may be implemented in a computer program, software, or firmware incorporated in a computer-readable storage medium for execution by a general purpose computer or a processor. Examples of computer-readable storage mediums include a read only memory (ROM), a random access memory (RAM), a register, cache memory, semiconductor memory devices, magnetic media such as internal hard disks and removable disks, magneto-optical media, and optical media such as CD-ROM disks, and digital versatile disks (DVDs).

[0041] Suitable processors include, by way of example, a general purpose processor, a special purpose processor, a conventional processor, a digital signal processor (DSP), a plurality of microprocessors, one or more microprocessors in association with a DSP core, a controller, a microcontroller, Application Specific Integrated Circuits (ASICs), Field Programmable Gate Arrays (FPGAs) circuits, any other type of integrated circuit (IC), and/or a state machine.

[0042] A processor in association with software may be used to implement a radio frequency transceiver for use in a wireless transmit receive unit (WTRU), user equipment (UE), terminal, base station, radio network controller (RNC), or any host computer. The WTRU may be used in conjunction with modules, implemented in hardware and/or software, such as a camera, a video camera module, a videophone, a speakerphone, a vibration device, a speaker, a microphone, a television transceiver, a hands free headset, a keyboard, a Bluetooth® module, a frequency modulated (FM) radio unit, a liquid crystal display (LCD) display unit, an organic light-emitting diode (OLED) display unit, a digital music player, a media player, a video game player

module, an Internet browser, and/or any wireless local area network (WLAN) or Ultra Wide Band (UWB) module.

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CLAIMS

What is claimed is:

1. A method for use in a wireless transmit/receive unit (WTRU), comprising:
displaying a graphical representation of data to be transferred to a target WTRU;
receiving directional input from a user relating to the data to be transferred;
determining the target WTRU based on the directional input; and
transmitting the data to the target WTRU.
2. The method of claim 1 wherein the receiving directional input includes:
receiving an indication of a tap at a location where the graphical representation of the data is displayed;
receiving an indication of a drag; and
receiving an indication of a release.
3. The method of claim 2 further comprising moving the location where the graphical representation of the data is displayed based on the drag.
4. The method of any one of claims 1-3 further comprising:
displaying a first portion of the graphical representation of the data to be transferred, wherein a second portion of the graphical representation of the data to be transferred is displayed on the target WTRU such that the first portion and second portion comprise the entire graphical representation of the data to be transferred, and
wherein relative sizes of the first portion and second portion represent progress of the transmission of the data to the target WTRU.

5. The method as in any one of claims 1-3 wherein the transmitting the data includes dividing the data into two or more sub-portions, adding display-related data to each sub-portion, and separately transmitting each sub-portion.

6. The method as in any one of claims 1-5 wherein the determining the target WTRU includes:

receiving input data including environment information, receiver information, or touchscreen information;

generating configuration information and target transmission instructions based on the input data; and

providing the configuration information and target transmission instructions to a network stack.

7. The method of claim 6 wherein the touchscreen information relates to a file reference, speed, pressure, acceleration, timing, or direction.

8. The method of any one of claims 6-7 wherein the environment information includes information relating to locations of potential target WTRUs within a radius of the WTRU.

9. The method of any one of claims 6-8 wherein the input data includes accelerometer information.

10. The method of any one of claims 6-9 wherein the configuration information relates to power level, antenna orientation, or security parameters.

11. The method of any one of claims 6-10 wherein the generating target transmission instructions includes determining encryption information relating to the

target WTRU, and wherein the transmitting the data includes encrypting the data based on the encryption information.

12. The method of claim 11 wherein the encrypting the data is based on Advanced Encryption Standard (AES) technology.

13. The method of any one of claims 6-12 wherein the generating target transmission instructions includes:

determining associations between locations and channels of potential target WTRUs;

generating secret key bits based on channel impulse response information;

determining whether the direction information indicates a potential target WTRU;

selecting the target WTRU;

selecting a channel-based key stream corresponding to the target WTRU; and

including the channel-based key stream in the transmission instructions.

14. The method of claim 13 wherein the generating secret keys bits is based on channel impulse response information.

15. The method of any one of claims 13-14 wherein the channel-based key stream is based on joint-randomness-not-shared-with-others (JRNSO) technology.

16. The method of any one of claims 1-15 further comprising sending the data one or more additional target WTRUs.

17. The method of claim 16 further comprising receiving directional user input identifying two or more target WTRUs.

18. A method for use in a wireless transmit/receive unit (WTRU), comprising:
receiving data from sent from a second WTRU in response to directional input
received at the second WTRU identifying the WTRU;
displaying progress of the receipt of the data.

19. The method of claim 18 further comprising storing the data in a file
system on the WTRU.

20. The method of any one of claims 18-19 further comprising receiving user
input indicating whether to receive the data from the second WTRU.

21. The method of claims 18-20 wherein the user input comprises a tap and
hold on a touchscreen, the tap and hold indicating that the receiving the data should
begin or should continue.

22. The method of any one of claims 20-21 wherein the user input comprises a
release on a touchscreen, the release indicating that the receiving the data should stop.

23. The method of any one of claims 1-22 wherein the data is a file.

24. The method of any one of claims 1-23 wherein the data is a media file, an
image file, a video file, or an audio file.

25. The method of any one of claims 1-23 wherein the data is an image file,
and wherein the graphical representation of the data is a scaled version of an image
represented in the image file.

26. A method for use in wireless communications, comprising:
receiving directional input at a first wireless transmit/receive unit from a user relating to data to be transferred to a second WTRU;
determining the target WTRU at the first WTRU based on the directional input;
transmitting the data from the first WTRU; and
receiving the data at the second WTRU.

27. The method of claim 26, further comprising encrypting the data at the first WTRU and decrypting the data at the second WTRU.

28. A wireless system configured to perform the method of any one of claims 1-27.

29. An integrated circuit configured to perform the method as in any one of claims 1-27.

30. A wireless/transmit receive unit (WTRU) configured to perform the method as in any one of claims 1-25.

31. The WTRU of claim 30 comprising a transmitter, receiver, and processor.

32. The WTRU of any one of claims 30-31 wherein the WTRU is a multi-mode WTRU.

33. The WTRU of any one of claims 30-32 wherein the WTRU supports at least one of: Institute of Electrical and Electronics Engineers (IEEE) Wireless Local Area Network (WLAN) 802.11x ad hoc mode; WLAN 802.11x infrastructure mode; Code Division Multiple Access 2000 (CDMA2000); Universal Mobile

Telecommunications System (UMTS); Wideband Code Division Multiple Access (WCDMA); Worldwide Interoperability for Microwave Access (WiMAX); Global System for Mobile Communications (GSM); Wireless Broadband (WiBro); and Long Term Evolution (LTE); Bluetooth; Wireless Personal Area Network (WPAN) (IEEE 802.15); Bluetooth; and Wireless Universal Serial Bus (W-USB).

34. The WTRU of any one of claims 30-33 comprising at least one of: a multi-touch touchscreen display; a single-touch touchscreen display; an accelerometer; and a storage media.

ABSTRACT

The present disclosure relates to transfer of data between a sending wireless transmit /receive unit (WTRU) in proximity to a target WTRU. A user taps on a touchscreen at the sending WTRU where a file to be transferred is displayed. The user drags the file on the sending WTRU in the direction of the target WTRU. The sending WTRU determines that the file should be sent to the target WTRU based on environment information such as locations of surrounding WTRUs including the target WTRU. Before sending the file to the target WTRU, the sending WTRU may encrypt the file such that it may be decrypted only by the target WTRU. During file transfer, the displays of the sending and target WTRUs reflect the progress of the transfer.

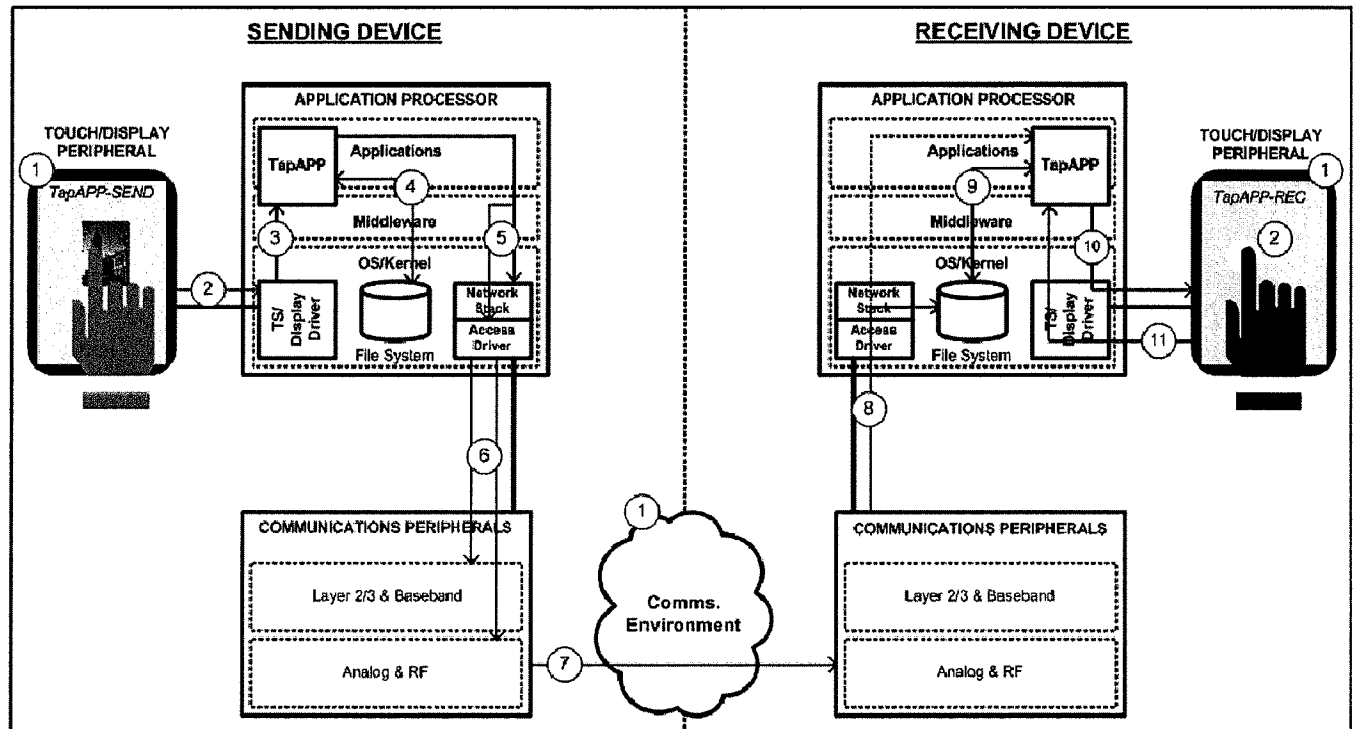


Figure 1

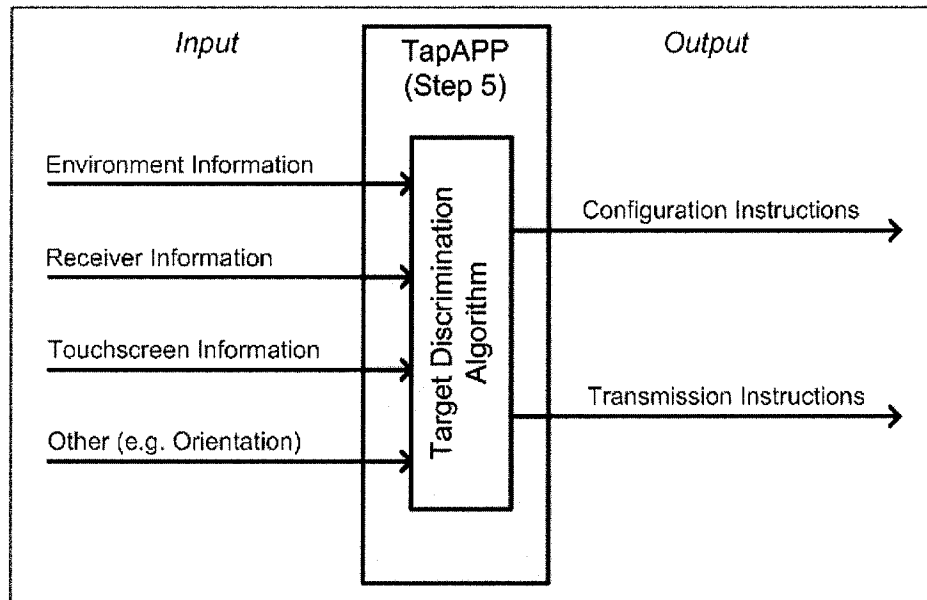


Figure 2

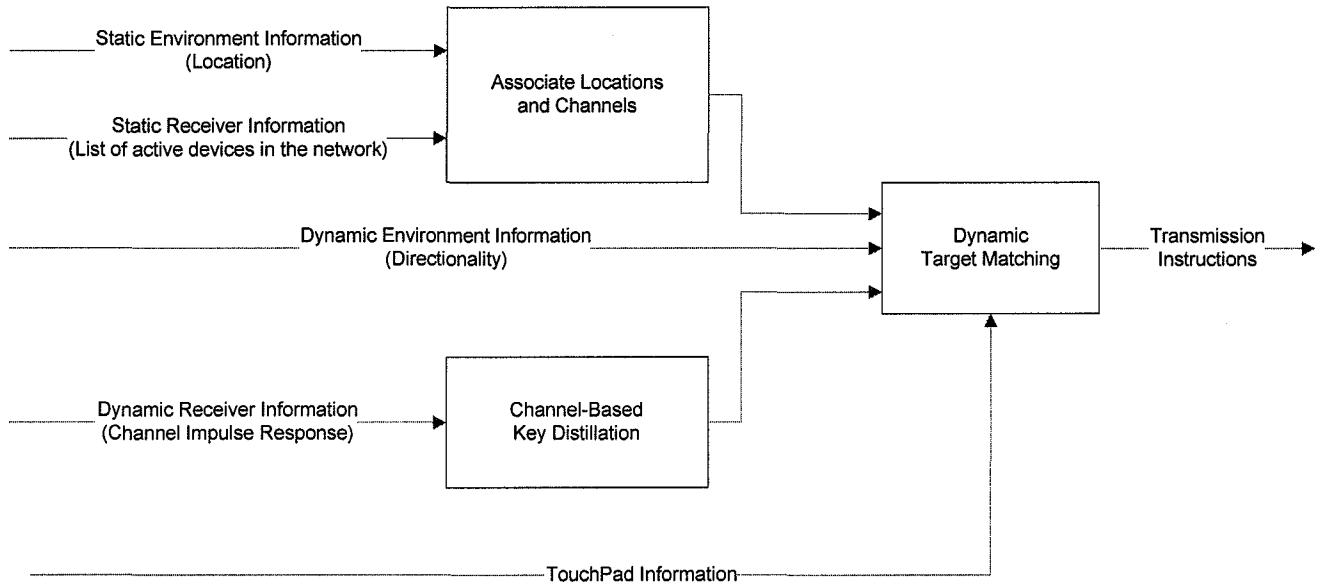


Figure 3

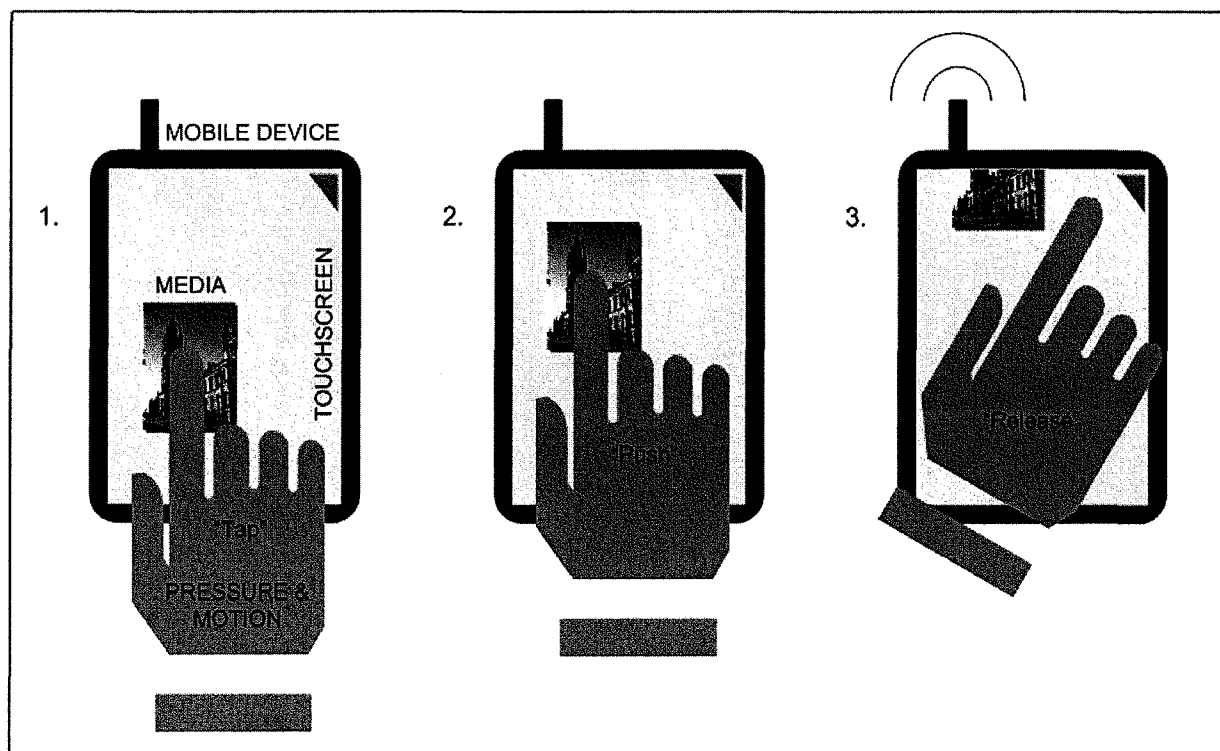


Figure 4

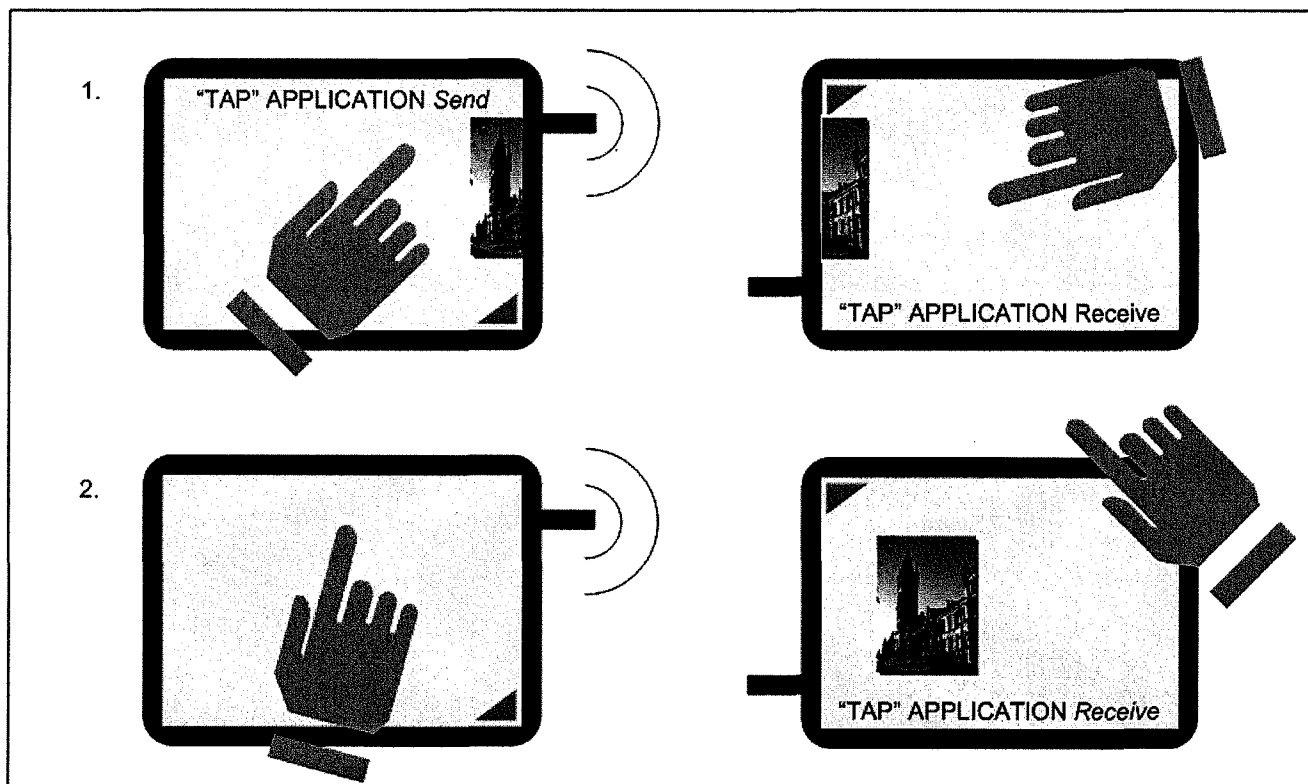


Figure 5

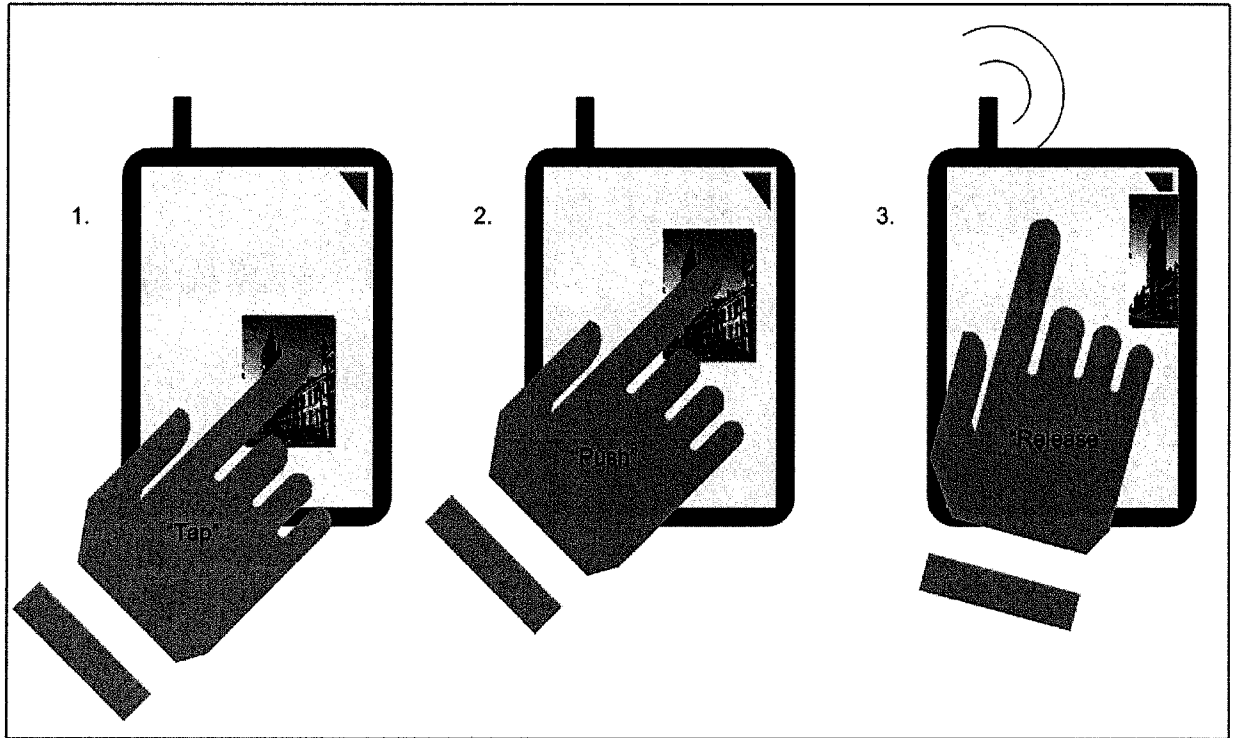


Figure 6

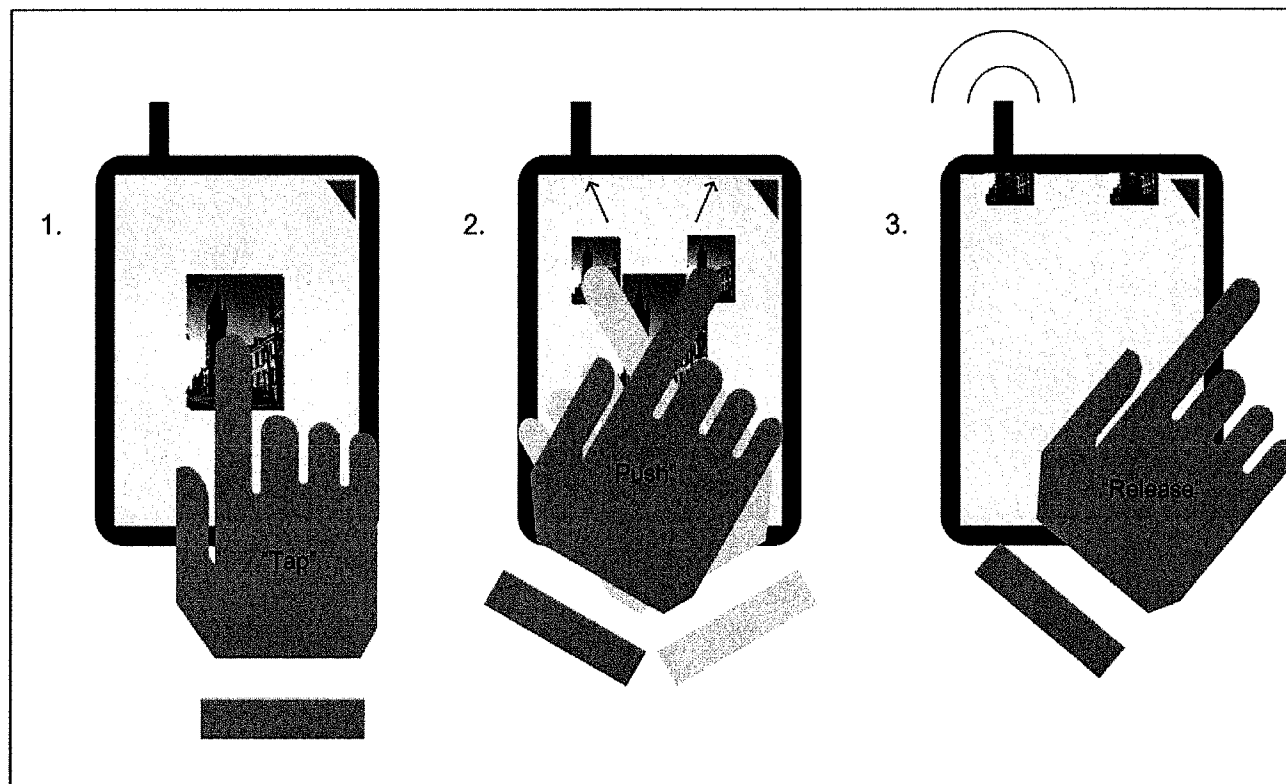


Figure 7

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City	Mineola	State/Province	NY	Country of Residence i		US	
Citizenship under 37 CFR 1.41(b) i		GB					
Mailing Address of Applicant:							
Address 1		12 Wisteria Avenue					
Address 2							
City	Mineola	State/Province		NY			
Postal Code	11501	Country i		US			
Applicant 2						Remove	
Applicant Authority		☒ Inventor		☐ Legal Representative under 35 U.S.C. 117		☐ Party of Interest under 35 U.S.C. 118	
Prefix	Given Name	Middle Name		Family Name		Suffix	
	Alexander			Reznik			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service							
City	Titusville	State/Province	NJ	Country of Residence i		US	
Citizenship under 37 CFR 1.41(b) i		US					
Mailing Address of Applicant:							
Address 1		1212 River Road					
Address 2							
City	Titusville	State/Province		NJ			
Postal Code	08560	Country i		US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.							
Add							

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

- ☐ An Address is being provided for the correspondence Information of this application.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IPH-2-2235.00.US	
		Application Number		
Title of Invention	DATA TRANSFER BETWEEN WIRELESS DEVICES			
Customer Number	24374			
Email Address	JHalt@volpe-koenig.com		Add Email	Remove Email

Application Information:

Title of the Invention	DATA TRANSFER BETWEEN WIRELESS DEVICES			
Attorney Docket Number	IPH-2-2235.00.US	Small Entity Status Claimed ☐		
Application Type	Provisional			
Subject Matter	Utility			
Suggested Class (if any)		Sub Class (if any)		
Suggested Technology Center (if any)				
Total Number of Drawing Sheets (if any)	7	Suggested Figure for Publication (if any)		

Publication Information:

☐	Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐	Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.			
Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	24374		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.			
Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	IPH-2-2235.00.US
		Application Number	
Title of Invention	DATA TRANSFER BETWEEN WIRELESS DEVICES		

This section allows for the applicant to claim benefit of foreign priority and to identify any prior foreign application for which priority is not claimed. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55(a).

			Remove
Application Number	Country ⁱ	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			☐ Yes ☒ No
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Assignee Information:

Providing this information in the application data sheet does not substitute for compliance with any requirement of part 3 of Title 37 of the CFR to have an assignment recorded in the Office.

Assignee 1				Remove
If the Assignee is an Organization check here. ☒				
Organization Name	INTERDIGITAL PATENT HOLDINGS, INC.			
Mailing Address Information:				
Address 1	3411 Silverside Road, Concord Plaza			
Address 2	Suite 105, Hagley Building			
City	Wilmington	State/Province	DE	
Country ⁱ	US	Postal Code	19810	
Phone Number		Fax Number		
Email Address				
Additional Assignee Data may be generated within this form by selecting the Add button.				Add

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Gerald B. Halt, Jr./		Date (YYYY-MM-DD)	2008-12-23
First Name	Gerald B.	Last Name	Halt, Jr.	Registration Number
			37633	

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Provisional Application for Patent Cover Sheet

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c)

Inventor(s)

Inventor 1

Remove

Given Name

Middle Name

Family Name

City

State

Country

Alan

G.

Carlton

Mineola

NY

US

Inventor 2

Remove

Given Name

Middle Name

Family Name

City

State

Country

Alexander

Reznik

Titusville

NJ

US

All Inventors Must Be Listed – Additional Inventor Information blocks may be generated within this form by selecting the **Add** button.

Add

Title of Invention

DATA TRANSFER BETWEEN WIRELESS DEVICES

Attorney Docket Number (if applicable)

IPH-2-2235.00.US

Correspondence Address

Direct all correspondence to (select one):

☒ The address corresponding to Customer Number

☐ Firm or Individual Name

Customer Number

03624

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

☐ Yes, the name of the U.S. Government agency and the Government contract number are:

Entity Status

Applicant claims small entity status under 37 CFR 1.27

- ☐ Yes, applicant qualifies for small entity status under 37 CFR 1.27
- ☒ No

Warning

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

Signature

Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Gerald B. Halt, Jr./			Date (YYYY-MM-DD)	Dec 23, 2008
First Name	Gerald B.	Last Name	Halt, Jr.	Registration Number (If appropriate)	37633

This collection of information is required by 37 CFR 1.51. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **This form can only be used when in conjunction with EFS-Web. If this form is mailed to the USPTO, it may cause delays in handling the provisional application.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that : (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:

Filing Date:

Title of Invention:

DATA TRANSFER BETWEEN WIRELESS DEVICES

First Named Inventor/Applicant Name:

Alan G. Carlton

Filer:

Harry Vartanian/Karen Lynch

Attorney Docket Number:

Filed as Large Entity

Provisional Filing Fees

Description

Fee Code

Quantity

Amount

**Sub-Total in
USD(\$)**

Basic Filing:

Provisional application filing

1005

1

220

220

Pages:

Claims:

Miscellaneous-Filing:

Petition:

Patent-Appeals-and-Interference:

Post-Allowance-and-Post-Issuance:

Extension-of-Time:

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				220

Electronic Acknowledgement Receipt

EFS ID:	4509354
Application Number:	61140126
International Application Number:	
Confirmation Number:	2226
Title of Invention:	DATA TRANSFER BETWEEN WIRELESS DEVICES
First Named Inventor/Applicant Name:	Alan G. Carlton
Customer Number:	24374
Filer:	Harry Vartanian/Karen Lynch
Filer Authorized By:	Harry Vartanian
Attorney Docket Number:	
Receipt Date:	23-DEC-2008
Filing Date:	
Time Stamp:	10:58:39
Application Type:	Provisional

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 220
RAM confirmation Number	8114
Deposit Account	090435
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	2235_00_US_ADS_Form_SB_14.pdf	1068663	no	4
			24c5ce99fbc3c5e8042fc5698c590e6609e55bf0		
Warnings:					
Information:					
2	Provisional Cover Sheet (SB16)	2235_00_US_ProvisionalCover Sheet_EFS.pdf	675597	no	3
			85ea99043850f151631fa3f2659e3dde084d0606		
Warnings:					
Information:					
3		2235_00_US_Application_EFS.pdf	104195	yes	20
			a228c633dff2eb7142fbc91ce73cee452d3ab084		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	13	
	Claims		14	19	
	Abstract		20	20	
Warnings:					
Information:					
4	Drawings-only black and white line drawings	2235_00_US_Drawings_EFS.PDF	437887	no	7
			0e5ba6137d992c7eb4cae18837ed87cfe6cdeb2a8		
Warnings:					
Information:					
5	Fee Worksheet (PTO-06)	fee-info.pdf	29001	no	2
			4af599b20e195a3b147cbb46f467c157ed2ac34a		
Warnings:					
Information:					
Total Files Size (in bytes):			2315343		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
61/140,126	12/23/2008		220	IPH-2-2235.00.US		

CONFIRMATION NO. 2226

24374
VOLPE AND KOENIG, P.C.
DEPT. ICC
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

FILING RECEIPT



OC000000034457009

Date Mailed: 02/11/2009

Receipt is acknowledged of this provisional patent application. It will not be examined for patentability and will become abandoned not later than twelve months after its filing date. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Alan G. Carlton, Mineola, NY;
Alexander Reznik, Titusville, NJ;

Power of Attorney: None

If Required, Foreign Filing License Granted: 02/09/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 61/140,126**

Projected Publication Date: None, application is not eligible for pre-grant publication

Non-Publication Request: No

Early Publication Request: No
Title

DATA TRANSFER BETWEEN WIRELESS DEVICES

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international

patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and

Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Application Number	61/140,126
	Filing Date	December 23, 2008
	First Named Inventor	Carlton et al.
	Title	DATA TRANSFER BETWEEN WIRELESS DEVICES
	Art Unit	Not Applicable
	Examiner Name	Not Applicable
	Attorney Docket Number	IPH-2-2235.00.US

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

24374

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified application to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

OR

☒ Firm or Individual Name Volpe and Koenig, P.C., DEPT ICC

Address

City

State

Zip

Country

Telephone

Email

I am the:

☒ Applicant/Inventor.

OR

☐ Assignee of record of the entire interest. See 37 CFR 3.71.

Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____.

SIGNATURE of Applicant or Assignee of Record

Signature

Date

Name

Telephone

Title and Company

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Application Number	61/140,126
	Filing Date	December 23, 2008
	First Named Inventor	Carlton et al.
	Title	DATA TRANSFER BETWEEN WIRELESS DEVICES
	Art Unit	Not Applicable
	Examiner Name	Not Applicable
	Attorney Docket Number	IPH-2-2235.00.US

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

24374

OR

☐ I hereby appoint Practitioner(s) named below as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith:

Practitioner(s) Name	Registration Number

Please recognize or change the correspondence address for the above-identified application to:

☒ The address associated with the above-mentioned Customer Number.

OR

☐ The address associated with Customer Number:

☒ Firm or Individual Name: Volpe and Koenig, P.C., DEPT ICC

Address: _____

City: _____ State: _____ Zip: _____

Country: _____

Telephone: _____ Email: _____

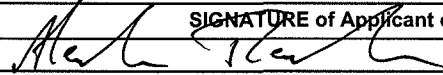
I am the:

☒ Applicant/Inventor.

OR

☐ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) (Form PTO/SB/96) submitted herewith or filed on _____.

SIGNATURE of Applicant or Assignee of Record

Signature		Date	19 MARCH 2009
Name	Alexander Reznik	Telephone	215-568-6400
Title and Company			

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 2 forms are submitted.

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt

EFS ID:	5029638
Application Number:	61140126
International Application Number:	
Confirmation Number:	2226
Title of Invention:	DATA TRANSFER BETWEEN WIRELESS DEVICES
First Named Inventor/Applicant Name:	Alan G. Carlton
Customer Number:	24374
Filer:	Aneesh A. Mehta/Chie Duncan
Filer Authorized By:	Aneesh A. Mehta
Attorney Docket Number:	IPH-2-2235.00.US
Receipt Date:	25-MAR-2009
Filing Date:	23-DEC-2008
Time Stamp:	10:12:06
Application Type:	Provisional

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	2235_00_US_PowerOfAttorney _EFS.pdf	155567 a3e3db0b783c6dd3e830d652fdf8ca371e2 dbd30	no	2

Warnings:

Information:

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
61/140,126	12/23/2008	Alan G. Carlton	IPH-2-2235.00.US

CONFIRMATION NO. 2226

POA ACCEPTANCE LETTER



24374
VOLPE AND KOENIG, P.C.
DEPT. ICC
UNITED PLAZA, SUITE 1600
30 SOUTH 17TH STREET
PHILADELPHIA, PA 19103

Date Mailed: 04/01/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/25/2009.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/ttran/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101