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UTILITY PATENT APPLICATION TRANSMITTAL <i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i>	Attorney Docket No.	7162-0141
	First Inventor	O'BRIEN
	Title	Computer architecture for a handheld electronic device
	Express Mail Label No.	EV 417203286 US

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents.	ADDRESS TO: Mail Stop Patent Application Commissioner for Patents P.O. Box 1450 Alexandria VA 22313-1450
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- ☒ Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
- ☐ Applicant claims small entity status.
See 37 CFR 1.27.
- ☒ Specification [Total Pages 23]
(preferred arrangement set forth below)
 - Descriptive title of the invention
 - Cross Reference to Related Applications
 - Statement Regarding Fed sponsored R & D
 - Reference to sequence listing, a table, or a computer program listing appendix
 - Background of the Invention
 - Brief Summary of the Invention
 - Brief Description of the Drawings (if filed)
 - Detailed Description
 - Claim(s)
 - Abstract of the Disclosure
- ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets 4]
- Oath or Declaration [Total Sheets 2]
 - ☒ Newly executed (original or copy)
 - ☐ Copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
 - ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
- ☒ Application Data Sheet. See 37 CFR 1.76

- ☐ CD-ROM or CD-R in duplicate, large table or Computer Program *(Appendix)*
- Nucleotide and/or Amino Acid Sequence Submission *(if applicable, all necessary)*
 - ☐ Computer Readable Form (CRF)
 - Specification Sequence Listing on:
 - ☐ CD-ROM or CD-R (2 copies); or
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ACCOMPANYING APPLICATION PARTS

- ☐ Assignment Papers (cover sheet & document(s))
- ☐ 37 CFR 3.73(b) Statement ☐ Power of Attorney
(when there is an assignee)
- ☐ English Translation Document *(if applicable)*
- ☐ Information Disclosure ☐ Copies of IDS Citations
- ☐ Statement (IDS)/PTO-1449
- ☐ Preliminary Amendment
- ☐ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
- ☐ Certified Copy of Priority Document(s)
(if foreign priority is claimed)
- ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
- ☒ Other: Fee: \$1.150

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.:

Prior application information: Examiner _____ Art Unit: _____
For CONTINUATION OF DIVISIONAL APPS only; The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number: 39207 OR ☐ Correspondence address below

Name			
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Name (Print/Type)	Robert J. Sacco	Registration No. (Attorney/Agent)	35,667
Signature		Date	2-22-06

This collection of information is required by 37 CFR 1.53(b). 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 12 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: Mail Stop Patent Application, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
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PTO Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL For FY 2006

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)
1,150

Complete if Known

Application Number
Filing Date Herewith
First Named Inventor O'BRIEN
Examiner Name
Art Unit
Attorney Docket No. 7162-0141

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☒ Other (please identify): Deposit Account
☒ Deposit Account Deposit Account Number: 08-0870 Deposit Account Name: Harris Corporation
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)
☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee
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FEE CALCULATION (All the fees below are due upon filing or may be subject to a surcharge.)

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	1,000
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
Total Claims	Extra Claims	Fee (\$)
23 - 20 or HP = 3	x 50 =	150
HP = highest number of total claims paid for, if greater than 20.		
Indep. Claims	Extra Claims	Fee (\$)
- 3 or HP =	x	
HP = highest number of independent claims paid for, if greater than 3.		

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets - 100 = / 50 = (round up to a whole number) x Fee (\$)

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge):

SUBMITTED BY

Signature [Signature] Registration No. (Attorney/Agent) 35,667 Telephone 561-626-2222
Name (Print/Type) Robert J. Sacco Date 2-22-06

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COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE
BACKGROUND OF THE INVENTION

Statement of the Technical Field

[0001] The inventive arrangements relate to personal electronic devices, and more particularly to personal digital assistant devices for storing, processing and communicating classified as well as unclassified data.

Description of the Related Art

[0002] Mobile computers, which are sometimes called personal digital assistants or PDAs, have the ability to store, process and communicate data. PDAs generally fall into one of several categories which can include handheld PCs, palm size PCs, smart phones, and handheld instruments. PDAs typically include some kind of microprocessor with a commercially available operating system such as Linux, Palm OS, or Widows CE (Pocket PC). Many PDAs also have built in LCD displays, touch sensitive screens, and keypads for the human/machine interface. Some PDAs also include wireless networking capabilities. For example, many such devices can communicate with other devices using well known wireless networking standards such as the IEEE 802.11 family of standards. The foregoing capabilities make these compact devices highly useful for a various business and personal applications.

[0003] Currently, there exist a wide variety of PDA devices with conventional operating systems and architectures. These commercially available PDAs with commercial-off-the-shelf (COTS) operating systems and COTS application programs generally satisfy the processing and communications requirements of most users. For example, they include applications for word processing, data storage, spreadsheets, email, internet browsing, time management, contact management, network communications, and voice communications. These applications generally function quite well and have interfaces that are familiar to many users. The familiarity of these

applications to users, and the relatively low cost of COTS software are considered advantageous for a variety of reasons.

[0004] Some commercially available PDA devices and/or software applications incorporate various security measures in an effort to protect data which is stored, processed or communicated using the device. For example, encryption technology and password protection features are known in the art. Still, this level of security can be inadequate for managing information that is of a Confidential, Secret, or Top Secret nature, particularly when such information relates to matters of national security. For example, COTS operating systems and applications may not be sufficiently trustworthy for handling this type of information. Such programs can be susceptible to being compromised by various means including hacker attacks, viruses, worms, Trojan horses, and a wide variety of other means that are known to those skilled in the art.

[0005] Finally, notwithstanding the security limitations of COTS operating systems and applications, the basic architecture and interface systems of many commercial PDA devices may leave these devices vulnerable to intrusion. For example, COTS devices do not employ trusted microprocessors, do not employ physical separation of classified and unclassified data processing, nor do they employ physical tamper detection and subsequent memory zeroization. They may also lack the capability of wireless communications for classified data. Consequently, transport, processing or communication of classified data using a commercial PDA is not generally permitted.

[0006] In order to address some of the foregoing problems, personal electronic devices have been developed that are specifically designed to allow for transport of classified data, for example encryption keys. However, these devices are not generally designed to accommodate data processing or wireless communications of classified information. Secure PDA devices are also known in the art. These devices utilize a trusted operating system, trusted microprocessors, and a trusted human/machine interface. However, they generally do not include wireless communications capabilities.

[0007] Trusted operating systems and applications are generally designed to more rigorously address the problem of computer security. Trusted operating systems

undergo evaluation of their overall design, verification of the integrity and reliability of their source code, and systematic, independent penetration evaluation. In contrast, non-trusted COTS operating systems are generally not designed to an equally high level with regard to security precautions.

SUMMARY OF THE INVENTION

[0008] The invention concerns a mobile PDA computer system. The mobile PDA computer system consists of a non-secure user processor, a secure user processor, and a cryptographic engine. The non-secure processor is comprised of non-trusted COTS microprocessor hardware (HW), a non-trusted COTS operating system, and non-trusted COTS application software. The secure processor is comprised of trusted microprocessor HW, a trusted operating system and trusted application software. The cryptographic engine is comprised of trusted hardware and trusted software. In addition to providing encryption and decryption services, the cryptographic engine provides a first data communication link that communicates data between the secure processor and the cryptographic engine and a second data communication link that communicates data between the non-secure processor and the cryptographic engine. In this way, the cryptographic engine forms a bridge between the secure processing side of the PDA and the non-secure processing side of the PDA.

[0009] According to one aspect of the invention, the non-secure processor can have a wired communication transceiver and/or a wireless communications transceiver. These communication transceivers can be used to communicate unclassified data and voice transmissions. In addition these transceivers can be used to communicate encrypted classified data. The secure processor can communicate encrypted classified data files from the secure processor's file system to the non-secure processor. The encrypted files can then be communicated using the wired or wireless transceiver circuitry associated with the non-secure processor. Similarly, classified real time voice communications originating on the secure processing side of the device can be encrypted and communicated to the non-secure processor. The non-secure processor can utilize the wired or wireless transceiver to communicate such encrypted voice information.

[0010] The invention can also concern a method for managing classified and unclassified on a mobile PDA computer system. The method can include processing classified data exclusively using a secure processor. The method can also include

processing unclassified data exclusively using a non-secure processor. Classified data for encryption and classified decrypted data can be communicated between the secure processor via the cryptographic engine using a first data communication link. Further classified data from the secure processor via the cryptographic engine can be communicated to the non-secure processor exclusively in an encrypted form. Such communications can be performed using a second data communication link between the cryptographic engine and the non-secure processor.

[0011] The method can include communicating classified data to and from the secure processor exclusively using a secure human/machine interface. Further, the method can include controlling the secure processor exclusively using the secure human/machine interface. Classified information can be provided to the user from the secure processor exclusively using the secure human/machine interface.

[0012] The non-secure processor can be controlled exclusively using a non-secure human/machine interface. Further, unclassified information can be provided to the user by the non-secure processor exclusively using the non-secure human/machine interface. A wireless communications transceiver can be used for communicating wireless unclassified data from the non-secure processor. The method can further include communicating encrypted classified data provided from the secure processor using the wireless communications transceiver. According to one aspect of the invention, the wireless communications transceiver can be selected from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver. According to yet another aspect, the method can include communicating classified audio information to and from the secure processor with a first audio interface, and communicating audio information to and from the non-secure processor with a second audio interface distinct from the first audio interface.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Fig. 1 is block diagram that is useful for understanding an architecture of a secure PDA

[0014] Fig. 2 is a block diagram that is useful for understanding an architecture of a non-secure commercial PDA/Phone.

[0015] Fig. 3 is a block diagram that is useful for understanding an architecture of a PDA that can be used for classified and unclassified data.

[0016] Fig. 4 is a more detailed block diagram showing the non-secure processor portion of the PDA architecture in Fig. 3.

[0017] Fig. 5 is a more detailed block diagram showing the secure processor portion of the PDA architecture in Fig. 3.

[0018] Fig. 6 is a more detailed block diagram of the cryptographic engine in Fig. 3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0019] The invention concerns a computer architecture for a mobile PDA computer system. Fig. 1 shows a simplified block diagram of a secure PDA of the prior art that includes trusted hardware and trusted software (operating system and application software). As used herein, the term “trusted” is used with reference to computer hardware, operating systems, and/or software applications that have been designed to ensure secure storage, processing and communication of data. Trusted hardware and trusted software can be combined to provide secure data processing. Trusted hardware and software are generally designed and tested to ensure the integrity and reliability of their source code, and their resistance to penetration. In contrast, untrusted hardware and untrusted software are generally not designed to an equally high level with regard to security precautions. Accordingly, when integrated into a computer system, those systems are often referred to as non-secure.

[0020] Secure PDA 100 utilizes secure user processor 102 comprised of trusted hardware (HW) and trusted software (SW) for securing data that is stored on the device. A user secure file system 103 is provided for storing classified data. A cryptographic engine 104 is provided with trusted hardware and trusted software for providing encryption and decryption services. A crypto secure file system 105 is used to store classified data and files used by the cryptographic engine 104. A secure human/machine interface (HMI) 106 is also provided. However, for security reasons, PDA devices of this type generally do not include machine input/output (I/O) facilities. Thus PDA 100 does not have a USB port, wireless networking, or cellular telephone communications capabilities. PDA 100 can generally satisfy the requirements for accessing secure file systems. However, the operating system and applications can be expensive and unfamiliar to many users who more often utilize commercial-off-the-shelf (COTS) systems.

[0021] In contrast to the secure PDA in Fig. 1, a commercial PDA/phone architecture is shown in Fig. 2. The commercial PDA/phone 200 can include a non-secure processor 202 comprised of untrusted COTS microprocessor hardware and untrusted

COTS software. A user non-secure file system 203 can be used for storing unclassified user files and data. The commercial PDA/phone will make use of COTS hardware and software to satisfy the processing and communications requirements of users. The commercial PDA/phone will make use of a conventional non-secure HMI 206, and can include non-secure I/O circuitry 204. The I/O circuitry 204 can include wired and/or wireless LAN transceivers, and cellular telephone transceiver circuitry. A suitable antenna or antennas 210 can be provided for any wireless applications. Audio interface circuitry can also be provided for headset 208. Significantly, PDA 200 will not generally satisfy the requirements for accessing secure file systems. However, commercial PDA 200 benefits from the economy associated with use of COTS applications and a COTS operating system. Another advantage is that users tend to be well familiar with such operating systems and applications.

[0022] Turning now to Fig. 3, there is shown an architecture for a mobile PDA computer system 300 that offers the combined advantages of secure PDA 100 and commercial PDA 200. The architecture in Fig. 3 can include a secure processor 302 composed of trusted microprocessor hardware executing trusted operating system software and trusted application software. Secure processor 302 can have access to a secure file system 314. Secure processor 302 receives user inputs and provides information to users through a secure HMI 308. Secure processor 302 can also communicate audio information to and from headset 316.

[0023] Non-secure processor 306 is also provided as part of PDA 300. Non-secure processor 306 is composed of untrusted microprocessor hardware executing an untrusted operating system and untrusted application software. Non-secure processor 306 can store unclassified user files and data in a user non-secure file system 319. Non-secure processor 306 is capable of receiving and transmitting data through I/O interface 312, which can include wired and/or wireless LAN transceivers, cellular telephone transceiver circuitry and any other conventional data communication service. A suitable antenna or antennas 320 can be provided for any wireless applications. A user audio interface can be provided for audio communications, audio recording and

listening to audio files. Non-secure processor 306 receives user inputs and provides information to users through a non-secure HMI 310.

[0024] PDA 300 also includes a cryptographic engine 304. The cryptographic engine is implemented with trusted software (operating system and application software) and trusted microprocessor hardware. The cryptographic engine is provided for encrypting and decrypting classified data. A crypto secure file system 317 is provided for storing classified data and files used by cryptographic engine 304. A first data communication link 303 is provided for communicating classified data between the secure processor 302 and the cryptographic engine 304. A second data communication link 305 is provided for communicating encrypted classified data between the non-secure processor 306 and the cryptographic engine. Data communicated between secure processor 302 and cryptographic engine 304 will be encrypted before being passed to the non-secure processor 306. In contrast, data communicated between non-secure processor 306 and cryptographic engine 304 can be unencrypted unclassified data in some instances and encrypted classified data in other instances. Still, the invention is not limited with regard to the specific type of data that is communicated on the first and second data links.

[0025] The first and second data communication links can be any suitable type serial or parallel type data channels. For example, if the communication link is a parallel type data link then it can conform to any of a number of well known bus standards, including without limitation ISA, EISA, VESA, PCI, EMIF and so on. Alternatively, if a serial data channel is used, then it can be an I2C, SPI, Microwire, Maxim or other type serial data bus.

[0026] A PDA computer architecture as show in Fig. 3 can offer several important advantages. One basic advantage of the foregoing arrangement is that it overcomes some limitations of conventional secure and non-secure PDAs. For example, the system can still offer all of the benefits of conventional commercial PDA devices. Such features can include familiar and inexpensive COTS operating systems and applications. Such COTS operating systems and applications can be used with the

non-secure processor 306. The PDA 300 also offers the benefit of wired and wireless LAN communication services, cellular telephone services and so on. In addition to these features, the PDA architecture shown in Fig. 3 can permit users to access to a secure file system. The file system can be maintained by secure processor 302 in a data store.

[0027] Referring now to Fig. 4, there is shown a more detailed block diagram of a portion of the PDA 300 that includes non-secure processor 306. As noted above, non-secure processor 306 can be comprised of untrusted processor hardware. For example, the untrusted processor hardware can be any one of a variety of well known COTS processors that are widely available. For example, the un-trusted processor hardware can be selected from the StrongARM or XScale processors (e.g., SA-110 or PXA270) available from Intel Corp. of Santa Clara, CA , the i.MX or Dragonball family of processors available from Freescale Semiconductor, Inc. of Austin, Texas, or the OMAP family of processors offered for sale by Texas Instruments of Dallas, Texas.

[0028] According to one embodiment, non-secure processor 306 can also be comprised of an untrusted COTS operating system. For example any of a variety of well known COTS operating systems suitable for use in a PDA can be used for this purpose. According to one embodiment, the non-secure processor 306 can utilize the Windows CE operating system that is made available by Microsoft Corporation of Redmond, Washington. However, the invention is not limited in this regard and other types of untrusted operating systems can also be used.

[0029] Non-secure processor 306 can communicate with one or more subsystem components including data store 402. Data store 402 can include flash memory, read-only memory (ROM), dynamic random access memory (DRAM). The un-trusted operating system for the non-secure processor can be stored in non-volatile memory in data store 402 or flash EE PROM 404. Application software can be loaded in flash memory or DRAM as needed.

[0030] As shown in Fig. 4, I/O interface 312 can include wired connectivity block 406 for USB or other wired connectivity services. Wireless connectivity block 408 can

include any wireless transceiver system now known or known in the future for communicating voice and/or data. For example, the wireless connectivity block 408 can be any suitable wireless LAN transceiver system. According to one embodiment of the invention, wireless connectivity block 408 can be configured for operation in accordance with any one of the 802.11 family of wireless network standards. However the invention is not limited in this regard. Instead, any other wireless networking standard can also be implemented in accordance with the inventive arrangements. Further, wireless connectivity block 408 can also comprise cellular telephone transceiver circuitry. For example, the cellular telephone transceiver circuitry can be designed to operate using any one of a variety of well known cellular telephone transmission protocols such as TDM, GSM, or CDMA.

[0031] Additional sub-systems connected to non-secure processor 306 can include audio interface 410. Audio interface 410 can include at least one suitable audio codec, analog to digital and digital to analog conversion circuitry, as well as any necessary audio amplifier circuitry (not shown). Audio interface 410 can also include any other circuitry necessary to allow PDA 300 to output MP3 audio associated with the non-secure processor 306.

[0032] In the event that wireless input/output subsystem 312 includes cellular telephone transceiver circuitry, then the audio interface 410 can include a voice codec that can provide the user audio interface for that application. In particular, the voice codec can code voice signals received from a microphone associated with headset 318. Similarly, the voice codec can decode voice signals received via wireless connectivity block 408 and output such decoded audio to an earphone associated with headset 318. Still, it should be understood that the invention is not limited to any particular arrangement with regard to audio interface 410. Audio interfaces for cellular telephones and MP3 audio playback are well known in the art and all such arrangements are contemplated for audio interface 410 within the scope of the present invention.

[0033] Non-secure processor 306 can interface with a user through non-secure HMI 310. Non-secure HMI 310 can include a conventional color display 416 and touch

screen controller 414. Non-secure HMI 206 can also include a keypad/pointing device 412. HMI interfaces of the type described herein are well known in the art. In this regard it should be understood that the non-secure HMI interface is not limited to the specific embodiments shown. Instead, any other suitable non-secure HMI interface can be used for this purpose.

[0034] Referring now to Fig. 5, there is shown a more detailed block diagram of the portion of PDA 300 including secure processor 302. Secure processor 302 can be custom-designed processor or can also be one of a variety of well known COTS processors that are widely available. Regardless of whether the secure processor 302 is comprised of custom components, COTS components, or a mixture of custom and COTS components, the secure processor must be designed and developed utilizing trusted methods and techniques to ensure the integrity and reliability of the device, and its resistance to penetration. For example, the secure processor 302 can be housed inside a physical barrier that will detect any attempt to open the enclosure and automatically zeroize any stored sensitive/classified information contained within. The secure processor 302 can also be housed inside an enclosure that provides radio frequency (RF) shielding to guard against radiating sensitive/classified information.

[0035] Secure processor 302 will also have trusted operating system software and trusted application software. Trusted software is designed and tested to ensure the integrity and reliability of the code, and its resistance to penetration. For example, trusted software must be developed utilizing trusted techniques, which may include peer reviews, testing of all paths through the control logic, and in some cases, a mathematical proof of correctness.

[0036] Secure processor 302 can communicate with one or more subsystem components including data store 502. Data store 502 can include flash memory, read-only memory (ROM), dynamic random access memory (DRAM). The trusted operating system used in secure processor 302 can be stored in non-volatile memory in data store 502 or flash EE PROM 504. Application software can be loaded in flash memory

or DRAM as needed. Additional sub-systems connected to secure processor 302 can include audio interface 506.

[0037] Audio interface 506 can include at least one suitable audio codec, analog to digital and digital to analog conversion circuitry, as well as any necessary audio amplifier circuitry (not shown). Audio interface 506 can also include any other circuitry necessary to allow PDA 300 to output MP3 audio associated with the secure processor 302. In the event that wireless input/output subsystem 312 includes cellular telephone transceiver circuitry, then the audio interface 506 can include a voice codec that can provide the user audio interface for that application. In particular, the voice codec can code voice signals received from a microphone associated with headset 316. Similarly, the voice codec can decode voice signals received via wireless connectivity block 408 and output such decoded audio to an earphone associated with headset 316. Still, it should be understood that the invention is not limited to any particular arrangement with regard to audio interface 506. Audio interfaces for cellular telephones and MP3 audio playback are well known in the art and all such arrangements are contemplated for audio interface 506 within the scope of the present invention.

[0038] Secure processor 302 can also communicate with secure HMI 308. Secure HMI devices are known in the art and typically can include one or more features to ensure trusted communications between the user and the secure processor 302. The secure HMI 308 can provide a trusted path to applications executing on secure processor 302. Consequently, secure HMI 308 can prevent invasive or unauthorized applications from monitoring user inputs and system outputs.

[0039] According to one embodiment of the invention, the secure HMI 308 can be at least partially contained within a shielded enclosure. Moreover, the power supply lines for the secure HMI 308 can be filtered to ensure that signals associated with secure processor 302 are not communicated along the power supply lines back to the non-secure processor 306. The secure HMI 308 can also be designed to prevent a user from being misled about which application is actually in use. For example, this can be accomplished by means of highly distinctive and easily recognized visual display

indications that cannot be obstructed. Such indicators can assure the user regarding the identity of the application with which the user is working. Secure HMI features of this type are implemented in a variety of ways that are known to those skilled in the art.

[0040] Referring now to Fig. 5, it can be observed that the secure HMI 308 can be comprised of several components. For example, secure HMI 308 can include one or more input devices which allow a user to input control commands and input data. According to one embodiment, these input devices can include a pointing keypad/pointing device 508 and a touch screen controller 510. However, the invention is not limited in this regard. The secure HMI 308 can also include a display 512, which can present alphanumeric and graphical data. The display 512 can be a color or monochrome type display. Further, one or more data ports (not shown) can be provided as part of the human/machine interface. The data ports can be any type of wired data interface. According to one embodiment, the data ports can conform to the well known USB standard. The data ports can be used for input and output of data. The data ports can also be used for connecting certain peripheral devices to the PDA 300. For example, the data ports can be used for connecting an external keyboard to the PDA 300.

[0041] Referring now to Fig. 6, there is shown a more detailed block diagram of cryptographic engine 304. Cryptographic engine 304 can include a cryptographic processor 602 and a cryptographic file system 604 maintained in a data store. Cryptographic engine 304 can be one of several available cryptographic engines. According to one embodiment, the cryptographic engine can be a Sierra II Crypto processor which is available from Harris Corporation of Melbourne, FL. The cryptographic engine can include configurable key lengths and can be programmed with one or more encryption algorithms. As illustrated in Fig. 6, cryptographic engine 304 can include several control and data ports including a crypto ignition key port, a key and certificate fill port, a zeroize switch, and a software load port. The software load port can be used for loading software for executing on the cryptographic engine 304 and for loading software used by secure processor 302.

[0042] The cryptographic file system 604 can be used to store cryptographic algorithms, crypto keys and certificates, audit data, policy profile, and any other information necessary for the operation of the cryptographic engine. The cryptographic engine 304 can also include one or more security features. For example, the cryptographic engine 304 can include a secure certified operating environment, security auditing, security policy enforcement, file integrity checking and/or trusted boot logic. Cryptographic file system 604 can be implemented in flash/ROM/DRAM 603 and/or EE PROM 605.

[0043] As shown in Fig. 6, the cryptographic engine 304 can be responsive to one or more control signals from secure processor 302 and non-secure processor 306 to provide various encryption functions. For example, according to one aspect of the invention, the cryptographic engine can provide an encryption/decryption function for data communicated between the secure and non-secure processors. The encryption function can be implemented with or without packet header bypass.

[0044] The functions of the cryptographic engine 304 can be responsive to crypto control signals received from the secure processor 302 and non-secure processor 306 via the crypto interfaces 606, 608. For example, any data of a sensitive nature that is transferred from the secure processor to the cryptographic engine 304 must be encrypted before being transferred to the non-secure processor.

[0045] With the PDA architecture as described herein in relation to Fig. 3, the user is capable of storing, processing, and communicating classified as well as unclassified data. Unclassified data storage and user processing of unclassified data can be performed by non-secure processor 306. The architecture provides for the use of untrusted COTS operating systems and COTS applications for the non-secure user. The use of COTS hardware and software for the non-secure processor provides the users with familiar user interfaces expected by the user community. In contrast, classified data storage and user processing of classified data can be provided using the secure processor 302 and a secure file system 314 accessed by secure processor 302. Any data of a sensitive nature transferred from the secure processor to the non-secure

processor can be encrypted by the cryptographic engine 304. An advantage of the foregoing architecture is that it (1) provides for physical separation of classified data from data which is unclassified or encrypted/classified data, and (2) provides secure access to sensitive files.

[0046] The foregoing arrangement also facilitates a secure/non-secure PDA architecture that provides for wired and wireless communications capabilities. Unclassified data can be transmitted using conventional wired connectivity 406 or wireless connectivity 408. Significantly, however, data that is of a sensitive nature can also be transmitted. For example, encrypted data stored in a secure file system associated with secure processor 302 can be communicated from secure processor 302 to non-secure processor 306, without being unencrypted. Unencrypted data can be encrypted by cryptographic engine 304 before being communicated from the secure processor 302 to the non-secure processor 306. Thereafter, the encrypted data can be communicated over-the-air by means of non-secure processor 306 and wired connectivity 408 using COTS software applications. Likewise, text messages and other communications originating from the secure HMI 308 can be encrypted when passed from secure processor 302 to non-secure processor 306. Consequently, any of the wired connectivity 406 or wireless connectivity services 406 can be used to communicate the data to third parties.

[0047] Another advantage of the foregoing arrangement is that it allows a user with classified and unclassified voice communications to take advantage of the wireless connectivity 408 for telecommunications services. For example, if the PDA 300 is equipped with a cellular telephone transceiver or other wireless transceiver that can be used for voice communications, then a user can plug in a headset 316 to provide encrypted communications with third parties. Audio data communicated to secure processor 302 by headset 316 can be encrypted by cryptographic engine 304 before ever passing to the non-secure side of the architecture of PDA 300. Likewise, classified audio communications can be received in an encrypted state and can remain encrypted until passing to the secure processor side of the PDA 300. Unclassified voice communications can be conducted using headset 318 and non-secure processor 306 in

the conventional manner. However, under no circumstances will classified audio information be communicated to the non-secure audio processing hardware so it cannot be inadvertently transmitted in an unencrypted state.

CLAIMS

We claim:

1. A mobile PDA computer system, comprising:
 - a secure user processor, comprising:
 - a trusted microprocessor;
 - a trusted operating system executing on said trusted microprocessor;
 - a trusted application software executing on said trusted microprocessor;
 - a non-secure user microprocessor comprising:
 - an untrusted microprocessor;
 - an untrusted operating system executing on said untrusted microprocessor;
 - untrusted application software executing on said untrusted microprocessor;
 - a cryptographic engine configured for encrypting and decrypting data comprising:
 - a trusted cryptographic processor;
 - a trusted operating system executing on said trusted cryptographic processor;
 - a first data communication link communicating data between said secure processor and said cryptographic engine; and
 - a second data communication link communicating data between said non-secure processor and said cryptographic engine.
2. The mobile PDA computer system according to claim 1, further comprising a secure human/machine interface for communicating data to and from said secure processor.
3. The mobile PDA computer system according to claim 2, wherein said secure human/machine interface comprises at least one input device to allow a user to control the secure processor.

4. The mobile PDA computer system according to claim 3, wherein said secure human/machine interface comprises at least one output device to allow the secure processor to inform a user.
5. The mobile PDA computer system according to claim 2, further comprising a non-secure human/machine interface.
6. The mobile PDA computer system according to claim 5, wherein said non-secure human/machine interface comprises at least one input device to allow a user to control the non-secure processor.
7. The mobile PDA computer system according to claim 6, wherein said non-secure human/machine interface comprises at least one output device to allow the non-secure processor to inform a user.
8. The mobile PDA computer system according to claim 1, wherein said non-secure processor is operatively connected to a wireless communications transceiver.
9. The mobile PDA computer system according to claim 8, wherein said wireless communications transceiver is selected from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver.
10. The mobile PDA computer system according to claim 9, wherein two audio interfaces are provided, a first audio interface for communicating audio information to and from said secure processor, and a second audio interface for communicating audio information to and from said non-secure processor.
11. A mobile PDA computer system, comprising:
 - a secure user processor, comprising:
 - a trusted microprocessor;
 - a trusted operating system executing on said trusted microprocessor;
 - a trusted application software executing on said trusted microprocessor;
 - a non-secure user processor, comprising:
 - an untrusted microprocessor;

an untrusted operating system executing on said untrusted microprocessor;
untrusted application software executing on said untrusted microprocessor;
a cryptographic engine configured for encrypting and decrypting data, comprising:
a trusted cryptographic processor
a trusted operating system executing on said trusted cryptographic processor;
a first data communication link communicating data between said secure processor and said cryptographic engine;
a second data communication link communicating data between said non-secure processor and said cryptographic engine;
a secure human/machine interface for communications between a user and said secure processor;
a non-secure human/machine interface for communications between a user and said non-secure processor.

12. The mobile PDA computer system according to claim 11, wherein said non-secure processor is operatively connected to a wireless communications transceiver.

13. The mobile PDA computer system according to claim 11, further comprising a first audio interface for communicating audio information to and from said secure processor, and a second audio interface for communicating audio information to and from said non-secure processor.

14. A method for managing classified and unclassified data on a mobile PDA computer system, comprising:
processing classified data exclusively using a secure processor, comprising a trusted microprocessor and a trusted operating system executing on said trusted microprocessor;

processing unclassified data exclusively using a non-secure processor, comprising an untrusted microprocessor and an untrusted operating system executing on said untrusted microprocessor;

communicating encrypted and decrypted classified data between said secure processor and said cryptographic engine using a first data communication link; and

communicating data from said secure processor and said cryptographic engine to said non-secure processor exclusively in an encrypted form using a second data communication link between said cryptographic engine and said non-secure processor.

15. The method according to claim 14, further comprising communicating data to and from said secure processor exclusively using a secure human/machine interface.

16. The method according to claim 15, further comprising controlling said secure processor exclusively using said secure human/machine interface.

17. The method according to claim 16, further comprising informing a user with information from said secure processor exclusively using said secure human/machine interface.

18. The method according to claim 14, further comprising controlling said non-secure processor exclusively using a non-secure human/machine interface.

19. The method according to claim 18, further comprising informing a user of information provided by said non-secure processor exclusively using said non-secure human/machine interface.

20. The method according to claim 14, further comprising performing wireless data communication of unclassified data from said non-secure processor using a wireless communications transceiver.

21. The method according to claim 20, further comprising communicating encrypted classified data from said secure processor using said wireless communications transceiver.

22. The method according to claim 20, further comprising selecting said wireless communications transceiver from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver.

23. The method according to claim 22, further comprising communicating classified audio information to and from said secure processor with a first audio interface, and communicating unclassified audio information to and from said processor with a second audio interface distinct from said first audio interface.

COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE

ABSTRACT

Mobile PDA computer system (300) includes a non-secure processor (306), comprising an untrusted microprocessor and an untrusted operating system executing on the untrusted microprocessor. The system also includes a secure processor (302), comprising a trusted microprocessor and a trusted operating system executing on the trusted microprocessor. A cryptographic engine (304) is provided for encrypting and decrypting data. A first data communication link (303) communicates data between the secure processor and the cryptographic engine. A second data communication link (305) communicates data between the non-secure processor and the cryptographic engine. In this way, the cryptographic engine forms a bridge between the secure user processor and the non-secure user processor.

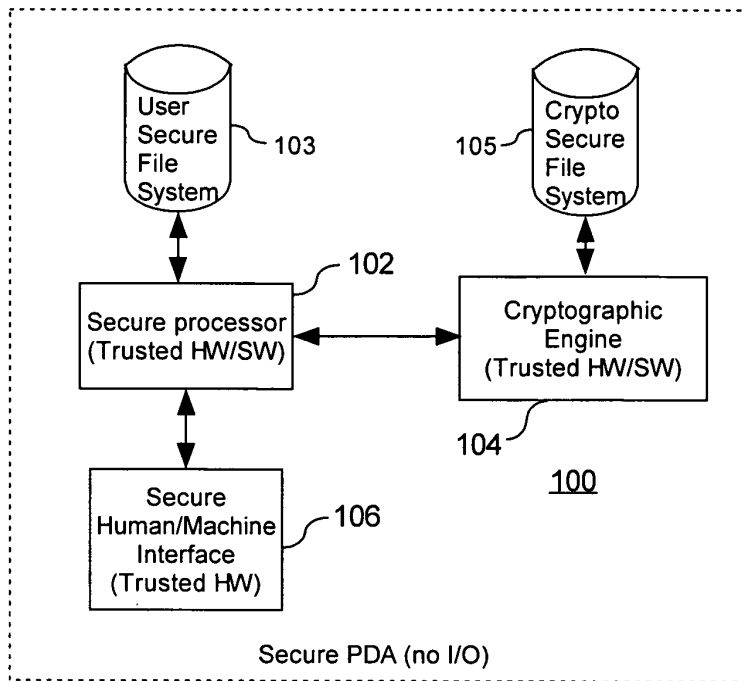


Fig. 1
(Prior Art)

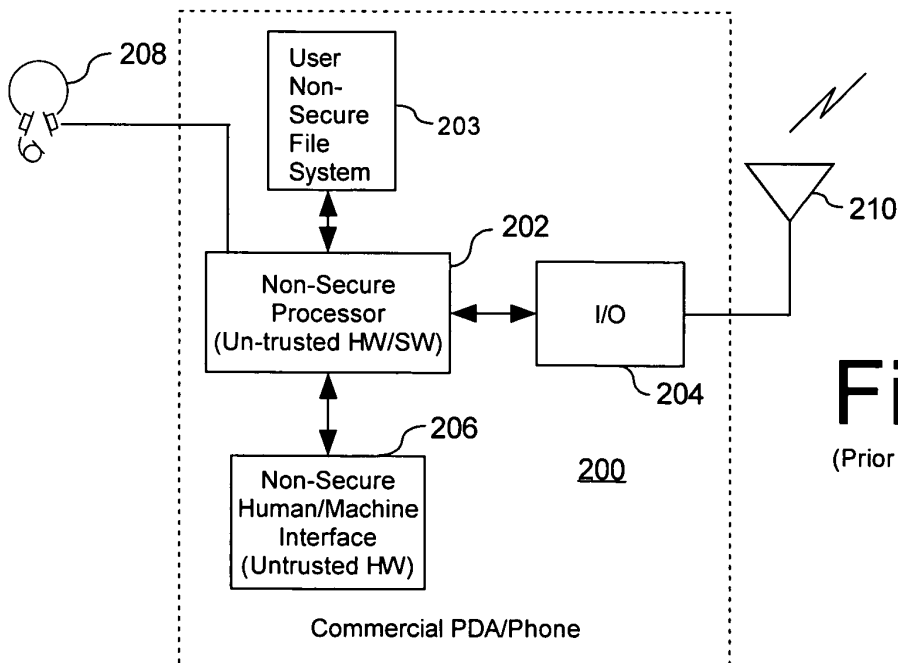


Fig. 2
(Prior Art)

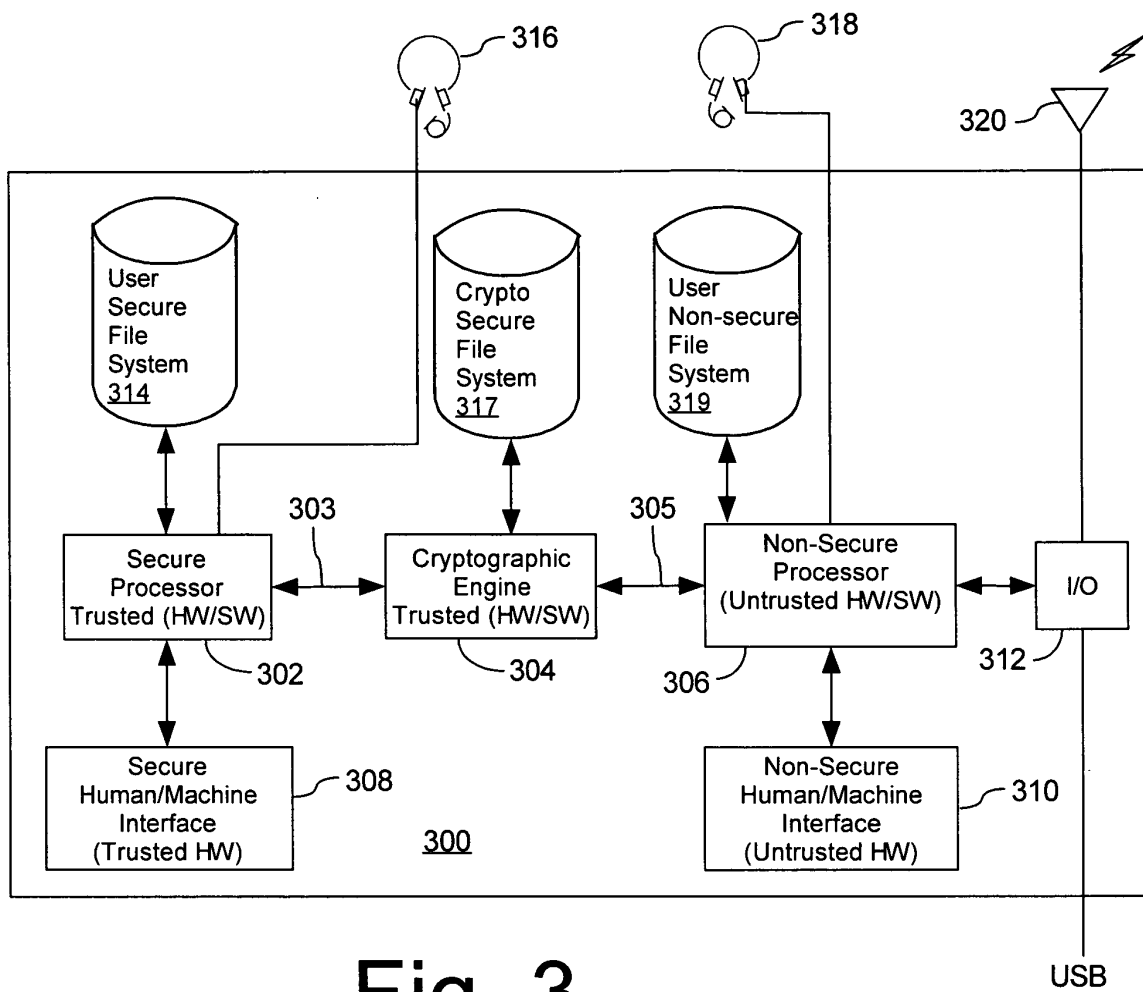


Fig. 3

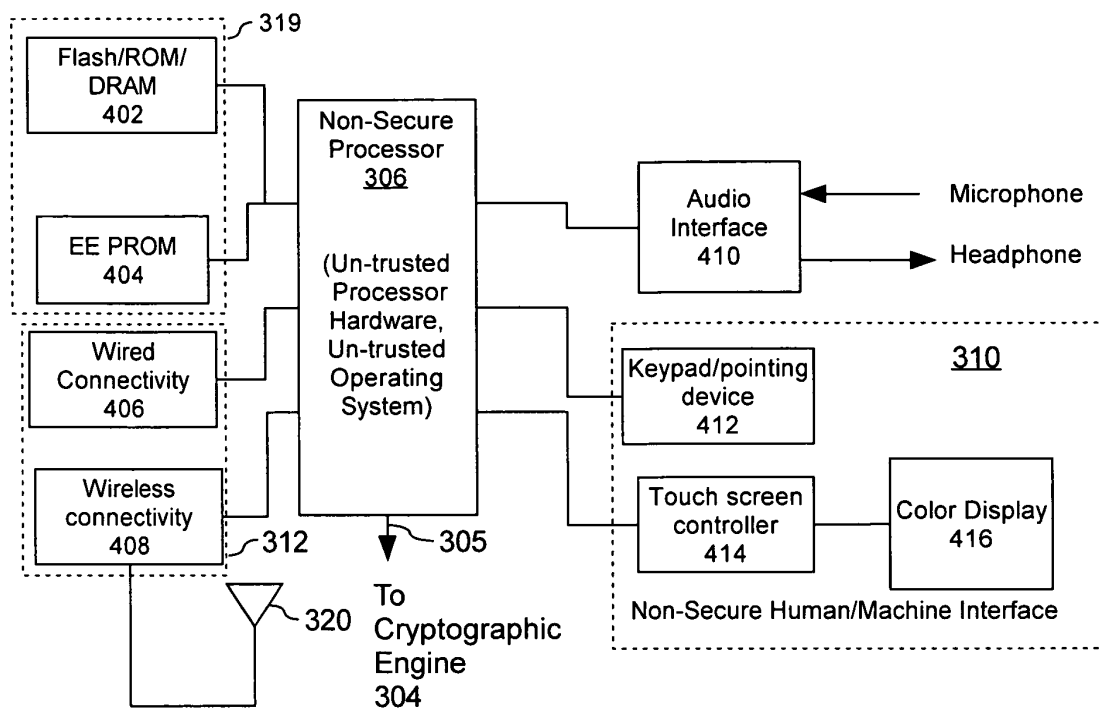


Fig. 4

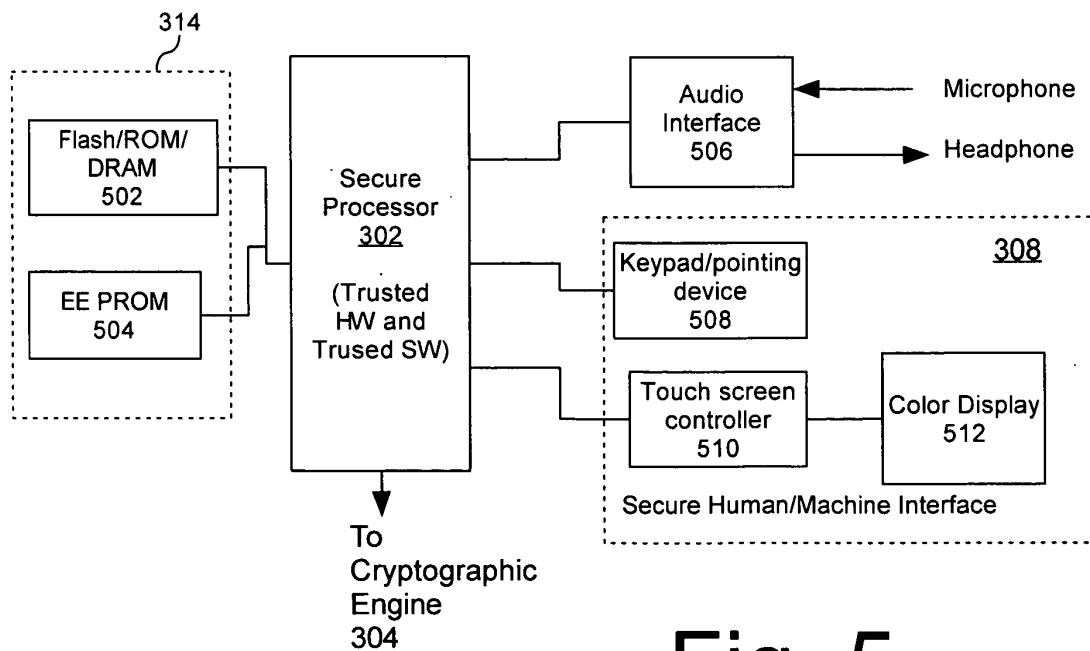


Fig. 5

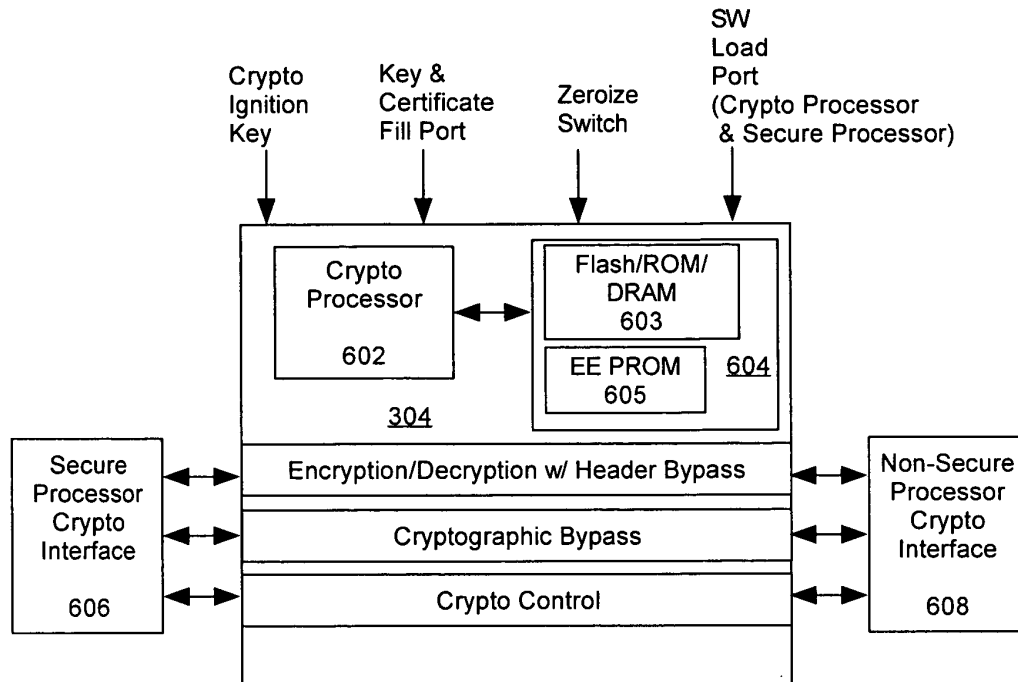


Fig. 6

US

Sacco & Associates, P.A.

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY
(Includes Reference to PCT International Applications)

ATTORNEY DOCKET NUMBER

7162-0141

RF-266

As a below named inventor, I hereby declare that:

My residence, mailing address and citizenship are as stated below next to my name.

I believe that I am the original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE

the specification of which (check only one item below):

☒ [X] is attached hereto.

☐ [] was filed as U.S. Patent Application Serial Number _____
On _____ as amended on _ (if applicable).

☐ [] was filed as a PCT international application number _____ on
_____, as amended on _ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) or (f), or §365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or §365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the applications on which priority is claimed:

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?
			☐	☐ YES ☐ NO
			☐	☐ YES ☐ NO
			☐	☐ YES ☐ NO

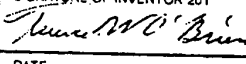
☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

{00009097;}

Express Mail Label:
EV 417203286 US

US

Sacco & Associates, P.A.

COMBINED DECLARATION FOR PATENT APPLICATION AND POWER OF ATTORNEY (Includes Reference to PCT International Applications)				ATTORNEY DOCKET NUMBER 7162-141 RF-266	
I hereby claim the benefit under 35 U.S.C. Sections 120 or 119(e) of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:					
PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. §120:					
U.S. APPLICATIONS					
U.S. APPLICATION NUMBER		U.S. FILING DATE		STATUS (Check One)	
				PATENTED	ABANDONED
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NUMBER		PCT FILING DATE		U.S. SERIAL NUMBERS	
POWER OF ATTORNEY: As a named inventor, I hereby appoint registered patent practitioners associated with Customer Number 39207 to prosecute this application and transact all business in the U.S. Patent and Trademark Office connected therewith.					
Send Correspondence to: *Customer Number 39207* Sacco & Associates, P.A. P. O. Box 30999 Palm Beach Gardens, FL 33420-0999				Direct Telephone Calls to: Robert J. Sacco 561-626-2222	
201	FULL NAME OF INVENTOR	FAMILY NAME O'BRIEN	FIRST GIVEN NAME Terence	SECOND GIVEN NAME W.	
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	MAILING ADDRESS	MAILING ADDRESS 1242 Wildflower Drive	CITY Webster	STATE & ZIP CODE/COUNTRY NY	
202	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME	
	RESIDENCE & CITIZENSHIP	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP	
	MAILING ADDRESS	MAILING ADDRESS	CITY	STATE & ZIP CODE/COUNTRY	
203	FULL NAME OF INVENTOR	FAMILY NAME	FIRST GIVEN NAME	SECOND GIVEN NAME	
	RESIDENCE & CITIZENSHIP	CITY	STATE OR COUNTRY	COUNTRY OF CITIZENSHIP	
	MAILING ADDRESS	MAILING ADDRESS	CITY	STATE & ZIP CODE/COUNTRY	
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.					
SIGNATURE OF INVENTOR 201 		SIGNATURE OF INVENTOR 202 _____		SIGNATURE OF INVENTOR 203 _____	
DATE 2/14/06		DATE _____		DATE _____	

PTC 1391 Rev 10-83

2 of 2

US DEPARTMENT OF COMMERCE Patent and Trademark Office

{00009097;}

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

02/24/2006 HDESTA1 00000053 080870 11359224

01 FC:1011	300.00 DA
02 FC:1111	500.00 DA
03 FC:1311	200.00 DA
04 FC:1202	150.00 DA

PTO-1556
(5/87)

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number

11/359,224

APPLICATION AS FILED - PART I

(Column 1)

(Column 2)

SMALL ENTITY

OR

OTHER THAN SMALL ENTITY

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A
EXAMINATION FEE (37 CFR 1.16(d), (p), or (q))	N/A	N/A
TOTAL CLAIMS (37 CFR 1.16(f))	23 minus 20 =	3
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2 minus 3 =	0
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))		

RATE (\$)	FEE (\$)
N/A	150.00
N/A	\$250
N/A	\$100
X\$ 25 =	
X100 =	
+180=	
TOTAL	

RATE (\$)	FEE (\$)
N/A	300.00
N/A	\$500
N/A	\$200
X\$50 =	150
X200 =	
+360=	
TOTAL	1150

* If the difference in column 1 is less than zero, enter "0" in column 2.

APPLICATION AS AMENDED - PART II

(Column 1)

(Column 2)

(Column 3)

SMALL ENTITY

OR

OTHER THAN SMALL ENTITY

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(i))	Minus	**	=
Independent (37 CFR 1.16(n))	Minus	***	=
Application Size Fee (37 CFR 1.16(s))			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			

RATE (\$)	ADDITIONAL FEE (\$)
X\$ 25 =	
X100 =	
+180=	
TOTAL ADD'L FEE	

RATE (\$)	ADDITIONAL FEE (\$)
X\$50 =	
X200 =	
+360=	
TOTAL ADD'L FEE	

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(i))	Minus	**	=
Independent (37 CFR 1.16(n))	Minus	***	=
Application Size Fee (37 CFR 1.16(s))			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			

RATE (\$)	ADDITIONAL FEE (\$)
X\$ 25 =	
X100 =	
+180=	
TOTAL ADD'L FEE	

RATE (\$)	ADDITIONAL FEE (\$)
X\$50 =	
X200 =	
+360=	
TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. 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 12 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.

APPLICATION DATA SHEET

(1) Inventor Information

Inventor One Given name: Terence W.
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Mailing Address: 1242 Wildflower Drive, Webster, NY
Citizenship: US

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Correspondence Address *39207*

(3) Application Information

Title: Computer Architecture for a Handheld Electronic Device
Total No. of Drawing Sheets: 4
Suggested Figure for Publication: 3
Docket Number: 7,162-0141
Type of Application: Utility

(4) Representative Information

Representative Information: *39207*
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(5) Domestic Priority Information

(6) Foreign Application Information

(7) Assignee Information

Assignee name: HARRIS CORPORATION
Assignee address: 1025 W. NASA Boulevard, Melbourne, FL 32919

18334 U.S. PTO
022206

PTO/SB/05 (08-03)
Approved for use through 07/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

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UTILITY PATENT APPLICATION TRANSMITTAL <i>(Only for new nonprovisional applications under 37 CFR 1.53(b))</i>	Attorney Docket No.	7162-0141
	First Inventor	O'BRIEN
	Title	Computer architecture for a handheld electronic device
	Express Mail Label No.	EV 417203286 US

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents.	ADDRESS TO: Mail Stop Patent Application Commissioner for Patents P.O. Box 1450 Alexandria VA 22313-1450
---	---

1. ☒ Fee Transmittal Form (e.g., PTO/SB/17) <i>(Submit an original and a duplicate for fee processing)</i> 2. ☐ Applicant claims small entity status. See 37 CFR 1.27. 3. ☒ Specification [Total Pages <u>23</u>] <i>(preferred arrangement set forth below)</i> - Descriptive title of the invention - Cross Reference to Related Applications - Statement Regarding Fed sponsored R & D - Reference to sequence listing, a table, or a computer program listing appendix - Background of the Invention - Brief Summary of the Invention - Brief Description of the Drawings (if filed) - Detailed Description - Claim(s) - Abstract of the Disclosure 4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets <u>4</u>] 5. Oath or Declaration [Total Sheets <u>2</u>] a. ☒ Newly executed (original or copy) b. ☐ Copy from a prior application (37 CFR 1.63(d)) <i>(for continuation/divisional with Box 18 completed)</i> i. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b). 6. ☒ Application Data Sheet. See 37 CFR 1.76	7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix) 8. Nucleotide and/or Amino Acid Sequence Submission <i>(if applicable, all necessary)</i> a. ☐ Computer Readable Form (CRF) b. Specification Sequence Listing on: i. ☐ CD-ROM or CD-R (2 copies); or ii. ☐ Paper c. ☐ Statements verifying identity of above copies ACCOMPANYING APPLICATION PARTS 9. ☐ Assignment Papers (cover sheet & document(s)) 10. ☐ 37 CFR 3.73(b) Statement of Power of Attorney <i>(when there is an assignee)</i> 11. ☐ English Translation Document (if applicable) 12. ☐ Information Disclosure Statement (IDS)/PTO-1449 13. ☐ Preliminary Amendment 14. ☒ Return Receipt Postcard (MPEP 503) <i>(Should be specifically itemized)</i> 15. ☐ Certified Copy of Priority Document(s) <i>(if foreign priority is claimed)</i> 16. ☐ Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent. 17. ☒ Other: Fee: \$1,150
--	--

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation
 ☐ Divisional
 ☐ Continuation-in-part (CIP)
 of prior application No.: _____

Prior application information: Examiner _____ Art Unit: _____
 For CONTINUATION OF DIVISIONAL APPS only; The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

19. CORRESPONDENCE ADDRESS

☒ Customer Number: 39207 OR ☐ Correspondence address below

Name			
Address			
City	State	Zip Code	
Country	Telephone	Fax	

Name (Print/Type)	Robert J. Sacco	Registration No. (Attorney/Agent)	35,667
Signature		Date	2-22-06

This collection of information is required by 37 CFR 1.53(b). 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 12 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: Mail Stop Patent Application, 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.

18334
022206

PTO/SB/17 (01-06)

Approved for use through 07/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL For FY 2006

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)
1,150

Complete if Known

Application Number
Filing Date Herewith
First Named Inventor O'BRIEN
Examiner Name
Art Unit
Attorney Docket No. 7162-0141

METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit Card ☐ Money Order ☐ None ☒ Other (please identify): Deposit Account
☒ Deposit Account Deposit Account Number: 08-0870 Deposit Account Name: Harris Corporation
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)
☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee
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FEE CALCULATION (All the fees below are due upon filing or may be subject to a surcharge.)

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	1,000
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
Total Claims	Extra Claims	Fee (\$)
23 - 20 or HP = 3	x 50 =	150
HP = highest number of total claims paid for, if greater than 20.		
Indep. Claims	Extra Claims	Fee (\$)
- 3 or HP =	x	
HP = highest number of independent claims paid for, if greater than 3.		
Multiple Dependent Claims		
Fee (\$)	Fee Paid (\$)	

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets Extra Sheets Number of each additional 50 or fraction thereof Fee (\$)

- 100 = / 50 = (round up to a whole number) x = Fee Paid (\$)

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge):

SUBMITTED BY

Signature

Name (Print/Type) Robert J. Sacco

Registration No.
(Attorney/Agent) 35,667

Telephone 561-626-2222

Date 2-22-06

This collection of information is required by 37 CFR 1.136. 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 30 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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APPLICATION NUMBER	FILING OR 371(c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
11/359,224	02/22/2006	Terence W. O'Brien	7162-0141

CONFIRMATION NO. 8502

39207
SACCO & ASSOCIATES, PA
P.O. BOX 30999
PALM BEACH GARDENS, FL33420-0999

Title: Computer architecture for a handheld electronic device

Publication No. US-2007-0199046-A1

Publication Date: 08/23/2007

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Pre-Grant Publication Division, 703-605-4283

PLUS Search Results for S/N 11359224, Searched Fri Aug 07 15:26:28 EDT 2009
 The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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PLUS Search Results for S/N 11359224, Searched Fri Aug 07 15:26:36 EDT 2009
The Patent Linguistics Utility System (PLUS) is a USPTO automated search system for U.S. Patents from 1971 to the present PLUS is a query-by-example search system which produces a list of patents that are most closely related linguistically to the application searched. This search was prepared by the staff of the Scientific and Technical Information Center, SIRA.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/359,224	02/22/2006	Terence W. O'Brien	17162/0207802-US0	8502

39207 7590 09/01/2009
DARBY & DARBY (formerly Sacco & Associates)
P.O. BOX 770
CHURCH STREET STATION
NEW YORK, NY 10008-0770

EXAMINER

SURYAWANSI, SUDHISH K

ART UNIT	PAPER NUMBER
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2433

MAIL DATE	DELIVERY MODE
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09/01/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/359,224	O'BRIEN, TERENCE W.	
	Examiner	Art Unit	
	SUDHISH SURYAWANSI	2433	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/22/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) ☐ Information Disclosure Statement(s) (PTO/SB/08) | 5) ☐ Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) ☐ Other: _____ |

DETAILED ACTION

This action is responsive to an original application filed on February 22, 2006.

Claims 1, 11, and 14 are independent claims. No IDS have been submitted.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of

activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-23 Application No. 11/359,224 provisionally rejected on the ground of nonstatutory double patenting over **claims 1, 4-6, 10, 12-15 of copending Application No. 11/385,063**. This is a provisional double patenting rejection since the conflicting claims have not yet been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

<u>Current Application#</u> <u>11/359,224</u>	<u>Copending Application# 11/385,063</u>
Claims 1, 2, 5, 11	Claim 1 <i>“a shared human/machine interface configured for bi-directional communication”</i>
Claims 3, 4, 6, 7	Claim 4 <i>“a shared human/machine interface”</i>
Claims 8, 12	Claim 5 <i>“a shared human/machine interface”</i>
Claim 9	Claim 6

	<i>“a shared human/machine interface”</i>
Claims 10, 13	Claim 10 <i>“a shared human/machine interface”</i>
Claim 20	Claim 12 <i>“a shared human/machine interface”</i>
Claim 21	Claim 13 <i>“a shared human/machine interface”</i>
Claim 22	Claim 14 <i>“a shared human/machine interface”</i>
Claim 23	Claim 15 <i>“a shared human/machine interface”</i>

Furthermore, there is no apparent reason why applicant would be prevented from presenting claims corresponding to those of the instant application in the other copending application. See *In re Schneller*, 397 F.2d 350, 158 USPQ 210 (CCPA 1968). See also MPEP § 804.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the

subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over McPhillie et al GB Patent No. 2336005 A (hereinafter "McPhillie '005") in view of Puranik Gagan US Publication No. 2006/0105740 (hereinafter "Puranik '740").

As to the independent claim 1, McPhillie '005 discloses "A mobile PDA computer system (Emulator 30 in fig. 2, Abstract), **comprising:**

"a secure user processor" (fig. 3[46], page 7, lines 9-14, second processor),
comprising:

"a trusted microprocessor" (an inherited feature);

"a trusted operating system executing on said trusted microprocessor" (an inherited feature);

"a trusted application software executing on said trusted microprocessor"
(an inherited feature);

"a non-secure user microprocessor comprising (fig. 3[44], page 7, lines 9-14, first processor):

"an untrusted microprocessor" (an inherited feature);

"an untrusted operating system executing on said untrusted microprocessor" (an inherited feature);

“untrusted application software executing on said untrusted microprocessor” (an inherited feature);

The following are not explicitly taught in McPhillie ‘005: “a cryptographic engine configured for encrypting and decrypting data comprising”; “a trusted cryptographic processor”;

“a trusted operating system executing on said trusted crypto processor”;

“a first data communication link communicating data between said secure processor and said cryptographic engine”; and

“a second data communication link communicating data between said non-secure processor and said cryptographic engine” however Puranik ‘740 teaches about a crypto server, Fig. 2[209], in paragraph 0060, interacting with two devices -- telemetry device Fig. 2[103] as unsecured device and 2-way messaging device Fig. 2[104] as secured device; has a trusted operating system executing on said trusted crypto processor via the first data communication link and second data communication link as "inherited features", reads on the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik ‘740 in McPhillie ‘005 for a cryptographic engine with data communication links for the purpose of enhancing and optimizing performance of the electronic system during cryptographic operations (paragraph 0060).

As to the dependent claim 2, McPhillie ‘005 discloses “The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) **according to claim 1,**

The following is not explicitly taught in McPhillie '005: “further comprising a secure human/machine interface for communicating data to and from said secure processor” however Puranik '740 teaches about a secure human/machine interface for communicating data to and from said secure processor in paragraph 0060 as "inherited feature" because the telemetry device is a secured device and has its own separate input and output interfaces, meets the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik '740 in McPhillie '005 for a secure and non-secure human/machine interface for the purpose of keeping the secure input data separate from non-secure data in a wireless network (Abstract and paragraph 0060).

As to the dependent claim 3, McPhillie '005 discloses “The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 2;

The following is not explicitly taught in McPhillie '005: “wherein said secure human/machine interface comprises at least one input device to allow a user to control the secure processor” however Puranik '740 teaches about a secure human/machine interface comprises at least one input device to allow a user to control the secure processor in paragraph 0060 as "inherited feature" because the telemetry device is a secured device and has its own separate input and output interfaces, meets the limitations.

As to the dependent claim 4, McPhillie '005 discloses “The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 3;

The following is not explicitly taught in McPhillie '005: "wherein said secure human/machine interface comprises at least one output device to allow the secure processor to inform a user" however Puranik '740 teaches about a secure human/machine interface comprises at least one output device to allow the secure processor to inform a user in paragraph 0060 as "inherited feature" because the telemetry device is a secured device and has its own separate input and output interfaces, meets the limitations.

As to the dependent claim 5, McPhillie '005 discloses "The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 2;

The following is not explicitly taught in McPhillie '005: "further comprising a non-secure human/machine interface" however Puranik '740 teaches about a non-secure human/machine interface comprises at least one input device to allow a user to control the non-secure processor in paragraph 0060 as "inherited feature" because the 2-way messaging device is a non-secured device and has its own separate input and output interfaces, meets the limitations.

As to the dependent claim 6, McPhillie '005 discloses "The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 5;

The following is not explicitly taught in McPhillie '005: "wherein said non-secure human/machine interface comprises at least one input device to allow a user to control the non-secure processor" however Puranik '740 teaches about a non-secure human/machine interface comprises at least one input device to allow a user to control the non-secure processor in paragraph 0060 as "inherited feature"

because the 2-way messaging device is a non-secured device and has its own separate input and output interfaces, meets the limitations.

As to the dependent claim 7, McPhillie '005 discloses "The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 6;

The following is not explicitly taught in McPhillie '005: "wherein said non-secure human/machine interface comprises at least one output device to allow the non-secure processor to inform a user" however Puranik '740 teaches about a non-secure human/machine interface comprises at least one output device to allow the non-secure processor to inform a user in paragraph 0060 as "inherited feature" because the 2-way messaging device is a non-secured device and has its own separate input and output interfaces, meets the limitations.

As to the dependent claim 8, McPhillie '005 discloses "The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 1;

The following is not explicitly taught in McPhillie '005: "wherein said non-secure processor is operatively connected to a wireless communications transceiver" however Puranik '740 teaches about non-secure processor is operatively connected to a wireless communications transceiver in paragraphs 0068-0070, meets the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik '740 in McPhillie '005 for a wireless communications transceiver for the purpose of communicating encrypted classified data

files from the secure processor's file system to the non-secure processor and vice versa in a wireless network (Abstract and paragraphs 0068-0070).

As to the dependent claim 9, McPhillie '005 discloses "The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 8;

The following is not explicitly taught in McPhillie '005: "wherein said wireless communications transceiver is selected from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver" however Puranik '740 teaches about a wireless communications transceiver is selected from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver in paragraphs 0068-0070, meets the limitations.

As to the dependent claims 10, McPhillie '005 discloses "The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 9;

The following are not explicitly taught in McPhillie '005: "wherein two audio interfaces are provided, a first audio interface for communicating audio information to and from said secure processor" however Puranik '740 teaches about a first audio interface for communicating audio information to and from said secure processor in paragraph 060 as "inherited features", meets the limitations; **and**

"a second audio interface for communicating audio information to and from said non-secure processor" however Puranik '740 teaches about a second audio interface for communicating audio information to and from said non-secure processor in paragraph 060 as "inherited features", meets the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik '740 in McPhillie '005 for a secure and non-secure audio human/machine interface for the purpose of keeping the secure input data separate from non-secure data in a data processing device (paragraph 060).

As to the independent claim 11, McPhillie '005 discloses “A mobile PDA computer system (Emulator 30 in fig. 2, Abstract), comprising:

“a secure user processor comprising” (fig. 3[46], page 7, lines 9-14, second processor):

“a trusted microprocessor” (an inherited feature);

“a trusted operating system executing on said trusted microprocessor” (an inherited feature);

“a trusted application software executing on said trusted microprocessor” (an inherited feature);

“a non-secure user microprocessor comprising” (fig. 3[44], page 7, lines 9-14, first processor):

“an untrusted microprocessor” (an inherited feature);

“an untrusted operating system executing on said untrusted microprocessor” (an inherited feature);

“untrusted application software executing on said untrusted microprocessor” (an inherited feature);

The following are not explicitly taught in McPhillie '005: “a cryptographic engine configured for encrypting and decrypting data comprising: ”

“a trusted cryptographic processor”; “a trusted operating system executing on said trusted crypto processor”; “a first data communication link communicating data between said secure processor and said cryptographic engine”; and

“a second data communication link communicating data between said non-secure processor and said cryptographic engine” however Puranik ‘740 teaches about a crypto server, Fig. 2[209], in paragraph 0060, interacting with two devices -- telemetry device Fig. 2[103] as unsecured device and 2-way messaging device Fig. 2[104] as secured device; has a trusted operating system executing on said trusted crypto processor via the first data communication link and second data communication link as "inherited features", reads on the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik ‘740 in McPhillie ‘005 for a cryptographic engine with data communication links for the purpose of enhancing and optimizing performance of the electronic system during cryptographic operations (paragraph 0060).

The following are also not explicitly taught in McPhillie ‘005: “a secure human/machine interface for communications between a user and said secure processor” and “a non-secure human/machine interface for communications between a user and said non-secure processor” however Puranik ‘740 teaches about a crypto server, Fig. 2[209], in paragraph 0060, interacting with two devices -- telemetry device Fig. 2[103] as unsecured device and 2-way messaging device Fig.

2[104] as secured device; has a trusted operating system executing on said trusted crypto processor via the first data communication link and second data communication link as "inherited features", reads on the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik '740 in McPhillie '005 for a secure and non-secure human/machine interface for the purpose of keeping the secure input data separate from non-secure data in a wireless network (Abstract and paragraph 0060).

As to the dependent claims 12, McPhillie '005 discloses "The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 11;

the following is not explicitly taught in McPhillie '005: "wherein said non-secure processor is operatively connected to a wireless communications transceiver" however Puranik '740 teaches about non-secure processor is operatively connected to a wireless communications transceiver in paragraphs 0068-0070, meets the limitations.

As to the dependent claims 13, McPhillie '005 discloses "The mobile PDA computer system (Emulator 30 in fig. 2, Abstract) according to claim 11;

The following are not explicitly taught in McPhillie '005: "wherein two audio interfaces are provided, a first audio interface for communicating audio information to and from said secure processor" however Puranik '740 teaches about a first audio interface for communicating audio information to and from said secure processor in paragraph 060 as "inherited features", meets the limitations; **and**

“a second audio interface for communicating audio information to and from said non-secure processor” however Puranik ‘740 teaches about a second audio interface for communicating audio information to and from said non-secure processor in paragraph 060 as “inherited features”, meets the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik ‘740 in McPhillie ‘005 for a secure and non-secure audio human/machine interface for the purpose of keeping the secure input data separate from non-secure data in a data processing device (paragraph 060).

As to the independent claim 14, McPhillie ‘005 discloses “A method for managing classified and unclassified data on a mobile PDA computer system (Emulator 30 in fig. 2, Abstract. Note that classified data runs on the secure user processor, fig. 3[46], page 7, lines 9-14, and unclassified data runs on the non-secure user processor, fig. 3[44], page 7, lines 9-14, second processor), **comprising”:**

“processing classified data exclusively using a secure processor (classified data runs on the secure user processor, fig. 3[46], page 7, lines 9-14), **comprising”:**

“a trusted microprocessor” (an inherited feature); **and**

“a trusted operating system executing on said trusted microprocessor” (an inherited feature);

“processing unclassified data exclusively using a non-secure processor, comprising” (unclassified data runs on the non-secure user processor, fig. 3[44], page 7, lines 9-14, second processor):

“an untrusted microprocessor” (an inherited feature); **and**

“an untrusted operating system executing on said untrusted microprocessor” (an inherited feature);

The following are not explicitly taught in McPhillie ‘005: “communicating encrypted and decrypted classified data between said secure processor and said cryptographic engine using a first data communication link”; and

“communicating data from said secure processor and said cryptographic engine to said non-secure processor exclusively in an encrypted form using a second data communication link between said cryptographic engine and said non-secure processor” however Puranik ‘740 teaches about a crypto server, Fig. 2[209], in paragraph 0060, interacting with two devices -- telemetry device Fig. 2[103] as unsecured device and 2-way messaging device Fig. 2[104] as secured device; has a trusted operating system executing on said trusted crypto processor via the first data communication link and second data communication link as "inherited features", reads on the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik ‘740 in McPhillie ‘005 for a cryptographic engine with data communication links for the purpose of enhancing and optimizing performance of the electronic system during cryptographic operations (paragraph 0060).

As to the dependent claims 15, the following is not explicitly taught in McPhillie ‘005: “The method according to claim 14, further comprising communicating data to and from said secure processor exclusively using a

secure human/machine interface” however Puranik ‘740 teaches about a secure human/machine interface for communicating data to and from said secure processor in paragraph 0060 as "inherited feature" because the telemetry device is a secured device and has its own separate input and output interfaces, meets the limitations.

As to the dependent claim 16, the following is not explicitly taught in McPhillie ‘005: “The method according to claim 15, further comprising controlling said secure processor exclusively using said secure human/machine interface” however Puranik ‘740 teaches about a secure human/machine interface for communicating data to and from said secure processor in paragraph 0060 as "inherited feature" because the telemetry device is a secured device and has its own separate input and output interfaces, controllers and users; meets the limitations.

As to the dependent claim 17, the following is not explicitly taught in McPhillie ‘005: “The method according to claim 16, further comprising informing a user with information from said secure processor exclusively using said secure human/machine interface” however Puranik ‘740 teaches about a secure human/machine interface for communications between a user and said secure processor in paragraph 0060 as "inherited feature" because the telemetry device is a secured device and has its own separate input and output interfaces, controllers and users; meets the limitations.

As to the dependent claim 18, the following is not explicitly taught in McPhillie ‘005: “The method according to claim 14, further comprising controlling said non-secure processor exclusively using a non-secure human/machine

interface” however Puranik ‘740 teaches about a non-secure human/machine interface comprises at least one input device to allow a user to control the non-secure processor in paragraph 0060 as "inherited feature" because the 2-way messaging device is a non-secured device and has its own separate input and output interfaces, meets the limitations.

As to the dependent claim 19, the following is not explicitly taught in McPhillie ‘005: “The method according to claim 18, further comprising informing a user of information provided by said non-secure processor exclusively using said non-secure human/machine interface” however Puranik ‘740 teaches about a non-secure human/machine interface for communications between a user and said non-secure processor in paragraph 0060 as "inherited feature" because the 2-way messaging device is a non-secured device and has its own separate input and output interfaces, meets the limitations.

As to the dependent claim 20, the following is not explicitly taught in McPhillie ‘005: “The method according to claim 14, further comprising performing wireless data communication of unclassified data from said non-secure processor using a wireless communications transceiver” however Puranik ‘740 teaches about non-secure processor is operatively connected to a wireless communications transceiver in paragraphs 0068-0070, meets the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik ‘740 in McPhillie ‘005 for a wireless communications transceiver for the purpose of communicating encrypted classified data

files from the secure processor's file system to the non-secure processor and vice versa in a wireless network (Abstract and paragraphs 0068-0070).

As to the dependent claim 21, the following is not explicitly taught in McPhillie '005: "The method according to claim 20, further comprising communicating encrypted classified data from said secure processor using said wireless communications transceiver" however Puranik '740 teaches about a communicating encrypted classified data from said secure processor using said wireless communications transceiver in paragraphs 0068-0070, meets the limitations.

As to the dependent claim 22, the following is not explicitly taught in McPhillie '005: "The method according to claim 20, further comprising selecting said wireless communications transceiver from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver" " however Puranik '740 teaches about a wireless communications transceiver is selected from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver in paragraphs 0068-0070, meets the limitations.

As to the dependent claim 23, the following are not explicitly taught in McPhillie '005: "wherein two audio interfaces are provided, a first audio interface for communicating audio information to and from said secure processor" however Puranik '740 teaches about a first audio interface for communicating audio information to and from said secure processor in paragraph 060 as "inherited features", meets the limitations; **and**

“a second audio interface for communicating audio information to and from said non-secure processor” however Puranik ‘740 teaches about a second audio interface for communicating audio information to and from said non-secure processor in paragraph 060 as “inherited features”, meets the limitations.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to include Puranik ‘740 in McPhillie ‘005 for a secure and non-secure audio human/machine interface for the purpose of keeping the secure input data separate from non-secure data in a data processing device (paragraph 060).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SUDHISH SURYAWANSI whose telephone number is (571) 270-7461. The examiner can normally be reached on Monday – Friday between 9AM to 5PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Nasser G. Moazzami can be reached on (571) 272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For

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more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/SUDHISH K SURYAWANSI/
Patent Examiner, Art Unit 2433
August 14, 2009

/Nasser G Moazzami/

Supervisory Patent Examiner, Art Unit 2436

Notice of References Cited	Application/Control No. 11/359,224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.	
	Examiner SUDHISH SURYAWANSI	Art Unit 2433	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2006/0105740	05-2006	Puranik, Gagan	455/410
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N	GB 2336005 A	10-1999	United Kingdom	MCPHILLIE et al.	
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Index of Claims</i> 	Application/Control No. 11359224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.
	Examiner SUDHISH SURYAWANSI	Art Unit 2433

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant											☐ CPA											☐ T.D.											☐ R.1.47										
CLAIM			DATE																																								
Final	Original	08/10/2009																																									
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Search Notes 	Application/Control No. 11359224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.
	Examiner SUDHISH SURYAWANSI	Art Unit 2433

SEARCHED			
Class	Subclass	Date	Examiner
713	189, 164, 176, 181	8/5/2009	SS
726	1, 36, 26	8/5/2009	SS
380	49, 4, 9, 25, 30, 40-60	8/5/2009	SS
455	410	8/25/2009	SS

SEARCH NOTES		
Search Notes	Date	Examiner
EAST - US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	8/5/2009	SS
NPL - GOOGLE	8/5/2009	SS
Interference Search - CLM TEXT SEARCH WITH CLASS SEARCH	8/6/2009	SS
CONSULTED WITH NASSER MOAZZAMI	8/25/2009	SS
UPDATAED	8/25/2009	SS

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
713	Interference Search - CLM TEXT SEARCH WITH CLASS SEARCH	8/5/2009	SS

/SUDHISH K SURYAWANSI/ Acting Examiner.Art Unit 2433	
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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1688	"713"/189.ccls. and @ad< "20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/17 14:55
L2	832	726/1.ccls. and @ad< "20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/17 14:55
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L5	372352	(mobile or portable or pda) with computer	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/17 14:55
L6	8536	((secure or trusted) with (microproc\$5 or computer or server)).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/17 14:55
L7	270	L4 and L6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/17 14:55
L8	97	L5 and L7	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/17 14:55

L9	2	mobile pda with (trusted or non-trusted) same microprocessor	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/17 14:56
L10	3	mobile pda with (trusted or non-trusted) same communication	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/17 14:57

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CONFIRMATION NO. 8502

SERIAL NUMBER 11/359,224	FILING or 371(c) DATE 02/22/2006 RULE	CLASS 380	GROUP ART UNIT 2433	ATTORNEY DOCKET NO. 17162/0207802-US0		
APPLICANTS Terence W. O'Brien, Webster, NY; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 03/21/2006						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /SUDHISH K SURYAWANSI/ Acknowledged Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY NY	SHEETS DRAWINGS 4	TOTAL CLAIMS 23	INDEPENDENT CLAIMS 3
ADDRESS DARBY & DARBY (formerly Sacco & Associates) P.O. BOX 770 CHURCH STREET STATION NEW YORK, NY 10008-0770 UNITED STATES						
TITLE Computer architecture for a handheld electronic device						
FILING FEE RECEIVED 1150	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees		
				☐ 1.16 Fees (Filing)		
				☐ 1.17 Fees (Processing Ext. of time)		
				☐ 1.18 Fees (Issue)		
				☐ Other _____		
				☐ Credit		

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L3	111489	"713"/	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/16 21:00
L4	3031	"713"/189	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/16 21:00
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L8	1038	"726"/1	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/16 21:02

L9	140854	"711"/	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/16 21:02
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L19	97	14 and 18	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/16 21:06
L20	76445	(wire\$4 communica\$5) with (mobile or portable or pda)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/16 21:08
L21	10	19 and 20	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/16 21:08

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L1	0	(mobile or pda or portable) with computer system same (trusted and untrusted) with (secure and nonsecure) with cryptograp\$3 processor with (first and second) same communicat\$3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/23 16:05
L2	0	(mobile or pda or portable) with computer system same (trusted and untrusted) with (secure and nonsecure)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/23 16:05
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L10	2556	(7 or 8 or 9)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/23 16:08
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L12	29	(7 and 8)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/23 16:08
L13	12330	(first and second) with communication link	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/23 16:19
L14	17	10 and 13	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/23 16:19
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L4	2	("6470447").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/06/25 18:06
L5	337	cryptographic processor and encryption keys	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 18:19
L6	69284	(mobile pda or portable computer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 18:19
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L5	0	3 and 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:24

6/ 25/ 2009 3:43:32 PM
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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	337	cryptographic processor and encryption keys	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:18
L2	1692	713/189.ccls. and @ad<"20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:19
L3	22	(1 and 2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:19
L4	38	(human and machine) with communicat\$3 data	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:24
L5	0	3 and 4	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:24
L6	0	2003/0009675	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:44
L7	3	"20030009675"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:45

L8	69284	(mobile pda or portable computer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:47
L9	79	2 and 8	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:47
L10	0	4 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:47
L11	3	1 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/06/25 15:48

6/ 25/ 2009 3:50:28 PM

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EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	(TPM and user mode)". clm"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:12
L2	0	(TPM and user mode). clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:12
L3	16	(mobile PDA).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:13
L4	28	(TPM and user mode)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:13
L5	0	(3 and 4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:13
L6	2	(TPM and mobile PDA)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:13
L7	70653	(mobile pda or portable computer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:14

L8	8	(4 and 7)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:15
L9	1708	713/189.ccls. and @ad<"20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:16
L10	81	7 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:16
L11	0	4 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:16
L12	4	4 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:17

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EAST Search History**EAST Search History (Prior Art)**

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L1	0	(TPM and user mode)". clm"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:12
L2	0	(TPM and user mode). clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:12
L3	16	(mobile PDA).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:13
L4	28	(TPM and user mode)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:13
L5	0	(3 and 4)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:13
L6	2	(TPM and mobile PDA)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:13
L7	70653	(mobile pda or portable computer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:14

L8	8	(4 and 7)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:15
L9	1708	713/189.ccls. and @ad<"20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:16
L10	81	7 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:16
L11	0	4 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:16
L12	4	4 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:17
L13	583	713/164.ccls. and @ad<"20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:24
L14	2226	(9 or 13)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:24
L15	0	(TPM and user mode) with (mobile pda or portable computer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:25

L16	0	(TPM and user mode) same (mobile pda or portable computer)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:26
L17	6	4 and 14	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 13:26

8/ 7/ 2009 1:27:53 PM

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EAST Search History (Prior Art)

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L1	2	"20070199046"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:05
L2	2	"20070223689"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:05
L3	2	"20070226493"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:06
L4	2	"20070226494"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:06
L5	2	"20070226517"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:06
L6	0	"O'Brien.IN"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:08
L7	10344	O'Brien.IN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:09

L8	0	(O'Brien, Terence "W.").IN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:10
L9	59	(O'Brien, Terence).IN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:10
L10	59	((O'Brien, Terence). IN.)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:11
L11	0	((O'Brien, Terence). IN.).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:11
L12	0	10.clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 16:11

8/ 7/ 2009 4:17:57 PM

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EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1708	713/189.ccls. and @ad<"20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:09
L2	65	726/36.ccls. and @ad<"20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:10
L3	1771	(1 or 2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:10
L4	0	(713/189.ccls. and @ad<"20060222").clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:10
L5	0	(data process\$3 protection using crypto\$6)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:15
L6	0	(first and second) with (adudio interface) same (mobile PDA)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:26
L7	0	(first and second) with (adudio interface) and (mobile PDA)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:27

L8	0	(first and second) with (adudio interface)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:27
L9	0	(first and second) with (adudio interface)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:27
L10	0	(adudio interface) with (mobile PDA)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:27
L11	0	(adudio interface)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:28
L12	253	mobile PDA	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:28
L13	16	(mobile PDA).clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 09:28
L14	28	(TPM and user mode)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 10:40
L15	583	713/164.ccls. and @ad< "20060222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 10:40

L16	3	14 and 15	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/07 10:40
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EAST Search History**EAST Search History (Prior Art)**

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L1	3	("9806575").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 09:06
L2	0	GB2336005	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/13 09:06
L3	0	("GB2336005").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 09:06
L4	7	("2336005").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 09:07

8/13/2009 9:08:36 AM

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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	2	("6295604").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 15:10
L2	2	("6895441").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 15:18
L3	2	("5060264").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 15:25
L4	2	("5150412").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 15:42
L5	0	EP0436518	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/13 15:44
L6	0	("EP436518").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 15:44
L7	2	("0436518").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 15:44

L8	2	"0436518"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/13 15:45
L9	0	"19910300092"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/13 15:45
L10	0	("19910300092").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 15:45
L11	0	"19910300092".AP.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/13 15:46
L12	1745684	Nordic Mobile Telephone, or NMT	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/13 15:49
L13	165713	(Nordic Mobile Telephone, or NMT).CLM.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/13 15:50
L14	0	(Nordic Mobile Telephone, or NMT).CCLS. AND @AD< "200650222"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/13 15:50
L15	0	(Nordic Mobile Telephone, or NMT).CCLS. AND @AD< "19880701"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/13 15:53
L16	0	(Nordic Mobile Telephone or NMT).CCLS. AND @AD< "19880701"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/13 15:53

L17	180138	(Nordic Mobile Telephone or NMT) AND @AD<"19880701"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/13 15:54
L18	38	(NMT) AND @AD<"19880701"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/13 15:55
L19	0	(processor\$2) with (secure and nonsecure) near2 (interface\$2)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/13 16:09
L20	2	("7434263").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 16:09
L21	2	("6789256").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 16:10
L22	2	("5825878").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 16:11
L23	4	"20030133574"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/13 16:13
L24	2	"20050044408"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/13 16:15
L25	3	"20040177264"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	ADJ	ON	2009/08/13 16:17

L26	2	("7434263").PN.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/13 16:18
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L1	604411	"450"/	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 17:19
L2	7	"450"/410	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 17:19
L3	0	450/410.ccls. and @ad<"20060522"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 17:19
L4	7	"450"/410	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2009/08/25 17:20
S1	1	2006/0105740	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 14:09
S2	0	2007/0245308	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 14:11
S3	2	"20070245308"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 14:12

S4	0	2008/0250242	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 14:13
S5	2	"20080250242"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 14:13
S6	3	"20060105740"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2009/08/25 14:22

8/ 25/ 2009 5:21:00 PM

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	Filing Date	February 22, 2006
	First Named Inventor	Terence W. O'Brien
	Art Unit	2436
	Examiner Name	P. Parthasarathy
	Attorney Docket No.	17162/0207802-US0

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Signature <u>/Marie Collazo/</u>				
Typed or Printed Name <u>Marie Collazo</u>				
Date <u>September 22, 2009</u>		Telephone <u>(212) 527-7764</u>		
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 <u>1</u> forms are submitted.			

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EFS ID:	6122026
Application Number:	11359224
International Application Number:	
Confirmation Number:	8502
Title of Invention:	Computer architecture for a handheld electronic device
First Named Inventor/Applicant Name:	Terence W. O'Brien
Customer Number:	39207
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Attorney Docket Number:	17162/0207802-US0
Receipt Date:	22-SEP-2009
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Time Stamp:	16:29:39
Application Type:	Utility under 35 USC 111(a)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Change of Address	COA.PDF	70479 030038a6688afc25bc7e9af5c03e120a83996ba	no	1

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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.

Docket No.: 17162/0207802-US0
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Terence W. O'Brien

Application No.: 11/359,224

Confirmation No.: 8502

Filed: February 22, 2006

Art Unit: 2433

For: COMPUTER ARCHITECTURE FOR A
HANDHELD ELECTRONIC DEVICE

Examiner: SURYAWANSI, Sudhish

AMENDMENT IN RESPONSE TO NON-FINAL OFFICE ACTION

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action dated September 1, 2009, please amend the above-identified U.S. patent application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 8 of this paper.

4496451.1 0207802-US0
RF-266; H7620

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A ~~mobile PDA~~ computer system, comprising:
a portable mobile computing device including a secure user processor, a non-secure user processor, a communications transceiver, and a cryptographic engine;
[[a]] said secure user processor[[;]] comprising[[;]]
a trusted microprocessor[[;]]
a trusted operating system executing on said trusted microprocessor[[;]], and
a trusted application software executing on said trusted microprocessor;
[[a]] said non-secure user ~~micro~~processor comprising:
an untrusted microprocessor[[;]]
an untrusted operating system executing on said untrusted microprocessor[[;]], and
an untrusted application software executing on said untrusted microprocessor;
[[a]] said cryptographic engine configured for encrypting any data communicated from said
secure user processor to said non-secure user processor, and decrypting data comprising[[;]]
a trusted cryptographic processor[[;]], and
a trusted operating system executing on said trusted cryptographic processor;
a first data communication link communicating data between said secure processor and said
cryptographic engine; ~~and~~
a second data communication link communicating data between said non-secure processor
and said cryptographic engine; and
wherein said communications transceiver is operatively coupled to said non-secure user
processor and configured for communicating data external to said portable mobile computing
device.
2. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 1, wherein said
portable mobile computing device further comprising comprises a secure human/machine interface
communicatively coupled to said secure user processor and configured to provide a user of said
portable mobile computing device with access and control of for communicating data to and from
said secure user processor.

3. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 2, wherein said secure human/machine interface comprises at least one input device to allow said [[a]] user to control the secure user processor.
4. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 3, wherein said secure human/machine interface comprises at least one output device to allow the secure user processor to inform said [[a]] user.
5. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 2, wherein said portable mobile computing device further comprising comprises a non-secure human/machine interface communicatively coupled to said non-secure user processor and configured to provide said user with access and control of said non-secure user processor, said non-secure human/machine interface distinct from said secure human/machine interface.
6. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 5, wherein said non-secure human/machine interface comprises at least one input device to allow said [[a]] user to control the non-secure user processor.
7. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 6, wherein said non-secure human/machine interface comprises at least one output device to allow the non-secure user processor to inform said [[a]] user.
8. (Canceled)
9. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 18, wherein said ~~wireless~~ communications transceiver is selected from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver.
10. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 9, further comprising wherein two first and second audio interfaces are provided, said [[a]] first audio interface configured for communicating audio information to and from said secure user processor, and said

[[a]] second audio interface configured for communicating audio information to and from said non-secure user processor.

11. (Currently Amended) A ~~mobile PDA~~ computer system, comprising:
a portable mobile computing device including a secure user processor, a non-secure user processor, a communications transceiver, and a cryptographic engine, said communications transceiver operatively coupled to said non-secure user processor and configured for communicating data external to said portable mobile computing device,

[[a]] said secure user processor, comprising[[:]]

a trusted microprocessor,[[:]]

a trusted operating system executing on said trusted microprocessor[[:]], and

a trusted application software executing on said trusted microprocessor;

[[a]] said non-secure user processor[[:]] comprising[[:]]

an untrusted microprocessor,[[:]]

an untrusted operating system executing on said untrusted microprocessor,[[:]]

and

an untrusted application software executing on said untrusted microprocessor;

[[a]] said cryptographic engine configured for encrypting ~~and decrypting~~ data
communicated from said secure user processor to said non-secure user processor,

comprising: a trusted cryptographic processor, and a trusted operating system executing on
said trusted cryptographic processor;

a first data communication link communicating data between said secure user processor and
said cryptographic engine;

a second data communication link communicating data between said non-secure user
processor and said cryptographic engine;

a secure human/machine interface communicatively coupled to said secure user processor
and configured to provide for communications between a user of said portable mobile computing
device with access and control of ~~and~~ said secure user processor; and

a non-secure human/machine interface communicatively coupled to said non-secure user processor and configured to provide said ~~for communications between a~~ said user with access and control of ~~and~~ said non-secure user processor, said non-secure human/machine interface distinct from said secure human/machine interface.

12. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 11, wherein said non-secure user processor is operatively connected to said ~~a wireless~~ communications transceiver.

13. (Currently Amended) The ~~mobile PDA~~ computer system according to claim 11, further comprising a first audio interface for communicating audio information to and from said secure user processor, and a second audio interface for communicating audio information to and from said non-secure user processor.

14. (Currently Amended) A method for managing classified and unclassified data on a portable mobile computing device ~~mobile PDA~~ computer system, comprising:

processing said classified data exclusively using a secure processor of said portable mobile computing device, said secure processor comprising a trusted microprocessor and a trusted operating system executing on said trusted microprocessor;

processing unclassified data exclusively using a non-secure processor of said portable mobile computing device, said non-secure processor comprising an untrusted microprocessor and an untrusted operating system executing on said untrusted microprocessor;

communicating encrypted and decrypted classified data between said secure processor and a ~~said~~ cryptographic engine of said portable mobile computing device using a first data communication link; ~~and~~

communicating data from said secure processor and said cryptographic engine to said non-secure processor exclusively in an encrypted form using a second data communication link between said cryptographic engine and said non-secure processor.

15. (Currently Amended) The method according to claim 14, further comprising communicating data to and from said secure processor exclusively using a secure human/machine interface.

16. (Original) The method according to claim 15, further comprising controlling said secure processor exclusively using said secure human/machine interface.
17. (Original) The method according to claim 16, further comprising informing a user with information from said secure processor exclusively using said secure human/machine interface.
18. (Original) The method according to claim 14, further comprising controlling said non-secure processor exclusively using a non-secure human/machine interface.
19. (Original) The method according to claim 18, further comprising informing a user of information provided by said non-secure processor exclusively using said non-secure human/machine interface.
20. (Original) The method according to claim 14, further comprising performing wireless data communication of unclassified data from said non-secure processor using a wireless communications transceiver.
21. (Original) The method according to claim 20, further comprising communicating encrypted classified data from said secure processor using said wireless communications transceiver.
22. (Original) The method according to claim 20, further comprising selecting said wireless communications transceiver from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver.
23. (Original) The method according to claim 22, further comprising communicating classified audio information to and from said secure processor with a first audio interface, and communicating unclassified audio information to and from said processor with a second audio interface distinct from said first audio interface.
24. (New) The mobile PDA computer system according to claim 1, further comprising a first file system exclusively accessible to said secure user processor for storing classified data and a second file system for storing unclassified data, said second file system distinct from said first file system so

as to provide physical separation of said classified data from said unclassified data within said mobile PDA computer system.

25. (New) The method according to claim 14, further comprising storing classified data in a first file system accessible only to said secure user processor and storing unclassified data in a second file system distinct from said first file system which is accessible to said non-secure user processor, thereby providing physical separation of said classified data from said unclassified data within said mobile PDA computer system.

REMARKS

These remarks are in response to the Office Action dated September 1, 2009. This reply is timely filed. At the time of the Office Action, claims 1-23 were pending in the application.

I. Status of the Claims

Claims 1-15 have been amended. No new subject matter has been added. Claim 8 has been canceled without prejudice or disclaimer to the subject matter therein. Claims 24 and 25 have been added.

Claims 1-23 have been rejected on the ground of nonstatutory double patenting. Claims 1-23 have been rejected under 35 U.S.C. §103(a). The rejections are set out in more detail below.

II. Double Patenting

Claims 1-23 have been provisionally rejected on the ground of nonstatutory obvious-type double patenting as being unpatentable over claims 1, 4-6, 10 and 12-15 co-pending U.S. Patent Application No. 11/385,063. The Examiner states that although the conflicting claims are not identical, they are not patenably distinct.

Applicant respectfully requests that these rejections be held in abeyance because none of the conflicting claims have yet been allowed or granted in an issued patent. Applicant notes that this request constitutes a full and complete response to the Examiner's provisional rejection, and that once all of the rejections other than these obviousness-type double patenting rejections have been overcome, the instant application should be allowed to pass to issue without a terminal disclaimer.¹

III. Claim Rejections Under 35 U.S.C. §103(a)

Claims 1-23 have been rejected under 35 U.S.C. §103(a) as being unpatentable over GB Patent No. 2,336,005 A to McPhillie et al. (hereinafter referred to as "McPhillie"), in view of U.S. Publication No. 2006/0105740 to Puranik (hereinafter referred to as "Puranik"). Applicant

¹ See MPEP §804(I)(B)(1).

respectfully traverses the rejections. Claim 8 has been canceled. As such, the Examiner's rejection thereto is moot.

A. Rejection of Claims 1-23

McPhillie fails to disclose and/or suggest the computer system recited in amended independent claim 1. In this regard, it should be understood that McPhillie fails to disclose and/or suggest a portable mobile computing device including a secure user processor, a non-secure user processor, a cryptographic engine and a communications transceiver. Instead, McPhillie discloses software and hardware development tools (e.g., an emulator **30**) that enable the control of access to cryptographic functions of a semiconductor target device (e.g., a smart card **100**). The development tool (e.g., an emulator **30**) includes an unsecure data processor **44** and a secure data processor **46** to emulate the semiconductor target device (e.g., a smart card **100**).² Still, it should be understood that such a development tool (e.g., an emulator **30**) is not the same as or similar to a portable mobile computing device such as that recited in amended independent claim 1. A development tool (e.g., an emulator **30**) is configured to enable analyze operations of a prototype device and the modification of its hardware/software so as to produce a desired finished product.³ Such a development tool would not teach or suggest the claimed portable mobile computing device to one of ordinary skill in the art.

McPhillie also fails to disclose and/or suggest a trusted cryptographic engine in combination with the other elements as claimed. For example, McPhillie fails to disclose an architecture as claimed in which a cryptographic engine in a portable mobile computing device as claimed is configured to encrypt any data communicated from a secure user processor to a non-secure user processor. Notably, the Examiner concedes that McPhillie fails to disclose and/or suggest the trusted cryptographic engine and the communication links recited in independent claim 1.⁴

² See FIG. 3 of McPhillie.

³ See page 2, lines 10-21 of McPhillie.

⁴ See page 6 of tShe Office Action.

McPhillie also fails to disclose a portable mobile computing device incorporating a data a secure user processor in combination with a data transceiver for communicating data external to the device . For security reasons, portable mobile computing devices generally do not include such data transceivers. The claimed architecture for a portable mobile computing device: (1) provides secure processing and data storage facilities, (2) permits use of familiar commercial operating systems and software for data not requiring secure processing; (3) allows the secure user processor to securely communicate data (including voice data) external to the device without possibility of such secure data being compromised by unintended recipients; and (4) ensures that classified data is stored separately from unclassified data, and is never accessible to the data transceiver or unsecure processor, except in encrypted form. This combination of security and convenience features is not achieved with prior art portable mobile computing devices.

The deficiencies of McPhillie are not corrected by Puranik. In this regard, it should be understood that Puranik generally discloses and/or suggests a telemetry device **103**, a 2-way messaging device **104** and a network operations center **101**.⁵ Each of the devices **101**, **103**, **104** is configured to communicate messages over-the-air in an unsecure mode and a secure mode. As such, each of the devices **103**, **104** includes an unsecure processor **323**, **1203**, a cryptographic logic device **317** and a communication interface **301**, **1217**.⁶ Also, the network operations center **101** includes a server **209** housed in a secure area **215**. The secure area **215** ensures that personnel have limited access to the server **209**. The server **209** includes an unsecure processor **1203**, a memory **1205** containing cryptographic logic and a communication interface **1217**.

As evident from the above discussion, Puranik fails to disclose and/or suggest a portable mobile computing device having the architecture recited in amended independent claim 1. For example, Puranik fails to disclose and/or suggest a portable mobile computing device including a secure processor communicatively coupled to an unsecure processor via a cryptographic engine. Instead, Puranik discloses a portable mobile computing device simply comprising an unsecure processor **323**, **1203** communicatively coupled to a device containing cryptographic logic **317**,

⁵ See FIG. 2 of Puranik.

⁶ See FIGS. 3 and 12 of Puranik

1205. The foregoing arrangement does not teach or disclose a portable mobile computing device that provides the advantageous combination of security and convenience features described above.

Therefore, amended independent claim 1 is non-obvious in view of the suggested combination of McPhillie and Puranik. As such, amended independent claim 1 is now in condition for allowance. Amended independent claims 11 and 14 are substantially similar to amended independent claim 1, albeit different in some ways. Thus, amended independent claims 11 and 14 are allowable at least for substantially the same reasons as amended independent claim 1, as discussed herein. Each of the dependant claims 2-7, 9, 10, 12, 13 and 15-23 is allowable at least by virtue of its dependence on a respective allowable independent claim 1, 11 or 14.

B. Rejections of Claims 5 and 11

McPhillie fails to disclose and/or suggest the mobile PDA computer system recited in amended dependant claim 5 and amended independent claim 11. As noted above, McPhillie generally discloses a data processing system comprising an unsecure data processor **44** and a secure data processor **46**.⁷ A developer has direct access and control over the unsecure data processor **44** via an interface **42**.⁸ However, the developer only has access to the secure data processor **46** via the unsecure data processor **44**.⁹ In contrast, a user of the portable mobile computing device, recited in amended claims 5 and 11, has direct access and control of an unsecure and secure data processor via distinct unsecure and secure human/machine interfaces. This is an important distinction between the portable mobile computing device of amended claims 5, 11 and the system of McPhillie. For example, the portable mobile computing device of amended claims 5, 11 advantageously provides secure access to sensitive files via a secure human/machine interface and a secure user processor.¹⁰

The deficiencies of McPhillie are not corrected by Puranik. As noted above, Puranik generally discloses a network based system supporting secure communications. The network based system comprises a telemetry device **103**, a 2-way messaging device **104** and a network operations

⁷ See FIG. 3 of McPhillie.

⁸ See page 5, lines 8-23 of McPhillie.

⁹ See page 5, lines 8-23 and page 7, lines 26-32 of McPhillie.

¹⁰ See paragraph [0047] of the present application.

center **101**.¹¹ Each of the devices **103, 104, 101** supports secure and unsecure over-the-air communications. The telemetry device **103** can include a two-way wireless modem **301**.¹² The two-way messaging device **104** can include a pager.¹³ The network operations center **101** includes a plurality of servers.¹⁴ As should be understood, modems, pagers and servers each include a single human/machine interface for accessing and controlling one or more internal circuits (e.g., processors) thereof.¹⁵ As such, Puranik fails to disclose and/or suggest the computer system of amended claims 5 and 11. More particularly, Puranik fails to disclose and/or suggest a portable mobile computing device comprising two (2) distinct human/machine interfaces each configured to provide a user with access and control of a respective one of an unsecure and secure user processor.

Therefore, amended claims 5 and 11 are non-obvious in view of the suggested combination of McPhillie and Puranik. As such, amended claims 5 and 11 are now in condition for allowance.

IV. New Claims

New claims 24 and 25 distinguish over the cited references based at least on the arguments above as well as the following arguments. Notably, McPhillie and Puranik fail to disclose and/or suggest a mobile PDA computer system comprising first and second file systems that provide physical separation of classified data from unclassified data therein. Instead, McPhillie discloses two processors that transfer encrypted/decrypted data therebetween. Each processor includes internal memory (e.g., ROM) which does not physically separate classified data from unclassified data.¹⁶ Puranik discloses a plurality of communication devices **103, 104, 101** configured to store data in memory devices thereof. Still, none of these communication devices **103, 104, 101** includes two or more file systems for physically separating classified data from unclassified data.¹⁷

¹¹ See FIG. 2 of Puranik.

¹² See paragraph [0069] of Puranik.

¹³ See paragraph [0076] and claims 9, 18 and 33 of Puranik.

¹⁴ See FIG. 2 of Puranik.

¹⁵ See FIGS. 2 and 12 of Puranik.

¹⁶ See FIG. 5 and page 14, lines 30-37 of McPhillie.

¹⁷ See paragraphs [0030], [0034], [0038] and [0047] of Puranik.

V. Conclusion

Applicant has made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. Nevertheless, Applicant invites the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. In view of the forgoing remarks, Applicant respectfully requests reconsideration and prompt allowance of the pending claims. Please charge any deficiencies, or credit any overpayment to Deposit Account 08-0870.

Dated: November 10, 2009

Respectfully submitted,

Electronic signature: /Robert J. Sacco/

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Attorneys/Agents For Applicant

Electronic Patent Application Fee Transmittal				
Application Number:		11359224		
Filing Date:		22-Feb-2006		
Title of Invention:		Computer architecture for a handheld electronic device		
First Named Inventor/Applicant Name:		Terence W. O'Brien		
Filer:		Robert Joseph Sacco/Joyce Dougherty		
Attorney Docket Number:		17162/0207802-US0		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Claims in excess of 20	1202	2	52	104
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 (\$)				104

Electronic Acknowledgement Receipt	
EFS ID:	6413699
Application Number:	11359224
International Application Number:	
Confirmation Number:	8502
Title of Invention:	Computer architecture for a handheld electronic device
First Named Inventor/Applicant Name:	Terence W. O'Brien
Customer Number:	68085
Filer:	Robert Joseph Sacco/Joyce Dougherty
Filer Authorized By:	Robert Joseph Sacco
Attorney Docket Number:	17162/0207802-US0
Receipt Date:	10-NOV-2009
Filing Date:	22-FEB-2006
Time Stamp:	09:58:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$104
RAM confirmation Number	7166
Deposit Account	080870
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 1.17 (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		AMEND_802.pdf	67975 49b7dfe575f9b22a4288b0f246f87edaefb755f2	yes	13
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	7	
	Applicant Arguments/Remarks Made in an Amendment		8	13	
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	30246 718ee78c92dd1ca91d6fba03631d88c7e6a5844d	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			98221		
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 11/359,224		Filing Date 02/22/2006		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)		(Column 2)		SMALL ENTITY ☐ OR		OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)		RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	11/10/2009	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 24	Minus	** 23	= 1	X \$ =		OR	X \$52=	52
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	X \$ =		OR	X \$220=	0
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	52
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/KIMBERLY PANNELL/

This collection of information is required by 37 CFR 1.16. 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 12 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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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/359,224	02/22/2006	Terence W. O'Brien	17162/0207802-US0	8502

68085 7590 02/02/2010

HARRIS CORPORATION
C/O DARBY & DARBY PC
P.O. BOX 770
CHURCH STREET STATION
NEW YORK, NY 10008-0770

EXAMINER

PARTHASARATHY, PRAMILA

ART UNIT	PAPER NUMBER
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2436

MAIL DATE	DELIVERY MODE
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02/02/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	11/359,224	O'BRIEN, TERENCE W.	
	Examiner	Art Unit	
	PRAMILA PARTHASARATHY	2436	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 10 November 2009.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) 8 is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-7 and 9-25 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments filed on 11/10/2009 with respect to the rejection(s) of claim(s) 1 – 7 and 9 – 25 under prior art (GB Patent 2336005 and publication 2006/0105740) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of 35 USC 112 Second paragraph rejection and prior art (Patent 6,092,202) rejection. Please, also note indicated allowable subject matter in item # 8. Applicant's remarks on double patenting rejection have been noted. However, Examiner maintains double patenting rejection (with copending application 11/385,063) and requests the Applicant to file a Terminal Disclaimer.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 24 and 25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 24 and 25 recites the limitation "mobile PDA". There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 2436

3. Claims 1 – 7 and 9 – 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Mauro (Patent 7,047,405).

4. As per Claims 1, 11 and 14, Mauro teaches “a trusted microprocessor (Fig.3), a trusted operating system executing on said trusted microprocessor (Fig.3), a trusted application software executing on said trusted microprocessor (Fig.3); said non-secure user microprocessor comprising an untrusted microprocessor, an untrusted operating system executing on said untrusted microprocessor (Fig.3 and Fig. 4a&b), an untrusted application software executing on said untrusted microprocessor; said cryptographic engine configured for encrypting any data communicated from said secure user processor to said non-secure user processor (Fig.3 and Fig. 4a&b), comprising: a trusted cryptographic processor, a trusted operating system executing on said trusted cryptographic processor (Fig.3 and Fig. 4a&b); a first data communication link communicating data between said secure processor and said cryptographic engine (Fig.3 and Fig. 4a&b); and a second data communication link communicating data between said non-secure processor and said cryptographic engine (Fig.3 and Fig. 4a&b); and wherein said communications receiver is operatively coupled to said non-secure user processor and configured for communicating data external to said portable mobile computing device (Fig.3 and Fig. 4a&b) and Column 4 lines 50 – Column 6 line 65; #230, #234; #240; #254)”.

5. As per Claims 2 – 7, 12 and 15 – 19, Mauro teaches “secure human/machine interface for communicating data to and from said secure processor; wherein said secure human/machine interface comprises at least one input device to allow a user to control the secure processor; wherein said secure human/machine interface comprises at least one input device to allow a user to control the secure processor; a non-secure human/machine interface; wherein said non-secure human/machine interface comprises at least one input device to allow

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a user to control the non-secure processor; wherein said non-secure human/machine interface comprises at least one output device to allow the non-secure processor to inform a user" (Fig. 3 and Fig. 4a&b) and Column 4 lines 50 – Column 6 line 65).

6. As per Claims 9 and 20 – 22, Mauro teaches "wherein said wireless communications transceiver is selected from the group consisting of a wireless LAN transceiver (Fig. 3; #222 and Column 4 lines and a cellular telephone transceiver (Column 3 lines 62 – 65)".

7. As per Claims 24 and 25, Mauro teaches "storing classified data in a first file system accessible only to said secure user processor and storing unclassified data in a second file system distinct from said first file system which is accessible to said non-secure user processor, thereby providing physical separation of said classified data from said unclassified data within said mobile PDA computer system (Fig. 3 and item# 236, 252 & 254)".

Allowable Subject Matter

8. Claims 10, 13 and 23 being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and, if terminal disclaimer is filed to overcome double patenting rejection.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Examiner's Note: Please note the Change of Examiner with this application.

Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.

Applicant is urged to consider the references. However, the references should be evaluated by what they suggest to one versed in the art, rather than by their specific disclosure. If applicants are aware of any better prior art than those are cited, they are required to bring the prior art to the attention of the examiner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRAMILA PARTHASARATHY whose telephone number is (571)272-3866. The examiner can normally be reached on 8:00a.m. to 5:00p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2436

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pramila Parthasarathy/
Primary Examiner, Art Unit 2436

Notice of References Cited	Application/Control No. 11/359,224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.	
	Examiner PRAMILA PARTHASARATHY	Art Unit 2436	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,092,202	07-2000	Veil et al.	726/27
*	B	US-7,047,405	05-2006	Mauro, Anthony	713/166
*	C	US-7,028,149	04-2006	Grawrock et al.	711/156
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Index of Claims</i> 	Application/Control No. 11359224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.
	Examiner PRAMILA PARTHASARATHY	Art Unit 2436

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant										☐ CPA										☐ T.D.										☐ R.1.47									
CLAIM		DATE																																					
Final	Original	08/10/2009	01/21/2010																																				
	1	✓	✓																																				
	2	✓	✓																																				
	3	✓	✓																																				
	4	✓	✓																																				
	5	✓	✓																																				
	6	✓	✓																																				
	7	✓	✓																																				
	8	✓	-																																				
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Search Notes 	Application/Control No. 11359224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.
	Examiner PRAMILA PARTHASARATHY	Art Unit 2436

SEARCHED			
Class	Subclass	Date	Examiner
713	189, 164, 176, 181	8/5/2009	SS
726	1, 36, 26	8/5/2009	SS
380	49, 4, 9, 25, 30, 40-60	8/5/2009	SS
455	410	8/25/2009	SS

SEARCH NOTES		
Search Notes	Date	Examiner
EAST - US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	8/5/2009	SS
NPL - GOOGLE	8/5/2009	SS
Interference Search - CLM TEXT SEARCH WITH CLASS SEARCH	8/6/2009	SS
CONSULTED WITH NASSER MOAZZAMI	8/25/2009	SS
UPDATAED	8/25/2009	SS
Inventor & Assignee search	1/21/2010	PP
EAST - with amended claim text search - all databases	1/21/2010	PP

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
713	Interference Search - CLM TEXT SEARCH WITH CLASS SEARCH	8/5/2009	SS

	/PRAMILA PARTHASARATHY/ Primary Examiner.Art Unit 2436
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BIB DATA SHEET

CONFIRMATION NO. 8502

SERIAL NUMBER 11/359,224	FILING or 371(c) DATE 02/22/2006 RULE	CLASS 380	GROUP ART UNIT 2436	ATTORNEY DOCKET NO. 17162/0207802-US0		
APPLICANTS Terence W. O'Brien, Webster, NY; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 03/21/2006						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /PRAMILA Acknowledged PARTHASARATHY/ Examiner's Signature		☐ Met after Allowance Initials	STATE OR COUNTRY NY	SHEETS DRAWINGS 4	TOTAL CLAIMS 23	INDEPENDENT CLAIMS 3
ADDRESS HARRIS CORPORATION C/O DARBY & DARBY PC P.O. BOX 770 CHURCH STREET STATION NEW YORK, NY 10008-0770 UNITED STATES						
TITLE Computer architecture for a handheld electronic device						
FILING FEE RECEIVED 1254	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit			

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3506	(Harris and corporation).as.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:12
L2	4	I1 and (trust\$3 near4 secure).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:13
L3	5220	(trust\$3 near4 secure)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:27
L4	2385	I3 and mobile	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:27
L5	878	I4 and cryptograph \$3	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:27
L6	2	I5 and (audio near4 interfac\$3).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:28
L7	27	I5 and (audio near4 interfac\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:28
L8	24	I7 and wireless	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:28
L9	17	I8 and portable	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:30

L10	9	I9 and PDA	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:30
L11	82	((secure and non-secure) near4 processor).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:37
L12	32	I11 and trusted	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:37
L13	15	I12 and (encrypt\$3 cryptographic\$4).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:37
L14	0	"6092202" and (audio near4 interfac\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:39
L15	26	"6092202" and audio	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:39
L16	0	"6092202" and audio.clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:39
L17	3	I13 and audio	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/01/21 21:43

1/ 21/ 2010 9:51:40 PM

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**TERMINAL DISCLAIMER TO OBTAIN A PROVISIONAL DOUBLE PATENTING
REJECTION OVER A PENDING "REFERENCE" APPLICATION**

Docket Number (Optional)
7162-0141US0

In re Application of: Terrence W. O'Brien

Application No.: 11/358,224

Filed: February 22, 2005

For: COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE

The owner*, HARRIS CORPORATION, of 100 percent interest in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of any patent granted on pending reference Application Number 11/385,083, filed on March 21, 2006, as such term is defined in 35 U.S.C. 164 and 173, and as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the reference application are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. 154 and 173 of any patent granted on said reference application, "as the term of any patent granted on said reference application may be shortened by any terminal disclaimer filed prior to the grant of any patent on the pending reference application," in the event that: any such patent: granted on the pending reference application: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as shortened by any terminal disclaimer filed prior to its grant.

Check either box 1 or 2 below, if appropriate.

1. ☒ For submissions on behalf of a business/organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the business/organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

2. ☐ The undersigned is an attorney or agent of record. Reg. No. _____

Michael S. Yatsko
Signature

04/27/10
Date

Michael Yatsko, Sr. Counsel, Intellectual Property
Typed or printed name

321-727-9100
Telephone Number

- ☒ Terminal disclaimer fee under 37 CFR 1.20(d) is included.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/996 may be used for making this statement. See MPEP § 324.

This collection of information is required by 37 CFR 1.321. 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 12 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.

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Terence W. O'Brien

Application No./Patent No.: 11/359,224 Filed/Issue Date: February 22, 2006

Titled: COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE

HARRIS CORPORATION, a CORPORATION
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest in;
 2. ☐ an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is _____ %); or
 3. ☐ the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made)
- the patent application/patent identified above, by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 017520, Frame 0218, or for which a copy therefore is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.
3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(b)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Michael S. Yatsko
Signature

04/27/10
Date

Michael Yatsko
Printed or Typed Name

Sr. Counsel/Intellectual Property
Title

This collection of information is required by 37 CFR 3.73(b). 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 12 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 1480, Alexandria, VA 22313-1450.

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Electronic Patent Application Fee Transmittal				
Application Number:		11359224		
Filing Date:		22-Feb-2006		
Title of Invention:		Computer architecture for a handheld electronic device		
First Named Inventor/Applicant Name:		Terence W. O'Brien		
Filer:		Robert Joseph Sacco/Joyce Dougherty		
Attorney Docket Number:		17162/0207802-US0		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Independent claims in excess of 3	1201	3	220	660
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:				
Statutory disclaimer	1814	1	140	140
Total in USD (\$)				800

Electronic Acknowledgement Receipt	
EFS ID:	7509339
Application Number:	11359224
International Application Number:	
Confirmation Number:	8502
Title of Invention:	Computer architecture for a handheld electronic device
First Named Inventor/Applicant Name:	Terence W. O'Brien
Customer Number:	68085
Filer:	Robert Joseph Sacco/Joyce Dougherty
Filer Authorized By:	Robert Joseph Sacco
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Receipt Date:	28-APR-2010
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Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 800
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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 1.17 (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		int7CB.PDF	497471 525afb56fdf3e11dbfcc150d6a26552c0ba85149	yes	16
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	10	
	Applicant Arguments/Remarks Made in an Amendment		11	14	
	Terminal Disclaimer Filed		15	15	
	Assignee showing of ownership per 37 CFR 3.73(b).		16	16	
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	31950 fce5a18f9b863275338a52ad201edc486e608dd1	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			529421		
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Docket No.: 7162-0141US0
RF-266; H7620
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Terence W. O'Brien

Application No.: 11/359,224

Confirmation No.: 8502

Filed: February 22, 2006

Art Unit: 2433

For: COMPUTER ARCHITECTURE FOR A
HANDHELD ELECTRONIC DEVICE

Examiner: SURYAWANSI, Sudhish

AMENDMENT

MS Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

INTRODUCTORY COMMENTS

In response to the Office Action dated February 2, 2010, please amend the above-identified U.S. patent application as follows:

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments begin on page 11 of this paper.

AMENDMENTS TO THE CLAIMS

The listing of claims will replace all prior versions, and listing, of claims in the application.

Listing of Claims

1. (Currently Amended) A computer system, comprising:
 - a portable mobile computing device including a secure user processor, a non-secure user processor, a communications transceiver, and a cryptographic engine;
 - said secure user processor comprising
 - a trusted microprocessor,
 - a trusted operating system executing on said trusted microprocessor, and
 - a trusted application software executing on said trusted microprocessor;
 - said non-secure user processor comprising
 - an untrusted microprocessor,
 - an untrusted operating system executing on said untrusted microprocessor, and
 - an untrusted application software executing on said untrusted microprocessor;
 - said cryptographic engine configured for encrypting any data communicated from said secure user processor to said non-secure user processor, comprising
 - a trusted cryptographic processor, and
 - a trusted operating system executing on said trusted cryptographic processor;
 - a first data communication link communicating data between said secure processor and said cryptographic engine;
 - a second data communication link communicating data between said non-secure processor and said cryptographic engine;
 - a secure human/machine interface configured for enabling bi-directional communication of classified information exclusively between a user and said secure user processor; and
 - a non-secure human/machine interface distinct from said secure human/machine interface and configured for enabling bi-directional communication of unclassified information exclusively between said user and said non-secure user processor;

wherein said communications transceiver is operatively coupled to said non-secure user processor and configured for communicating data external to said portable mobile computing device[[],].

2. (Canceled)

3. (Currently Amended) The computer system according to claim 1[[2]], wherein said secure human/machine interface comprises at least one input device to allow said user to control the secure user processor.

4. (Previously Presented) The computer system according to claim 3, wherein said secure human/machine interface comprises at least one output device to allow the secure user processor to inform said user.

5. (Canceled)

6. (Currently Amended) The computer system according to claim 1[[5]], wherein said non-secure human/machine interface comprises at least one input device to allow said user to control the non-secure user processor.

7. (Previously Presented) The computer system according to claim 6, wherein said non-secure human/machine interface comprises at least one output device to allow the non-secure user processor to inform said user.

8. (Canceled)

9. (Previously Presented) The computer system according to claim 1, wherein said communications transceiver is selected from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver.

10. (Currently Amended) ~~The computer system according to claim 9, further comprising A computer system, comprising:~~

a portable mobile computing device including a secure user processor, a non-secure user processor, a communications transceiver, and a cryptographic engine;

said secure user processor comprising

a trusted microprocessor,

a trusted operating system executing on said trusted microprocessor, and

a trusted application software executing on said trusted microprocessor;

said non-secure user processor comprising

an untrusted microprocessor,

an untrusted operating system executing on said untrusted microprocessor, and

an untrusted application software executing on said untrusted microprocessor;

said cryptographic engine configured for encrypting any data communicated from said secure user processor to said non-secure user processor, comprising

a trusted cryptographic processor, and

a trusted operating system executing on said trusted cryptographic processor;

a first data communication link communicating data between said secure processor and said cryptographic engine;

a second data communication link communicating data between said non-secure processor and said cryptographic engine; and

first and second audio interfaces, said first audio interface configured for communicating audio information to and from said secure user processor, and said second audio interface configured for communicating audio information to and from said non-secure user processor;

wherein said communications transceiver is operatively coupled to said non-secure user processor, is configured for communicating data external to said portable mobile computing device,

and is selected from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver.

11. (Currently Amended) A computer system, comprising:
- a portable mobile computing device including a secure user processor, a non-secure user processor, a communications transceiver, and a cryptographic engine,
 - said communications transceiver operatively coupled to said non-secure user processor and configured for communicating data external to said portable mobile computing device,
 - said secure user processor comprising
 - a trusted microprocessor,
 - a trusted operating system executing on said trusted microprocessor, and
 - a trusted application software executing on said trusted microprocessor;
 - said non-secure user processor comprising
 - an untrusted microprocessor,
 - an untrusted operating system executing on said untrusted microprocessor,
 - and
 - an untrusted application software executing on said untrusted microprocessor;
 - said cryptographic engine configured for encrypting data communicated from said secure user processor to said non-secure user processor, comprising a trusted cryptographic processor, and a trusted operating system executing on said trusted cryptographic processor;
 - a first data communication link communicating data between said secure user processor and said cryptographic engine;
 - a second data communication link communicating data between said non-secure user processor and said cryptographic engine;
 - a secure human/machine interface communicatively coupled to said secure user processor and configured to enable bi-directional communication of classified information exclusively between
~~provide a user of said portable mobile computing device with access and control of said secure user~~

processor, at least a portion of said secure human/machine interface located in a physically secure enclosure; and

a non-secure human/machine interface communicatively coupled to said non-secure user processor and configured to enable bi-directional communication of unclassified information exclusively between ~~provide said user with access and control of~~ said non-secure user processor, said non-secure human/machine interface distinct from said secure human/machine interface.

12. (Previously Presented) The computer system according to claim 11, wherein said non-secure user processor is operatively connected to said communications transceiver.

13. (Currently Amended) ~~The computer system according to claim 11, further comprising A~~
computer system, comprising:

a portable mobile computing device including a secure user processor, a non-secure user processor, a communications transceiver, and a cryptographic engine, said communications transceiver operatively coupled to said non-secure user processor and configured for communicating data external to said portable mobile computing device,

said secure user processor comprising

a trusted microprocessor,

a trusted operating system executing on said trusted microprocessor, and

a trusted application software executing on said trusted microprocessor;

said non-secure user processor comprising

an untrusted microprocessor,

an untrusted operating system executing on said untrusted microprocessor,

and

an untrusted application software executing on said untrusted microprocessor;

said cryptographic engine configured for encrypting data communicated from said secure user processor to said non-secure user processor, comprising a trusted cryptographic processor, and a trusted operating system executing on said trusted cryptographic processor;

a first data communication link communicating data between said secure user processor and said cryptographic engine;

a second data communication link communicating data between said non-secure user processor and said cryptographic engine;

a secure human/machine interface communicatively coupled to said secure user processor and configured to provide a user of said portable mobile computing device with access and control of said secure user processor;

a non-secure human/machine interface communicatively coupled to said non-secure user processor and configured to provide said user with access and control of said non-secure user processor, said non-secure human/machine interface distinct from said secure human/machine interface;

a first audio interface for communicating audio information to and from said secure user processor; [[,]] and

a second audio interface for communicating audio information to and from said non-secure user processor.

14. (Currently Amended) A method for managing classified and unclassified data on a portable mobile computing device of a computer system, comprising:

processing said classified data exclusively using a secure processor of said portable mobile computing device, said secure processor comprising a trusted microprocessor and a trusted operating system executing on said trusted microprocessor;

processing unclassified data exclusively using a non-secure processor of said portable mobile computing device, said non-secure processor comprising an untrusted microprocessor and an untrusted operating system executing on said untrusted microprocessor;

communicating encrypted and decrypted classified data between said secure processor and a cryptographic engine of said portable mobile computing device using a first data communication link;

communicating data from said secure processor and said cryptographic engine to said non-secure processor exclusively in an encrypted form using a second data communication link between said cryptographic engine and said non-secure processor;

communicating classified information to and from said secure processor using a secure human/machine interface that is configured for enabling bi-directional communication of classified information exclusively between a user and said secure processor; and

communicating unclassified information to and from said non-secure processor using a non-secure human/machine interface that is distinct from said secure human/machine interface and configured for enabling bi-directional communication of unclassified information exclusively between said user and said non-secure processor.

15. (Canceled)

16. (Currently Amended) The method according to claim 14 [[15]], further comprising controlling said secure processor exclusively using said secure human/machine interface.

17. (Canceled)

18. (Original) The method according to claim 14, further comprising controlling said non-secure processor exclusively using a non-secure human/machine interface.

19. (Canceled)

20. (Original) The method according to claim 14, further comprising performing wireless data communication of unclassified data from said non-secure processor using a wireless communications transceiver.

21. (Original) The method according to claim 20, further comprising communicating encrypted classified data from said secure processor using said wireless communications transceiver.

22. (Original) The method according to claim 20, further comprising selecting said wireless communications transceiver from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver.

23. (Currently Amended) ~~The method according to claim 22, further comprising~~ A method for managing classified and unclassified data on a portable mobile computing device of a computer system, comprising:

processing said classified data exclusively using a secure processor of said portable mobile computing device, said secure processor comprising a trusted microprocessor and a trusted operating system executing on said trusted microprocessor;

processing unclassified data exclusively using a non-secure processor of said portable mobile computing device, said non-secure processor comprising an untrusted microprocessor and an untrusted operating system executing on said untrusted microprocessor;

communicating encrypted and decrypted classified data between said secure processor and a cryptographic engine of said portable mobile computing device using a first data communication link;

communicating data from said secure processor and said cryptographic engine to said non-secure processor exclusively in an encrypted form using a second data communication link between said cryptographic engine and said non-secure processor;

performing wireless data communication of said unclassified data from said non-secure processor using a wireless communications transceiver;

selecting said wireless communications transceiver from the group consisting of a wireless LAN transceiver and a cellular telephone transceiver;

communicating classified audio information to and from said secure processor with a first audio interface; [[,]] and

communicating unclassified audio information to and from said processor with a second audio interface distinct from said first audio interface.

24. (Currently Amended) The mobile PDA computer system according to claim 1, further comprising a first file system exclusively accessible to said secure user processor for storing classified data and a second file system for storing unclassified data, said second file system distinct from said first file system so as to provide physical separation of said classified data from said unclassified data within said portable mobile computing device ~~mobile PDA computer system~~.

25. (Currently Amended) The method according to claim 14, further comprising storing classified data in a first file system accessible only to said secure user processor and storing unclassified data in a second file system distinct from said first file system which is accessible to said non-secure user processor, thereby providing physical separation of said classified data from said unclassified data within said portable mobile computing device ~~mobile PDA computer system~~.

REMARKS

These remarks are in response to the office action mailed February 2, 2010 ("Office Action"). This reply is timely filed. At the time of the Office Action, claims 1-25 were pending in the application.

I. Status of the Claims

Claims 1, 3, 6, 10, 11, 13, 14, 16 and 23-25 have been amended. No new subject matter has been introduced by the claim amendments. Claims 2, 5, 15, 17 and 19 have been cancelled without prejudice or disclaimer to the subject matter therein.

Claims 24 and 25 have been rejected under 35 U.S.C. §112. Claims 1-7, 9, 11, 12, 14, 15-22, 24 and 25 have been rejected under 35 U.S.C. §102(e).

The rejections are set forth in detail below.

II. Interview Summary

Applicant thanks the Examiner for discussing the present application with its representative, Carol Forsyth, on April 23, 2010. During said discussion, proposed amendments for independent claims 1, 11 and 14 were discussed. The proposed claim amendments were the same as the amendments made herein in relation to independent claims 1, 11 and 14. As a consequence of said discussion, the Examiner agreed that the present invention as recited in amended independent claims 1, 11 and 14 distinguishes over the cited reference (namely, U.S. Pat. No. 7,047,405 to Mauro). Still, we have included arguments herein discussing how the amended independent claims 1, 11 and 14 distinguish over the cited reference for purposes of refreshing the Examiner's recollection about the content of our discussion.

III. Allowable Subject Matter

Applicant respectfully thanks the Examiner for the indication that claims 10, 13 and 23 include allowable subject matter and would be allowed (a) if rewritten in independent form including all of the limitations of the base claim and any intervening claims, and (b) a terminal disclaimer is filed to overcome a double patenting rejection. In response, claims 10, 13 and 23 have

been amended to place them in independent form including all of the limitations of their respective base claims and any intervening claims. A terminal disclaimer and associated fee is also provided herewith. As such, claims 10, 13 and 23 are in condition for allowance.

IV. Claim Rejections under 35 U.S.C. §112

Claims 24 and 25 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this regard, the Examiner states that there is no antecedent basis for the phrase “mobile PDA” of claims 24 and 25. In response, claims 24 and 25 have been amended so as to overcome the Examiner’s rejection thereto.

V. Claim Rejections under 35 U.S.C. §102

In the Office Action, claims 1-7, 9, 11, 12, 14, 15-22, 24 and 25 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Pat. No. 7,047,405 to Mauro (hereinafter referred to as “Mauro”). Dependant claims 2, 5, 15, 17 and 19 have been canceled. As such, the Examiner’s rejections thereto are moot. Applicants respectfully traverses the Examiner’s rejections.

Mauro generally discloses a system **100** comprising wireless communication devices **110a, . . . , 110n**. One or more of the wireless communication devices **110a, . . . , 110n** comprises an unsecure main processor **230**, an unsecure system memory **236**, an unsecure human/machine interface **234** and a secure unit **240**. Bi-directional communications between a user of the device **110a, . . . , 110n** and the secure unit **240** is enabled via the unsecure human/machine interface **234**. In contrast, bi-directional communications between a user of the computer system, recited in amended independent claim 1, and a secure processor is exclusively enabled via a secure human/machine interface that is distinct from an unsecure human/machine interface. This is an important distinction between the computing device of the present application and the device **110a, . . . , 110n** of Mauro. For example, the security of “sensitive information” communicated between a user and a secure processor of claim 1 is at a level that is adequate for national security related applications. The “adequate security” level is at least partially due to the provision of a secure human/machine interface that is (a) distinct from an unsecure human/machine interface and (b) configured for enabling bi-directional communication of classified information exclusively between a user and a secure user processor.

In the Office Action, the Examiner suggests that FIG. 3, FIG. 4a, FIG. 4b and col. 4, line 50 –col. 6, line 65 of Mauro disclose a secure human/machine interface configured for communicating data between a user and a secure processor.¹ Applicant has reviewed the cited portions of Mauro and can find no such teaching. Instead, Applicant finds that the cited portions of Mauro simply disclose an unsecure human/machine interface **234b** configured for communicating data between a user and a secure processor **240**.

Therefore, amended independent claim 1 is not anticipated by Mauro. As such, amended independent claim 1 is now in condition for allowance. Amended independent claims 11 and 14 are similar to amended independent claim 1, albeit different in some ways. Thus, amended independent claims 11 and 14 are at least allowable for substantially the same reasons as amended independent claim 1, as discussed herein. Furthermore, each of the dependant claims 3, 4, 6, 7, 9, 12, 16, 18, 20-22, 24 and 25 is allowable at least by virtue of its dependence on a respective allowable independent claim 1, 11 or 14.

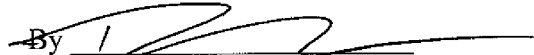
¹ See page 3, section 5 of the Office Action.

VI. Conclusion

Applicant has made every effort to present claims which distinguish over the prior art, and it is believed that all claims are in condition for allowance. Nevertheless, Applicant invites the Examiner to call the undersigned if it is believed that a telephonic interview would expedite the prosecution of the application to an allowance. In view of the forgoing remarks, Applicant respectfully requests reconsideration and prompt allowance of the pending claims. Please charge any deficiencies, or credit any overpayment to Deposit Account No. 08-0870.

Dated: 4-28-2010

Respectfully submitted,

By 

Robert J. Sacco

Registration No.: 35,667

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Attorneys/Agents For Applicant

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 11/359,224		Filing Date 02/22/2006		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY ☐ OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	04/28/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 19	Minus	** 24	= 0	X \$ =		OR	X \$52=	0
	Independent (37 CFR 1.16(h))	* 6	Minus	*** 3	= 3	X \$ =		OR	X \$220=	660
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	660
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =	
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/eugenia v. hardy/

This collection of information is required by 37 CFR 1.16. 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 12 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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Application Number 	Application/Control No. 11/359,224	Applicant(s)/Patent under Reexamination O'BRIEN, TERENCE W.
Document Code - DISQ		Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 04/28/10	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
Angie Walker



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NOTICE OF ALLOWANCE AND FEE(S) DUE

68085 7590 06/01/2010

HARRIS CORPORATION
C/O FOX ROTHSCHILD, LLP
997 Lenox Drive
Building 3
Lawrenceville, NJ 08543-5231

EXAMINER

PARTHASARATHY, PRAMILA

ART UNIT

PAPER NUMBER

2436

DATE MAILED: 06/01/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/359,224

02/22/2006

Terence W. O'Brien

7162-0141US0

8502

TITLE OF INVENTION: COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1510	\$300	\$0	\$1810	09/01/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

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If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

68085 7590 06/01/2010

HARRIS CORPORATION
C/O FOX ROTHSCHILD, LLP
997 Lenox Drive
Building 3
Lawrenceville, NJ 08543-5231

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

11/359,224 02/22/2006 Terence W. O'Brien 7162-0141US0 8502

TITLE OF INVENTION: COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 09/01/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
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PARTHASARATHY, PRAMILA 2436 713-164000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. 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 12 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, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/359,224	02/22/2006	Terence W. O'Brien	7162-0141US0	8502
68085	7590	06/01/2010	EXAMINER	
HARRIS CORPORATION C/O FOX ROTHSCHILD, LLP 997 Lenox Drive Building 3 Lawrenceville, NJ 08543-5231			PARTHASARATHY, PRAMILA	
			ART UNIT	PAPER NUMBER
			2436	
DATE MAILED: 06/01/2010				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 863 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 863 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Notice of Allowability	Application No.	Applicant(s)	
	11/359,224	O'BRIEN, TERENCE W.	
	Examiner	Art Unit	
	PRAMILA PARTHASARATHY	2436	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to terminal disclaimer and amendments to the claims filed on 4/28/2010.

2. ☒ The allowed claim(s) is/are 1,3,4,6,7,9-14,16,18 and 20-25; renumbered as 1-19.

3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
 * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____ 4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material	5. ☐ Notice of Informal Patent Application 6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ 7. ☐ Examiner's Amendment/Comment 8. ☒ Examiner's Statement of Reasons for Allowance 9. ☐ Other _____.
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/Pramila Parthasarathy/ Primary Examiner, Art Unit 2436	
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Terminal Disclaimer

The terminal disclaimer filed on 4/28/2010 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of copending application 11/385,063 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Response to Arguments

Applicant's arguments filed on 4/28/2010 with respect to amended claims 1, 3-4, 6-7, 9-14, 16, 18, 20-25 have been fully considered and are persuasive. The prior art rejection of claims 1,3-4,6-7,9-14,16,18,20-25 has been withdrawn. The 35 USC 112 Second paragraph rejection of claims 24 and 25 has been withdrawn.

Allowable Subject Matter

Claims 1, 3-4, 6-7, 9-14, 16, 18, 20-25 are allowed and renumbered 1 – 19.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PRAMILA PARTHASARATHY whose telephone number is (571)272-3866. The examiner can normally be reached on 8:00a.m. to 5:00p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nasser Moazzami can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2436

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Pramila Parthasarathy/
Primary Examiner, Art Unit 2436

<i>Index of Claims</i> 	Application/Control No. 11359224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.
	Examiner PRAMILA PARTHASARATHY	Art Unit 2436

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant											☐ CPA											☒ T.D.											☐ R.1.47										
CLAIM		DATE																																									
Final	Original	08/10/2009	01/21/2010	05/26/2010																																							
1	1	✓	✓	=																																							
	2	✓	✓	-																																							
2	3	✓	✓	=																																							
3	4	✓	✓	=																																							
	5	✓	✓	-																																							
4	6	✓	✓	=																																							
5	7	✓	✓	=																																							
	8	✓	-	-																																							
6	9	✓	✓	=																																							
8	10	✓	✓	=																																							
9	11	✓	✓	=																																							
10	12	✓	✓	=																																							
11	13	✓	✓	=																																							
12	14	✓	✓	=																																							
	15	✓	✓	-																																							
13	16	✓	✓	=																																							
	17	✓	✓	-																																							
14	18	✓	✓	=																																							
	19	✓	✓	-																																							
15	20	✓	✓	=																																							
16	21	✓	✓	=																																							
17	22	✓	✓	=																																							
19	23	✓	✓	=																																							
7	24		✓	=																																							
18	25		✓	=																																							

Issue Classification 	Application/Control No. 11359224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.
	Examiner PRAMILA PARTHASARATHY	Art Unit 2436

ORIGINAL						INTERNATIONAL CLASSIFICATION																	
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED												
713		164				H	0	4	L	29 / 06 (2006.01.01)					H	0	4	L	29 / 06 (2006.01.01)				
CROSS REFERENCE(S)																							
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																						
726	16																						

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☒ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		17												
	2	14	18												
2	3		19												
3	4	15	20												
	5	16	21												
4	6	17	22												
5	7	19	23												
	8	7	24												
6	9	18	25												
8	10														
9	11														
10	12														
11	13														
12	14														
	15														
13	16														

NONE		---		Total Claims Allowed:	
(Assistant Examiner)		(Date)		19	
/PRAMILA PARTHASARATHY/ Primary Examiner.Art Unit 2436		05/26/2010		O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)		(Date)		1	3

Search Notes 	Application/Control No. 11359224	Applicant(s)/Patent Under Reexamination O'BRIEN, TERENCE W.
	Examiner PRAMILA PARTHASARATHY	Art Unit 2436

SEARCHED			
Class	Subclass	Date	Examiner
713	189, 164, 176, 181	8/5/2009	SS
726	1, 36, 26	8/5/2009	SS
380	49, 4, 9, 25, 30, 40-60	8/5/2009	SS
455	410	8/25/2009	SS

SEARCH NOTES		
Search Notes	Date	Examiner
EAST - US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	8/5/2009	SS
NPL - GOOGLE	8/5/2009	SS
Interference Search - CLM TEXT SEARCH WITH CLASS SEARCH	8/6/2009	SS
CONSULTED WITH NASSER MOAZZAMI	8/25/2009	SS
UPDATAED	8/25/2009	SS
Inventor & Assignee search	1/21/2010	PP
EAST - with amended claim text search - all databases	1/21/2010	PP
Updated search with amended claim text	5/26/2010	PP

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
713	Interference Search - CLM TEXT SEARCH WITH CLASS SEARCH	8/5/2009	SS
	Interference searched	5/26/2010	PP
	713/\$.ccls. with amended claim text search	5/26/2010	PP
	726/\$.ccls. with amended claim text search	5/26/2010	PP

	/PRAMILA PARTHASARATHY/ Primary Examiner.Art Unit 2436
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	3588	(Harris and corporation).as.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L2	4	L1 and (trust\$3 near4 secure).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L3	5585	(trust\$3 near4 secure)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L4	2619	L3 and mobile	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L5	969	L4 and cryptograph\$3	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L6	2	L5 and (audio near4 interfac\$3).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L7	27	L5 and (audio near4 interfac\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L8	24	L7 and wireless	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L9	17	L8 and portable	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L10	9	L9 and PDA	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38

L11	85	((secure and non-secure) near4 processor).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L12	33	L11 and trusted	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L13	15	L12 and (encrypt\$3 cryptographic\$4).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L14	0	"6092202" and (audio near4 interfac\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L15	27	"6092202" and audio	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L16	0	"6092202" and audio. clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L17	3	L13 and audio	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L18	38	("6385727" "6092202") and mobile	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L19	0	("6385727" "6092202") and wirelss	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L20	64	("6385727" "6092202") and wireless	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L21	21	L20 and mobile	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L22	13	L20 and cellular	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38

L23	0	((trusted adj microprocessor) and (cryptographic adj engine)).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L24	0	((trusted adj microprocessor) and (cryptographic adj engine))	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L25	6	((trusted adj microprocessor) and (cryptographic adj engine))	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L26	0	((trusted adj microprocessor) and (portable adj (device comput\$3)))	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L27	0	((trusted adj microprocessor) and (portable near4 (device comput\$3)))	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L28	0	((trusted adj microprocessor) and (portable and (device comput\$3)))	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L29	0	((trusted adj microprocessor) and portable)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L30	5	((trusted adj microprocessor) and mobile)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L31	2	((trusted adj process \$3) and mobile).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L32	179	((trusted adj process \$3) and mobile)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L33	29	L32 and wireless.clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L34	26	L33 and (crypt\$7 encrypt\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38

L35	12	L33 and (crypt\$7 encrypt\$3).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L36	8	L35 and cellular	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:38
L37	49913	"713"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:41
L38	24949	"726"/\$.ccls.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:41
L39	4948	(I37 I38) and (crypto \$11 and microprocessor\$2)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:42
L40	41	I39 and (trusted near4 operating).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:43
L41	1	I40 and (secure adj process\$3).clm.	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:44
L42	7	I40 and (secure adj process\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:44
L43	1	I42 and unsecur\$3	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:45
L44	0	I41 and unsecur\$3	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:45
L45	1	I40 and unsecur\$3	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:45
L46	2513	(I37 I38) and (secur\$3 and unsecur\$3)	US-PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:46

L47	10	l46 and (trusted near4 operating).clm.	US- PGPUB; USPAT; EPO; JPO	OR	OFF	2010/05/26 18:46
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5/ 26/ 2010 6:50:43 PM

**C:\ Documents and Settings\ pparthasarathy\ My Documents\ EAST\ Workspaces
\ Case_11359224 Allowance.wsp**

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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

68085 7590 06/01/2010

HARRIS CORPORATION
 C/O FOX ROTHSCHILD, LLP
 997 Lenox Drive
 Building 3
 Lawrenceville, NJ 08543-5231

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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11/359,224 02/22/2006 Terence W. O'Brien 7162-0141US0 8502

TITLE OF INVENTION: COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
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nonprovisional NO \$1510 \$300 \$0 \$1810 09/01/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
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PARTHASARATHY, PRAMILA 2436 713-164000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 FOX ROTHSCHILD, LLP
 ROBERT J. SACCO
 2
 3

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

HARRIS CORPORATION

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

MELBOURNE, FL

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies

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5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature
 Robert J. Sacco

Date June 22, 2010
 35,667

Typed or printed name

Registration No.

This collection of information is required by 37 CFR 1.311. 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 12 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, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Electronic Patent Application Fee Transmittal				
Application Number:		11359224		
Filing Date:		22-Feb-2006		
Title of Invention:		COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE		
First Named Inventor/Applicant Name:		Terence W. O'Brien		
Filer:		Robert Joseph Sacco/Joyce Dougherty		
Attorney Docket Number:		7162-0141US0		
Filed as Large Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	1501	1	1510	1510
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1810

Electronic Acknowledgement Receipt	
EFS ID:	7867760
Application Number:	11359224
International Application Number:	
Confirmation Number:	8502
Title of Invention:	COMPUTER ARCHITECTURE FOR A HANDHELD ELECTRONIC DEVICE
First Named Inventor/Applicant Name:	Terence W. O'Brien
Customer Number:	68085
Filer:	Robert Joseph Sacco/Joyce Dougherty
Filer Authorized By:	Robert Joseph Sacco
Attorney Docket Number:	7162-0141US0
Receipt Date:	22-JUN-2010
Filing Date:	22-FEB-2006
Time Stamp:	16:18:11
Application Type:	Utility under 35 USC 111(a)

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Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1810
RAM confirmation Number	3070
Deposit Account	080870
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 1.17 (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	Issue Fee Payment (PTO-85B)	intB7.PDF	115308 39896651d094f2ed14b3dd1d942128fa8029a289	no	1
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	32065 d57409efdfc994418eb6c72def453098b28832d1	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			147373		
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/359,224	07/27/2010	7765399	7162-0141US0	8502

68085 7590 07/07/2010

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ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 1192 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Terence W. O'Brien, Webster, NY;