



18351 U.S. PTO

102004

PTO/SB/05 (09-04)

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

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UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 CFR 1.53(b))	Attorney Docket No.	036864.0006
	First Inventor	CARLEY, Jeffrey Alan
	Title	Secure management access control for computers, embedded and card embodiment
	Express Mail Label No.	EV 527401981 US

APPLICATION ELEMENTS See MPEP chapter 600 concerning utility patent application contents.	ADDRESS TO: Commissioner for Patents P.O. Box 1450 Alexandria VA 22313-1450
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1. ☒ **Fee Transmittal Form** (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)
2. ☒ **Applicant claims small entity status.**
See 37 CFR 1.27.
3. ☒ **Specification** [Total Pages 35]
Both the claims and abstract must start on a new page
(For information on the preferred arrangement, see MPEP 608.01(a))
4. ☒ **Drawing(s)** (35 U.S.C. 113) [Total Sheets 32]
5. **Oath or Declaration** [Total Sheets 2]
 - a. ☒ Newly executed (original or copy)
 - b. ☐ A copy from a prior application (37 CFR 1.63(d))
(for continuation/divisional with Box 18 completed)
 - 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)
☐ Landscape Table on CD
8. **Nucleotide and/or Amino Acid Sequence Submission**
(if applicable, items a. - c. are required)
 - 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))
Name of Assignee _____
10. ☐ **37 CFR 3.73(b) Statement** (when there is an assignee) ☒ **Power of Attorney**
11. ☐ **English Translation Document** (if applicable)
12. ☒ **Information Disclosure Statement** (PTO/SB/08 or PTO-1449)
☐ Copies of citations attached
13. ☐ **Preliminary Amendment**
14. ☒ **Return Receipt Postcard** (MPEP 503)
(Should be specifically itemized)
15. ☐ **Certified Copy of Priority Document(s)**
(if foreign priority is claimed)
16. ☐ **Nonpublication Request** under 35 U.S.C. 122(b)(2)(B)(i).
Applicant must attach form PTO/SB/35 or equivalent.
17. ☐ **Other:** _____

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: _____

19. CORRESPONDENCE ADDRESS

☒ The address associated with Customer Number: 22467 OR ☐ Correspondence address below

Name	Kimberly A. Chasteen				
Address	721 Lakefront Commons, Suite 200				
City	Newport News	State	Virginia	Zip Code	23606
Country	US	Telephone	757-249-5100	Fax	757-249-5109

Signature		Date	20 October 2004
Name (Print/Type)	Kimberly A. Chasteen	Registration No. (Attorney/Agent)	36,755

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for FY 2005**

Effective 10/01/2004. Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 395.00)

Complete if Known

Application Number	
Filing Date	20 October 2004
First Named Inventor	CARLEY, Jeffrey Alan
Examiner Name	
Art Unit	
Attorney Docket No.	036864.0006

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:Deposit
Account
Number
Deposit
Account
Name

50-0766

Williams Mullen

The Director is authorized to: (check all that apply)

☒ Charge fee(s) indicated below ☒ Credit any overpayments☒ Charge any additional fee(s) or any underpayment of fee(s)☐ Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1001	790	2001	395	Utility filing fee	395.00
1002	350	2002	175	Design filing fee	
1003	550	2003	275	Plant filing fee	
1004	790	2004	395	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	
SUBTOTAL (1)					(\$ 395.00)

2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE

Total Claims		Extra Claims		Fee from below	Fee Paid
Independent	Multiple Dependent	-20** =	-3** =		
20	2	0	0		

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1202	18	2202	9	Claims in excess of 20	
1201	88	2201	44	Independent claims in excess of 3	
1203	300	2203	150	Multiple dependent claim, if not paid	
1204	88	2204	44	** Reissue independent claims over original patent	
1205	18	2205	9	** Reissue claims in excess of 20 and over original patent	

SUBTOTAL (2) (\$ 0)

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)**3. ADDITIONAL FEES**

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
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1052	50	2052	25	Surcharge - late provisional filing fee or cover sheet	
1053	130	1053	130	Non-English specification	
1812	2,520	1812	2,520	For filing a request for ex parte reexamination	
1804	920*	1804	920*	Requesting publication of SIR prior to Examiner action	
1805	1,840*	1805	1,840*	Requesting publication of SIR after Examiner action	
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1252	430	2252	215	Extension for reply within second month	
1253	980	2253	490	Extension for reply within third month	
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1807	50	1807	50	Processing fee under 37 CFR 1.17(q)	
1806	180	1806	180	Submission of Information Disclosure Stmt	
8021	40	8021	40	Recording each patent assignment per property (times number of properties)	
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1810	790	2810	395	For each additional invention to be examined (37 CFR 1.129(b))	
1801	790	2801	395	Request for Continued Examination (RCE)	
1802	900	1802	900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 0)

SUBMITTED BY

Name (Print/Type)	Kimberly A. Chasteen	Registration No. (Attorney/Agent)	36,755	Telephone	757-249-5100
Signature		Date	20 October 2004		

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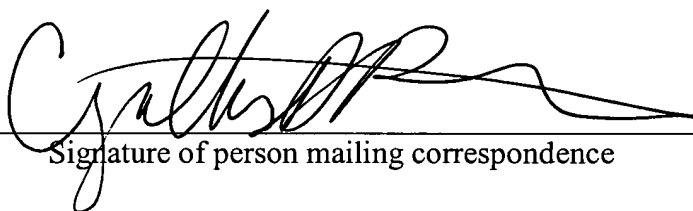
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Examiner Name	
Art Unit	
Attorney Docket No.	036864.0006

METHOD OF PAYMENT (check all that apply)☐ Check ☐ Credit card ☐ Money Order ☐ Other ☐ None☒ Deposit Account:

Deposit Account Number	50-0766
Deposit Account Name	Williams Mullen

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Independent Claims		2		- 3** = 0		X	
Multiple Dependent							

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FEE CALCULATION (continued)**3. ADDITIONAL FEES**

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Other fee (specify)

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SUBTOTAL (3) (\$ 0)**SUBMITTED BY**

Name (Print/Type)	Kimberly A. Chasteen	Registration No. (Attorney/Agent)	36,755	Telephone	757-249-5100
Signature		Date	20 October 2004		

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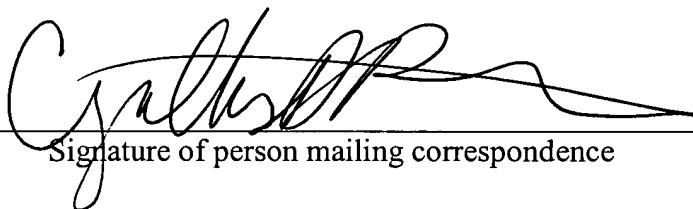
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20 October 2004

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Signature of person mailing correspondence

Cynthia D. Parrish

Typed or printed name of person mailing correspondence

Note: Each paper must have its own certificate of mailing by "Express Mail".

Secure Management Access Control for Computers, Embedded and Card Embodiment

Cross Reference To Related Applications

[01] The present application is a continuation in part based on U.S. Patent Application Ser. No. 10/461,827, filed June 13, 2003. The present application claims priority from U.S. Provisional Application Ser. No. 60/ 512,777, filed October 21, 2003. The present invention is related to the invention described in co-owned, co-pending patent application no. 10/461,820 filed on June 13, 2003, incorporated herein by reference.

Technical Field of the Invention

[02] The present invention relates in general to methods and apparatus used in managing devices or systems in a communication network and more particularly to methods and apparatus for remote management of these devices or systems in a secure manner.

Background of the Invention

[03] In distributed computer networks the vast majority of the networking elements are not in the same geographic location or easily accessible by the skilled technicians or network administrators typically responsible for normal maintenance of the elements. Not only do these technicians and administrators require regular access to the network elements for maintenance, but they also need timely access to the network elements when problems arise in order to perform trouble shooting and resolving problems. The more quickly a network administrator can access the elements in the network for troubleshooting the shorter the mean-time-to-repair (MTTR) an outage in the network.

[04] In general, it is not practical to require physical access to the systems for general maintenance or troubleshooting and repair. The costs would be prohibitive, both in time and personal, to require a skilled technician to be dispatched for every required activity on a system. This has driven a strong requirement to provide for remote management of network elements and servers. A number of means have been developed to provide for remote management of these systems. Remote management of the elements can be provided in-band (the remote administrator communicates with the system using the same network as the user data for the managed system) or out-of-band (the remote administrator communicates with the system using a means other than the network utilized by the user data of the managed system). Typically, when out-of-band remote management is utilized, the administrator is connecting to a console or management port on the system.

[05] However, the security of the network elements and servers is a concern when remote management is allowed. For a system to be secure, it must first of all be physically secure from attack. Without physical security, it is almost certain an attacker can compromise a system. If management of the system requires physical access to the system then the security of the management is as strong as the physical security. But, as stated above, in most networks this is not practical. It is important, though, to realize that opening up a device to remote management allows a larger window for attackers to utilize in an attack. The use and security of remote management must be carefully considered.

[06] The struggle to find a workable compromise between the utility of remote management of devices and the need to maintain the security of the devices can clearly be seen in “The Router Security Configuration Guide” published by the National Security Agency. On page 49 of the guide it is recommended that a terminal (or computer) be a stand-alone device protected from unauthorized access. This goes back to requiring physical access to the network element in order to access the console or management port. On page 47 the guide also states, “Permitting direct dial-in to any vital piece of network infrastructure is potentially very risky...”. In-band management methods often depend to one degree or another on the security of the network the element is a part of to protect the management traffic. While this MIGHT provide a reasonable level of protection from external attacks (initiated from outside the network), it generally will not provide a sufficient level of protection from an internal attack (initiated from inside a network). To help reduce the vulnerability to internal attack, the “The Router Security Configuration Guide” has recommendation using a dedicated network or at least dedicated network segments for remote network administration of routers. Building out a dedicated network for management would be quite expensive for most networks.

[07] There are definite advantages to having an out-of-band remote management connection to network elements that utilize connectivity that is diverse from the primary network connection. One of the primary purposes of the remote management connection is to assist the remote administrator or technician in troubleshooting network problems. With in-band management, if a network problem has hindered connectivity to a network element, management connectivity to that element could be lost when it is needed the most. An out-of-band management solution is more likely to allow the administrator or technician to still remotely access the network element to troubleshoot and resolve the network problem in a timely manner.

Also, the out-of-band management connection providing connectivity to the console or management port of an element might be available for the initial configuration of the device whereas an in-band management connection might not be available for initial configuration. It is also possible that some functions can only be performed using the console or management port of the element. An example of this would be Password Recovery on a Cisco router. While a dedicated and secure out-of-band network would be the most preferable solution for out-of-band management from a security standpoint, the cost of such a solution is generally prohibitive. While some form of public shared network, such as the Public Switched Telephone Network (PSTN) or an Integrated Services Digital Network (ISDN) provides the most cost effective solution for a diverse out-of-band connection, the security of such solutions is a major concern.

[08] The most straightforward means of providing out-of-band connectivity to a network element is to place a modem on the console port of a networking element connecting it to the PSTN. However, any perimeter security for the network such as firewalls and access-lists has just been completely bypassed, providing a vulnerable point for intruders to attack. If an attacker knows or can determine the phone number of the modem then the only security is the logon protection on the networking element itself. War dialers will generally find phone numbers connected to modems.

[09] It is important to realize that most protocols used for assisting in the remote management of network elements do not provide for the confidentiality or integrity of the information being transmitted between the remote administrator and the network element or strong authentication of the parties involved. This is especially critical if a public shared network such as the PSTN is utilized for the out-of-band connectivity. For instance, the protocol most frequently utilized for remote login to network elements (Telnet) transmits traffic in the clear (any one who can tap into or sniff the network can capture and understand the traffic). It would not be uncommon for a remote administrator to be transmitting passwords and device configurations over such a connection. If an attacker were able to insert himself in the middle of such a connection, even more attacks would be possible.

[10] In order to control the cost of remote management solutions, user traffic and management traffic are being commingled at multiple locations throughout the management path. The use of the user data network for the transport of management traffic is one place this commingling of data occurs. There is also a commingling of user and management data in the

device itself. User traffic and device management traffic comes in over the same user interface, uses the same memory and buffers, and is processed by the same processor. The commingling of user traffic and management traffic can compromise the security of the device management.

[11] Maintenance and troubleshooting of network element problems can often be facilitated by having the element maintain an accurate time clock. One way of keeping the clock accurate on an element is to allow the network to set the clock utilizing a protocol such as Network Time Protocol (NTP). If an attacker were able to alter or interfere with NTP, the smooth operation of the network could be interfered with.

[12] Some network elements utilize Hypertext Transfer Protocol (HTTP) or Hypertext Transfer Protocol over Secure Socket Layer (HTTPS) for managing the network element. HTTP transmits information in the clear and is susceptible to impersonation and data compromise. Often HTTPS is only authenticating the server to the client. For remote management, mutual authentication can be important.

[13] A common difficulty in maintaining the elements of a network is keeping the software on the elements updated with patches that protect them from new exploits by hackers and crackers. One of the functions of firewalls is to protect the elements behind them from these exploits so that it is not as critical to keep protected elements updated. However, this does require the firewalls to be updated regularly to protect the elements from new exploits. Keeping the firewalls updated can be difficult.

[14] Some of these concerns can be addressed by technology existing today. A firewall/Virtual Private Network (VPN) appliance could be utilized to protect management traffic that flows from a user interface on the managed device to a central location providing services for the management of the device. This would protect the management data while it flows over the in-band network. A terminal server could be utilized to allow an administrator to dial into the managed device over an out-of-band network. Some terminal servers will even allow the connection from the administrator to the terminal server to be encrypted for protection of the management data. However, this does not solve all the concerns. The terminal server does not fully support a centralized mechanism to verify an administrator should have access to the managed device, especially if the in-band network is down. The VPN/Firewall does not support connection to the console port of the managed device. Even having both a VPN/Firewall and a terminal server would leave gaps in the protection.

[15] It would take a number of different devices configured to work together to address most of the concerns. This would require a number of additional devices in an environment where rack space is very expensive. Having another two or three devices in the rack is quite expensive in more ways than just the cost of the equipment.

[16] An object of the invention is to provide for the secure management of devices without requiring additional devices taking up additional rack space by embedding the necessary hardware and software for secure management of the device in the device to be managed.

[17] Another object of the invention is to separate user traffic from device management traffic, logically and/or physically, both in the device and while in transit over a network.

[18] Another object of the invention is to establish a network enabled management interface for the secure remote management of the device. While similar to a console interface, the secure interface is to be engineered to secure remote access.

[19] Another object of the invention is to define a virtual management interface for controlling management traffic that will flow over the in-band interfaces. The virtual management interface provides for logical separation of the management data from the user data even when the management data and the user data will transit the same physical network.

[20] Another object of the invention is to utilize standard packet filtering firewall methods to restrict access to the management interfaces of the device, both real and virtual, based on factors such as the source address of the connection request.

[21] Another object of the invention is to use a means of authentication, including the possibility of strong authentication, to verify the identity of the administrator and restrict access to the management interfaces based on the identity of the administrator.

[22] Another object of the invention is to use an Access Control Server (ACS) to allow for centralized authentication and authorization of administrators as well as to log accounting information.

[23] Another object of the invention is to restrict functions and protocols allowed to access the management interfaces to those necessary for remote management of that network element.

[24] Another object of the invention is to dynamically update the rules used for restricting access to the management interfaces.

[25] Another object of the invention is to provide for the confidentiality and integrity of the information transmitted between the remote administrator and the management interfaces.

[26] Another object of the invention is to monitor the management interfaces for proper functioning and alert management software upon failure.

[27] Another object of the invention is to monitor management interfaces for possible attacks and report possible attacks to Intrusion Detection System management software.

[28] Another object of the invention is to provide for secure connections to a network providing network services both utilizing the managed device's user data connections and over a dedicated secure network enabled management connection.

[29] Another object of the invention is to access network services such as ACS, Domain Name Server (DNS), NTP, Network Management Stations, Logging Servers, and Intrusion Detection Systems management stations over either an in-band network connection or over the network enabled management connection (or both) and dynamically switch between which network is being utilized for the service.

[30] Another object of the invention is to allow a remote administrator or technician to access the management interfaces via either an in-band connection or a network enabled management connection (or both).

[31] Yet another object of the invention is to provide auditing information about attempted connections (successful and unsuccessful) to the management interfaces.

[32] Yet another object of the invention is to alert management software on unsuccessful attempts to connect to management interfaces.

[33] Yet another object of the invention is to be able to securely manage the device through in-band connections to the virtual management interface, the network enabled management connection, or the console port.

[34] A further object of the invention is to enable securing a plurality of management protocols for managing the device, both over in-band connections to the virtual management interface and over the secure network enabled management connection. Exemplary protocols to be secured include telnet, ssh, http, https, snmp, dns, tftp, ftp, ntp, and xml.

[35] A further object of the invention is to provide the end-point for an in-band or out-of-band connection between the network segments providing network services and the management interfaces on the managed devices which can be secured using protocols such as IPSec or may be unsecured.

[36] A further object of the invention is to provide the ability for the managed device to switch which management path is being utilized for management network services, in particular, the managed device can utilize in-band connections for management network services when available and switch to using a network enabled management connection for management network services when an inband connection is not available.

[37] A further objective of the invention is to enable the secure management of other devices that are collocated with the managed device.

[38] A further objective of the invention is to provide for the ability to easily upgrade existing hardware to support secure management of the device.

[39] Finally, it is an object of the present invention to accomplish the foregoing objectives in a simple and cost effective manner.

Summary of the Invention

[40] The present invention addresses the foregoing problems, as well as other problems, by providing an exemplary embodiment of a Secure Management Access Control for Computer Chipset (SMACC) for inclusion in devices that are to be enabled for remote management. In this preferred exemplary embodiment, the SMACC functions are implemented on a separate processor with separate flash and memory; however, this is not intended to limit the implementation of these features to separate chipsets in a device. These features also can be combined with other hardware and software features such as being integrated with a modem or with the main processor of a device. Some of the features of the SMACC can also be implemented separately. Such implementations would still be within the spirit and scope of this invention.

[41] An additional exemplary embodiment of the invention implements the SMACC processor and supporting chips on a card that can be inserted into the device to be managed. In this implementation, management of the device is controlled by the card and the administrator must connect to the card to manage the device. The administrator will be able to connect to the SMACC card through the Virtual Management Interface (VMI) or directly through a SMACC interface on the SMACC card.

[42] A primary function of the SMACC is to provide for the separation of management data from user data both within the device being managed and while the management

information is in transit. Within the device, the SMACC sets up a separate processor for receiving management information and interacting with the control functions of the device. Remote management functions will pass through the SMACC processor. The SMACC also provides for a separate interface for management functions that is network enabled to facilitate remote management. Various embodiments of the invention allow for different types of interfaces to be utilized for the network enabled management interfaces. Exemplary interfaces could include POTS connections to the PSTN, Packet Cellular connections to a cellular provider's infrastructure, an Ethernet interface to a broadband modem and the Internet, or a wireless connection. The types of interfaces are not limited to those in this list to be within the scope of this invention. A VMI is also established for logically separating management traffic from user data when the in-band path is to be used for management data. The VMI is the interface between the SMACC chipset and the user data interfaces. The VMI utilizes existing and developing technology such as VPN to build secure tunnels between the SMACC chipset and the management center while utilizing the user data interfaces of the managed device and the user network to provide the transport of the management data cost effectively. The VPN technology provides the logical separation, confidentiality, and integrity of the management traffic while it is in transit.

[43] Another primary function of the SMACC is to protect the management interfaces from attack. This is accomplished through a combination of firewall, VPN, and authentication and authorization applications. The SMACC chipset implements the logic to support VPN tunnels to the management center, thus protecting the management traffic between the management interface on the SMACC (VMI or SMACC interface) and the management center. The firewall functionality protects the SMACC chipset from access by unauthorized parties, both internal and external, and from unauthorized protocols. An exemplary embodiment of the SMACC can be configured to only allow the protocols necessary for managing the device to access the SMACC. No other protocols will be allowed through the interface. The authentication and authorization of administrators can either be configured and accomplished locally to the SMACC, and/or centralized services can be accessed at the management center utilizing the secure management interfaces to the management center (VMI or SMACC interface). The SMACC implements the client protocol for exemplary services such a Remote

Authentication Dial-In User Service (RADIUS) protocol, Terminal Access Controller Access Control System (TACACS+), or Lightweight Directory Access Protocol (LDAP).

[44] The SMACC allows the use of shared networks including public networks such as the Internet, the Public Switched Telephone Network (PSTN), or a corporate backbone network for secure network management while still providing for the confidentiality, integrity, and logical separation of the management data. In an exemplary embodiment, this is accomplished by utilizing Virtual Private Networking (VPN) technology to build secure tunnels between one or more management interface on the SMACC and the management center providing network resources for management. The VPN tunnels provide for logical separation of the management traffic from any other traffic utilizing the network. The VPN tunnels also utilize encryption to provide for the confidentiality and integrity of the management traffic utilizing the network. SMACC increases both the security and the availability of remote management of devices.

[45] The SMACC allows for access controls both on what remote devices can connect to the management interfaces of the SMACC (and can therefore access the management functions of the managed device), and what administrators (users) are allowed to connect to the management interfaces of the SMACC. In an exemplary embodiment of the invention, what devices are allowed to connect to the SMACC can be filtered by network level addresses such as Internet Protocol (IP) addresses or calling telephone numbers, as well as by presenting valid credentials such as a certificate or proof of a shared secret. Administrators can also be challenged for valid credentials and authorization. The SMACC can check these credentials either in a locally maintained database on the SMACC or by utilizing centralized authentication services at the management center. The SMACC optionally implements one or more authentication clients such as a RADIUS, TACACS+, or LDAP client to utilize the centralized authentication services.

[46] In a preferred exemplary embodiment of the SMACC, the SMACC can be configured to monitor the various management interfaces for connectivity and report the loss of connectivity to the management center. This includes interfaces that are to be available even if they are not currently being utilized to transport management data. One example of this is when a POTS line is connected to a SMACC interface and is configured to be a backup for management data if the connection to the management center via the VMI is not available. In this situation, the SMACC can be configured to be checking the availability of the connection to the PSTN even when it is not

being utilized for management data. It is critical for that POTS connection to be there if it is needed. Other types of interfaces can also be checked for availability by the SMACC processor. If the SMACC detects a management interface that it is monitoring as being unavailable, it reports this to the management center over another available management interface using protocols such as Simple Network Management Protocol (SNMP), trap or syslog.

[47] In a preferred exemplary embodiment of the SMACC, the SMACC can utilize network services to provide a centralized and scalable solution for secure remote management of the network. Some of the network services accessed can include an ACS to provide for centralized authentication and authorization at the user level, a NTP server to provide time synchronization for the managed device, a DNS to provide secure name resolution for the managed device, a logging server to provide for centralized logging, a network management station to provide for centralized management of the managed device utilizing a protocol such as SNMP, and an intrusion detection/prevention management system.

[48] The SMACC implements the clients to access and utilize these services. The SMACC can access the centralized service via the VMI and through a connection to the backbone network (or an operations support network) or via a SMACC interface through an out-of-band network, such as the PSTN or a packet cellular network, to the management center. In a preferred exemplary embodiment of the SMACC, the clients running on the SMACC can access the servers at the management center over any available management interface and the interface being utilized can change depending on the conditions at the time.

[49] The SMACC may have information it can configure to send to the management center concerning its own operation and the operation of the managed device (or proxy managed devices). This information can be sent to the management center utilizing protocols such as SNMP traps, or remote syslog records as well as other possible proprietary or standards based protocols. The SMACC will utilize the first available management interface in a preferred priority list for transporting this information back to the management center. This information can include auditing information, operational information, and alerts as well as other possible information.

[50] A preferred exemplary embodiment of the SMACC will detect attempts to access the management interfaces by unauthorized systems or users. The SMACC can be configured to report these attempts to the management center. The SMACC can also be configured to detect

and report attempts to utilize unauthorized protocols to access the management interfaces to the SMACC.

[51] An exemplary embodiment of the SMACC enables remote administrators to access the managed device via the SMACC by first accessing the management center and then connecting to the SMACC via the secure tunnel from the management center to the SMACC. The plurality of possible paths may exist from the management center to the SMACC, both utilizing the VMI on the SMACC and SMACC interfaces on the SMACC. The remote administrator will be able to utilize any of these interfaces to connect from the management center to the SMACC.

[52] A variety of exemplary embodiments are possible supporting various protocols for the management of the managed device via the SMACC. These protocols can utilize any of the SMACC management interfaces. Example management protocols that can be supported include: telnet, ssh, http, https, snmp, dns, tftp, ftp, ntp, and xml. This is not intended to be an exhaustive list of possible protocols for which there might be requirements for supporting for the management of a device.

[53] An additional exemplary embodiment of the SMACC allows the SMACC processor to be utilized as a secure management proxy for other devices collocated with the device containing the SMACC. User interfaces on the managed device can be specified as proxy management interfaces. Proxy Management Interfaces can be either Console Interfaces or Dedicated Management Segments and will connect to a proxy managed device. A proxy managed device does not have a SMACC, but is being managed via a collocated device that does have a SMACC. Since the communications between the proxy managed device and the SMACC enabled device may not be secure, it can be important for the proxy managed device and the SMACC enabled device to be physically secured together.

[54] The SMACC processor will control data in and out of the interfaces configured as proxy management interfaces for the passing of management information between the proxy managed device and the SMACC. In a preferred exemplary embodiment, proxy console management interfaces will be restricted to management data only and will be serial interfaces providing a terminal emulation program type of access to the console or management interface on the proxy managed device collocated with the SMACC enabled device. In an exemplary embodiment of the invention, the proxy dedicated management segment is also restricted to

management data only in order to provide for physical separation of management data from user data, however, an additional exemplary embodiment of the invention would allow the segment to support both user data and management data. In the exemplary embodiment in which the management segment will support both management data and user data, the SMACC and optionally support utilizing VPN technology to logically separate the management data from user data. The VPN technology could also be utilized to ensure confidentiality and integrity of the management data between the SMACC and the proxy managed device.

[55] In a preferred exemplary embodiment of the SMACC that supports proxy management of collocated devices, the SMACC can implement both application level proxies for the management protocols to be supported as well as an application level tunnel for passing management traffic between the proxy managed device and the management center.

[56] An additional exemplary embodiment of the current invention implements the SMACC chipset on a card that can be connected to a system. In the illustrated exemplary embodiment, the card connects to the managed system via a Peripheral Component Interconnect (PCI) bus, but this should not be taken to limit the current invention to a PCI implementation. Any connection of the card to a system to be managed is within the scope of the current invention. The use of a card connecting to a system provides for greater opportunity to utilize the SMACC with existing hardware and hardware designs.

[57] The SMACC provides for the separation of management data from user data both in the device being managed and while the management data is in transit. Since there is a very strong need for securing remote management and for separating management data from user data, yet this has not been done primarily because it has been considered too expensive to implement, this invention is clearly not obvious to one of ordinary skill in this area. This invention combines existing building blocks along with additional new and innovative features and concepts to solve the shortcomings in remote management in an integrated and affordable solution.

Brief Description of the Drawings

[58] Fig. 1 is a block diagram for an exemplary embodiment of the embedded SMACC chip set within a device to be monitored;

- [59] Fig. 2 is a block diagram for an exemplary embodiment of the embedded SMACC chip set within a device to be monitored along with a power supply;
- [60] Fig. 3 illustrates the interfaces to the SMACC processor;
- [61] Fig. 4 illustrates network connectivity to the management interfaces;
- [62] Fig. 5 illustrates an additional design for connectivity to the management interfaces;
- [63] Fig. 6 illustrates the packet filtering for access to the SMACC;
- [64] Fig. 7 illustrates the selection of a secure path for management services;
- [65] Fig. 8 illustrates changing which management path is used for management services;
- [66] Fig. 9 is a block diagram of an exemplary embodiment of the embedded SMACC chipset including an integrated modem;
- [67] Fig. 10 is a block diagram of an exemplary embodiment of the embedded SMACC chipset including an Ethernet SMACC interface;
- [68] Fig. 11 is a block diagram of an exemplary embodiment of the embedded SMACC chipset including an integrated packet cellular interface;
- [69] Fig. 12 is a block diagram of an exemplary embodiment of the embedded SMACC chipset including an slot interface for an interchangeable card for a SMACC interface card;
- [70] Fig. 13 is a block diagram of an exemplary embodiment of the embedded SMACC chipset including multiple SMACC interfaces;
- [71] Fig. 14 is a block diagram of an exemplary embodiment of the embedded SMACC chipset without dedicated flash, nvram, or ram chips;
- [72] Fig. 15 illustrates a sample circuit for monitoring the voltage on a telephone line;
- [73] Fig. 16 illustrates a process for monitoring a telephone line for connectivity to a central office;
- [74] Fig. 17 is a block diagram of an exemplary embodiment of the embedded SMACC chipset with an external UPS;
- [75] Fig. 18 is a block diagram of an exemplary embodiment of a SMACC card for interfacing to a managed device;
- [76] Fig. 19 is a depiction of the system architecture of an exemplary embodiment of a system with a SMACC card;
- [77] Fig. 20 is a block diagram of an exemplary embodiment of a system with an embedded SMACC showing a user interface configured as a proxy management interface;

- [78] Fig. 21 illustrates a user interface configured as a proxy management interface;
- [79] Fig. 22 illustrates a SMACC enabled device acting as a proxy management system for another collocated device providing both a console connection to the collocated device and a management segment connection to the collocated device;
- [80] Fig. 23 is a block diagram of an exemplary embodiment of the SMACC card including an Ethernet SMACC interface;
- [81] Fig. 24 is a block diagram of an exemplary embodiment of the SMACC card including a Packet Cellular SMACC interface;
- [82] Fig. 25 is a block diagram of an exemplary embodiment of the SMACC card including an analog modem based SMACC interface;
- [83] Fig. 26 is a block diagram of an exemplary embodiment of the SMACC card including multiple SMACC interfaces;
- [84] Fig. 27 is a block diagram of an exemplary embodiment of the SMACC card in which dedicated proxy management interfaces are included on the card;
- [85] Fig. 28 is a block diagram of an exemplary embodiment of the SMACC processor connecting to a PCI bus in which a controller chip is required for the SMACC processor to access the PCI Bus;
- [86] Fig. 29 is a block diagram of an exemplary embodiment of the SMACC processor connecting to the system Central Processing Unit (CPU) bus of the system the SMACC is being embedded in in which a controller chip is required for the SMACC processor to access the system CPU bus;
- [87] Fig. 30 is a block diagram of an exemplary embodiment of the SMACC chipset with an additional chip to implement the VPN technology;
- [88] Fig. 31 illustrates an exemplary power up sequence for a system that has both a SMACC processor and a main processor; and
- [89] Fig. 32 illustrates Fast Hangup.

Detailed Description of the Preferred Embodiment

Fig. 1 illustrates the positioning of the SMACC chipset within the managed device. In a preferred exemplary embodiment, the SMACC processor has its own flash, Non-Volatile Random Access Memory (NVRAM), and Random Access Memory (RAM) for operating,

however, an alternative exemplary embodiment as illustrated in Fig. 14 is also possible in which the SMACC processor utilizes the same flash, NVRAM, and RAM chips as the main processor and such implementations are not excluded. In these exemplary embodiments, it may be necessary to utilize a controller chip for the SMACC processor to access the necessary bus as illustrated in Figs. 28 and 29.

[90] The Flash chip is intended to save the programs and microcode for the SMACC processor, the NVRAM to store operating parameters and configurations, and the RAM to act as the operating memory for the SMACC processor. It should be noted that additional chips can be included for additional security or to offload processing from the SMACC processor while still being included in the intent of this invention. An additional exemplary embodiment of the SMACC chipset, as illustrated in Fig. 30, included a dedicated chip for providing IPSec.

[91] It is also likely in time that system on chip (SOC) capabilities will continue to expand to the point where it could be economical to use a processor for the SMACC processor that includes some or all of the flash, or NVRAM on the same chip as the SMACC processor. To do so is still considered to be within the scope of this invention.

[92] Fig. 2 illustrates the option of the SMACC processor and supporting chips having a power circuit from the power supply that is different from the circuit utilized for the main processor of the SMACC enabled device. This would enable a couple of significant features. It would allow the inclusion of a small Uninterruptible Power Supply (UPS) that could then selectively provide power only to the SMACC when there is a power loss. The SMACC could then report the power loss over the SMACC interface that could still be operational even in the event of a loss of power (such as could be the case with a PSTN connection or if the SMACC interface is a cellular network connection). This way the UPS would not have to be large enough to provide power for the entire device while reporting the power outage. An additional feature enabled by a separate circuit for the SMACC chipset is the ability to reload and power cycle the SMACC chipset and the main device discreetly. The main device can be reloaded while the SMACC remains operational allowing for the secure remote monitoring and control of the device boot process over the SMACC interface. The SMACC processor can also be reloaded without the main device being reloaded at the same time.

[93] A preferred exemplary embodiment as illustrated in Fig. 31 allows for the device to be configured such that on power up, the SMACC chipset receives power first and is allowed to

load before the main device is powered up. This allows the main device boot process to be monitored over the SMACC interface on power up. An alternate exemplary embodiment provides for separate power switches for the two circuits such that they could be powered up separately. An additional exemplary embodiment includes separate connections to an external power source or outlets such that common remote power management solutions could be utilized to power up the SMACC separately from the main device.

[94] In a preferred exemplary embodiment of the SMACC, as shown in Fig. 3, the SMACC has two types of interfaces for transporting management traffic between the SMACC and the management center:

[95] Virtual Management Interface (VMI) – logically separates management traffic from user data traffic when a user interface on the managed device is going to be utilized for the network connection, and

[96] SMACC Network Enabled Management Interface – provides a physically separate interface for the management network connection rather than the user interfaces on the managed device.

Virtual Management Interface (VMI)

[97] The Virtual Management Interface (VMI) logically separates management traffic from user data when they are going to utilize the same interfaces on the managed device and the same physical network. In a preferred exemplary embodiment of the current invention, the VMI will utilize a Virtual Private Network (VPN) mechanism such as IPSec to encrypt, protect and logically separate the management traffic before the traffic is passed to the user interfaces. The managed device is designed such that management traffic is not allowed to be sent directly to the user interfaces. All management traffic must go through one of the management interfaces (the VMI or the SMACC interface). The VMI allows any of the user interfaces to be utilized for management traffic while still protecting the management interface and traffic.

SMACC Network Enabled Management Interface (SMACC Interface)

[98] The SMACC interface is an interface that is dedicated for management traffic for management of the device. The SMACC interface is a network enabled interface and therefore is able to support the full range of protocols that are typically utilized for management of a

device such as SNMP, Trivial File Transfer Protocol (TFTP), File Transfer Protocol (FTP), DNS, SysLog, Telnet, Secure Shell (SSH), or HTTP. The SMACC interface will also control access to the management functions of the device and protect the management traffic in transit through the utilization of VPN technology such as IPSec. The SMACC interface can be utilized to connect to a central location that provides for these network services as well as for remote administrator access.

[99] Several embodiments of the SMACC with different types of physical interfaces for a SMACC interface are illustrated. Fig. 9 illustrates an embodiment in which the physical SMACC interface is an integrated analog modem for connection to a PSTN. Fig. 10 illustrates an embodiment of the SMACC in which the physical SMACC interface is an integrated Ethernet interface. This embodiment would be particularly useful if the SMACC interface is going to be connected to a broadband modem and the out-of-band connection is going to be over the Internet. Fig. 11 illustrates an embodiment of the SMACC in which the SMACC interface is an integrated cellular interface for connectivity to a packet cellular network. This embodiment would be both for inclusion in transmission equipment where it would be difficult to break out a circuit for monitoring the equipment, and where the primary circuit is a Digital Subscriber Line (DSL) where disruption of the DSL circuit could also disrupt a POTS line. Fig. 12 illustrates an embodiment of the SMACC in which the SMACC interface includes a card slot such as a Personal Computer Memory Card International Association (PCMCIA) card for inclusion of different types of interface cards. There are exemplary embodiments only are not intended to limit the SMACC to these types of interfaces. Other types of interfaces are also within the scope of this invention.

[100] A SMACC is not limited to only one SMACC interface in implementation. Fig. 13 illustrates an embodiment of the SMACC that includes multiple SMACC interfaces.

SMACC Card

[101] The SMACC can also be implemented as a card for insertion into a device to be SMACC enabled. An exemplary embodiment of a SMACC card is depicted in Fig. 18. Fig. 19 illustrates the architecture of a system that has a SMACC card inserted into a slot. In this situation, it is likely that the SMACC card would not be on the same bus as the main CPU and the main CPU could well already have its own console port.

[102] There are also a number of exemplary embodiments of SMACC cards with different exemplary embodiments included. Fig. 25 illustrates an embodiment in which the physical SMACC interface is an integrated analog modem for connection to a PSTN. Fig. 23 illustrates an embodiment of the SMACC card in which the physical SMACC interface is an integrated Ethernet interface. This embodiment would be particularly useful if the SMACC interface is going to be connected to a broadband modem and the out-of-band connection is going to be over the Internet. Fig. 24 illustrates an embodiment of the SMACC card in which the SMACC interface is an integrated cellular interface for connectivity to a packet cellular network. This embodiment would be both for inclusion in transmission equipment where it would be difficult to break out a circuit for monitoring the equipment and where the primary circuit is a DSL line where disruption of the DSL circuit could also disrupt a POTS line. There are exemplary embodiments only are not intended to limit the SMACC to these types of interfaces. Other types of interfaces are also within the scope of this invention.

[103] A SMACC card is not limited to only one SMACC interface in implementation. Fig. 26 illustrates an embodiment of the SMACC card that includes multiple SMACC interfaces.

Proxy Management Interfaces

[104] In an additional exemplary embodiment of the SMACC in which the SMACC can be utilized to manage additional devices collocated with the SMACC enabled device, there is a third type of management interface as illustrated in Figs. 20 and 21. A proxy management interface is not utilized for communicating management data between the SMACC and the remote management center. Rather, a proxy management interface is utilized for communicating management data between a collocated device and the SMACC in which the SMACC is going to act as a proxy for the device providing it with a secure connection to the management center. The SMACC may also provide the proxy managed device with proxy applications for the management of the device.

[105] The connections between the SMACC enabled device and the proxy-managed device (as illustrated in Fig. 22) can be either connections to the console port on the proxy managed device, and or a dedicated management segment.

[106] When the connection between the SMACC enabled device and the proxy-managed device, illustrated in Fig. 22, is to a console or management interface on the proxy-managed

device, the interface is generally a serial interface and is dedicated for management data. This interface is also typically only used to provide a command line interface for the device.

[107] The dedicated management segment, also illustrated in Fig. 22, typically can support some sort of networking protocol. In this exemplary embodiment of the SMACC, the dedicated management segment supports the Transmission Control Protocol/Internet Protocol (TCP/IP) protocol for networking. This allows a more complete suite of management protocols to be utilized for the management of the proxy managed device. The SMACC enabled device can be utilized to protect Telnet, SSH, TFTP, FTP, HTTP, HTTPS, DNS, NTP, Extensible Markup Language (XML), syslog records, RADIUS transactions, TACACS+ transactions, LDAP transactions, or other protocols for the proxy managed device. Some protocols or services might be configured to be passed through from the proxy-managed device to the management center utilizing an application level gateway on the SMACC for passing this information on. Other applications, such as SNMP, might be implemented as a proxy on the SMACC.

[108] In a preferred exemplary embodiment of the SMACC with proxy management capabilities, the proxy management segments to the proxy managed devices (as illustrated in Figs. 20-22) should be dedicated for management data between the SMACC and the proxy managed device. This provides the separation of the management data as recommended in the NSA guidelines. The interface type for the dedicated management segment can be any type of interface supported by both the SMACC enabled device and the proxy managed device.

[109] However, in some environments, the dedication of an interface for management data may be greater than a customer can support. For this environment, and alternative embodiment of the SMACC proxy function supports the use of proxy management segments that allows both management data addressed and routed to the SMACC and user data over the same interface. Another alternative embodiment for the SMACC proxy function when the proxy interface is a Local Area Network (LAN) interface is the use of Virtual LANs (VLANs) for separating management traffic from user traffic. VLANs are not as secure as utilizing physically separate interfaces, but for many customers this would be acceptable. One VLAN would point to the SMACC and another VLAN would be utilized for user data. Another alternative embodiment for the SMACC proxy function would be to utilize a VPN tunnel between the SMACC and the proxy managed device. This is an option when the proxy managed device supports the VPN

technology on the interface and allows some aggregation of the VPN tunnels at the SMACC enabled device so that every device does not need a VPN tunnel back to the management center.

[110] An additional exemplary embodiment of the SMACC illustrated in Fig. 26 includes additional interfaces as part of the SMACC chipset dedicated as proxy management interfaces. This would be especially useful when a SMACC card is being utilized to SMACC enable a device that does not have an abundance of native user interfaces (for example, a server). This would allow a card to be inserted into a system to manage that system and would allow the card to also manage other collocated systems even if the SMACC enabled system does not have the additional interfaces. These interfaces could be a combination of serial interfaces to be utilized as console proxy management interfaces and interfaces of any type to be utilized as dedicated management segments.

Access to Network Services

[111] To effectively manage a large number of devices, it is important for the devices to have access to a set of services provided through a network. These services are often centrally located at a network operations center (NOC) or management center, as depicted in Fig. 4, or at an Application Service provider (ASP). A SMACC enabled device will be able to be configured to securely access these network services over the user interfaces utilizing the VMI or over the SMACC interfaces. There are significant advantages in a network design that allows the management service to be accessed over either type of interface. Typically the network services like an ACS server, a DNS server, a logging server, a network management station, or an NTP server will need to be accessed.

[112] There are a number of ways the management interfaces of a SMACC enabled device can be utilized in a network for remote management of the network elements. Some of the sample configurations include:

- Secure Management Access via remote administrator dial over PSTN
- Secure Management Access via Gateway or Network Access Server (NAS) to Out-of-Band Network
- Network Services provided via Out-of-Band Network

Secure Management Access via remote administrator dial direct to SMACC

[113] In this scenario shown in Fig. 4, the remote administrator is using his work station to directly dial the PSTN phone number for the managed device in order to access a SMACC interface on the managed device. In a preferred exemplary embodiment, the SMACC sets up a point-to-point Internet Protocol (IP) connection to the remote administrator and the remote administrator would run a secure client such as secure shell or an HTTPS client on his workstation for communicating with the SMACC interface. This would secure the communications between the remote administrator and the SMACC.

[114] The SMACC can and should be configured to perform authentication and authorization of the remote administrator before allowing access to the management functions for the managed device. While the SMACC could be configured with a database of authorized administrators, it is also possible to utilize an ACS to authenticate and authorize a remote administrator. The SMACC utilizes its VMI to access network services such as an ACS in the network using a protocol such as RADIUS, TACACS+, or LDAP. This would allow centralized authentication and authorization of the administrators. In this type of configuration, if connectivity to the network services is down, the SMACC would not be able to utilize a central ACS and would have to revert to allowing access based on a locally maintained database.

Secure Management Access via Gateway to Out-of-Band Network

[115] Fig. 5 shows another configuration that can be used to allow remote administrators access to a SMACC enabled managed device. A gateway or Network Access Server (NAS) is utilized to dial out to the SMACC interface on the managed device from a secure network that provides the needed network services. When the administrator initiates a connection to the address of the SMACC interface, the gateway will initialize a connection to the SMACC interface (using a VPN tunnel) if a connection is not already up. The SMACC interface can then also utilize the VPN tunnel back to the management center to access the needed network services (including an authentication/authorization server) if the services are not available over the VMI.

[116] The out-of-band network does not have to be a PSTN network. For instance, in Fig. 5, if the SMACC's connection to the out-of-Band network is a DSL connection to an Internet Service Provider (ISP) and the Network Operations Center Network has a gateway to the internet this diagram would work as well.

Network Services provided via Out-of-Band Network

[117] One difficulty with using a centralized ACS is that, on occasion, a network administrator is attempting to access a network element during problem determination when the network connectivity is down. Requiring an administrator to know a locally configured password on the managed device to access the management interface to a network element every time network access was down would risk the security of the system. Too many people would have access to the password.

[118] A major advantage of the network design in Fig. 5 is the utilization of the out-of-band network connection for connectivity to the ACS for authentication and authorization as well as other network services. If the SMACC interface is utilizing a broadband connection such as DSL to access an ISP and then is utilizing a VPN client to connect to a VPN gateway on the in-band data network, not only can this VPN tunnel be used for remote administrator access to the SMACC interface, but the VPN tunnel can also be used by the SMACC interface to access network services at the network operations center. The managed device can be configured to always utilize the out-of-band connection for network services, or only to utilize it when they are not available over the VMI because the user network connections are down. The connection between the User Data Network and the Internet would be able to utilize VPN services that exist today for VPN gateways.

[119] In the configurations where a VPN tunnel is being built across the out-of-band network as shown in Fig. 5, the network administrator may decide to allow the remote administrators to use the telnet protocol to access the managed device if they trust the security of the Network Operations Center Network. The telnet traffic would travel in the clear between the remote administrator and the gateway. In the exemplary embodiment, the gateway would encapsulate the traffic in an Internet Protocol Security (IPSec) tunnel providing for data confidentiality and integrity as it travels across the “untrusted” out-of-band network. The SMACC would then receive the traffic from the IPSec tunnel and would proxy the management of the rest of the device.

[120] The SMACC can be configured to filter packets on various criteria such as origin IP address or telephone number. For example, as shown in Fig. 6, if a packet is not from a valid source, log information will be recorded and the packet will be discarded. If the destination of the packet is for the managed device, the packet will continue to be processed. If the destination

is not for the managed device, the packet may optionally be logged and will be discarded. The management interfaces of the SMACC can also be configured to only allow the specific interfaces necessary for management of the device. If the packet is not for a necessary protocol, it will optionally be logged and discarded.

[121] The SMACC can make extensive use of network services in order to facilitate the remote management of SMACC enabled devices. These services can include a centralized authentication server, a network time server (utilizing a protocol such as network time protocol (NTP)), remote logging servers, and network management stations for reporting. The SMACC is set up to be able to access these network servers over the VMI interface or over the SMACC interface. There are circumstances where it would be useful to utilize the VMI interface when connectivity is available and only use the SMACC interface when the in-band connections for the VMI are not available. The SMACC can be configured to attempt to connect to network services according to a priority list starting at the top of the list, see Fig. 7.

[122] In the event that an existing connection of a network service is lost, the SMACC can attempt to reestablish a connection to the network service over another interface, as shown in Fig. 8. The SMACC can be configured to give preference to the VMI or to the SMACC interface.

[123] An exemplary embodiment of the SMACC interface may include an integrated modem, as illustrated in Fig. 9, consisting of an interface to a telephone line and a Data Circuit-terminating Equipment (DCE) interface for a connection to Data Terminal Equipment (DTE). Additional exemplary embodiments of the SMACC interface may include one or more of the network interfaces illustrated by Figs. 10 and 11 which include but is not limited to an Ethernet interface or a cellular interface. In particular, this application would be well suited for cellular packet data.

[124] An additional exemplary embodiment is depicted in Fig. 12 in which the SMACC interface on a device can be a card where the user can select the type of interface they want for the SMACC interface by plugging the appropriate card into the SMACC slot.

[125] An additional alternate exemplary embodiment is illustrated in Fig. 13 in which there can be multiple SMACC interfaces for dedicated management access. This provides for additional redundancy and reliability of the SMACC interface functionality over multiple networks.

[126] Fig. 14 depicts an additional exemplary embodiment in which the SMACC processor does not have its own dedicated Flash, RAM, or NVRAM, but rather shares these resources with the main processor. In this embodiment, segments of these resources would be dedicated for use by the SMACC processor.

[127] Command, Control, and Monitoring functions for the device being managed are passed through the SMACC processor. This will include configuration commands, operational commands, monitoring commands and updates, etc. Only user data will not have to pass through the SMACC processor. SNMP traps and remote syslog messages will also be passed through the SMACC and sent on either the VMI or a SMACC interface.

[128] When an administrator is logged into the SMACC processor for controlling the managed device, there will also be commands for configuring and controlling the SMACC processor itself. This will include configuration of parameters for the SMACC interface, the Virtual Management Interface, configuration of connectivity parameters for the gateway device at one or more management centers, configuration of network services located at the management center, configuration of access controls restricting what administrators are authorized to access the management functions of the device, as well as other possible functions and commands. Among the possible services to be configured on the SMACC for utilizing are network management stations utilizing SNMP or XML, TFTP servers, FTP servers, remote syslog servers, NTP servers, and DNS servers.

[129] The availability of multiple and diverse paths for reporting status information to monitoring stations or allowing for remote configuration of the device are significant advantages of designs where only one or non-diverse paths are utilized. The use of the SMACC interface to connect to and protect traffic over a diverse network allows the device to regularly report on the status of the device and its connections even in the face of a loss of the network connection. This status information can be reported via standardized means such as Simple Network Management Protocol (SNMP), or via private protocols, or a combination of both either over the VMI when it is available and/or over the SMACC interface. This is especially important if status information is to be communicated when the user interfaces are down.

[130] It is also possible to configure the SMACC processor to receive console messages and log messages, filter the messages, and send an alert over either the VMI and/or the SMACC interface for certain error conditions such as a particular interface going down. If the interface

that went down were the interface the router would normally utilize for connectivity to the management center, the SMACC interface might be the only way the alert gets sent.

[131] The use of the VMI for connecting to the SMACC processor for management of the device allows the management data to logically isolated from user data, but still physically use the user data network. This has the possibility of reducing charges for the secondary network utilized by the SMACC interface, especially if charges for the secondary network are based upon connect time or packet/byte counts. The normal operational method of reaching the SMACC processor would be through the in-band network to the VMI, and only then a path to the VMI is not available would the secondary network need to be utilized. Since the secondary network often has lower performance characteristic, it is likely that the in-band path through the VMI will also provide for a faster connection when the in-band data network connection(s) are available.

[132] The exemplary embodiment of the SMACC interface includes a POTS connection to the PSTN depicted in Fig. 9. An additional exemplary embodiment includes a means of automatically monitoring the status of the connection to the telephone network. This monitoring can be accomplished by measuring the voltage levels of the telephone line with a circuit similar to Fig. 15 and/or by periodically taking the line off-hook and checking for dial tone as shown in the flow chart in Fig. 16. If the SMACC detects the connection to the telephone network is malfunctioning it will notify a monitoring station using the management connection over the VMI or if additional SMACC interfaces are operational, over another SMACC interface.

[133] In the exemplary embodiment depicted in Fig. 2 where a UPS is incorporated to supply a limited amount of power to the SMACC processor and chipset on the loss of power to the managed device, an additional exemplary embodiment allows the SMACC processor to monitor the supply of external power to the power supply. The exemplary embodiment depicted in Fig. 17 utilizes an external UPS to provide a limited supply of power in the event of a power outage and provide a management connection from the external UPS to the SMACC for management of the UPS. This would include notification by the UPS to the SMACC on the loss of external power. If the SMACC detects a power loss from the external power source, it will notify the management center of the loss of power. It is likely that the VMI will not be able to be utilized for this notification if power has been lost, but for certain secondary networks such as the PSTN network or a cellular network, it is likely that the SMACC interface to that secondary network would be able to be used to report the outage.

[134] In yet another exemplary embodiment of the SMACC processor as depicted in Fig. 2, the SMACC processor can provide a means of “cycling” the power for the managed device. When logged into the SMACC processor, the administrator could issue the “power cycle” command to cycle the power for the circuit for the main processor (circuit 2 in Fig. 2). Allowing an administrator to power cycle device while connected to SMACC processor over a SMACC interface allows the remote administrator to see all the boot commands for the managed device.

[135] In order to defend against denial-of-service attacks on the PSTN line the SMACC Interface receives Caller ID on the calls it receives. Filtering of calls based on Caller ID can be performed by the SMACC processor. In an exemplary embodiment, calls from an unauthorized source will be answered and immediately disconnected as illustrated in Fig. 32. Notification of the attack can be made to the management center (over the VMI or a SMACC interface). If the VMI does not have an operational path to the management center and a SMACC interface is not available, the SMACC processor can be configured to bring up a SMACC interface to report the attack to the management center.

[136] The VMI allows the SMACC processor to utilize data network ports to securely tunnel management traffic to the management center. The SMACC will run a suitable Virtual Private Network (VPN) protocol such as IPSec over the VMI. This allows the SMACC to take advantage of many services available at the management center such as network management applications, Network Time Protocol Servers, Log Server, Access Control Servers, and provide remote access to the managed device and more specifically the SMACC over the data network. Examples of protocols exemplary embodiments of the SMACC could utilize to allow an administrator access to the SMACC include but are not limited to HTTP, HTTPS, Telnet, or Secure Shell.

[137] The SMACC has the capability to provide management information to a network management station. This could be implemented via standardized protocols such as SNMP or via proprietary protocols. The SMACC can be configured to allow a remote network management station to query the SMACC for information and/or for the SMACC to initiate sending information to the network management station. The SMACC can be configured to send selected information on a periodic basis as well as send selected information when specified threshold conditions are met or error conditions occur. This is referred to as setting traps for information to be sent. Some management protocols also allow operating parameters of the

SMACC to be changed by the remote administrator using the protocol. This information will be sent over either the VMI or over a SMACC Interface and will be encrypted using a VPN protocol.

[138] SMACC access to the management center servers allows the SMACC to access an NTP Server and a log server. The NTP server allows the SMACC to maintain an accurate time source and to use the time source for time stamping log information. The SMACC could also log events both locally and remotely at a log server over the network. Keeping proper log and audit information is a vital part of network management.

[139] An additional service the SMACC can utilize through the VMI or the SMACC Interfaces is an Access Control Server (ACS). The SMACC will run a client for authentication and can communicate with one or more ACS using standardized protocols such as RADIUS or proprietary protocols. This would allow the SMACC to authenticate and authorize users connecting to the SMACC and determine their privileges on the SMACC. If a protocol such as TACACS+ is being used the SMACC would also be able to provide accounting information to the ACS.

[140] The advantages of using an ACS connected over the network is the user information, passwords and privileges can be configured on one central system rather than having to be configured in every device in the network. For larger networks with a large number of administrators centralized authentication is mandatory. The SMACC would be able to perform authentication and authorization using the connection to an ACS over the VMI or SMACC Interface. Allowing the SMACC to connect to the ACS over either the VMI or a SMACC Interface greatly improves the availability of the ACS to the managed device and the SMACC.

[141] In an exemplary embodiment, the SMACC might typically report ongoing network status information and alerts to a network management station using a protocol such as SNMP over the VMI. However, there are times when the SMACC will report network status information and alerts over a secondary network such as the PSTN using a SMACC interface. Typically, this would occur when the SMACC has lost connectivity to the Network Management Station via the VMI. One primary condition the SMACC might want to report in this manner would be the failure of all of the managed device interfaces that could provide a path to the VMI to the management center. A secondary network and a SMACC Interface would then be the only way the SMAC could report the outage. Another event might be the loss of power to the site

since the in-band connections could well be down due to the loss of power. To send the alert via a secondary network, the SMACC would initiate a connection using a SMACC Interface to the Management Center. Once this connection is established, the SMACC can send the alerts or status information to the Network Management Station over a secondary network not affected by the power outage (such as a PSTN or cellular network).

[142] As indicated above, one of the events that it might make sense to report over SMACC interface would be the loss of power at the site. The SMACC can be configured to report the loss the main external power source to the power supply. Upon detecting loss of power from the main power supply, the SMACC would be configured to bring up a connection to the management center over a SMACC interface utilizing a secondary network resistant to the affects of a power failure and send the alert to the log server and/or management station. This would provide a Network Management Center quick notification that the underlying cause of a network problem is a power outage at the remote location. This can save significant time during the problem determination process and help get the proper personal involved more quickly.

[143] An exemplary embodiment as depicted in Fig. 2 for providing the SMACC with power for reporting the power outage would include building a power supply with a small UPS and multiple circuits for the power. One circuit would provide power to the SMACC processor and its supporting chips including at least one SMACC Interface. This circuit would be backed up by the UPS. The second circuit would provide power to the rest of the managed device. When power is lost, the UPS would then only have to supply power to the SMACC chips allowing a smaller UPS to be utilized. The SMACC will monitor the power supply for loss of external power and send the alert when that event occurs.

[144] An additional exemplary embodiment in which there is only one circuit or the UPS backs up both circuits would have the SMACC shutting down the main device when there is a power outage saving power and allowing a smaller UPS to be utilized to enable reporting power outages. Yet another exemplary embodiment would utilize an external UPS as depicted in Fig. 17. The SMACC can be configured to designate a user interface as a UPS monitoring interface. Data from that interface would then be sent to the SMACC and the SMACC would be notified when external power has failed. At that point the SMACC can do a controlled shutdown of the main processor and report the outage over a SMACC interface. Shutting down the main processor right away would reduce power requirements and allow a smaller extern UPS to be

utilized. The SMACC could also be configured to forward any other log information or problem determination information. The SMACC could also be configured to keep the SMACC interface active for a specified length of time or as long as sufficient power remained in the UPS

[145] The SMACC can also be configured to provide notification to the Management Center when power is restored to the site. When power is restored the SMACC can be configured to wait a determined length of time (perhaps on the order of minutes) to give the network device time to boot and the in-band connection time to reestablish. At the end of that time the SMACC will check the VMI. If the VMI is able to access the Management Center via the in-band connection, the SMACC will send the notification of power restoration to the Management Center via the VMI. If the VMI is not up, then the SMACC will establish a connection over a SMACC Interface to report the power restoration.

[146] An exemplary embodiment of the SMACC that utilizes a POTS connection can monitor the physical connectivity of a telephone line to the SMACC interface that includes an integrated modem and send an alert if the telephone line is disconnected. Access to the SMACC can assist with problem determination and resolution when there is an outage in the network. It might be that the telephone connection to the SMACC interface does not get used very often. It is not unheard of for a telephone line to a modem on a console port to have stopped working for weeks and months before being needed and then discovered to not be functional. When it is needed, such as when there is an outage, it is important to know that the telephone connection will be there and working. Monitoring the connection to the line assists in doing this.

[147] When a telephone line is in the on-hook state, the line generally carries a voltage. In the USA this is in the vicinity of -48V. To monitor a line that is in the on-hook state it is important to draw very little current if any at all. A FET transistor circuit as depicted in Fig. 15 would be a good candidate for this circuit. A connection from the telephone line would be connected to the gate of the FET transistor. While a high enough negative voltage was maintained on the line, the FET would be in pinch off state and no current would flow between the source and the drain. If the negative voltage was removed from the line and the voltage at the gate went to zero, the FET would allow current to begin flowing between the source and the drain on the transistor. The circuit could detect the flowing current or the circuit could be designed so that the current flow caused a voltage drop at the output to the circuit. This voltage drop could be noted and used to trigger an alert that the line has been disconnected while at the

same time drawing very little if any current in the steady state condition. This circuit would provide the most accurate indication of the status of the connectivity of the telephone line when the integrated modem portion of the SMACC interface is in the on hook state.

[148] In situations where it is desirable not to physically monitor the voltage on the telephone line, a method for periodically monitoring the status of the telephone line is possible as depicted in Fig. 16. The SMACC can be configured to periodically request the SMACC interface to go off-hook and dial a telephone number to test for line status. If no telephone number is provided to dial the SMACC interface can go off-hook and monitor for dial tone. If dial tone is returned the SMACC will consider the line still connected. While this will not provide for continuous monitoring of the connectivity, it will still detect the line being disconnected in a timely manner. If the telephone line is currently in use for a connection, the SMACC will consider the line connected and will not need to do the test. The frequency at which this test is performed can be configured.

[149] For a SMACC interface to be as beneficial as possible, it is important for the access connection to the secondary network to be available for legitimate traffic. In the case of a POTS connection, this access could be taken away by an attack on the local loop connecting the SMACC interface to the PSTN local service provider. If an unauthorized user dials in repeatedly, even though they do not get authorized, they are still tying up the local loop connecting the SMACC interface to the central office. In fact, large ISPs have come under attack by Distributed DoS attacks where illegitimate traffic ties up their modem pools so the legitimate users cannot get access to the ISP.

[150] A first step is to monitor caller-id and to note the caller-id of connections that failed to authenticate. In some situations, it is reasonable to limit allowed calls to a set of preconfigured origination numbers. In other situations the originating number can be monitored and if a number of failures to authenticate originate from the same number then the SMACC can be configured for fast failure for some length of time. When a number is not in the list of authorized originating numbers or is flagged for fast failure, the SMACC interface will not attempt to authenticate the user, but will perform a fast hang-up as illustrated in Fig. 32. The SMACC will simply answer the call and immediately hang up on that call. The SMACC can also be configured to reject calls that are marked as P (Private) or O for a set length of time when the SMACC interface is under attack.

[151] Many improvements, modifications, and additions will be apparent to the skilled artisan without departing from the spirit and scope of the present invention as described herein and defined in the following claims.

What is claimed is:

1. A remote management system for securely managing a network device in a computer network, comprising:
 - at least one secure management access controller in direct communication with the network device;
 - a remote connection means for remotely communicating with the secure management access controller; and
 - at least one network communication means for connecting the network device to the computer network.
2. The system of claim 1 wherein the at least one secure management access controller includes a flash chip, non-volatile random access memory and random access memory.
3. The system of claim 1 wherein the at least one secure management access controller is embedded in the network device to be managed.
4. The system of claim 1 wherein the at least one secure management access controller accesses a flash chip, non-volatile random access memory and random access memory embedded in a main processor on the network device.
5. The system of claim 1 wherein the network device includes a card reader and the at least one secure management access controller is embedded in a card capable of being read by the card reader.
6. The system of claim 1 wherein the remote connection means comprises:
 - a communication system; and
 - a secure management access controller interface device.
7. The system of claim 6 wherein the communication system is selected from the group consisting of a Public Switched Telephone Network, a broadband connection and a Virtual

Private Network and the interface device is selected from the group consisting of an analog modem, a broadband modem, an Ethernet interface, a cellular interface and a card slot for accepting interface cards.

8. The system of claim 1 wherein the at least one network communication means is selected from the group consisting of a local area network, a serial interface and a network connection.

9. The system of claim 1 wherein the at least one network communication means supports at least one protocol selected from the group consisting of Transmission Control Protocol/Internet Protocol, Simple Network Management Protocol, Telnet, Trivial File Transfer Protocol, File Transfer Protocol, Hypertext Transfer Protocol, Hypertext Transfer Protocol over Secure Socket Layer and Secure Shell.

10. The system of claim 1 wherein user and management communications are transmitted to the at least one secure management access controller and the at least one controller further comprises a virtual management interface for separating the user communications from the management communications.

11. The system of claim 10 wherein the virtual management interface includes a protection means for protecting the management data.

12. The system of claim 10 wherein the virtual management interface includes a secure transmission tunnel to protect management communications and a firewall to protect the at least one management access controller from unauthorized access.

13. The system of claim 1 wherein the at least one the management access controller includes a monitoring means for monitoring the status of at least one computer network component and a network interface for reporting a status of the at least one computer network component to a network management station.

14. The system of claim 1 further comprising:
 - a network power supply;
 - a monitoring means for monitoring the status of the network power supply; and
 - a reporting means for reporting the status of the network power supply.
15. The system of claim 1 further comprising an independent power supply for supplying power to the management access controller.
16. The system of claim 1 further comprising a means for monitoring connection attempts made through the management access controller.
17. A remote management method for securely managing a network device in a computer network, comprising:
 - connecting a remote administrator to a secure management access controller in direct communication with the device to be managed;
 - verifying the identity of the remote administrator;
 - securing the connection between the remote administrator and the network device; and
 - providing a network communication means between the network device and the computer network.
18. The method of claim 17 in which the remote administrator is connected by means of a communication system and a secure management access controller interface device.
19. The method of claim 17 further comprising the step of:
 - providing a virtual management interface for separating user communications and management communications which are transmitted to the at least one secure management access controller.
20. The method of claim 17 in which the virtual management interface includes a secure transmission tunnel to protect management communications and a firewall to protect the secure management access controller from unauthorized access.

ABSTRACT OF THE INVENTION

A computer network management system for remotely managing a network device. The system includes a secure management access controller which is in direct communication with the network device. The secure management access controller provides access for remotely and securely managing a network. The secure management access controller further separates management communications from user communications to ensure the security of the management communications. The system further includes network and power monitoring and notification systems. The system further provides authentication and authorization capabilities for security purposes.

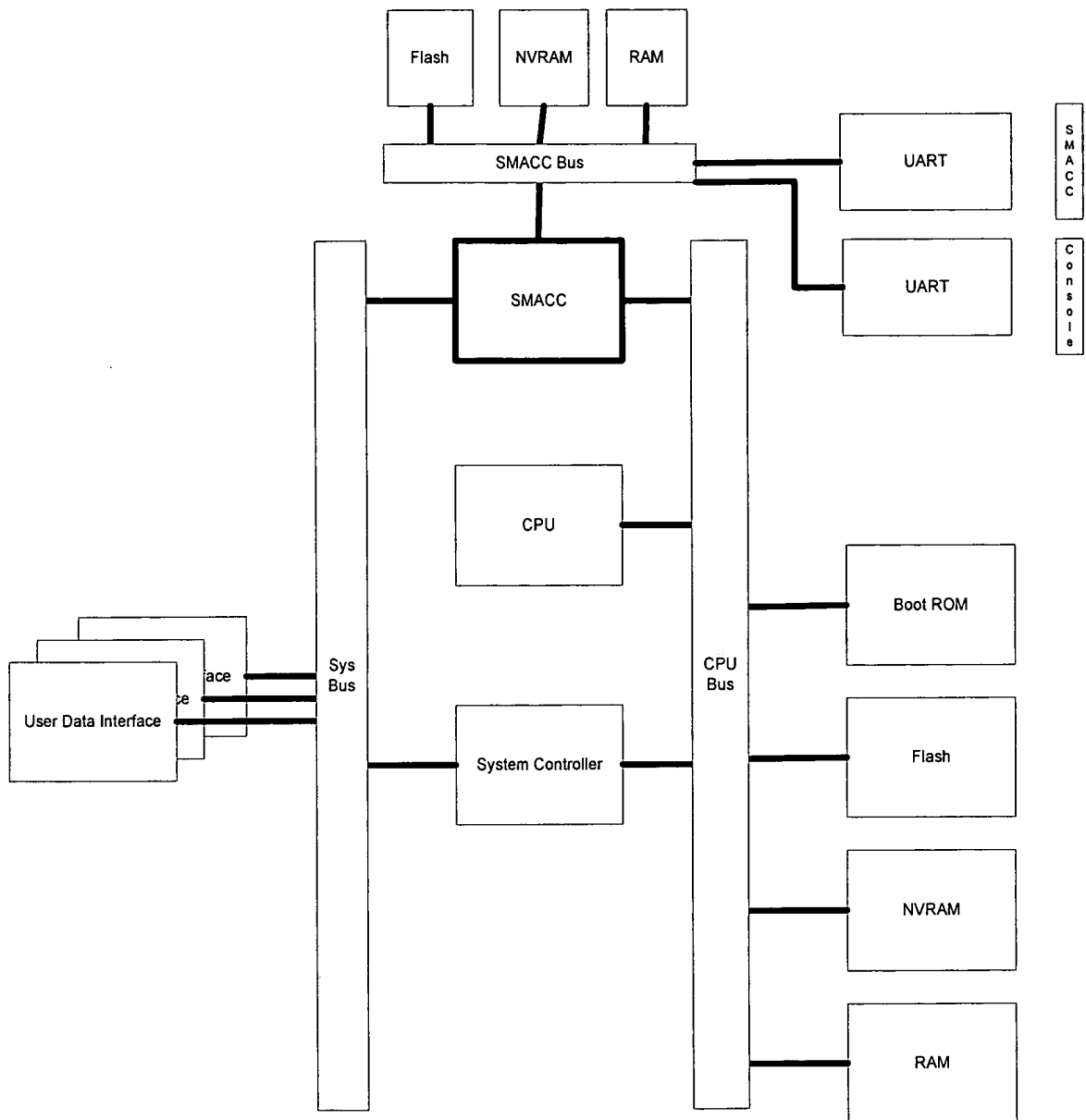


Fig. 1

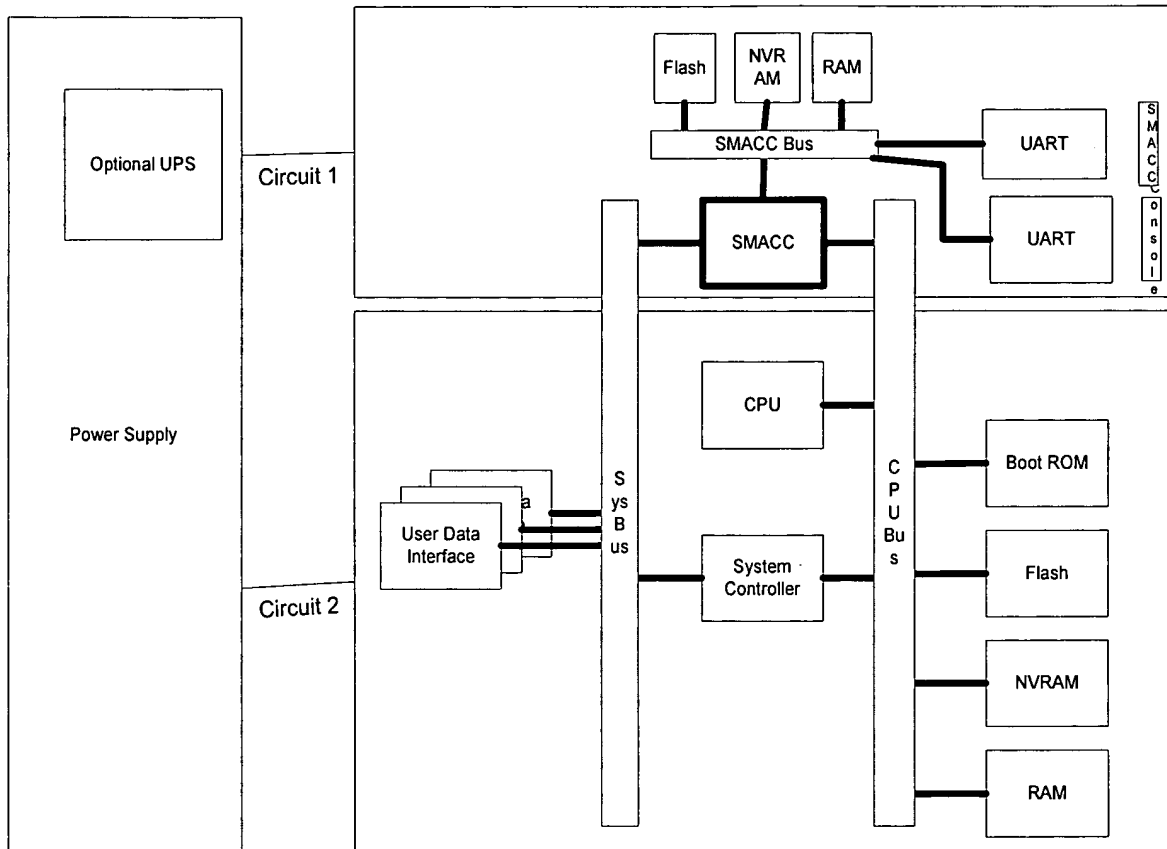


Fig. 2

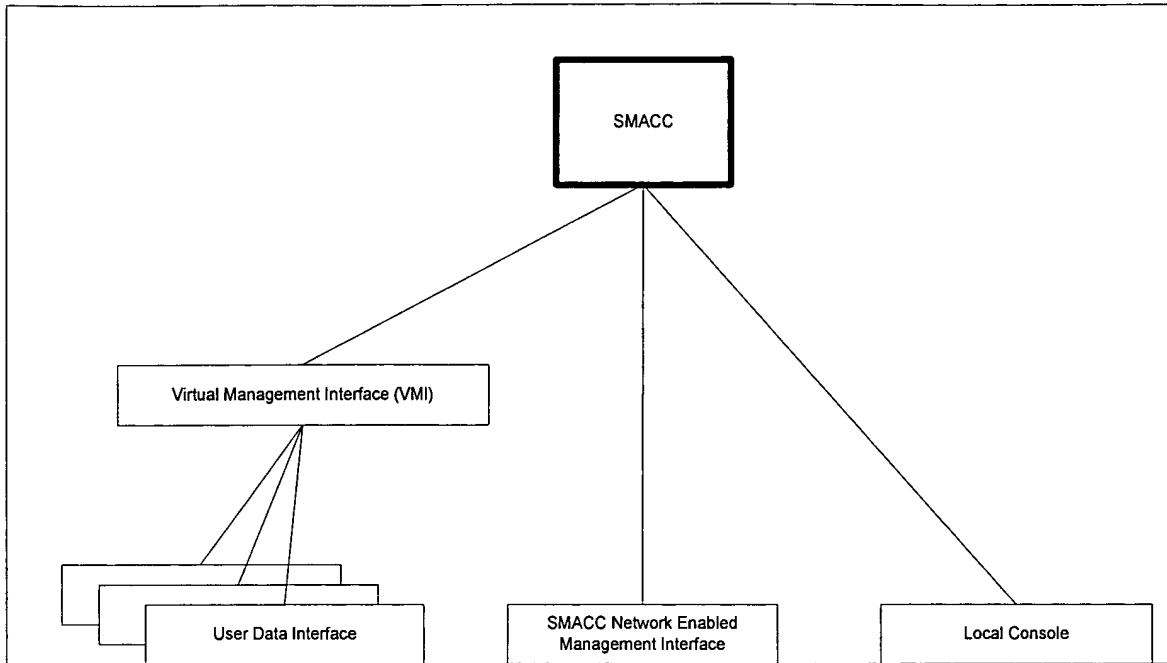


Fig. 3

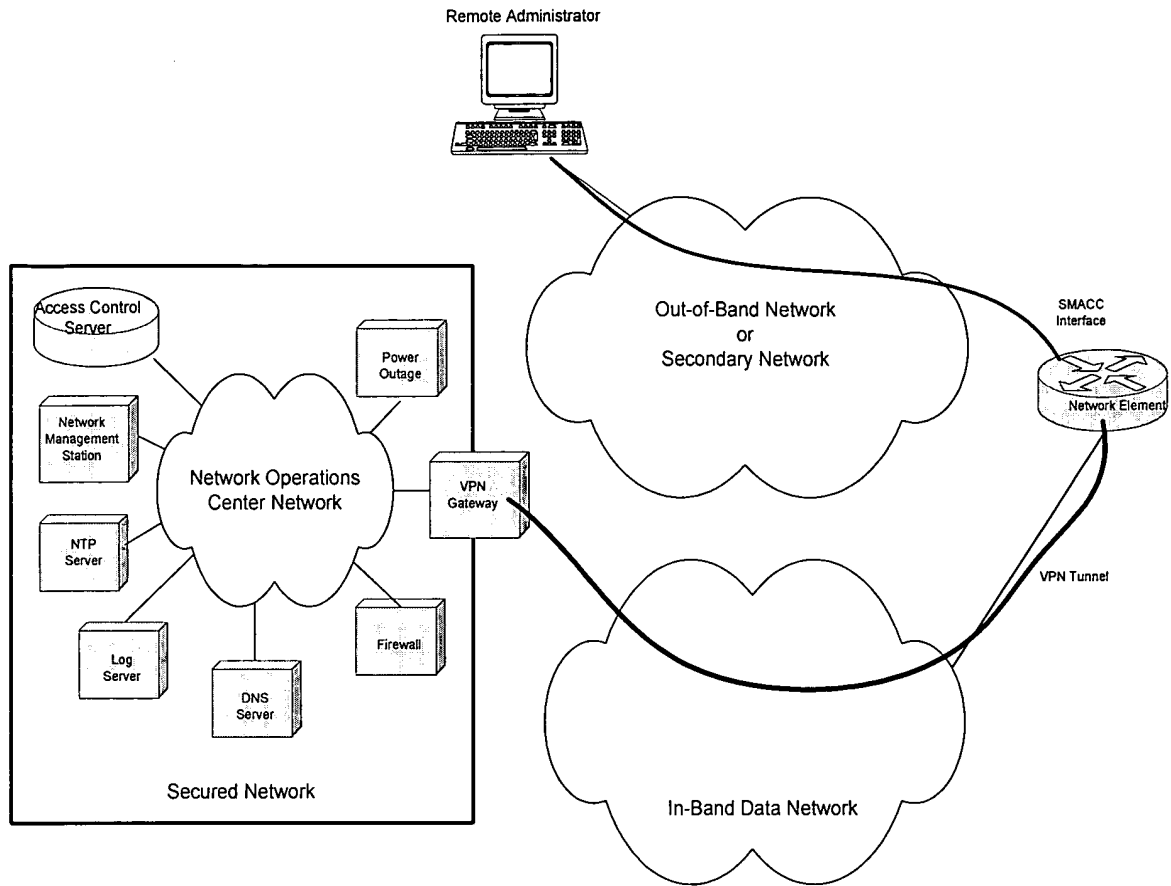


Fig. 4

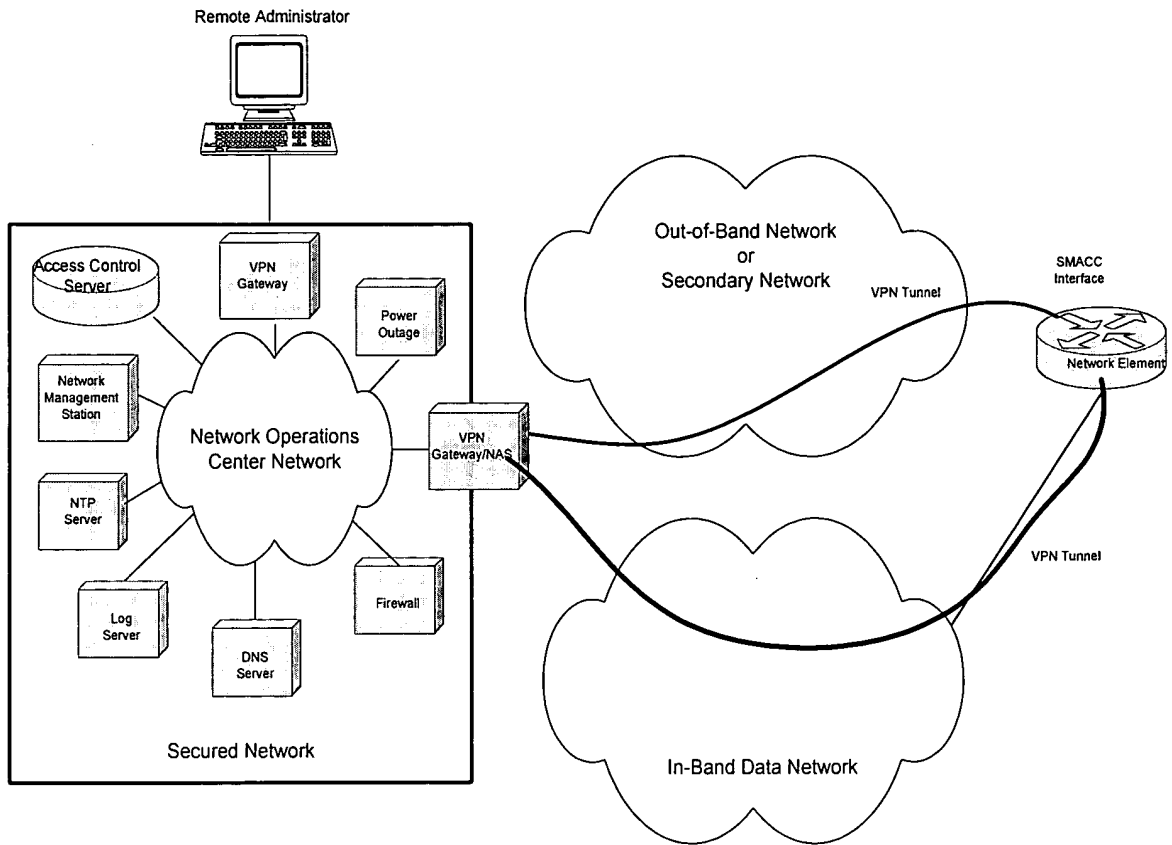


Fig. 5

Packet Filtering for packets received on VMI or SMACC interfaces

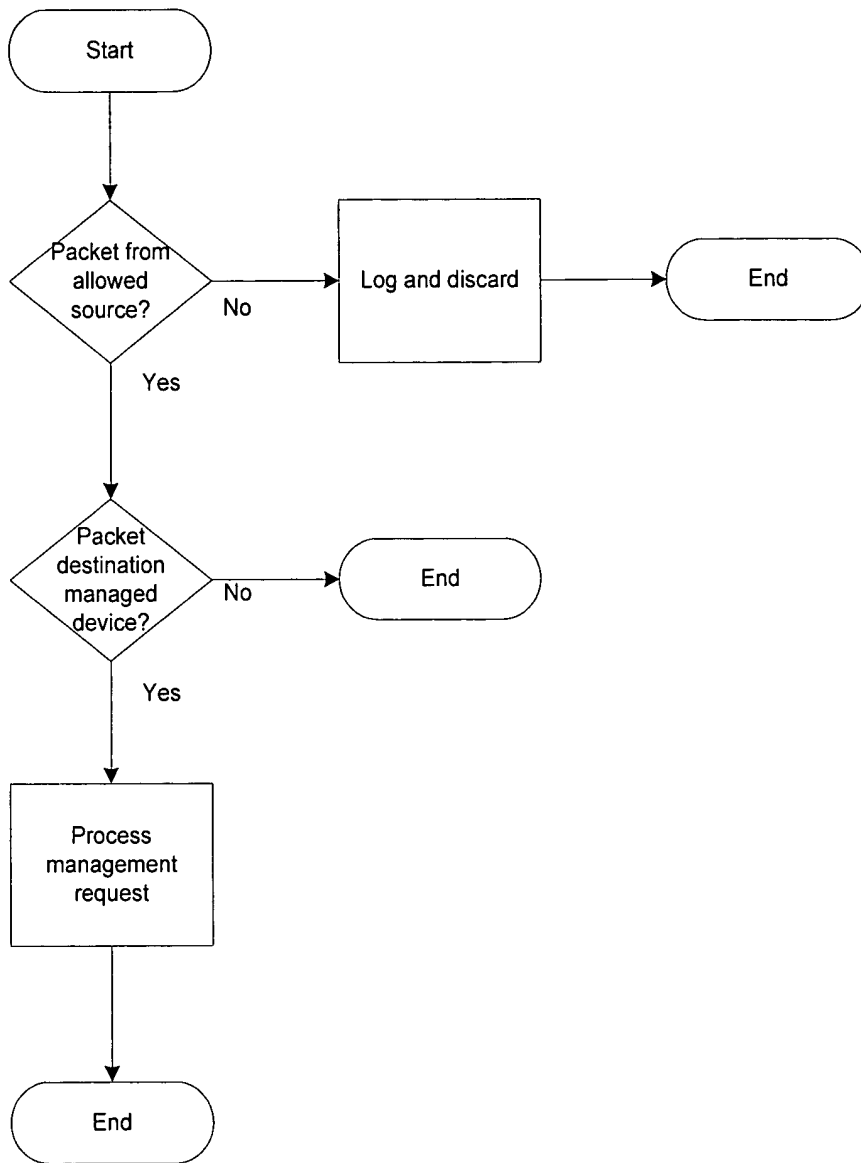


Fig. 6

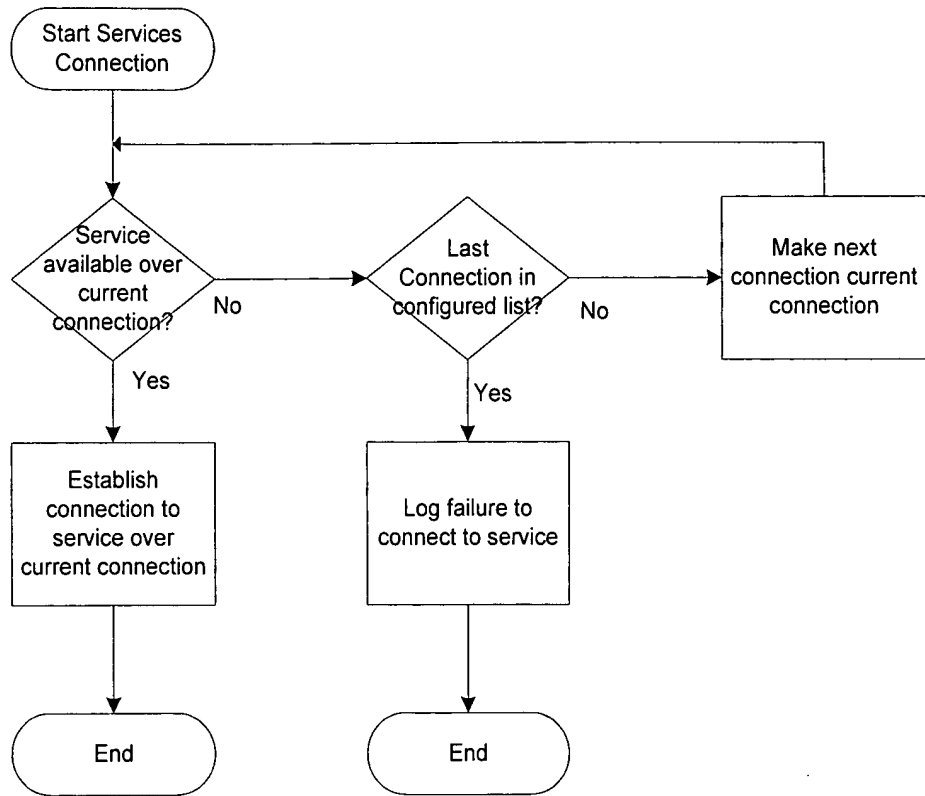


Fig. 7

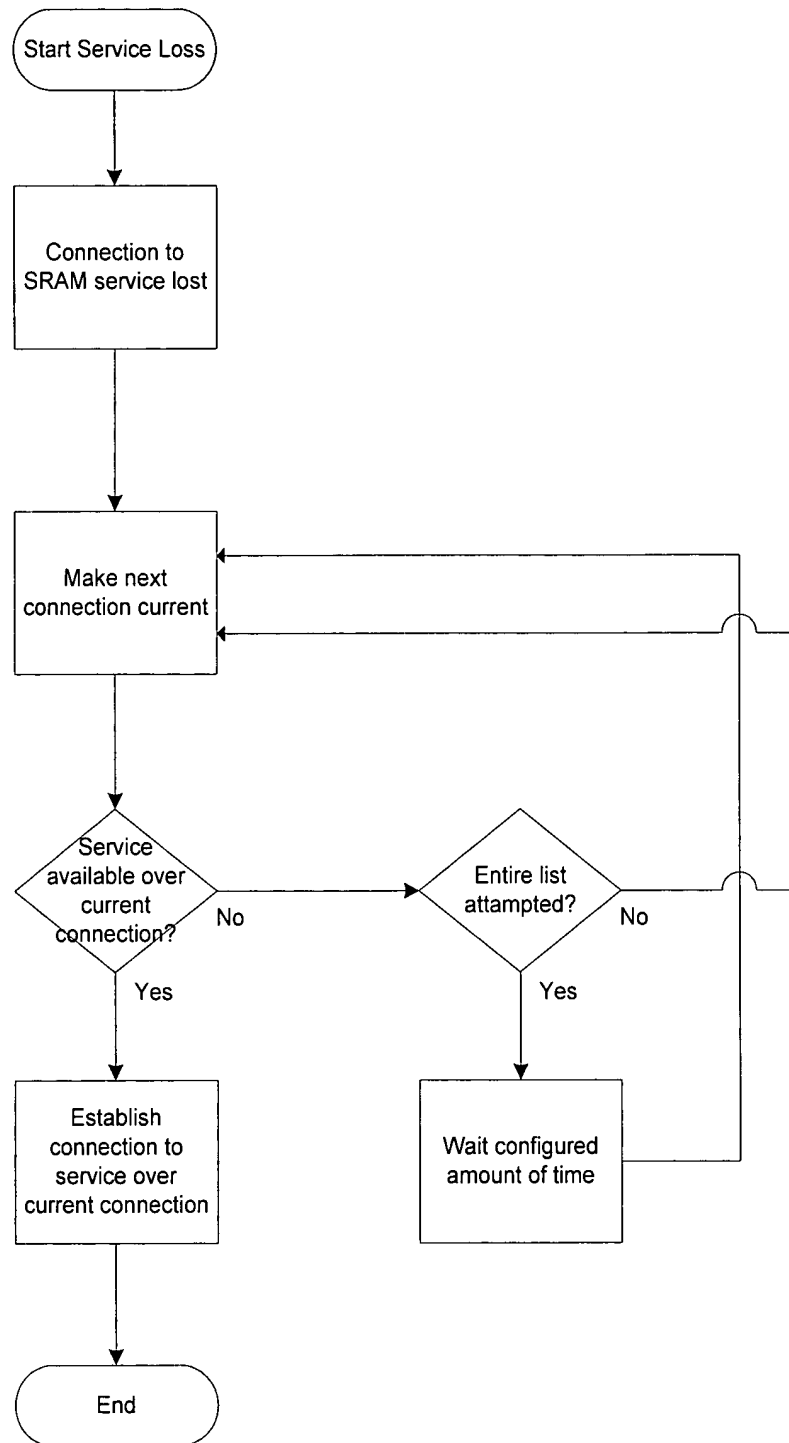


Fig. 8

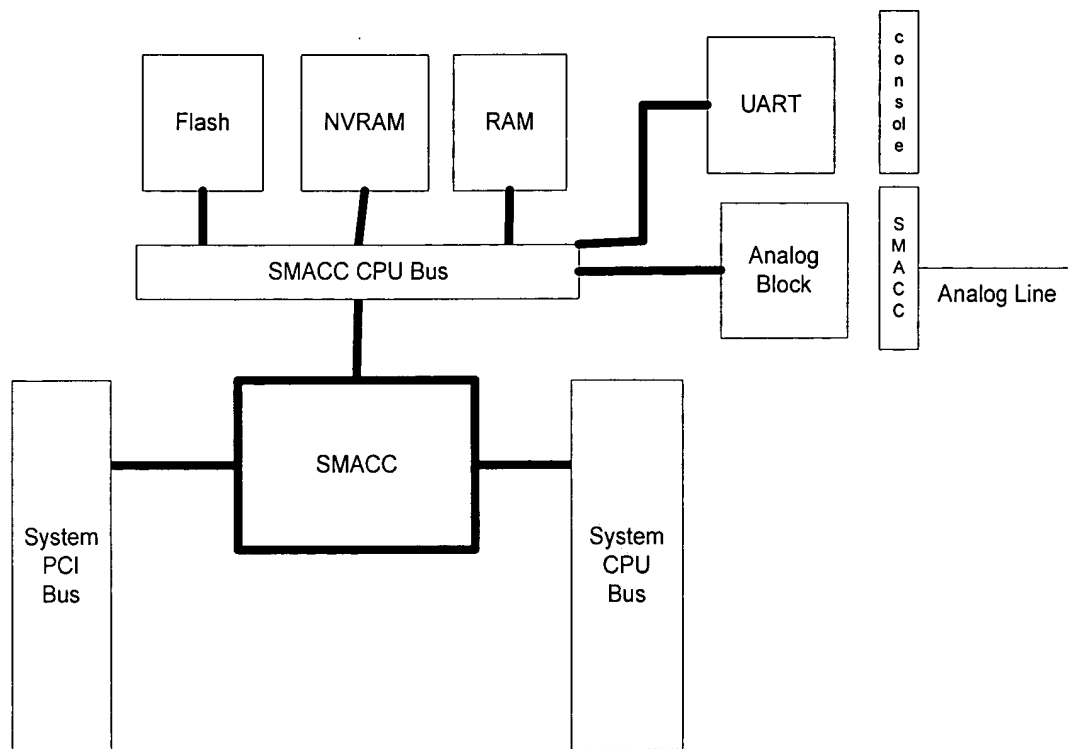


Fig. 9

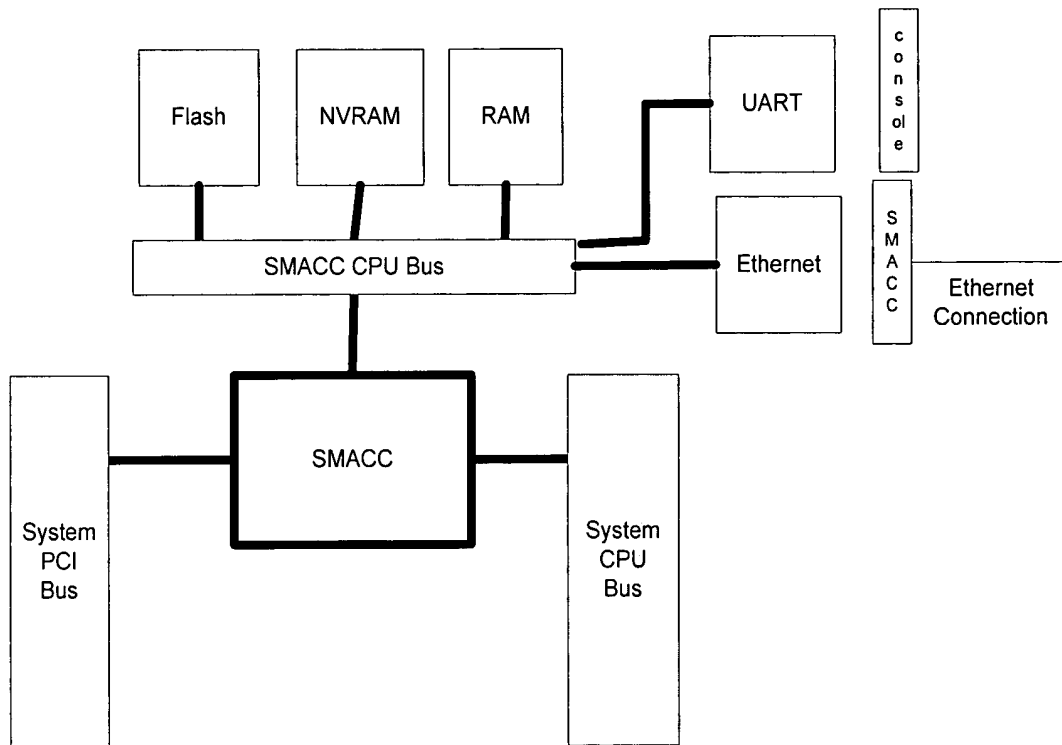


Fig. 10

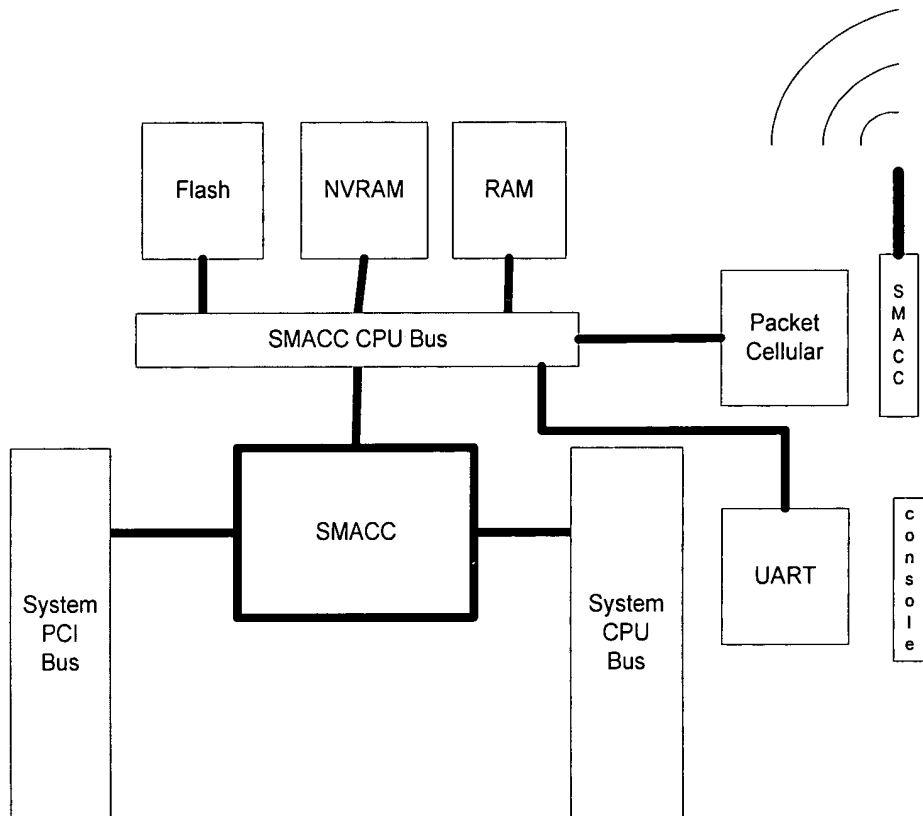
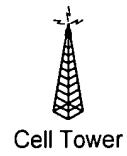


Fig. 11

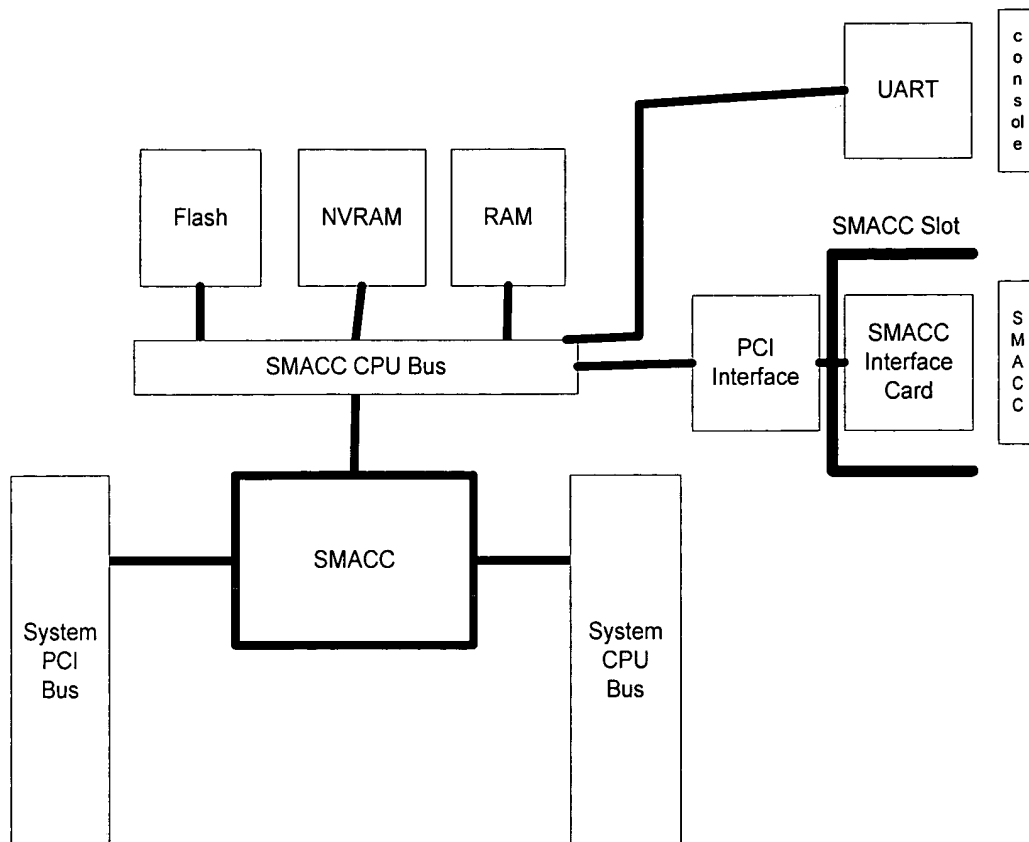


Fig. 12

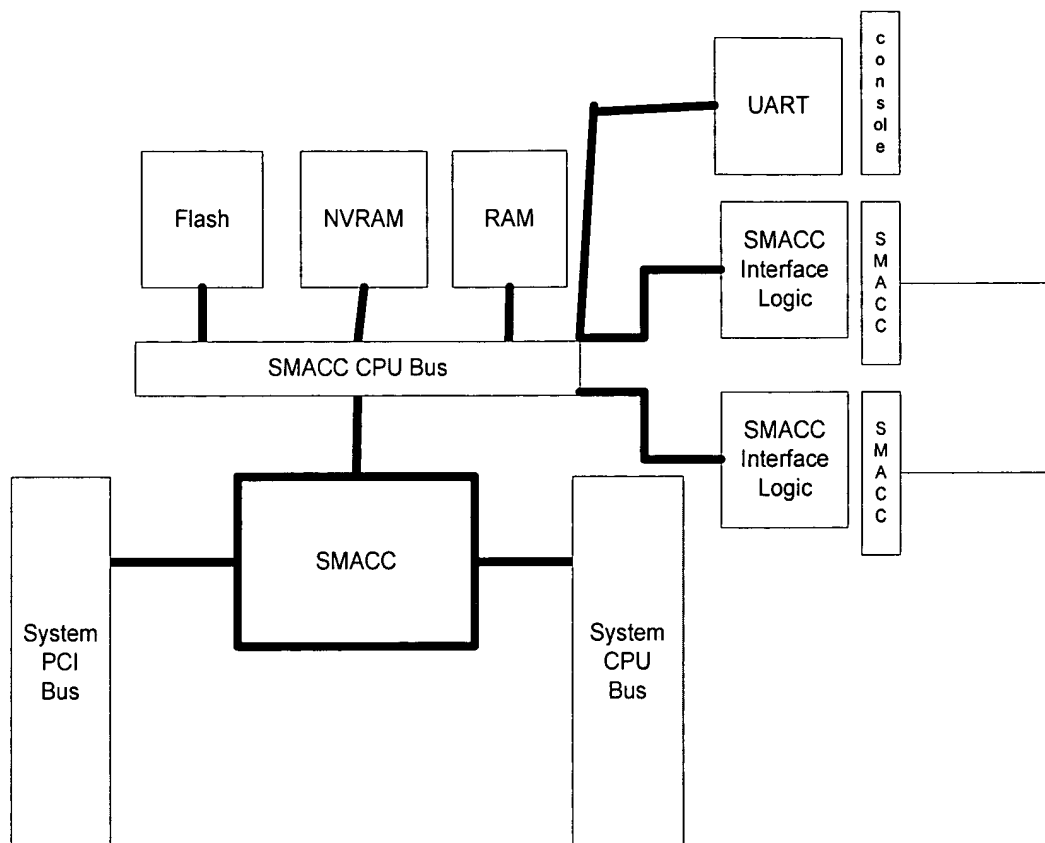


Fig. 13

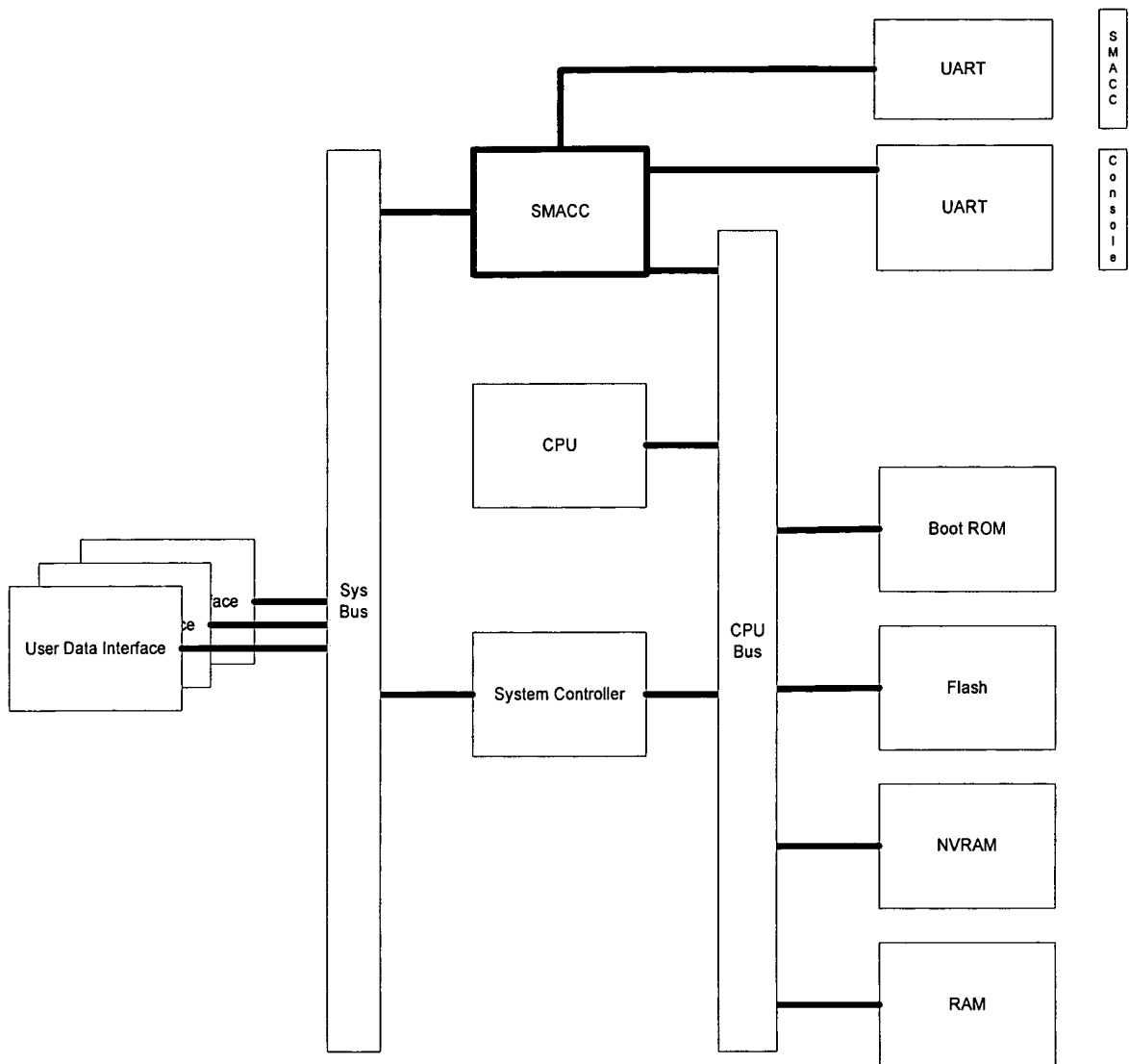


Fig. 14

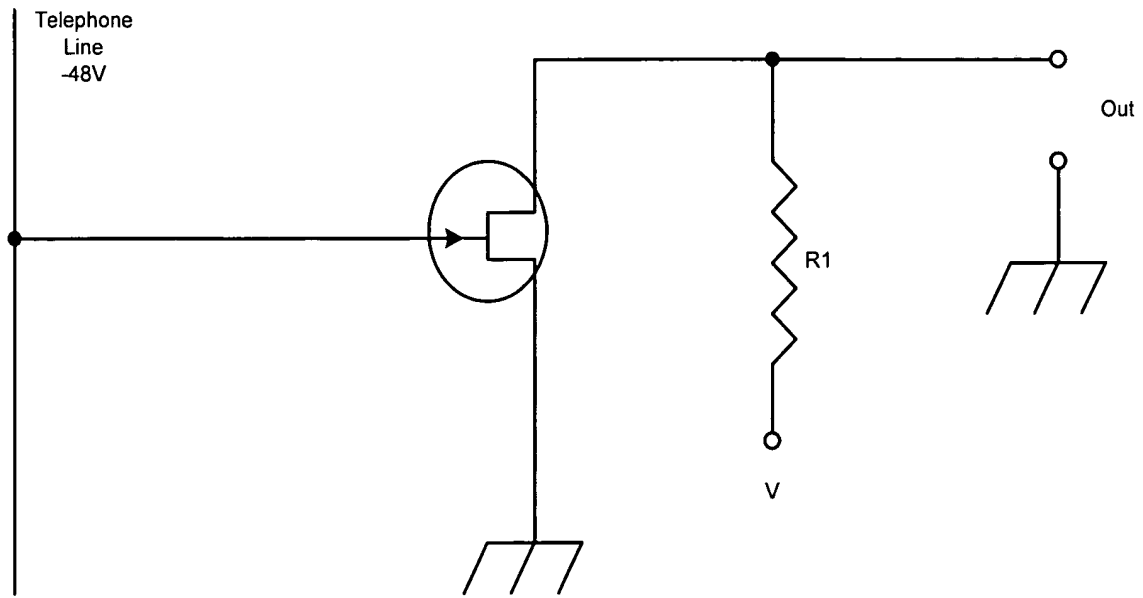


Fig. 15

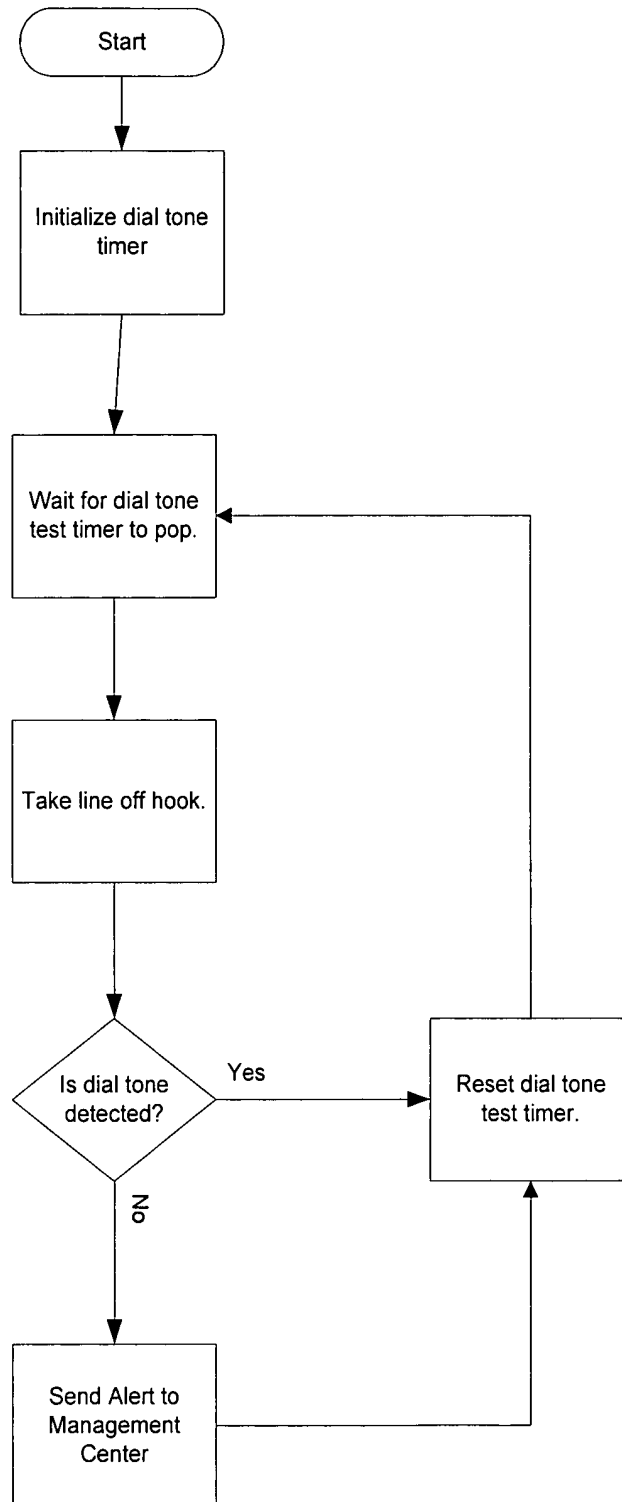


Fig. 16

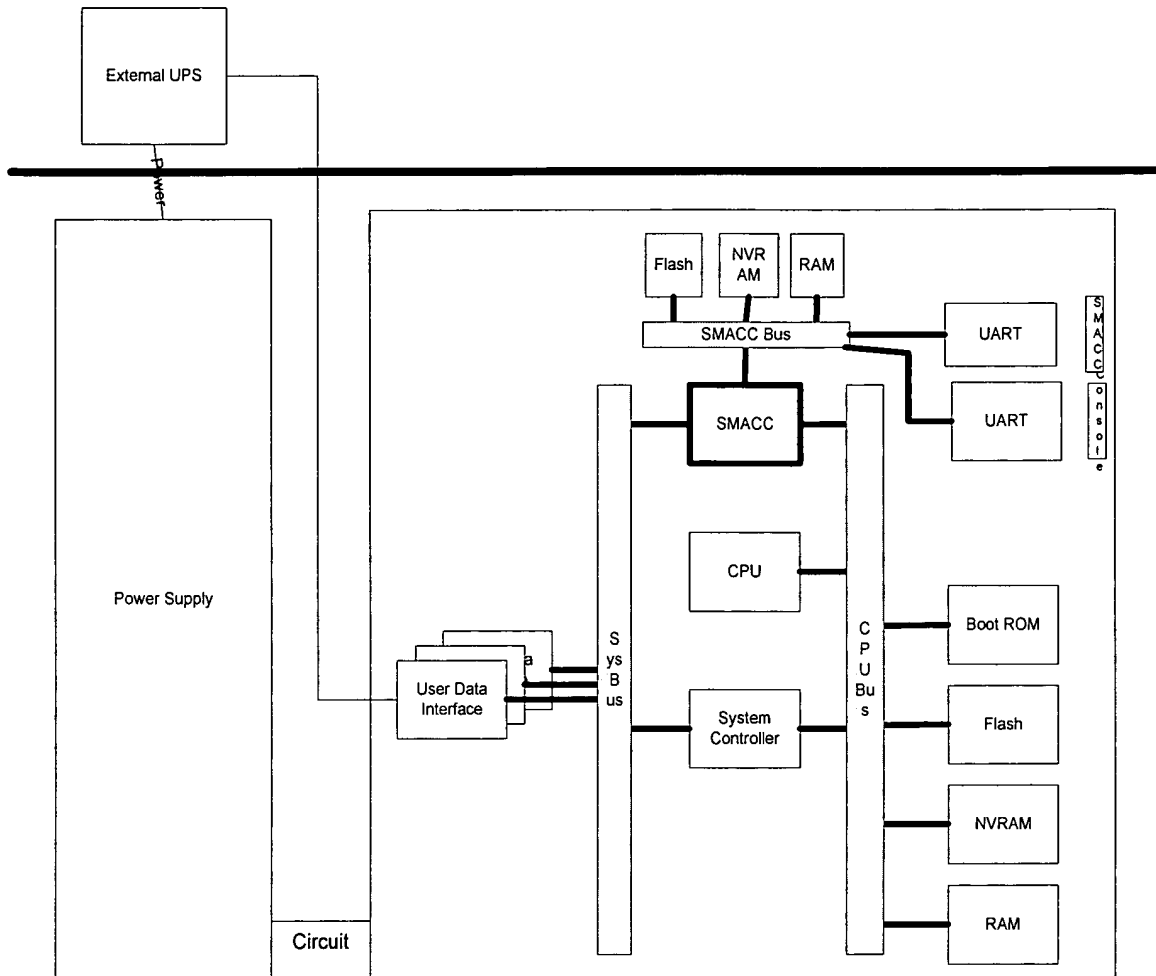


Fig. 17

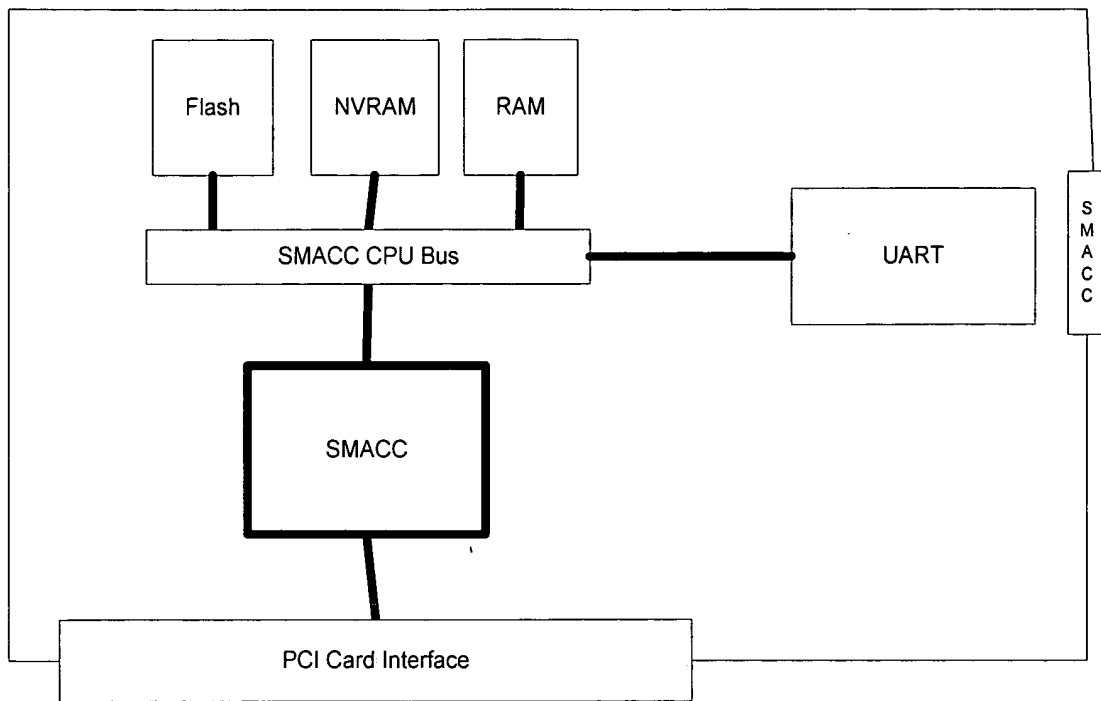


Fig. 18

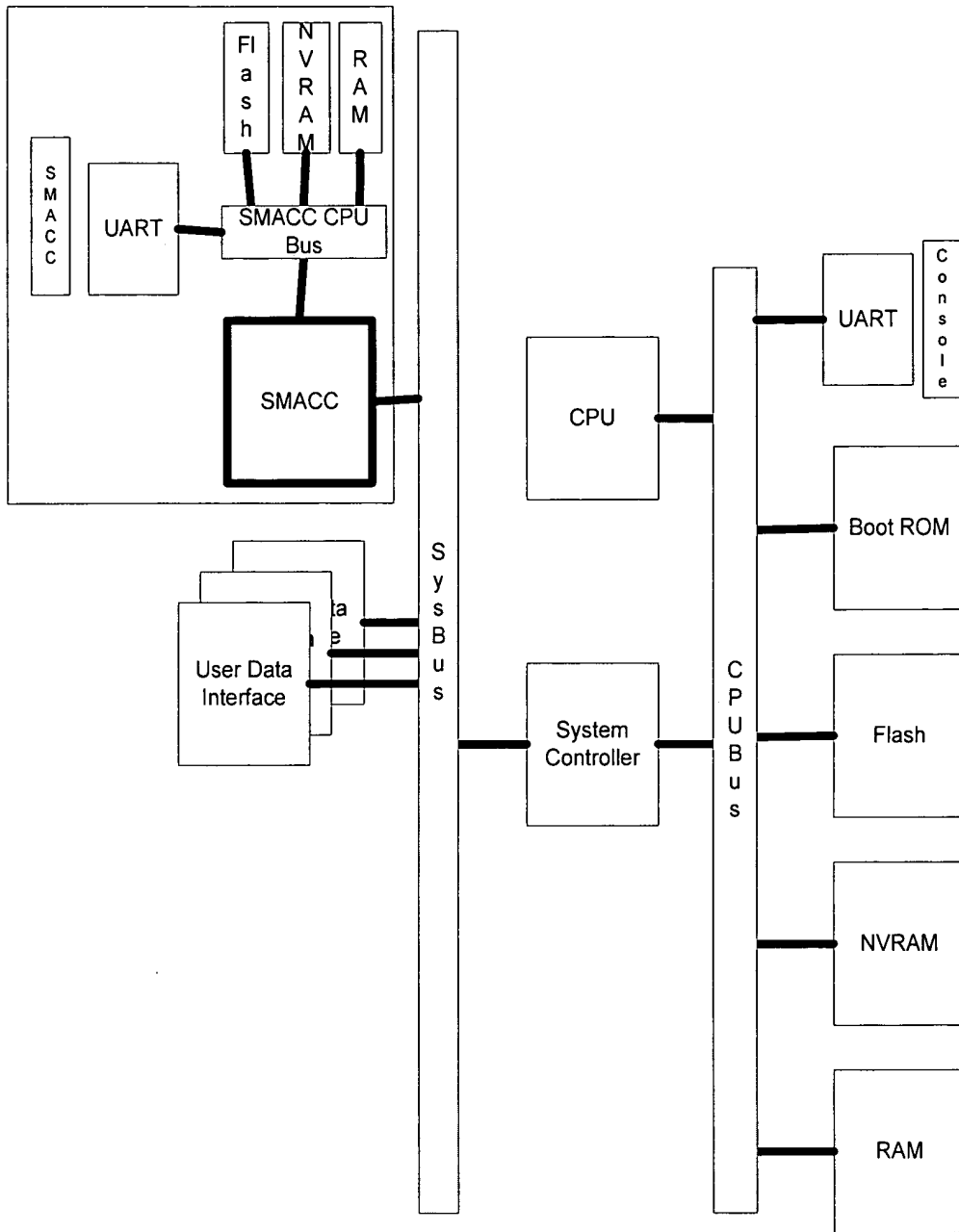


Fig. 19

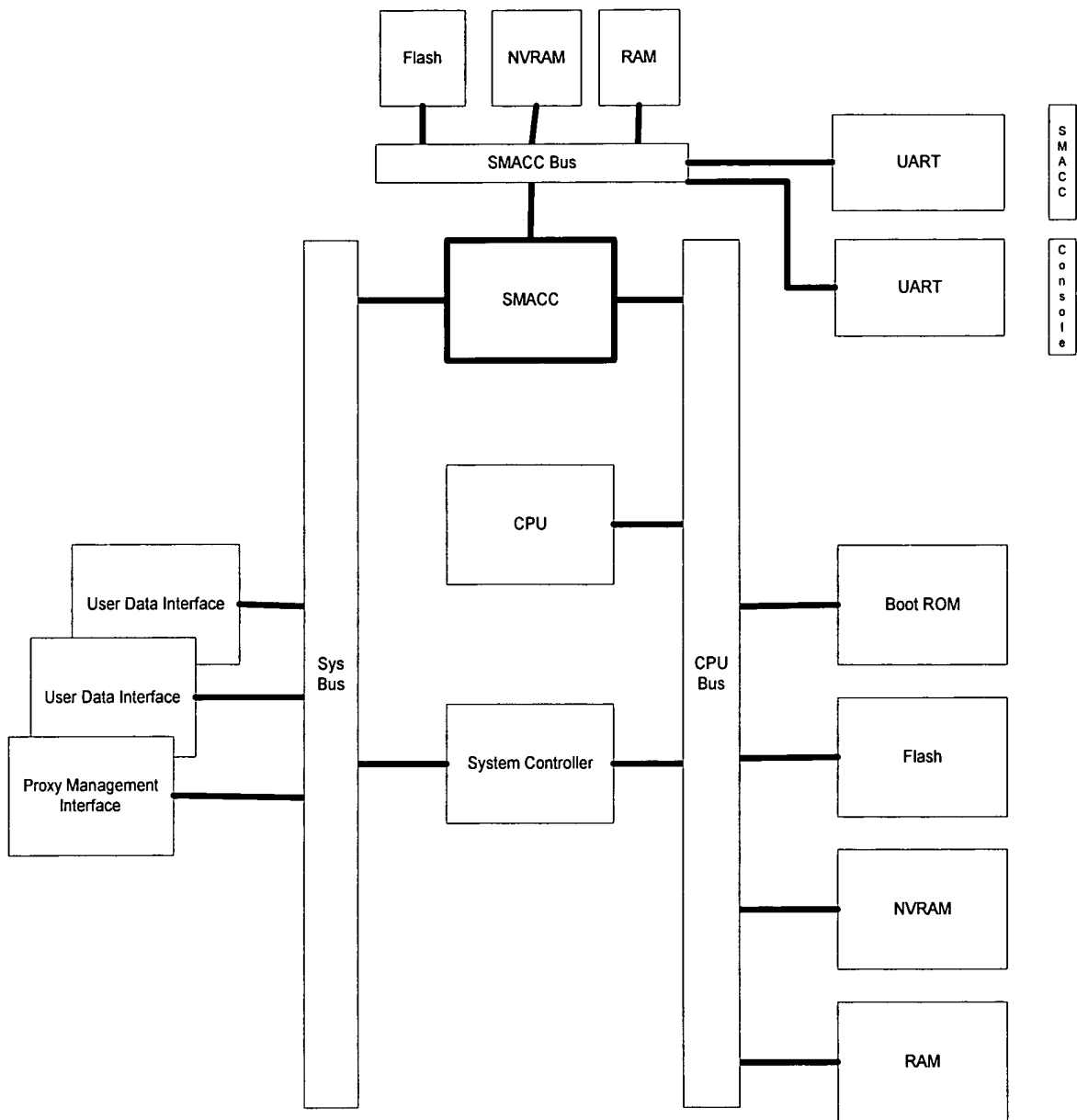


Fig. 20

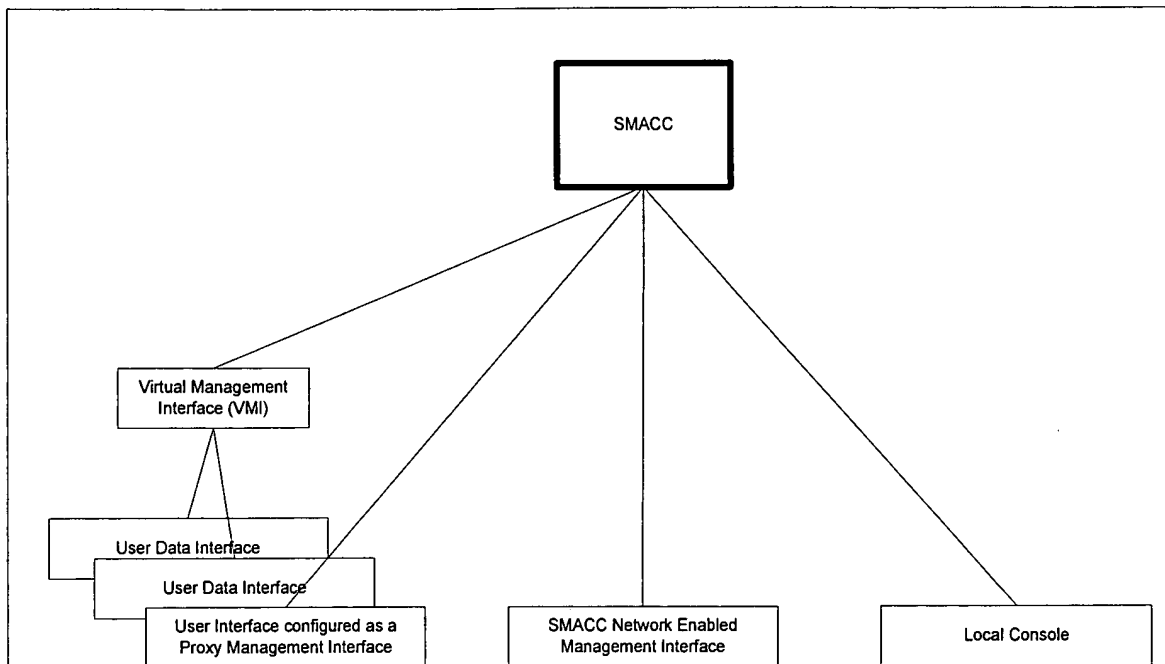


Fig. 21

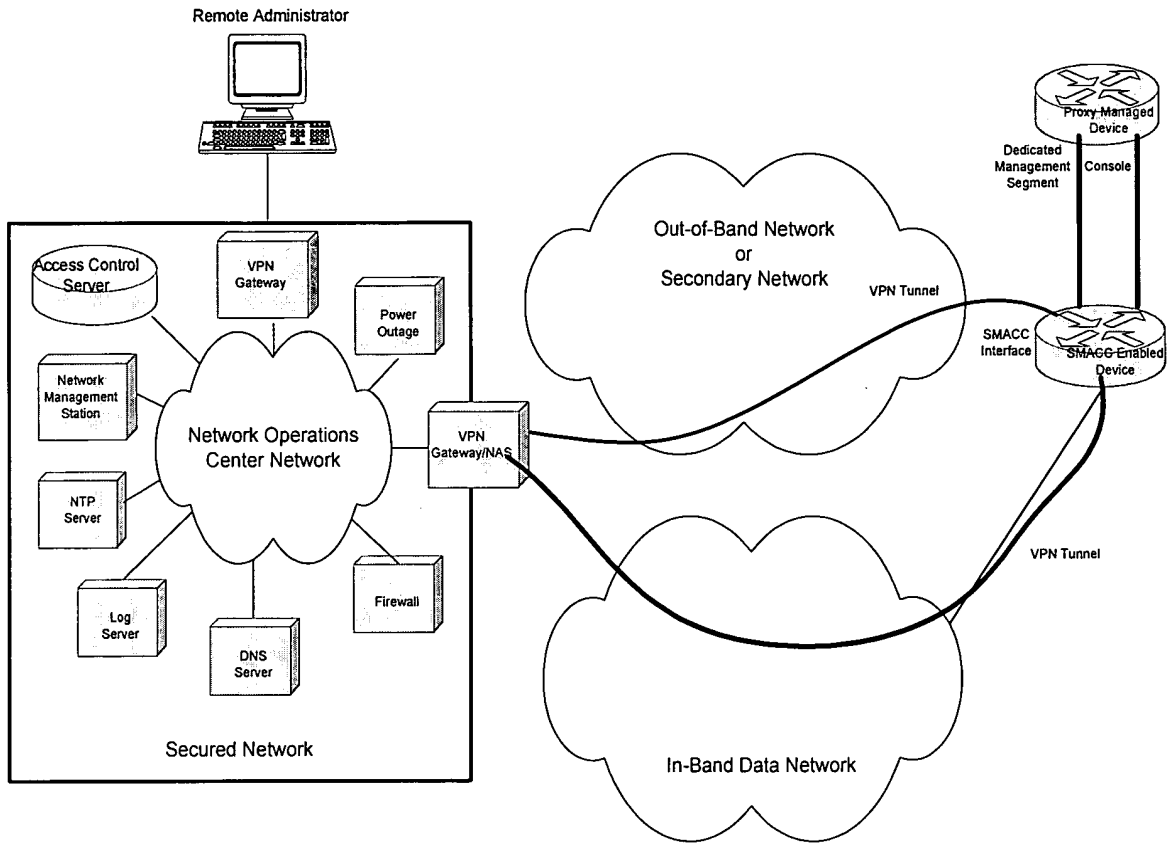


Fig. 22

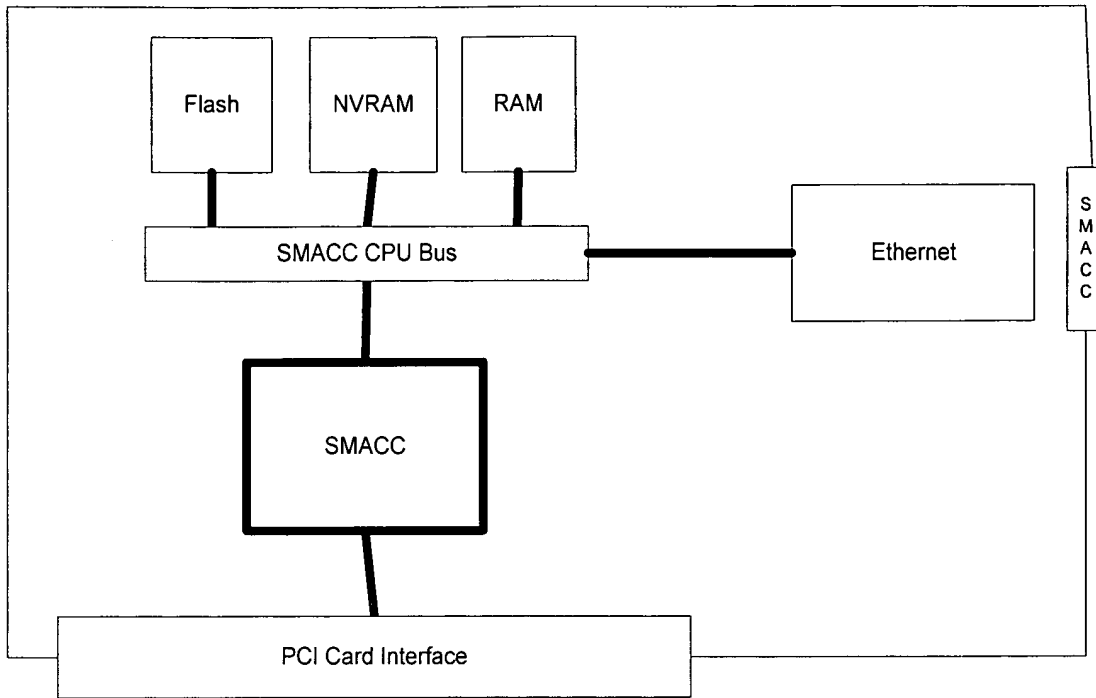


Fig. 23

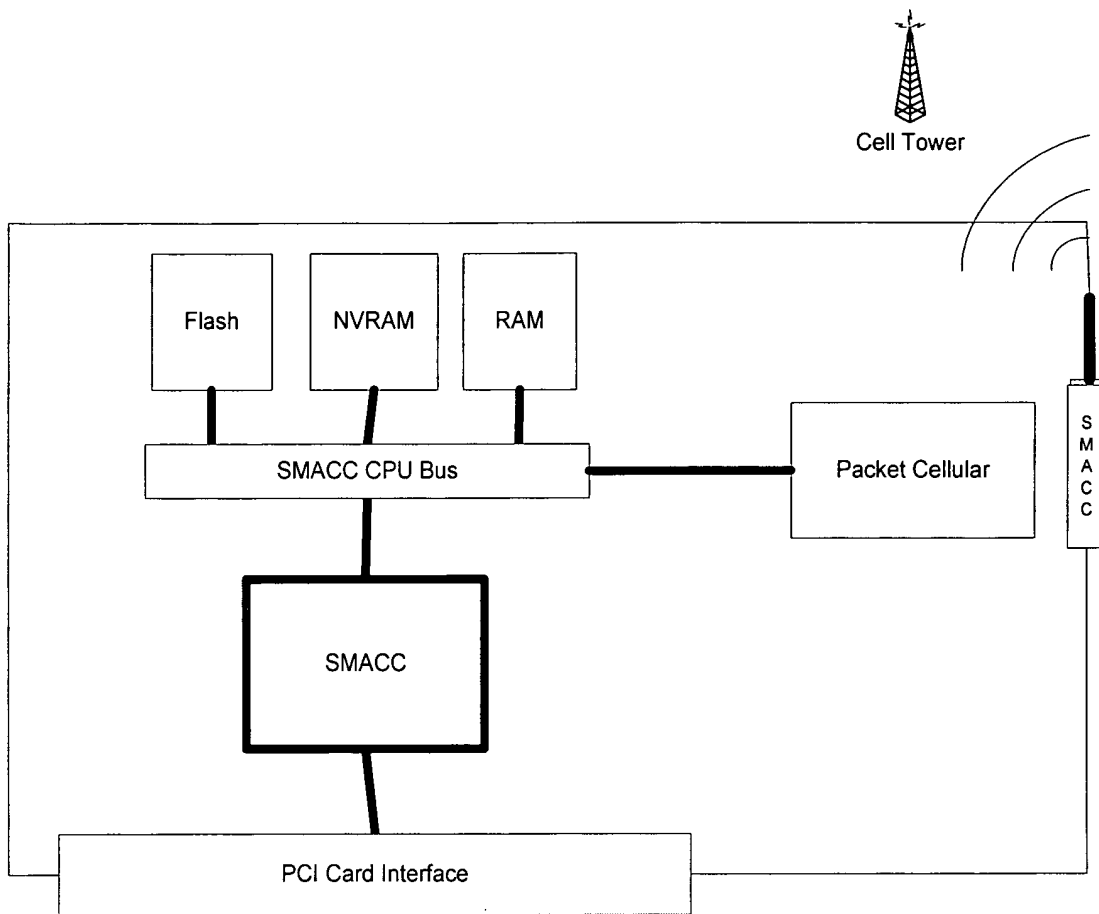


Fig. 24

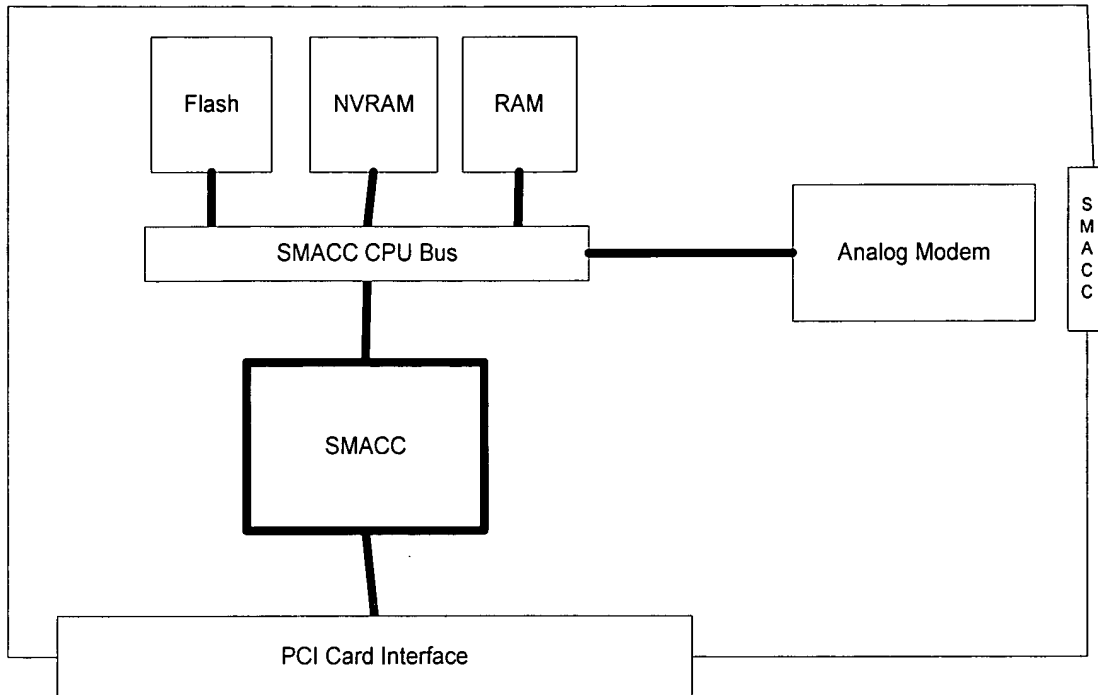


Fig. 25

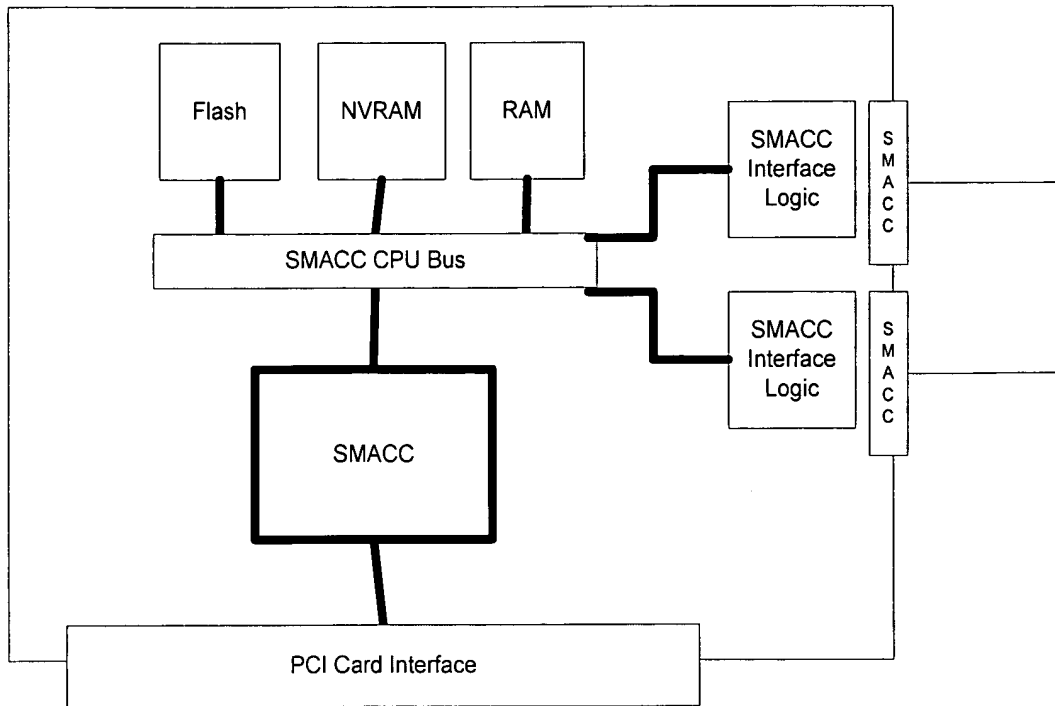


Fig. 26

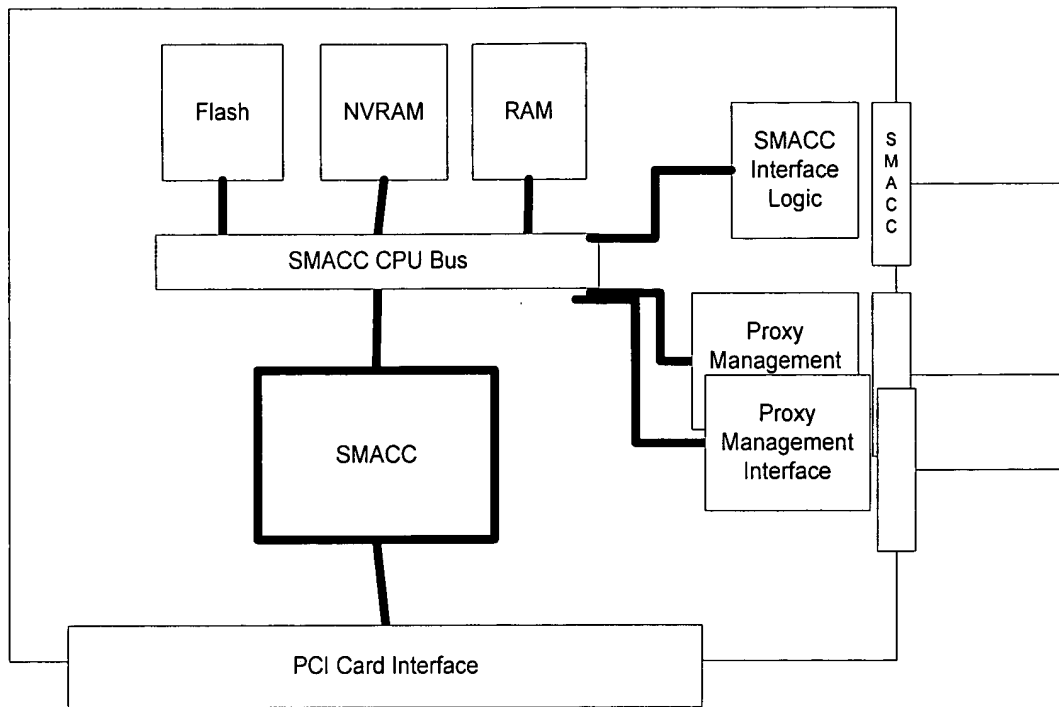


Fig. 27

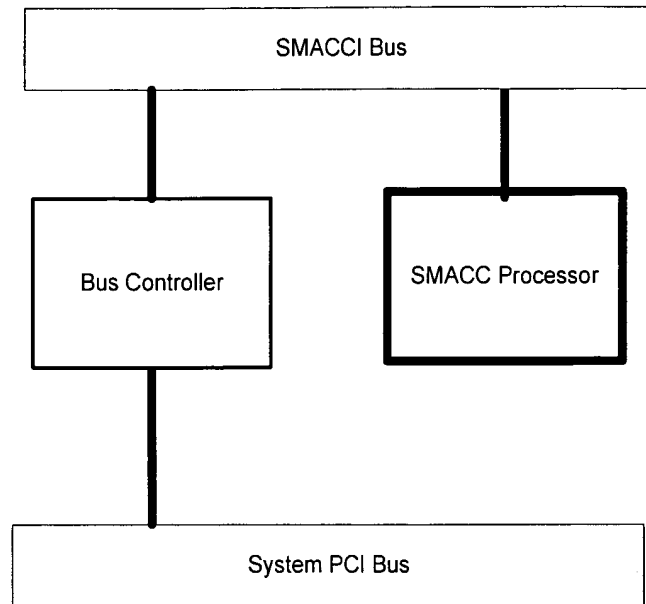


Fig. 28

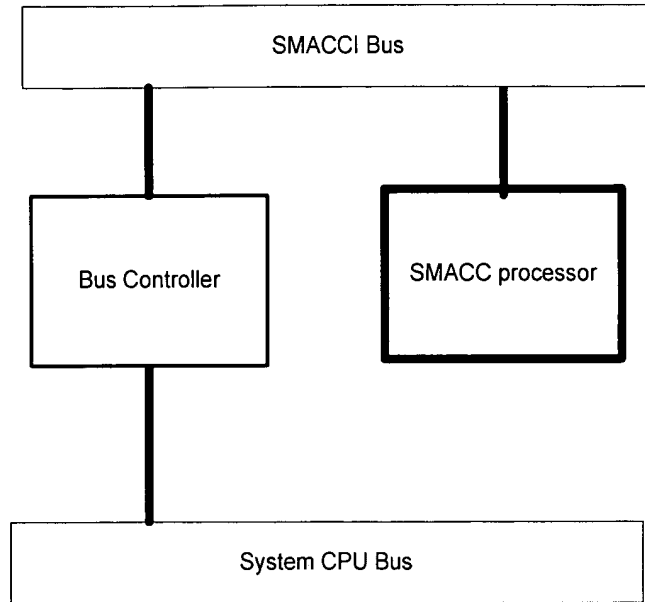


Fig. 29

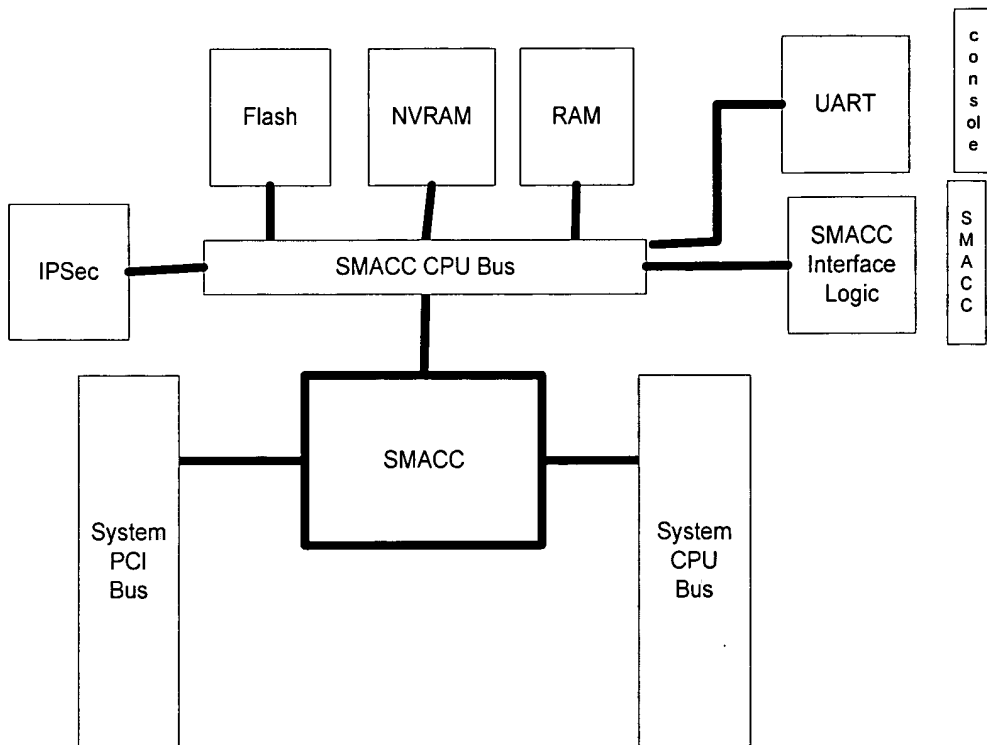


Fig. 30

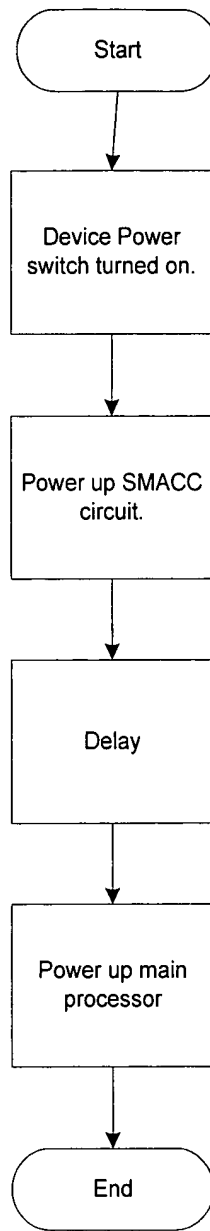


Fig. 31

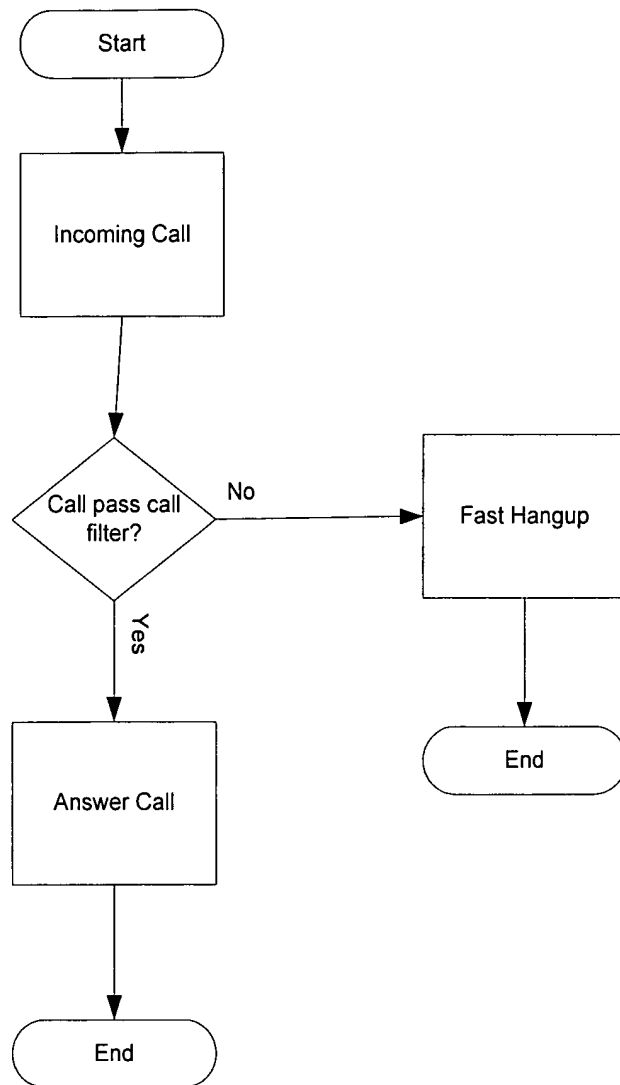


Fig. 32

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Application Number	
Filing Date	20 October 2004
First Named Inventor	CARLEY, Jeffrey Alan
Title	
Art Unit	
Examiner Name	
Attorney Docket Number	036864.0006

I hereby appoint:

☒ Practitioners associated with the Customer Number:

22467

OR

☐ Practitioner(s) named below:

Name	Registration Number
Kimberly A. Chasteen	36,755
721 Lakefront Commons	
Suite 200	
Newport News, VA 23606	

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

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

☐ The address associated with the above-mentioned Customer Number:

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City		State		Zip
Country				
Telephone		Fax		

I am the:

☒ Applicant/Inventor.

☐ Assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Signature		Date	20 October, 2004
Name	Jeffrey Alan Carley	Telephone	719 277-7210
Title and Company			

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

☐ Total of _____ forms are submitted.

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

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Ex. 1004 - Page 74

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**DECLARATION FOR UTILITY OR
DESIGN
PATENT APPLICATION
(37 CFR 1.63)**Declaration
Submitted
With Initial
Filing

OR

Declaration
Submitted after Initial
Filing (surcharge
(37 CFR 1.16 (e))
required)

Attorney Docket Number	036864.0006
First Named Inventor	CARLEY, Jeffrey Alan
COMPLETE IF KNOWN	
Application Number	
Filing Date	20 October 2004
Art Unit	
Examiner Name	

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Secure management access control for computers, embedded and card embodiment

(Title of the Invention)

the specification of which



is attached hereto

OR



was filed on (MM/DD/YYYY)

as United States Application Number or PCT International

Application Number

and was amended on (MM/DD/YYYY)

(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 specifically 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, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application 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
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐
			☐	☐	☐

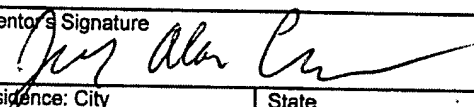
☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

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DECLARATION — Utility or Design Patent Application

Direct all correspondence to:	☒ The address associated with Customer Number:	22467	OR	☐ Correspondence address below
Name Kimberly A. Chasteen				
Address 721 Lakefront Commons, Suite 200				
City Newport News		State Virginia	ZIP 23606	
Country US	Telephone 757-249-5100		Fax 757-249-5109	
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 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.				
NAME OF SOLE OR FIRST INVENTOR:		☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any)) Jeffrey Alan		Family Name or Surname Carley		
Inventor's Signature 			Date 20 October, 2004	
Residence: City Colorado Springs	State Colorado	Country US	Citizenship US	
Mailing Address 5242 Willow Brook Road				
City Colorado Springs	State Colorado	Zip 80917	Country US	
NAME OF SECOND INVENTOR:		☐ A petition has been filed for this unsigned inventor		
Given Name (first and middle (if any))		Family Name or Surname		
Inventor's Signature			Date	
Residence: City	State	Country	Citizenship	
Mailing Address				
City	State	Zip	Country	
☐ Additional inventors or a legal representative are being named on the supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.				

PATENT APPLICATION SERIAL NO. _____

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

10/25/2004 WASFAW1 00000009 500766 10969561

01 FC:2001 395.00 DA

PTO-1556
(5/87)

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2004

Application or Docket Number

10969561

CLAIMS AS FILED - PART I

(Column 1) (Column 2)

TOTAL CLAIMS	20	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	20 minus 20 =	*
INDEPENDENT CLAIMS	2 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

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

SMALL ENTITY TYPE ☒

OR OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	395.00
X\$ 9=	
X44=	
+150=	
TOTAL	395

RATE	FEE
BASIC FEE	790.00
X\$18=	
X88=	
+300=	
TOTAL	

CLAIMS AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

SMALL ENTITY OR

OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE
X\$ 9=	
X44=	
+150=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X88=	
+300=	
TOTAL ADDIT. FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X44=	
+150=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X88=	
+300=	
TOTAL ADDIT. FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**	=
	Independent	*	Minus	***	=
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM ☐				

RATE	ADDITIONAL FEE
X\$ 9=	
X44=	
+150=	
TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X88=	
+300=	
TOTAL ADDIT. 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."

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				Application Number	
				Filing Date	20 October 2004
				First Named Inventor	Carley, Jeffrey A.
				Art Unit	
				Examiner Name	
				Attorney Docket Number	036864.0006
Sheet	1	of	2		

[illegible][illegible]

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>		Complete if Known	
		Application Number	
		Filing Date	20 October 2004
		First Named Inventor	Jeffrey A. Carley
		Art Unit	
		Examiner Name	
Sheet	2	of	2
		Attorney Docket Number	036864.0006

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		HARIKRISHNAN, HARI; Advanced security for data, voice, and video access ideal for small offices and teleworkers; Introducing Cisco 836 and SOHO 96 Secure Broadband Routers, Cisco.com; March, 2003; Pages 1-14.	
		Hardware you need FAST; Symbiat (online); Copyright 2002; Pages 1-2.	

Examiner Signature		Date Considered	
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¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached.

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REVOCATION OF POWER OF ATTORNEY WITH NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Application Number	10/969,561	
	Filing Date	10/20/2004	
	First Named Inventor	Carley	
	Art Unit	N/A	
	Examiner Name	N/A	
		Attorney Docket Number	ENGEDI6

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

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint the practitioners associated with the Customer 31704

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

☐ The address associated with Customer Number:

OR

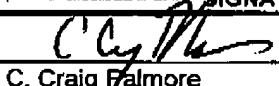
☒ Firm or Individual Name	John H. Thomas, P.C.		
Address	536 Granite Avenue		
City	Richmond	State	Virginia
		Zip	23226
Country	USA		
Telephone	(804) 344-8130	Email	jthomas@ip-counsel.net

I am the:

☐ Applicant/Inventor.

☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Signature			
Name	C. Craig Falmore		
Date	15 FEB 2006	Telephone	804-726-1000

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 1 forms are submitted.

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United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/969,561	10/20/2004	Jeffrey Alan Carley	036864.0006

22467
WILLIAMS MULLEN
FOUNTAIN PLAZA THREE, SUITE 200
721 LAKEFRONT COMMONS
NEWPORT NEWS, VA 23606

CONFIRMATION NO. 3106



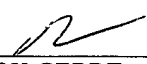
OC000000018179176

Date Mailed: 03/02/2006

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- The Power of Attorney is from an assignee and the Certificate required by 37 CFR 3.73(b) has not been received.



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EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L6	6	"CARLEY, JEFFREY ALAN"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:08
L7	4	"ENGEDI TECHNOLOGIES, INC"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:11
L8	8584	((network\$1 or ("computer" adj network\$1)) adj manag\$5 adj system\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:22
L9	399	l8 and (secur\$3 adj (communication\$1 or network\$1 or environment\$1))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:22
L10	54	l9 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:27
L11	7	l10 and (manag\$5 with (access\$3 with "controller"))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:27
L12	1515	713/182	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:22
L13	17	l12 and ((network\$1 or ("computer" adj network\$1)) adj manag\$5 adj system\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:24
L14	7	l13 and (secur\$3 adj (communication\$1 or network\$1 or environment\$1))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:25
L15	2	l14 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:25
L16	1	l15 and (manag\$5 with (access\$3 with "controller"))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:25

EAST Search History

L17	543	726/3.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:24
L18	11	l17 and ((network\$1 or ("computer" adj network\$1)) adj manag\$5 adj system\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:26
L19	1	l18 and (manag\$5 with (access\$3 with "controller"))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:25
L20	2	l18 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:25
L21	4	l18 and (secur\$3 adj (communication\$1 or network\$1 or environment\$1))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:27
L22	1	l21 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:26
L23	0	l22 and (manag\$5 with (access\$3 with "controller"))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:25
L24	10274	709/224	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:26
L25	702	l24 and ((network\$1 or ("computer" adj network\$1)) adj manag\$5 adj system\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:28
L26	56	l25 and (secur\$3 adj (communication\$1 or network\$1 or environment\$1))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:28
L27	11	l26 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:28
L28	1	l27 and (manag\$5 with (access\$3 with "controller"))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:30

EAST Search History

L29	6942	370/335	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:28
L30	46	I29 and ((network\$1 or ("computer" adj network\$1)) adj manag\$5 adj system\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:36
L31	4	I30 and (secur\$3 adj (communication\$1 or network\$1 or environment\$1))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:36
L32	0	I31 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:37
L33	0	I31 and (manag\$5 with (access\$3 with "controller"))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:37
L34	1011	("remote" adj "management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:36
L35	50	I34 and ((network\$1 or ("computer" adj network\$1)) adj manag\$5 adj system\$1)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:36
L36	8	I35 and (secur\$3 adj (communication\$1 or network\$1 or environment\$1))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:36
L37	8	I36 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:37
L38	2	I37 and (manag\$5 with (access\$3 with "controller"))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2006/10/30 12:37



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/969,561

10/20/2004

Jeffrey Alan Carley

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11/02/2006

WILLIAMS MULLEN

FOUNTAIN PLAZA THREE, SUITE 200

721 LAKEFRONT COMMONS

NEWPORT NEWS, VA 23606

EXAMINER

TRUONG, THANHNGA B

ART UNIT

PAPER NUMBER

2135

DATE MAILED: 11/02/2006

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

Office Action Summary	Application No. 10/969,561	Applicant(s) CARLEY, JEFFREY ALAN	
	Examiner Thanhnga B. Truong	Art Unit 2135	

-- 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 20 October 2004.
- 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) 1-20 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) 1-20 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 20 October 2004 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)
Paper No(s)/Mail Date. _____ |
| 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) ☐ Notice of Informal Patent Application |
| 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/20/04</u> . | 6) ☐ Other: _____ |

DETAILED ACTION

1. This action is responsive to the communication filed on October 20, 2004. Claims 1-20 are pending. At this time, claims 1-20 are rejected.

Information Disclosure Statement

2. The information disclosure statements (IDS) filed on October 20, 2004. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 102

3. 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 –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-13, 16-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nessett et al (US 5,968,176).

a. *Referring to claim 1:*

i. Nessett teaches a remote management system for securely managing a network device in a computer network (column 1, lines 31-39 of Nessett), comprising:

(1) at least one secure management access controller in direct communication with the network device [i.e., **Figure 1, a network 10 includes a plurality of nodes. At least one node in the network comprises a network management station 11 or other security policy server. Other nodes in equipment 13, a router witch 12, a remote access equipment 13, a router 14, an end station including a network interface card and its supporting driver software 15, and a repeater 16. Thus, a variety of network devices are included in the network 10. The switch 12, remote access equipment 13, router 14, end station network interface card 15, and repeater 16 all include security policy management agents**

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22, 23, 24, 25 and 26 respectively (column 6, lines 64-67 through column 7, lines 1-7 of Nessett). In addition, Nessett further discloses substantial technology has been developed for the purposes of securing networks. The security features which have been developed include at least the following product categories: (1) filtering, (2) access control, (3) protected communications, (4) security assist, and (5) security policy management. Filtering involves the dropping or transforming of packets or frames based on values within their headers or within their data. Access control involves deciding whether a user or a user initiated communication should be given access to a particular computing resource (column 1, lines 14-25 and column 3, lines 58-63 of Nessett));

(2) a remote connection means for remotely communicating with the secure management access controller (column 3, lines 20-27 and lines 52-57; (column 6, lines 64-67 through column 7, lines 1-7; and column 1, lines 14-25 and column 3, lines 58-63 of Nessett); and

(3) at least one network communication means for connecting the network device to the computer network [i.e., the most basic products in the set of nodes are Network Interface Cards (NICs) and Modems. A NIC is an I/O device that attaches to an end system through its internal I/O bus, providing the end system access to a Local Area Network, such as Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, FDDI, and ATM. In the case of ATM, certain NICs may provide access to an ATM Wide Area Network (column 11, lines 25-31 of Nessett)].

b. Referring to claim 2:

i. Nessett further teaches:

(1) wherein the at least one secure management access controller includes a flash chip, non-volatile random access memory and random access memory (column 5, lines 45-47; column 20, lines 46-49 of Nessett).

c. Referring to claim 3:

i. Nessett further teaches:

(1) wherein the at least one secure management access controller is embedded in the network device to be managed [i.e., **Figure 1, a network 10 includes a plurality of nodes. At least one node in the network comprises a network management station 11 or other security policy server. Other nodes in equipment 13, a router witch 12, a remote access equipment 13, a router 14, an end station including a network interface card and its supporting driver software 15, and a repeater 16. Thus, a variety of network devices are included in the network 10. The switch 12, remote access equipment 13, router 14, end station network interface card 15, and repeater 16 all include security policy management agents 22, 23, 24, 25 and 26 respectively (column 6, lines 64-67 through column 7, lines 1-7), whereby the processor or CPU or microprocessor is embedded in each of these nodes that makes up of the network**].

d. Referring to claim 4:

i. This claim has limitations that is similar to those of claims 2 and 3, thus it is rejected with the same rationale applied against claims 2 and 3 above.

e. Referring to claim 5:

i. Nessett further teaches:

(1) wherein the network device includes a card reader and the at least one secure management access controller is embedded in a card capable of being read by the card reader (**column 12, lines 10-15 of Nessett**).

f. Referring to claim 6:

i. This claim has limitations that is similar to those of claim 1, thus it is rejected with the same rationale applied against claim 1 above.

g. Referring to claim 7:

i. Nessett further teaches:

(1) wherein the communication system is selected from the group consisting of a Public Switched Telephone Network, a broadband connection and a Virtual Private Network and the interface device is selected from the group consisting of an analog modem, a broadband modem, an Ethernet interface, a cellular

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interface and a card slot for accepting interface cards (**column 11, lines 25-35 of Nessett**).

h. Referring to claim 8:

i. Nessett further teaches:

(1) wherein the at least one network communication means is selected from the group consisting of a local area network, a serial interface and a network connection [**i.e., the most basic products in the set of nodes are Network Interface Cards (NICs) and Modems. A NIC is an I/O device that attaches to an end system through its internal I/O bus, providing the end system access to a Local Area Network, such as Ethernet, Fast Ethernet, Gigabit Ethernet, Token Ring, FDDI, and ATM. In the case of ATM, certain NICs may provide access to an ATM Wide Area Network (column 11, lines 25-31 of Nessett)**].

i. Referring to claim 9:

i. Nessett further teaches:

(1) wherein the at least one network communication means supports at least one protocol selected from the group consisting of Transmission Control Protocol/Internet Protocol, Simple Network Management Protocol, Telnet, Trivial File Transfer Protocol, File Transfer Protocol, Hypertext Transfer Protocol, Hypertext Transfer Protocol over Secure Socket Layer and Secure Shell [**i.e., virtually all of network intermediate systems and NICs must be configured or otherwise managed in some way. Generally, this is accomplished through the Simple Network Management Protocol (SNMP), which assumes each managed device implements agent functionality controlled by remote management software. Normally, multiple agents are managed by a given management station. Network devices normally provide an SNMP agent that will respond to get and set requests from an SNMP manager which allow site administrators to manage networking equipment from an integrated systems perspective, rather than on a device by device basis (column 16, lines 31-42)**].

j. Referring to claims 10-11, 16:

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i. These claims have limitations that is similar to those of claim 1, thus they are rejected with the same rationale applied against claim 1 above.

k. Referring to claim 12:

i. Nessett further teaches:

(1) wherein the virtual management interface includes a secure transmission tunnel to protect management communications and a firewall to protect the at least one management access controller from unauthorized access **(column 3, lines 20-40 of Nessett).**

l. Referring to claim 13:

i. Nessett further teaches:

(1) wherein the at least one the management access controller includes a monitoring means for monitoring the status of at least one computer network component and a network interface for reporting a status of the at least one computer network component to a network management station **(column 3, lines 41-57 of Nessett).**

m. Referring to claims 17-20:

i. These claims have limitations that is similar to those of claims 1, 10, and 12, thus they are rejected with the same rationale applied against claims 1, 10, and 12 above.

Claim Rejections - 35 USC § 103

5. 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.

6. Claims 14-15 rejected under 35 U.S.C. 103(a) as being unpatentable over Nessett et al (US 5,968,176), and further in view of Grob et al (US 6,894,994 B1).

a. Referring to claim 14:

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i. Nessett teaches a remote management system for securely managing a network device in a computer network (column 1, lines 31-39 of Nessett). However Nessett is silent about monitoring the power supply.

ii. Whereas, Grob further teaches:

(1) Network interface 128 further provides the physical interfaces for connections to power supplies, the BACKHAULS (e.g., via T1/E1 or Ethernet), GPS antenna, alarm contacts, and others. Network interface 128 also typically includes a serial port connection for interfacing to an external computer for local configuration and provisioning. Network interface 128 may also include an interface to the MPTs. Network interface 128 performs AC power conversion and conditioning and supplies DC power to other subsystems in access point 120. Access point 120 supports external alarm inputs and external relay contact outputs that are configurable by the system operator (**column 27, lines 1-12 of Grob**). In addition, Grob also discloses the access terminal 110 only listens to the control channel during its slot and stays asleep the rest of the time to conserve battery power. This battery power is meant for keeping the system running without interrupting in case there is a power outage (**column 22, lines 7-9 of Grob**).

iii. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to:

(1) combine the teaching of Grob into Nessett's system for improved high data rate, wireless packet data communications system (**column 1, lines 25-26 of Grob**).

iv. The ordinary skilled person would have been motivated to:

(1) combine the teaching of Grob into Nessett's system since security is an increasingly important issue for network users, both inside enterprises operating so called intranets, and for world wide global data networks. Substantial technology has been developed for the purposes of securing networks. The security features which have been developed include at least the following product categories: (1) filtering, (2) access control, (3) protected communications, (4) security assist, and (5) security policy management (**column 1, lines 11-19 of Nessett**).

b. Referring to claim 15:

i. The combination of teaching between Nessett and Grob teaches the claimed subject matter. Grob further teaches:

(1) an independent power supply for supplying power to the management access controller [i.e., **battery power (column 22, line 9)**].

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhnga (Tanya) Truong whose telephone number is 571-272-3858.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached at 571-272-3859. The fax and phone numbers for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

TBT

October 27, 2006

Thanhnga B. Truong
Au2135

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	
		Filing Date	20 October 2004
		First Named Inventor	Carley, Jeffrey A.
		Art Unit	
		Examiner Name	
Sheet 1	of 2	Attorney Docket Number	036864.0006

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
TBT ↓ ↓ ↓		US- 2002/0064149 A1	05/30/2002	Isaac K. Elliott	
		US- 6,335,927 B1	01/01/2002	Isaac K. Elliott	
		US- 6,560,222 B1	05/06/2003	Gregory E. Pounds	
		US- 2002/0001302 A1	01/03/2002	Scott K. Pickett	
		US- 5,689,566	11/18/1997	Minhtam C. Nguyen	
		US- 2003/0093563 A1	05/15/2003	Bruce F. Young	
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FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)			

Examiner Signature	/Thanhnga Truong/	Date Considered	10/30/2006
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This collection of information is required by 37 CFR 1.97 and 1.98. 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 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, 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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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known	
		Application Number	
		Filing Date	20 October 2004
		First Named Inventor	Jeffrey A. Carley
		Art Unit	
		Examiner Name	
Sheet 2	of 2	Attorney Docket Number	036864.0006

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
TBT		HARIKRISHNAN, HARI; Advanced security for data, voice, and video access ideal for small offices and teleworkers; Introducing Cisco 836 and SOHO 96 Secure Broadband Routers, Cisco.com; March, 2003; Pages 1-14.	
TBT		Hardware you need FAST; Symbiat (online); Copyright 2002; Pages 1-2.	

Examiner Signature	/Thanhnga Truong/	Date Considered	10/30/2006
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Notice of References Cited	Application/Control No. 10/969,561		Applicant(s)/Patent Under Reexamination CARLEY, JEFFREY ALAN	
	Examiner Thanhnga B. Truong		Art Unit 2135	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,968,176 A	10-1999	Nessett et al.	726/11
*	B	US-6,894,994 B1	05-2005	Grob et al.	370/335
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
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	K	US-			
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FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
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NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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*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.



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Bib Data Sheet

CONFIRMATION NO. 3106

SERIAL NUMBER 10/969,561	FILING OR 371(c) DATE 10/20/2004 RULE	CLASS 713	GROUP ART UNIT 2135	ATTORNEY DOCKET NO. 036864.0006
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APPLICANTS

Jeffrey Alan Carley, Colorado Springs, CO;

** CONTINUING DATA *****

TBT

This application is a CIP of 10/461,827 06/13/2003 and claims benefit of 60/512,777 10/21/2003

** FOREIGN APPLICATIONS *****

TBT

IF REQUIRED, FOREIGN FILING LICENSE GRANTED **
01/07/2005

** SMALL ENTITY **

Foreign Priority claimed ☐ yes ☒ no	STATE OR COUNTRY CO	SHEETS DRAWING 32	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 2
35 USC 119 (a-d) conditions met ☐ yes ☒ no ☐ Met after Allowance				
Verified and Acknowledged Examiner's Signature <i>Shirley B. Tm</i> Initials <i>TBT</i>				

ADDRESS

22467

TITLE

Secure management access control for computers, embedded and card embodiment

FILING FEE RECEIVED 395	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

Index of Claims



Application/Control No.

10/969,561

Examiner

Thanhnga B. Truong

Applicant(s)/Patent under Reexamination

CARLEY, JEFFREY ALAN

Art Unit

2135

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date											
Final	Original	10/27/06											
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Search Notes

Application/Control No.

10/969,561

Examiner

Thanhnga B. Truong

Applicant(s)/Patent under
Reexamination

CARLEY, JEFFREY ALAN

Art Unit

2135

SEARCHED

Class	Subclass	Date	Examiner
713	182	10/30/2006	TBT
726	3	10/30/2006	TBT
709	224	10/30/2006	TBT
370	335	10/30/2006	TBT

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
Inventor Name Search	10/30/2006	TBT
Assignee Search	10/30/2006	TBT
TEXT Search	10/30/2006	TBT
EAST Search	10/30/2006	TBT

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PTO/SB/82 (04-05)

Approved for use through 11/30/2005. OMB 0651-0035
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REVOCATION OF POWER OF ATTORNEY WITH NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS	Application Number	10/969,561
	Filing Date	10/20/2004
	First Named Inventor	Carley
	Art Unit	N/A
	Examiner Name	N/A
	Attorney Docket Number	ENGEDI6

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

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint the practitioners associated with the Customer

31704

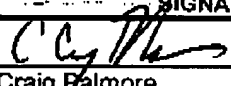
☒ Please change the correspondence address for the above-identified application to:☐ The address associated with
Customer Number:

OR

☒ Firm or Individual Name	John H. Thomas, P.C.		
Address	536 Granite Avenue		
City	Richmond	State	Virginia
Country	USA		
Telephone	(804) 344-8130	Email	jthomas@jp-counsel.net

I am the:

☐ Applicant/Inventor.☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)**SIGNATURE of Applicant or Assignee of Record**

Signature			
Name	C. Craig Palmore		
Date	15 FEB 2006	Telephone	804-726-1000

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 1 forms are submitted.

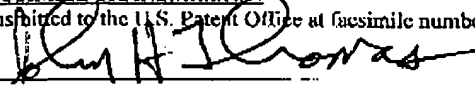
This collection of information is required by 37 CFR 1.39. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Dated: 3/27/2007



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PTO/SB/06 (09-06)

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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Engedi Technologies, Inc.Application No./Patent No.: 10/969,561 Filed/Issue Date: 10/20/2004Entitled: SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBIDDED AND CARD EMBODIMENTEngedi Technology, Inc., 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; or
2. ☐ an assignee of less than the entire right, title and interest
(The extent (by percentage) of its ownership interest is _____ %)

in 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 015811, Frame 0986, or for which a copy thereof 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.☐ 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.



Signature

Brian J. Teague, Reg. No. 55,670

Printed or Typed Name

Attorney for Assignee

Title

March 27, 2007

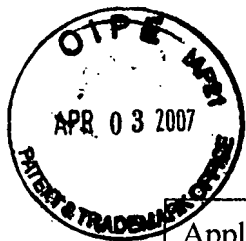
Date

(804) 344-8130

Telephone Number

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 1450, Alexandria, VA 22313-1450.

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



SPK

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Jeffrey Alan Carley	
Application No.: 10/969,561	Conf. No.: 3106
Filed: October 20, 2004	Group Art Unit: 2135
Title: SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT	Examiner: Thanhnga B. Truong
Attorney Docket No.: ENGEDI 6	

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

AMENDMENT

Dear Sir:

In response to the Office Action of November 2, 2006, please amend this application as follows:

Amendments to the Claims are reflected in the listing of claims beginning on p. 2 of this paper; and

Remarks begin on p. 6 of this paper.

IN THE CLAIMS:

1. (Currently amended) A remote device management communication system for securely controlling access to management applications and communications to and from said management applications on managing a network devices in a distributed computer network that includes one or more network services, one or more secure management access controllers, and one or more managed network devices, the remote device management system comprising:

at least one secure management access controller ~~in direct communication with the~~ connected to one or more data bus of said managed network device for the communication of device management data;

an out-of-band access remote connection means for connecting said one or more network services or remote users remotely communicating with said the secure management access controller for management of said network device; and

at least one ~~network communication means for connecting the network device to the computer network~~ virtual management interface connection means for connecting said one or more network services or remote users with said secure management access controller;

wherein said virtual management interface connection means provides logical separation of management data from user data and utilizes user interfaces of said managed network element for connecting said one or more network services or remote users with said secure management access controller.

2. (Previously presented) The system of claim 1 wherein the at least one secure management access controller includes a flash chip, non-volatile random access memory and random access memory.

3. (Previously presented) The system of claim 1 wherein the at least one secure management access controller is embedded in the network device to be managed.

4. (Previously presented) The system of claim 1 wherein the at least one secure management access controller accesses a flash chip, non-volatile random access memory and random access memory embedded in a main processor on the network device.

5. (Previously presented) The system of claim 1 wherein the network device includes a card reader and the at least one secure management access controller is embedded in a card capable of being read by the card reader.

6. (Currently amended) The system of claim 1 wherein the out-of-band access ~~remote~~ connection means comprises:

a communication system; and

a secure management access controller interface device.

7. (Previously presented) The system of claim 6 wherein the communication system is selected from the group consisting of a Public Switched Telephone Network, a broadband connection and a Virtual Private Network and the interface device is selected from the group consisting of an analog modem, a broadband modem, an Ethernet interface, a cellular interface and a card slot for accepting interface cards.

8. (Previously presented) The system of claim 1 wherein the at least one network communication means is selected from the group consisting of a local area network, a serial interface and a network connection.

9. (Previously presented) The system of claim 1 wherein the at least one network communication means supports at least one protocol selected from the group consisting of Transmission Control Protocol/Internet Protocol, Simple Network Management Protocol, Telnet, Trivial File Transfer Protocol, File Transfer Protocol, Hypertext Transfer Protocol, Hypertext Transfer Protocol over Secure Socket Layer and Secure Shell.

10. (Previously presented) The system of claim 1 wherein user and management communications are transmitted to the at least one secure management access controller and the at least one controller further comprises a virtual management interface for separating the user communications from the management communications.

11. (Previously presented) The system of claim 10 wherein the virtual management interface includes a protection means for protecting the management data.

12. (Previously presented) The system of claim 10 wherein the virtual management interface includes a secure transmission tunnel to protect management communications and a firewall to protect the at least one management access controller from unauthorized access.

13. (Previously presented) The system of claim 1 wherein the at least one the management access controller includes a monitoring means for monitoring the status of at least one computer network component and a network interface for reporting a status of the at least one computer network component to a network management station.

14. (Previously presented) The system of claim 1 further comprising:
a network power supply;
a monitoring means for monitoring the status of the network power supply; and
a reporting means for reporting the status of the network power supply.

15. (Previously presented) The system of claim 1 further comprising an independent power supply for supplying power to the management access controller.

16. (Previously presented) The system of claim 1 further comprising a means for monitoring connection attempts made through the management access controller.

17. (Currently amended) A remote management communications method for securely managing access to network management applications and communication of network management data to and from a network device in a computer network, comprising:
connecting a remote administrator to a secure management access controller connected to one or more data bus of said managed network device for the communication of device management data ~~in direct communication with the device to be managed~~;

verifying the identity of the remote administrator; securing the connection between the remote administrator and the network device; and

providing a network communication means between the network device and the computer network.

18. (Previously presented) The method of claim 17 in which the remote administrator is connected by means of a communication system and a secure management access controller interface device.

19. (Previously presented) The method of claim 17 further comprising the step of: providing a virtual management interface for separating user communications and management communications which are transmitted to the at least one secure management access controller.

20. (Previously presented) The method of claim 17 in which the virtual management interface includes a secure transmission tunnel to protect management communications and a firewall to protect the secure management access controller from unauthorized access.

REMARKS

Applicant submits this response to the Office Action mailed November 2, 2006. Claims 1-13 and 16-20 have been rejected as being anticipated by Nessett et al. Claims 14 and 15 have been rejected as being unpatentable over Nessett in combination with Grob. In view of the foregoing amendments, and for one or more of the following reasons, Applicant submits that all of the claims of the present application are in condition for allowance.

Claims 1 and 17 have been amended to recite a data bus-based connection between a secure management access controller and a network device being managed, to enable the secure communication of device management data. Support for the claim amendments is found at least in ¶¶ 0019 and 0056 and in Figure 28. Nessett does not teach or suggest such a data bus connection between a secure management access controller and a managed network device, nor the communication of device management data over such a connection as recited by amended Claims 1 and 17. Therefore, amended Claims 1 and 17 are not anticipated by Nessett. Further, Grob also does not teach or suggest such a data bus connection between a secure management access controller and a managed network device, nor the communication of device management data over such a connection as recited by amended Claims 1 and 17. In fact, neither of the cited references teach or suggest bus-based device management connections between management components and managed devices. As such, amended Claims 1 and 17 are patentably distinct from the cited references. Since Claims 2-16 depend from independent Claim 1 and Claims 18-20 depend from independent Claim 17, these dependent claims are also patentably distinct from the cited references for at least the reasons described above.

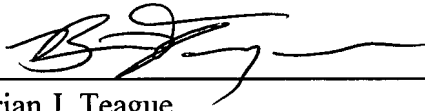
CONCLUSION

In view of the foregoing remarks, Applicant respectfully submits that all of the claims of the present application are in condition for allowance. It is respectfully requested that a Notice of Allowance be issued in due course. The Examiner is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 50-2127.

Respectfully submitted,

Date: April 2, 2007

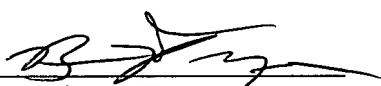


Brian J. Teague
Reg. No. 55,670

JOHN H. THOMAS, P.C.
536 Granite Avenue
Richmond, Virginia 23226
Phone: (804) 344-8130
Fax: (804) 644-3643
E-Mail: info@ip-counsel.net

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the appropriate address at the U.S. Patent and Trademark Office required under 37 C.F.R. §1.1(a) on April 2, 2007.

by: 

Brian J. Teague



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Jeffrey Alan Carley	
Application No.: 10/969,561	Conf. No.: 3106
Filed: October 20, 2004	Group Art Unit: 2135
Title: SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT	Examiner: Thanhnga B. Truong
Attorney Docket No.: ENGEDI 6	

PETITION FOR AN EXTENSION OF TIME

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

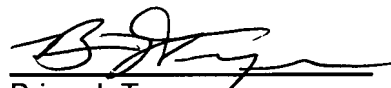
In the matter of the above-identified application, applicants hereby respectfully petition for an extension of time to permit the filing of a response within the second month subsequent to the expiration of the shortened statutory period set in the outstanding Office Action mailed November 2, 2006.

A payment in the amount of \$225.00 (small entity) to cover the fee required for the requested extension of time is attached hereto.

It is respectfully requested that any shortage in the fee be charged to the deposit account of John H. Thomas, P.C., Deposit Account No. 50-2127 (Case: Engedi 6).

Respectfully submitted,

Date: April 2, 2007


Brian J. Teague
Reg. No. 55,670

536 Granite Avenue
Richmond, Virginia 23226
Phone: (804) 344-8130
Fax: (804) 644-3643
E-Mail: bteague@ip-counsel.net

04/04/2007 EAYALEW1 00000001 10569561 225.00 0P
LFC:2252
Ex. 1004 - Page 110

PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2004

Application or Docket Number

10969561

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	20	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	20 minus 20 =	
INDEPENDENT CLAIMS	2 minus 3 =	
MULTIPLE DEPENDENT CLAIM PRESENT ☐		

SMALL ENTITY TYPE ☒

OR OTHER THAN SMALL ENTITY

RATE	FEE		RATE	FEE
BASIC FEE	395.00	OR	BASIC FEE	790.00
X\$ 9=		OR	X\$18=	
X44=		OR	X88=	
+150=		OR	+300=	
TOTAL	395	OR	TOTAL	

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

4-307 CLAIMS AS AMENDED - PART II

	(Column 1)	(Column 2)	(Column 3)	(Column 4)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT	EXTRA
Total	* 20	Minus	** 20	
Independent	* 2	Minus	*** 3	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIMS ☐				

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
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X44=		OR	X88=	
+150=		OR	+300=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)	(Column 4)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT	EXTRA
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Independent	*	Minus	***	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIMS ☐				

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
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X44=		OR	X88=	
+150=		OR	+300=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)	(Column 4)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT	EXTRA
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Independent	*	Minus	***	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIMS ☐				

RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
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X44=		OR	X88=	
+150=		OR	+300=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

* If the entry in column 1 is less than the entry in column 2, write "0"
 ** If the "Highest Number Previously Paid For" IN THIS SPACE
 *** If the "Highest Number Previously Paid For" IN THIS SPACE
 The "Highest Number Previously Paid For" (Total or Independent)

found in the appropriate box in column 1.



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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/969,561	10/20/2004	Jeffrey Alan Carley	ENGEDI6

John H. Thomas, P.C.
 536 Granite Avenue
 Richmond, VA 23226

CONFIRMATION NO. 3106



OC000000023499098

Date Mailed: 04/23/2007

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/27/2007.

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

Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199
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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/969,561	10/20/2004	Jeffrey Alan Carley	036864.0006

22467
 WILLIAMS MULLEN
 FOUNTAIN PLAZA THREE, SUITE 200
 721 LAKEFRONT COMMONS
 NEWPORT NEWS, VA 23606

CONFIRMATION NO. 3106



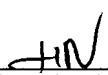
OC000000023499028

Date Mailed: 04/23/2007

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 03/27/2007.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).


 Office of Initial Patent Examination (571) 272-4000, or 1-800-PTO-9199
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/969,561	10/20/2004	Jeffrey Alan Carley	ENGEDI6	3106

7590
John H. Thomas, P.C.
536 Granite Avenue
Richmond, VA 23226

06/26/2007

EXAMINER

TRUONG, THANHNGA B

ART UNIT	PAPER NUMBER
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2135

MAIL DATE	DELIVERY MODE
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06/26/2007

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.

10/969,561

Applicant(s)

CARLEY, JEFFREY ALAN

Examiner

Thanhnga B. Truong

Art Unit

2135

-- 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 1 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 03 April 2007.
- 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) 1-20 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) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-20 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.

Thanhnga B. Truong
AU2135

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: _____.

DETAILED ACTION

1. This action is responsive to the communication filed on April 3, 2007. Claims 1-20. At this time, claims 1-20 are being restricted.

Election/Restrictions

2. This application contains claims directed to the following patentably distinct species:

Species 1: Figures 4 and 5 associate with claims 1-16

Species 2: Figures 7 and 8 associate with claims 17-20

3. The species are independent or distinct because each of the various disclosed species details a mutual exclusive characteristic of:

i. A remote device management system for network connectivity to the management interfaces.

ii. A remote management communication method of a secure path for management services.

4. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted.

5. Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

6. Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

7. Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the

Art Unit: 2135

requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

8. The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

9. Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

10. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhnga B. Truong whose telephone number is 571-272-3858. The examiner can normally be reached on First Shift.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2135

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).

TBT
June 19, 2007


AU2135

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Jeffrey Alan Carley	
Application No.: 10/969,561	Conf. No.: 3106
Filed: October 20, 2004	Group Art Unit: 2135
Title: SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT	Examiner: Thanhnga B. Truong
Attorney Docket No.: ENGEDI 6	

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

AMENDMENT

Dear Sir:

In response to the Office Action of June 26, 2007, please amend this application as follows:

Amendments to the Claims are reflected in the listing of claims beginning on p. 2 of this paper; and

Remarks begin on p. 5 of this paper.

IN THE CLAIMS:

1. (Previously presented) A remote device management communication system for securely controlling access to management applications and communications to and from said management applications on network devices in a distributed computer network that includes one or more network services, one or more secure management access controllers, and one or more managed network devices, the remote device management system comprising:

at least one secure management access controller connected to one or more data bus of said managed network device for the communication of device management data;

an out-of-band access connection means for connecting said one or more network services or remote users with said secure management access controller for management of said network device; and

at least one virtual management interface connection means for connecting said one or more network services or remote users with said secure management access controller;

wherein said virtual management interface connection means provides logical separation of management data from user data and utilizes user interfaces of said managed network element for connecting said one or more network services or remote users with said secure management access controller.

2. (Previously presented) The system of claim 1 wherein the at least one secure management access controller includes a flash chip, non-volatile random access memory and random access memory.

3. (Previously presented) The system of claim 1 wherein the at least one secure management access controller is embedded in the network device to be managed.

4. (Previously presented) The system of claim 1 wherein the at least one secure management access controller accesses a flash chip, non-volatile random access memory and random access memory embedded in a main processor on the network device.

5. (Previously presented) The system of claim 1 wherein the network device includes a card reader and the at least one secure management access controller is embedded in a card capable of being read by the card reader.

6. (Previously presented) The system of claim 1 wherein the out-of-band access connection means comprises:

a communication system; and

a secure management access controller interface device.

7. (Previously presented) The system of claim 6 wherein the communication system is selected from the group consisting of a Public Switched Telephone Network, a broadband connection and a Virtual Private Network and the interface device is selected from the group consisting of an analog modem, a broadband modem, an Ethernet interface, a cellular interface and a card slot for accepting interface cards.

8. (Previously presented) The system of claim 1 wherein the at least one network communication means is selected from the group consisting of a local area network, a serial interface and a network connection.

9. (Previously presented) The system of claim 1 wherein the at least one network communication means supports at least one protocol selected from the group consisting of Transmission Control Protocol/Internet Protocol, Simple Network Management Protocol, Telnet, Trivial File Transfer Protocol, File Transfer Protocol, Hypertext Transfer Protocol, Hypertext Transfer Protocol over Secure Socket Layer and Secure Shell.

10. (Previously presented) The system of claim 1 wherein user and management communications are transmitted to the at least one secure management access controller and the at least one controller further comprises a virtual management interface for separating the user communications from the management communications.

11. (Previously presented) The system of claim 10 wherein the virtual management interface includes a protection means for protecting the management data.

12. (Previously presented) The system of claim 10 wherein the virtual management interface includes a secure transmission tunnel to protect management communications and a firewall to protect the at least one management access controller from unauthorized access.

13. (Previously presented) The system of claim 1 wherein the at least one the management access controller includes a monitoring means for monitoring the status of at least one computer network component and a network interface for reporting a status of the at least one computer network component to a network management station.

14. (Previously presented) The system of claim 1 further comprising:
a network power supply;
a monitoring means for monitoring the status of the network power supply; and
a reporting means for reporting the status of the network power supply.

15. (Previously presented) The system of claim 1 further comprising an independent power supply for supplying power to the management access controller.

16. (Previously presented) The system of claim 1 further comprising a means for monitoring connection attempts made through the management access controller.

17-20. (Canceled)

REMARKS

Applicant submits this response to the Office Action mailed June 26, 2007. Claims 1-20 have been restricted. Applicant elects Species 1 associated with Claims 1-16. Applicant is canceling Claims 17-20 without prejudice, reserving the right to re-file Claims 17-20.

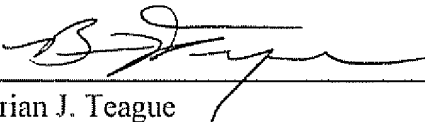
CONCLUSION

Applicant respectfully submits that all of the claims of the present application are in condition for allowance. It is respectfully requested that a Notice of Allowance be issued in due course. The Examiner is encouraged to contact Applicant's undersigned attorney to resolve any remaining issues in order to expedite examination of the present application.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 50-2127.

Respectfully submitted,

Date: **July 17, 2007**



Brian J. Teague
Reg. No. 55,670

JOHN H. THOMAS, P.C.
536 Granite Avenue
Richmond, Virginia 23226
Phone: (804) 344-8130
Fax: (804) 644-3643
E-Mail: info@ip-counsel.net

Electronic Acknowledgement Receipt

EFS ID:	1978268
Application Number:	10969561
International Application Number:	
Confirmation Number:	3106
Title of Invention:	Secure management access control for computers, embedded and card embodiment
First Named Inventor/Applicant Name:	Jeffrey Alan Carley
Correspondence Address:	John H. Thomas, P.C. - 536 Granite Avenue - Richmond VA 23226 US 8043448130 jthomas@ip-counsel.net
Filer:	John H. Thomas/Brian J. Teague
Filer Authorized By:	John H. Thomas
Attorney Docket Number:	ENGEDI6
Receipt Date:	17-JUL-2007
Filing Date:	20-OCT-2004
Time Stamp:	10:27:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response to Election / Restriction Filed	amendment.pdf	145128 4d1f0a2e9294694eb872c9ac3c270dc68dbb541c	no	6

Warnings:

Information:

Total Files Size (in bytes):	145128
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875 Effective December 8, 2004

Application or Docket Number
10 864 561**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(e), (f), or (g))	N/A	N/A
SEARCH FEE (37 CFR 1.16(h), (i), 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(j))	minus 20 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	
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(i))		

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

OR

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

* 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(j))	Minus	**	=
Independent (37 CFR 1.16(h))	Minus	***	=
Application Size Fee (37 CFR 1.16(s))			
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(i))			

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

OR

OR

OR

OR

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

(Column 1)

(Column 2)

(Column 3)

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

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

OR

OR

OR

OR

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.

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S86	7	"CARLEY, JEFFREY ALAN"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:34
S87	5	"ENGEDI TECHNOLOGIES, INC"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:36
S88	701	726/2.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:40
S89	0	S88 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:42
S90	9	S88 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:43
S91	0	S90 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:44
S92	735	726/3.ccls.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:43
S93	14	S92 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:44
S94	0	S93 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:44
S95	12330	709/223	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:44
S96	421	S95 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:45

EAST Search History

S97	0	S96 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:45
S98	12461	709/224	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:44
S99	282	S98 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:45
S100	0	S99 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:46
S101	1938	713/182	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:45
S103	27	S101 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:47
S104	1	S103 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:47
S105	7931	370/335	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:47
S106	17	S105 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:48
S107	0	S106 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:48
S108	11166	709/217	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:48
S109	219	S108 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:49

EAST Search History

S11 0	0	S109 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:49
S11 1	10144	709/219	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:49
S11 2	169	S111 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:50
S11 3	0	S112 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:50
S11 4	265	455/3.03	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:50
S11 5	1	S114 and ("remote" with ("management" adj (system\$1 or device\$1 or "apparatus" or unit\$1 or module\$1)))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/04 18:50
S11 6	0	S115 and (("virtual" adj "management" adj "interface") with ("logical" with separat\$3))	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/06 08:02
S11 7	16	"6081530"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2007/08/06 08:02

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virtual management interface with logical sepa

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Patents

Patents 1 - 10 on virtual management interface with logical separation data. (0.13 seconds)

File server having snapshot application data groups

US Pat. 5403639 - Filed Sep 2, 1992 - Storage Technology Corporation

Furthermore, automatic data transfer interface 1610 is used to transfer data ...
Dynamic Virtual Device to Logical Device Mapping 35 With respect to data ...

Apparatus for compressing data in a dynamically mapped virtual data storage subsystem

US Pat. 5247638 - Filed Jun 18, 1990 - Storage Technology Corporation

Storage Dynamic Virtual Device to Logical Device Mapping path 200-0 is ...
complete front end/backend separation, the data tion, an optical device interface ...

Incremental disk backup system for a dynamically mapped data storage subsystem

US Pat. 5210866 - Filed Sep 12, 1990 - Storage Technology Corporation

100 consists of three abstract layers: virtual, logical and ... The data storage
management system fined by the virtual track directory 900 into the exact ...

Data record copy system for a disk drive array data storage subsystem

US Pat. 5410667 - Filed Apr 17, 1992 - Storage Technology Corporation

cache memory and one of the channel interface of a virtual track. ... Each logical
device is complete front end/backend separation, the data stor- 60 ...

Method for providing a virtual execution environment on a target computer using a virtual ...

US Pat. 4961133 - Filed Aug 10, 1989 - VISystems, Inc.

The routing of data and information through the blackboard switch 5 logic 36 ...
This separation of the processes 40 from the process management interface ...

Virtual software machine which preprocesses application program to isolate execution ...

US Pat. 5067072 - Filed Oct 1, 1990 - VISystems, Inc.

The routing of data and information through the blackboard switch logic 36 and
... This separation of the processes 40 from the process management interface ...

Dynamically mapped data storage subsystem having multiple open destage cylinders and method of ...

US Pat. 5581724 - Filed May 12, 1995 - Storage Technology Corporation

Dynamic virtual Device to Logical Device Mapping With respect to data transfer
... Because of the complete front end/backend separation, the data storage ...

Virtual software machine for enabling CICS application software to run on UNIX based computer ...

US Pat. 6006277 - Filed Jan 26, 1996 - BEA Systems, Inc.

The routing of data and information through the blackboard switch logic 36 and
... This separation of the processes 40 from the process management interface ...

Fault tolerant disk array data storage subsystem

US Pat. 5459857 - Filed Sep 27, 1994 - Storage Technology Corporation

Dynamic Virtual Device to Logical Device Mapping With respect to data transfer
... Because of the complete front end/backend separation, the data storage ...

Phantom duplex copy group apparatus for a disk drive array data storage subsystem

US Pat. 5239659 - Filed Jun 19, 1991 - Storage Technology Corporation

The **virtual** layer functions as a conventional large tected a bad disk drive

transmits a ... The **data** storage **management** system oper- This is accomplished by ...

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Patents

Patents 1 - 10 on virtual management interface with management data. (0.34 seconds)

Method for configuration and **management** of storage resources in a storage network

US Pat. 6640278 - Filed Jan 12, 2000 - Dell Products L.P.

The Ethernet connection 144 supports an Ethernet **interface** for **management** protocols and possibly for **data** transfer. The network **interface** 146 is one of ...

Method for providing a **virtual** execution environment on a target computer using a **virtual** ...

US Pat. 4961133 - Filed Aug 10, 1989 - VISystems, Inc.

Data access **interface** process ("DAI") knows the symbolic (ie, ... This scheme enables the **virtual management interface** 42 to exhibit direct or ...

Virtual storage system and method

US Pat. 4467421 - Filed Jun 2, 1982 - Storage Technology Corporation

Furthermore, the **virtual** storage system of the present invention comprises means ... job **management**, **data** **management**, **interface** with the con- 30 sole and ...

Virtual software machine which preprocesses application program to isolate execution ...

US Pat. 5067072 - Filed Oct 1, 1990 - VISystems, Inc.

For example, **data** access **interface** process ("DAI") 40a is controlled by a **data** ... Once This scheme enables the **virtual management interface** notified of the ...

Method and system for managing **data** migration for a storage system

US Pat. 6654830 - Filed Dec 6, 1999 - Dell Products L.P.

The Ethernet connection 144 supports an Ethernet **interface** for **management** protocols and possibly for **data** transfer. The network **interface** 146 is one of ...

Virtual device architecture having memory for storing lists of driver modules

US Pat. 6553408 - Filed Jul 2, 1999 - Dell Products L.P.

The Ethernet connection 144 supports an Ethernet **interface** for **management** protocols and possibly for **data** transfer. The network **interface** 146 is one of ...

Bandwidth **management** processes and systems for asynchronous transfer mode networks using ...

US Pat. 6097722 - Filed Dec 13, 1996 - Nortel Networks Corporation

For instance, as shown in TABLE 3, **data** traffic, such as e-mail and file ... 150 uses the ATM switch **management interface** to delete **virtual** channels until ...

Dynamic control processes and systems for asynchronous transfer mode networks

US Pat. 5953338 - Filed Dec 13, 1996 - Northern Telecom Limited

For instance, as shown in TABLE 3, **data** traffic, such as e-mail and file ... 150 uses the ATM switch **management interface** to delete **virtual** channels until ...

Voice over **data** telecommunications network architecture

US Pat. 6614781 - Filed Nov 20, 1998 - Level 3 Communications, Inc.

tgs 232, 234 also provide a **management interface** for remote **management**, ... voice **virtual** private network (VPN) that is overlaid on an IP **data** network 112. ...

Techniques for defining using and manipulating rights management data structures

US Pat. 5920861 - Filed Feb 25, 1997 - InterTrust Technologies Corp.

A publisher of fashion magazines 106 can distribute **management interface** with
... objects and/or **data** within a distributed, rights **management** poses (eg, ...

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Web · [Scholar](#) Results 1 - 10 of about 1,080,000 for **virtual management interface connection with logical separation of m:**

Scholarly articles for **virtual management interface connection with logical separation of management data**



Integrated Management of Networked Systems: Concepts, ... - Abeck - Cited by 175

'BladeCenter Networking' - Hunter - Cited by 29

Virtual circuit management in cellular telecommunications - Nguyen - Cited by 35

Remote management unit with interface for remote data exchange ...

A remote **management** unit--RMU--manages a local **data** processing ... of features to either unit based on a **logical separation** of RMU- and DPU-functionalities. ...

www.freepatentsonline.com/20030105851.html - 34k - [Cached](#) - [Similar pages](#)

Remote management unit with interface for remote data exchange ...

(a) configuring a **data exchange interface** (60) of a remote **management** unit either unit based on a **logical separation** of RMU- and DPU-functionalities. ...

www.freepatentsonline.com/EP1235156.html - 34k - [Cached](#) - [Similar pages](#)

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Method and apparatus for operating a data processing system - US ...

The **management interface** processor hosts one or more **logical** console objects for the respective partitions of the **data** processing system. ...

www.patentstorm.us/patents/6728764-description.html - 41k - [Cached](#) - [Similar pages](#)

Virtual software machine which preprocesses application program to ...

This **separation** of the processes 40 from the process **management interface** modules 44 via the blackboard switch **logic** and blackboard advantageously enables ...

www.patentstorm.us/patents/5067072-description.html - 40k - [Cached](#) - [Similar pages](#)

[[More results from www.patentstorm.us](#)]

Internetworking Technology Handbook - Virtual Private Networks ...

In this scenario, the client establishes a **logical connection** within a ... RFC 2408, "Internet Security Association and Key **Management** Protocol (ISAKMP)" ...

www.cisco.com/en/US/tech/tk1330/tsd_technology_support_technical_reference_chapter09186a008075971a.html - 37k - [Cached](#) - [Similar pages](#)

Java Pro - Apply JMX Best Practices

It is also important to view the JMX **management interface** as a repository of **management data**, rather than as a repository of **management logic**. ...

ftponline.com/javapro/2005_01/magazine/features/cpeltz/default_pf.aspx - 33k - [Cached](#) - [Similar pages](#)

[PDF] **The Service Oriented Optical Network (SOON) Project**

File Format: PDF/Adobe Acrobat

control plane is obtained by the XML-based **management interface** available in the routers The SOON project develops the **logical separation** between ...

ieeexplore.ieee.org/iel5/10062/32275/01505836.pdf?arnumber=1505836 - [Similar pages](#)

[PDF] **Virtual network concept and its applications for resource ...**

File Format: PDF/Adobe Acrobat

networks **management** functions and for **virtual separation** of network resources. 0

User-network **interface connection** admission control, UNI-CAC ...

ieeexplore.ieee.org/iel5/7120/19181/00887796.pdf - [Similar pages](#)

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Memory Management

2.5 Memory Management. Each process has its own private address space. The address space is initially divided into three **logical** segments: text, data, ...

www.freebsd.org/doc/en_US.ISO8859-1/books/design-44bsd/overview-memory-management.html - 13k - [Cached](#) - [Similar pages](#)

IBM JRD 49-6 | BladeCenter networking

The I2C bus **interface** is a low-level **management interface** used for collecting VLAN tag to create a separate **virtual connection** for each **interface**, ...

<https://www.research.ibm.com/journal/rd/496/hunter.html> - 86k - [Cached](#) - [Similar pages](#)

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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590

09/06/2007

John H. Thomas, P.C.
536 Granite Avenue
Richmond, VA 23226

EXAMINER

TRUONG, THANHNGA B

ART UNIT

PAPER NUMBER

2135

DATE MAILED: 09/06/2007

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/969,561

10/20/2004

Jeffrey Alan Carley

ENGEDI6

3106

TITLE OF INVENTION: SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$0	\$1000	12/06/2007

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.

HOW TO REPLY TO THIS NOTICE:

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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.

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Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
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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.

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09/06/2007

John H. Thomas, P.C.
536 Granite Avenue
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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.

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(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/969,561

10/20/2004

Jeffrey Alan Carley

ENGEDI6

3106

TITLE OF INVENTION: SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$0	\$1000	12/06/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
TRUONG, THANHNGA B	2135	713-182000

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

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(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.

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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.

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(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:

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

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☐ 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.

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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.
10/969,561	10/20/2004	Jeffrey Alan Carley	ENGEDI6	3106
7590 09/06/2007				
John H. Thomas, P.C. 536 Granite Avenue Richmond, VA 23226		EXAMINER TRUONG, THANHNGA B		
		ART UNIT PAPER NUMBER		
		2135		
DATE MAILED: 09/06/2007				

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 257 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 257 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.

10/969,561

Applicant(s)

CARLEY, JEFFREY ALAN

Examiner

Thanhnga B. Truong

Art Unit

2135

-- 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 7/17/07.
2. ☒ The allowed claim(s) is/are 1-16.
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 Draftsperson'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 _____

T. B. Truong
AU 2135

DETAILED ACTION

1. Applicant's amendment filed on July 17, 2007 has been entered. Claims 1-20 are pending. Claims 17-20 are cancelled by the applicant.

Election/Restrictions

2. Applicant's election without traverse of **species 1** in the reply filed on July 17, 2007 is acknowledged.

Claims 17-20 are withdrawn and cancelled from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species 2, there being no allowable generic or linking claim. Election was made **without traverse** in the reply filed on July 17, 2007.

Response to Argument

2. Applicant's arguments filed July 17, 2007 have been fully considered and are persuasive.

Allowable Subject Matter

3. Claims 1-16 are allowed. The following is an examiner's statement of reasons for allowance: The prior art does not disclose a remote device management communication system for securely controlling access to management applications mad communications to and from said management applications oi1 network devices in a distributed computer network that includes one or more network services, one or more secure management access controllers, and one or more managed network devices, the remote device management system comprising: at least one secure management access controller connected to one or more data bus of said managed network device for the communication of device management data; an out-of-band access connection means for connecting said one or more network services or remote users with said secure management access controller for management of said network device; and at least one virtual management interface connection means for connecting said one or more network services or remote users with said secure management access controller; wherein said virtual management interface connection means provides logical separation of management data from user data mad utilizes user interfaces of said

Art Unit: 2135

managed network element for connecting said one or more network services or' remote users with said secure management access controller as set forth in claim 1.

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."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanhnga (Tanya) Truong whose telephone number is 571-272-3858.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Vu can be reached on 571-272-3859. The central fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

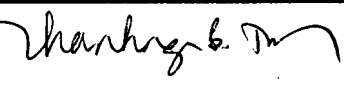
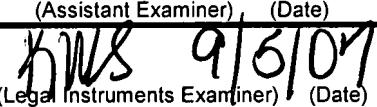
TBT

August 24, 2007

Thanhnga B. Truong
Primary Examiner AU2135

Issue Classification 	Application/Control No. 10/969,561	Applicant(s)/Patent under Reexamination CARLEY, JEFFREY ALAN
	Examiner Thanhnga B. Truong	Art Unit 2135

ISSUE CLASSIFICATION												
ORIGINAL					INTERNATIONAL CLASSIFICATION							
CLASS		SUBCLASS			CLAIMED				NON-CLAIMED			
713		182			H	04	L	9	/00			/
CROSS REFERENCES								/			/	
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)							/			/	
726	2	3						/			/	
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 (Assistant Examiner) (Date)		 T. B. Truong 8/24/07 (Primary Examiner) (Date)		Total Claims Allowed: 16	
 (Legal Instruments Examiner) (Date)				O.G. Print Claim(s) 1	
				O.G. Print Fig. 4	

☐ 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		
1	1		31		61		91		121		151		181		
2	2		32		62		92		122		152		182		
3	3		33		63		93		123		153		183		
4	4		34		64		94		124		154		184		
5	5		35		65		95		125		155		185		
6	6		36		66		96		126		156		186		
7	7		37		67		97		127		157		187		
8	8		38		68		98		128		158		188		
9	9		39		69		99		129		159		189		
10	10		40		70		100		130		160		190		
11	11		41		71		101		131		161		191		
12	12		42		72		102		132		162		192		
13	13		43		73		103		133		163		193		
14	14		44		74		104		134		164		194		
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	29		59		89		119		149		179		209		
	30		60		90		120		150		180		210		



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UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
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BIB DATA SHEET

CONFIRMATION NO. 3106

SERIAL NUMBER 10/969,561	FILING or 371(c) DATE 10/20/2004 RULE	CLASS 713	GROUP ART UNIT 2135	ATTORNEY DOCKET NO. ENGEDI6		
APPLICANTS Jeffrey Alan Carley, Colorado Springs, CO; ** CONTINUING DATA ***** This application is a CIP of 10/461,827 06/13/2003 and claims benefit of 60/512,777 10/21/2003 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 01/07/2005						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /THANHNGA B Acknowledged TRUONG/ Examiner's Signature		☐ Met after Allowance TBT Initials	STATE OR COUNTRY CO	SHEETS DRAWINGS 32	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 2
ADDRESS John H. Thomas, P.C. 536 Granite Avenue Richmond, VA 23226 UNITED STATES						
TITLE Secure management access control for computers, embedded and card embodiment						
FILING FEE RECEIVED 395	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		

Index of Claims



Application/Control No.

10/969,561

Examiner

Thanhnga B. Truong

Applicant(s)/Patent under Reexamination

CARLEY, JEFFREY ALAN

Art Unit

2135

✓	Rejected
=	Allowed

-	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim	Date
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Search Notes

Application/Control No.

10/969,561

Examiner

Thanhnga B. Truong

Applicant(s)/Patent under
Reexamination

CARLEY, JEFFREY ALAN

Art Unit

2135

SEARCHED

Class	Subclass	Date	Examiner
726	2-3	8/4/2007	TBT
709	223--224	8/4/2007	TBT
709	217,219	8/4/2007	TBT
713	182	8/4/2007	TBT
370	335	8/4/2007	TBT
455	3.03	8/4/2007	TBT

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner
713	182	8/4/2007	TBT
726	2-3	8/4/2007	TBT
709	223-224	8/4/2007	TBT
709/217		8/4/2007	TBT

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
Inventor Name Search	8/4/2007	TBT
Assignee Search	8/4/2007	TBT
TEXT Search	8/4/2007	TBT
EAST Search	8/4/2007	TBT
NPL Search: Google	8/30/2007	TBT

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)

7590

09/06/2007

John H. Thomas, P.C.
 536 Granite Avenue
 Richmond, VA 23226

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.

Faith Russell

(Depositor's name)

(Signature)

December 3, 2007

(Date)

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

10/969,561

10/20/2004

Jeffrey Alan Carley

ENGEDI6

3106

TITLE OF INVENTION: SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$0	\$1000	12/06/2007

EXAMINER	ART UNIT	CLASS-SUBCLASS
TRUONG, THANHNGA B	2135	713-182000

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 John H. Thomas, P.C.

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

Engedi Technologies, Inc.

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

Virginia Beach, Virginia 23451

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)

☒ ~~XXXXXX~~ Online Payment

☐ 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 50-2127 (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 December 3, 2007

Typed or printed name

Brian J. Teague

Registration No. 55,670

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.

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

Electronic Patent Application Fee Transmittal

Application Number:	10969561			
Filing Date:	20-Oct-2004			
Title of Invention:	SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT			
First Named Inventor/Applicant Name:	Jeffrey Alan Carley			
Filer:	John H. Thomas			
Attorney Docket Number:	ENGEDI6			
Filed as Small Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Publ. Fee- early, voluntary, or normal	1504	1	300	300
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	2501	1	720	720 Lenovo

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1020

Electronic Acknowledgement Receipt

EFS ID:	2537810
Application Number:	10969561
International Application Number:	
Confirmation Number:	3106
Title of Invention:	SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT
First Named Inventor/Applicant Name:	Jeffrey Alan Carley
Correspondence Address:	John H. Thomas, P.C. - 536 Granite Avenue - Richmond VA 23226 US 8043448130 jthomas@ip-counsel.net
Filer:	John H. Thomas
Filer Authorized By:	
Attorney Docket Number:	ENGEDI6
Receipt Date:	03-DEC-2007
Filing Date:	20-OCT-2004
Time Stamp:	14:30:14
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Electronic Funds Transfer
Payment was successfully received in RAM	\$ 1020

Lenovo

RAM confirmation Number		8475			
Deposit Account					
Authorized User					
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)	feetransmittal.pdf	116304	no	1
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Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8324	no	2
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Warnings:					
Information:					
Total Files Size (in bytes):			124628		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> 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. <u>National Stage of an International Application under 35 U.S.C. 371</u> 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. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/969,561	01/29/2008	7325140	ENGEDI6	3106

7590

01/09/2008

John H. Thomas, P.C.
536 Granite Avenue
Richmond, VA 23226

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 257 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 Customer Service Center of the Office of Patent Publication at (571)-272-4200.

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

Jeffrey Alan Carley, Colorado Springs, CO;



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

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
10/969,561	7325140	2135	9200



Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 31704 on 04/06/2011

- Correspondence Address
- Maintenance Fee Address
- Power of Attorney Address

The address of record for Customer Number 31704 is:

31704
Thomas & Karceski, P.C.
536 GRANITE AVENUE
RICHMOND, VA 23226

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(b).

I hereby appoint:



Practitioners associated with the Customer Number:

35690

OR



Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used).

Name	Registration Number	Name	Registration Number

as attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(b).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(b) to:



The address associated with Customer Number:

35690

OR

☐ Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

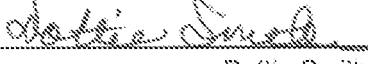
Assignee Name and Address:

Infinite Bay Telecom Limited Liability Company
180 Greentree Drive, Suite 101
Dover, Delaware 19904

A copy of this form, together with a statement under 37 CFR 3.73(b) (Form PTO/SB/96 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(b) may be completed by one of the practitioners appointed in this form if the appointed practitioner is authorized to act on behalf of the assignee, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	9-2-2011
Name	Dottie Smith		Telephone
Title	Authorized Person for Infinite Bay Telecom Limited Liability Company		

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

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

DECLARATION REGARDING AUTHORITY TO SIGN ON BEHALF OF A LEGAL ENTITY
37 C.F.R. 3.73(b)(2)(i)

I, Dottie Smith (whose title is supplied below), hereby declare that I am authorized to sign on behalf of Infinite Bay Telecom Limited Liability Company

Dottie Smith

Dottie Smith, Authorized Person for Infinite Bay Telecom Limited Liability Company

9-2-2011
[date]

Electronic Acknowledgement Receipt

EFS ID:	11063114
Application Number:	10969561
International Application Number:	
Confirmation Number:	3106
Title of Invention:	SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT
First Named Inventor/Applicant Name:	Jeffrey Alan Carley
Customer Number:	31704
Filer:	Dean M. Munyon/Dawn DeLuca
Filer Authorized By:	Dean M. Munyon
Attorney Docket Number:	ENGEDI6
Receipt Date:	27-SEP-2011
Filing Date:	20-OCT-2004
Time Stamp:	19:34:06
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Assignee showing of ownership per 37 CFR 3.73(b).	sb0096.pdf	427858 cedd80e37d785887762fb05083106f7ed9831d10	no	2

Warnings:

Information:

Lenovo

2	Power of Attorney	Engedi_Technologies_Inc_US_ POA.pdf	856263 d1262cc9219f1fa4b9ef6ff5a91d9b8b35bc bb3	no	1
Warnings:					
Information:					
3	Miscellaneous Incoming Letter	Engedi_Technologies_Inc_US_ DRATS.pdf	227415 71eea674980e2d4a80868535d1ff789836f5 c38d	no	1
Warnings:					
Information:					
Total Files Size (in bytes):			1511536		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> 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. <u>National Stage of an International Application under 35 U.S.C. 371</u> 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. <u>New International Application Filed with the USPTO as a Receiving Office</u> 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.					

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

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: INFINITE BAY TELECOM LIMITED LIABILITY COMPANY

Application No./Patent No.: 7325140 Filed/Issue Date: January 29, 2008

Titled: Secure management access control for computers, embedded and card embodiment

INFINITE BAY TELECOM LIMITED LIABILITY CC, a LIMITED LIABILITY COMPANY

(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 _____, Frame _____, 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: Jeffrey Alan Carley To: Engedi Technologies, Inc.

The document was recorded in the United States Patent and Trademark Office at
Reel 015611, Frame 0986, or for which a copy thereof is attached.

2. From: Engedi Technologies, Inc. To: Infinite Bay Telecom Limited Liability Company

The document was recorded in the United States Patent and Trademark Office at
Reel 026849, Frame 0251, 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.

/Dean M. Munyon/

Signature

September 27, 2011

Date

Dean M. Munyon

Printed or Typed Name

Attorney (Reg. No. 42,914)

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 1450, Alexandria, VA 22313-1450.**

Lenovo

Privacy Act Statement

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

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

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/969,561	10/20/2004	Jeffrey Alan Carley	ENGEDI6

35690
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

CONFIRMATION NO. 3106
POA ACCEPTANCE LETTER



Date Mailed: 10/06/2011

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/27/2011.

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

/s/brahim/

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/969,561	10/20/2004	Jeffrey Alan Carley	ENGEDI6

31704
Thomas & Karceski, P.C.
536 GRANITE AVENUE
RICHMOND, VA 23226

CONFIRMATION NO. 3106
POWER OF ATTORNEY NOTICE



Date Mailed: 10/06/2011

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/27/2011.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/sibrahim/

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Atty. Dkt. No:	6257-62709	§	Title:	SECURE MANAGEMENT
Application No:	10/969561	§		ACCESS CONTROL FOR
Patent No:	7325140	§		COMPUTERS, EMBEDDED AND
Filing Date:	10-20-2004	§		CARD EMBODIMENT
Inventor(s):	Jeffrey Alan Carley	§	Examiner:	TRUONG, THANHNGA B
		§	Group/Art Unit:	2135
		§		
		§		
		§		

STATEMENT REGARDING CHANGE FROM SMALL ENTITY STATUS

Patentee is no longer entitled to small entity status in the above-referenced patent.

No fees are believed necessary; however if any fees are required, the Commissioner is hereby authorized to immediately charge the fees or credit any overpayment to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 501505/6257-62709/DMM.

Respectfully submitted,

Date: October 10, 2011

By: /Dean M. Munyon/
Dean M. Munyon
Reg. No. 42,914

Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.
P. O. Box 398
Austin, Texas 78767
(512) 853-8800

Electronic Acknowledgement Receipt

EFS ID:	11151158
Application Number:	10969561
International Application Number:	
Confirmation Number:	3106
Title of Invention:	SECURE MANAGEMENT ACCESS CONTROL FOR COMPUTERS, EMBEDDED AND CARD EMBODIMENT
First Named Inventor/Applicant Name:	Jeffrey Alan Carley
Customer Number:	35690
Filer:	Dean M. Munyon/Dawn DeLuca
Filer Authorized By:	Dean M. Munyon
Attorney Docket Number:	6257-62709
Receipt Date:	10-OCT-2011
Filing Date:	20-OCT-2004
Time Stamp:	14:49:19
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Miscellaneous Incoming Letter	SEC.pdf	16724 cdca2a7110e1c6d0b8f000000920daaf27c5bda9	no	1

Warnings:

Information:

Lenovo

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court _____ for the Western District of Texas, Waco Division _____ on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:22-cv-703	DATE FILED 6/30/2022	U.S. DISTRICT COURT for the Western District of Texas, Waco Division
PLAINTIFF INTELLECTUAL VENTURES II LLC		DEFENDANT HEWLETT PACKARD ENTERPRISE CO.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,325,140	1/29/2008	Intellectual Ventures II LLC
2 8,474,016	6/25/2013	Intellectual Venturesf II LLC
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
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Lenovo

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Ex. 1004 - Page 165

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court _____ for the Western District of Texas, Waco Division _____ on the following

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DOCKET NO. 6:22-cv-703	DATE FILED 6/30/2022	U.S. DISTRICT COURT for the Western District of Texas, Waco Division
PLAINTIFF INTELLECTUAL VENTURES II LLC		DEFENDANT HEWLETT PACKARD ENTERPRISE CO.
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DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
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AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:23-cv-68	DATE FILED 2/2/2023	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF Intellectual Ventures II LLC		DEFENDANT Lenovo Group Limited
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,325,140	1/29/2008	Intellectual Ventures II LLC
2 8,474,016	6/25/2013	Intellectual Ventures II LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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DECISION/JUDGEMENT

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Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292);

DOCKET NO. 6:23-cv-0068	DATE FILED 2/2/2023	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF Intellectual Ventures II LLC		DEFENDANT Lenovo Group Limited
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,325,140	1/29/2008	Intellectual Ventures II LLC
2 8,474,016	6/25/2013	Intellectual Ventures II LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED 4/20/2023	INCLUDED BY ☒ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,089,443	8/8/2006	Intellectual Ventures II LLC
2 7,623,439	11/24/2009	Intellectual Ventures II LLC
3 7,646,835	1/12/2010	Intellectual Ventures II LLC
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
filed in the U.S. District Court **Western District of Texas** on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:23-cv-307	DATE FILED 4/26/2023	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF Intellectual Ventures I LLC and Intellectual Ventures II LLC		DEFENDANT Lenovo Group Limited
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,325,140	1/29/2008	Intellectual Ventures II LLC
2 8,474,016	6/25/2013	Intellectual Ventures II LLC
3 7,089,443	8/8/2006	Intellectual Ventures I LLC
4 7,623,439	11/24/2009	Intellectual Ventures I LLC
5 7,646,835	1/12/2010	Intellectual Ventures II LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

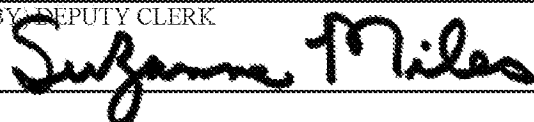
DOCKET NO. 6:23-cv-68	DATE FILED 2/2/2023	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF Intellectual Ventures II LLC		DEFENDANT Lenovo Group Limited
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,325,140	1/29/2008	Intellectual Ventures II LLC
2 8,474,016	6/25/2013	Intellectual Ventures II LLC
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT 4/26/2023 - Notice of Voluntary Dismissal - Doc #11

CLERK PHILIP J. DEVLIN	(BY) DEPUTY CLERK 	DATE 06/08/2023
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Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been
 filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 6:23-cv-68	DATE FILED 2/2/2023	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF Intellectual Ventures II LLC		DEFENDANT Lenovo Group Limited
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT 4/26/2023 - Notice of Voluntary Dismissal - Doc #11

CLERK PHILIP J. DEVLIN	(BY) DEPUTY CLERK <i>Suzanne Miles</i>	DATE 06/08/2023
---------------------------	---	--------------------

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
 Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO: Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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filed in the U.S. District Court Western District of Texas on the following

☐ Trademarks or ☒ Patents. (☐ the patent action involves 35 U.S.C. § 292.);

DOCKET NO. 6:23-cv-0068	DATE FILED 2/2/2023	U.S. DISTRICT COURT Western District of Texas
PLAINTIFF Intellectual Ventures II LLC		DEFENDANT Lenovo Group Limited
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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2 7,623,439	11/24/2009	Intellectual Ventures II LLC
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