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TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. is the patent application of:

Yigal Edery, Nimrod Vered and David Kroll

## FOR:

Malicious Mobile Code Runtime Monitoring System and Methods:

- ☒ Certificate of Mailing with Express Mailing Label No.: EL 701 364 462 US;
- ☒ 10 Informal Sheets of Drawings: FIGS 1a-1c; 2, 3, 4; 5, 6a and 6b; 7a-7b and 8; 9 10A-10B; 11; 12a-12b
- ☒ Unsigned Combined Declaration and Power of Attorney;
- ☒ General Authorization and Request to Petition for Extension of Time; and
- ☒ Return Receipt Postcard

## CLAIMS AS FILED

FOR	FILED	ALLOWED	Extra	Rate	Additional Fee
Total Claims	76	-20	56	x \$ 9.00	\$ 504.00
Indep. Claims	11	-3	8	x \$40.00	\$ 320.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$
Basic Fee					\$ 355.00
Total Filing Fee					\$1,179.00

- ☒ No additional fee is required for amendment.
- ☒ Please charge Deposit Account No. 05-0150 in the amount of \$ 1,179.00
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As described below. A duplicate copy of this sheet is enclosed.

- ☒ Charge the amount of \$1,179.00 as filing fee.
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- ☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

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**APPLICATION FOR  
UNITED STATES PATENT  
IN THE NAME OF**

**Yigal Edery, Nimrod Vered and David Kroll**

**OF**

**FINJAN SOFTWARE, LTD.**

**MALICIOUS MOBILE CODE RUNTIME MONITORING  
SYSTEM AND METHODS**

**DOCKET NO. 43426.00014**

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MALICIOUS MOBILE CODE RUNTIME MONITORING  
SYSTEM AND METHODS

PRIORITY REFERENCE TO RELATED APPLICATIONS

5 This application claims benefit of and hereby incorporates by reference  
provisional application serial number 60/205,591, entitled "Computer Network Malicious  
Code Run-time Monitoring," filed on May 17, 2000 by inventors Nimrod Itzhak Vered, et  
al. This application is also a Continuation-In-Part of and hereby incorporates by  
reference patent application serial number 09/539,667, entitled "System and Method for  
10 Protecting a Computer and a Network From Hostile Downloadables" filed on March 30,  
2000 by inventor Shlomo Touboul. This application is also a Continuation-In-Part of and  
hereby incorporates by reference patent application serial number 09/551,302, entitled  
"System and Method for Protecting a Client During Runtime From Hostile  
Downloadables", filed on April 18, 2000 by inventor Shlomo Touboul.

BACKGROUND OF THE INVENTION

Field of the Invention

20 This invention relates generally to computer networks, and more particularly  
provides a system and methods for protecting network-connectable devices from  
undesirable downloadable operation.

Description of the Background Art

Advances in networking technology continue to impact an increasing number and diversity of users. The Internet, for example, already provides to expert, intermediate and even novice users the informational, product and service resources of over 100,000 interconnected networks owned by governments, universities, nonprofit groups, companies, etc. Unfortunately, particularly the Internet and other public networks have also become a major source of potentially system-fatal or otherwise damaging computer code commonly referred to as “viruses.”

Efforts to forestall viruses from attacking networked computers have thus far met with only limited success at best. Typically, a virus protection program designed to identify and remove or protect against the initiating of known viruses is installed on a network firewall or individually networked computer. The program is then inevitably surmounted by some new virus that often causes damage to one or more computers. The damage is then assessed and, if isolated, the new virus is analyzed. A corresponding new virus protection program (or update thereof) is then developed and installed to combat the new virus, and the new program operates successfully until yet another new virus appears - and so on. Of course, damage has already typically been incurred.

To make matters worse, certain classes of viruses are not well recognized or understood, let alone protected against. It is observed by this inventor, for example, that Downloadable information comprising program code can include distributable components (e.g. Java™ applets and JavaScript scripts, ActiveX™ controls, Visual Basic, add-ins and/or others). It can also include, for example, application programs, Trojan horses, multiple compressed programs such as zip or meta files, among others. U.S. Patent 5,983,348 to Shuang, however, teaches a protection system for protecting

against only distributable components including “Java applets or ActiveX controls”, and further does so using resource intensive and high bandwidth static Downloadable content and operational analysis, and modification of the Downloadable component; Shuang further fails to detect or protect against additional program code included within a tested

5 Downloadable. U.S. Patent 5,974,549 to Golan teaches a protection system that further focuses only on protecting against ActiveX controls and not other distributable components, let alone other Downloadable types. U.S. patent 6,167,520 to Touboul enables more accurate protection than Shuang or Golan, but lacks the greater flexibility and efficiency taught herein, as do Shuang and Golan.

10 Accordingly, there remains a need for efficient, accurate and flexible protection of computers and other network connectable devices from malicious Downloadables.

### SUMMARY OF THE INVENTION

The present invention provides protection systems and methods capable of

15 protecting a personal computer (“PC”) or other persistently or even intermittently network accessible devices or processes from harmful, undesirable, suspicious or other “malicious” operations that might otherwise be effectuated by remotely operable code. While enabling the capabilities of prior systems, the present invention is not nearly so limited, resource intensive or inflexible, and yet enables more reliable protection. For

20 example, remotely operable code that is protectable against can include downloadable application programs, Trojan horses and program code groupings, as well as software “components”, such as Java™ applets, ActiveX™ controls, JavaScript™/Visual Basic scripts, add-ins, etc., among others. Protection can also be provided in a distributed

interactively, automatically or mixed configurable manner using protected client, server or other parameters, redirection, local/remote logging, etc., and other server/client based protection measures can also be separately and/or interoperably utilized, among other examples.

5           In one aspect, embodiments of the invention provide for determining, within one or more network “servers” (e.g. firewalls, resources, gateways, email relays or other devices/processes that are capable of receiving-and-transferring a Downloadable) whether received information includes executable code (and is a “Downloadable”). Embodiments also provide for delivering static, configurable and/or extensible remotely operable  
10           protection policies to a Downloadable-destination, more typically as a sandboxed package including the mobile protection code, downloadable policies and one or more received Downloadables. Further client-based or remote protection code/policies can also be utilized in a distributed manner. Embodiments also provide for causing the mobile protection code to be executed within a Downloadable-destination in a manner that  
15           enables various Downloadable operations to be detected, intercepted or further responded to via protection operations. Additional server/information-destination device security or other protection is also enabled, among still further aspects.

          A protection engine according to an embodiment of the invention is operable within one or more network servers, firewalls or other network connectable information  
20           re-communicating devices (as are referred to herein summarily one or more “servers” or “re-communicators”). The protection engine includes an information monitor for monitoring information received by the server, and a code detection engine for determining whether the received information includes executable code. The protection

engine also includes a packaging engine for causing a sandboxed package, typically including mobile protection code and downloadable protection policies to be sent to a Downloadable-destination in conjunction with the received information, if the received information is determined to be a Downloadable.

5 A sandboxed package according to an embodiment of the invention is receivable by and operable with a remote Downloadable-destination. The sandboxed package includes mobile protection code ("MPC") for causing one or more predetermined malicious operations or operation combinations of a Downloadable to be monitored or otherwise intercepted. The sandboxed package also includes protection policies (operable  
10 alone or in conjunction with further Downloadable-destination stored or received policies/MPCs) for causing one or more predetermined operations to be performed if one or more undesirable operations of the Downloadable is/are intercepted. The sandboxed package can also include a corresponding Downloadable and can provide for initiating the Downloadable in a protective "sandbox". The MPC/policies can further include a  
15 communicator for enabling further MPC/policy information or "modules" to be utilized and/or for event logging or other purposes.

A sandbox protection system according to an embodiment of the invention comprises an installer for enabling a received MPC to be executed within a Downloadable-destination (device/process) and further causing a Downloadable  
20 application program, distributable component or other received downloadable code to be received and installed within the Downloadable-destination. The protection system also includes a diverter for monitoring one or more operation attempts of the Downloadable, an operation analyzer for determining one or more responses to the attempts, and a

security enforcer for effectuating responses to the monitored operations. The protection system can further include one or more security policies according to which one or more protection system elements are operable automatically (e.g. programmatically) or in conjunction with user intervention (e.g. as enabled by the security enforcer). The security policies can also be configurable/extensible in accordance with further downloadable and/or Downloadable-destination information.

A method according to an embodiment of the invention includes receiving downloadable information, determining whether the downloadable information includes executable code, and causing a mobile protection code and security policies to be communicated to a network client in conjunction with security policies and the downloadable information if the downloadable information is determined to include executable code. The determining can further provide multiple tests for detecting, alone or together, whether the downloadable information includes executable code.

A further method according to an embodiment of the invention includes forming a sandboxed package that includes mobile protection code ("MPC"), protection policies, and a received, detected-Downloadable, and causing the sandboxed package to be communicated to and installed by a receiving device or process ("user device") for responding to one or more malicious operation attempts by the detected-Downloadable from within the user device. The MPC/policies can further include a base "module" and a "communicator" for enabling further up/downloading of one or more further "modules" or other information (e.g. events, user/user device information, etc.).

Another method according to an embodiment of the invention includes installing, within a user device, received mobile protection code ("MPC") and protection policies in

conjunction with the user device receiving a downloadable application program, component or other Downloadable(s). The method also includes determining, by the MPC, a resource access attempt by the Downloadable, and initiating, by the MPC, one or more predetermined operations corresponding to the attempt. (Predetermined operations can, for example, comprise initiating user, administrator, client, network or protection system determinable operations, including but not limited to modifying the Downloadable operation, extricating the Downloadable, notifying a user/another, maintaining a local/remote log, causing one or more MPCs/policies to be downloaded, etc.)

Advantageously, systems and methods according to embodiments of the invention enable potentially damaging, undesirable or otherwise malicious operations by even unknown mobile code to be detected, prevented, modified and/or otherwise protected against without modifying the mobile code. Such protection is further enabled in a manner that is capable of minimizing server and client resource requirements, does not require pre-installation of security code within a Downloadable-destination, and provides for client specific or generic and readily updateable security measures to be flexibly and efficiently implemented. Embodiments further provide for thwarting efforts to bypass security measures (e.g. by "hiding" undesirable operation causing information within apparently inert or otherwise "friendly" downloadable information) and/or dividing or combining security measures for even greater flexibility and/or efficiency.

Embodiments also provide for determining protection policies that can be downloaded and/or ascertained from other security information (e.g. browser settings, administrative policies, user input, uploaded information, etc.). Different actions in response to different Downloadable operations, clients, users and/or other criteria are also

enabled, and embodiments provide for implementing other security measures, such as verifying a downloadable source, certification, authentication, etc. Appropriate action can also be accomplished automatically (e.g. programmatically) and/or in conjunction with alerting one or more users/administrators, utilizing user input, etc. Embodiments

5 further enable desirable Downloadable operations to remain substantially unaffected, among other aspects.

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BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1a is a block diagram illustrating a network system in accordance with an embodiment of the present invention;

FIG. 1b is a block diagram illustrating a network subsystem example in  
5 accordance with an embodiment of the invention;

FIG. 1c is a block diagram illustrating a further network subsystem example in accordance with an embodiment of the invention;

FIG. 2 is a block diagram illustrating a computer system in accordance with an embodiment of the invention;

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FIG. 3 is a flow diagram broadly illustrating a protection system host according to an embodiment of the invention;

FIG. 4 is a block diagram illustrating a protection engine according to an embodiment of the invention;

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FIG. 5 is a block diagram illustrating a content inspection engine according to an embodiment of the invention;

FIG. 6a is a block diagram illustrating protection engine parameters according to an embodiment of the invention;

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FIG. 6b is a flow diagram illustrating a linking engine use in conjunction with ordinary, compressed and distributable sandbox package utilization, according to an embodiment of the invention;

FIG. 7a is a flow diagram illustrating a sandbox protection system operating within a destination system, according to an embodiment of the invention;

FIG. 7b is a block diagram illustrating memory allocation usable in conjunction with the protection system of FIG. 7a, according to an embodiment of the invention;

FIG. 7c is a block diagram illustrating a mobile protection code according to an embodiment of the invention;

5        FIG. 8 is a flowchart illustrating a method for examining a Downloadable in accordance with the present invention;

FIG. 9 is a flowchart illustrating a server based protection method according to an embodiment of the invention;

10        FIG. 10a is a flowchart illustrating method for determining if a potential-Downloadable includes or is likely to include executable code, according to an embodiment of the invention;

FIG. 10b is a flowchart illustrating a method for forming a protection agent, according to an embodiment of the invention;

15        FIG. 11 is a flowchart illustrating a method for protecting a Downloadable destination according to an embodiment of the invention;

FIG. 12a is a flowchart illustrating a method for forming a Downloadable access interceptor according to an embodiment of the invention; and

FIG. 12b is a flowchart illustrating a method for implementing mobile protection policies according to an embodiment of the invention.

DETAILED DESCRIPTION

In providing malicious mobile code runtime monitoring systems and methods, embodiments of the invention enable actually or potentially undesirable operations of even unknown malicious code to be efficiently and flexibly avoided. Embodiments provide, within one or more “servers” (e.g. firewalls, resources, gateways, email relays or other information re-communicating devices), for receiving downloadable-information and detecting whether the downloadable-information includes one or more instances of executable code (e.g. as with a Trojan horse, zip/meta file etc.). Embodiments also provide for separately or interoperably conducting additional security measures within the server, within a Downloadable-destination of a detected-Downloadable, or both.

Embodiments further provide for causing mobile protection code (“MPC”) and downloadable protection policies to be communicated to, installed and executed within one or more received information destinations in conjunction with a detected-Downloadable. Embodiments also provide, within an information-destination, for detecting malicious operations of the detected-Downloadable and causing responses thereto in accordance with the protection policies (which can correspond to one or more user, Downloadable, source, destination, or other parameters), or further downloaded or downloadable-destination based policies (which can also be configurable or extensible). (Note that the term “or”, as used herein, is generally intended to mean “and/or” unless otherwise indicated.)

FIGS. 1a through 1c illustrate a computer network system 100 according to an embodiment of the invention. FIG. 1a broadly illustrates system 100, while FIGS. 1b and

1c illustrate exemplary protectable subsystem implementations corresponding with system 104 or 106 of FIG. 1a.

Beginning with FIG. 1a, computer network system 100 includes an external computer network 101, such as a Wide Area Network or “WAN” (e.g. the Internet), which is coupled to one or more network resource servers (summarily depicted as resource server-1 102 and resource server-N 103). Where external network 101 includes the Internet, resource servers 1-N (102, 103) might provide one or more resources including web pages, streaming media, transaction-facilitating information, program updates or other downloadable information, summarily depicted as resources 121, 131 and 132. Such information can also include more traditionally viewed “Downloadables” or “mobile code” (i.e. distributable components), as well as downloadable application programs or other further Downloadables, such as those that are discussed herein. (It will be appreciated that interconnected networks can also provide various other resources as well.)

Also coupled via external network 101 are subsystems 104-106. Subsystems 104-106 can, for example, include one or more servers, personal computers (“PCs”), smart appliances, personal information managers or other devices/processes that are at least temporarily or otherwise intermittently directly or indirectly connectable in a wired or wireless manner to external network 101 (e.g. using a dialup, DSL, cable modem, cellular connection, IR/RF, or various other suitable current or future connection alternatives). One or more of subsystems 104-106 might further operate as user devices that are connectable to external network 101 via an internet service provider (“ISP”) or

local area network (“LAN”), such as a corporate intranet, or home, portable device or smart appliance network, among other examples.

FIG. 1a also broadly illustrates how embodiments of the invention are capable of selectively, modifiably or extensibly providing protection to one or more determinable ones of networked subsystems 104-106 or elements thereof (not shown) against potentially harmful or other undesirable (“malicious”) effects in conjunction with receiving downloadable information. “Protected” subsystem 104, for example, utilizes a protection in accordance with the teachings herein, while “unprotected” subsystem-N 105 employs no protection, and protected subsystem-M 106 might employ one or more protections including those according to the teachings herein, other protection, or some combination.

System 100 implementations are also capable of providing protection to redundant elements 107 of one or more of subsystems 104-106 that might be utilized, such as backups, failsafe elements, redundant networks, etc. Where included, such redundant elements are also similarly protectable in a separate, combined or coordinated manner using embodiments of the present invention either alone or in conjunction with other protection mechanisms. In such cases, protection can be similarly provided singly, as a composite of component operations or in a backup fashion. Care should, however, be exercised to avoid potential repeated protection engine execution corresponding to a single Downloadable; such “chaining” can cause a Downloadable to operate incorrectly or not at all, unless a subsequent detection engine is configured to recognize a prior packaging of the Downloadable..

FIGS. 1b and 1c further illustrate, by way of example, how protection systems according to embodiments of the invention can be utilized in conjunction with a wide variety of different system implementations. In the illustrated examples, system elements are generally configurable in a manner commonly referred to as a “client-server” configuration, as is typically utilized for accessing Internet and many other network resources. For clarity sake, a simple client-server configuration will be presumed unless otherwise indicated. It will be appreciated, however, that other configurations of interconnected elements might also be utilized (e.g. peer-peer, routers, proxy servers, networks, converters, gateways, services, network reconfiguring elements, etc.) in accordance with a particular application.

The FIG. 1b example shows how a suitable protected system 104a (which can correspond to subsystem-1 104 or subsystem-M 106 of FIG. 1) can include a protection-initiating host “server” or “re-communicator” (e.g. ISP server 140a), one or more user devices or “Downloadable-destinations” 145, and zero or more redundant elements (which elements are summarily depicted as redundant client device/process 145a). In this example, ISP server 140a includes one or more email, Internet or other servers 141a, or other devices or processes capable of transferring or otherwise “re-communicating” downloadable information to user devices 145. Server 141a further includes protection engine or “PE” 142a, which is capable of supplying mobile protection code (“MPC”) and protection policies for execution by client devices 145. One or more of user devices 145 can further include a respective one or more clients 146 for utilizing information received via server 140a, in accordance with which MPC and protection policies are operable to

protect user devices 145 from detrimental, undesirable or otherwise “malicious” operations of downloadable information also received by user device 145.

The FIG. 1c example shows how a further suitable protected system 104b can include, in addition to a “re-communicator”, such as server 142b, a firewall 143c (e.g. as is typically the case with a corporate intranet and many existing or proposed home/smart networks.) In such cases, a server 141b or firewall 143 can operate as a suitable protection engine host. A protection engine can also be implemented in a more distributed manner among two or more protection engine host systems or host system elements, such as both of server 141b and firewall 143, or in a more integrated manner, for example, as a standalone device. Redundant system or system protection elements can also be similarly provided in a more distributed or integrated manner (see above).

System 104b also includes internal network 144 and user devices 145. User devices 145 further include a respective one or more clients 146 for utilizing information received via server 140a, in accordance with which the MPCs or protection policies are operable. (As in the previous example, one or more of user devices 145 can also include or correspond with similarly protectable redundant system elements, which are not shown.)

It will be appreciated that the configurations of FIGS 1a-1c are merely exemplary. Alternative embodiments might, for example, utilize other suitable connections, devices or processes. One or more devices can also be configurable to operate as a network server, firewall, smart router, a resource server servicing deliverable third-party/manufacture postings, a user device operating as a firewall/server, or other information-suppliers or intermediaries (i.e. as a “re-communicator” or “server”) for

servicing one or more further interconnected devices or processes or interconnected levels of devices or processes. Thus, for example, a suitable protection engine host can include one or more devices or processes capable of providing or supporting the providing of mobile protection code or other protection consistent with the teachings herein. A

5 suitable information-destination or “user device” can further include one or more devices or processes (such as email, browser or other clients) that are capable of receiving and initiating or otherwise hosting a mobile code execution.

FIG. 2 illustrates an exemplary computing system 200, that can comprise one or more of the elements of FIGS. 1a through 1c. While other application-specific

10 alternatives might be utilized, it will be presumed for clarity sake that system 100 elements (FIGS. 1a-c) are implemented in hardware, software or some combination by one or more processing systems consistent therewith, unless otherwise indicated.

Computer system 200 comprises elements coupled via communication channels (e.g. bus 201) including one or more general or special purpose processors 202, such as a

15 Pentium® or Power PC®, digital signal processor (“DSP”), etc. System 200 elements also include one or more input devices 203 (such as a mouse, keyboard, microphone, pen, etc.), and one or more output devices 204, such as a suitable display, speakers, actuators, etc., in accordance with a particular application.

System 200 also includes a computer readable storage media reader 205 coupled

20 to a computer readable storage medium 206, such as a storage/memory device or hard or removable storage/memory media; such devices or media are further indicated separately as storage device 208 and memory 209, which can include hard disk variants, floppy/compact disk variants, digital versatile disk (“DVD”) variants, smart cards, read

only memory, random access memory, cache memory, etc., in accordance with a particular application. One or more suitable communication devices 207 can also be included, such as a modem, DSL, infrared or other suitable transceiver, etc. for providing inter-device communication directly or via one or more suitable private or public networks that can include but are not limited to those already discussed.

Working memory further includes operating system (“OS”) elements and other programs, such as application programs, mobile code, data, etc. for implementing system 100 elements that might be stored or loaded therein during use. The particular OS can vary in accordance with a particular device, features or other aspects in accordance with a particular application (e.g. Windows, Mac, Linux, Unix or Palm OS variants, a proprietary OS, etc.). Various programming languages or other tools can also be utilized, such as C++, Java, Visual Basic, etc. As will be discussed, embodiments can also include a network client such as a browser or email client, e.g. as produced by Netscape, Microsoft or others, a mobile code executor such as an OS task manager, Java Virtual Machine (“JVM”), etc., and an application program interface (“API”), such as a Microsoft Windows or other suitable element in accordance with the teachings herein. (It will also become apparent that embodiments might also be implemented in conjunction with a resident application or combination of mobile code and resident application components.)

One or more system 200 elements can also be implemented in hardware, software or a suitable combination. When implemented in software (e.g. as an application program, object, downloadable, servlet, etc. in whole or part), a system 200 element can be communicated transitionally or more persistently from local or remote storage to

memory (or cache memory, etc.) for execution, or another suitable mechanism can be utilized, and elements can be implemented in compiled or interpretive form. Input, intermediate or resulting data or functional elements can further reside more transitionally or more persistently in a storage media, cache or more persistent volatile or non-volatile memory, (e.g. storage device 207 or memory 208) in accordance with a particular application.

FIG. 3 illustrates an interconnected re-communicator 300 generally consistent with system 140b of FIG. 1, according to an embodiment of the invention. As with system 140b, system 300 includes a server 301, and can also include a firewall 302. In this implementation, however, either server 301 or firewall 302 (if a firewall is used) can further include a protection engine (310 or 320 respectively). Thus, for example, an included firewall can process received information in a conventional manner, the results of which can be further processed by protection engine 310 of server 301, or information processed by protection engine 320 of an included firewall 302 can be processed in a conventional manner by server 301. (For clarity sake, a server including a singular protection engine will be presumed, with or without a firewall, for the remainder of the discussion unless otherwise indicated. Note, however, that other embodiments consistent with the teachings herein might also be utilized.)

FIG. 3 also shows how information received by server 301 (or firewall 302) can include non-executable information, executable information or a combination of non-executable and one or more executable code portions (e.g. so-called Trojan horses that include a hostile Downloadable within a friendly one, combined, compressed or otherwise encoded files, etc.). Particularly such combinations will likely remain

undetected by a firewall or other more conventional protection systems. Thus, for convenience, received information will also be referred to as a “potential-Downloadable”, and received information found to include executable code will be referred to as a “Downloadable” or equivalently as a “detected-Downloadable” (regardless of whether the executable code includes one or more application programs, distributable “components” such as Java, ActiveX, add-in, etc.).

Protection engine 310 provides for detecting whether received potential-Downloadables include executable code, and upon such detection, for causing mobile protection code (“MPC”) to be transferred to a device that is a destination of the potential-Downloadable (or “Downloadable-destination”). Protection engine 310 can also provide protection policies in conjunction with the MPC (or thereafter as well), which MPC/policies can be automatically (e.g. programmatically) or interactively configurable in accordance user, administrator, downloadable source, destination, operation, type or various other parameters alone or in combination (see below). Protection engine 310 can also provide or operate separately or interoperably in conjunction with one or more of certification, authentication, downloadable tagging, source checking, verification, logging, diverting or other protection services via the MPC, policies, other local/remote server or destination processing, etc. (e.g. which can also include protection mechanisms taught by the above-noted prior applications; see FIG. 4).

Operationally, protection engine 310 of server 301 monitors information received by server 301 and determines whether the received information is deliverable to a protected destination, e.g. using a suitable monitor/data transfer mechanism and comparing a destination-address of the received information to a protected destination set,

such as a protected destinations list, array, database, etc. (All deliverable information or one or more subsets thereof might also be monitored.) Protection engine 310 further analyzes the potential-Downloadable and determines whether the potential-Downloadable includes executable code. If not, protection engine 310 enables the not executable potential-Downloadable 331 to be delivered to its destination in an unaffected manner.

In conjunction with determining that the potential-Downloadable is a detected-Downloadable, protection engine 310 also causes mobile protection code or “MPC” 341 to be communicated to the Downloadable-destination of the Downloadable, more suitably in conjunction with the detected-Downloadable 343 (see below). Protection engine 310 further causes downloadable protection policies 342 to be delivered to the Downloadable-destination, again more suitably in conjunction with the detected-Downloadable. Protection policies 342 provide parameters (or can additionally or alternatively provide additional mobile code) according to which the MPC is capable of determining or providing applicable protection to a Downloadable-destination against malicious Downloadable operations.

(One or more “checked”, tag, source, destination, type, detection or other security result indicators, which are not shown, can also be provided as corresponding to determined non-Downloadables or Downloadables, e.g. for testing, logging, further processing, further identification tagging or other purposes in accordance with a particular application.)

Further MPCs, protection policies or other information are also deliverable to a the same or another destination, for example, in accordance with communication by an MPC/protection policies already delivered to a downloadable-destination. Initial or

subsequent MPCs/policies can further be selected or configured in accordance with a Downloadable-destination indicated by the detected-Downloadable, destination-user or administrative information, or other information providable to protection engine 310 by a user, administrator, user system, user system examination by a communicated MPC, etc.

- 5 (Thus, for example, an initial MPC/policies can also be initially provided that are operable with or optimized for more efficient operation with different Downloadable-destinations or destination capabilities.)

While integrated protection constraints within the MPC might also be utilized, providing separate protection policies has been found to be more efficient, for example, by enabling more specific protection constraints to be more easily updated in conjunction with detected-Downloadable specifics, post-download improvements, testing, etc. Separate policies can further be more efficiently provided (e.g. selected, modified, instantiated, etc.) with or separately from an MPC, or in accordance with the requirements of a particular user, device, system, administration, later improvement, etc., as might also be provided to protection engine 310 (e.g. via user/MPC uploading, querying, parsing a Downloadable, or other suitable mechanism implemented by one or more servers or Downloadable-destinations).

- 20 (It will also become apparent that performing executable code detection and communicating to a downloadable-Destination an MPC and any applicable policies as separate from a detected-Downloadable is more accurate and far less resource intensive than, for example, performing content and operation scanning, modifying a Downloadable, or providing completely Downloadable-destination based security.)

System 300 enables a single or extensible base-MPC to be provided, in anticipation or upon receipt of a first Downloadable, that is utilized thereafter to provide protection of one or more Downloadable-destinations. It is found, however, that providing an MPC upon each detection of a Downloadable (which is also enabled) can

5 provide a desirable combination of configurability of the MPC/policies and lessened need for management (e.g. given potentially changing user/destination needs, enabling testing, etc.).

Providing an MPC upon each detection of a Downloadable also facilitates a lessened demand on destination resources, e.g. since information-destination resources

10 used in executing the MPC/policies can be re-allocated following such use. Such alternatives can also be selectively, modifiably or extensibly provided (or further in accordance with other application-specific factors that might also apply.) Thus, for example, a base-MPC or base-policies might be provided to a user device that is/are extensible via additionally downloadable “modules” upon server 301 detection of a

15 Downloadable deliverable to the same user device, among other alternatives.

In accordance with a further aspect of the invention, it is found that improved efficiency can also be achieved by causing the MPC to be executed within a Downloadable-destination in conjunction with, and further, prior to initiation of the detected Downloadable. One mechanism that provides for greater compatibility and

20 efficiency in conjunction with conventional client-based Downloadable execution is for a protection engine to form a sandboxed package 340 including MPC 341, the detected-Downloadable 343 and any policies 342. For example, where the Downloadable is a binary executable to be executed by an operating system, protection engine 310 forms a

protected package by concatenating, within sandboxed package 340, MPC 341 for  
 delivery to a Downloadable-destination first, followed by protection policies 342 and  
 Downloadable 343. (Concatenation or techniques consistent therewith can also be  
 utilized for providing a protecting package corresponding to a Java applet for execution  
 5 by a JVM of a Downloadable-destination, or with regard to ActiveX controls, add-ins or  
 other distributable components, etc.)

The above concatenation or other suitable processing will result in the following.

Upon receipt of sandboxed package 340 by a compatible browser, email or other  
 destination-client and activating of the package by a user or the destination-client, the  
 10 operating system (or a suitable responsively initiated distributed component host) will  
 attempt to initiate sandboxed package 340 as a single Downloadable. Such processing  
 will, however, result in initiating the MPC 341 and -in accordance with further aspects of  
 the invention- the MPC will initiate the Downloadable in a protected manner, further in  
 accordance with any applicable included or further downloaded protection policies 342.  
 15 (While system 300 is also capable of ascertaining protection policies stored at a  
 Downloadable-destination, e.g. by poll, query, etc. of available destination information,  
 including at least initial policies within a suitable protecting package is found to avoid  
 associated security concerns or inefficiencies.)

Turning to FIG. 4, a protection engine 400 generally consistent with protection  
 20 engine 310 (or 320) of FIG. 3 is illustrated in accordance with an embodiment of the  
 invention. Protection engine 400 comprises information monitor 401, detection engine  
 402, and protected packaging engine 403, which further includes agent generator 431,  
 storage 404, linking engine 405, and transfer engine 406. Protection engine 400 can also

include a buffer 407, for temporarily storing a received potential-Downloadable, or one or more systems for conducting additional authentication, certification, verification or other security processing (e.g. summarily depicted as security system 408) Protection engine 400 can further provide for selectively re-directing, further directing, logging, etc. of a potential/detected Downloadable or information corresponding thereto in conjunction with detection, other security, etc., in accordance with a particular application.

(Note that FIG. 4, as with other figures included herein, also depicts exemplary signal flow arrows; such arrows are provided to facilitate discussion, and should not be construed as exclusive or otherwise limiting.)

Information monitor 401 monitors potential-Downloadables received by a host server and provides the information via buffer 407 to detection engine 402 or to other system 400 elements. Information monitor 401 can be configured to monitor host server download operations in conjunction with a user or a user-device that has logged-on to the server, or to receive information via a server operation hook, servlet, communication channel or other suitable mechanism.

Information monitor 401 can also provide for transferring, to storage 404 or other protection engine elements, configuration information including, for example, user, MPC, protection policy, interfacing or other configuration information (e.g. see FIG. 6). Such configuration information monitoring can be conducted in accordance with a user/device logging onto or otherwise accessing a host server, via one or more of configuration operations, using an applet to acquire such information from or for a particular user, device or devices, via MPC/policy polling of a user device, or via other suitable mechanisms.

Detection engine 402 includes code detector 421, which receives a potential-Downloadable and determines, more suitably in conjunction with inspection parameters 422, whether the potential-Downloadable includes executable code and is thus a “detected-Downloadable”. (Code detector 421 can also include detection processors for performing file decompression or other “decoding”, or such detection-facilitating processing as decryption, utilization/support of security system 408, etc. in accordance with a particular application.)

Detection engine 402 further transfers a detected-downloadable (“XEQ”) to protected packaging engine 403 along with indicators of such detection, or a determined non-executable (“NXEQ”) to transfer engine 406. (Inspection parameters 422 enable analysis criteria to be readily updated or varied, for example, in accordance with particular source, destination or other potential Downloadable impacting parameters, and are discussed in greater detail with reference to FIG. 5). Detection engine 402 can also provide indicators for delivery of initial and further MPCs/policies, for example, prior to or in conjunction with detecting a Downloadable and further upon receipt of an indicator from an already downloaded MPC/policy. A downloaded MPC/policy can further remain resident at a user device with further modules downloaded upon or even after delivery of a sandboxed package. Such distribution can also be provided in a configurable manner, such that delivery of a complete package or partial packages are automatically or interactively determinable in accordance with user/administrative preferences/policies, among other examples.

Packaging engine 403 provides for generating mobile protection code and protection policies, and for causing delivery thereof (typically with a detected-

Downloadable) to a Downloadable-destination for protecting the Downloadable-destination against malicious operation attempts by the detected Downloadable. In this example, packaging engine 403 includes agent generator 431, storage 404 and linking engine 405.

5           Agent generator 431 includes an MPC generator 432 and a protection policy generator 433 for “generating” an MPC and a protection policy (or set of policies) respectively upon receiving one or more “generate MPC/policy” indicators from detection engine 402, indicating that a potential-Downloadable is a detected-Downloadable. MPC generator 432 and protection policy generator 433 provide for generating MPCs and  
10           protection policies respectively in accordance with parameters retrieved from storage 404. Agent generator 431 is further capable of providing multiple MPCs/policies, for example, the same or different MPCs/policies in accordance with protecting ones of multiple executables within a zip file, or for providing initial MPCs/policies and then further MPCs/policies or MPC/policy “modules” as initiated by further indicators such as given  
15           above, via an indicator of an already downloaded MPC/policy or via other suitable mechanisms. (It will be appreciated that pre-constructed MPCs/policies or other processing can also be utilized, e.g. via retrieval from storage 404, but with a potential decrease in flexibility.)

          MPC generator 432 and protection policy generator 433 are further configurable.  
20           Thus, for example, more generic MPCs/policies can be provided to all or a grouping of serviced destination-devices (e.g. in accordance with a similarly configured/administered intranet), or different MPCs/policies that can be configured in accordance with one or more of user, network administration, Downloadable-destination or other parameters (e.g.

see FIG. 6). As will become apparent, a resulting MPC provides an operational interface to a destination device/process. Thus, a high degree of flexibility and efficiency is enabled in providing such an operational interface within different or differently configurable user devices/processes or other constraints.

5       Such configurability further enables particular policies to be utilized in accordance with a particular application (e.g. particular system uses, access limitations, user interaction, treating application programs or Java components from a particular known source one way and unknown source ActiveX components, or other considerations). Agent generator 431 further transfers a resulting MPC and protection  
10 policy pair to linking engine 405.

Linking engine 405 provides for forming from received component elements (see above) a sandboxed package that can include one or more initial or complete MPCs and applicable protection policies, and a Downloadable, such that the sandboxed package will protect a receiving Downloadable-destination from malicious operation by the  
15 Downloadable. Linking engine 405 is implementable in a static or configurable manner in accordance, for example, with characteristics of a particular user device/process stored intermittently or more persistently in storage 404. Linking engine 405 can also provide for restoring a Downloadable, such as a compressed, encrypted or otherwise encoded file that has been decompressed, decrypted or otherwise decoded via detection processing  
20 (e.g. see FIG. 6b).

It is discovered, for example, that the manner in which the Windows OS initiates a binary executable or an ActiveX control can be utilized to enable protected initiation of a detected-Downloadable. Linking engine 405 is, for example, configurable to form, for

an ordinary single-executable Downloadable (e.g. an application program, applet, etc.) a sandboxed package 340 as a concatenation of ordered elements including an MPC 341, applicable policies 342 and the Downloadable or “XEQ” 343 (e.g. see FIG. 4).

Linking engine 405 is also configurable to form, for a Downloadable received by  
 5 a server as a compressed single or multiple-executable Downloadable such as a zipped or meta file, a protecting package 340 including one or more MPCs, applicable policies and the one or more included executables of the Downloadable. For example, a sandboxed package can be formed in which a single MPC and policies precede and thus will affect all such executables as a result of inflating and installation. An MPC and applicable  
 10 policies can also, for example, precede each executable, such that each executable will be separately sandboxed in the same or a different manner according to MPC/policy configuration (see above) upon inflation and installation. (See also FIGS. 5 and 6)

Linking engine is also configurable to form an initial MPC, MPC-policy or sandboxed package (e.g. prior to upon receipt of a downloadable) or an additional MPC,  
 15 MPC-policy or sandboxed package (e.g. upon or following receipt of a downloadable), such that suitable MPCs/policies can be provided to a Downloadable-destination or other destination in a more distributed manner. In this way, requisite bandwidth or destination resources can be minimized (via two or more smaller packages) in compromise with latency or other considerations raised by the additional required communication.

20 A configurable linking engine can also be utilized in accordance with other requirements of particular devices/processes, further or different elements or other permutations in accordance with the teachings herein. (It might, for example be desirable to modify the ordering of elements, to provide one or more elements separately, to

provide additional information, such as a header, etc., or perform other processing in accordance with a particular device, protocol or other application considerations.)

Policy/authentication reader-analyzer 481 summarily depicts other protection mechanisms that might be utilized in conjunction with Downloadable detection, such as already discussed, and that can further be configurable to operate in accordance with policies or parameters (summarily depicted by security/authentication policies 482). Integration of such further protection in the depicted configuration, for example, enables a potential-Downloadable from a known unfriendly source, a source failing authentication or a provided-source that is confirmed to be fictitious to be summarily discarded, otherwise blocked, flagged, etc. (with or without further processing). Conversely, a potential-Downloadable from a known friendly source (or one confirmed as such) can be transferred with or without further processing in accordance with particular application considerations. (Other configurations including pre or post Downloadable detection mechanisms might also be utilized.)

Finally, transfer engine 406 of protection agent engine 303 provides for receiving and causing linking engine 405 (or other protection) results to be transferred to a destination user device/process. As depicted, transfer engine 406 is configured to receive and transfer a Downloadable, a determined non-executable or a sandboxed package. However, transfer engine 406 can also be provided in a more configurable manner, such as was already discussed for other system 400 elements. (Any one or more of system 400 elements might be configurably implemented in accordance with a particular application.) Transfer engine 406 can perform such transfer, for example, by adding the information to a server transfer queue (not shown) or utilizing another suitable method.

Turning to FIG. 5 with reference to FIG. 4, a code detector 421 example is illustrated in accordance with an embodiment of the invention. As shown, code detector 421 includes data fetcher 501, parser 502, file-type detector 503, inflater 504 and control 506; other depicted elements. While implementable and potentially useful in certain instances, are found to require substantial overhead, to be less accurate in certain instances (see above) and are not utilized in a present implementation; these will be discussed separately below. Code detector elements are further configurable in accordance with stored parameters retrievable by data fetcher 501. (A coupling between data fetcher 501 and control 506 has been removed for clarity sake.)

Data fetcher 501 provides for retrieving a potential-Downloadable or portions thereof stored in buffer 407 or parameters from storage 404, and communicates such information or parameters to parser 502. Parser 502 receives a potential-Downloadable or portions thereof from data fetcher 501 and isolates potential-Downloadable elements, such as file headers, source, destination, certificates, etc. for use by further processing elements.

File type detector 502 receives and determines whether the potential-Downloadable (likely) is or includes an executable file type. File-reader 502 can, for example, be configured to analyze a received potential-Downloadable for a file header, which is typically included in accordance with conventional data transfer protocols, such as a portable executable or standard “.exe” file format for Windows OS application programs, a Java class header for Java applets, and so on for other applications, distributed components, etc. “Zipped”, meta or other compressed files, which might include one or more executables, also typically provide standard single or multi-level

headers that can be read and used to identify included executable code (or other included information types). File type detector 502 is also configurable for analyzing potential-Downloadables for all potential file type delimiters or a more limited subset of potential file type delimiters (e.g. “.exe” or “.com” in conjunction with a DOS or Microsoft Windows OS Downloadable-destination).

Known file type delimiters can, for example, be stored in a more temporary or more persistent storage (e.g. storage 404 of FIG. 4) which file type detector 502 can compare to a received potential-Downloadable. (Such delimiters can thus also be updated in storage 404 as a new file type delimiter is provided, or a more limited subset of delimiters can also be utilized in accordance with a particular Downloadable-destination or other considerations of a particular application.) File type detector 502 further transfers to controller 506 a detected file type indicator indicating that the potential-Downloadable includes or does not include (i.e. or likely include) an executable file type.

In this example, the aforementioned detection processor is also included as pre-detection processor or, more particularly, a configurable file inflator 504. File inflator 504 provides for opening or “inflating” compressed files in accordance with a compressed file type received from file type detector 503 and corresponding file opening parameters received from data fetcher 501. Where a compressed file (e.g. a meta file) includes nested file type information not otherwise reliably provided in an overall file header or other information, inflator 504 returns such information to parser 502. File inflator 504 also provides any now-accessible included executables to control 506 where one or more included files are to be separately packaged with an MPC or policies.

Control 506, in this example, operates in accordance with stored parameters and provides for routing detected non-Downloadables or Downloadables and control information, and for conducting the aforementioned distributed downloading of packages to Downloadable-destinations. In the case of a non-Downloadable, for example, control

5 506 sends the non-Downloadable to transfer engine 406 (FIG. 4) along with any indicators that might apply. For an ordinary single-executable Downloadable, control 506 sends control information to agent generator 431 and the Downloadable to linking engine 405 along with any other applicable indicators (see 641 of FIG. 6b). Control 506 similarly handles a compressed single-executable Downloadable or a multiple

10 downloadable to be protected using a single sandboxed package. For a multiple-executable Downloadable, control 506 sends control information for each corresponding executable to agent generator agent generator 431, and sends the executable to linking engine 405 along with controls and any applicable indicators, as in 643b of FIG. 6b. (The above assumes, however, that distributed downloading is not utilized; when used –

15 according to applicable parameters- control 506 also operates in accordance with the following.)

Control 506 conducts distributed protection (e.g. distributed packaging) by providing control signals to agent generator 431, linking engine 405 and transfer engine 406. In the present example, control 506 initially sends controls to agent generator 431

20 and linking engine 405 (FIG. 4) causing agent generator to generate an initial MPC and initial policies, and sends control and a detected-Downloadable to linking engine 405. Linking engine 405 forms an initial sandboxed package, which transfer engine causes (in conjunction with further controls) to be downloaded to the Downloadable destination

(643a of FIG. 6b). An initial MPC within the sandboxed package includes an installer and a communicator and performs installation as indicated below. The initial MPC also communicates via the communicator controls to control 506 (FIG. 5) in response to which control 506 similarly causes generation of MPC-M and policy-M modules 643c, which linking engine 405 links and transfer engine 406 causes to be sent to the Downloadable destination, and so on for any further such modules.

(It will be appreciated, however, that an initial package might be otherwise configured or sent prior to receipt of a Downloadable in accordance with configuration parameters or user interaction. Information can also be sent to other user devices, such as that of an administrator. Further MPCs/policies might also be coordinated by control 506 or other elements, or other suitable mechanisms might be utilized in accordance with the teachings herein.)

Regarding the remaining detection engine elements illustrated in FIG. 5, where content analysis is utilized, parser 502 can also provide a Downloadable or portions thereof to content detector 505. Content detector 505 can then provide one or more content analyses. Binary detector 551, for example, performs detection of binary information; pattern detector 552 further analyzes the Downloadable for patterns indicating executable code, or other detectors can also be utilized. Analysis results therefrom can be used in an absolute manner, where a first testing result indicating executable code confirms Downloadable detection, which result is then sent to control 506. Alternatively, however, composite results from such analyses can also be sent to control 506 for evaluation. Control 506 can further conduct such evaluation in a summary manner (determining whether a Downloadable is detected according to a

majority or minimum number of indicators), or based on a weighting of different analysis results. Operation then continues as indicated above. (Such analysis can also be conducted in accordance with aspects of a destination user device or other parameters.)

FIG. 6a illustrates more specific examples of indicators/parameters and known (or “knowledge base”) elements that can be utilized to facilitate the above-discussed system 400 configurability and detection. For clarity sake, indicators, parameters and knowledge base elements are combined as indicated “parameters.” It will be appreciated, however, that the particular parameters utilized can differ in accordance with a particular application, and indicators, parameters or known elements, where utilized, can vary and need not correspond exactly with one another. Any suitable explicit or referencing list, database or other storage structure(s) or storage structure configuration(s) can also be utilized to implement a suitable user/device based protection scheme, such as in the above examples, or other desired protection schema.

Executable parameters 601 comprise, in accordance with the above examples, executable file type parameters 611, executable code parameters 612 and code pattern parameters 613 (including known executable file type indicators, header/code indicators and patterns respectively, where code patterns are utilized). Use parameters 602 further comprise user parameters 621, system parameters 622 and general parameters 623 corresponding to one or more users, user classifications, user-system correspondences or destination system, device or processes, etc. (e.g. for generating corresponding MPCs/policies, providing other protection, etc.). The remaining parameters include interface parameters 631 for providing MPC/policy (or further) configurability in

accordance with a particular device or for enabling communication with a device user (see below), and other parameters 632.

FIG. 6b illustrates a linking engine 405 according to an embodiment of the invention. As already discussed, linking engine 405 includes a linker for combining  
 5 MPCs, policies or agents via concatenation or other suitable processing in accordance with an OS, JVM or other host executor or other applicable factors that might apply. Linking engine 405 also includes the aforementioned post-detection processor which, in this example, comprises a compressor 508. As noted, compressor 508 receives linked  
 10 elements from linker 507 and, where a potential-Downloadable corresponds to a compressed file that was inflated during detection, re-forms the compressed file. (Known file information can be provided via configuration parameters, substantially reversal of inflating or another suitable method.) Encryption or other post-detection processing can also be conducted by linking engine 508.

FIGS. 7a, 7b and 8 illustrate a “sandbox protection” system, as operable within a  
 15 receiving destination-device, according to an embodiment of the invention.

Beginning with FIG. 7a, a client 146 receiving sandbox package 340 will “recognize” sandbox package 340 as a (mobile) executable and cause a mobile code  
 installer 711 (e.g. an OS loader, JVM, etc.) to be initiated. Mobile code installer 711 will also recognize sandbox package 340 as an executable and will attempt to initiate sandbox  
 20 package 340 at its “beginning.” Protection engine 400 processing corresponding to destination 700 use of a such a loader, however, will have resulted in the “beginning” of sandbox package 340 as corresponding to the beginning of MPC 341, as noted with regard to the above FIG. 4 example.

Such protection engine processing will therefore cause a mobile code installer (e.g. OS loader 711, for clarity sake) to initiate MPC 341. In other cases, other processing might also be utilized for causing such initiation or further protection system operation. Protection engine processing also enables MPC 341 to effectively form a protection “sandbox” around Downloadable (e.g. detected-Downloadable or “XEQ”) 343, to monitor Downloadable 343, intercept determinable Downloadable 343 operation (such as attempted accesses of Downloadable 343 to destination resources) and, if “malicious”, to cause one or more other operations to occur (e.g. providing an alert, offloading the Downloadable, offloading the MPC, providing only limited resource access, possibly in a particular address space or with regard to a particularly “safe” resource or resource operation, etc.).

MPC 341, in the present OS example, executes MPC element installation and installs any policies, causing MPC 341 and protection policies 342 to be loaded into a first memory space, P1. MPC 341 then initiates loading of Downloadable 343. Such Downloadable initiation causes OS loader 711 to load Downloadable 343 into a further working memory space-P2 703 along with an API import table (“IAT”) 731 for providing Downloadable 631 with destination resource access capabilities. It is discovered, however that the IAT can be modified so that any call to an API can be redirected to a function within the MPC. The technique for modifying the IAT is documented within the MSDN (Microsoft Developers Network) Library CD in several articles. The technique is also different for each operating system (e.g. between Windows 9x and Windows NT), which can be accommodated by agent generator configurability, such as that given above.

MPC 341 therefore has at least initial access to API IAT 731 of Downloadable 632, and provides for diverting, evaluating and responding to attempts by Downloadable 632 to utilize system APIs 731, or further in accordance with protection policies 342.

In addition to API diverting, MPC 341 can also install filter drivers, which can be used  
5 for controlling access to resources such as a Downloadable-destination file system or registry. Filter driver installation can be conducted as documented in the MSDN or using other suitable methods.

Turning to FIG. 8 with reference to FIG. 7b, an MPC 341 according to an  
embodiment of the invention includes a package extractor 801, executable installer 802,  
10 sandbox engine installer 803, resource access diverter 804, resource access (attempt) analyzer 805, policy enforcer 806 and MPC de-installer 807. Package extractor 801 is initiated upon initiation of MPC 341, and extracts MPC 341 elements and protection policies 342. Executable installer 802 further initiates installation of a Downloadable by  
extracting the downloadable from the protected package, and loading the process into  
15 memory in suspended mode (so it only loads into memory, but does not start to run). Such installation further causes the operating system to initialize the Downloadable's IAT 731 in the memory space of the downloadable process, P2, as already noted.

Sandbox engine installer 803 (running in process space P1) then installs the  
sandbox engine (803-805) and policies 342 into the downloadable process space P2. This  
20 is done in different way in each operating system (e.g. see above). Resource access diverter 804 further modifies those Downloadable-API IAT entries that correspond with protection policies 342, thereby causing corresponding Downloadable accesses via Downloadable-API IAT 731 to be diverted resource access analyzer 805.

During Downloadable operation, resource access analyzer or “RAA” 805 receives and determines a response to diverted Downloadable (i.e. “malicious”) operations in accordance with corresponding protection policies of policies 342. (RAA 805 or further elements, which are not shown, can further similarly provide for other security mechanisms that might also be implemented.) Malicious operations can for example include, in a Windows environment: file operations (e.g. reading, writing, deleting or renaming a file), network operations (e.g. listen on or connect to a socket, send/receive data or view intranet), OS registry or similar operations (read/write a registry item), OS operations (exit OS/client, kill or change the priority of a process/thread, dynamically load a class library), resource usage thresholds (e.g. memory, CPU, graphics), etc.

Policy enforcer 806 receives RAA 805 results and causes a corresponding response to be implemented, again according to the corresponding policies. Policy enforcer 806 can, for example, interact with a user (e.g. provide an alert, receive instructions, etc.), create a log file, respond, cause a response to be transferred to the Downloadable using “dummy” or limited data, communicate with a server or other networked device (e.g. corresponding to a local or remote administrator), respond more specifically with a better known Downloadable, verify accessibility or user/system information (e.g. via local or remote information), even enable the attempted Downloadable access, among a wide variety of responses that will become apparent in view of the teachings herein.

The FIG. 9 flowchart illustrates a protection method according to an embodiment of the invention. In step 901, a protection engine monitors the receipt, by a server or other re-communicator of information, and receives such information intended for a

protected information-destination (i.e. a potential-Downloadable) in step 903. Steps 905-911 depict an adjunct trustworthiness protection that can also be provided, wherein the protection engine determines whether the source of the received information is known to be “unfriendly” and, if so, prevents current (at least unaltered) delivery of the potential-Downloadable and provides any suitable alerts. (The protection engine might also continue to perform Downloadable detection and nevertheless enable delivery or protected delivery of a non-Downloadable, or avoid detection if the source is found to be “trusted”, among other alternatives enabled by the teachings herein.)

If, in step 913, the potential-Downloadable source is found to be of an unknown or otherwise suitably authenticated/certified source, then the protection engine determines whether the potential-Downloadable includes executable code in step 915. If the potential-Downloadable does not include executable code, then the protection engine causes the potential-Downloadable to be delivered to the information-destination in its original form in step 917, and the method ends. If instead the potential-Downloadable is found to include executable code in step 915 (and is thus a “detected-Downloadable”), then the protection engine forms a sandboxed package in step 919 and causes the protection agent to be delivered to the information-Destination in step 921, and the method ends. As was discussed earlier, a suitable protection agent can include mobile protection code, policies and the detected-Downloadable (or information corresponding thereto).

The FIG. 10a flowchart illustrates a method for analyzing a potential-Downloadable, according to an embodiment of the invention. As shown, one or more aspects can provide useful indicators of the inclusion of executable code within the

potential-Downloadable. In step 1001, the protection engine determines whether the potential-Downloadable indicates an executable file type, for example, by comparing one or more included file headers for file type indicators (e.g. extensions or other descriptors). The indicators can be compared against all known file types executable by all protected

- 5 Downloadable destinations, a subset, in accordance with file types executable or desirably executable by the Downloadable-destination, in conjunction with a particular user, in conjunction with available information or operability at the destination, various combinations, etc.

Where content analysis is conducted, in step 1003 of FIG. 10a, the protection  
10 engine analyzes the potential-Downloadable and determines in accordance therewith whether the potential-Downloadable does or is likely to include binary information, which typically indicates executable code. The protection engine further analyzes the potential-Downloadable for patterns indicative of included executable code in step 1003. Finally, in step 1005, the protection engine determines whether the results of steps 1001  
15 and 1003 indicate that the potential-Downloadable more likely includes executable code (e.g. via weighted comparison of the results with a suitable level indicating the inclusion or exclusion of executable code). The protection engine, given a suitably high confidence indicator of the inclusion of executable code, treats the potential-Downloadable as a detected-Downloadable.

- 20 The FIG. 10b flowchart illustrates a method for forming a sandboxed package according to an embodiment of the invention. As shown, in step 1011, a protection engine retrieves protection parameters and forms mobile protection code according to the parameters. The protection engine further, in step 1013, retrieves protection parameters

and forms protection policies according to the parameters. Finally, in step 1015, the protection engine couples the mobile protection code, protection policies and received-information to form a sandboxed package. For example, where a Downloadable-destination utilizes a standard windows executable, coupling can further be accomplished

5 via concatenating the MPC for delivery of MPC first, policies second, and received information third. (The protection parameters can, for example, include parameters relating to one or more of the Downloadable destination device/process, user, supervisory constraints or other parameters.)

The FIG. 11 flowchart illustrates how a protection method performed by mobile protection code ("MPC") according to an embodiment of the invention includes the MPC

10 installing MPC elements and policies within a destination device in step 1101. In step 1102, the MPC loads the Downloadable without actually initiating it (i.e. for executables, it will start a process in suspended mode). The MPC further forms an access monitor or "interceptor" for monitoring or "intercepting" downloadable destination device access

15 attempts within the destination device (according to the protection policies in step 1103, and initiates a corresponding Downloadable within the destination device in step 1105.

If, in step 1107, the MPC determines, from monitored/intercepted information, that the Downloadable is attempting or has attempted a destination device access considered undesirable or otherwise malicious, then the MPC performs steps 1109 and

20 1111; otherwise the MPC returns to step 1107. In step 1109, the MPC determines protection policies in accordance with the access attempt by the Downloadable, and in step 1111, the MPC executes the protection policies. (Protection policies can, for example, be retrieved from a temporary, e.g. memory/cache, or more persistent storage.)

As shown in the FIG. 12a example, the MPC can provide for intercepting Downloadable access attempts by a Downloadable by installing the Downloadable (but not executing it) in step 1201. Such installation will cause a Downloadable executor, such as a the Windows operating system, to provide all required interfaces and parameters (such as the IAT, process ID, etc.) for use by the Downloadable to access device resources of the host device. The MPC can thus cause Downloadable access attempts to be diverted to the MPC by modifying the Downloadable IAT, replacing device resource location indicators with those of the MPC (step 1203).

The FIG. 12b example further illustrates an example of how the MPC can apply suitable policies in accordance with an access attempt by a Downloadable. As shown, the MPC receives the Downloadable access request via the modified IAT in step 1211. The MPC further queries stored policies to determine a policy corresponding to the Downloadable access request in step 1213.

The foregoing description of preferred embodiments of the invention is provided by way of example to enable a person skilled in the art to make and use the invention, and in the context of particular applications and requirements thereof. Various modifications to the embodiments will be readily apparent to those skilled in the art, and the generic principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the invention. Thus, the present invention is not intended to be limited to the embodiments shown, but is to be accorded the widest scope consistent with the principles, features and teachings disclosed herein. The embodiments described herein are not intended to be exhaustive or limiting. The present invention is limited only by the following claims.

WHAT IS CLAIMED IS:

1. A method, comprising:

receiving downloadable-information;

determining whether the downloadable-information includes executable code; and

5 causing mobile protection code to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code.

10 2. The method of claim 1, wherein the receiving includes monitoring received information of an information re-communicator.

3. The method of claim 2, wherein the information re-communicator is a network server.

15 4. The method of claim 1, wherein the determining comprises analyzing the downloadable-information for an included type indicator indicating an executable file type.

5. The method of claim 1, wherein the determining comprises analyzing the downloadable-information for an included an included type detector indicating an archive  
20 file that contains at least one executable.

6. The method of claim 1, wherein the determining comprises analyzing the downloadable-information for an included file type indicator and an information pattern

corresponding to one or more information patterns that tend to be included within executable code.

7. The method of claim 1, further comprising receiving one or more executable code characteristics of executable code that is capable of being executed by the information-destination, and wherein the determining is conducted in accordance with the executable code characteristics.

8. The method of claim 1, wherein the determining comprises performing one or more analyses of the downloadable-information, the analyses producing detection-indicators indicating whether a correspondence is detected between a downloadable-information characteristic and at least one respective executable code characteristic, and evaluating the detection-indicators to determine whether the downloadable-information includes executable code.

9. The method of claim 8, wherein at least one of the detection-indicators indicates a level of downloadable-information characteristic and executable code characteristic correspondence.

10. The method of claim 8, wherein the evaluating includes assigning a weighted level of importance to at least one of the indicators.

11. The method of claim 1, wherein the causing mobile protection code to be

communicated comprises forming a sandboxed package including the mobile protection code and the downloadable-information, and causing the sandboxed package to be communicated to the at least one information-destination.

5 12. The method of claim 10, wherein the sandboxed package is formed such that the mobile protection code will be executed by the information-destination before the downloadable-information.

10 13. The method of claim 11, wherein the sandboxed package further includes protection policies according to which the mobile protection code is operable.

15 14. The method of claim 13, wherein the sandboxed package is formed for receipt by the information-destination such that the mobile protection code is received before the downloadable-information, and the downloadable information before the protection policies.

15. The method of claim 13, wherein the protection policies correspond with at least one of the information-destination and a user of the information destination.

20 16. A system, comprising:

an information monitor for receiving downloadable-information;  
a content inspection engine communicatively coupled to the information monitor for determining whether the downloadable-information includes executable code; and

a protection agent engine communicatively coupled to the content inspection engine for causing mobile protection code (“MPC”) to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code.

5

17. The system of claim 16, wherein the information monitor intercepts received information received by an information re-communicator.

18. The system of claim 17, wherein the information re-communicator is a network server.

19. The system of claim 16, wherein the content inspection engine comprises a file type detector for determining whether the downloadable-information includes a file type indicator indicating an executable file type.

20. The system of claim 16, wherein the content inspection engine comprises a parser for parsing the downloadable-information and a content analyzer communicatively coupled to the parser for determining whether one or more downloadable-information elements of the downloadable-information correspond with executable code elements are executable code elements.

21. The system of claim 16, wherein the content inspection engine comprises one or more downloadable-information analyzers for analyzing the downloadable-information,

each analyzer producing therefrom a detection indicator indicating whether a  
downloadable-information characteristic corresponds with an executable code  
characteristic, and an inspection controller communicatively coupled to the analyzers for  
determining whether the indicators indicate that the downloadable-information includes  
5 executable code.

22. The system of claim 21, wherein at least one of the detection-indicators indicates a  
level of downloadable-information characteristic and executable code characteristic  
correspondence.

23. The system of claim 21, wherein the evaluating includes assigning a weighted level  
of importance to at least one of the detection-indicators.

24. The system of claim 16, wherein the sandboxed package engine comprises an MPC  
generator for providing the MPC, a linking engine coupled to the MPC generator for  
forming a protection agent including the MPC and the downloadable-information, and a  
transfer engine for causing the protection agent to be communicated to the at least one  
information-destination.

20 25. The system of claim 24, wherein the protection agent engine further comprises a  
policy generator communicatively coupled to the linking engine for providing protection  
policies according to which the MPC is operable.

26. The system of claim 25, wherein the sandboxed package is formed for receipt by the information-destination such that the mobile protection code is executed before the downloadable-information.

5 27. The system of claim 26, wherein the protection policies correspond with policies of at least one of the information-destination and a user of the information destination.

28. A system, comprising:

means for receiving downloadable-information;

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means for determining whether the downloadable-information includes executable code; and

means for causing mobile protection code to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code.

29. A computer-readable storage medium storing program code for causing a computer to perform the steps of:

receiving downloadable-information;

determining whether the downloadable-information includes executable code; and

20 causing mobile protection code to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code.

30. A method, comprising:

receiving, at an information re-communicator, downloadable-information,  
including executable code; and

causing mobile protection code to be executed by a mobile code executor at a  
5 downloadable-information destination such that one or more operations of the executable  
code at the destination, if attempted, will be processed by the mobile protection code.

31. The method of claim 30, wherein the mobile code executor is a Java Virtual  
Machine.

32. The method of claim 30, wherein the mobile code executor is the operating system,  
running native code executables.

33. The method of claim 30, wherein the mobile code executor is ActiveX subsystem of  
15 the windows operating system

34. The method of claim 30, wherein the mobile code executor is the Microsoft  
Windows scripting host

20 35. The method of claim 30, wherein the causing is accomplished by forming a  
sandboxed package including the mobile protection code and the downloadable-  
information, and causing the sandboxed package to be delivered to the downloadable-  
information destination.

36. The method of claim 35, wherein the sandboxed package further includes protection policies according to which the processing by the mobile protection code is conducted.

5 37. A sandboxed package formed according to the method of claim 35.

38. A sandboxed package formed according to the method of claim 36.

39. The method of claim 36, wherein the forming comprises generating the mobile  
10 protection code, generating the sandboxed package, and linking the mobile protection code, protection policies and downloadable-information.

40. The method of claim 39, wherein the generating of at least one of the mobile  
15 protection code and the protection policies is conducted in accordance with one or more destination-characteristics of the destination.

41. The method of claim 40, wherein the destination-characteristics include characteristics corresponding to at least one of a destination user, a destination device and a destination process.

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42. The method of claim 35, wherein the causing the sandboxed package to be executed includes communicating the sandboxed package to a communication buffer of the information re-communicator.



48. The system of claim 47, wherein the mobile code executor is a Java Virtual Machine.

49. The system of claim 47, wherein the mobile code executor is an operating system,  
5 running native code executables.

50. The system of claim 47, wherein the mobile code executor is an ActiveX subsystem  
of the windows operating system.

51. The system of claim 47, wherein the mobile code executor is a Microsoft Windows  
scripting host.

52. The system of claim 47, wherein the causing is accomplished by forming a  
sandboxed package including the mobile protection code and the downloadable-  
15 information, and causing the sandboxed package to be delivered to the downloadable-  
information destination.

53. The system of claim 52, wherein the sandboxed package further includes protection  
policies according to which the processing by the mobile protection code is conducted.  
20

54. The system of claim 53, wherein the forming comprises generating the mobile  
protection code, generating the protection policies, and linking the mobile protection  
code, protection policies and downloadable-information.



receiving, at an information re-communicator, downloadable-information,  
including executable code; and

causing mobile protection code to be executed by a mobile code executor at a  
downloadable-information destination such that one or more operations of the executable  
5 code at the destination, if attempted, will be processed by the mobile protection code.

61. A method, comprising:

receiving mobile protection code ("MPC") and a Downloadable at a  
Downloadable-destination;

10 causing, by the MPC, one or more operations attempted by the Downloadable to  
be received by the MPC;

receiving, by the MPC, an attempted operation of the Downloadable; and

initiating, by the MPC, a protection policy corresponding to the attempted  
operation.

15 62. The method of claim 61, wherein the receiving comprises receiving a sandboxed  
package that includes the MPC, the Downloadable and one or more protection policies.

63. The method of claim 62, wherein the sandboxed package is configured such that the  
20 MPC is executed first, the Downloadable is executed by the MPC and the protection  
policies are accessible to the MPC.

64. The method of claim 61, wherein the causing comprises modifying, by the MPC,

interfaces of a corresponding downloadable to resources at the destination.

65. The method of claim 64, wherein the modifying is accomplished by initiating a loading of the Downloadable, thereby causing a mobile code executor to provide and

5 initialize the interfaces, modifying one or more interface elements to divert corresponding attempted Downloadable operations to the MPC, and initiating execution of the Downloadable.

66. The method of claim 64, wherein the interfaces comprise an import address table  
10 (“IAT”) of a native code executable downloadable.

67. The method of claim 64, wherein modifying the interfaces installs a filter-driver between the downloadable and the resources.

15 68. A system, comprising:

a mobile code executor for initiating received mobile code; and

a sandboxed package capable of being received and initiated by the mobile code executor, the sandboxed package including a Downloadable and mobile protection code (“MPC”) for causing one or more Downloadable operations to be intercepted and for  
20 processing the intercepted operations, if the Downloadable attempts to initiate the operations.

69. The system of claim 60, wherein the MPC comprises:

a Downloadable installer communicatively coupled to the MPC element installer  
for installing the Downloadable;

a resource access analyzer communicatively coupled to the MPC installer for receiving an intercepted Downloadable operation and determining a protection policy corresponding to the intercepted Downloadable operation; and

70. The system of claim 69, wherein the resource access diverter modifies one or more elements of an interface usable by the Downloadable to effectuate the Downloadable operations.

72. The system of claim 69, wherein the mobile code executor is an operating system, running native code executables.

20

75. A system, comprising

76. A computer-readable storage medium storing program code for causing a computer to perform the steps of:

- receiving mobile protection code (“MPC”) and a Downloadable at a Downloadable-destination;
- causing, by the MPC, one or more operations attempted by the Downloadable to be received by the MPC;
- receiving, by the MPC, an attempted operation of the Downloadable; and
- initiating, by the MPC, a protection policy corresponding to the attempted operation.

ABSTRACT OF THE DISCLOSUREMALICIOUS MOBILE CODE RUNTIME MONITORING  
SYSTEM AND METHODS

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Protection systems and methods provide for protecting one or more personal computers ("PCs") and/or other intermittently or persistently network accessible devices or processes from undesirable or otherwise malicious operations of Java™ applets, ActiveX™ controls, JavaScript™ scripts, Visual Basic scripts, add-ins, downloaded/10 uploaded programs or other "Downloadables" or "mobile code" in whole or part. A protection engine embodiment provides, within a server, firewall or other suitable "re-communicator," for monitoring information received by the communicator, determining whether received information does or is likely to include executable code, and if so, causes mobile protection code (MPC) to be transferred to and rendered operable within a15 destination device of the received information, more suitably by forming a protection agent including the MPC, protection policies and a detected-Downloadable. An MPC embodiment further provides, within a Downloadable-destination, for initiating the Downloadable, enabling malicious Downloadable operation attempts to be received by the MPC, and causing (predetermined) corresponding operations to be executed in20 response to the attempts, more suitably in conjunction with protection policies.

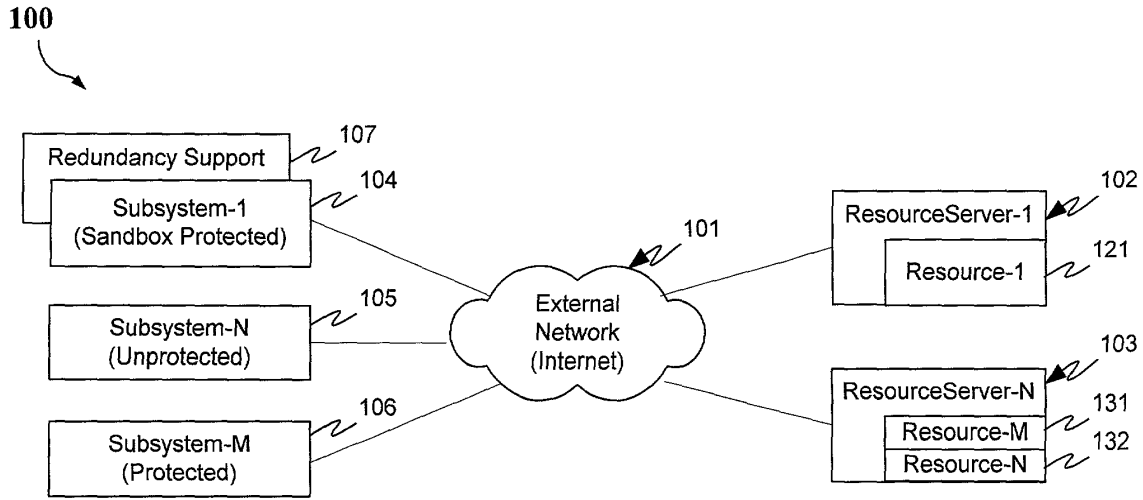


FIG. 1a

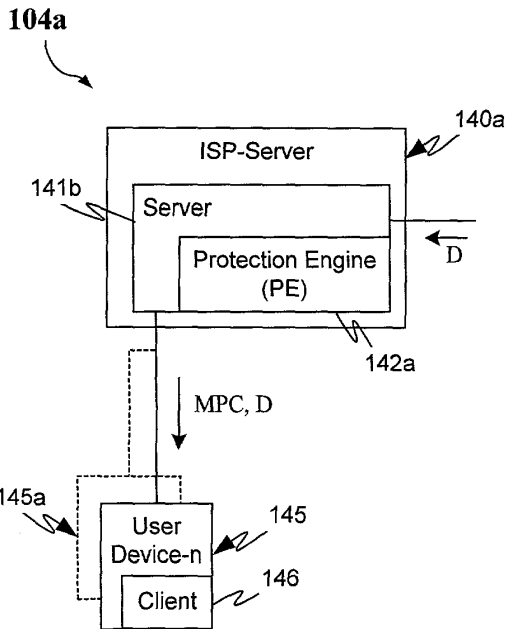


FIG. 1b

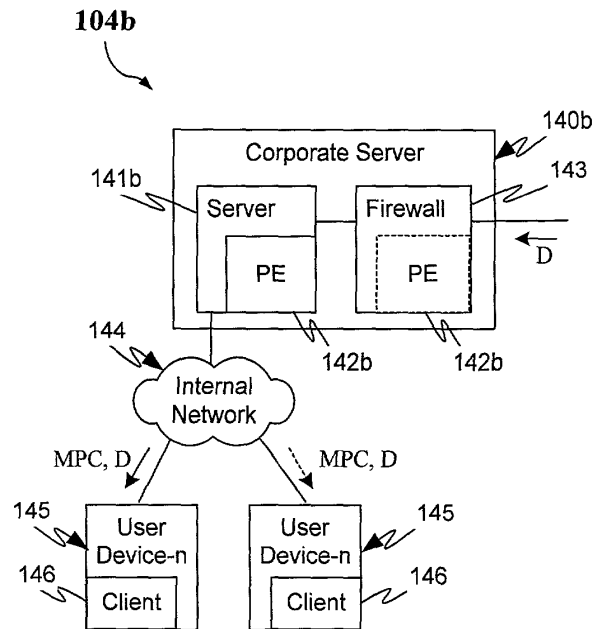


FIG. 1c

FIG. 2

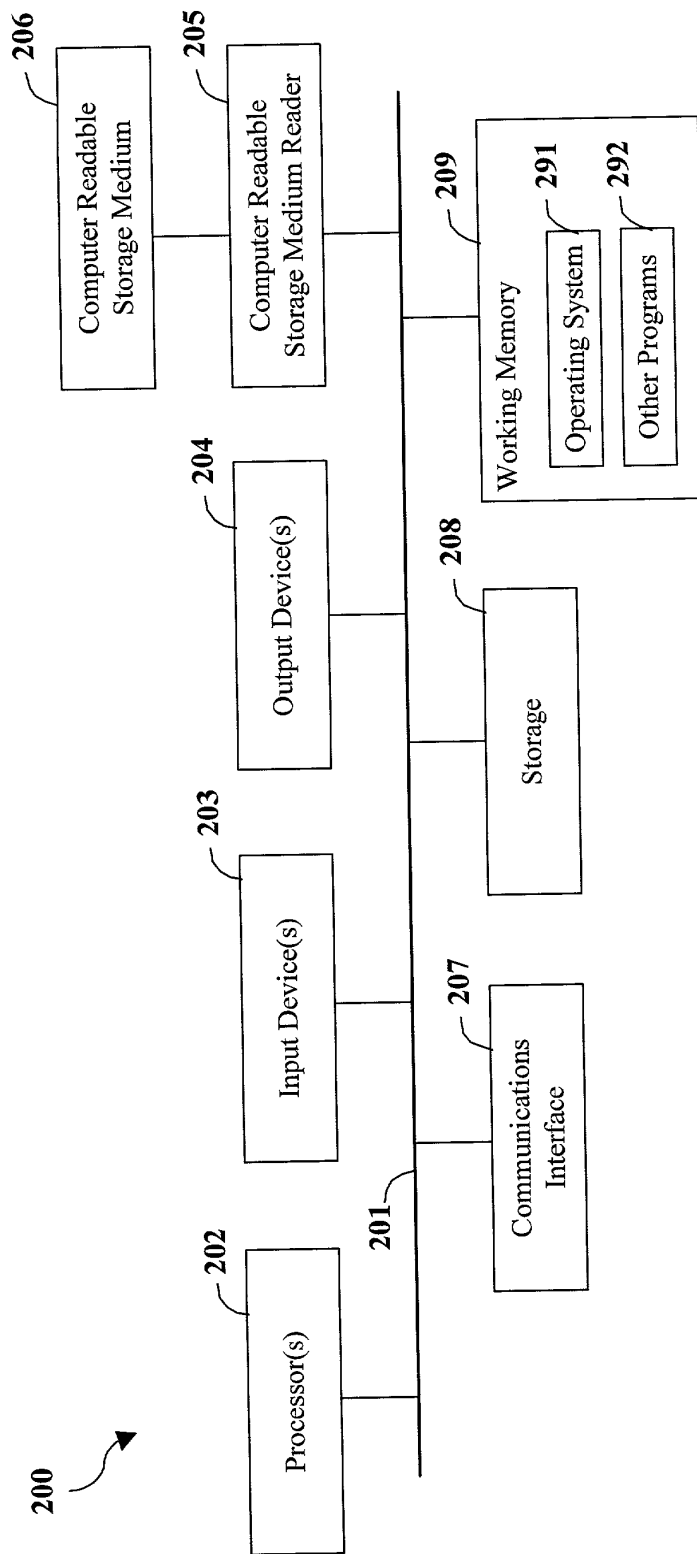


FIG. 2

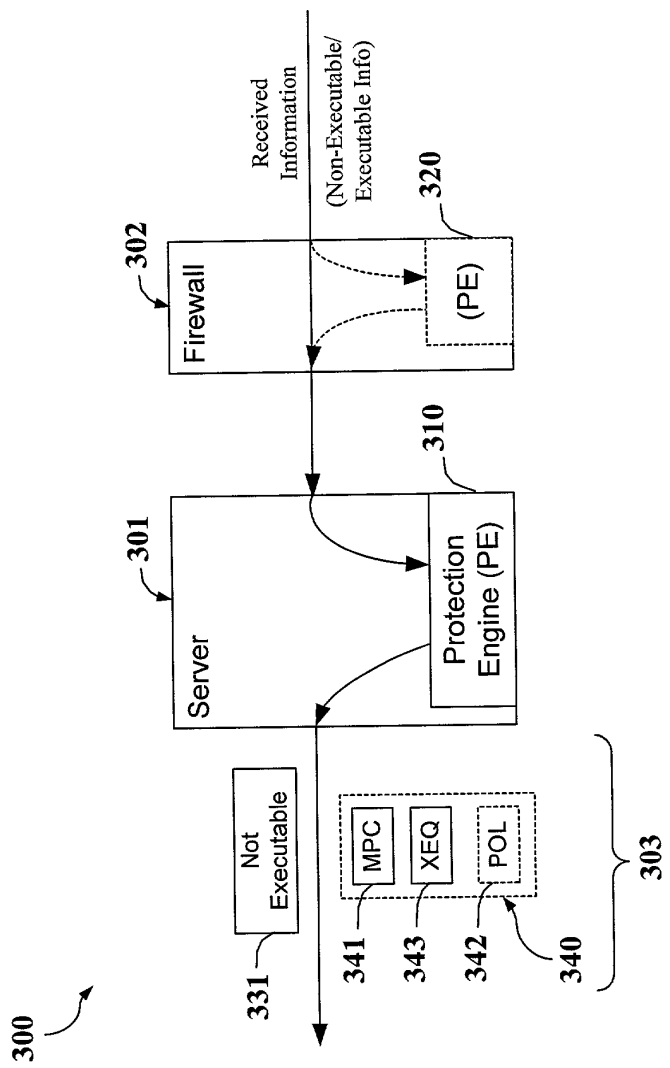


FIG. 3

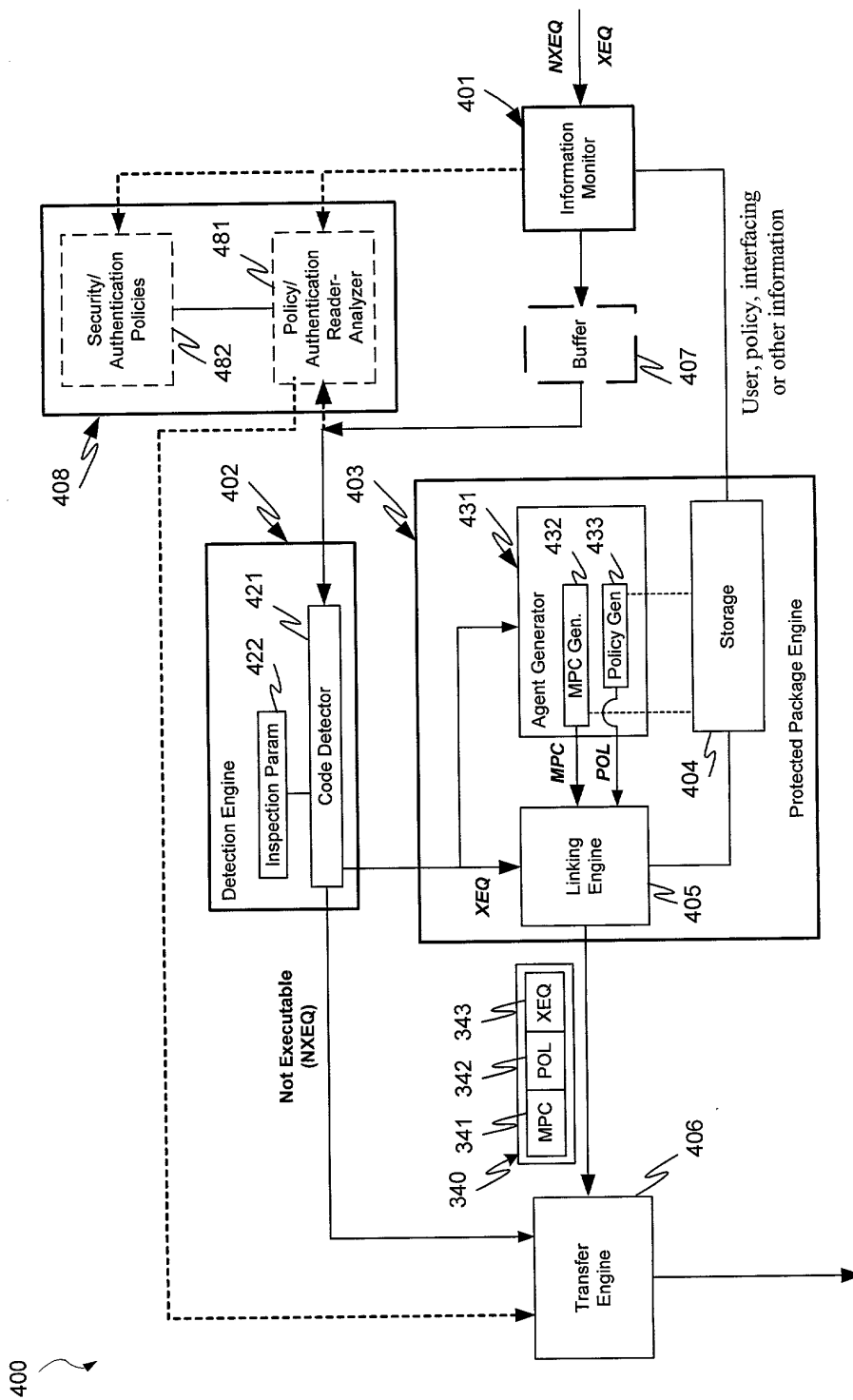
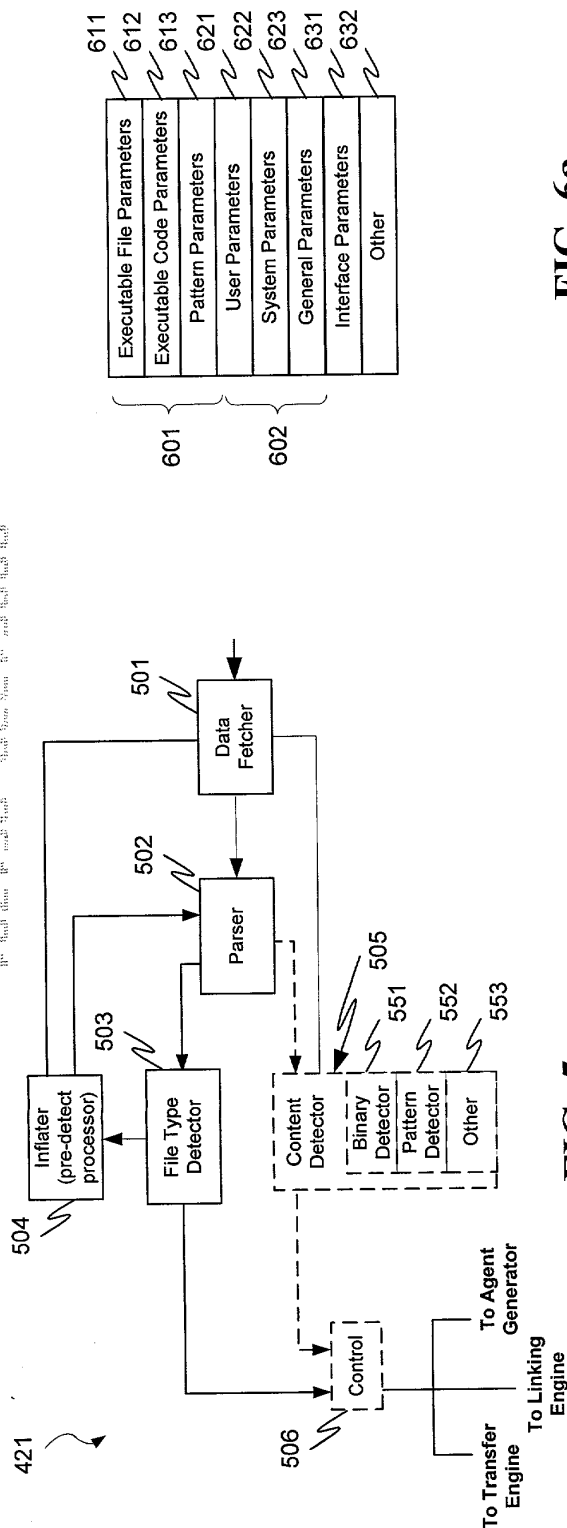
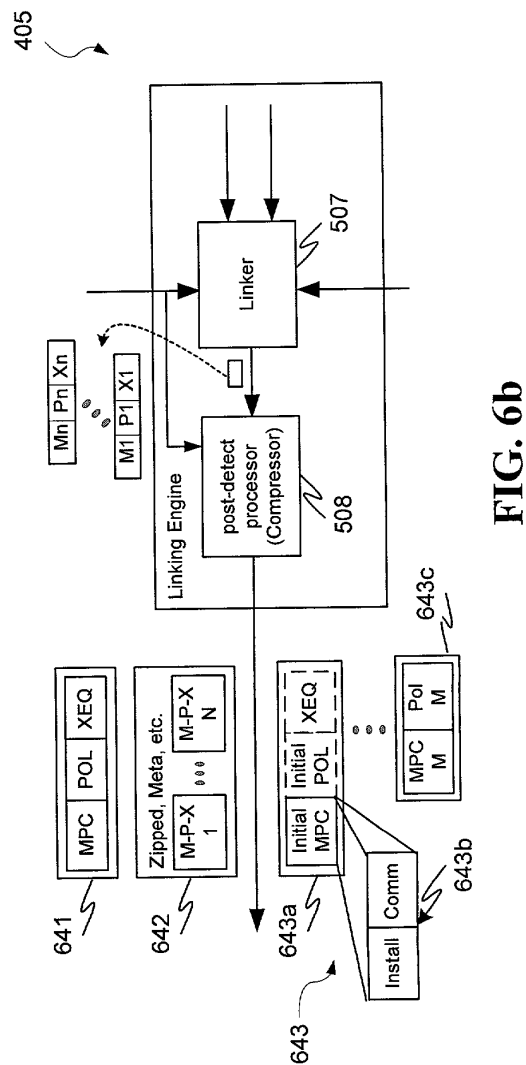


FIG. 4



**FIG. 6a**



**FIG. 6b**

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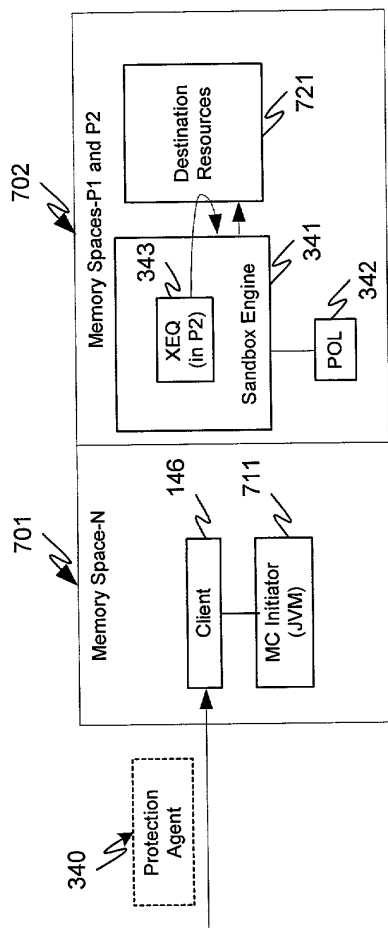


FIG. 7a

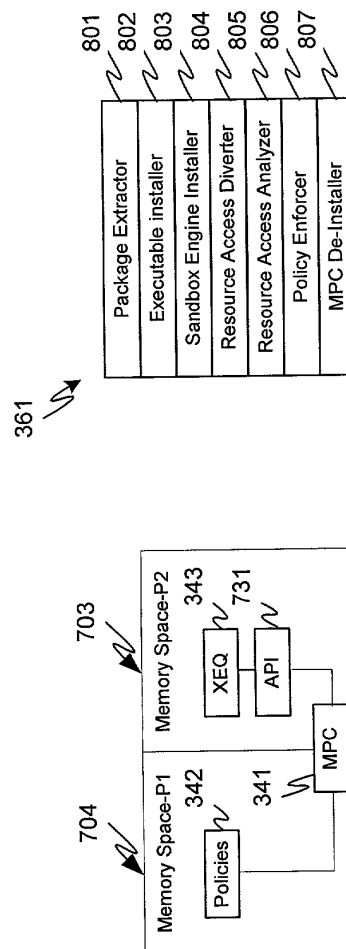


FIG. 8

FIG. 7b

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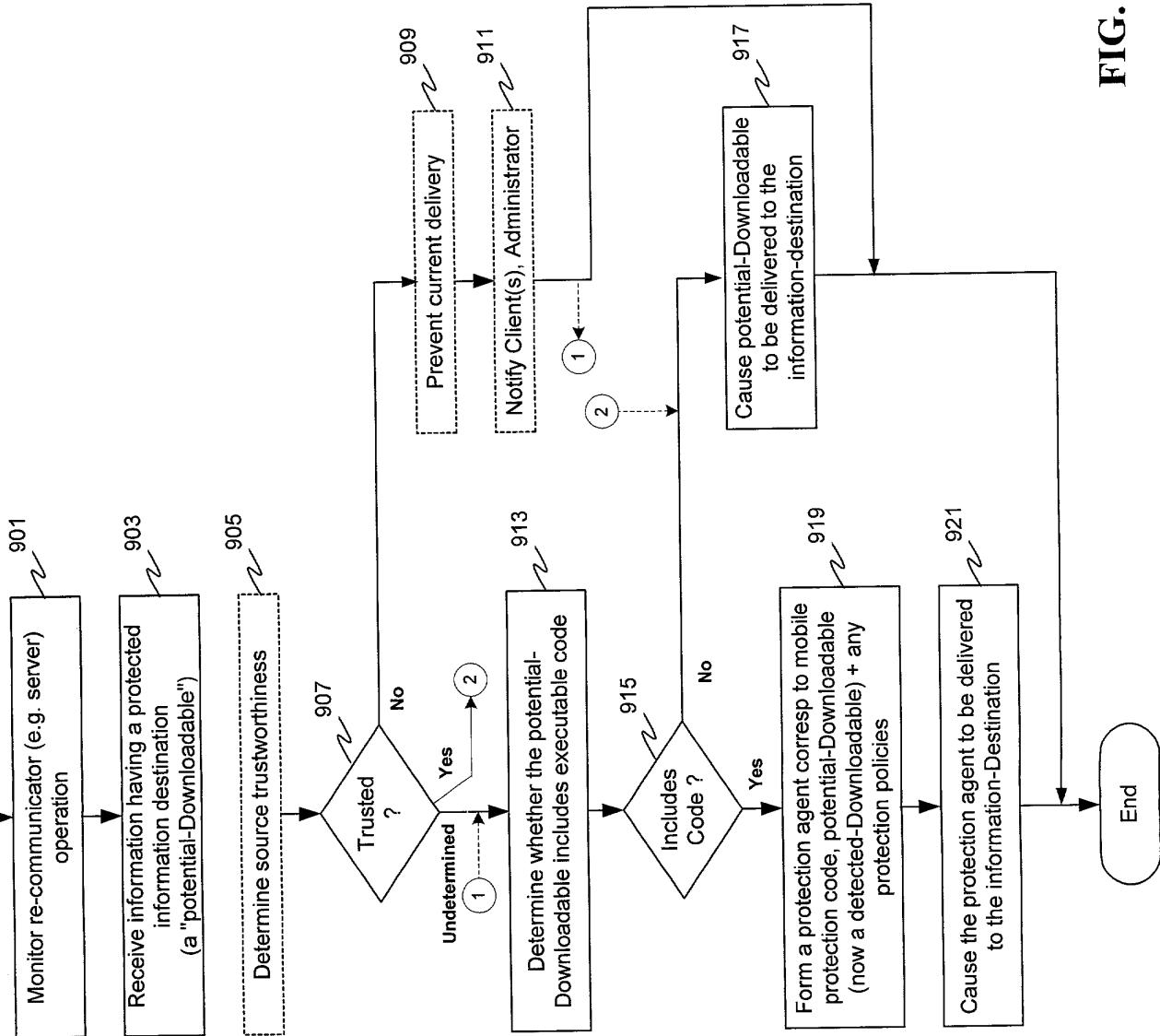


FIG. 9

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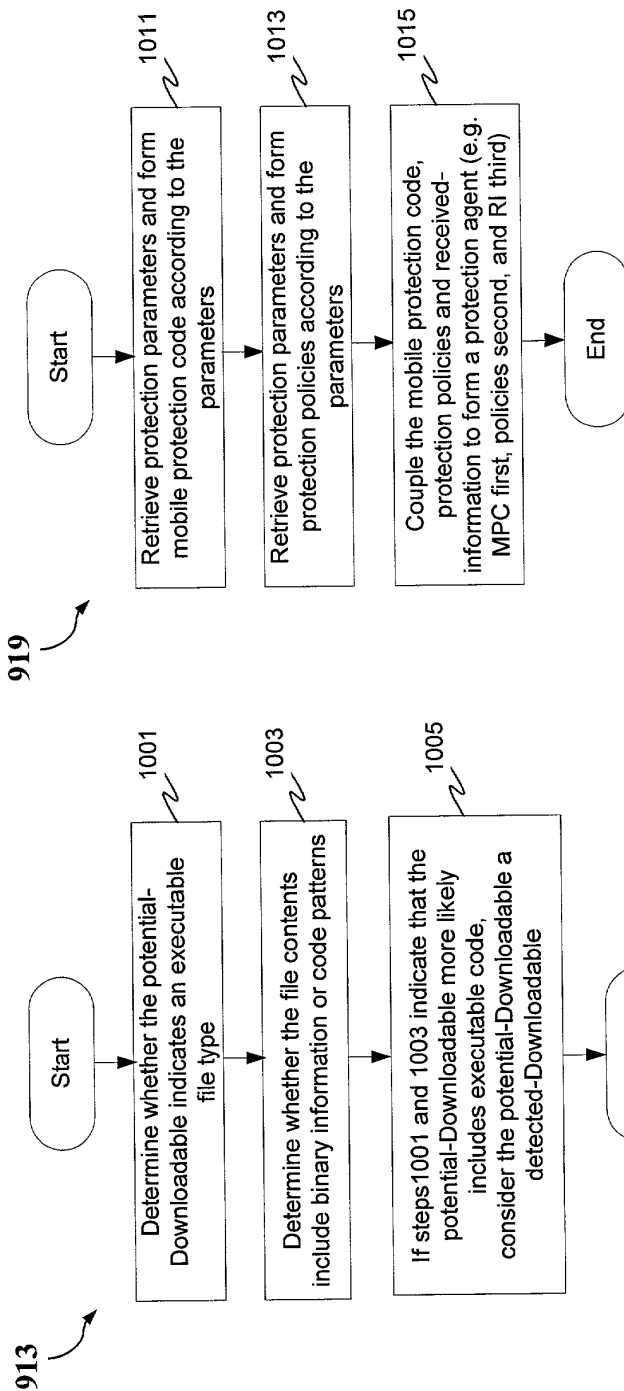
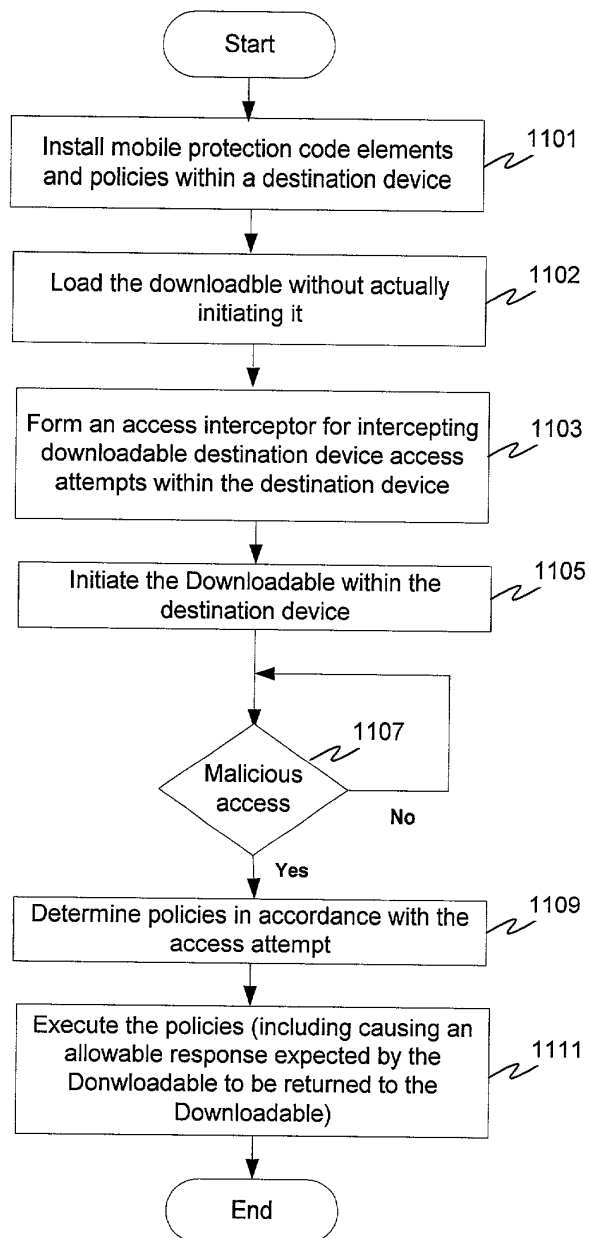


FIG. 10A

FIG. 10B



**FIG. 11**

FIG. 1103

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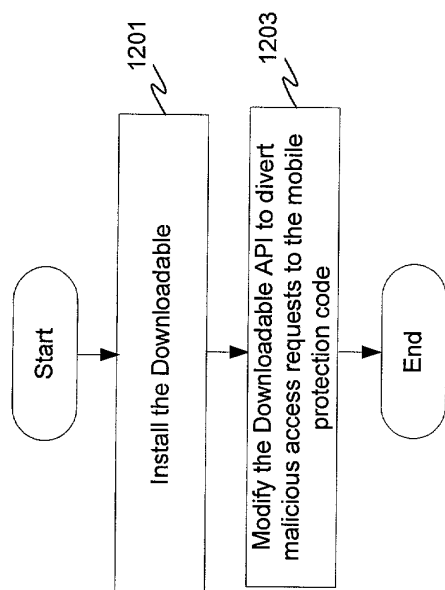


FIG. 12a

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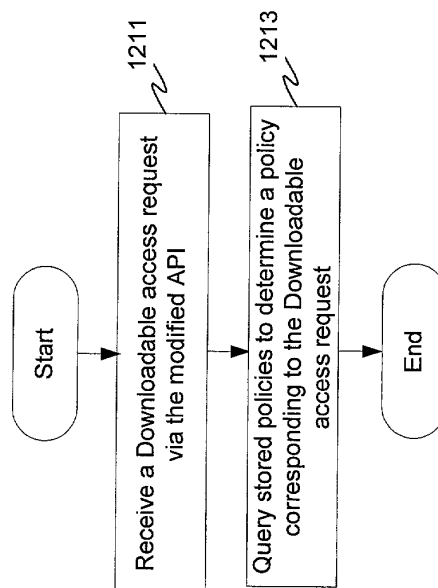


FIG. 12b

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APPLICATION NO. 09/861229	CONT/PRIOR D	CLASS 709 713	SUBCLASS 201	ART UNIT 2462 2131	EXAMINER Rovale
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## APPLICANTS

**TITLE**

PTO-2040  
12/99[illegible]

<input type="checkbox"/> <b>TERMINAL DISCLAIMER</b>	<b>DRAWINGS</b>		<b>CLAIMS ALLOWED</b>	
	Sheets Drwg.	Figs. Drwg.	Print Fig.	Total Claims
<input type="checkbox"/> The term of this patent subsequent to _____ (date) has been disclaimed.  <input type="checkbox"/> The term of this patent shall not extend beyond the expiration date of U.S Patent. No. _____  _____  _____	_____ (Assistant Examiner)		<b>NOTICE OF ALLOWANCE MAILED</b>  	
	_____ (Primary Examiner)		<b>ISSUE FEE</b>	
<input type="checkbox"/> The terminal ____ months of this patent have been disclaimed.	_____ (Legal Instruments Examiner)		Amount Due	Date Paid
	_____ (Date)		<b>ISSUE BATCH NUMBER</b>	

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FILED WITH: ☐ DISK (CRF) ☐ FICHE ☐ CD-ROM  
(Attached in pocket on right inside flap)

(FACE)



## SEARCHED

Class	Sub.	Date	Exmr.
713	176, 175, 200, 201	12/4/04	CR
709	223-229	↓	↓
717	129, 124, 126, 127, 130, 131, 134, 135	↓	↓

## INTERFERENCE SEARCHED

Class	Sub.	Date	Exmr.

## SEARCH NOTES (INCLUDING SEARCH STRATEGY)

	Date	Exmr.
BRS Tax Search USPAT, DEFWENT, JPO, EPO, IBMTOS, USP6 Pub, USOCR	12/4/04	CR
DIALOG COMPSA, EATRON, SOFTWARE	↓	↓
PALM Inventor Name Search	↓	↓

(RIGHT OUTSIDE)

ISSUE SLIP STAPLE AREA (for additional cross references)

POSITION	INITIALS	ID NO.	DATE
FEE DETERMINATION	<i>heret</i>		
O.I.P.E. CLASSIFIER	<i>fa</i>	<i>120</i>	<i>5/12/01</i>
FORMALITY REVIEW	<i>zm</i>	<i>927</i>	<i>07-19-01</i>
RESPONSE FORMALITY REVIEW			<i>10-19-01</i>

INDEX OF CLAIMS

✓ ..... Rejected      N ..... Non-elected  
 = ..... Allowed      I ..... Interference  
 - (Through numeral) ... Canceled      A ..... Appeal  
 - ..... Restricted      O ..... Objected

Claim	Date
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05/17/01

JC978 U.S. PTO

PATENT TRANSMITTAL LETTER  
(SMALL ENTITY)Attorney Docket No.  
43426.00014

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith for filing under 35 U.S.C. 111 and 37 C.F.R. is the patent application of:  
Yigal Edery, Nimrod Vered and David Kroll

## FOR:

## Malicious Mobile Code Runtime Monitoring System and Methods:

- ☒ Certificate of Mailing with Express Mailing Label No.: EL 701 364 462 US;  
☒ 10 Informal Sheets of Drawings: FIGS 1a-1c; 2, 3, 4; 5, 6a and 6b; 7a-7b and 8; 9 10A-10B; 11; 12a-12b  
☒ Unsigned Combined Declaration and Power of Attorney;  
☒ General Authorization and Request to Petition for Extension of Time; and  
☒ Return Receipt Postcard

## CLAIMS AS FILED

FOR	FILED	ALLOWED	Extra	Rate	Additional Fee
Total Claims	76	-20	56	x \$ 9.00	\$ 504.00
Indep. Claims	11	-3	8	x \$40.00	\$ 320.00
Multiple Dependent Claims (check if applicable) <input type="checkbox"/>					\$
Basic Fee					\$ 355.00
Total Filing Fee					\$1,179.00

- ☒ No additional fee is required for amendment.  
☒ Please charge Deposit Account No. 05-0150 in the amount of \$ 1,179.00  
☒ The Commissioner is hereby authorized to charge and credit Deposit Account No. . 05-0150  
As described below. A duplicate copy of this sheet is enclosed.

- ☒ Charge the amount of \$1,179.00 as filing fee.  
☒ Credit any overpayment.  
☒ Charge any additional filing fees required under 37 C.F.R. 1.16.  
☒ Charge any patent application processing fees under 37 C.F.R. 1.17.  
☐ Charge the issue fee set in 37 C.F.R. 1.18 at the mailing of the Notice of Allowance, pursuant to 37 C.F.R. 1.311(b).

*Daryl C. Josephson*  
Daryl C. Josephson Reg. No. 37/365  
Attorney for Applicants  
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Facsimile: (650) 856-3619

Date:

5/17/01

JC978 U.S. PTO  
09/861229

05/17/01

Attorney Docket No.: 43426.00014



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In Re Application Of:

Examiner: Unknown

Yigal Edery, et al.

Art Unit: Unknown

Serial No: Unknown

Filed: Date Herewith

For: Malicious Mobile Code Runtime  
Monitoring System and Methods

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BOX PATENT APPLICATION  
Commissioner of Patents  
Washington, D.C. 20231

**GENERAL AUTHORIZATION TO PETITION FOR EXTENSIONS OF TIME**

Dear Sir:

With reference to the subject application, and pursuant to 37 C.F.R. § 1.136, Applicants hereby authorize and request the Commissioner to treat any correspondence requiring a petition for extension of time as containing such a request therefor for the appropriate length of time. This general authorization is effective during the pendency of this application, including any division or continuing application therefrom.

Where no check is received by the Commissioner, you are hereby authorized to charge payment of the requisite petition fees, or charge any additional fee required under 37 C.F.R. §

1.17, or credit any overpayment of same, to Deposit Account No. 05-0150.

Date: 5/17/01

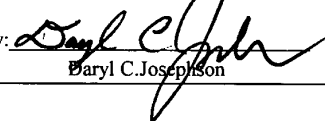
Respectfully submitted,  
Yigal Edery

By:   
Daryl C. Josephson  
Attorney for Applicants  
Reg. No. 31,365

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Facsimile (650) 856-3619

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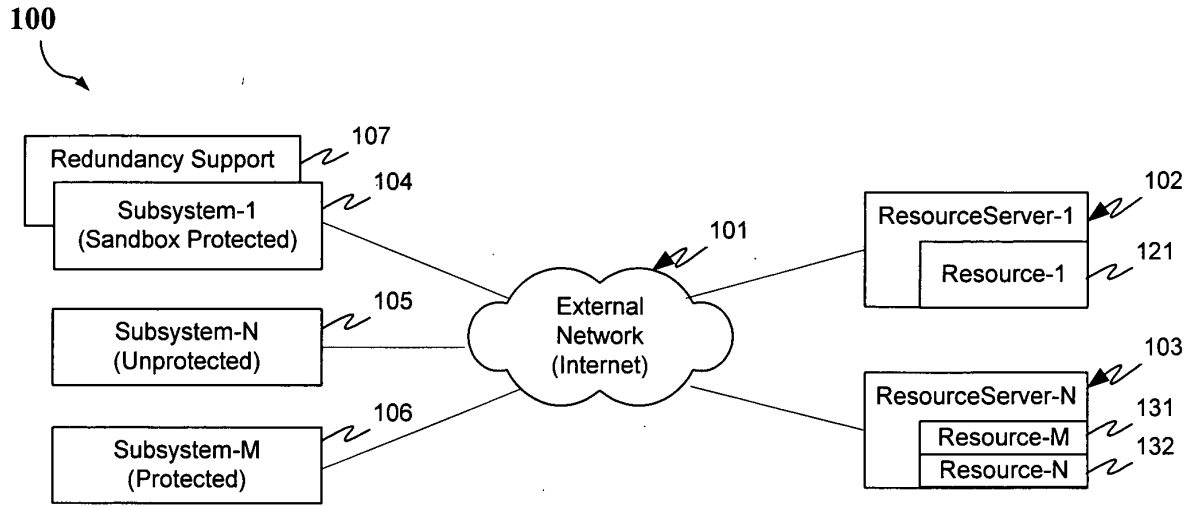


FIG. 1a

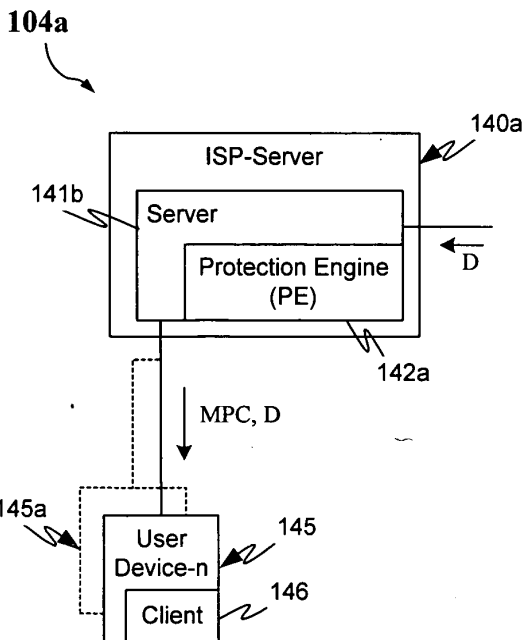


FIG. 1b

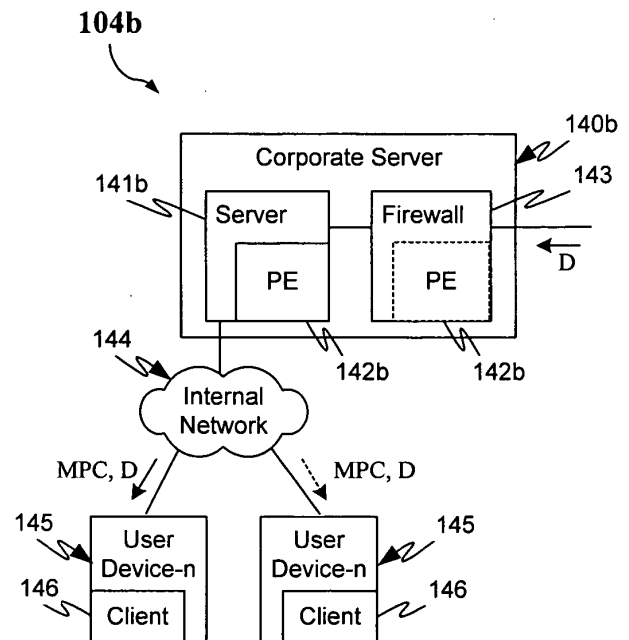


FIG. 1c

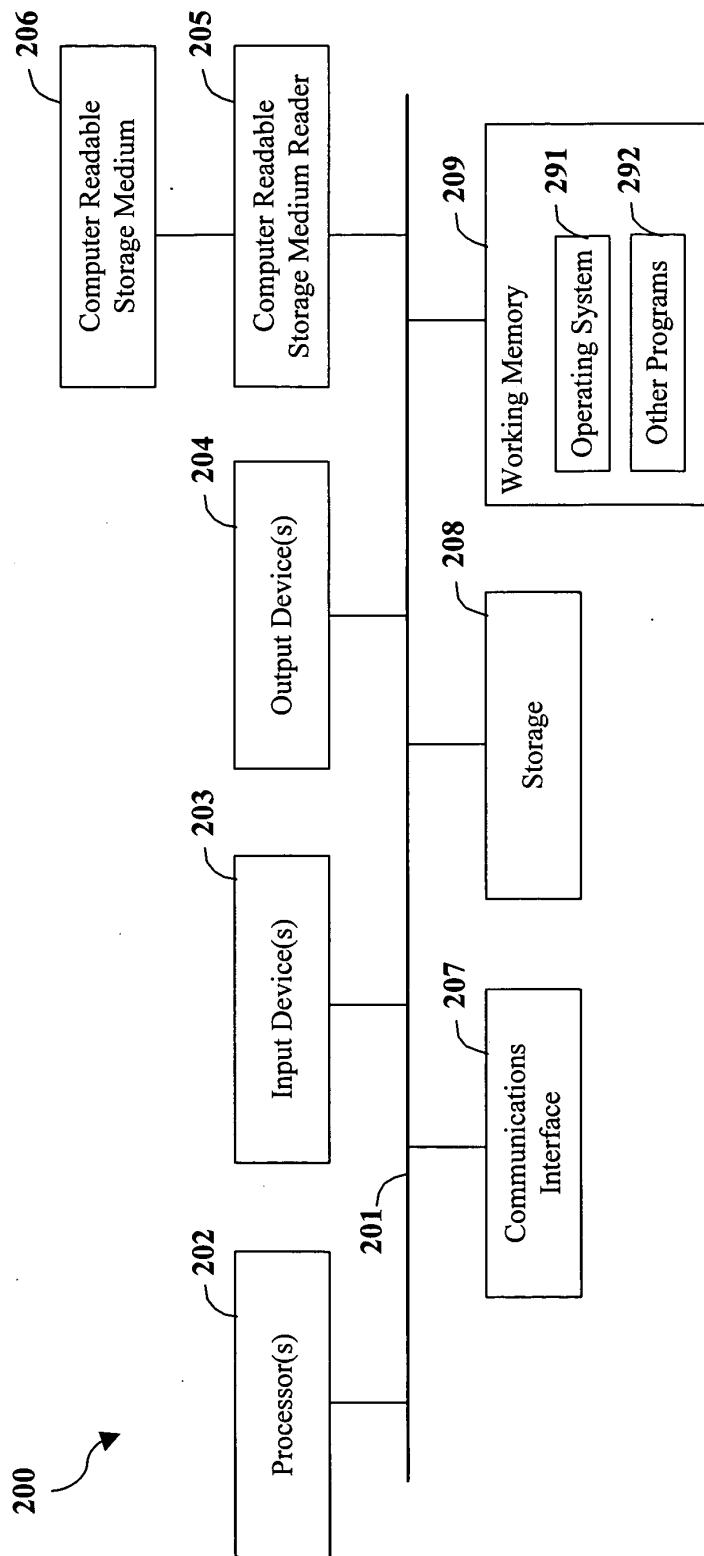


FIG. 2

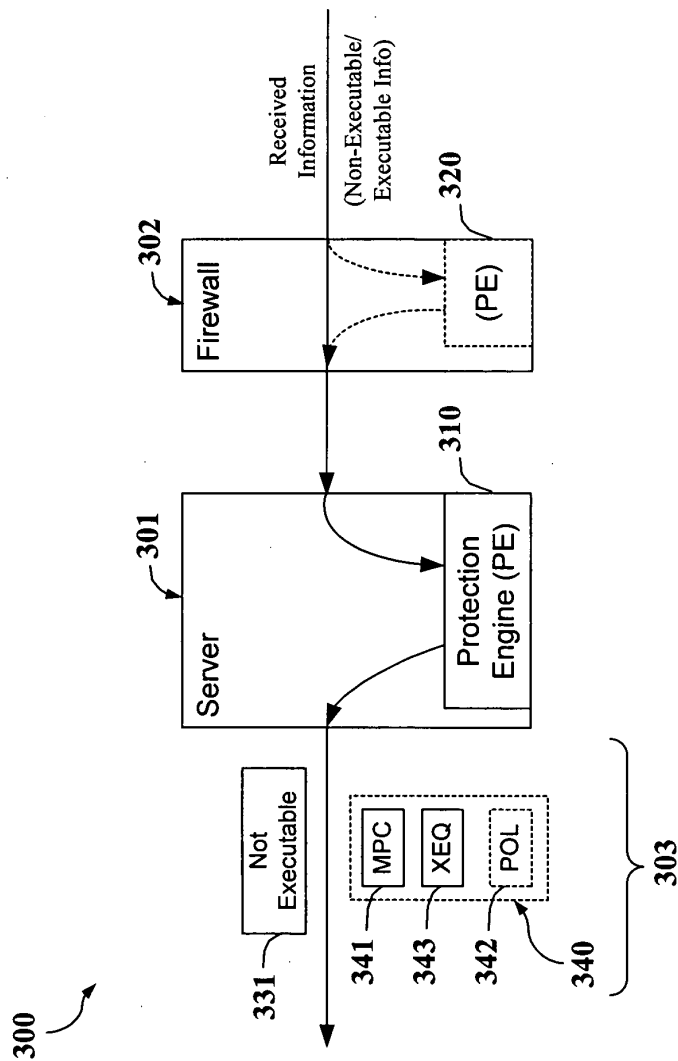
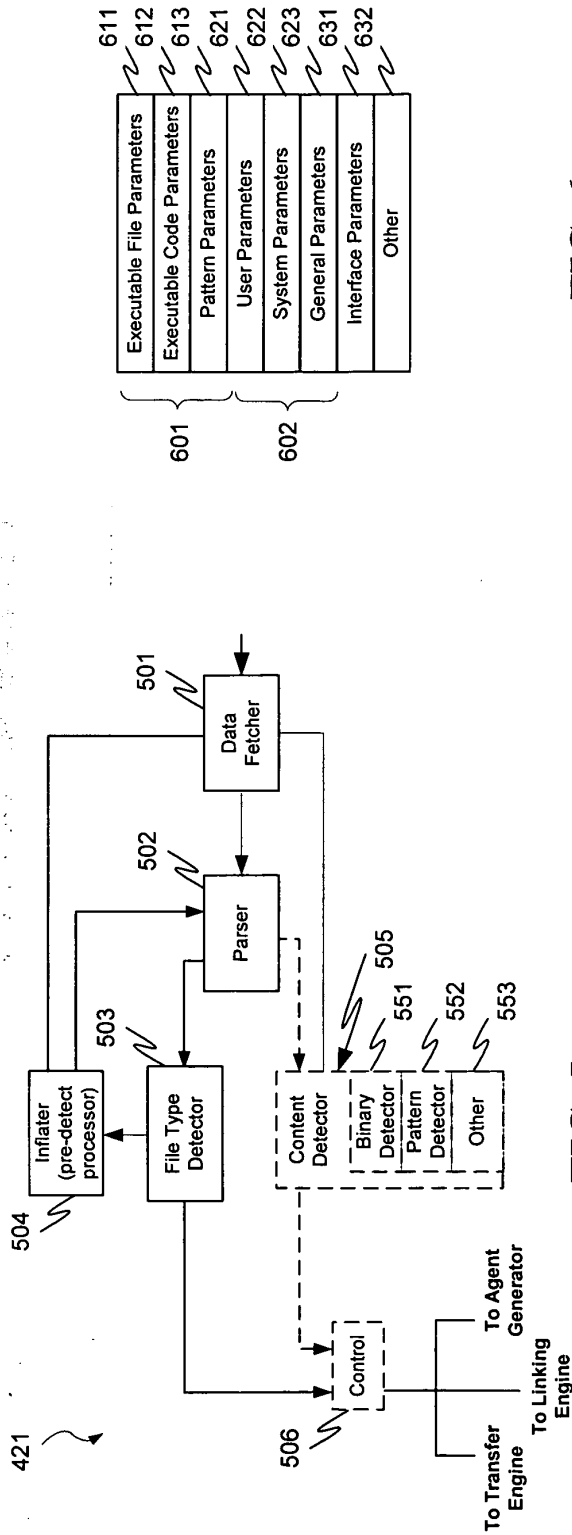
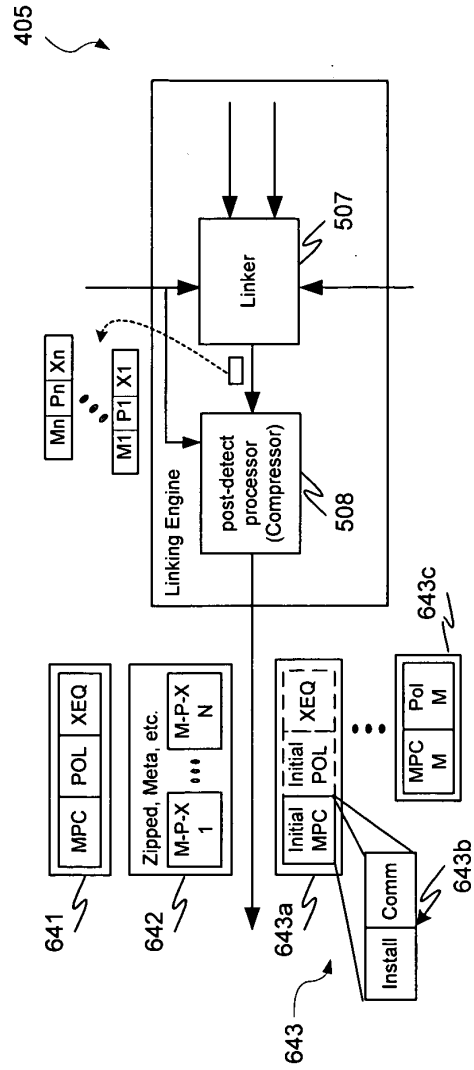
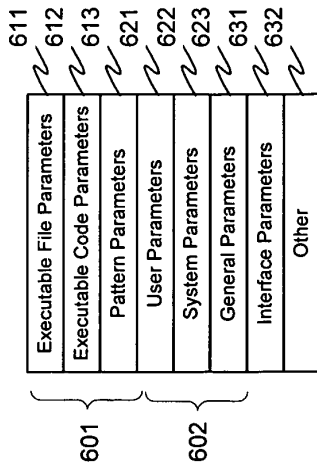


FIG. 3





**FIG. 6a**



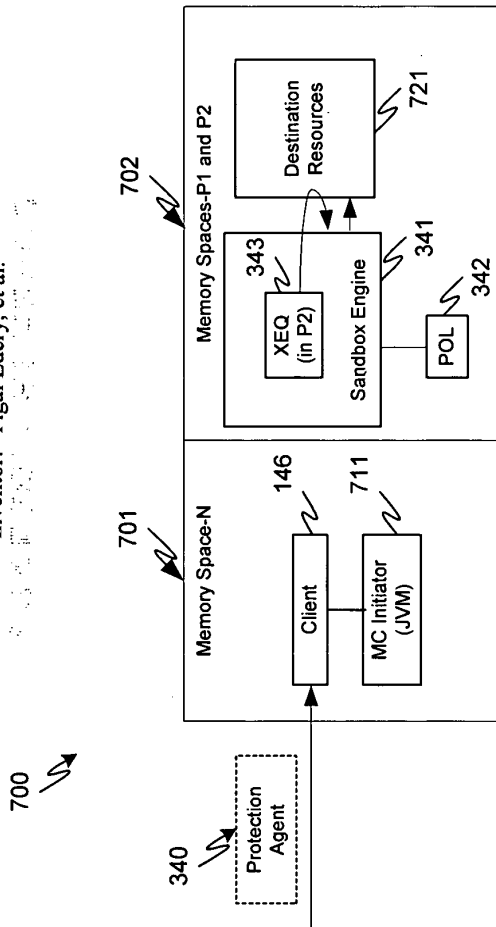


FIG. 7a

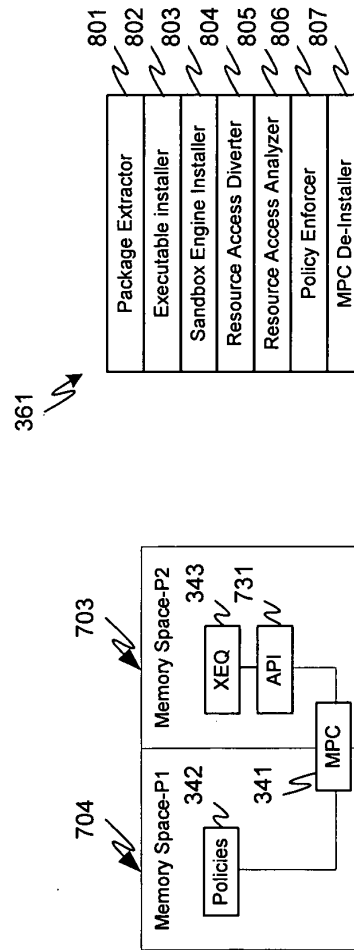


FIG. 8

FIG. 7b

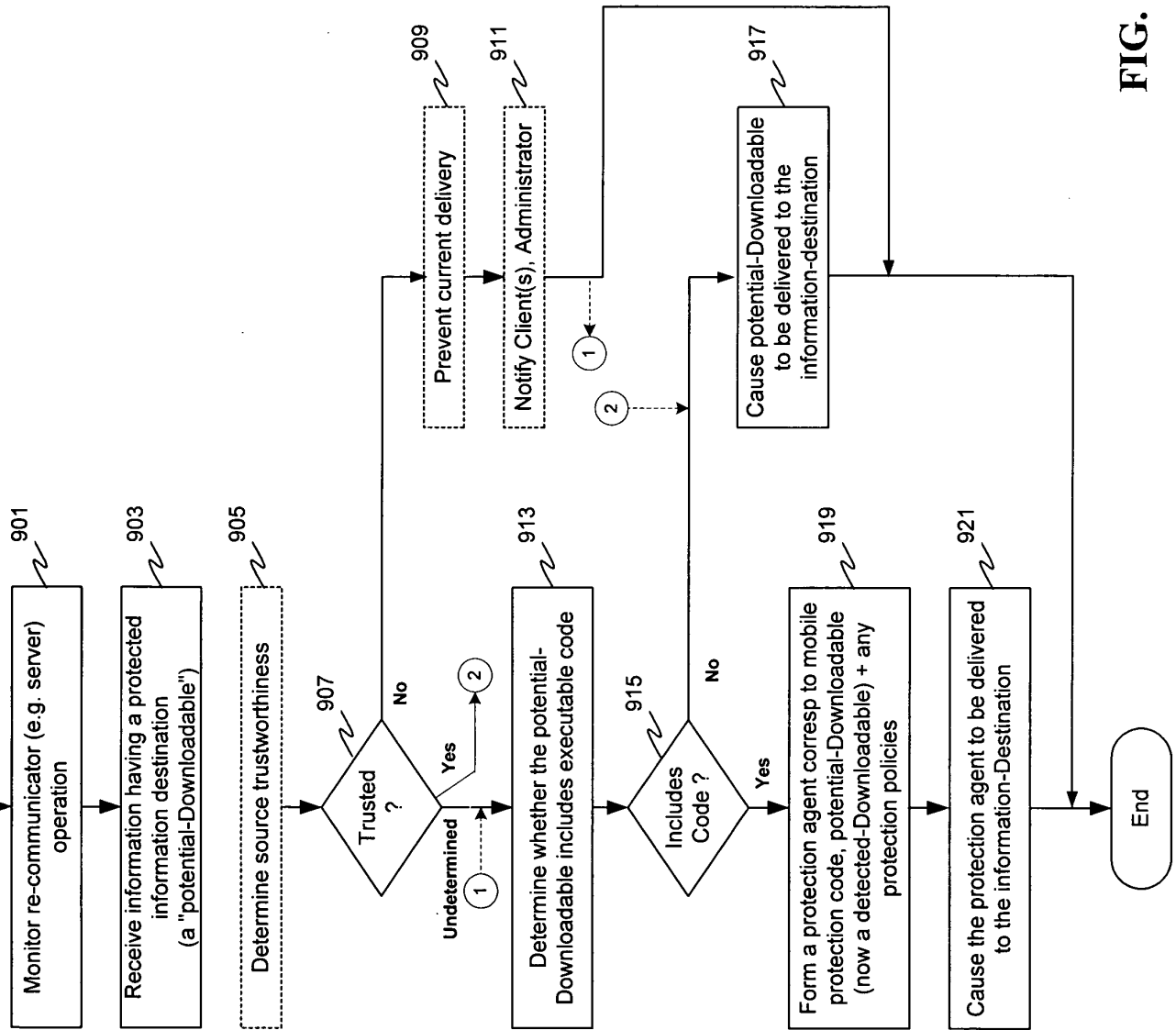


FIG. 9

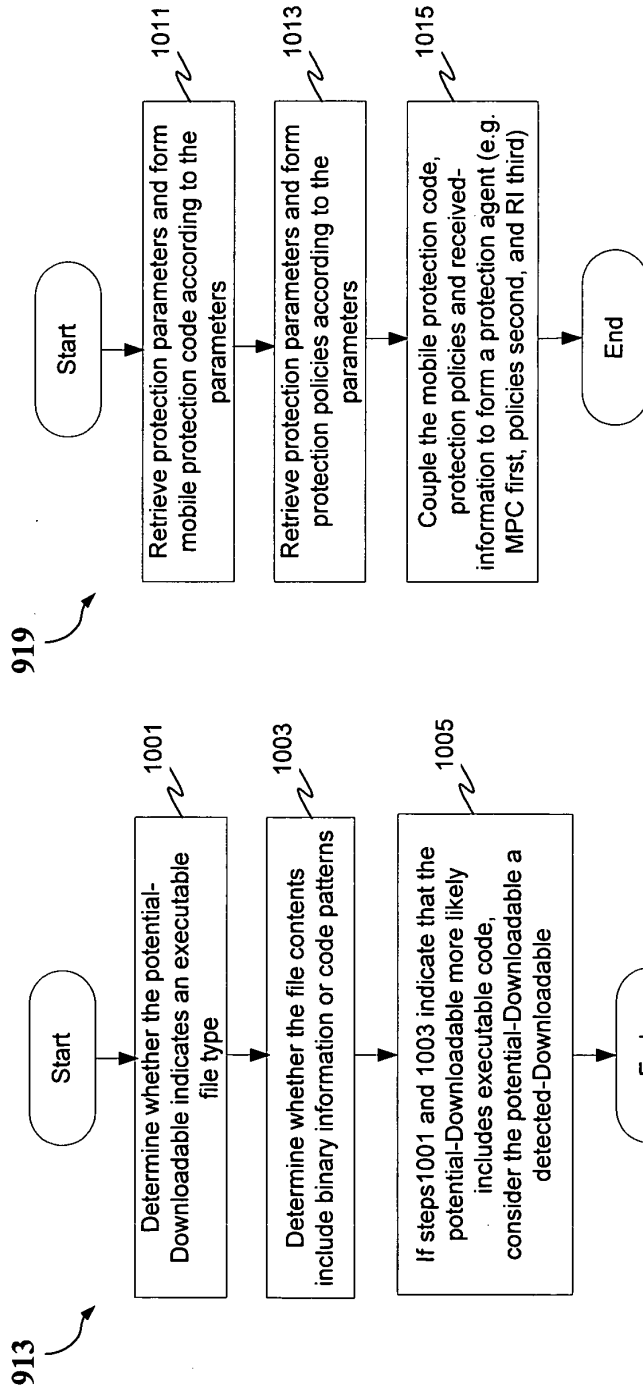


FIG. 10A

FIG. 10B

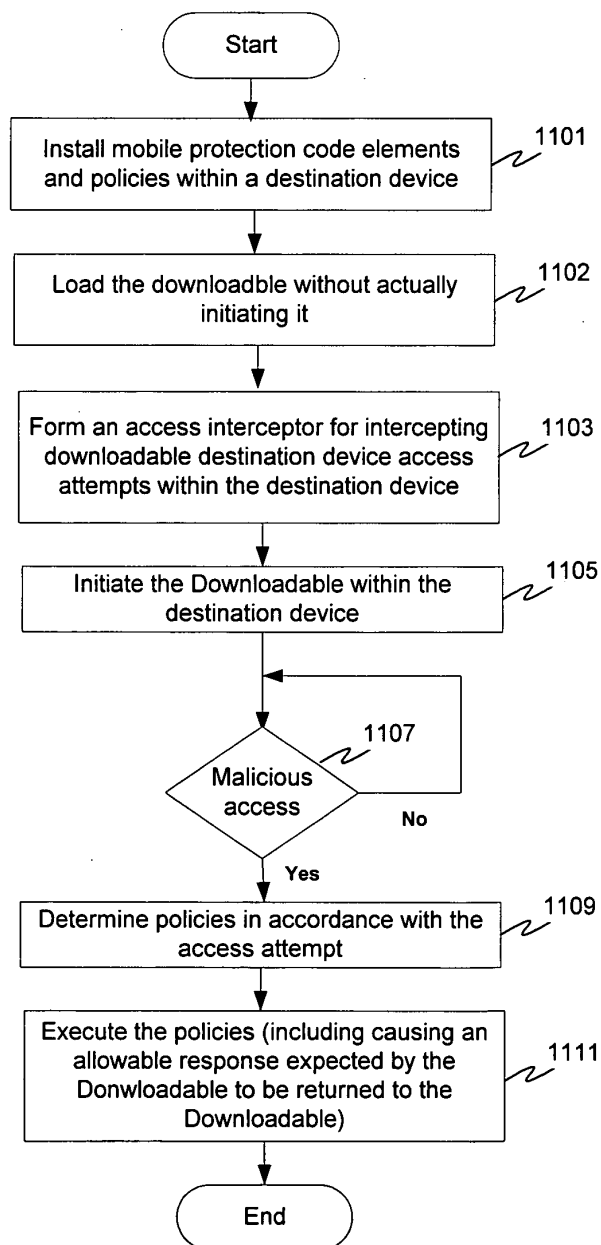


FIG. 11

1103

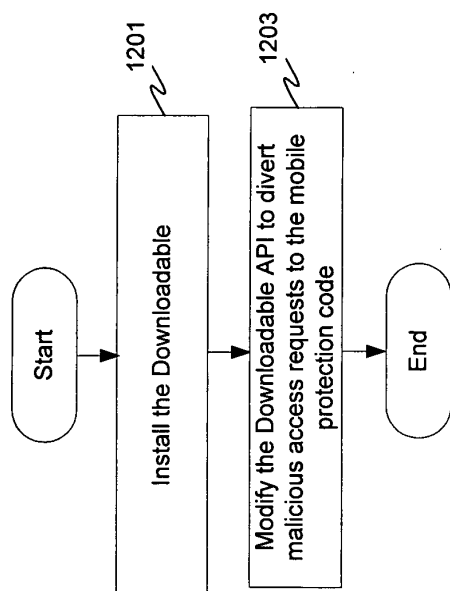


FIG. 12a

1109

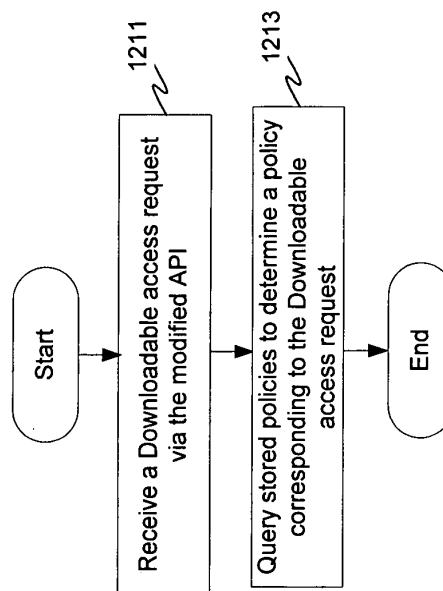


FIG. 12b

**APPLICATION FOR  
UNITED STATES PATENT  
IN THE NAME OF**

**Yigal Edery, Nimrod Vered and David Kroll**

**OF**

**FINJAN SOFTWARE, LTD.**

**MALICIOUS MOBILE CODE RUNTIME MONITORING  
SYSTEM AND METHODS**

**DOCKET NO. 43426.00014**

**Please direct communications to:**

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**Express Mail Number EL 701 364 624**

MALICIOUS MOBILE CODE RUNTIME MONITORINGSYSTEM AND METHODSPRIORITY REFERENCE TO RELATED APPLICATIONS

5 This application claims benefit of and hereby incorporates by reference  
provisional application serial number 60/205,591, entitled "Computer Network Malicious  
Code Run-time Monitoring," filed on May 17, 2000 by inventors Nimrod Itzhak Vered, et  
al. This application is also a Continuation-In-Part of and hereby incorporates by  
reference patent application serial number 09/539,667, entitled "System and Method for  
10 Protecting a Computer and a Network From Hostile Downloadables" filed on March 30,  
2000 by inventor Shlomo Touboul. This application is also a Continuation-In-Part of and  
hereby incorporates by reference patent application serial number 09/551,302, entitled  
"System and Method for Protecting a Client During Runtime From Hostile  
Downloadables", filed on April 18, 2000 by inventor Shlomo Touboul.

BACKGROUND OF THE INVENTIONField of the Invention

20 This invention relates generally to computer networks, and more particularly  
provides a system and methods for protecting network-connectable devices from  
undesirable downloadable operation.

Description of the Background Art

Advances in networking technology continue to impact an increasing number and diversity of users. The Internet, for example, already provides to expert, intermediate and even novice users the informational, product and service resources of over 100,000 interconnected networks owned by governments, universities, nonprofit groups, companies, etc. Unfortunately, particularly the Internet and other public networks have also become a major source of potentially system-fatal or otherwise damaging computer code commonly referred to as "viruses."

Efforts to forestall viruses from attacking networked computers have thus far met with only limited success at best. Typically, a virus protection program designed to identify and remove or protect against the initiating of known viruses is installed on a network firewall or individually networked computer. The program is then inevitably surmounted by some new virus that often causes damage to one or more computers. The damage is then assessed and, if isolated, the new virus is analyzed. A corresponding new virus protection program (or update thereof) is then developed and installed to combat the new virus, and the new program operates successfully until yet another new virus appears - and so on. Of course, damage has already typically been incurred.

To make matters worse, certain classes of viruses are not well recognized or understood, let alone protected against. It is observed by this inventor, for example, that Downloadable information comprising program code can include distributable components (e.g. Java™ applets and JavaScript scripts, ActiveX™ controls, Visual Basic, add-ins and/or others). It can also include, for example, application programs, Trojan horses, multiple compressed programs such as zip or meta files, among others. U.S. Patent 5,983,348 to Shuang, however, teaches a protection system for protecting

against only distributable components including “Java applets or ActiveX controls”, and further does so using resource intensive and high bandwidth static Downloadable content and operational analysis, and modification of the Downloadable component; Shuang further fails to detect or protect against additional program code included within a tested Downloadable. U.S. Patent 5,974,549 to Golan teaches a protection system that further focuses only on protecting against ActiveX controls and not other distributable components, let alone other Downloadable types. U.S. patent 6,167,520 to Touboul enables more accurate protection than Shuang or Golan, but lacks the greater flexibility and efficiency taught herein, as do Shuang and Golan.

Accordingly, there remains a need for efficient, accurate and flexible protection of computers and other network connectable devices from malicious Downloadables.

### SUMMARY OF THE INVENTION

The present invention provides protection systems and methods capable of protecting a personal computer (“PC”) or other persistently or even intermittently network accessible devices or processes from harmful, undesirable, suspicious or other “malicious” operations that might otherwise be effectuated by remotely operable code. While enabling the capabilities of prior systems, the present invention is not nearly so limited, resource intensive or inflexible, and yet enables more reliable protection. For example, remotely operable code that is protectable against can include downloadable application programs, Trojan horses and program code groupings, as well as software “components”, such as Java™ applets, ActiveX™ controls, JavaScript™/Visual Basic scripts, add-ins, etc., among others. Protection can also be provided in a distributed

interactively, automatically or mixed configurable manner using protected client, server or other parameters, redirection, local/remote logging, etc., and other server/client based protection measures can also be separately and/or interoperably utilized, among other examples.

5 In one aspect, embodiments of the invention provide for determining, within one or more network “servers” (e.g. firewalls, resources, gateways, email relays or other devices/processes that are capable of receiving-and-transferring a Downloadable) whether received information includes executable code (and is a “Downloadable”). Embodiments also provide for delivering static, configurable and/or extensible remotely operable  
10 protection policies to a Downloadable-destination, more typically as a sandboxed package including the mobile protection code, downloadable policies and one or more received Downloadables. Further client-based or remote protection code/policies can also be utilized in a distributed manner. Embodiments also provide for causing the mobile protection code to be executed within a Downloadable-destination in a manner that  
15 enables various Downloadable operations to be detected, intercepted or further responded to via protection operations. Additional server/information-destination device security or other protection is also enabled, among still further aspects.

A protection engine according to an embodiment of the invention is operable within one or more network servers, firewalls or other network connectable information  
20 re-communicating devices (as are referred to herein summarily one or more “servers” or “re-communicators”). The protection engine includes an information monitor for monitoring information received by the server, and a code detection engine for determining whether the received information includes executable code. The protection

engine also includes a packaging engine for causing a sandboxed package, typically including mobile protection code and downloadable protection policies to be sent to a Downloadable-destination in conjunction with the received information, if the received information is determined to be a Downloadable.

5 A sandboxed package according to an embodiment of the invention is receivable by and operable with a remote Downloadable-destination. The sandboxed package includes mobile protection code ("MPC") for causing one or more predetermined malicious operations or operation combinations of a Downloadable to be monitored or otherwise intercepted. The sandboxed package also includes protection policies (operable  
10 alone or in conjunction with further Downloadable-destination stored or received policies/MPCs) for causing one or more predetermined operations to be performed if one or more undesirable operations of the Downloadable is/are intercepted. The sandboxed package can also include a corresponding Downloadable and can provide for initiating the Downloadable in a protective "sandbox". The MPC/policies can further include a  
15 communicator for enabling further MPC/policy information or "modules" to be utilized and/or for event logging or other purposes.

A sandbox protection system according to an embodiment of the invention comprises an installer for enabling a received MPC to be executed within a Downloadable-destination (device/process) and further causing a Downloadable  
20 application program, distributable component or other received downloadable code to be received and installed within the Downloadable-destination. The protection system also includes a diverter for monitoring one or more operation attempts of the Downloadable, an operation analyzer for determining one or more responses to the attempts, and a

security enforcer for effectuating responses to the monitored operations. The protection system can further include one or more security policies according to which one or more protection system elements are operable automatically (e.g. programmatically) or in conjunction with user intervention (e.g. as enabled by the security enforcer). The security policies can also be configurable/extensible in accordance with further downloadable and/or Downloadable-destination information.

A method according to an embodiment of the invention includes receiving downloadable information, determining whether the downloadable information includes executable code, and causing a mobile protection code and security policies to be communicated to a network client in conjunction with security policies and the downloadable information if the downloadable information is determined to include executable code. The determining can further provide multiple tests for detecting, alone or together, whether the downloadable information includes executable code.

A further method according to an embodiment of the invention includes forming a sandboxed package that includes mobile protection code ("MPC"), protection policies, and a received, detected-Downloadable, and causing the sandboxed package to be communicated to and installed by a receiving device or process ("user device") for responding to one or more malicious operation attempts by the detected-Downloadable from within the user device. The MPC/policies can further include a base "module" and a "communicator" for enabling further up/downloading of one or more further "modules" or other information (e.g. events, user/user device information, etc.).

Another method according to an embodiment of the invention includes installing, within a user device, received mobile protection code ("MPC") and protection policies in

conjunction with the user device receiving a downloadable application program, component or other Downloadable(s). The method also includes determining, by the MPC, a resource access attempt by the Downloadable, and initiating, by the MPC, one or more predetermined operations corresponding to the attempt. (Predetermined operations can, for example, comprise initiating user, administrator, client, network or protection system determinable operations, including but not limited to modifying the Downloadable operation, extricating the Downloadable, notifying a user/another, maintaining a local/remote log, causing one or more MPCs/policies to be downloaded, etc.)

Advantageously, systems and methods according to embodiments of the invention enable potentially damaging, undesirable or otherwise malicious operations by even unknown mobile code to be detected, prevented, modified and/or otherwise protected against without modifying the mobile code. Such protection is further enabled in a manner that is capable of minimizing server and client resource requirements, does not require pre-installation of security code within a Downloadable-destination, and provides for client specific or generic and readily updateable security measures to be flexibly and efficiently implemented. Embodiments further provide for thwarting efforts to bypass security measures (e.g. by "hiding" undesirable operation causing information within apparently inert or otherwise "friendly" downloadable information) and/or dividing or combining security measures for even greater flexibility and/or efficiency.

Embodiments also provide for determining protection policies that can be downloaded and/or ascertained from other security information (e.g. browser settings, administrative policies, user input, uploaded information, etc.). Different actions in response to different Downloadable operations, clients, users and/or other criteria are also

enabled, and embodiments provide for implementing other security measures, such as verifying a downloadable source, certification, authentication, etc. Appropriate action can also be accomplished automatically (e.g. programmatically) and/or in conjunction with alerting one or more users/administrators, utilizing user input, etc. Embodiments

5 further enable desirable Downloadable operations to remain substantially unaffected, among other aspects.

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BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1a is a block diagram illustrating a network system in accordance with an embodiment of the present invention;

FIG. 1b is a block diagram illustrating a network subsystem example in  
5 accordance with an embodiment of the invention;

FIG. 1c is a block diagram illustrating a further network subsystem example in accordance with an embodiment of the invention;

FIG. 2 is a block diagram illustrating a computer system in accordance with an embodiment of the invention;

FIG. 3 is a flow diagram broadly illustrating a protection system host according to  
10 an embodiment of the invention;

FIG. 4 is a block diagram illustrating a protection engine according to an embodiment of the invention;

FIG. 5 is a block diagram illustrating a content inspection engine according to an  
15 embodiment of the invention;

FIG. 6a is a block diagram illustrating protection engine parameters according to an embodiment of the invention;

FIG. 6b is a flow diagram illustrating a linking engine use in conjunction with ordinary, compressed and distributable sandbox package utilization, according to an  
20 embodiment of the invention;

FIG. 7a is a flow diagram illustrating a sandbox protection system operating within a destination system, according to an embodiment of the invention;

FIG. 7b is a block diagram illustrating memory allocation usable in conjunction with the protection system of FIG. 7a, according to an embodiment of the invention;

FIG. 7c is a block diagram illustrating a mobile protection code according to an embodiment of the invention;

5 FIG. 8 is a flowchart illustrating a method for examining a Downloadable in accordance with the present invention;

FIG. 9 is a flowchart illustrating a server based protection method according to an embodiment of the invention;

10 FIG. 10a is a flowchart illustrating method for determining if a potential-Downloadable includes or is likely to include executable code, according to an embodiment of the invention;

FIG. 10b is a flowchart illustrating a method for forming a protection agent, according to an embodiment of the invention;

15 FIG. 11 is a flowchart illustrating a method for protecting a Downloadable destination according to an embodiment of the invention;

FIG. 12a is a flowchart illustrating a method for forming a Downloadable access interceptor according to an embodiment of the invention; and

FIG. 12b is a flowchart illustrating a method for implementing mobile protection policies according to an embodiment of the invention.

DETAILED DESCRIPTION

In providing malicious mobile code runtime monitoring systems and methods, embodiments of the invention enable actually or potentially undesirable operations of even unknown malicious code to be efficiently and flexibly avoided. Embodiments provide, within one or more “servers” (e.g. firewalls, resources, gateways, email relays or other information re-communicating devices), for receiving downloadable-information and detecting whether the downloadable-information includes one or more instances of executable code (e.g. as with a Trojan horse, zip/meta file etc.). Embodiments also provide for separately or interoperably conducting additional security measures within the server, within a Downloadable-destination of a detected-Downloadable, or both.

Embodiments further provide for causing mobile protection code (“MPC”) and downloadable protection policies to be communicated to, installed and executed within one or more received information destinations in conjunction with a detected-Downloadable. Embodiments also provide, within an information-destination, for detecting malicious operations of the detected-Downloadable and causing responses thereto in accordance with the protection policies (which can correspond to one or more user, Downloadable, source, destination, or other parameters), or further downloaded or downloadable-destination based policies (which can also be configurable or extensible). (Note that the term “or”, as used herein, is generally intended to mean “and/or” unless otherwise indicated.)

FIGS. 1a through 1c illustrate a computer network system 100 according to an embodiment of the invention. FIG. 1a broadly illustrates system 100, while FIGS. 1b and

1c illustrate exemplary protectable subsystem implementations corresponding with system 104 or 106 of FIG. 1a.

Beginning with FIG. 1a, computer network system 100 includes an external computer network 101, such as a Wide Area Network or "WAN" (e.g. the Internet), which is coupled to one or more network resource servers (summarily depicted as resource server-1 102 and resource server-N 103). Where external network 101 includes the Internet, resource servers 1-N (102, 103) might provide one or more resources including web pages, streaming media, transaction-facilitating information, program updates or other downloadable information, summarily depicted as resources 121, 131 and 132. Such information can also include more traditionally viewed "Downloadables" or "mobile code" (i.e. distributable components), as well as downloadable application programs or other further Downloadables, such as those that are discussed herein. (It will be appreciated that interconnected networks can also provide various other resources as well.)

Also coupled via external network 101 are subsystems 104-106. Subsystems 104-106 can, for example, include one or more servers, personal computers ("PCs"), smart appliances, personal information managers or other devices/processes that are at least temporarily or otherwise intermittently directly or indirectly connectable in a wired or wireless manner to external network 101 (e.g. using a dialup, DSL, cable modem, cellular connection, IR/RF, or various other suitable current or future connection alternatives). One or more of subsystems 104-106 might further operate as user devices that are connectable to external network 101 via an internet service provider ("ISP") or

local area network ("LAN"), such as a corporate intranet, or home, portable device or smart appliance network, among other examples.

FIG. 1a also broadly illustrates how embodiments of the invention are capable of selectively, modifiably or extensibly providing protection to one or more determinable ones of networked subsystems 104-106 or elements thereof (not shown) against potentially harmful or other undesirable ("malicious") effects in conjunction with receiving downloadable information. "Protected" subsystem 104, for example, utilizes a protection in accordance with the teachings herein, while "unprotected" subsystem-N 105 employs no protection, and protected subsystem-M 106 might employ one or more protections including those according to the teachings herein, other protection, or some combination.

System 100 implementations are also capable of providing protection to redundant elements 107 of one or more of subsystems 104-106 that might be utilized, such as backups, failsafe elements, redundant networks, etc. Where included, such redundant elements are also similarly protectable in a separate, combined or coordinated manner using embodiments of the present invention either alone or in conjunction with other protection mechanisms. In such cases, protection can be similarly provided singly, as a composite of component operations or in a backup fashion. Care should, however, be exercised to avoid potential repeated protection engine execution corresponding to a single Downloadable; such "chaining" can cause a Downloadable to operate incorrectly or not at all, unless a subsequent detection engine is configured to recognize a prior packaging of the Downloadable..

FIGS. 1b and 1c further illustrate, by way of example, how protection systems according to embodiments of the invention can be utilized in conjunction with a wide variety of different system implementations. In the illustrated examples, system elements are generally configurable in a manner commonly referred to as a “client-server” configuration, as is typically utilized for accessing Internet and many other network resources. For clarity sake, a simple client-server configuration will be presumed unless otherwise indicated. It will be appreciated, however, that other configurations of interconnected elements might also be utilized (e.g. peer-peer, routers, proxy servers, networks, converters, gateways, services, network reconfiguring elements, etc.) in accordance with a particular application.

The FIG. 1b example shows how a suitable protected system 104a (which can correspond to subsystem-1 104 or subsystem-M 106 of FIG. 1) can include a protection-initiating host “server” or “re-communicator” (e.g. ISP server 140a), one or more user devices or “Downloadable-destinations” 145, and zero or more redundant elements (which elements are summarily depicted as redundant client device/process 145a). In this example, ISP server 140a includes one or more email, Internet or other servers 141a, or other devices or processes capable of transferring or otherwise “re-communicating” downloadable information to user devices 145. Server 141a further includes protection engine or “PE” 142a, which is capable of supplying mobile protection code (“MPC”) and protection policies for execution by client devices 145. One or more of user devices 145 can further include a respective one or more clients 146 for utilizing information received via server 140a, in accordance with which MPC and protection policies are operable to

protect user devices 145 from detrimental, undesirable or otherwise “malicious” operations of downloadable information also received by user device 145.

The FIG. 1c example shows how a further suitable protected system 104b can include, in addition to a “re-communicator”, such as server 142b, a firewall 143c (e.g. as is typically the case with a corporate intranet and many existing or proposed home/smart networks.) In such cases, a server 141b or firewall 143 can operate as a suitable protection engine host. A protection engine can also be implemented in a more distributed manner among two or more protection engine host systems or host system elements, such as both of server 141b and firewall 143, or in a more integrated manner, for example, as a standalone device. Redundant system or system protection elements can also be similarly provided in a more distributed or integrated manner (see above).

System 104b also includes internal network 144 and user devices 145. User devices 145 further include a respective one or more clients 146 for utilizing information received via server 140a, in accordance with which the MPCs or protection policies are operable. (As in the previous example, one or more of user devices 145 can also include or correspond with similarly protectable redundant system elements, which are not shown.)

It will be appreciated that the configurations of FIGS 1a-1c are merely exemplary. Alternative embodiments might, for example, utilize other suitable connections, devices or processes. One or more devices can also be configurable to operate as a network server, firewall, smart router, a resource server servicing deliverable third-party/manufacture postings, a user device operating as a firewall/server, or other information-suppliers or intermediaries (i.e. as a “re-communicator” or “server”) for

servicing one or more further interconnected devices or processes or interconnected levels of devices or processes. Thus, for example, a suitable protection engine host can include one or more devices or processes capable of providing or supporting the providing of mobile protection code or other protection consistent with the teachings herein. A

5 suitable information-destination or "user device" can further include one or more devices or processes (such as email, browser or other clients) that are capable of receiving and initiating or otherwise hosting a mobile code execution.

FIG. 2 illustrates an exemplary computing system 200, that can comprise one or more of the elements of FIGS. 1a through 1c. While other application-specific  
10 alternatives might be utilized, it will be presumed for clarity sake that system 100 elements (FIGS. 1a-c) are implemented in hardware, software or some combination by one or more processing systems consistent therewith, unless otherwise indicated.

Computer system 200 comprises elements coupled via communication channels (e.g. bus 201) including one or more general or special purpose processors 202, such as a  
15 Pentium® or Power PC®, digital signal processor ("DSP"), etc. System 200 elements also include one or more input devices 203 (such as a mouse, keyboard, microphone, pen, etc.), and one or more output devices 204, such as a suitable display, speakers, actuators, etc., in accordance with a particular application.

System 200 also includes a computer readable storage media reader 205 coupled  
20 to a computer readable storage medium 206, such as a storage/memory device or hard or removable storage/memory media; such devices or media are further indicated separately as storage device 208 and memory 209, which can include hard disk variants, floppy/compact disk variants, digital versatile disk ("DVD") variants, smart cards, read

only memory, random access memory, cache memory, etc., in accordance with a particular application. One or more suitable communication devices 207 can also be included, such as a modem, DSL, infrared or other suitable transceiver, etc. for providing inter-device communication directly or via one or more suitable private or public networks that can include but are not limited to those already discussed.

Working memory further includes operating system ("OS") elements and other programs, such as application programs, mobile code, data, etc. for implementing system 100 elements that might be stored or loaded therein during use. The particular OS can vary in accordance with a particular device, features or other aspects in accordance with a particular application (e.g. Windows, Mac, Linux, Unix or Palm OS variants, a proprietary OS, etc.). Various programming languages or other tools can also be utilized, such as C++, Java, Visual Basic, etc. As will be discussed, embodiments can also include a network client such as a browser or email client, e.g. as produced by Netscape, Microsoft or others, a mobile code executor such as an OS task manager, Java Virtual Machine ("JVM"), etc., and an application program interface ("API"), such as a Microsoft Windows or other suitable element in accordance with the teachings herein. (It will also become apparent that embodiments might also be implemented in conjunction with a resident application or combination of mobile code and resident application components.)

One or more system 200 elements can also be implemented in hardware, software or a suitable combination. When implemented in software (e.g. as an application program, object, downloadable, servlet, etc. in whole or part), a system 200 element can be communicated transitionally or more persistently from local or remote storage to

memory (or cache memory, etc.) for execution, or another suitable mechanism can be utilized, and elements can be implemented in compiled or interpretive form. Input, intermediate or resulting data or functional elements can further reside more transitionally or more persistently in a storage media, cache or more persistent volatile or non-volatile memory, (e.g. storage device 207 or memory 208) in accordance with a particular application.

FIG. 3 illustrates an interconnected re-communicator 300 generally consistent with system 140b of FIG. 1, according to an embodiment of the invention. As with system 140b, system 300 includes a server 301, and can also include a firewall 302. In this implementation, however, either server 301 or firewall 302 (if a firewall is used) can further include a protection engine (310 or 320 respectively). Thus, for example, an included firewall can process received information in a conventional manner, the results of which can be further processed by protection engine 310 of server 301, or information processed by protection engine 320 of an included firewall 302 can be processed in a conventional manner by server 301. (For clarity sake, a server including a singular protection engine will be presumed, with or without a firewall, for the remainder of the discussion unless otherwise indicated. Note, however, that other embodiments consistent with the teachings herein might also be utilized.)

FIG. 3 also shows how information received by server 301 (or firewall 302) can include non-executable information, executable information or a combination of non-executable and one or more executable code portions (e.g. so-called Trojan horses that include a hostile Downloadable within a friendly one, combined, compressed or otherwise encoded files, etc.). Particularly such combinations will likely remain

undetected by a firewall or other more conventional protection systems. Thus, for convenience, received information will also be referred to as a “potential-Downloadable”, and received information found to include executable code will be referred to as a “Downloadable” or equivalently as a “detected-Downloadable” (regardless of whether the executable code includes one or more application programs, distributable “components” such as Java, ActiveX, add-in, etc.).

Protection engine 310 provides for detecting whether received potential-Downloadables include executable code, and upon such detection, for causing mobile protection code (“MPC”) to be transferred to a device that is a destination of the potential-Downloadable (or “Downloadable-destination”). Protection engine 310 can also provide protection policies in conjunction with the MPC (or thereafter as well), which MPC/policies can be automatically (e.g. programmatically) or interactively configurable in accordance user, administrator, downloadable source, destination, operation, type or various other parameters alone or in combination (see below). Protection engine 310 can also provide or operate separately or interoperably in conjunction with one or more of certification, authentication, downloadable tagging, source checking, verification, logging, diverting or other protection services via the MPC, policies, other local/remote server or destination processing, etc. (e.g. which can also include protection mechanisms taught by the above-noted prior applications; see FIG. 4).

Operationally, protection engine 310 of server 301 monitors information received by server 301 and determines whether the received information is deliverable to a protected destination, e.g. using a suitable monitor/data transfer mechanism and comparing a destination-address of the received information to a protected destination set,

such as a protected destinations list, array, database, etc. (All deliverable information or one or more subsets thereof might also be monitored.) Protection engine 310 further analyzes the potential-Downloadable and determines whether the potential-Downloadable includes executable code. If not, protection engine 310 enables the not executable potential-Downloadable 331 to be delivered to its destination in an unaffected manner.

In conjunction with determining that the potential-Downloadable is a detected-Downloadable, protection engine 310 also causes mobile protection code or "MPC" 341 to be communicated to the Downloadable-destination of the Downloadable, more suitably in conjunction with the detected-Downloadable 343 (see below). Protection engine 310 further causes downloadable protection policies 342 to be delivered to the Downloadable-destination, again more suitably in conjunction with the detected-Downloadable.

Protection policies 342 provide parameters (or can additionally or alternatively provide additional mobile code) according to which the MPC is capable of determining or providing applicable protection to a Downloadable-destination against malicious Downloadable operations.

(One or more "checked", tag, source, destination, type, detection or other security result indicators, which are not shown, can also be provided as corresponding to determined non-Downloadables or Downloadables, e.g. for testing, logging, further processing, further identification tagging or other purposes in accordance with a particular application.)

Further MPCs, protection policies or other information are also deliverable to a the same or another destination, for example, in accordance with communication by an MPC/protection policies already delivered to a downloadable-destination. Initial or

subsequent MPCs/policies can further be selected or configured in accordance with a Downloadable-destination indicated by the detected-Downloadable, destination-user or administrative information, or other information providable to protection engine 310 by a user, administrator, user system, user system examination by a communicated MPC, etc.

- 5 (Thus, for example, an initial MPC/policies can also be initially provided that are operable with or optimized for more efficient operation with different Downloadable-destinations or destination capabilities.)

While integrated protection constraints within the MPC might also be utilized, providing separate protection policies has been found to be more efficient, for example,  
10 by enabling more specific protection constraints to be more easily updated in conjunction with detected-Downloadable specifics, post-download improvements, testing, etc. Separate policies can further be more efficiently provided (e.g. selected, modified, instantiated, etc.) with or separately from an MPC, or in accordance with the requirements of a particular user, device, system, administration, later improvement, etc.,  
15 as might also be provided to protection engine 310 (e.g. via user/MPC uploading, querying, parsing a Downloadable, or other suitable mechanism implemented by one or more servers or Downloadable-destinations).

- (It will also become apparent that performing executable code detection and communicating to a downloadable-Destination an MPC and any applicable policies as  
20 separate from a detected-Downloadable is more accurate and far less resource intensive than, for example, performing content and operation scanning, modifying a Downloadable, or providing completely Downloadable-destination based security.)

System 300 enables a single or extensible base-MPC to be provided, in anticipation or upon receipt of a first Downloadable, that is utilized thereafter to provide protection of one or more Downloadable-destinations. It is found, however, that providing an MPC upon each detection of a Downloadable (which is also enabled) can provide a desirable combination of configurability of the MPC/policies and lessened need for management (e.g. given potentially changing user/destination needs, enabling testing, etc.).

Providing an MPC upon each detection of a Downloadable also facilitates a lessened demand on destination resources, e.g. since information-destination resources used in executing the MPC/policies can be re-allocated following such use. Such alternatives can also be selectively, modifiably or extensibly provided (or further in accordance with other application-specific factors that might also apply.) Thus, for example, a base-MPC or base-policies might be provided to a user device that is/are extensible via additionally downloadable "modules" upon server 301 detection of a Downloadable deliverable to the same user device, among other alternatives.

In accordance with a further aspect of the invention, it is found that improved efficiency can also be achieved by causing the MPC to be executed within a Downloadable-destination in conjunction with, and further, prior to initiation of the detected Downloadable. One mechanism that provides for greater compatibility and efficiency in conjunction with conventional client-based Downloadable execution is for a protection engine to form a sandboxed package 340 including MPC 341, the detected-Downloadable 343 and any policies 342. For example, where the Downloadable is a binary executable to be executed by an operating system, protection engine 310 forms a

protected package by concatenating, within sandboxed package 340, MPC 341 for delivery to a Downloadable-destination first, followed by protection policies 342 and Downloadable 343. (Concatenation or techniques consistent therewith can also be utilized for providing a protecting package corresponding to a Java applet for execution

5 by a JVM of a Downloadable-destination, or with regard to ActiveX controls, add-ins or other distributable components, etc.)

The above concatenation or other suitable processing will result in the following.

Upon receipt of sandboxed package 340 by a compatible browser, email or other destination-client and activating of the package by a user or the destination-client, the operating system (or a suitable responsively initiated distributed component host) will attempt to initiate sandboxed package 340 as a single Downloadable. Such processing will, however, result in initiating the MPC 341 and -in accordance with further aspects of the invention- the MPC will initiate the Downloadable in a protected manner, further in accordance with any applicable included or further downloaded protection policies 342.

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15 (While system 300 is also capable of ascertaining protection policies stored at a Downloadable-destination, e.g. by poll, query, etc. of available destination information, including at least initial policies within a suitable protecting package is found to avoid associated security concerns or inefficiencies.)

Turning to FIG. 4, a protection engine 400 generally consistent with protection engine 310 (or 320) of FIG. 3 is illustrated in accordance with an embodiment of the invention. Protection engine 400 comprises information monitor 401, detection engine 402, and protected packaging engine 403, which further includes agent generator 431, storage 404, linking engine 405, and transfer engine 406. Protection engine 400 can also

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include a buffer 407, for temporarily storing a received potential-Downloadable, or one or more systems for conducting additional authentication, certification, verification or other security processing (e.g. summarily depicted as security system 408) Protection engine 400 can further provide for selectively re-directing, further directing, logging, etc. of a potential/detected Downloadable or information corresponding thereto in conjunction with detection, other security, etc., in accordance with a particular application.

(Note that FIG. 4, as with other figures included herein, also depicts exemplary signal flow arrows; such arrows are provided to facilitate discussion, and should not be construed as exclusive or otherwise limiting.)

Information monitor 401 monitors potential-Downloadables received by a host server and provides the information via buffer 407 to detection engine 402 or to other system 400 elements. Information monitor 401 can be configured to monitor host server download operations in conjunction with a user or a user-device that has logged-on to the server, or to receive information via a server operation hook, servlet, communication channel or other suitable mechanism.

Information monitor 401 can also provide for transferring, to storage 404 or other protection engine elements, configuration information including, for example, user, MPC, protection policy, interfacing or other configuration information (e.g. see FIG. 6). Such configuration information monitoring can be conducted in accordance with a user/device logging onto or otherwise accessing a host server, via one or more of configuration operations, using an applet to acquire such information from or for a particular user, device or devices, via MPC/policy polling of a user device, or via other suitable mechanisms.

Detection engine 402 includes code detector 421, which receives a potential-Downloadable and determines, more suitably in conjunction with inspection parameters 422, whether the potential-Downloadable includes executable code and is thus a “detected-Downloadable”. (Code detector 421 can also include detection processors for performing file decompression or other “decoding”, or such detection-facilitating processing as decryption, utilization/support of security system 408, etc. in accordance with a particular application.)

Detection engine 402 further transfers a detected-downloadable (“XEQ”) to protected packaging engine 403 along with indicators of such detection, or a determined non-executable (“NXEQ”) to transfer engine 406. (Inspection parameters 422 enable analysis criteria to be readily updated or varied, for example, in accordance with particular source, destination or other potential Downloadable impacting parameters, and are discussed in greater detail with reference to FIG. 5). Detection engine 402 can also provide indicators for delivery of initial and further MPCs/policies, for example, prior to or in conjunction with detecting a Downloadable and further upon receipt of an indicator from an already downloaded MPC/policy. A downloaded MPC/policy can further remain resident at a user device with further modules downloaded upon or even after delivery of a sandboxed package. Such distribution can also be provided in a configurable manner, such that delivery of a complete package or partial packages are automatically or interactively determinable in accordance with user/administrative preferences/policies, among other examples.

Packaging engine 403 provides for generating mobile protection code and protection policies, and for causing delivery thereof (typically with a detected-

Downloadable) to a Downloadable-destination for protecting the Downloadable-destination against malicious operation attempts by the detected Downloadable. In this example, packaging engine 403 includes agent generator 431, storage 404 and linking engine 405.

5 Agent generator 431 includes an MPC generator 432 and a protection policy generator 433 for “generating” an MPC and a protection policy (or set of policies) respectively upon receiving one or more “generate MPC/policy” indicators from detection engine 402, indicating that a potential-Downloadable is a detected-Downloadable. MPC generator 432 and protection policy generator 433 provide for generating MPCs and  
10 protection policies respectively in accordance with parameters retrieved from storage 404. Agent generator 431 is further capable of providing multiple MPCs/policies, for example, the same or different MPCs/policies in accordance with protecting ones of multiple executables within a zip file, or for providing initial MPCs/policies and then further MPCs/policies or MPC/policy “modules” as initiated by further indicators such as given  
15 above, via an indicator of an already downloaded MPC/policy or via other suitable mechanisms. (It will be appreciated that pre-constructed MPCs/policies or other processing can also be utilized, e.g. via retrieval from storage 404, but with a potential decrease in flexibility.)

MPC generator 432 and protection policy generator 433 are further configurable.

20 Thus, for example, more generic MPCs/policies can be provided to all or a grouping of serviced destination-devices (e.g. in accordance with a similarly configured/administered intranet), or different MPCs/policies that can be configured in accordance with one or more of user, network administration, Downloadable-destination or other parameters (e.g.

see FIG. 6). As will become apparent, a resulting MPC provides an operational interface to a destination device/process. Thus, a high degree of flexibility and efficiency is enabled in providing such an operational interface within different or differently configurable user devices/processes or other constraints.

5        Such configurability further enables particular policies to be utilized in accordance with a particular application (e.g. particular system uses, access limitations, user interaction, treating application programs or Java components from a particular known source one way and unknown source ActiveX components, or other considerations). Agent generator 431 further transfers a resulting MPC and protection  
10        policy pair to linking engine 405.

Linking engine 405 provides for forming from received component elements (see above) a sandboxed package that can include one or more initial or complete MPCs and applicable protection policies, and a Downloadable, such that the sandboxed package will protect a receiving Downloadable-destination from malicious operation by the  
15        Downloadable. Linking engine 405 is implementable in a static or configurable manner in accordance, for example, with characteristics of a particular user device/process stored intermittently or more persistently in storage 404. Linking engine 405 can also provide for restoring a Downloadable, such as a compressed, encrypted or otherwise encoded file that has been decompressed, decrypted or otherwise decoded via detection processing  
20        (e.g. see FIG. 6b).

It is discovered, for example, that the manner in which the Windows OS initiates a binary executable or an ActiveX control can be utilized to enable protected initiation of a detected-Downloadable. Linking engine 405 is, for example, configurable to form, for

an ordinary single-executable Downloadable (e.g. an application program, applet, etc.) a sandboxed package 340 as a concatenation of ordered elements including an MPC 341, applicable policies 342 and the Downloadable or "XEQ" 343 (e.g. see FIG. 4).

Linking engine 405 is also configurable to form, for a Downloadable received by a server as a compressed single or multiple-executable Downloadable such as a zipped or meta file, a protecting package 340 including one or more MPCs, applicable policies and the one or more included executables of the Downloadable. For example, a sandboxed package can be formed in which a single MPC and policies precede and thus will affect all such executables as a result of inflating and installation. An MPC and applicable policies can also, for example, precede each executable, such that each executable will be separately sandboxed in the same or a different manner according to MPC/policy configuration (see above) upon inflation and installation. (See also FIGS. 5 and 6)

Linking engine is also configurable to form an initial MPC, MPC-policy or sandboxed package (e.g. prior to upon receipt of a downloadable) or an additional MPC, MPC-policy or sandboxed package (e.g. upon or following receipt of a downloadable), such that suitable MPCs/policies can be provided to a Downloadable-destination or other destination in a more distributed manner. In this way, requisite bandwidth or destination resources can be minimized (via two or more smaller packages) in compromise with latency or other considerations raised by the additional required communication.

A configurable linking engine can also be utilized in accordance with other requirements of particular devices/processes, further or different elements or other permutations in accordance with the teachings herein. (It might, for example be desirable to modify the ordering of elements, to provide one or more elements separately, to

provide additional information, such as a header, etc., or perform other processing in accordance with a particular device, protocol or other application considerations.)

Policy/authentication reader-analyzer 481 summarily depicts other protection mechanisms that might be utilized in conjunction with Downloadable detection, such as already discussed, and that can further be configurable to operate in accordance with policies or parameters (summarily depicted by security/authentication policies 482). Integration of such further protection in the depicted configuration, for example, enables a potential-Downloadable from a known unfriendly source, a source failing authentication or a provided-source that is confirmed to be fictitious to be summarily discarded, otherwise blocked, flagged, etc. (with or without further processing). Conversely, a potential-Downloadable from a known friendly source (or one confirmed as such) can be transferred with or without further processing in accordance with particular application considerations. (Other configurations including pre or post Downloadable detection mechanisms might also be utilized.)

Finally, transfer engine 406 of protection agent engine 303 provides for receiving and causing linking engine 405 (or other protection) results to be transferred to a destination user device/process. As depicted, transfer engine 406 is configured to receive and transfer a Downloadable, a determined non-executable or a sandboxed package.

However, transfer engine 406 can also be provided in a more configurable manner, such as was already discussed for other system 400 elements. (Any one or more of system 400 elements might be configurably implemented in accordance with a particular application.) Transfer engine 406 can perform such transfer, for example, by adding the information to a server transfer queue (not shown) or utilizing another suitable method.

Turning to FIG. 5 with reference to FIG. 4, a code detector 421 example is illustrated in accordance with an embodiment of the invention. As shown, code detector 421 includes data fetcher 501, parser 502, file-type detector 503, inflater 504 and control 506; other depicted elements. While implementable and potentially useful in certain instances, are found to require substantial overhead, to be less accurate in certain instances (see above) and are not utilized in a present implementation; these will be discussed separately below. Code detector elements are further configurable in accordance with stored parameters retrievable by data fetcher 501. (A coupling between data fetcher 501 and control 506 has been removed for clarity sake.)

Data fetcher 501 provides for retrieving a potential-Downloadable or portions thereof stored in buffer 407 or parameters from storage 404, and communicates such information or parameters to parser 502. Parser 502 receives a potential-Downloadable or portions thereof from data fetcher 501 and isolates potential-Downloadable elements, such as file headers, source, destination, certificates, etc. for use by further processing elements.

File type detector 502 receives and determines whether the potential-Downloadable (likely) is or includes an executable file type. File-reader 502 can, for example, be configured to analyze a received potential-Downloadable for a file header, which is typically included in accordance with conventional data transfer protocols, such as a portable executable or standard ".exe" file format for Windows OS application programs, a Java class header for Java applets, and so on for other applications, distributed components, etc. "Zipped", meta or other compressed files, which might include one or more executables, also typically provide standard single or multi-level

headers that can be read and used to identify included executable code (or other included information types). File type detector 502 is also configurable for analyzing potential-Downloadables for all potential file type delimiters or a more limited subset of potential file type delimiters (e.g. “.exe” or “.com” in conjunction with a DOS or Microsoft Windows OS Downloadable-destination).

Known file type delimiters can, for example, be stored in a more temporary or more persistent storage (e.g. storage 404 of FIG. 4) which file type detector 502 can compare to a received potential-Downloadable. (Such delimiters can thus also be updated in storage 404 as a new file type delimiter is provided, or a more limited subset of delimiters can also be utilized in accordance with a particular Downloadable-destination or other considerations of a particular application.) File type detector 502 further transfers to controller 506 a detected file type indicator indicating that the potential-Downloadable includes or does not include (i.e. or likely include) an executable file type.

In this example, the aforementioned detection processor is also included as pre-detection processor or, more particularly, a configurable file inflator 504. File inflator 504 provides for opening or “inflating” compressed files in accordance with a compressed file type received from file type detector 503 and corresponding file opening parameters received from data fetcher 501. Where a compressed file (e.g. a meta file) includes nested file type information not otherwise reliably provided in an overall file header or other information, inflator 504 returns such information to parser 502. File inflator 504 also provides any now-accessible included executables to control 506 where one or more included files are to be separately packaged with an MPC or policies.

Control 506, in this example, operates in accordance with stored parameters and provides for routing detected non-Downloadables or Downloadables and control information, and for conducting the aforementioned distributed downloading of packages to Downloadable-destinations. In the case of a non-Downloadable, for example, control

5 506 sends the non-Downloadable to transfer engine 406 (FIG. 4) along with any indicators that might apply. For an ordinary single-executable Downloadable, control 506 sends control information to agent generator 431 and the Downloadable to linking engine 405 along with any other applicable indicators (see 641 of FIG. 6b). Control 506 similarly handles a compressed single-executable Downloadable or a multiple  
10 downloadable to be protected using a single sandboxed package. For a multiple-executable Downloadable, control 506 sends control information for each corresponding executable to agent generator agent generator 431, and sends the executable to linking engine 405 along with controls and any applicable indicators, as in 643b of FIG. 6b. (The above assumes, however, that distributed downloading is not utilized; when used –  
15 according to applicable parameters- control 506 also operates in accordance with the following.)

Control 506 conducts distributed protection (e.g. distributed packaging) by providing control signals to agent generator 431, linking engine 405 and transfer engine 406. In the present example, control 506 initially sends controls to agent generator 431  
20 and linking engine 405 (FIG. 4) causing agent generator to generate an initial MPC and initial policies, and sends control and a detected-Downloadable to linking engine 405. Linking engine 405 forms an initial sandboxed package, which transfer engine causes (in conjunction with further controls) to be downloaded to the Downloadable destination

(643a of FIG. 6b). An initial MPC within the sandboxed package includes an installer and a communicator and performs installation as indicated below. The initial MPC also communicates via the communicator controls to control 506 (FIG. 5) in response to which control 506 similarly causes generation of MPC-M and policy-M modules 643c, which linking engine 405 links and transfer engine 406 causes to be sent to the Downloadable destination, and so on for any further such modules.

(It will be appreciated, however, that an initial package might be otherwise configured or sent prior to receipt of a Downloadable in accordance with configuration parameters or user interaction. Information can also be sent to other user devices, such as that of an administrator. Further MPCs/policies might also be coordinated by control 506 or other elements, or other suitable mechanisms might be utilized in accordance with the teachings herein.)

Regarding the remaining detection engine elements illustrated in FIG. 5, where content analysis is utilized, parser 502 can also provide a Downloadable or portions thereof to content detector 505. Content detector 505 can then provide one or more content analyses. Binary detector 551, for example, performs detection of binary information; pattern detector 552 further analyzes the Downloadable for patterns indicating executable code, or other detectors can also be utilized. Analysis results therefrom can be used in an absolute manner, where a first testing result indicating executable code confirms Downloadable detection, which result is then sent to control 506. Alternatively, however, composite results from such analyses can also be sent to control 506 for evaluation. Control 506 can further conduct such evaluation in a summary manner (determining whether a Downloadable is detected according to a

majority or minimum number of indicators), or based on a weighting of different analysis results. Operation then continues as indicated above. (Such analysis can also be conducted in accordance with aspects of a destination user device or other parameters.)

FIG. 6a illustrates more specific examples of indicators/parameters and known (or “knowledge base”) elements that can be utilized to facilitate the above-discussed system 400 configurability and detection. For clarity sake, indicators, parameters and knowledge base elements are combined as indicated “parameters.” It will be appreciated, however, that the particular parameters utilized can differ in accordance with a particular application, and indicators, parameters or known elements, where utilized, can vary and need not correspond exactly with one another. Any suitable explicit or referencing list, database or other storage structure(s) or storage structure configuration(s) can also be utilized to implement a suitable user/device based protection scheme, such as in the above examples, or other desired protection schema.

Executable parameters 601 comprise, in accordance with the above examples, executable file type parameters 611, executable code parameters 612 and code pattern parameters 613 (including known executable file type indicators, header/code indicators and patterns respectively, where code patterns are utilized). Use parameters 602 further comprise user parameters 621, system parameters 622 and general parameters 623 corresponding to one or more users, user classifications, user-system correspondences or destination system, device or processes, etc. (e.g. for generating corresponding MPCs/policies, providing other protection, etc.). The remaining parameters include interface parameters 631 for providing MPC/policy (or further) configurability in

accordance with a particular device or for enabling communication with a device user (see below), and other parameters 632.

FIG. 6b illustrates a linking engine 405 according to an embodiment of the invention. As already discussed, linking engine 405 includes a linker for combining  
 5 MPCs, policies or agents via concatenation or other suitable processing in accordance with an OS, JVM or other host executor or other applicable factors that might apply. Linking engine 405 also includes the aforementioned post-detection processor which, in this example, comprises a compressor 508. As noted, compressor 508 receives linked  
 10 elements from linker 507 and, where a potential-Downloadable corresponds to a compressed file that was inflated during detection, re-forms the compressed file. (Known file information can be provided via configuration parameters, substantially reversal of inflating or another suitable method.) Encryption or other post-detection processing can also be conducted by linking engine 508.

FIGS. 7a, 7b and 8 illustrate a “sandbox protection” system, as operable within a  
 15 receiving destination-device, according to an embodiment of the invention.

Beginning with FIG. 7a, a client 146 receiving sandbox package 340 will “recognize” sandbox package 340 as a (mobile) executable and cause a mobile code installer 711 (e.g. an OS loader, JVM, etc.) to be initiated. Mobile code installer 711 will also recognize sandbox package 340 as an executable and will attempt to initiate sandbox  
 20 package 340 at its “beginning.” Protection engine 400 processing corresponding to destination 700 use of a such a loader, however, will have resulted in the “beginning” of sandbox package 340 as corresponding to the beginning of MPC 341, as noted with regard to the above FIG. 4 example.

Such protection engine processing will therefore cause a mobile code installer (e.g. OS loader 711, for clarity sake) to initiate MPC 341. In other cases, other processing might also be utilized for causing such initiation or further protection system operation. Protection engine processing also enables MPC 341 to effectively form a protection “sandbox” around Downloadable (e.g. detected-Downloadable or “XEQ”) 343, to monitor Downloadable 343, intercept determinable Downloadable 343 operation (such as attempted accesses of Downloadable 343 to destination resources) and, if “malicious”, to cause one or more other operations to occur (e.g. providing an alert, offloading the Downloadable, offloading the MPC, providing only limited resource access, possibly in a particular address space or with regard to a particularly “safe” resource or resource operation, etc.).

MPC 341, in the present OS example, executes MPC element installation and installs any policies, causing MPC 341 and protection policies 342 to be loaded into a first memory space, P1. MPC 341 then initiates loading of Downloadable 343. Such Downloadable initiation causes OS loader 711 to load Downloadable 343 into a further working memory space-P2 703 along with an API import table (“IAT”) 731 for providing Downloadable 631 with destination resource access capabilities. It is discovered, however that the IAT can be modified so that any call to an API can be redirected to a function within the MPC. The technique for modifying the IAT is documented within the MSDN (Microsoft Developers Network) Library CD in several articles. The technique is also different for each operating system (e.g. between Windows 9x and Windows NT), which can be accommodated by agent generator configurability, such as that given above.

MPC 341 therefore has at least initial access to API IAT 731 of Downloadable 632, and provides for diverting, evaluating and responding to attempts by Downloadable 632 to utilize system APIs 731, or further in accordance with protection policies 342.

In addition to API diverting, MPC 341 can also install filter drivers, which can be used for controlling access to resources such as a Downloadable-destination file system or registry. Filter driver installation can be conducted as documented in the MSDN or using other suitable methods.

Turning to FIG. 8 with reference to FIG. 7b, an MPC 341 according to an embodiment of the invention includes a package extractor 801, executable installer 802, sandbox engine installer 803, resource access diverter 804, resource access (attempt) analyzer 805, policy enforcer 806 and MPC de-installer 807. Package extractor 801 is initiated upon initiation of MPC 341, and extracts MPC 341 elements and protection policies 342. Executable installer 802 further initiates installation of a Downloadable by extracting the downloadable from the protected package, and loading the process into memory in suspended mode (so it only loads into memory, but does not start to run). Such installation further causes the operating system to initialize the Downloadable's IAT 731 in the memory space of the downloadable process, P2, as already noted.

Sandbox engine installer 803 (running in process space P1) then installs the sandbox engine (803-805) and policies 342 into the downloadable process space P2. This is done in different way in each operating system (e.g. see above). Resource access diverter 804 further modifies those Downloadable-API IAT entries that correspond with protection policies 342, thereby causing corresponding Downloadable accesses via Downloadable-API IAT 731 to be diverted resource access analyzer 805.

During Downloadable operation, resource access analyzer or "RAA" 805 receives and determines a response to diverted Downloadable (i.e. "malicious") operations in accordance with corresponding protection policies of policies 342. (RAA 805 or further elements, which are not shown, can further similarly provide for other security mechanisms that might also be implemented.) Malicious operations can for example include, in a Windows environment: file operations (e.g. reading, writing, deleting or renaming a file), network operations (e.g. listen on or connect to a socket, send/receive data or view intranet), OS registry or similar operations (read/write a registry item), OS operations (exit OS/client, kill or change the priority of a process/thread, dynamically load a class library), resource usage thresholds (e.g. memory, CPU, graphics), etc.

Policy enforcer 806 receives RAA 805 results and causes a corresponding response to be implemented, again according to the corresponding policies. Policy enforcer 806 can, for example, interact with a user (e.g. provide an alert, receive instructions, etc.), create a log file, respond, cause a response to be transferred to the Downloadable using "dummy" or limited data, communicate with a server or other networked device (e.g. corresponding to a local or remote administrator), respond more specifically with a better known Downloadable, verify accessibility or user/system information (e.g. via local or remote information), even enable the attempted Downloadable access, among a wide variety of responses that will become apparent in view of the teachings herein.

The FIG. 9 flowchart illustrates a protection method according to an embodiment of the invention. In step 901, a protection engine monitors the receipt, by a server or other re-communicator of information, and receives such information intended for a

protected information-destination (i.e. a potential-Downloadable) in step 903. Steps 905-911 depict an adjunct trustworthiness protection that can also be provided, wherein the protection engine determines whether the source of the received information is known to be “unfriendly” and, if so, prevents current (at least unaltered) delivery of the potential-Downloadable and provides any suitable alerts. (The protection engine might also continue to perform Downloadable detection and nevertheless enable delivery or protected delivery of a non-Downloadable, or avoid detection if the source is found to be “trusted”, among other alternatives enabled by the teachings herein.)

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10 If, in step 913, the potential-Downloadable source is found to be of an unknown or otherwise suitably authenticated/certified source, then the protection engine determines whether the potential-Downloadable includes executable code in step 915. If the potential-Downloadable does not include executable code, then the protection engine causes the potential-Downloadable to be delivered to the information-destination in its original form in step 917, and the method ends. If instead the potential-Downloadable is found to include executable code in step 915 (and is thus a “detected-Downloadable”), then the protection engine forms a sandboxed package in step 919 and causes the protection agent to be delivered to the information-Destination in step 921, and the method ends. As was discussed earlier, a suitable protection agent can include mobile protection code, policies and the detected-Downloadable (or information corresponding thereto).

The FIG. 10a flowchart illustrates a method for analyzing a potential-Downloadable, according to an embodiment of the invention. As shown, one or more aspects can provide useful indicators of the inclusion of executable code within the

potential-Downloadable. In step 1001, the protection engine determines whether the potential-Downloadable indicates an executable file type, for example, by comparing one or more included file headers for file type indicators (e.g. extensions or other descriptors). The indicators can be compared against all known file types executable by all protected Downloadable destinations, a subset, in accordance with file types executable or desirably executable by the Downloadable-destination, in conjunction with a particular user, in conjunction with available information or operability at the destination, various combinations, etc.

Where content analysis is conducted, in step 1003 of FIG. 10a, the protection engine analyzes the potential-Downloadable and determines in accordance therewith whether the potential-Downloadable does or is likely to include binary information, which typically indicates executable code. The protection engine further analyzes the potential-Downloadable for patterns indicative of included executable code in step 1003. Finally, in step 1005, the protection engine determines whether the results of steps 1001 and 1003 indicate that the potential-Downloadable more likely includes executable code (e.g. via weighted comparison of the results with a suitable level indicating the inclusion or exclusion of executable code). The protection engine, given a suitably high confidence indicator of the inclusion of executable code, treats the potential-Downloadable as a detected-Downloadable.

The FIG. 10b flowchart illustrates a method for forming a sandboxed package according to an embodiment of the invention. As shown, in step 1011, a protection engine retrieves protection parameters and forms mobile protection code according to the parameters. The protection engine further, in step 1013, retrieves protection parameters

and forms protection policies according to the parameters. Finally, in step 1015, the protection engine couples the mobile protection code, protection policies and received-information to form a sandboxed package. For example, where a Downloadable-destination utilizes a standard windows executable, coupling can further be accomplished via concatenating the MPC for delivery of MPC first, policies second, and received information third. (The protection parameters can, for example, include parameters relating to one or more of the Downloadable destination device/process, user, supervisory constraints or other parameters.)

The FIG. 11 flowchart illustrates how a protection method performed by mobile protection code ("MPC") according to an embodiment of the invention includes the MPC installing MPC elements and policies within a destination device in step 1101. In step 1102, the MPC loads the Downloadable without actually initiating it (i.e. for executables, it will start a process in suspended mode). The MPC further forms an access monitor or "interceptor" for monitoring or "intercepting" downloadable destination device access attempts within the destination device (according to the protection policies in step 1103, and initiates a corresponding Downloadable within the destination device in step 1105.

If, in step 1107, the MPC determines, from monitored/intercepted information, that the Downloadable is attempting or has attempted a destination device access considered undesirable or otherwise malicious, then the MPC performs steps 1109 and 1111; otherwise the MPC returns to step 1107. In step 1109, the MPC determines protection policies in accordance with the access attempt by the Downloadable, and in step 1111, the MPC executes the protection policies. (Protection policies can, for example, be retrieved from a temporary, e.g. memory/cache, or more persistent storage.)

As shown in the FIG. 12a example, the MPC can provide for intercepting Downloadable access attempts by a Downloadable by installing the Downloadable (but not executing it) in step 1201. Such installation will cause a Downloadable executor, such as a the Windows operating system, to provide all required interfaces and parameters (such as the IAT, process ID, etc.) for use by the Downloadable to access device resources of the host device. The MPC can thus cause Downloadable access attempts to be diverted to the MPC by modifying the Downloadable IAT, replacing device resource location indicators with those of the MPC (step 1203).

The FIG. 12b example further illustrates an example of how the MPC can apply suitable policies in accordance with an access attempt by a Downloadable. As shown, the MPC receives the Downloadable access request via the modified IAT in step 1211. The MPC further queries stored policies to determine a policy corresponding to the Downloadable access request in step 1213.

The foregoing description of preferred embodiments of the invention is provided by way of example to enable a person skilled in the art to make and use the invention, and in the context of particular applications and requirements thereof. Various modifications to the embodiments will be readily apparent to those skilled in the art, and the generic principles defined herein may be applied to other embodiments and applications without departing from the spirit and scope of the invention. Thus, the present invention is not intended to be limited to the embodiments shown, but is to be accorded the widest scope consistent with the principles, features and teachings disclosed herein. The embodiments described herein are not intended to be exhaustive or limiting. The present invention is limited only by the following claims.

WHAT IS CLAIMED IS:

## 1. A method, comprising:

receiving downloadable-information;

determining whether the downloadable-information includes executable code; and

5 causing mobile protection code to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code.

10 2. The method of claim 1, wherein the receiving includes monitoring received information of an information re-communicator.

3. The method of claim 2, wherein the information re-communicator is a network server.

15 4. The method of claim 1, wherein the determining comprises analyzing the downloadable-information for an included type indicator indicating an executable file type.

20 5. The method of claim 1, wherein the determining comprises analyzing the downloadable-information for an included an included type detector indicating an archive file that contains at least one executable.

6. The method of claim 1, wherein the determining comprises analyzing the downloadable-information for an included file type indicator and an information pattern

corresponding to one or more information patterns that tend to be included within executable code.

7. The method of claim 1, further comprising receiving one or more executable code characteristics of executable code that is capable of being executed by the information-destination, and wherein the determining is conducted in accordance with the executable code characteristics.

8. The method of claim 1, wherein the determining comprises performing one or more analyses of the downloadable-information, the analyses producing detection-indicators indicating whether a correspondence is detected between a downloadable-information characteristic and at least one respective executable code characteristic, and evaluating the detection-indicators to determine whether the downloadable-information includes executable code.

9. The method of claim 8, wherein at least one of the detection-indicators indicates a level of downloadable-information characteristic and executable code characteristic correspondence.

10. The method of claim 8, wherein the evaluating includes assigning a weighted level of importance to at least one of the indicators.

11. The method of claim 1, wherein the causing mobile protection code to be

communicated comprises forming a sandboxed package including the mobile protection code and the downloadable-information, and causing the sandboxed package to be communicated to the at least one information-destination.

- 5 12. The method of claim 10, wherein the sandboxed package is formed such that the mobile protection code will be executed by the information-destination before the downloadable-information.

- 10 13. The method of claim 11, wherein the sandboxed package further includes protection policies according to which the mobile protection code is operable.

- 15 14. The method of claim 13, wherein the sandboxed package is formed for receipt by the information-destination such that the mobile protection code is received before the downloadable-information, and the downloadable information before the protection policies.

15. The method of claim 13, wherein the protection policies correspond with at least one of the information-destination and a user of the information destination.

- 20 16. A system, comprising:

an information monitor for receiving downloadable-information;  
a content inspection engine communicatively coupled to the information monitor for determining whether the downloadable-information includes executable code; and

a protection agent engine communicatively coupled to the content inspection engine for causing mobile protection code ("MPC") to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code.

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17. The system of claim 16, wherein the information monitor intercepts received information received by an information re-communicator.

18. The system of claim 17, wherein the information re-communicator is a network server.

19. The system of claim 16, wherein the content inspection engine comprises a file type detector for determining whether the downloadable-information includes a file type indicator indicating an executable file type.

20. The system of claim 16, wherein the content inspection engine comprises a parser for parsing the downloadable-information and a content analyzer communicatively coupled to the parser for determining whether one or more downloadable-information elements of the downloadable-information correspond with executable code elements are executable code elements.

21. The system of claim 16, wherein the content inspection engine comprises one or more downloadable-information analyzers for analyzing the downloadable-information,

each analyzer producing therefrom a detection indicator indicating whether a  
downloadable-information characteristic corresponds with an executable code  
characteristic, and an inspection controller communicatively coupled to the analyzers for  
determining whether the indicators indicate that the downloadable-information includes  
5 executable code.

22. The system of claim 21, wherein at least one of the detection-indicators indicates a  
level of downloadable-information characteristic and executable code characteristic  
correspondence.

23. The system of claim 21, wherein the evaluating includes assigning a weighted level  
of importance to at least one of the detection-indicators.

24. The system of claim 16, wherein the sandboxed package engine comprises an MPC  
generator for providing the MPC, a linking engine coupled to the MPC generator for  
forming a protection agent including the MPC and the downloadable-information, and a  
transfer engine for causing the protection agent to be communicated to the at least one  
information-destination.

20 25. The system of claim 24, wherein the protection agent engine further comprises a  
policy generator communicatively coupled to the linking engine for providing protection  
policies according to which the MPC is operable.

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30. A method, comprising:

receiving, at an information re-communicator, downloadable-information,  
including executable code; and

causing mobile protection code to be executed by a mobile code executor at a  
5 downloadable-information destination such that one or more operations of the executable  
code at the destination, if attempted, will be processed by the mobile protection code.

31. The method of claim 30, wherein the mobile code executor is a Java Virtual  
Machine.

32. The method of claim 30, wherein the mobile code executor is the operating system,  
running native code executables.

33. The method of claim 30, wherein the mobile code executor is ActiveX subsystem of  
15 the windows operating system

34. The method of claim 30, wherein the mobile code executor is the Microsoft  
Windows scripting host

20 35. The method of claim 30, wherein the causing is accomplished by forming a  
sandboxed package including the mobile protection code and the downloadable-  
information, and causing the sandboxed package to be delivered to the downloadable-  
information destination.

36. The method of claim 35, wherein the sandboxed package further includes protection policies according to which the processing by the mobile protection code is conducted.

5 37. A sandboxed package formed according to the method of claim 35.

38. A sandboxed package formed according to the method of claim 36.

39. The method of claim 36, wherein the forming comprises generating the mobile protection code, generating the sandboxed package, and linking the mobile protection code, protection policies and downloadable-information.

40. The method of claim 39, wherein the generating of at least one of the mobile protection code and the protection policies is conducted in accordance with one or more destination-characteristics of the destination.

41. The method of claim 40, wherein the destination-characteristics include characteristics corresponding to at least one of a destination user, a destination device and a destination process.

42. The method of claim 35, wherein the causing the sandboxed package to be executed includes communicating the sandboxed package to a communication buffer of the information re-communicator.

43. The method of claim 30, wherein the re-communicator is at least one of a firewall and a network server.

5 44. The method of claim 30, wherein the sandboxed package has a same file type as the  
downloadable-information, thereby causing the mobile code executor to be unaware that  
the protected package is not a normal downloadable.

45. The method of claim 44, wherein the sandboxed package is formed using concatenation of a mobile protection code, a policy, and a downloadable.

46. The method of claim 30, wherein executing the mobile protection code at the destination causes downloadable interfaces to resources at the destination to be modified such that at least one attempted operation of the executable code is diverted to the mobile protection code.

47. A system, comprising:

receiving means for receiving, at an information re-communicator, downloadable-information, including executable code; and

mobile code means communicatively coupled to the receiving means for causing mobile protection code to be executed by a mobile code executor at a downloadable-information destination such that one or more operations of the executable code at the destination, if attempted, will be processed by the mobile protection code.

48. The system of claim 47, wherein the mobile code executor is a Java Virtual Machine.

49. The system of claim 47, wherein the mobile code executor is an operating system,

5 running native code executables.

50. The system of claim 47, wherein the mobile code executor is an ActiveX subsystem  
of the windows operating system.

10 51. The system of claim 47, wherein the mobile code executor is a Microsoft Windows  
scripting host.

52. The system of claim 47, wherein the causing is accomplished by forming a  
sandboxed package including the mobile protection code and the downloadable-  
15 information, and causing the sandboxed package to be delivered to the downloadable-  
information destination.

53. The system of claim 52, wherein the sandboxed package further includes protection  
policies according to which the processing by the mobile protection code is conducted.

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54. The system of claim 53, wherein the forming comprises generating the mobile  
protection code, generating the protection policies, and linking the mobile protection  
code, protection policies and downloadable-information.

55. The system of claim 54, wherein the generating of at least one of the mobile protection code and the protection policies is conducted in accordance with one or more destination-characteristics of the destination.

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56. The system of claim 55, wherein the destination-characteristics include characteristics corresponding to at least one of a destination user, a destination device and a destination process.

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57. The system of claim 46, wherein the causing the sandboxed package to be executed includes communicating the sandboxed package to a communication buffer of the information re-communicator.

58. The system of claim 47, wherein the re-communicator is at least one of a firewall and a network server.

59. The system of claim 47, wherein executing the mobile protection code at the destination causes downloadable interfaces a resource at the destination to be modified such that at least one attempted operation of the executable code is diverted to the mobile protection code.

60. A computer-readable storage medium storing program code for causing a computer to perform the steps of:

receiving, at an information re-communicator, downloadable-information,  
including executable code; and

causing mobile protection code to be executed by a mobile code executor at a  
downloadable-information destination such that one or more operations of the executable  
5 code at the destination, if attempted, will be processed by the mobile protection code.

61. A method, comprising:

receiving mobile protection code ("MPC") and a Downloadable at a  
Downloadable-destination;

10 causing, by the MPC, one or more operations attempted by the Downloadable to  
be received by the MPC;

receiving, by the MPC, an attempted operation of the Downloadable; and  
initiating, by the MPC, a protection policy corresponding to the attempted  
operation.

15 62. The method of claim 61, wherein the receiving comprises receiving a sandboxed  
package that includes the MPC, the Downloadable and one or more protection policies.

63. The method of claim 62, wherein the sandboxed package is configured such that the  
20 MPC is executed first, the Downloadable is executed by the MPC and the protection  
policies are accessible to the MPC.

64. The method of claim 61, wherein the causing comprises modifying, by the MPC,

interfaces of a corresponding downloadable to resources at the destination.

65. The method of claim 64, wherein the modifying is accomplished by initiating a loading of the Downloadable, thereby causing a mobile code executor to provide and

5 initialize the interfaces, modifying one or more interface elements to divert corresponding attempted Downloadable operations to the MPC, and initiating execution of the Downloadable.

66. The method of claim 64, wherein the interfaces comprise an import address table ("IAT") of a native code executable downloadable.

67. The method of claim 64, wherein modifying the interfaces installs a filter-driver between the downloadable and the resources.

15 68. A system, comprising:

a mobile code executor for initiating received mobile code; and

a sandboxed package capable of being received and initiated by the mobile code executor, the sandboxed package including a Downloadable and mobile protection code ("MPC") for causing one or more Downloadable operations to be intercepted and for  
20 processing the intercepted operations, if the Downloadable attempts to initiate the operations.

69. The system of claim 60, wherein the MPC comprises:

an MPC installer for causing MPC elements to be installed;

a Downloadable installer communicatively coupled to the MPC element installer  
for installing the Downloadable;

a resource access diverter communicatively coupled to the MPC installer for  
5 causing the Downloadable operations to be intercepted;

a resource access analyzer communicatively coupled to the MPC installer for  
receiving an intercepted Downloadable operation and determining a protection policy  
corresponding to the intercepted Downloadable operation; and

a policy enforcer communicatively coupled to the resource access analyzer for  
10 processing the intercepted Downloadable operation.

70. The system of claim 69, wherein the resource access diverter modifies one or more  
elements of an interface usable by the Downloadable to effectuate the Downloadable  
operations.

71. The system of claim 69, wherein the mobile code executor is a Java Virtual Machine.

72. The system of claim 69, wherein the mobile code executor is an operating system,  
running native code executables.

73. The system of claim 69, wherein the mobile code executor is an ActiveX subsystem  
of the windows operating system.

74. The system of claim 69, wherein the mobile code executor is an Microsoft Windows scripting host.

75. A system, comprising

5 receiving means for receiving mobile protection code ("MPC") and a

Downloadable at a Downloadable-destination;

monitoring means for causing, by the MPC, one or more operations attempted by the Downloadable to be received by the MPC;

10 second receiving means receiving, by the MPC, an attempted operation of the Downloadable; and

initiating means for initiating, by the MPC, a protection policy corresponding to the attempted operation.

76. A computer-readable storage medium storing program code for causing a computer to perform the steps of:

15 receiving mobile protection code ("MPC") and a Downloadable at a Downloadable-destination;

causing, by the MPC, one or more operations attempted by the Downloadable to be received by the MPC;

20 receiving, by the MPC, an attempted operation of the Downloadable; and

initiating, by the MPC, a protection policy corresponding to the attempted operation.

ABSTRACT OF THE DISCLOSUREMALICIOUS MOBILE CODE RUNTIME MONITORING  
SYSTEM AND METHODS

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Protection systems and methods provide for protecting one or more personal computers ("PCs") and/or other intermittently or persistently network accessible devices or processes from undesirable or otherwise malicious operations of Java™ applets, ActiveX™ controls, JavaScript™ scripts, Visual Basic scripts, add-ins, downloaded/10 uploaded programs or other "Downloadables" or "mobile code" in whole or part. A protection engine embodiment provides, within a server, firewall or other suitable "re-communicator," for monitoring information received by the communicator, determining whether received information does or is likely to include executable code, and if so, causes mobile protection code (MPC) to be transferred to and rendered operable within a15 destination device of the received information, more suitably by forming a protection agent including the MPC, protection policies and a detected-Downloadable. An MPC embodiment further provides, within a Downloadable-destination, for initiating the Downloadable, enabling malicious Downloadable operation attempts to be received by the MPC, and causing (predetermined) corresponding operations to be executed in20 response to the attempts, more suitably in conjunction with protection policies.



## UNITED STATES PATENT AND TRADEMARK OFFICE

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WASHINGTON, D.C. 20231  
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Bib Data Sheet

CONFIRMATION NO. 5421

<b>SERIAL NUMBER</b> 09/861,229	<b>FILING DATE</b> 05/17/2001 <b>RULE</b>	<b>CLASS</b> 709	<b>GROUP ART UNIT</b> 2152	<b>ATTORNEY DOCKET NO.</b> 43426.00014
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 Nimrod Itzhak Vered, Goosh Tel-Mond, ISRAEL;  
 David R. Kroll, San Jose, CA;

**\*\* CONTINUING DATA \*\*\*\*\***  
 THIS APPLN CLAIMS BENEFIT OF 60/205,591 05/17/2000  
 AND A CIP OF 09/539,667 03/30/2000 which is now U.S. Patent 6,804,780  
 AND A CIP OF 09/551,302 04/18/2000 which is now U.S. Patent 6,480,962

**\*\* FOREIGN APPLICATIONS \*\*\*\*\***  
 CM  
 IF REQUIRED, FOREIGN FILING LICENSE GRANTED\*\* SMALL ENTITY \*\*  
 \*\* 07/18/2001

Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	<b>STATE OR COUNTRY</b> ISRAEL	<b>SHEETS DRAWING</b> 10	<b>TOTAL CLAIMS</b> 76	<b>INDEPENDENT CLAIMS</b> 11
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance				
Verified and Acknowledged Examiner's Signature: <i>CM</i> Initials: <i>CM</i>				

**ADDRESS**  
 Intellectual Property Department  
 Squire, Sanders & Dempsey L.L.P.  
 600 Hansen Way  
 Palo Alto, CA 94304-1043

**TITLE**  
 Malicious mobile code runtime monitoring system and methods

<b>FILING FEE RECEIVED</b> 1244	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees
		<input type="checkbox"/> 1.16 Fees ( Filing )
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		<input type="checkbox"/> Other _____
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PATENT APPLICATION SERIAL NO. \_\_\_\_\_

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

05/23/2001 MBELETE1 00000028 050150 09861229

01 FC:201	355.00 CH
02 FC:202	320.00 CH
03 FC:203	504.00 CH

PTO-1556  
(5/87)

\*U.S. GPO: 2000-468-987/39595

# PATENT APPLICATION FEE DETERMINATION RECORD

Effective October 1, 2000

Application or Docket Number

09/86/229

43426.00072

## CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	76	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	76 minus 20 =	* 56
INDEPENDENT CLAIMS	11 minus 3 =	* 8
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

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

## 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 <input type="checkbox"/>			

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	*	Minus	**
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FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

	(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 <input type="checkbox"/>			

\* 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.

SMALL ENTITY TYPE ☐

OR OTHER THAN SMALL ENTITY

RATE	FEE
BASIC FEE	355.00
X\$ 9=	504.00
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TOTAL	1179.00

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X80=	
+270=	
TOTAL	

RATE	ADDITIONAL FEE
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RATE	ADDITIONAL FEE
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<b>CLAIMS ONLY</b>							SERIAL NO. <b>09861229</b>	FILING DATE <b>5/17/01</b>	
							APPLICANT(S)		
CLAIMS									
AS FILED		AFTER 1st AMENDMENT		AFTER 2nd AMENDMENT		*		*	
IND.	DEP.	IND.	DEP.	IND.	DEP.	IND.	DEP.	IND.	DEP.
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TOTAL IND.						TOTAL IND.	11		
TOTAL DEP.						TOTAL DEP.	65		
TOTAL CLAIMS						TOTAL CLAIMS	76		

\* MAY BE USED FOR ADDITIONAL CLAIMS OR ADMENDMENTS

U.S. DEPARTMENT OF COMMERCE  
Patent and Trademark Office

FORM PTO-2022 (1-98)

\*U.S. GPO: 1998-443-593/89152



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APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/861,229	05/17/2001	Yigal Edery	43426.00014

CONFIRMATION NO. 5421

## FORMALITIES LETTER



\*OC000000006314695\*

Intellectual Property Department  
Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043

Date Mailed: 07/19/2001

## NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

*Filing Date Granted*

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

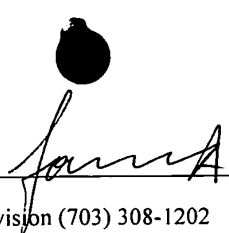
- The oath or declaration is missing.  
*A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is \$ 65.**

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. ( 5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

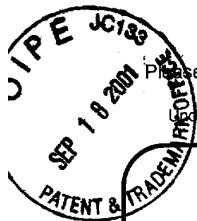
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PTO/SB/21 (08-00)  
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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	<b>Application Number</b>	09/861,229	
	<b>Filing Date</b>	May 17, 2001	
	<b>First Named Inventor</b>	Yigal Edery, et al.	
	<b>Group Art Unit</b>	2152	
	<b>Examiner Name</b>	Unknown	
<b>Total Number of Pages in This Submission</b>	27	<b>Attorney Docket Number</b>	43426.00014

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form (in duplicate)  <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Deposit Account Authorization on Fee Transmittal Form  <input type="checkbox"/> Amendment / Response  <input type="checkbox"/> After Final  <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input checked="" type="checkbox"/> Return Postcard  <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s) <input checked="" type="checkbox"/> Response to Missing Parts/Incomplete Application (in duplicate) <input checked="" type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input checked="" type="checkbox"/> Informal Drawings consisting of Figures 1a, 1b, 1c, 2, 3, 4, 5, 6a, 6b, 7a, 7b, 8, 9, 10a, 10b, 11, 12a, and 12b  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input checked="" type="checkbox"/> Combined Power of Attorney and Declaration for Patent Application  <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences  <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information  <input type="checkbox"/> Status Letter  <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <b>Letter to the Official Draftsperson (Request to Substitute Drawings) (in duplicate)</b>
<b>Remarks</b>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
<b>Firm or Individual name</b>	Daryl C. Josephson, Reg. No. 37,365 Squire, Sanders & Dempsey, L.L.P. 600 Hansen Way Palo Alto, CA 94304-1043
<b>Signature</b>	
<b>Date</b>	September 10, 2001

CERTIFICATE OF MAILING			
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date: <u>September 10, 2001</u>			
<b>Typed or printed name</b>	Sandy Yi		
<b>Signature</b>		<b>Date</b>	September 10, 2001



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/861,229	05/17/2001	Yigal Edery	43426.00014

CONFIRMATION NO. 5421

## FORMALITIES LETTER



\*OC000000006314695\*

Intellectual Property Department  
Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043

Date Mailed: 07/19/2001

## NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

## Filing Date Granted

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.  
*A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is \$ 65.**

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

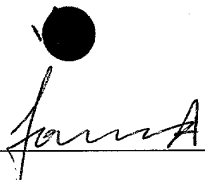
- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. ( 5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

*A copy of this notice **MUST** be returned with the reply.*

09/19/2001 09:40:01 (10/00/01) MAIL ROOM

01 FD:200

08:30 AM



Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 2 - COPY TO BE RETURNED WITH RESPONSE

2025-03-06 10:00:00

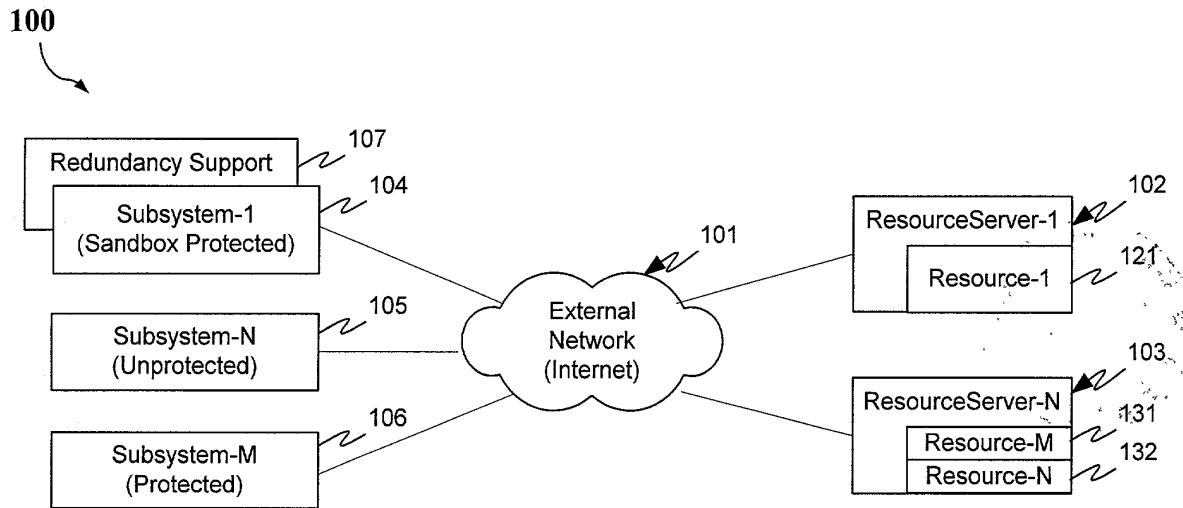


FIG. 1a

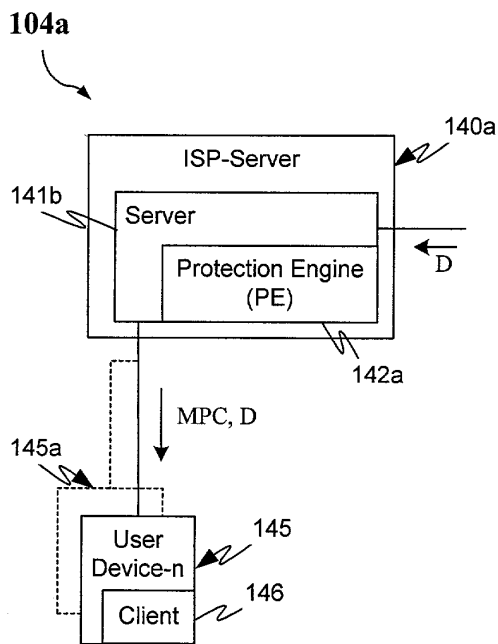


FIG. 1b

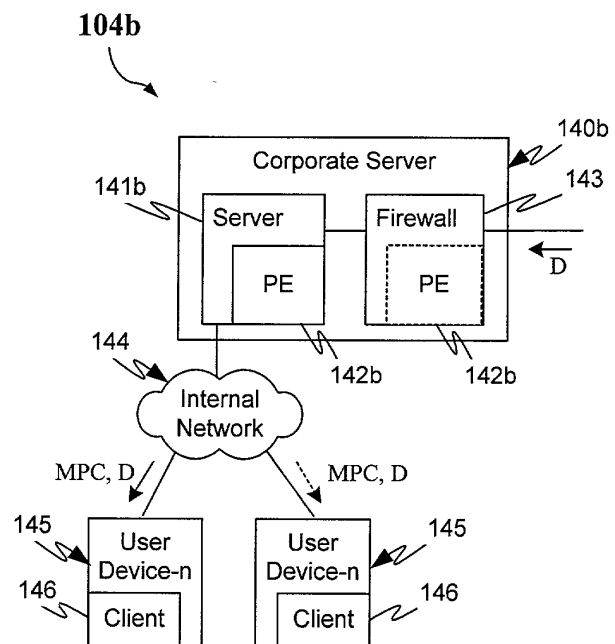


FIG. 1c

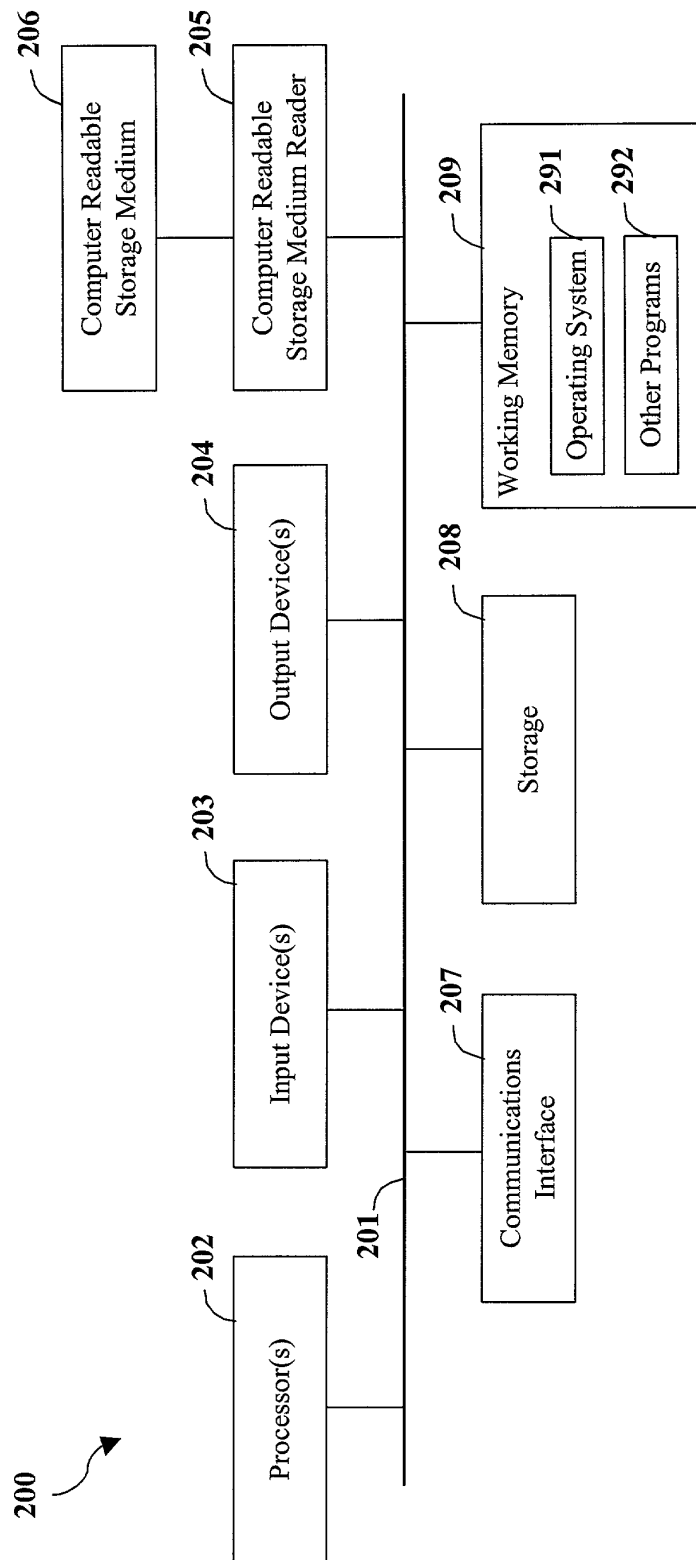


FIG. 2

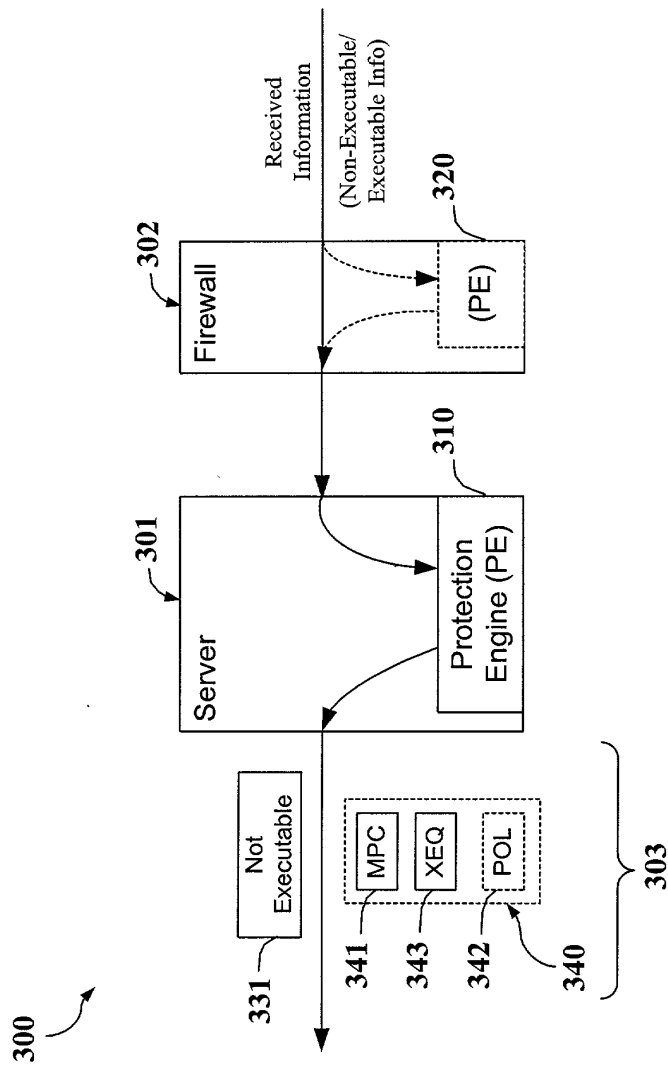


FIG. 3

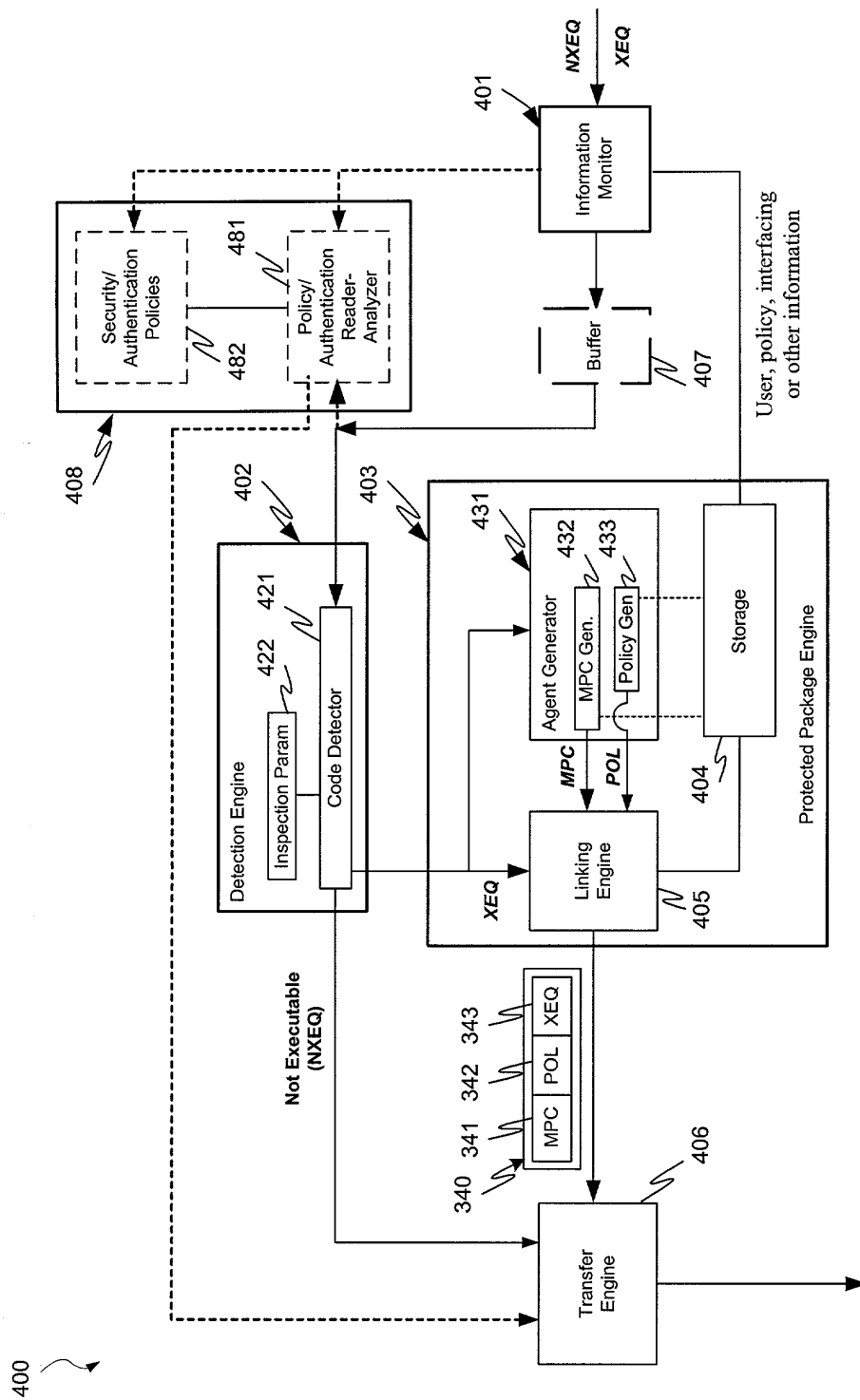


FIG. 4



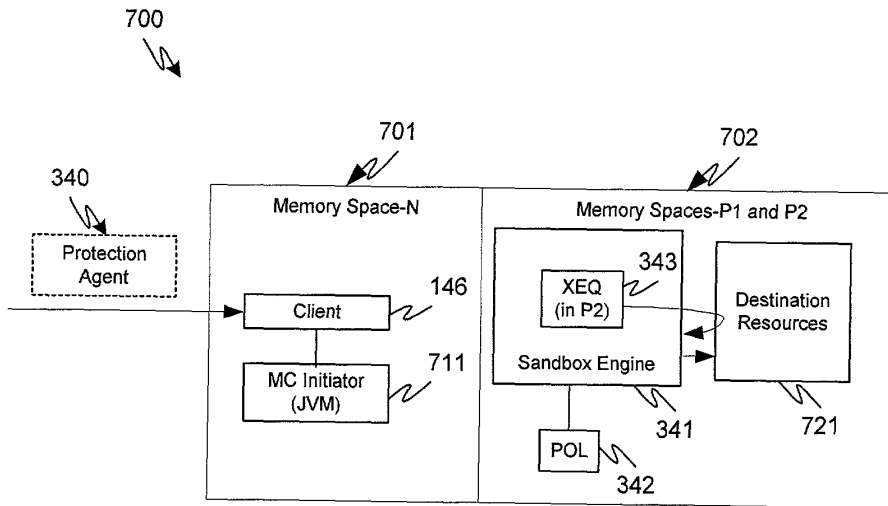


FIG. 7a

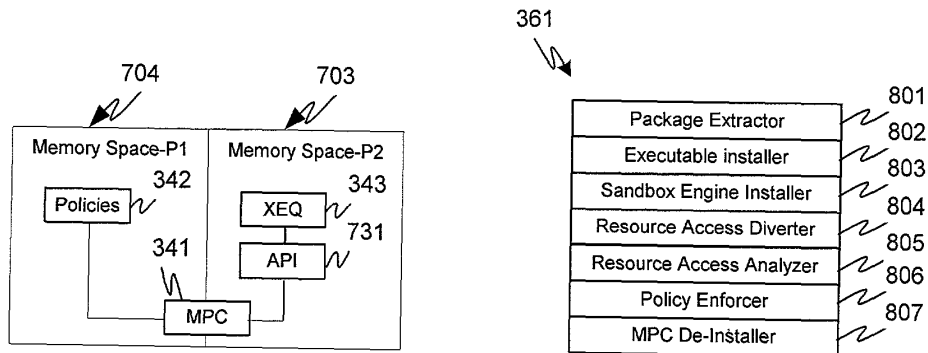


FIG. 7b

FIG. 8

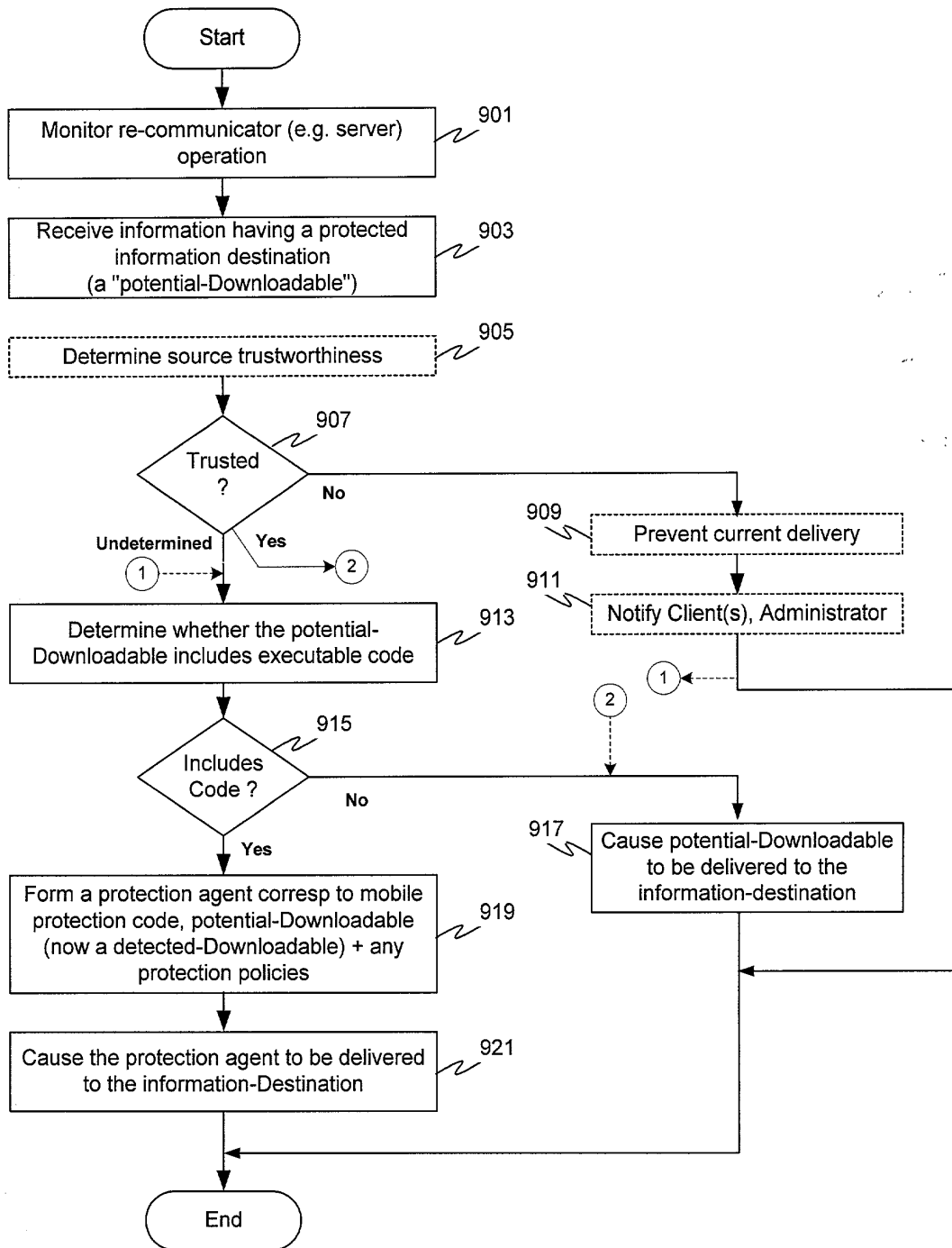


FIG. 9

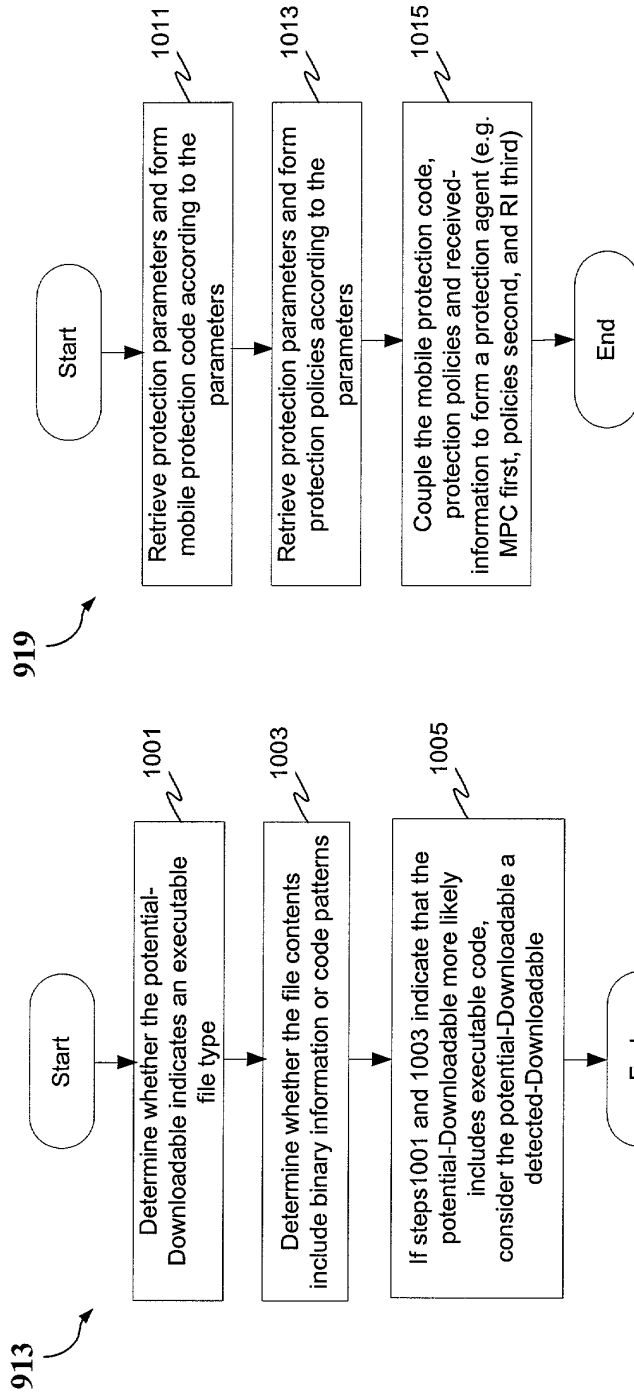


FIG. 10A

FIG. 10B

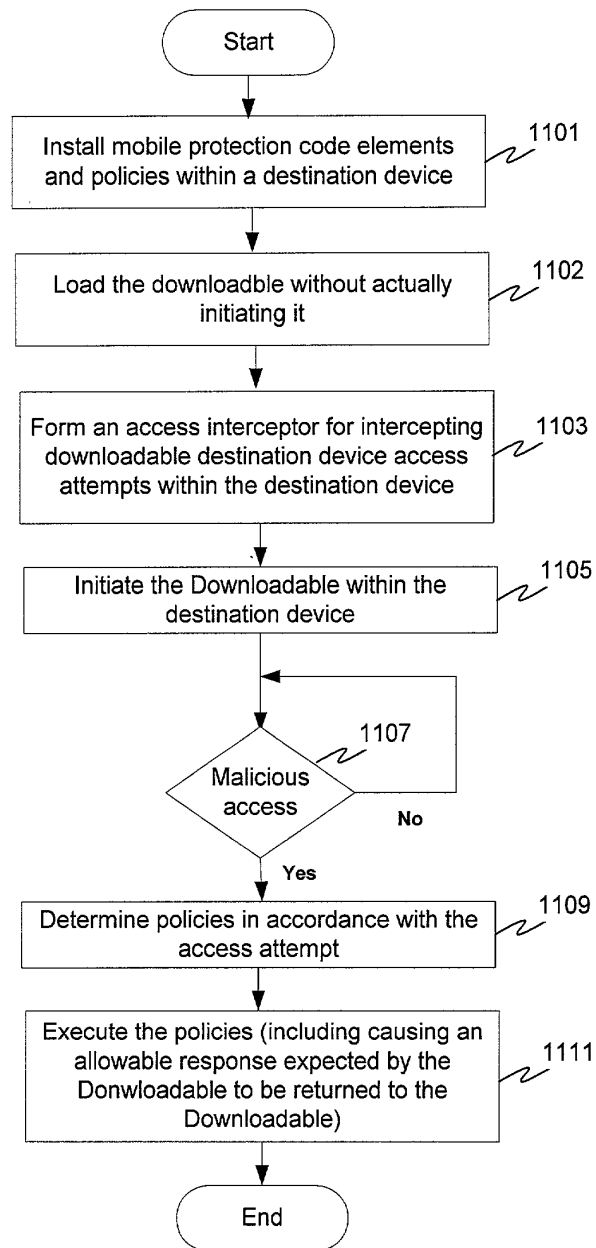


FIG. 11

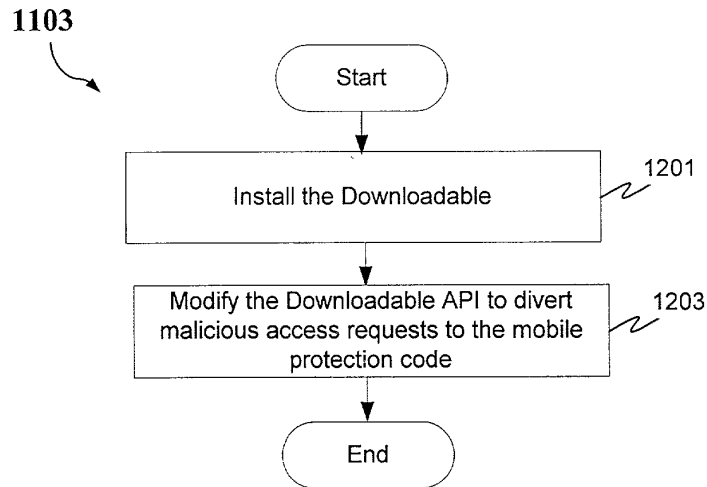


FIG. 12a

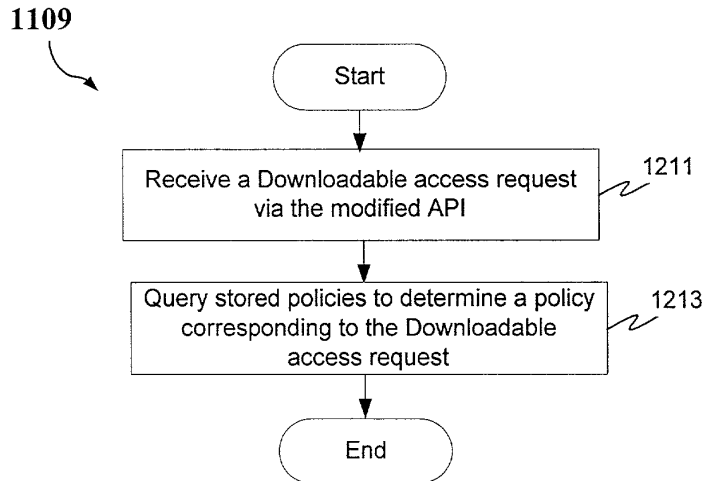


FIG. 12b



PTO/SB/21 (08-00)  
Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE  
do not respond to a collection of information unless it displays a valid OMB control number.

*(to be used for all correspondence after initial filing)*

<b>Application Number</b>	09/861,229
<b>Filing Date</b>	May 17, 2001
<b>First Named Inventor</b>	Yigal Edery, et al.
Group Art Unit	2152
Examiner Name	Unknown
Attorney Docket Number	43426.00014

☒ Fee Transmittal Form (in duplicate)

☒ Deposit Account Authorization on Fee Transmittal Form

☐ After Final

☐ Affidavits/declaration(s)

☐ Extension of Time Request☒ Return Postcard☐ Information Disclosure Statement☐ Certified Copy of Priority Document(s)☒ Response to Missing Parts/  
Incomplete Application (in duplicate)

☒ Response to Missing Parts under 37 CFR 1.52 or 1.53

☐ Assignment Papers  
(for an Application)

☒ Informal Drawings consisting of Figures 1a, 1b, 1c, 2, 3, 4, 5, 6a, 6b, 7a, 7b, 8, 9, 10a, 10b, 11, 12a, and 12b

☐ Licensing-related Papers

## ☐ Petition

☐ Petition to Convert to a Provisional Application

☒ Combined Power of Attorney and Declaration for Patent Application

☐ Terminal Disclaimer

☐ Request for Refund☐ CD, Number of CD(s) \_\_\_\_\_☐ After Allowance Communication to Group☐ Appeal Communication to Board of Appeals and Interferences

☐ Appeal Communication to Group  
(Appeal Notice, Brief, Reply Brief)

☐ Proprietary Information

☐ Status Letter

☒ Other Enclosure(s)  
(please identify below):

**Letter to the Official Draftsperson  
(Request to Substitute Drawings)  
(in duplicate)**

Remarks

Firm  
or  
Individual name

Daryl C. Josephson, Reg. No. 37,365  
Squire, Sanders & Dempsey, L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043

**Signature**

to Alto, CA 94304-1043

*Daryl C. Josephson*

September 10, 2001

Date \_\_\_\_\_

September 10, 2001

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date: 

September 10, 2001
--------------------

Typed or printed name

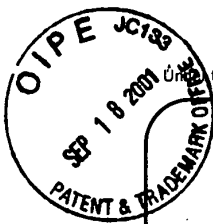
Sandy Yi

**Signature**

Sandy G.

Date \_\_\_\_\_

September 10, 2001



# FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision.

TOTAL AMOUNT OF PAYMENT (\$) 65

## Complete if Known

Application Number 09/861,229  
Filing Date May 17, 2001  
First Named Inventor Yigal Edery, et al.  
Examiner Name Unknown  
Group / Art Unit 2152  
Attorney Docket No. 43426.00014

## METHOD OF PAYMENT (check one)

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit Account Number 05-0150

Deposit Account Name Squire, Sanders & Dempsey, L.L.P.

☒ Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17

☒ Applicant claims small entity status. See 37 CFR 1.27

2. ☐ Payment Enclosed:

☐ Check ☐ Credit card ☐ Money Order ☐ Other

## FEE CALCULATION

1. BASIC FILING FEE					
Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid
101	710	201	355	Utility filing fee	
106	320	206	160	Design filing fee	
107	490	207	245	Plant filing fee	
108	710	208	355	Reissue filing fee	
114	150	214	75	Provisional filing fee	
SUBTOTAL (1)					(\$) 0

## 2. EXTRA CLAIM FEES

Total Claims 20 = 0 X Fee from below = 0

Independent Claims 3 = 0 X Fee from below = 0

Multiple Dependent X Fee from below = 0

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description
103	18	203	9	Claims in excess of 20
102	80	202	40	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	80	209	40	** Reissue independent claims over original patent
110	18	210	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)

Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	65
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	390	216	195	Extension for reply within second month	
117	890	217	445	Extension for reply within third month	
118	1,390	218	695	Extension for reply within fourth month	
128	1,890	228	945	Extension for reply within fifth month	
119	310	219	155	Notice of Appeal	
120	310	220	155	Filing a brief in support of an appeal	
121	270	221	135	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,240	241	620	Petition to revive - unintentional	
142	1,240	242	620	Utility issue fee (or reissue)	
143	440	243	220	Design issue fee	
144	600	244	300	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	130	123	130	Petitions related to provisional applications	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	710	246	355	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	710	249	355	For each additional invention to be examined (37 CFR § 1.129(b))	
179	710	279	355	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	
Other fee (specify) _____					
*Reduced by Basic Filing Fee Paid					
SUBTOTAL (3)					(\$) 65

## SUBMITTED BY

## Complete (if applicable)

Name (Print/Type)	Daryl C. Josephson	Registration No. Attorney/Agent)	37,365	Telephone	650.856.6500
Signature				Date	September 10, 2001

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

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



PATENT  
Attorney Docket No.: 43426.00014

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, Washington, D.C. 20231, on

Date: 9/10/01

By: *Sandy Yi*  
Sandy Yi

In re Application of:

Examiner: Unknown

Yigal Edery, et al.

Serial No. 09/861,229

Art Unit: 2152

Filed: May 17, 2001

Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM  
AND METHODS

Commissioner for Patents  
Washington, D.C. 20231

**RESPONSE TO NOTICE TO FILE MISSING PARTS OF  
NONPROVISIONAL APPLICATION**

Dear Sir:

In response to the Notice to File Missing Parts of Nonprovisional Papers mailed on July 19, 2001, in the above-identified application, enclosed herewith are the following:

- 1) Copy of Notice to File Missing Parts of Nonprovisional Application
- 2) Combined Power of Attorney and Declaration for Patent Application
- 3) Ten (10) sheets of informal drawings consisting of Figures 1a, 1b, 1c, 2, 3, 4, 5, 6a, 6b, 7a, 7b, 8, 9, 10a, 10b, 11, 12a, and 12b
- 4) Letter to the Official Draftsperson (Request to Substitute Drawings) (in duplicate)
- 5) Transmittal Form

*In re Edery, et al.*  
U.S. Application No.: 09/861,229

Page 1 of 2  
24485

- 6) Fee Transmittal (in duplicate)
- 7) Acknowledgment Postcard

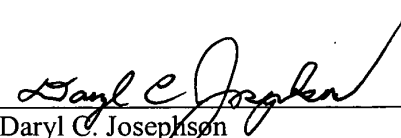
If the Examiner has any questions or needs additional information, the Examiner is invited to telephone the undersigned attorney at (650) 856-6500.

If for any reason an insufficient fee has been paid, please charge the insufficiency to Deposit Account No. 05-0150. A duplicate of this communication is enclosed.

Date: 9/10/01

Respectfully submitted,

SQUIRE, SANDERS & DEMPSEY L.L.P.  
600 Hansen Way  
Palo Alto, California 94304-1043  
Telephone: (650) 856-6500  
Facsimile: (650) 843-8777

  
Daryl C. Josephson  
Attorney for Applicants  
Registration No.: 37,365



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231  
www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/861,229	05/17/2001	Yigal Edery	43426.00014

CONFIRMATION NO. 5421

## FORMALITIES LETTER



\*OC000000006314695\*

Intellectual Property Department  
Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043

Date Mailed: 07/19/2001

## NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

*Filing Date Granted*

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.  
*A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(e) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is \$ 65.**

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawing sheets do not have the appropriate margin(s) (see 37 CFR 1.84(g)). Each sheet must include a top margin of at least 2.5 cm. (1 inch), a left side margin of at least 2.5 cm. (1 inch), a right side margin of at least 1.5 cm. ( 5/8 inch), and a bottom margin of at least 1.0 cm. (3/8 inch);

*A copy of this notice **MUST** be returned with the reply.*

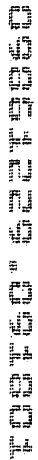
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70.75-000 65.00 001

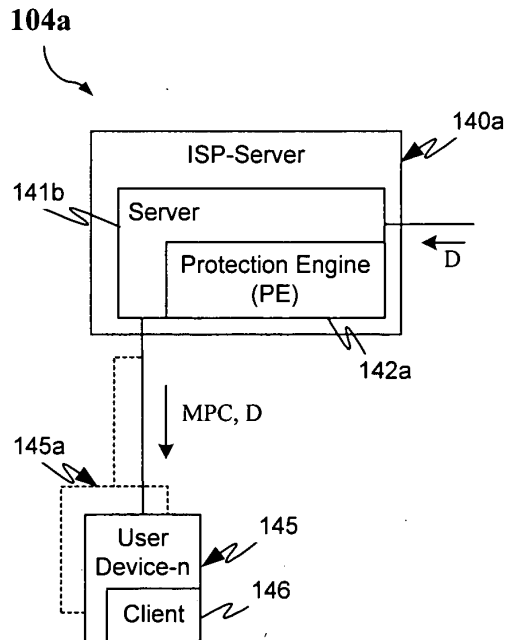
(703) 308-1202



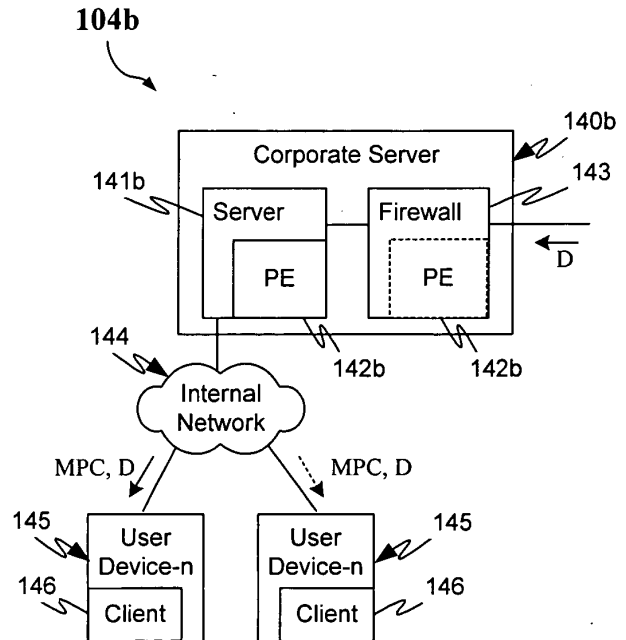
100-443887-100



**FIG. 1a**



**FIG. 1b**



**FIG. 1c**

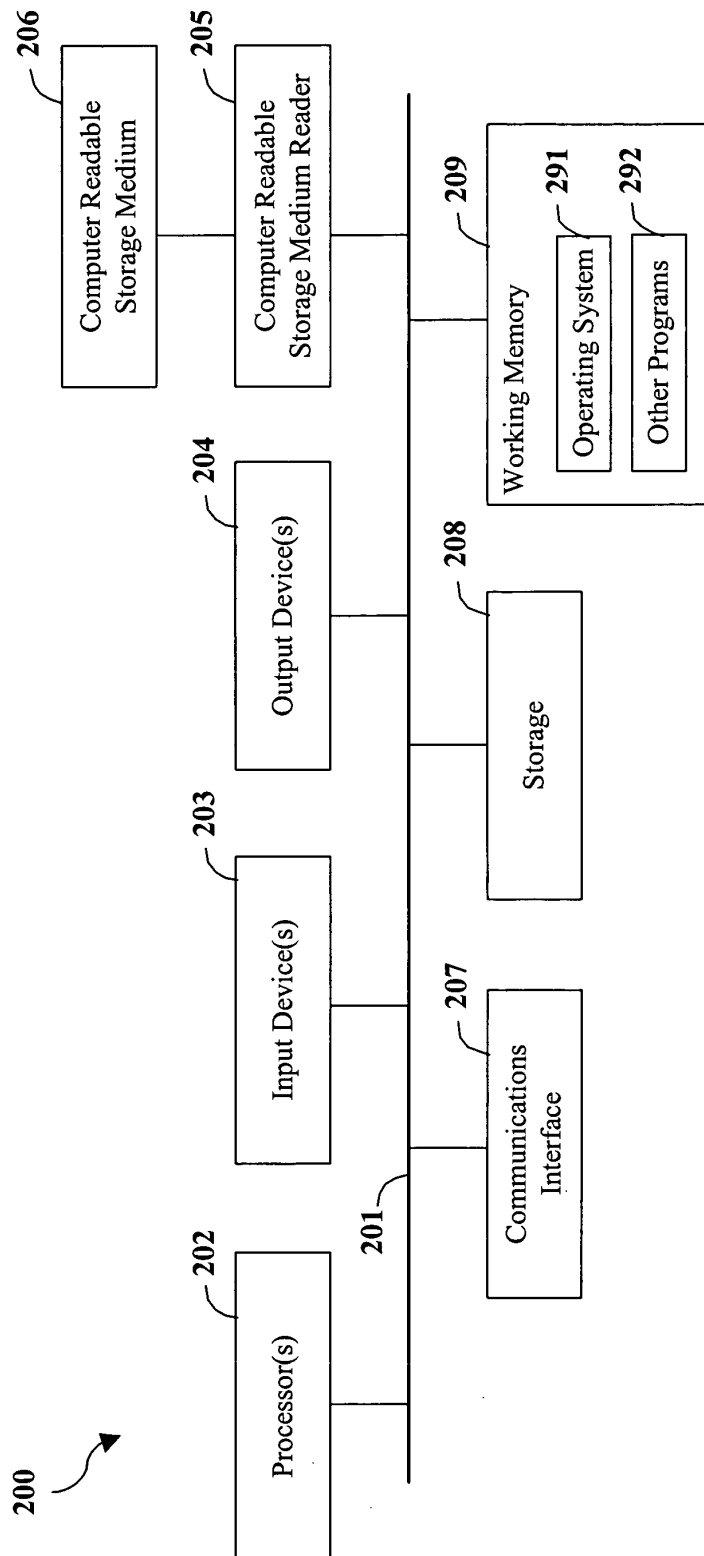


FIG. 2



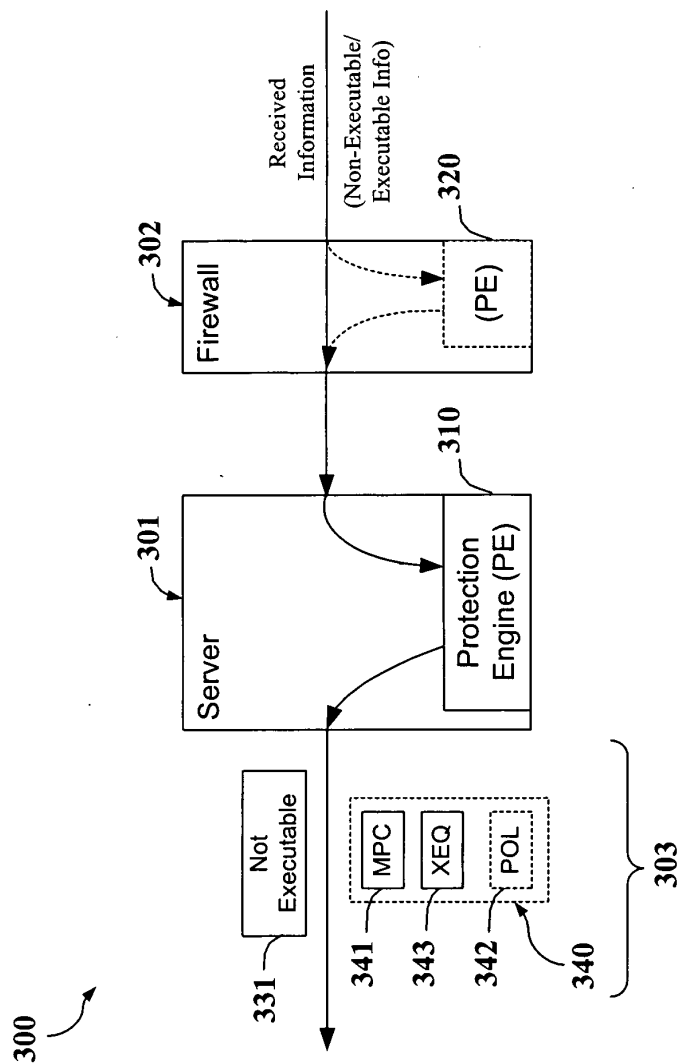


FIG. 3



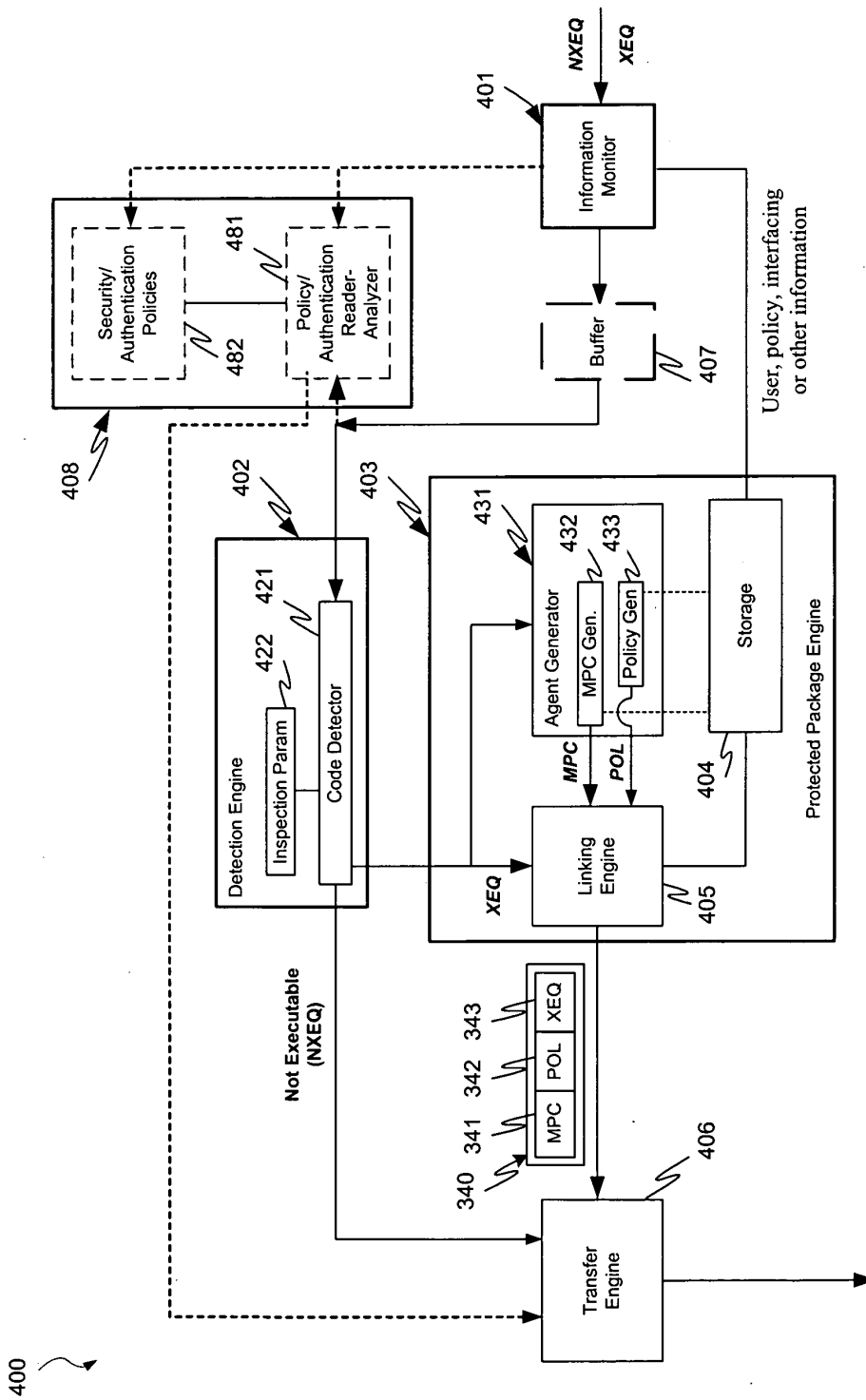


FIG. 4

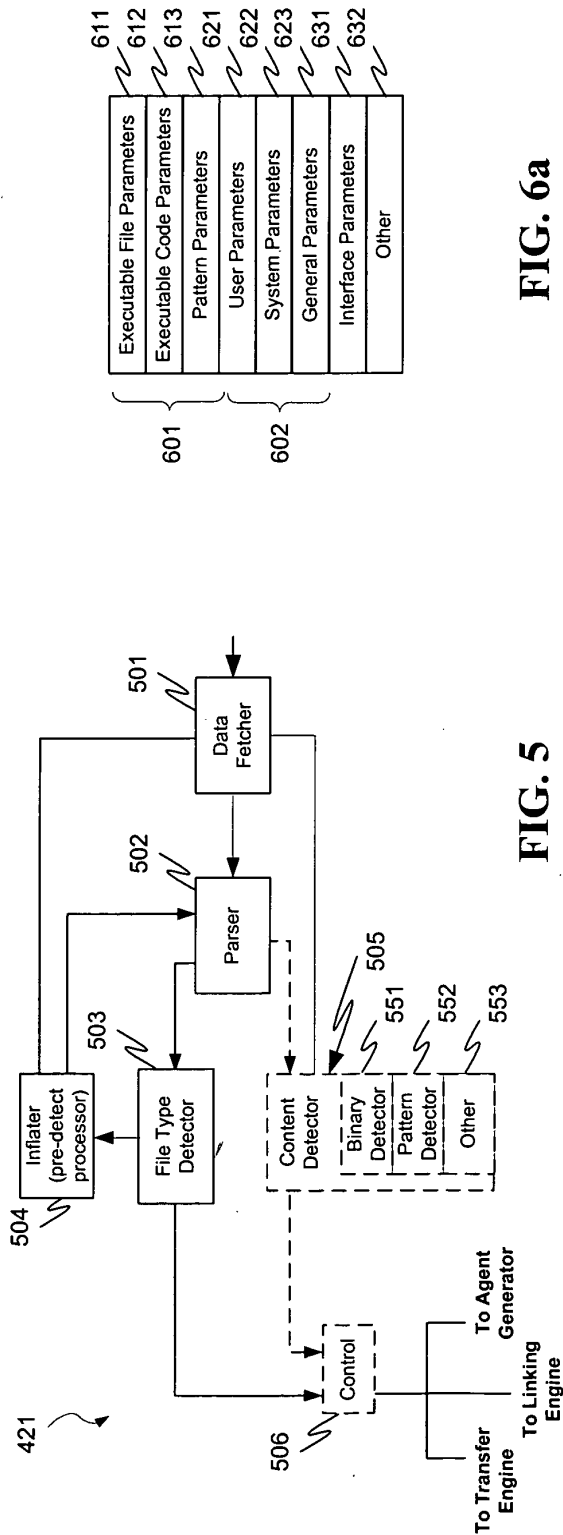


FIG. 6a

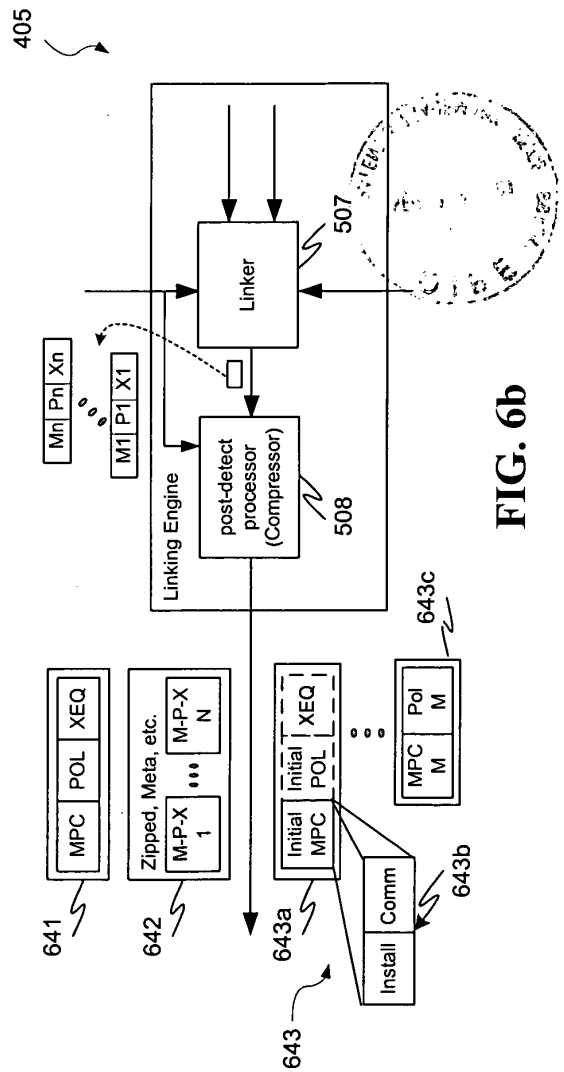


FIG. 6b

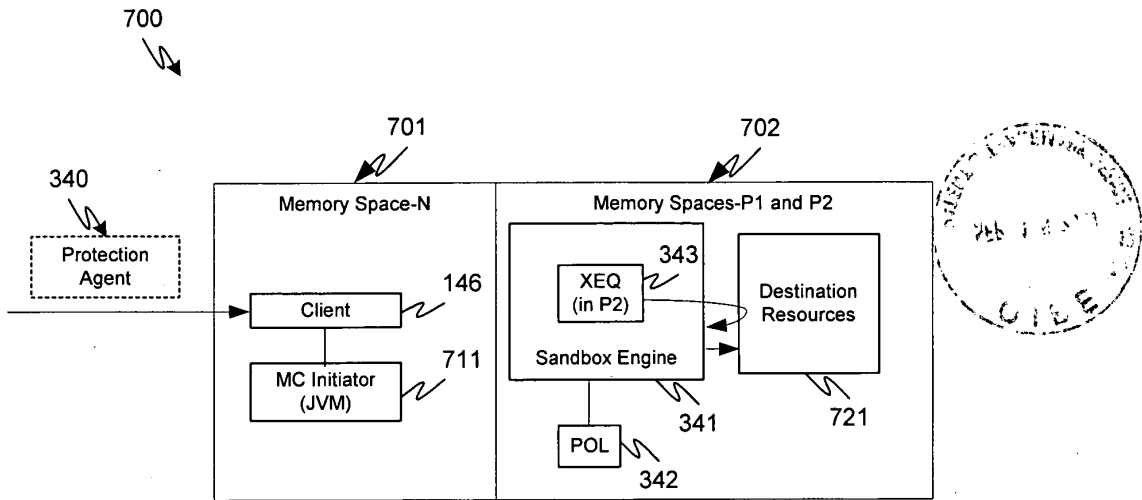


FIG. 7a

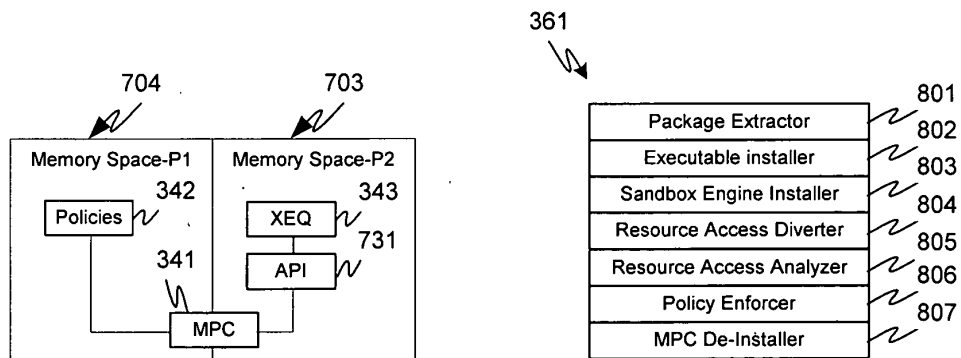


FIG. 7b

FIG. 8

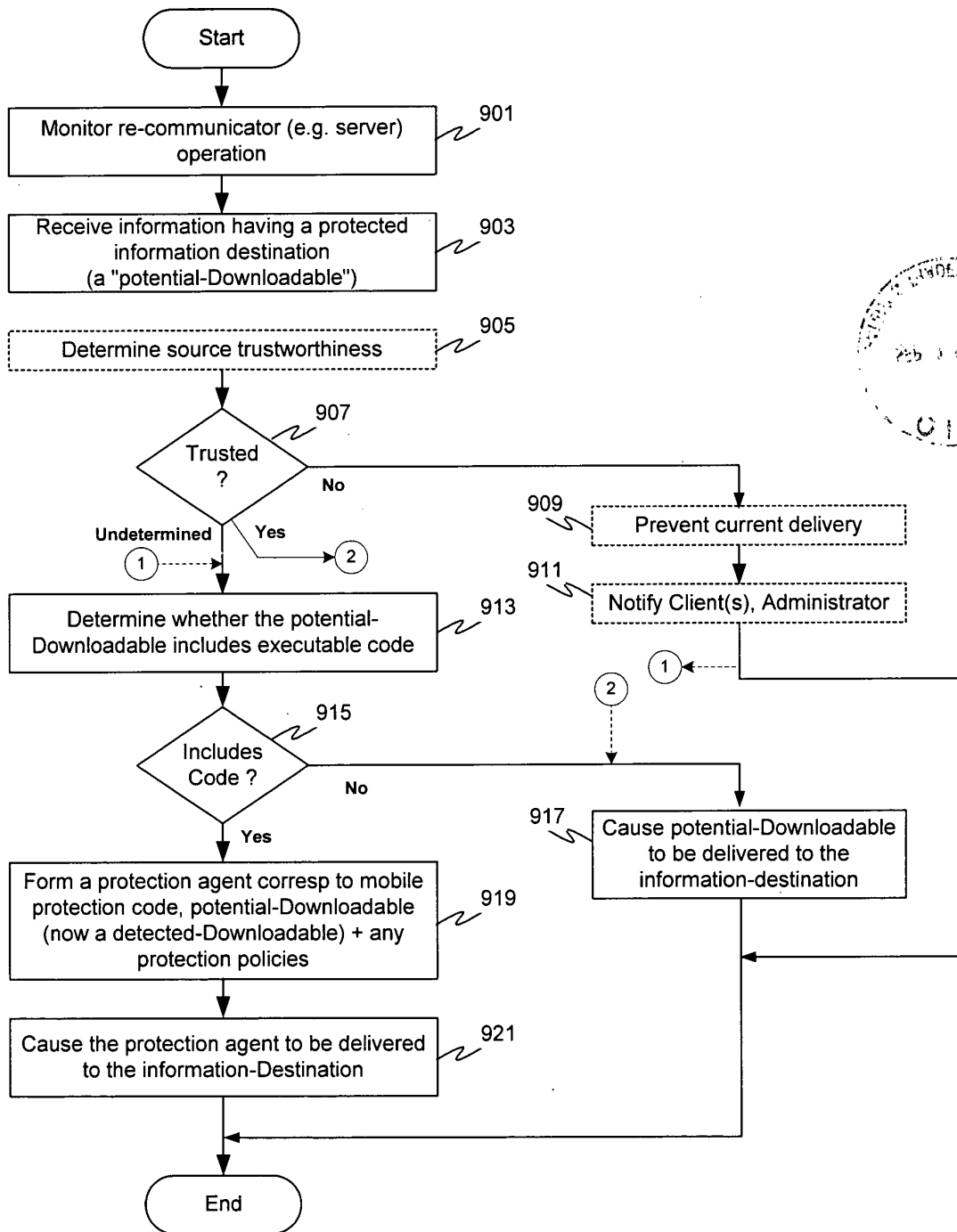


FIG. 9

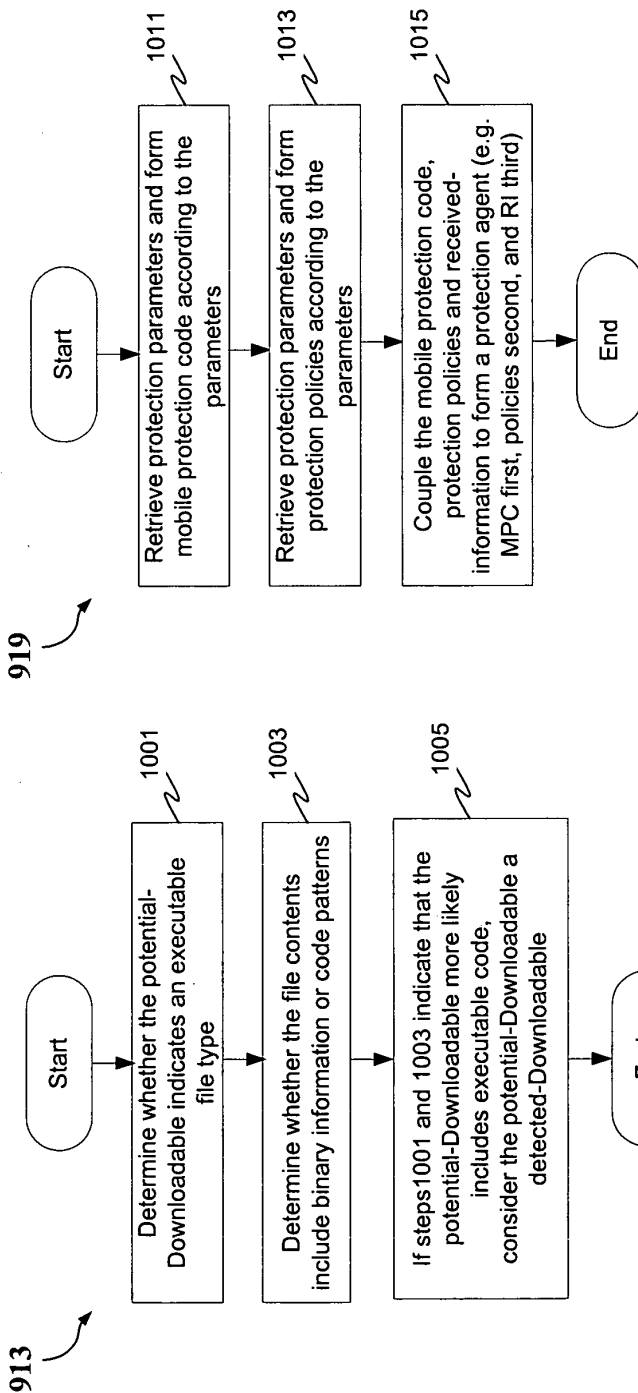


FIG. 10A

FIG. 10B



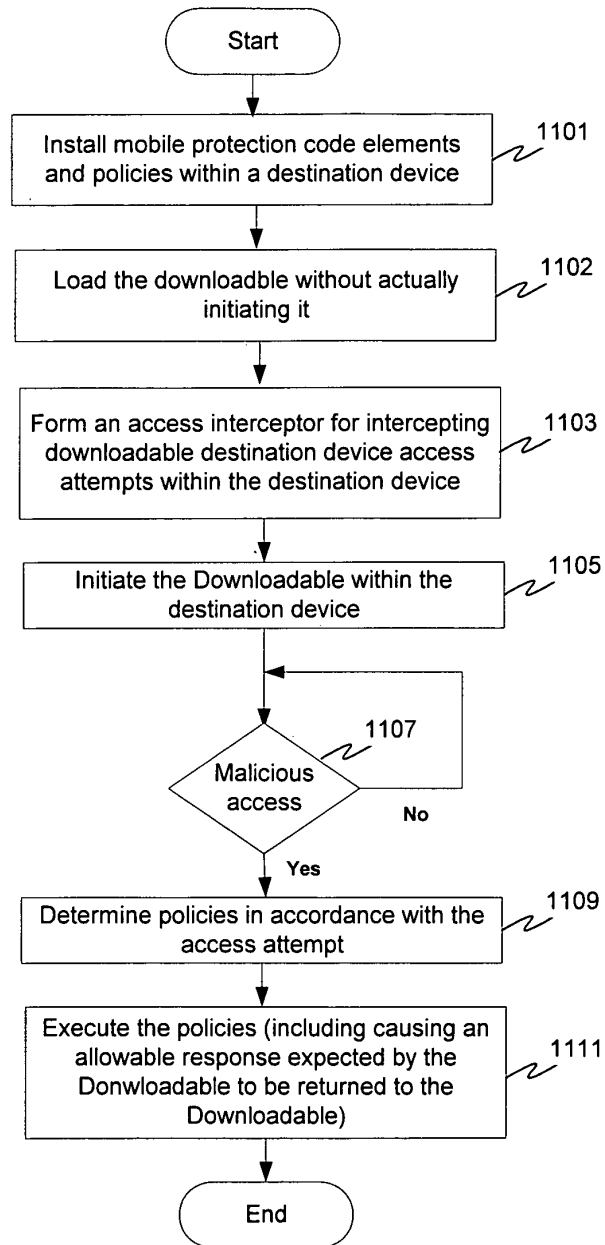


FIG. 11

1103

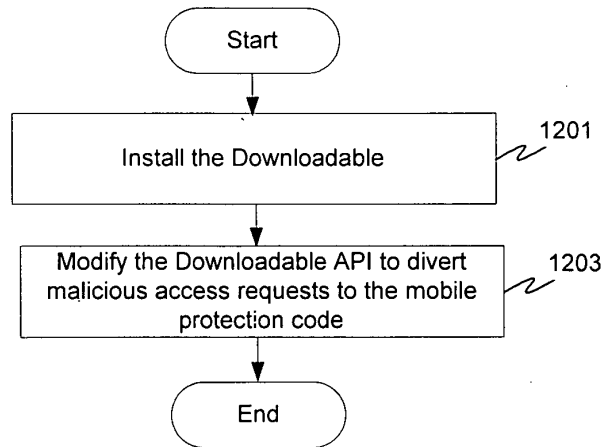


FIG. 12a

1109

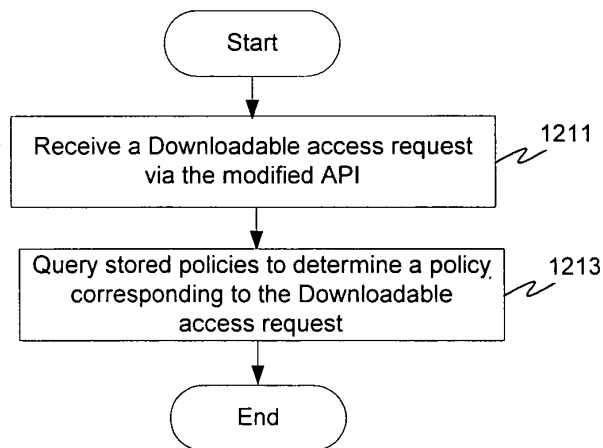
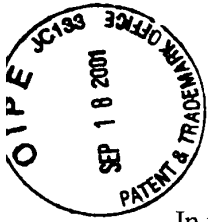


FIG. 12b



#3  
PATENT  
Attorney Docket No.: 43426.00014

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

Yigal Edery, et al.

Serial No. 09/861,229

Filed: May 17, 2001

**COMBINED POWER OF ATTORNEY AND  
DECLARATION FOR PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter, which is claimed and for which a patent is sought on the invention entitled:

**MALICIOUS MOBILE CODE RUNTIME MONITORING  
SYSTEM AND METHODS**

the specification of which

☐ is attached hereto

OR

☒ was filed on May 17, 2001 as United States Application Number or PCT  
International Application Number 09/861,229.

☐ and was amended on \_\_\_\_\_  
(if applicable)

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

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56.

I hereby claim the benefit under Title 35, United States, §119 (e) of any United States provisional application(s) listed below.

<u>60/205,591</u>	<u>May 17, 2000</u>
(Application Number)	(Filing Date)
_____	_____
(Application Number)	(Filing Date)

*In re Edery, et al.*  
U.S. Application No.: 09/861,229

Page 1 of 4  
17175

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

_____ (Application Number)	_____ (Filing Date)
_____ (Application Number)	_____ (Filing Date)
_____ (Application Number)	_____ (Filing Date)

I hereby claim the benefit under Title 35, United States Code, Section 120 of any United States application(s) or PCT international application(s) designating the United States of America that is/are listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of Title 35, United States Code, Section 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, Section 1.56(a) which occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application.

**PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 U.S.C. 120**

U.S. APPLICATIONS			STATUS (Check one)		
U.S. APPLICATION NUMBER	U.S. FILING DATE		PATENTED	PENDING	ABANDONED
09/539,667	March 30, 2000			X	
09/551,302	April 18, 2000			X	
PCT APPLICATIONS DESIGNATING THE U.S.					
PCT APPLICATION NO.	PCT FILING DATE	U.S. SERIAL NUMBERS ASSIGNED (if any)			

**POWER OF ATTORNEY:** As a named inventor, I hereby appoint the following attorney(s) and/or Agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Marc A. Sockol, Reg. No. 40,823; Daryl C. Josephson, Reg. No. 37,365; Arnold de Guzman, Reg. No. 39,955; Cameron Kerrigan, Reg. No. 44,826; Patrick D. Benedicto, Reg. No. 40,909; David B. Abel, Reg. No. 32,394; Nathan Lane, Reg. No. 43,738; Lorinda Howland, Reg. No. 42,671; Michael Lechter, Reg. No. 27,350; David Koo, Reg. No. 46,839; David Rogers, Reg. No. 38,287; William Bachand, Reg. No. 34,980; Aaron Wininger, Reg. No. 45,229; Paul A. Durdik, Reg. No. 37,819; Paul J. Meyer 47,791; Victoria L. Nicholson, Reg. No. 47,823; and Fariba Sirjani, Reg. No. 47,947.

Please direct all correspondence to: Daryl C. Josephson  
Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043

Direct Phone Calls To: Daryl C. Josephson, 650- 856-6500

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

1. First Inventor's Name Yigal Mordechai Eder  
First Middle Last Name

Citizenship Israel

Residence Hashikma 11, POB 1115, Pardesia 42815

(State/Foreign Country) Israel

First Inventor's Signature  Date 3/9/01

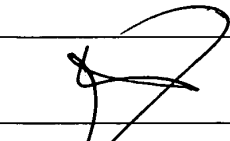
2. Second Inventor's Name Nimrod Itzhak Vered  
First Middle Last Name

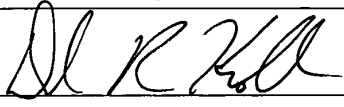
Citizenship Israel

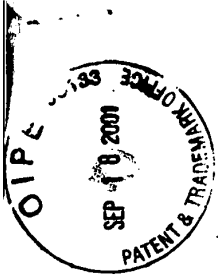
Residence Moshav Mismaret #81, Goosh Tel-Mond 40695

(State/Foreign Country) Israel

Post Office Address \_\_\_\_\_ (Zip Code) \_\_\_\_\_

Second Inventor's Signature  Date 3/Sept 01

3. Third Inventor's Name David R. Kroll  
First Middle Last Name  
Citizenship United States  
Residence 4856 Kingbrook Dr., San Jose, CA 95124  
(State/Foreign Country) United States  
Post Office Address N/A (Zip Code) \_\_\_\_\_  
Third Inventor's Signature  Date 8/27/01



#3

PATENT  
ATTORNEY DOCKET NO. 43426.00014

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF MAILING

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, Washington, D.C. 20231, on

Date: 9/10/01By: Sandy Yi  
Sandy Yi

In re Application of:

Examiner: Unknown

Yigal Edery, et al.

Serial No. 09/861,229

Art Unit: 2152

Filed: May 17, 2001

Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM  
AND METHODSCommissioner for Patents  
Washington, D.C. 20231**LETTER TO THE OFFICIAL DRAFTSPERSON**  
(Request to Substitute Drawings)

Sir:

Subject to the approval of the Primary Examiner in the above-entitled patent application, please substitute the enclosed ten (10) sheets of drawings, containing Figures 1a, 1b, 1c, 2, 3, 4, 5, 6a, 6b, 7a, 7b, 8, 9, 10a, 10b, 11, 12a, and 12b, for the ten (10) sheets of informal drawings containing Figures 1a, 1b, 1c, 2, 3, 4, 5, 6a, 6b, 7a, 7b, 8, 9, 10a, 10b, 11, 12a, and 12b as previously filed on May 17, 2001.

REMARKS

Applicants respectfully submit that the requested drawing substitution is consistent with the corresponding material in the specification and does not add any new matter to the application.

Should the Examiner have any questions concerning this request, the Examiner is invited to call the undersigned at the number shown below.

The Commissioner is hereby authorized to charge payment for any deficiency of required fees associated with this communication to Deposit Account 05-0150.

Date: 9/10/01

Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
Telephone (650) 856-6500  
Facsimile (650) 843-8777

Respectfully submitted,

By: Daryl C. Josephson  
Daryl C. Josephson  
Attorney for Applicants  
Registration No. 37,365

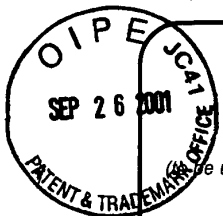
Please type a plus sign (+) inside this box → ☐

PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

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

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## TRANSMITTAL FORM

(Use for all correspondence after initial filing)

Application Number	09/861,229
Filing Date	May 17, 2001
First Named Inventor	Yigal Edery, et al.
Group Art Unit	2152
Examiner Name	Unknown
Attorney Docket Number	43426.00014

Total Number of Pages in This Submission

### ENCLOSURES (check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Deposit Account Authorization on Fee Transmittal Form <input type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Signed Oath/Declaration <input type="checkbox"/> Extension of Time Request <input checked="" type="checkbox"/> Return Postcard <input checked="" type="checkbox"/> Information Disclosure Statement (2 pages) & PTO Form 1449 (2 pages) <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts <input type="checkbox"/> Response to Incomplete Application	<input type="checkbox"/> Assignment & Cover Sheet (for an Application) <input type="checkbox"/> Drawing(s) _____ sheets <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <b>47 References</b>
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### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Marc A. Sockol, Reg. No. 40,823 Squire, Sanders & Dempsey, L.L.P. 600 Hansen Way Palo Alto, CA 94304-1043
Signature	
Date	September 17, 2001

### CERTIFICATE OF MAILING

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Typed or printed name	Sandy Yi		
Signature		Date	September 17, 2001

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# FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision.

Complete if Known

Application Number 09/861,229

Filing Date May 17, 2001

First Named Inventor Yigal Edery, et al.

Examiner Name Unknown

Group / Art Unit 2152

Attorney Docket No. 43426.00014

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TOTAL AMOUNT OF PAYMENT (\$ ) 0

## METHOD OF PAYMENT (check one)

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Deposit  
Account  
Number

05-0150

Deposit  
Account  
Name

Squire, Sanders & Dempsey, L.L.P.

☒ Charge Any Additional Fee Required  
Under 37 CFR 1.16 and 1.17

☒ Applicant claims small entity status.  
See 37 CFR 1.27

2. ☐ Payment Enclosed:

☐ Check ☐ Credit card ☐ Money  
Order ☐ Other

## FEE CALCULATION

### 1. BASIC FILING FEE

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description	Fee Paid
101	710	201	355	Utility filing fee	
106	320	206	160	Design filing fee	
107	490	207	245	Plant filing fee	
108	710	208	355	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1)

(\$ ) 0

### 2. EXTRA CLAIM FEES

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Independent Claims	<input type="text" value="-3"/>	-3	= <input type="text" value="0"/>	X	<input type="text" value="0"/>	=	<input type="text" value="0"/>
Multiple Dependent				X	<input type="text" value="0"/>	=	<input type="text" value="0"/>

Large Fee Code	Entity Fee (\$)	Small Fee Code	Entity Fee (\$)	Fee Description
103	18	203	9	Claims in excess of 20
102	80	202	40	Independent claims in excess of 3
104	270	204	135	Multiple dependent claim, if not paid
109	80	209	40	** Reissue independent claims over original patent
110	18	210	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2)

(\$ ) 0

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

## 3. ADDITIONAL FEES

3. ADDITIONAL FEES				
	Large Entity		Small Entity	
Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description
105	130	205	65	Surcharge - late filing fee or oath
127	50	227	25	Surcharge - late provisional filing fee or cover sheet.
139	130	139	130	Non-English specification
147	2,520	147	2,520	For filing a request for reexamination
112	920*	112	920*	Requesting publication of SIR prior to Examiner action
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action
115	110	215	55	Extension for reply within first month
116	390	216	195	Extension for reply within second month
117	890	217	445	Extension for reply within third month
118	1,390	218	695	Extension for reply within fourth month
128	1,890	228	945	Extension for reply within fifth month
119	310	219	155	Notice of Appeal
120	310	220	155	Filing a brief in support of an appeal
121	270	221	135	Request for oral hearing
138	1,510	138	1,510	Petition to institute a public use proceeding
140	110	240	55	Petition to revive – unavoidable
141	1,240	241	620	Petition to revive – unintentional
142	1,240	242	620	Utility issue fee (or reissue)
143	440	243	220	Design issue fee
144	600	244	300	Plant issue fee
122	130	122	130	Petitions to the Commissioner
123	130	123	130	Petitions related to provisional applications
126	180	126	180	Submission of Information Disclosure Stmt
581	40	581	40	Recording each patent assignment per property (times number of properties)
146	710	246	355	Filing a submission after final rejection (37 CFR § 1.129(a))
149	710	249	355	For each additional invention to be examined (37 CFR § 1.129(b))
179	710	279	355	Request for Continued Examination (RCE)
169	900	169	900	Request for expedited examination of a design application

Other fee (specify) \_\_\_\_\_

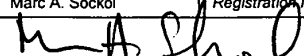
\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ ) 0

## SUBMITTED BY

Complete (if applicable)

Name (Print/Type)	Marc A. Sockol	Registration No. Attorney/Agent)	40,823	Telephone	650.856.6500
Signature				Date	September 17, 2001

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

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

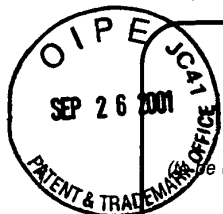
Please type a plus sign (+) inside this box → ☐

PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

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

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## TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	09/861,229
Filing Date	May 17, 2001
First Named Inventor	Yigal Edery, et al.
Group Art Unit	2152
Examiner Name	Unknown
Attorney Docket Number	43426.00014

Total Number of Pages in This Submission

### ENCLOSURES (check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Deposit Account Authorization on Fee Transmittal Form <input type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> Signed Oath/Declaration <input type="checkbox"/> Extension of Time Request <input checked="" type="checkbox"/> Return Postcard <input checked="" type="checkbox"/> Information Disclosure Statement (2 pages) & PTO Form 1449 (2 pages) <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts <input type="checkbox"/> Response to Incomplete Application	<input type="checkbox"/> Assignment & Cover Sheet (for an Application) <input type="checkbox"/> Drawing(s) _____ sheets <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <b>47 References</b>
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### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm or Individual name	Marc A. Sockol, Reg. No. 40,823 Squire, Sanders & Dempsey, L.L.P. 600 Hansen Way Palo Alto, CA 94304-1043
Signature	
Date	September 17, 2001

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Typed or printed name	Sandy Yi
Signature	
Date	September 17, 2001

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# FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision.

Complete if Known

Application Number 09/861,229

Filing Date May 17, 2001

First Named Inventor Yigal Edery, et al.

Examiner Name Unknown

Group / Art Unit 2152

Attorney Docket No. 43426.00014

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TOTAL AMOUNT OF PAYMENT (\$ 0

## METHOD OF PAYMENT (check one)

1. ☒ The Commissioner is hereby authorized to charge indicated fees and credit any over payments to:

Deposit  
Account  
Number

05-0150

Deposit  
Account  
Name

Squire, Sanders & Dempsey, L.L.P.

☒ Charge Any Additional Fee Required  
Under 37 CFR 1.16 and 1.17

☒ Applicant claims small entity status.  
See 37 CFR 1.27

2. ☐ Payment Enclosed:

☐ Check ☐ Credit card ☐ Money  
Order ☐ Other

## FEE CALCULATION

### 1. BASIC FILING FEE

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107	490	207	245	Plant filing fee	
108	710	208	355	Reissue filing fee	
114	150	214	75	Provisional filing fee	

SUBTOTAL (1)

(\$ 0

### 2. EXTRA CLAIM FEES

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Multiple Dependent			X <input type="text"/>	= <input type="text"/> 0

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SUBTOTAL (2)

(\$ 0

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

## 3. ADDITIONAL FEES

3. ADDITIONAL FEES					
Fee Code	Large Entity Fee (\$)	Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
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169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) \_\_\_\_\_

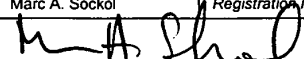
\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3)

(\$ 0

## SUBMITTED BY

Complete (if applicable)

Name (Print/Type)	Marc A. Sockol	Registration No. Attorney/Agent)	40,823	Telephone	650.856.6500
Signature				Date	September 17, 2001

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PATENT  
Attorney Docket No.: 43426.00014

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Date: 9/17/01

By: Sandy Yi  
Sandy Yi

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Technology Center 2100

In re Application of:  Yigal Edery, et al.  Serial No.: 09/861,229  Filed: May 17, 2001  Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS	Examiner: Unknown  Art Unit: 2152
--	---

Commissioner for Patents  
Washington, D.C. 20231

**INFORMATION DISCLOSURE STATEMENT PURSUANT TO  
37 C.F.R. §§1.97-1.98**

Sir:

In accordance with the duty of disclosure under 37 C.F.R. §1.56 and pursuant to 37 C.F.R. §§1.97-1.98, Applicants hereby notify the U.S. Patent and Trademark Office of the references listed on the attached Form PTO-1449. One copy of each cited reference is submitted herewith.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicants reserve the right to dispute any of the listed documents as prior art during examination. Furthermore, Applicants do not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application. The submission of this Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other material information may exist.

In re Edery, et al.  
U.S. Appl. No.: 09/861,229

Page 1 of 2  
24753

The Examiner is requested to initial the enclosed Form PTO-1449 and return a copy thereof to the undersigned.

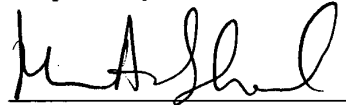
The present Information Disclosure Statement is being filed before receiving the first Office Action. Therefore, no certification under 37 C.F.R. §1.97(e) or fee under 37 C.F.R. §1.17(p) is required.

However, if for any reason an insufficient fee has been paid, please charge the insufficiency to Deposit Account No. 05-0150.

Date: September 17, 2001

Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
Telephone (650) 856-6500  
Facsimile (650) 843-8777

Respectfully submitted,



Marc A. Sockol  
Attorney for Applicant  
Reg. No. 40,823

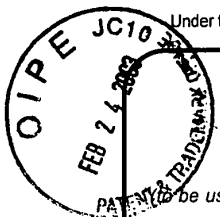
Please type a plus sign (+) inside this box → ☐

PTO/SB/21 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

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

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## TRANSMITTAL FORM

Patent forms to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

3

Application Number

09/861,229

Filing Date

May 17, 2001

First Named Inventor

Yigal Edery

Group Art Unit

2152

Examiner Name

Unknown

Attorney Docket Number

43426.00014

### ENCLOSURES (check all that apply)

☐ Fee Transmittal Form (in duplicate)

☐ Amendment / Response

☐ With RCE

☐ After Final

☐ Affidavits/declaration(s)

☐ Extension of Time Request  
(in duplicate)

☐ Reference(s)

☐ IDS and Form 1449

☐ Certified Copy of Priority  
Document(s)

☐ Response to Missing Parts/  
Incomplete Application

☐ Declaration/Oath

☐ Assignment and Recordation Cover  
Sheet (for an Application)

☐ Drawing(s) \_\_\_\_\_ Sheets

☐ Licensing-related Papers

☐ Petition

☐ Request for Continued Examination

☒ Associate Power of Attorney

☐ Terminal Disclaimer

☐ Request for Refund

☐ CD, Number of CD(s) \_\_\_\_\_

☐ Request to Correct Filing Receipt

☐ Appeal Communication to Board of  
Appeals and Interferences

☐ Appeal Communication to Group  
(Appeal Notice, Brief, Reply Brief)

☒ Return Postcard

☐ Status Letter

☐ Other Enclosure(s)  
(please identify below):

Remarks

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Technology Center 2100

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm  
or  
Individual name

Marc A. Sockol, Reg. No. 40,823  
Squire, Sanders & Dempsey, L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043

Signature

*M. A. Sockol*

Date

February 13, 2003

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on this date: February 13, 2003

Typed or printed name

Sandy Yi

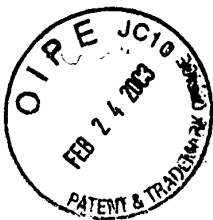
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*Sandy Yi*

Date

February 13, 2003

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PATENT  
Attorney Docket No.: 43426.00014

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Date: 2-13-03

By: *Sandy Yi*  
Sandy Yi

In re Application of:	
Yigal Edery, et al.	Examiner: Unknown
Serial No.: 09/861,229	Art Unit: 2152
Filed: May 17, 2001	
Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS	

Commissioner of Patents  
Washington, DC 20231

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### ASSOCIATE POWER OF ATTORNEY

Sir:

Please recognize the following attorney as an associate attorney in the above-referenced application:

**Marc A. Berger, Reg. No. 44,029.**

Please continue to address all correspondence and communications to:

Marc A. Sockol  
Customer No. 30256  
Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
650-856-6500

Dated: 2-13-03

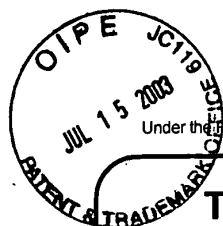
Respectfully submitted

Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
Tel (650) 856-6500  
Fax (650) 843-8777

By: M A Sockol  
Marc A. Sockol  
Attorney for Applicants  
Registration No. 40,823

PaloAlto Doc #: 49232v1

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2152  
#6  
SP  
7-22-03

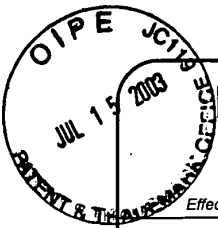
<b>TRANSMITTAL FORM</b> <i>(to be used for all correspondence after initial filing)</i>	Application Number	09/861,229	
	Filing Date	May 17, 2001	
	First Named Inventor	Yigal Edery	
	Art Unit	2152	
	Examiner Name	Unknown	
Total Number of Pages in This Submission	N/A	Attorney Docket Number	43426.00014

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form (in duplicate) <input type="checkbox"/> Request for Corrected Filing Receipt <input type="checkbox"/> Amendment / Response <input type="checkbox"/> After Final <input type="checkbox"/> With RCE <input type="checkbox"/> Extension of Time Request <input checked="" type="checkbox"/> Return Postcard <input checked="" type="checkbox"/> Supplemental Information Disclosure Statement (2 pages) <input checked="" type="checkbox"/> PTO Form 1449 (2 pages) <input checked="" type="checkbox"/> 9 References <input type="checkbox"/> Declaration/Oath	<input type="checkbox"/> Assignment and Recordation Cover Sheet (for an Application) <input type="checkbox"/> Drawing(s) _____ Sheets <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> RCE <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Request <input type="checkbox"/> Other Enclosure(s) (please identify below):
Remarks		<b>RECEIVED</b> JUL 17 2003 Technology Center 2100

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT	
Firm or Individual name	Marc A. Sockol, Reg. No. 40,823 Squire, Sanders & Dempsey L.L.P. 600 Hansen Way Palo Alto, CA 94304-1043
Signature	
Date	July 11, 2003

CERTIFICATE OF MAILING			
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Typed or printed name	Sandy Yi		
Signature		Date	July 11, 2003

This collection of information is required by 37 CFR 1.5. 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 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.



# FEE TRANSMITTAL for FY 2003

Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 0

## Complete if Known

Application Number 09/861,229  
Filing Date May 17, 2001  
First Named Inventor Yigal Edery  
Examiner Name Unknown  
Art Unit 2152  
Attorney Docket No. 43426.00014

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JUL 17 2003

Technology Center 2100

## METHOD OF PAYMENT (check all that apply)

☐ Check ☐ Credit card ☐ Money ☐ Other ☐ None  
☒ Deposit Account:

Deposit Account Number 05-0150

Deposit Account Name Squire, Sanders & Dempsey L.L.P.

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

☐ Charge fee(s) indicated below ☒ Credit any overpayments  
☒ Charge any additional fee(s) during the pendency of this application  
☐ 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	750	2001	375	Utility filing fee	
1002	330	2002	165	Design filing fee	
1003	520	2003	260	Plant filing fee	
1004	750	2004	375	Reissue filing fee	
1005	160	2005	80	Provisional filing fee	

SUBTOTAL (1)

(\$ 0)

### 2. EXTRA CLAIM FEES

Total Claims  -20 \*\* =  0 X  =  0  
Independent Claims  -3 \*\* =  0 X  =  0  
Multiple Dependent  X  =  0

Large Entity		Small Entity		Fee Description
Fee Code	Fee (\$)	Fee Code	Fee (\$)	
1202	18	2202	9	Claims in excess of 20
1201	84	2201	42	Independent claims in excess of 3
1203	280	2203	140	Multiple dependent claim, if not paid
1204	84	2204	42	** 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 Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
1051	130	2051	65	Surcharge - late filing fee or oath	
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 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	
1251	110	2251	55	Extension for reply within first month	
1252	410	2252	205	Extension for reply within second month	
1253	930	2253	465	Extension for reply within third month	
1254	1,450	2254	725	Extension for reply within fourth month	
1255	1,970	2255	985	Extension for reply within fifth month	
1401	320	2401	160	Notice of Appeal	
1402	320	2402	160	Filing a brief in support of an appeal	
1403	280	2403	140	Request for oral hearing	
1451	1,510	1451	1,510	Petition to institute a public use proceeding	
1452	110	2452	55	Petition to revive - unavoidable	
1453	1,300	2453	650	Petition to revive - unintentional	
1501	1,300	2501	650	Utility issue fee (or reissue)	
1502	470	2502	235	Design issue fee	
1503	630	2503	315	Plant issue fee	
1460	130	1460	130	Petitions to the Commissioner	
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)	
1809	750	2809	375	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	750	2810	375	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	750	2801	375	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

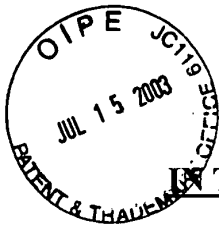
## Complete (if applicable)

Name (Print/Type)	Marc A. Sockol	Registration No. Attorney/Agent)	40,823	Telephone	650.856.6500
Signature				Date	July 11, 2003

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This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PATENT  
Attorney Docket No.: 43426.00014

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:	
Yigal Edery, et al.	Examiner: Unknown
Serial No.: 09/861,229	Art Unit: 2152
Filed: May 17, 2001	
Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS	<b>RECEIVED</b> JUL 17 2003

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

Technology Center 2100

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT  
PURSUANT TO 37 C.F.R. §§1.97(b)**

Sir:

In accordance with the duty of disclosure under 37 CFR §1.56 and pursuant to 37 CFR §§1.97-1.98, Applicants hereby notify the U.S. Patent and Trademark Office of the references listed on the enclosed Form PTO-1449. One copy of each reference cited is submitted herewith.

The present Supplemental Information Disclosure Statement is being filed more than three months after the filing date but before receiving the first Office Action. Accordingly, no fee or certification is needed.

The submission of the listed documents is not intended as an admission that any such document constitutes prior art against the claims of the present application. Applicants reserve the right to dispute any of the listed documents as prior art during examination. Furthermore, Applicants do not waive any right to take any action that would be appropriate to antedate or otherwise remove any listed document as a competent reference against the claims of the present application. The submission of this Supplemental Information Disclosure Statement is not to be

construed as a representation that a search has been made or that no other material information may exist.

The Examiner is requested to initial the enclosed Form PTO-1449 and return a copy thereof to the undersigned.

If for any reason an insufficient fee has been paid, please charge the insufficiency to Deposit Account No. 05-0150.

Date: July 11, 2003

Respectfully submitted,

Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
Telephone (650) 856-6500  
Facsimile (650) 843-8777

By: M. A. Sockol  
Marc A. Sockol  
Attorney for Applicants  
Reg. No. 40,823

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Date: July 11, 2003 By: Sandy Yi  
Sandy Yi

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1	BRS	L1	135368	(code or executable or download\$5 or applet or java or script or activex)near10(determin\$5 or ascertain\$3 or monitor\$3 or analy\$4 or inspect\$3 or examin\$5)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2004/12/04 13:02
2	BRS	L2	7046	1 same(secure or environment or shell or sandbox or protect\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2004/12/04 13:00
3	BRS	L3	199947	(transmi\$5 or send\$3 or sent or communicat\$3 or forward\$3)near10(secure or environment or shell or sandbox or protect\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2004/12/04 13:01
4	BRS	L4	820	2 same 3	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2004/12/04 13:01
5	BRS	L5	172333	(code or executable or download\$5 or applet or java or script or activex)near10(append\$3 or attach\$5 or indicat\$3 or profile or character\$5)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2004/12/04 13:03

	Type	L #	Hits	Search Text	DBs	Time Stamp
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S4	428	S2(S)S3
S5	77346	(CODE OR EXECUTABLE OR DOWNLOAD????? OR APPLET OR JAVA OR - SCRIPT OR ACTIVEX) (10N) (APPEND??? OR ATTACH????? OR INDICAT??? OR PROFILE OR CHARACTER?????)
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United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421
30256	7590	12/07/2004		
SQUIRE, SANDERS & DEMPSEY L.L.P 600 HANSEN WAY PALO ALTO, CA 94304-1043				
EXAMINER				
REVAK, CHRISTOPHER A				
ART UNIT		PAPER NUMBER		
2131				

DATE MAILED: 12/07/2004

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

<b>Office Action Summary</b>	<b>Application No.</b> 09/861,229	<b>Applicant(s)</b> EDERY ET AL.	
	<b>Examiner</b> Christopher A. Revak	<b>Art Unit</b> 2131	

**-- 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) 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 the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- 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 15 July 2003.  
 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) 1-76 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) 1-7, 16-20, 28-34, 43-51, and 60-76 is/are rejected.  
 7) ☒ Claim(s) 8-15, 21-27, 33-42, 50-59, 73 and 74 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 September 18, 2001 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) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4,6</u> .	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date: _____. 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6) <input type="checkbox"/> Other: _____.
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## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statements (IDS) submitted on September 26, 2001 and July 15, 2003 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statements.

### ***Specification***

2. The disclosure is objected to because of the following informalities: On page 2 of the applicant's specification, the status of the application serial number 09/539,667 is now U.S. Patent 6,804,780 and application serial number 09/551,302 is now U.S. Patent 6,480,962.

Appropriate correction is required.

### ***Claim Objections***

3. Claims 33,34,50,51,73, and 74 contain the trademarks ActiveX, Windows, and Microsoft. Where a trademark is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark cannot be used properly to identify any particular material or product. A trademark is used to identify a source of goods, and not the goods themselves. Thus, a trademark does not identify or describe

the goods associated with the trademark. In the present case, the trademark is used to identify/describe software of specific functionality and, accordingly, the identification/description is indefinite.

4. Claims 57-59 are objected to because of the following informalities: Claim 57, a system claim that currently recites being dependent upon claim 46, which is a method claim. Additionally, claim 57 includes the limitation "the sandboxed package" which is not claimed in claim 46, but there is antecedent basis in claim 52 which appears that claims 57-59 are in dependency of dependent claim 47. The examiner is interpreting the current claims 57 to depend upon claim 56, claim 58 to depend on claim 57, and claim 59 to depend on claim 57 since they are all system claims. Appropriate correction is required.

***Claim Rejections - 35 USC § 101***

5. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

6. Claims 1-28,30-59, and 61-75 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims recite of software alone and of itself and the current claim language does not fall in any statutory class. It is suggested by the examiner that he claims be amended to be either stored on a computer readable medium or to be executed by a processor.

***Claim Rejections - 35 USC § 102***

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

A person shall be entitled to a patent unless –

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

8. Claims 1-7, 16-20, 28-34, 43-51, and 60-76 are rejected under 35 U.S.C. 102(e) as being anticipated by Golan, U.S. Patent 5,974,549.

As per claims 1, 16, 28, and 29, Golan discloses of a method, system, and a computer readable storage medium storing computer code for causing a computer to receive downloadable information by a security (information) monitor, determine whether the downloadable information includes executable code as determined by a security monitor (content inspection engine) that is communicatively coupled to the security (information) monitor, and a sandbox (protection agent engine) communicatively coupled to the security monitor (content inspection engine) for causing mobile protection code to be communicated to one information-destination of the downloadable information, if the downloadable-information is determined to include executable code (col. 2, lines 12-28; col. 3, lines 45-58; and col. 4, line 50 through col. 5, line 14). It is noted by the examiner that it is interpreted that the security monitor of Golan acts as both a monitor and an inspector since it examines the downloadable code (col. 2, lines 21-25).

As per claims 2 and 17, Golan teaches of receiving monitored information of an information re-communicator (col. 4, line 50 through col. 5, line 14).

As per claims 3 and 18, it is taught by Golan that the information re-communicator is a network server (col. 4, line 50 through col. 5, line 14).

As per claims 4,5,6, and 19, Golan discloses of determining comprises analyzing the downloadable information for an included type indicator detector indicating an executable file type, an archive file that contains an executable, or an information pattern corresponding to one or more information patterns that tend to be included within executable code (col. 2, lines 12-28).

As per claim 7, it is disclosed by Golan that the received executable code characteristics are capable of being executed by the information-destination and the determining is conducted in accordance with the executable code characteristics (col. 2, lines 12-28 and col. 3, lines 45-58).

As per claim 20, Golan teaches of a content inspection engine that parses the downloadable-information and a content analyzer communicatively coupled to the parser for determining whether the downloadable-information elements of the downloadable-information correspond with executable code elements are executable code elements (col. 2, lines 12-28; col. 3, lines 45-58; and col. 4, line 50 through col. 5, line 14).

As per claims 30,47, and 60, Golan discloses of a method, system, and a computer readable storage medium storing computer code for causing a computer to receive downloadable information that includes executable code, at an information re-

communicator. Mobile protection code is executed by a sandbox (mobile code executor) at a downloadable destination such that one or more operations of the executable code at the destination, if attempted, will be processed by the mobile protection code (col. 2, lines 12-28; col. 3, lines 45-58; and col. 4, line 50 through col. 5, line 14).

As per claims 31,48, and 71, it is disclosed by Golan a mobile code executor, or browser (that is run by a Java Virtual Machine)(col. 4, lines 50-61).

As per claims 32,49, and 72, Golan teaches that the mobile code executor is the operating system running native code executables (col. 1, lines 44-46).

As per claims 33,50, and 73, in the teachings of Golan, it is disclosed that the mobile code executor is ActiveX subsystem of the windows operating system (col. 1, lines 44-46).

As per claims 34,51, and 74, Golan discloses that the mobile code executor is the Microsoft Windows scripting host (col. 2, lines 12-28).

As per claims 43 and 50, it is taught by Golan that the information re-communicator is a network server (col. 4, line 50 through col. 5, line 14).

As per claim 44, Golan discloses of a sandboxed package that has a same file type as the downloadable-information, thereby causing the mobile code executor to be unaware that the protected package is not a normal downloadable (col. 1, lines 34-43 and col. 2, lines 12-28).

As per claim 45, it is taught by Golan that the sandboxed package is formed using a concatenation of a mobile protection code, a policy, and a downloadable (col. 1, lines 34-43; col. 2, lines 12-28; and col. 5, lines 60-67).

As per claim 46, Golan discloses the executed mobile protection code at a destination causes downloadable interfaces to resources at the destination to be modified such that attempted operations of the executable code is diverted to the mobile protection code (col. 1, lines 34-43; col. 2, lines 12-28; and col. 5, lines 60-67).

As per claim 57, Golan teaches of causing the sandboxed package to be executed that includes communicating the san

As per claims 61, 75, and 76, Golan discloses of a method, system, and a computer readable storage medium storing computer code for causing a computer to receive mobile protection code and a downloadable at a downloadable-destination, causing by the mobile protection code, one or more operations attempted by the downloadable to be received by the mobile protection code. The mobile protection code receives an attempted operation of the downloadable and initiates a protection policy corresponding to the attempted operation (col. 2, lines 12-28; col. 3, lines 45-58; and col. 4, line 50 through col. 5, line 14).

As per claim 62, Golan discloses of receiving a sandboxed package that includes mobile protection code, the downloadable, and one or more protection policies (col. 1, lines 34-43; col. 2, lines 12-28; and col. 5, lines 60-67).

As per claim 63, it is taught by Golan that the sandboxed package is configured such that the mobile protection code is executed first, the downloadable is executed by

the mobile protection code and the protection policies are accessible to the mobile protection code (col. 1, lines 34-43; col. 2, lines 12-28; and col. 5, lines 60-67).

As per claim 64, Golan teaches that the mobile protection code modifies interfaces of a corresponding downloadable to resources at the destination (col. 3, lines 45-58).

As per claim 65, the teachings of Golan recite of initiating a loading of the downloadable thereby causing a browser (mobile code executer) to provide and initialize the interfaces, modifying one or more interface elements to divert corresponding attempted downloadable operations to the mobile protection code and initiating execution of the downloadable (col. 6, line 30 through col. 7, line 22).

As per claim 66, it is taught by Golan that the interface comprises an import address table of native coded executable downloadable (col. 1, lines 44-46 and col. 6, lines 17-27).

As per claim 67, Golan discloses of modifying the interfaces by installing a filter-driver between the resources and the downloadable (col. 4, lines 45-58).

As per claim 68, it is disclosed by Golan of a system comprising a browser (mobile code executer) for initiating received mobile code. A sandboxed package capable of being received and initiated by the mobile code executer, the sandboxed package including a downloadable and mobile protection code for causing one or more downloadable operations to be intercepted and for processing the intercepted operations, if the downloadable attempts to initiate the operations (col. 1, lines 34-43;

col. 2, lines 12-28; col. 3, lines 45-58; col. 4, line 50 through col. 5, line 14; and col. 5, lines 60-67).

As per claim 69, Golan teaches of installing mobile protection code elements by an installer, the installer is coupled to the downloadable installer. A resource access diverter is coupled to the MPC installer for causing a downloadable to be intercepted. A resource access analyzer is coupled to the MPC installer for receiving an intercepted downloadable operation and determining a protection policy corresponding to the intercepted downloadable operation. A policy enforcer is coupled to the resource access analyzer for processing the intercepted downloadable operation (col. 6, line 30 through col. 7, line 22).

As per claim 70, Golan discloses of a resource access diverter that modifies elements of an interface usable by a downloadable to effectuate the downloadable operation (col. 6, line 30 through col. 7, line 22).

#### ***Allowable Subject Matter***

9. Claims 8-15,21-27,35-42, and 52-59 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Conclusion***

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

Brown et al, U.S. Patent 6,732,179

Zhong et al, "Security in the large: is Java's sandbox scalable?"

Rubin et al, "Mobile code security"


Schmid et al, "Protecting data from malicious software"


Corradi et al, "A flexible access control service for Java mobile code"

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Revak whose telephone number is 571-272-3794. The examiner can normally be reached on Monday-Friday, 6:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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).

CR  
  
December 6, 2004

Christopher Revak  
AU 2131  
  
12/6/04

<b>Notice of References Cited</b>	Application/Control No. 09/861,229	Applicant(s)/Patent Under Reexamination EDERY ET AL.	
	Examiner Christopher A. Revak	Art Unit 2131	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,732,179	05-2004	Brown et al.	709/229
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
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	M	US-			

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

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
/	U	Zhong et al, "Security in the large: is Java's sandbox scalable?", October 1998, Seventh IEEE Symposium on Reliable Distributed Systems, pp 1-6
/	V	Rubin et al, "Mobile code security" December 1998, IEEE Internet, pp 30-34
/	W	Schmid et al, "Protecting data from malicious software", 2002, Proceeding of the 18th Annual Computer Security Applications Conference, pp 1-10
/	X	Corradi et al, "A flexible access control service for Java mobile code", 2000, IEEE, pp 356-365

\*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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PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031  
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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

## Complete if Known

Application Number 09/861,229  
Filing Date May 17, 2001  
First Named Inventor Yigal Edery, et al.  
Group Art Unit 2152  
Examiner Name Unknown  
Attorney Docket Number 43426.00014

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## U.S. PATENT DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
um		5,077,677		John H. Murphy, et al.	12-31-1991	
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Examiner Initials *	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sub>e</sub>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				

Examiner Signature

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Date Considered

12/2/04

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Sheet 2 of 2

### Complete if Known

Application Number	09/861,229
Filing Date	May 17, 2001
First Named Inventor	Yigal Edery, et al.
Group Art Unit	2152
Examiner Name	Unknown
Attorney Docket Number	43426.00014

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### OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

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CU		JIM K. OMURA, "Novel Applications of Cryptography in Digital Communications", IEEE Communications Magazine, May, 1990; pages 21-29.	
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		Company Profile "Finjan - Safe Surfing, The Java Security Solutions Provider" Article published on the Internet by Finjan Software Ltd., October 31, 1996, 3 pages.	
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		"Java Security: Issues & Solutions" Article published on the Internet by Finjan Software Ltd., 1996, 8 pages.	
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		RON MORITZ, "Why We Shouldn't Fear Java." Java Report, February, 1997, pages 51-56.	
		Web Page Article "Frequently Asked Questions About Authenticode", Microsoft Corporation, last updated February 17, 1997, Printed December 23, 1998. URL: <a href="http://www.microsoft.com/workshop/security/authcode/signfaq.asp#9">http://www.microsoft.com/workshop/security/authcode/signfaq.asp#9</a> , pages 1-13.	
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Examiner  
Signature

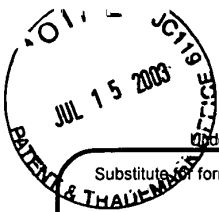
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**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet

1

of

2

**Complete if Known**

Application Number	09/861,229
Filing Date	May 17, 2001
First Named Inventor	Yigal Edery
Art Unit	2152
Examiner Name	Unknown
Attorney Docket Number	43426.00014

**U.S. PATENT DOCUMENTS**

Examiner Initials *	Cite No. <sup>1</sup>	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 <sup>2</sup> (if known)			
↑ ↓ ↑		US-5,978,484	11-02-1999	Apperson et al.	
		US- 6,425,058	07-23-2002	Arimilli et al.	
		US- 6,434,668	08-13-2002	Arimilli et al.	
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		US- 6,480,962	11-12-2002	Touboul, Shlomo	
		US- 6,519,679	02-11-2003	Devireddy et al.	
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		Country Code <sup>3</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				

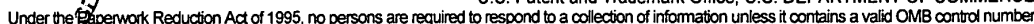
Examiner  
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12/2/04

\*EXAMINER: Initial if reference is 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](http://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.

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, 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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Approved for use through 04/30/2003. OMB 0651-0031

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

Substitute for Form 1449A/PTO

*(use as many sheets as necessary)*

Sheet	2	of	2
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**Complete if Known**

Application Number	09/861,229
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Filing Date	May 17, 2001
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First Named Inventor	Yigal Edery
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Group Art Unit	2152
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Examiner Name	Unknown
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Attorney Docket Number	43426.00014
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Examiner Initials *	Cite No. <sup>1</sup>	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 <sup>2</sup>
YR		KHARE, Rohit, "Microsoft Authenticode Analyzed", July 22, 1996, 2 pages. URL: <a href="http://www.xent.com/FoRK-archive/summer96/0338.html">http://www.xent.com/FoRK-archive/summer96/0338.html</a>	
Ar		"Release Notes for the Microsoft ActiveX Development Kit", August 13, 1996, 11 pages. URL: <a href="http://activex.adsp.or.jp/inetsdk/readme.txt">http://activex.adsp.or.jp/inetsdk/readme.txt</a>	
Ur		"Microsoft ActiveX Software Development Kit", August 12, 1996, 6 pages. URL: <a href="http://activex.adsp.or.jp/inetsdk/help/overview.htm">http://activex.adsp.or.jp/inetsdk/help/overview.htm</a>	

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**JUL 17 2003**

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Technology Center 2100

Examiner  
Signature

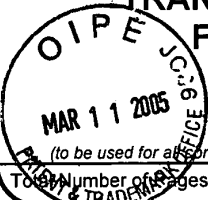
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

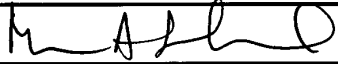
1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and 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 120 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.**

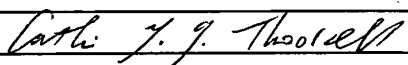
***If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.***

2131  
CFW

<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	09/861,229	
	Filing Date	May 17, 2001	
	First Named Inventor	Yigal Mordechai EDERY	
	Art Unit	2131	
	Examiner Name	Christopher A. REVAK	
Total Number of Pages in This Submission	12	Attorney Docket Number	43426.00014

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Reply [Total 10 pages] <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts / Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Return Postcard
<input checked="" type="checkbox"/> The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to <u>Deposit Account Number 05-0150</u> . I have enclosed a duplicate copy of this sheet. [Total 2 pages]		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm	Squire, Sanders & Dempsey L.L.P.		
Signature			
Printed Name	Marc A. Sockol		
Date	March 7, 2005	Reg. No.	40,823

CERTIFICATE OF TRANSMISSION/MAILING			
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Signature			
Typed or printed name	Cathi L.G. Thoorse	Date	March 7, 2005

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PATENT  
Attorney Docket No.: 43426.00014

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:  
Edery *et al.*

Examiner: Revak

Serial No.: 09/861,229

Art Unit: 2131

Filed: 5/17/01

Title: Malicious Mobile Code Runtime Monitoring System and Methods

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

**AMENDMENT AND RESPONSE**

Sir:

In response to the Office Action dated December 7, 2004, the three-month deadline for response ending on March 7, 2005, please amend the above-identified application as follows:

IN THE SPECIFICATION:

Please amend the first paragraph of the application on page 2 as follows:

“PRIORITY REFERENCE TO RELATED APPLICATIONS

This application claims benefit of and hereby incorporates by reference provisional application serial number 60/205,591, entitled “Computer Network Malicious Code Run-time Monitoring,” filed on May 17, 2000 by inventors Nimrod Itzhak Vered, et al. This application is also a Continuation-In-Part of and hereby incorporates by reference patent application serial number 09/539,667, now U.S. Patent No. 6,804,780, entitled “System and Method for Protecting a Computer and a Network From Hostile Downloadables” filed on March 30, 2000 by inventor Shlomo Touboul. This application is also a Continuation-In-Part of and hereby incorporates by reference patent application serial number 09/551,302, now U.S. Patent No. 6,480,962, entitled “System and Method for Protecting a Client During Runtime From Hostile Downloadables”, filed on April 18, 2000 by inventor Shlomo Touboul.”

IN THE CLAIMS:

Claims 1-7. Canceled.

8. (Currently amended) A processor-based method, comprising:  
receiving downloadable-information;  
determining whether the downloadable-information includes executable code; and  
causing mobile protection code to be communicated to at least one information-  
destination of the downloadable-information, if the downloadable-information is determined to  
include executable code.

~~The method of claim 1,~~ wherein the determining comprises performing one or more analyses of the downloadable-information, the analyses producing detection-indicators indicating whether a correspondence is detected between a downloadable-information characteristic and at least one respective executable code characteristic, and evaluating the detection-indicators to determine whether the downloadable-information includes executable code.

9. (Original) The method of claim 8, wherein at least one of the detection-indicators indicates a level of downloadable-information characteristic and executable code characteristic correspondence.
10. (Original) The method of claim 8, wherein the evaluating includes assigning a weighted level of importance to at least one of the indicators.
11. (Currently amended) A processor-based method, comprising:  
receiving downloadable-information;  
determining whether the downloadable-information includes executable code; and  
causing mobile protection code to be communicated to at least one information-  
destination of the downloadable-information, if the downloadable-information is determined to  
include executable code.

~~The method of claim 1~~, wherein the causing mobile protection code to be communicated comprises forming a sandboxed package including the mobile protection code and the downloadable-information, and causing the sandboxed package to be communicated to the at least one information-destination.

12. (Original) The method of claim 10, wherein the sandboxed package is formed such that the mobile protection code will be executed by the information-destination before the downloadable-information.

13. (Original) The method of claim 11, wherein the sandboxed package further includes protection policies according to which the mobile protection code is operable.

14. (Original) The method of claim 13, wherein the sandboxed package is formed for receipt by the information-destination such that the mobile protection code is received before the downloadable-information, and the downloadable information before the protection policies.

15. (Original) The method of claim 13, wherein the protection policies correspond with at least one of the information-destination and a user of the information destination.

Claims 16-20. Canceled.

21. (Currently amended) A processor-based system, comprising:  
an information monitor for receiving downloadable-information;  
a content inspection engine communicatively coupled to the information monitor for  
determining whether the downloadable-information includes executable code; and  
a protection agent engine communicatively coupled to the content inspection engine for  
causing mobile protection code ("MPC") to be communicated to at least one information-  
destination of the downloadable-information, if the downloadable-information is determined to  
include executable code.

~~The system of claim 16~~, wherein the content inspection engine comprises one or more downloadable-information analyzers for analyzing the downloadable-information, each analyzer producing therefrom a detection indicator indicating whether a downloadable-information characteristic corresponds with an executable code characteristic, and an inspection controller communicatively coupled to the analyzers for determining whether the indicators indicate that the downloadable-information includes executable code.

22. (Original) The system of claim 21, wherein at least one of the detection-indicators indicates a level of downloadable-information characteristic and executable code characteristic correspondence.
23. (Original) The system of claim 21, wherein the evaluating includes assigning a weighted level of importance to at least one of the detection-indicators.
24. (Currently amended) A processor-based system, comprising:  
an information monitor for receiving downloadable-information;  
a content inspection engine communicatively coupled to the information monitor for determining whether the downloadable-information includes executable code; and  
a protection agent engine communicatively coupled to the content inspection engine for causing mobile protection code ("MPC") to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code.

~~The system of claim 16~~, wherein the sandboxed package engine comprises an MPC generator for providing the MPC, a linking engine coupled to the MPC generator for forming a protection agent including the MPC and the downloadable-information, and a transfer engine for causing the protection agent to be communicated to the at least one information-destination.

25. (Original) The system of claim 24, wherein the protection agent engine further comprises a policy generator communicatively coupled to the linking engine for providing protection policies according to which the MPC is operable.

26. (Original) The system of claim 25, wherein the sandboxed package is formed for receipt by the information-destination such that the mobile protection code is executed before the downloadable-information.

27. (Original) The system of claim 26, wherein the protection policies correspond with policies of at least one of the information-destination and a user of the information destination.

Claims 28-34. Canceled.

35. (Currently amended) A processor-based method, comprising:  
receiving, at an information re-communicator, downloadable-information, including  
executable code; and  
causing mobile protection code to be executed by a mobile code executor at a  
downloadable-information destination such that one or more operations of the executable code at  
the destination, if attempted, will be processed by the mobile protection code.

~~The method of claim 30,~~ wherein the causing is accomplished by forming a sandboxed package including the mobile protection code and the downloadable-information, and causing the sandboxed package to be delivered to the downloadable-information destination.

36. (Original) The method of claim 35, wherein the sandboxed package further includes protection policies according to which the processing by the mobile protection code is conducted.

37. (Original) A sandboxed package formed according to the method of claim 35.

38. (Original) A sandboxed package formed according to the method of claim 36.

39. (Original) The method of claim 36, wherein the forming comprises generating the mobile protection code, generating the sandboxed package, and linking the mobile protection code, protection policies and downloadable-information.

40. (Original) The method of claim 39, wherein the generating of at least one of the mobile protection code and the protection policies is conducted in accordance with one or more destination-characteristics of the destination.

41. (Original) The method of claim 40, wherein the destination-characteristics include characteristics corresponding to at least one of a destination user, a destination device and a destination process.

42. (Original) The method of claim 35, wherein the causing the sandboxed package to be executed includes communicating the sandboxed package to a communication buffer of the information re-communicator.

Claims 43-51. Canceled.

52. (Currently amended) A processor-based system, comprising:  
receiving means for receiving, at an information re-communicator, downloadable-  
information, including executable code; and  
mobile code means communicatively coupled to the receiving means for causing mobile  
protection code to be executed by a mobile code executor at a downloadable-information  
destination such that one or more operations of the executable code at the destination, if  
attempted, will be processed by the mobile protection code.

~~The system of claim 47,~~ wherein the causing is accomplished by forming a sandboxed package including the mobile protection code and the downloadable-information, and causing the sandboxed package to be delivered to the downloadable-information destination.

53. (Original) The system of claim 52, wherein the sandboxed package further includes protection policies according to which the processing by the mobile protection code is conducted.

54. (Original) The system of claim 53, wherein the forming comprises generating the mobile protection code, generating the protection policies, and linking the mobile protection code, protection policies and downloadable-information.

55. (Original) The system of claim 54, wherein the generating of at least one of the mobile protection code and the protection policies is conducted in accordance with one or more destination-characteristics of the destination.

56. (Original) The system of claim 55, wherein the destination-characteristics include characteristics corresponding to at least one of a destination user, a destination device and a destination process.

57. (Currently amended) The system of ~~claim 46~~ claim 52, wherein the causing the sandboxed package to be executed includes communicating the sandboxed package to a communication buffer of the information re-communicator.

58. (Currently amended) The system of ~~claim 47~~ claim 57, wherein the re-communicator is at least one of a firewall and a network server.

59. (Currently amended) The system of ~~claim 47~~ claim 58, wherein executing the mobile protection code at the destination causes downloadable interfaces a resource at the destination to be modified such that at least one attempted operation of the executable code is diverted to the mobile protection code.

Claims 60-76. Canceled

REMARKS

Claims 1-76 were pending in the above-identified patent application. Claims 1-7, 16-20, 28-34, 43-51 and 60-76 were rejected. Claims 8-15, 21-27, 35-42 and 52-59 were deemed allowable if rewritten into independent form to overcome the objections. Claims 33, 34, 50, 51, 73 and 74 were objected to as containing improper use of trademarks. Claims 57-59 were objected for improper dependencies. Claims 1-28, 30-59 and 61-75 were objected to as directed to nonstatutory matter. Claims 8, 11, 21, 24, 35, 52 and 57-59 are being amended. Claims 1-7, 16-20, 28-34, 43-51 and 60-76 are being canceled. Claims 8-15, 21-27, 35-42 and 52-59 remain pending. Reconsideration is respectfully requested.

In paragraph 2, the Examiner requested correction of the priority claim to update then-pending applications as now-allowed patents. Applicant has amended the specification accordingly.

In paragraph 3, the Examiner objected to claims 33, 34, 50, 51, 73 and 74 as containing improper use of trademarks. These claims have been canceled. Accordingly, the objection is now moot.

In paragraph 4, the Examiner objected to claims 57-59 for improper dependencies. Claim 57 has been amended to depend from claim 52, claim 58 has been amended to depend from claim 57 and claim 59 has been amended to depend from claim 57. Applicant believes that the claims now depend on appropriate classes and contain no antecedent basis problems.

In paragraphs 5 and 6, the Examiner objected to claims 1-28, 30-59 and 61-75 as being directed to nonstatutory matter. Applicant is amending each of the independent claims now pending to include the language "processor-based" in the preamble. Applicant believes that the claims are directed to statutory matter.

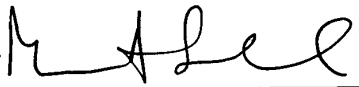
In paragraphs 7 and 8, the Examiner rejected claims 1-7, 16-20, 28-34, 43-51 and 60-76 under 35 USC § 102(e) over Golan. Applicant is canceling claims 1-7, 16-20, 28-34, 43-51 and 60-76 without prejudice. The rejection is now moot.

In paragraph 9, the Examiner indicated that claims 8-15, 21-27, 35-42 and 52-59 would be allowable if rewritten into independent form to overcome the rejections. Applicant has amended the claims to place them into independent form and has addressed each of the Examiner's objections. Applicant believes that claims 8-15, 21-27, 35-42 and 52-59 are now in condition for allowance.

If the Examiner has any questions, he is invited to contact the undersigned.

Respectfully submitted,

Dated: March 7, 2005  
Squire, Sanders & Dempsey L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
Telephone (650) 856-6500  
Facsimile (650) 843-8777

By   
Marc A. Sockol  
Attorney for Applicants  
Reg. No. 40,823

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Date: March 7, 2005 By:   
Cathi L.G. Thoorse

PaloAlto/79846.1

**PATENT APPLICATION FEE DETERMINATION RECORD**  
Effective October 1, 2000

Application or Docket Number

09/86/229

43426.00070

**CLAIMS AS FILED - PART I**

	(Column 1)	(Column 2)
TOTAL CLAIMS	76	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	76 minus 20 =	56
INDEPENDENT CLAIMS	11 minus 3 =	8
MULTIPLE DEPENDENT CLAIM PRESENT	<input type="checkbox"/>	

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

SMALL ENTITY  
TYPE ☐

OR

OTHER THAN  
SMALL ENTITY

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BASIC FEE	355.00
X\$ 9=	504.00
X40=	320.00
+135=	
TOTAL	1179.00

RATE	FEE
BASIC FEE	710.00
X\$18=	
X80=	
+270=	
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	31	Minus	**
Independent	6	Minus	***
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM	<input type="checkbox"/>		

SMALL ENTITY

OR

OTHER THAN  
SMALL ENTITY

RATE	ADDI-TIONAL FEE
X\$ 9=	
X40=	
+135=	
TOTAL	
ADDIT. FEE	

RATE	ADDI-TIONAL FEE
X\$18=	
X80=	
+270=	
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	<input type="checkbox"/>		

RATE	ADDI-TIONAL FEE
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X40=	
+135=	
TOTAL	
ADDIT. FEE	

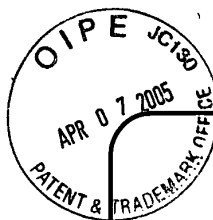
RATE	ADDI-TIONAL FEE
X\$18=	
X80=	
+270=	
TOTAL	
ADDIT. FEE	

	(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	<input type="checkbox"/>		

RATE	ADDI-TIONAL FEE
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X40=	
+135=	
TOTAL	
ADDIT. FEE	

RATE	ADDI-TIONAL FEE
X\$18=	
X80=	
+270=	
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."
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<b>TRANSMITTAL FORM</b>  <small>(to be used for all correspondence after initial filing)</small>		Application Number	09/861,229
		Filing Date	May 17, 2001
		First Named Inventor	Yigal Mordechai EDERY
		Art Unit	2131
		Examiner Name	Christopher A. REVAK
Total Number of Pages in This Submission	15	Attorney Docket Number	43426.00014

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<input type="checkbox"/> Fee Transmittal Form  <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Supplemental Amendment [Total 11 pages]  <input type="checkbox"/> After Final  <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts / Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s)  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition  <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) ____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information  <input type="checkbox"/> Status Letter  <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Return Postcard
<input checked="" type="checkbox"/> The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to <b>Deposit Account Number 05-0150</b> .		
I have enclosed a duplicate copy of this sheet. [Total 2 pages]		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm	Squire, Sanders & Dempsey L.L.P.		
Signature			
Printed Name	Marc A. Sockol		
Date	April 5, 2005	Reg. No.	40,823

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Signature			
Typed or printed name	Cathi L.G. Thoorsell	Date	April 5, 2005

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2131 *grw*

Examiner: Revak

Edery *et al.*

Sir:

1

IN THE SPECIFICATION:

On page 30, please amend the paragraph beginning on line 15 as follows:

“Finally, transfer engine 406 of ~~protection agent engine 303~~ provides for receiving and causing linking engine 405 (or other protection) results to be transferred to a destination user device/process. As depicted, transfer engine 406 is configured to receive and transfer a Downloadable, a determined non-executable or a sandboxed package. However, transfer engine 406 can also be provided in a more configurable manner, such as was already discussed for other system 400 elements. (Any one or more of system 400 elements might be configurably implemented in accordance with a particular application.) Transfer engine 406 can perform such transfer, for example, by adding the information to a server transfer queue (not shown) or utilizing another suitable method.”

IN THE CLAIMS:

Claims 1-7. Canceled.

8. (Previously presented) A processor-based method, comprising:  
receiving downloadable-information;  
determining whether the downloadable-information includes executable code; and  
causing mobile protection code to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code,  
wherein the determining comprises performing one or more analyses of the downloadable-information, the analyses producing detection-indicators indicating whether a correspondence is detected between a downloadable-information characteristic and at least one respective executable code characteristic, and evaluating the detection-indicators to determine whether the downloadable-information includes executable code.
9. (Original) The method of claim 8, wherein at least one of the detection-indicators indicates a level of downloadable-information characteristic and executable code characteristic correspondence.
10. (Original) The method of claim 8, wherein the evaluating includes assigning a weighted level of importance to at least one of the indicators.
11. (Previously presented) A processor-based method, comprising:  
receiving downloadable-information;  
determining whether the downloadable-information includes executable code; and  
causing mobile protection code to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code,

wherein the causing mobile protection code to be communicated comprises forming a sandboxed package including the mobile protection code and the downloadable-information, and causing the sandboxed package to be communicated to the at least one information-destination.

12. (Currently amended) The method of claim 11 ~~claim 10~~, wherein the sandboxed package is formed such that the mobile protection code will be executed by the information-destination before the downloadable-information.

13. (Currently amended) The method of claim 12 ~~claim 11~~, wherein the sandboxed package further includes protection policies according to which the mobile protection code is operable.

14. (Original) The method of claim 13, wherein the sandboxed package is formed for receipt by the information-destination such that the mobile protection code is received before the downloadable-information, and the downloadable information before the protection policies.

15. (Original) The method of claim 13, wherein the protection policies correspond with at least one of the information-destination and a user of the information destination.

Claims 16-20. Canceled.

21. (Currently amended) A processor-based system, comprising:  
an information monitor for receiving downloadable-information;  
a content inspection engine communicatively coupled to the information monitor for determining whether the downloadable-information includes executable code; and  
a packaging protection agent ~~protection agent~~ engine communicatively coupled to the content inspection engine for causing mobile protection code ("MPC") to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code,

wherein the content inspection engine comprises one or more downloadable-information analyzers for analyzing the downloadable-information, each analyzer producing therefrom a

detection indicator indicating whether a downloadable-information characteristic corresponds with an executable code characteristic, and an inspection controller communicatively coupled to the analyzers for determining whether the indicators indicate that the downloadable-information includes executable code.

22. (Original) The system of claim 21, wherein at least one of the detection-indicators indicates a level of downloadable-information characteristic and executable code characteristic correspondence.

23. (Original) The system of claim 21, wherein the evaluating includes assigning a weighted level of importance to at least one of the detection-indicators.

24. (Currently amended) A processor-based system, comprising:  
an information monitor for receiving downloadable-information;  
a content inspection engine communicatively coupled to the information monitor for determining whether the downloadable-information includes executable code; and  
a packaging ~~protection-agent~~ engine communicatively coupled to the content inspection engine for causing mobile protection code ("MPC") to be communicated to at least one information-destination of the downloadable-information, if the downloadable-information is determined to include executable code,  
wherein the packaging ~~sandboxed package~~ engine comprises an MPC generator for providing the MPC, a linking engine coupled to the MPC generator for forming a sandbox package ~~protection-agent~~ including the MPC and the downloadable-information, and a transfer engine for causing the sandbox package ~~protection-agent~~ to be communicated to the at least one information-destination.

25. (Currently amended) The system of claim 24, wherein the packaging ~~protection-agent~~ engine further comprises a policy generator communicatively coupled to the linking engine for providing protection policies according to which the MPC is operable.

26. (Original) The system of claim 25, wherein the sandboxed package is formed for receipt by the information-destination such that the mobile protection code is executed before the downloadable-information.

27. (Original) The system of claim 26, wherein the protection policies correspond with policies of at least one of the information-destination and a user of the information destination.

Claims 28-34. Canceled.

35. (Previously presented) A processor-based method, comprising:  
receiving, at an information re-communicator, downloadable-information, including executable code; and  
causing mobile protection code to be executed by a mobile code executor at a downloadable-information destination such that one or more operations of the executable code at the destination, if attempted, will be processed by the mobile protection code,  
wherein the causing is accomplished by forming a sandboxed package including the mobile protection code and the downloadable-information, and causing the sandboxed package to be delivered to the downloadable-information destination.

36. (Original) The method of claim 35, wherein the sandboxed package further includes protection policies according to which the processing by the mobile protection code is conducted.

37. (Original) A sandboxed package formed according to the method of claim 35.

38. (Original) A sandboxed package formed according to the method of claim 36.

39. (Original) The method of claim 36, wherein the forming comprises generating the mobile protection code, generating the sandboxed package, and linking the mobile protection code, protection policies and downloadable-information.

40. (Original) The method of claim 39, wherein the generating of at least one of the mobile protection code and the protection policies is conducted in accordance with one or more destination-characteristics of the destination.

41. (Original) The method of claim 40, wherein the destination-characteristics include characteristics corresponding to at least one of a destination user, a destination device and a destination process.

42. (Original) The method of claim 35, wherein the causing the sandboxed package to be executed includes communicating the sandboxed package to a communication buffer of the information re-communicator.

Claims 43-51. Canceled.

52. (Previously presented) A processor-based system, comprising:  
receiving means for receiving, at an information re-communicator, downloadable-information, including executable code; and  
mobile code means communicatively coupled to the receiving means for causing mobile protection code to be executed by a mobile code executor at a downloadable-information destination such that one or more operations of the executable code at the destination, if attempted, will be processed by the mobile protection code,  
wherein the causing is accomplished by forming a sandboxed package including the mobile protection code and the downloadable-information, and causing the sandboxed package to be delivered to the downloadable-information destination.

53. (Original) The system of claim 52, wherein the sandboxed package further includes protection policies according to which the processing by the mobile protection code is conducted.

54. (Original) The system of claim 53, wherein the forming comprises generating the mobile protection code, generating the protection policies, and linking the mobile protection code, protection policies and downloadable-information.

55. (Original) The system of claim 54, wherein the generating of at least one of the mobile protection code and the protection policies is conducted in accordance with one or more destination-characteristics of the destination.

56. (Original) The system of claim 55, wherein the destination-characteristics include characteristics corresponding to at least one of a destination user, a destination device and a destination process.

57. (Previously presented) The system of claim 52, wherein the causing the sandboxed package to be executed includes communicating the sandboxed package to a communication buffer of the information re-communicator.

58. (Previously presented) The system of claim 57, wherein the re-communicator is at least one of a firewall and a network server.

59. (Previously presented) The system of claim 58, wherein executing the mobile protection code at the destination causes downloadable interfaces a resource at the destination to be modified such that at least one attempted operation of the executable code is diverted to the mobile protection code.

Claims 60-76. Canceled

Please add the following new claims:

77. (New) The method of claim 35, wherein the re-communicator is at least one of a firewall and a network server.

78. (New) The method of claim 35, wherein the sandboxed package has a same file type as the downloadable-information, thereby causing the mobile code executor to be unaware that the protected package is not a normal downloadable.

79. (New) The method of claim 78, wherein the sandboxed package is formed using concatenation of a mobile protection code, a policy, and a downloadable.

80. (New) The method of claim 35, wherein executing the mobile protection code at the destination causes downloadable interfaces to resources at the destination to be modified such that at least one attempted operation of the executable code is diverted to the mobile protection code.

REMARKS

Claims 8-15, 21-27, 35-42 and 52-59 were pending and deemed allowable. Claims 12, 13, 21, 24 and 25 are being amended. Claims 77-80 are being added. Claims 8-15, 21-27, 35-42, 52-59 and 77-80 are now pending. Reconsideration is respectfully requested.

The specification on page 30 is being amended to correct a statement clearly incorrect. The transfer engine 406 is part of the protection engine 400 of Fig. 4 (and possibly part of the protection engine 310 of Fig. 3). However, the transfer engine 406 is not a part of the information being transferred, e.g., the sandbox package 340 and/or the not executable potential Downloadable 331, as referenced by element 303 (see Fig. 3 and the discussion of Fig. 3 in the specification at pages 19-24).

Claims 12 and 13 are being amended to correct dependencies.

Claims 21, 24 and 25 are being amended to correct element names. In claims 21 and 24, “protection agent engine” is being amended to more properly recite “packaging engine”, as identified in the specification (see for example the paragraph on page 26 beginning with “Packaging engine 403” and discussing Fig. 4). In claims 24 and 25, “sandbox package engine” is being amended to more properly recite the “packaging engine” and to provide proper antecedent basis (again, see for example the paragraph on page 26 beginning with “Packaging engine 403” and discussing Fig. 4). In claim 24, “protection agent” is being amended to more properly recite “sandbox package” as identified in the specification (see for example the paragraph on page 28 beginning with “Linking agent 405” and discussing Fig. 4) and to provide proper antecedent basis (see for example claim 26).

Since claims 77-80 depend directly or indirectly from claim 35, previously deemed allowable, applicant believes claims 77-80 also to be allowable. Applicant respectfully submits that claims 77-80 do not add new matter (see for example original claims 43-46).

Applicant believes the claims still to be allowable. If the Examiner has any questions, he is invited to contact the undersigned.

Respectfully submitted,

Dated: April 5, 2005  
Squire, Sanders & Dempsey L.L.P.  
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By M A Sockol  
Marc A. Sockol  
Attorney for Applicants  
Reg. No. 40,823

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PaloAlto/81047

**PATENT APPLICATION FEE DETERMINATION RECORD**  
Effective October 1, 2000

Application or Docket Number

09/86/229

47426.00872

**CLAIMS AS FILED - PART I**

	(Column 1)	(Column 2)
TOTAL CLAIMS	76	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	76 minus 20 =	56
INDEPENDENT CLAIMS	11 minus 3 =	8
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

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

**CLAIMS AS AMENDED - PART II**

	(Column 1)	(Column 2)	(Column 3)
CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	31	Minus	76 = 8
Independent	6	Minus	11 = 8
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

SMALL ENTITY TYPE ☐ OR OTHER THAN SMALL ENTITY

RATE	FEE	OR	RATE	FEE
BASIC FEE	355.00	OR	BASIC FEE	710.00
X\$ 9=	54.00	OR	X\$18=	
X40=	390.00	OR	X80=	
+135=		OR	+270=	
TOTAL	1179.00	OR	TOTAL	

SMALL ENTITY OR OTHER THAN SMALL ENTITY

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. FEE	

4/7/05

	(Column 1)	(Column 2)	(Column 3)
CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total	35	Minus	76 = 8
Independent	6	Minus	11 = 8
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. FEE	

	(Column 1)	(Column 2)	(Column 3)
CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total		Minus	=
Independent		Minus	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=		OR	X\$18=	
X40=		OR	X80=	
+135=		OR	+270=	
TOTAL		OR	TOTAL	
ADDIT. FEE		OR	ADDIT. FEE	

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 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."  
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7	BRS	L7	166911	(code or executable or download\$5 or applet or java or javascript or script or activex)with(id or identifier or indicat\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2005/06/08 18:15
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9	BRS	L9	23767	(profile or sandbox)with(mpc or secure or environment or shell or protect\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2005/06/08 18:17

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10	BRS	L10	8	6 same 9	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	2005/06/08 18:17



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EXAMINER

REVAK, CHRISTOPHER A

ART UNIT PAPER NUMBER

2131

DATE MAILED: 06/16/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421

TITLE OF INVENTION: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$1000	09/16/2005

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 REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421

**TITLE OF INVENTION:** MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$300	\$1000	09/16/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
REVAK, CHRISTOPHER A	2131	713-200000

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☐ "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.**

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

## **4b. Payment of Fee(s):**

- ☐ A check in the amount of the fee(s) is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized by charge the required fee(s), 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).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above.  
 NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_

Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_

Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.**

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# UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421
30256	7590	06/16/2005		
SQUIRE, SANDERS & DEMPSEY L.L.P. 600 HANSEN WAY PALO ALTO, CA 94304-1043				
EXAMINER REVAK, CHRISTOPHER A				
ART UNIT		PAPER NUMBER		
2131				

DATE MAILED: 06/16/2005

## 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 843 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 843 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 (703) 305-8283.

**Notice of Allowability**

Application No.

09/861,229

Examiner

Christopher A. Revak

Applicant(s)

EDERY ET AL.

Art Unit

2131

**-- 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 filed on April 7, 2005.
2. ☒ The allowed claim(s) is/are 8-15, 21-27, 35-42, 52-59 and 77-80.
3. ☒ The drawings filed on September 18, 2001 are accepted by the Examiner.
4. ☐ 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.**

5. ☐ 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.
  6. ☐ 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).
7. ☐ 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. <input type="checkbox"/> Notice of References Cited (PTO-892)  | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)           |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input type="checkbox"/> Examiner's Amendment/Comment                              |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material          | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance  |
|   | 9. <input type="checkbox"/> Other _____   |

*CS*  
*6/9/05*

## NOTICE OF ALLOWANCE

### *Allowable Subject Matter*

1. The following is an examiner's statement of reasons for allowance:

As per claim 8, it was not found to be taught in the prior art of performing an analysis on downloadable information, the analysis produces detection indicators indicating whether there is a correspondence between a downloadable information characteristic and a respective executable code characteristic and evaluating the detection indicators to determine whether the downloadable information includes executable code.

As per claim 11, it was not found to be taught in the prior art of causing mobile protection code to be communicated to an information destination if the downloadable information is determined to include executable code wherein the causing mobile protection code to be communicated comprises forming a sandboxed package including the mobile protection code and the downloadable information and the sandboxed package is then communicated to an information destination.

As per claim 21, it was not found to be taught in the prior art of a content inspection engine that comprises downloadable information analyzers for analyzing downloadable information, each analyzer produces a detection indicator indicating whether a downloadable information characteristic corresponds with an executable code characteristic and an inspection controller couple to the analyzer for determining

whether the indicators include that the downloadable information includes executable code.

As per claim 24, it was not found to be taught in the prior art of a packaging engine comprises a mobile protection code generator for providing the mobile protection code, a linking engine couple to the mobile protection code generator for forming a sandbox package including the mobile protection code and downloadable information, and a transfer engine for causing the sandbox package to be communicated to an information destination.

As per claims 35 and 52, it was not found to be taught in the prior art of causing mobile protection code to be executed by a mobile code executor at a downloadable information destination in that the operations of executable code as a destination, if attempted, will be processed by the mobile protection code and forming a sandboxed package including mobile protection code and downloadable information and causing the sandboxed package to be delivered to a downloadable information destination.

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

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Revak whose telephone number is 571-272-3794. The examiner can normally be reached on Monday-Friday, 6:30am-4:00pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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).

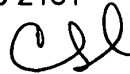
Christopher Revak


Application/Control Number: 09/861,229  
Art Unit: 2131

Page 5

CR  
  
June 8, 2005



AU 2131

  
6/8/05

<b>Issue Classification</b> 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	09/861,229	EDERY ET AL.	
	Examiner	Art Unit	
	Christopher A. Revak	2131	

ISSUE CLASSIFICATION									
ORIGINAL					CROSS REFERENCE(S)				
CLASS		SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)			
713		200							
INTERNATIONAL CLASSIFICATION									
G	0	6	F	11/30					
				/					
				/					
				/					
				/					

(Assistant Examiner) (Date)		Christopher Revak 6/9/05  (Primary Examiner) (Date)		Total Claims Allowed: 27	
 (Legal Instruments Examiner) (Date)				O.G. Print Claim(s) 1	O.G. Print Fig. 4

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant										<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		31		61		91		121		151		181		
	2		32		62		92		122		152		182		
	3		33		63		93		123		153		183		
	4		34		64		94		124		154		184		
	5	16	35		65		95		125		155		185		
	6	17	36		66		96		126		156		186		
	7	22	37		67		97		127		157		187		
1	8	18	38		68		98		128		158		188		
2	9	19	39		69		99		129		159		189		
3	10	20	40		70		100		130		160		190		
4	11	21	41		71		101		131		161		191		
5	12	23	42		72		102		132		162		192		
6	13		43		73		103		133		163		193		
7	14		44		74		104		134		164		194		
8	15		45		75		105		135		165		195		
	16		46		76		106		136		166		196		
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	18		48	25	78		108		138		168		198		
	19		49	26	79		109		139		169		199		
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9	21		51		81		111		141		171		201		
10	22	28	52		82		112		142		172		202		
11	23	29	53		83		113		143		173		203		
12	24	30	54		84		114		144		174		204		
13	25	31	55		85		115		145		175		205		
14	26	32	56		86		116		146		176		206		
15	27	33	57		87		117		147		177		207		
	28	34	58		88		118		148		178		208		
	29	35	59		89		119		149		179		209		
	30		60		90		120		150		180		210		

**Search Notes**

Application/Control No.

09/861,229

Examiner

Christopher A. Revak

Applicant(s)/Patent under  
Reexamination

EDERY ET AL.

Art Unit

2131

**SEARCHED**

Class	Subclass	Date	Examiner
713	150,168, 175,176, 200,201	6/8/2005	CR
709	223-229	6/8/2005	CR
717	120,124	6/8/2005	CR
717	126,127	6/8/2005	CR
717	130,131	6/8/2005	CR
717	134,135	6/8/2005	CR

**INTERFERENCE SEARCHED**

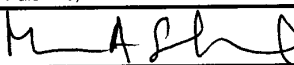
Class	Subclass	Date	Examiner
709	223-229	6/8/2005	CR
717	120,124	6/8/2005	CR
717	130,131	6/8/2005	CR
713/150,168,175,176, 200,201		6/8/2005	CR

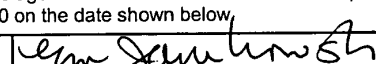
**SEARCH NOTES  
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
PALM Inventor Name Search	6/9/2005	CR
BRS Text Search USPAT, DERWENT, JPO, EPO, IBM TDB, US PGPUB, USOCR	6/8/2005	CR
DIALOG Text Search COMPSCI, ELECTRON, SOFTWARE	6/8/2005	CR
Matt Smithers class 713	6/8/2005	CR

<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing) JUN 23 2005 P.O. BOX 1450 ALEXANDRIA, VA 22313-1450	Application Number	09/861,229	
	Filing Date	May 17, 2001	
	First Named Inventor	Yigal Mordechai EDERY	
	Art Unit	2131	
	Examiner Name	Christopher A. REVAK	
Total Number of Pages in This Submission	14	Attorney Docket Number	43426.00014

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form  <input type="checkbox"/> Fee Attached  <input type="checkbox"/> Amendment / Reply  <input type="checkbox"/> After Final  <input type="checkbox"/> Affidavits/declaration(s)  <input type="checkbox"/> Extension of Time Request  <input type="checkbox"/> Express Abandonment Request  <input type="checkbox"/> Information Disclosure Statement  <input type="checkbox"/> Certified Copy of Priority Document(s)  <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application  <input type="checkbox"/> Reply to Missing Parts under 37 CFR1.52 or 1.53	<input type="checkbox"/> Drawing(s)  <input type="checkbox"/> Licensing-related Papers  <input type="checkbox"/> Petition  <input type="checkbox"/> Petition to Convert to a Provisional Application  <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address  <input type="checkbox"/> Terminal Disclaimer  <input type="checkbox"/> Request for Refund  <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input checked="" type="checkbox"/> Assent of Assignee To Correction And/Or Addition of Inventor(s) (2 pgs) <input checked="" type="checkbox"/> Inventor Statement Regarding Inventorship Error (1 page) <input checked="" type="checkbox"/> Statement Under 37 CFR 3.73 (b) (1 pg) <input checked="" type="checkbox"/> Declaration For Utility Or Design Patent Application (37 CFR 1.63) (5 pages) <input checked="" type="checkbox"/> Copy of Assignment of Shlomo Touboul (2 pages) <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Return Receipt Postcard
<b>Remarks</b>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm	Squire, Sanders & Dempsey, L.L.P. 600 Hansen Way Palo Alto, CA 94304-1043		
Signature			
Printed Name	Marc A. Sockol		
Date	June 21, 2005	Reg. No.	40,823

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Signature			
Typed or printed name	Eileen M. Janikowski	Date	June 21, 2005

This collection of information is required by 37 CFR 1.5. 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 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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Effective on 12/08/2004.

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

# **FEE TRANSMITTAL for FY 2005**

☐ Applicant claims small entity status. See 37 CFR 1.27

**TOTAL AMOUNT OF PAYMENT (\$)** 130.00

## **Complete if Known**

Application Number 09/861,229  
Filing Date May 17, 2001  
First Named Inventor Yigal Mordechai EDERY  
Examiner Name Christopher A. REVAK  
Art Unit 2131  
Attorney Docket No. 43426.00014

## **METHOD OF PAYMENT (check all that apply)**

- ☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify) : \_\_\_\_\_  
☒ Deposit Account Deposit Account Number: 05-0150 Deposit Account Name: Squire, Sanders & Dempsey, L.L.P.  
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)  
☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee  
☒ Charge any additional fee(s) or underpayments of fee(s) ☒ Credit any overpayments  
Under 37 CFR 1.16 and 1.17

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

## **FEE CALCULATION**

### **1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

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

### **2. EXCESS CLAIM FEES**

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

### **3. APPLICATION SIZE FEE**

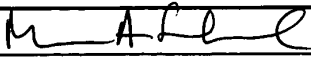
If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

**Total Sheets** **Extra Sheets** **Number of each additional 50 or fraction thereof** **Fee (\$)** **Fee Paid (\$)**  
\_\_\_\_\_ - 100 = \_\_\_\_\_ / 50 = \_\_\_\_\_ (round up to a whole number) x \_\_\_\_\_ = \_\_\_\_\_

### **4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount)  
Other (e.g., late filing surcharge): Request to Correct Inventorship **130.00**

## **SUBMITTED BY**

Signature		Registration No. (Attorney/Agent)	40,823	Telephone	(650) 856-6500
Name (Print/Type)	Marc A. Sockol	Date	June 21, 2005		

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**



In re Application of:

Examiner: Christopher A. REVAK

Yigal Mordechai EDERY, et al.

Serial No.: 09/861,229

Art Unit: 2131

Filed: May 17, 2001

Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

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

**REQUEST TO CORRECT INVENTORSHIP**

Sir:

Please amend the inventorship to add Shlomo Touboul, Pardesia Israel, citizen of Israel as an inventor.

Respectfully Submitted,

Dated: June 21, 2005

SQUIRE, SANDERS & DEMPSEY L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
650-856-6500

Marc A. Sockol  
Attorney for Applicants  
Reg. No. 40,823

**CERTIFICATE OF MAILING**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

Date: June 21, 2005

By:

Eileen M. Janikowski

06/24/2005 CCHAU1 00000059 050150 09861229

01 FC:1464 130.00 DA



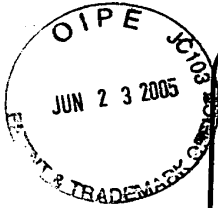
43426.00014  
Application No. 09/861,229

**INVENTOR STATEMENT REGARDING INVENTORSHIP ERROR**

The error in inventorship occurred inadvertently. There was no deceptive intention on my part. Therefore, I would like my name to be added to application no. 09/861,229..

Date: March 6, 2005

  
\_\_\_\_\_  
Shlomo Touboul



**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      43426.00014

First Named Inventor      Yigal EDERY

COMPLETE IF KNOWN

Application Number      09/861,229

Filing Date      May 17, 2001

Art Unit      2152

Examiner Name      Unknown

**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:

**MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS**

the specification of which (Title of the Invention)

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) **5/17/2001** as United States Application Number or PCT International

Application Number **09/861,229** 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 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
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

[Page 1 of 3]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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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Approved for use through 07/31/2006, OMB 0651-0032  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

## DECLARATION — Utility or Design Patent Application

Direct all correspondence to:		<input checked="" type="checkbox"/> Customer Number		30258		OR		<input type="checkbox"/> Correspondence address below	
Name									
Address									
City				State			ZIP		
Country				Telephone			Fax		
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:				<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Yigal Mordechai			Family Name or Surname		
				EDERY					
Inventor's Signature							Date		
							17/4/2005		
Residence: City				State		Country		Citizenship	
Pardesia				N/A		Israel		Israel	
Mailing Address									
Hashikma 11, POB 1115									
City				State		Zip		Country	
Pardesia				N/A		42815		Israel	
NAME OF SECOND INVENTOR:				<input type="checkbox"/> A petition has been filed for this unsigned inventor					
Given Name (first and middle (if any))				Nimrod Itzhak			Family Name or Surname		
				VERED					
Inventor's Signature							Date		
Residence: City				State		Country		Citizenship	
Goosh Tel-Mond				N/A		Israel		Israel	
Mailing Address									
Moshav Mismaret #81									
City				State		Zip		Country	
Goosh Tel-Mond				N/A		40695		Israel	
<input checked="" type="checkbox"/> Additional inventors or a legal representative are being named on the 1 supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.									

[Page 2 of 3]

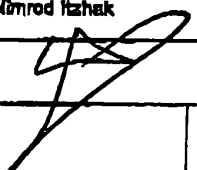
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PTO/SB/01 (09-08)

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

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**DECLARATION — Utility or Design Patent Application**

Direct all correspondence to: <input checked="" type="checkbox"/> Customer Number <b>30256</b> <input type="checkbox"/> OR <input type="checkbox"/> Correspondence address below			
Name			
Address			
City	State	ZIP	
Country	Telephone	Fax	
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:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any)) <b>Yigal Mordechai</b>		Family Name or Surname <b>EDERY</b>	
Inventor's Signature		Date	
Residence: City <b>Pardesia</b>	State <b>N/A</b>	Country <b>Israel</b>	Citizenship <b>Israel</b>
Mailing Address <b>Hashikma 11, POB 1115</b>			
City <b>Pardesia</b>	State <b>N/A</b>	Zip <b>42815</b>	Country <b>Israel</b>
NAME OF SECOND INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any)) <b>Nimrod Itzhak</b>		Family Name or Surname <b>VERED</b>	
Inventor's Signature 		Date <b>18/5/05</b>	
Residence: City <b>Gosh Tel-Mond</b>	State <b>N/A</b>	Country <b>Israel</b>	Citizenship <b>Israel</b>
Mailing Address <b>Moshav Mismaret #81</b>			
City <b>Gosh Tel-Mond</b>	State <b>N/A</b>	Zip <b>40895</b>	Country <b>Israel</b>
<input checked="" type="checkbox"/> Additional inventors or a legal representative are being named on the 1 supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.			

(Page 2 of 3)

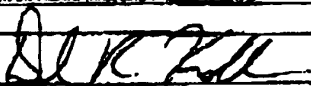

TOTAL P.02

PTO/SB/02A (05-04)

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

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<b>DECLARATION</b>	<b>ADDITIONAL INVENTOR(S) Supplemental Sheet</b>	Page 3 of 3
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Name of Additional Inventor, if any				<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle if any)			Family Name or Surname		
David S.			KROLL		
Inventor's Signature				Date May 8, 2005	
Residence: City	San Jose	State	CA	Country	USA
Mailing Address		4050 Kingbrook Drive			
Mailing Address					
City	San Jose	State	CA	Zip	95134
Country		USA			
Citizenship USA					
Name of Additional Inventor, if any				<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle if any)			Family Name or Surname		
Shlomo			TOUIGOL		
Inventor's Signature				Date MARCH 6, 2005	
Residence: City	Kefar-Haim	State	N/A	Country	Israel
Mailing Address					
Mailing Address					
City	Kefar-Haim	State	N/A	Zip	43945
Country		Israel			
Name of Additional Inventor, if any				<input type="checkbox"/> 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	
Mailing Address					
Mailing Address					
City		State		Zip	
Country					

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.03. 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 21 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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0014887492036 P.02

TO

03-MAY-2005 11:33 FROM FINJIN SOFTWARE

May. 18 2005 03:54PM P2




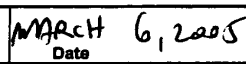
FAX NO. :

FROM :

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**DECLARATION****ADDITIONAL INVENTOR(S)  
Supplemental Sheet**

Page 3 of 3

<b>Name of Additional Inventor, if any</b>				<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))				Family Name or Surname	
David R.				KROLL	
Inventor's Signature 				Date 	
Residence: City	San Jose	State	CA	Country	USA
Citizenship		USA			
Mailing Address 4856 Kingbrook Drive					
Mailing Address					
City	San Jose	State	CA	ZIP	95124
Country		USA			
<b>Name of Additional Inventor, if any</b>				<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any))				Family Name or Surname	
Shlomo				TOUBOUL	
Inventor's Signature 				Date 	
Residence: City	Kefar-Haim	State	N/A	Country	Israel
Citizenship		Israel			
Mailing Address					
Mailing Address					
City	Kefar-Haim	State	N/A	Zip	42945
Country		Israel			
<b>Name of Additional Inventor, if any</b>				<input type="checkbox"/> 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					
Mailing Address					
City		State		Zip	
Country					

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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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Practitioner's Docket No. 43426.00014

**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Yigal Edery

Application No.: 09,861,229 Group No.: 2131

Filed: May 17, 2001

Examiner: Christopher A. Revak

For: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

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

**ASSENT OF ASSIGNEE TO CORRECTION  
AND/OR ADDITION OF INVENTOR(S)**

Finjan Software, Ltd.

(type or print name of assignee)  
Citco Building, Giborai Israel Street

Address  
South Netanya, Israel 42504

**Assignment**☒ recorded on March 14, 2002Reel 012748Frame 0843☐ recorded herewith☐ A separate ☐ "ASSIGNMENT" (DOCUMENT) COVER SHEET is attached.

or

☐ FORM PTO 1595 is attached.

Assignee hereby assents to the correction of inventorship filed

☒ herewith.☐ on \_\_\_\_\_**CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. § 1.8(a))**

I hereby certify that this correspondence is, on the date shown below, being:

**MAILING**

☒ deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450

**FACSIMILE**☐ transmitted by facsimile to the Patent and Trademark Office.Date: June 21, 2005

Signature

Marc A. Sockol, Reg. No. 40,823

(type or print name of person certifying)

(Assent of Assignee to Correction and/or Addition of Inventor(s) [9-23]—page 1 of 2)

**ASSIGNEE STATEMENT**

A "STATEMENT UNDER 37 C.F.R. § 3.73(b)" is attached.

  
\_\_\_\_\_  
Signature

Shlomo Touboul, President and CEO

\_\_\_\_\_  
(type or print name and title of person authorized to sign  
on behalf of assignee)

(Assent of Assignee to Correction and/or Addition of Inventor(s) [9-23]—page 2 of 2)



PTO/SB/96 (09-04)

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

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**STATEMENT UNDER 37 CFR 3.73(b)**Applicant/Patent Owner: Finjan Software, Ltd.Application No./Patent No.: 09/861,229Filed/Issue Date: May 17, 2001Entitled: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODSFinjan Software, Ltd., 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 012748, Frame 0843, 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 shown below:

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.

- ☐ Copies of assignments or other documents in the chain of title are attached.

[NOTE: A separate copy (i.e., a true copy of the original document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded 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.

March 6, 2005

Signature

Shlomo Touboul

Printed or Typed Name

President and CEO

Title

Date

011-972-8-931-5207

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.

# ASSIGNMENT

(1-8) *Insert Name(s) of Inventor(s)*

(1) Shlomo TOUBOUL (2) \_\_\_\_\_  
 (3) \_\_\_\_\_ (4) \_\_\_\_\_  
 (5) \_\_\_\_\_ (6) \_\_\_\_\_  
 (7) \_\_\_\_\_ (8) \_\_\_\_\_

For good and valuable consideration receipt of which is hereby acknowledged, the undersigned agree(s) to assign, and hereby do(es) assign, transfer and set over to:

(9) *Insert name of Assignee* (9) Finjan Software, Ltd.  
 (10) *Insert state of incorporation of Assignee* (10) Israel  
 (11) *Insert address of Assignee* (11) of Citco Building, Giborai Israel Street, South Netanya 42504, Israel  
 (hereinafter designated as the Assignee) the entire worldwide right, title, interest, and patent applications and patents for every country, including divisions, reissues, continuations and all other extensions, rights and priorities in the invention known as and subject matter contained in  
 (12) *Insert Identification of Invention, such as Title, Case Number or Foreign Application Number* (12) MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS  
 (Case No. 43426.00014, Serial No. 09/861,229) for which the undersigned has (have) executed an application for patent in United States of America  
 (13) *Insert Date of Signing of Application* (13) on March 6, 2005

1) The undersigned agree(s) to execute all papers necessary in connection with the application and any continuing or division applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

5) The undersigned hereby authorize(s) and request(s) the Commissioner for Patents and the duly constituted authorities of foreign countries to issue any and all Letters Patents resulting from said application or any division or divisions or continuing or reissue applications thereof to the said Assignee, its successors and assigns, as Assignee of the entire right, title and interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed and will not execute, any agreement in conflict herewith.

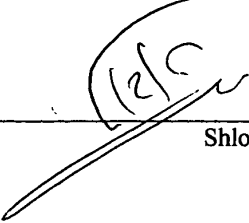
6) *The undersigned hereby grant(s)*


**Marc A. Sockol, Reg. No. 40,823; Vidya R. Bhakar, Reg. No. 42,323; Cameron K. Kerrigan, Reg. No. 44,826; David B. Abel, Reg. No. 32,394; Nathan Lane III, Reg. No. 43,738; Michael A. Lechter, Reg. No. 27,350; David E. Rogers, Reg. No. 38,287; William R. Bachand, Reg. No. 34,980; Aaron Wininger, Reg. No. 45,229; Paul J. Meyer 47,791; Douglas H. Goldhush, Reg. No.**

**33,125; Kevin F. Turner, Reg. No. 43,437; Charles E. Runyan, Reg. No. 43,066; Allen J. Moss, Reg. No. 38,567; Sung I. Oh, Reg. No. 45,583; Zhaoyang Li, Reg. No. 46,872; Brian S. Boyer, Reg. No. 52,643; Mark Lupkowski, Reg. No. 49,010; William F. Nixon, Reg. No. 44,262; and Donnie L. Kidd, Reg. No. 50,285.**

*the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.*

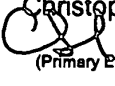

Date March 6, 2005

  
\_\_\_\_\_  
Shlomo TOUBOUL

<b>Issue Classification</b> 	Application/Control No.	Applicant(s)/Patent under Reexamination	
	09/861,229	EDERY ET AL.	
	Examiner	Art Unit	
	Christopher A. Revak	2131	

ISSUE CLASSIFICATION									
ORIGINAL					CROSS REFERENCE(S)				
CLASS		SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)			
713		200							
INTERNATIONAL CLASSIFICATION									
G	0	6	F	11/30					
				/					
				/					
				/					
				/					

(Assistant Examiner) (Date)		Christopher Revak 6/9/05  (Primary Examiner)	Total Claims Allowed: 27 	
Brenda Harrison (Legal Instruments Examiner) (Date)			O.G. Print Claim(s) 1	O.G. Print Fig. 4

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant				<input type="checkbox"/> CPA				<input type="checkbox"/> T.D.				<input type="checkbox"/> R.1.47			
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
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	5		16 35		65		95		125		155				185
	6		17 36		66		96		126		156				186
	7		22 37		67		97		127		157				187
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14	26		32	56		86		116		146		176			206
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	28		34	58		88		118		148		178			208
	29		35	59		89		119		149		179			209
	30			60		90		120		150		180			210

## 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**  
**(703) 746-4000**

or **Fax**

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)

30256 7590 06/16/2005

**SQUIRE, SANDERS & DEMPSEY L.L.P**  
**600 HANSEN WAY**  
**PALO ALTO, CA 94304-1043**

08/05/2005 HDESTA2 00000116 050150 09861229

01 FC:1501 1400.00 DA  
 02 FC:1504 300.00 DA

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 (703) 746-4000, on the date indicated below.

**Eileen M. Janikowski** (Depositor's name)  
*Eileen M. Janikowski* (Signature)  
**August 2, 2005** (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421

TITLE OF INVENTION: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	<del>YES</del> NO	<del>\$700</del> \$1,400	\$300	<del>\$1000</del> \$1,700	09/16/2005
EXAMINER	ART UNIT	CLASS-SUBCLASS			
REVAK, CHRISTOPHER A	2131	713-200000			

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.

~~Squire, Sanders &~~  
~~Dempsey, L.L.P.~~

## 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

FINJAN SOFTWARE, LTD.

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

SOUTH NETANYA, ISRAEL

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 enclosed:

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

4b. Payment of Fee(s):

- ☐ A check in the amount of the fee(s) is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☒ The Director is hereby authorized to charge the required fee(s), or credit any overpayment, to Deposit Account Number 05-0130 (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).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. 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

*Marc A. Sockol*

Date

August 2, 2005

Typed or printed name

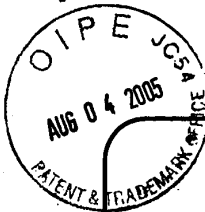
Marc A. Sockol

Registration No.

40,823

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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<b>TRANSMITTAL FORM</b>  <small>(to be used for all correspondence after initial filing)</small>	Application Number	09/861,229	
	Filing Date	May 17, 2001	
	First Named Inventor	Yigal Edery	
	Art Unit	2131	
	Examiner Name	Christopher A. Revak	
Total Number of Pages in This Submission	5	Attorney Docket Number	43426.00014

ENCLOSURES (check all that apply)		
<input type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Return Postcard <input type="checkbox"/> Amendment / Response <input type="checkbox"/> Amendment After Final <input type="checkbox"/> Declaration of Inventor(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Request for Continued Examination <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> PTO SB/08a <input type="checkbox"/> PTO SB/08b <input checked="" type="checkbox"/> Issue Fee Transmittal (PTO-85b) (in duplicate) <input type="checkbox"/> New Power of Attorney, Revocation of Previous Powers, Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> Power of Attorney <input type="checkbox"/> Affidavit	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Status Request <input checked="" type="checkbox"/> The Director is authorized to charge any required fees or credit any overpayment to Deposit Acct. No. 05-0150. A duplicate of this sheet is enclosed for this purpose. <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Notification of Loss of Entitlement To Small Entity Status (37 C.F.R. §1.27(g)(2))
<b>Remarks</b>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm	Squire, Sanders & Dempsey L.L.P. 600 Hansen Way, Palo Alto, CA 94304-1043		
Signature			
Printed Name	Marc A. Sockol		
Date	August 2, 2005	Reg. No.	40,823

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Signature			
Typed or printed name	Eileen M. Janikowski	Date	August 2, 2005

This collection of information is required by 37 CFR 1.5. 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 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.



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Application of:

Examiner: Christopher A. Revak

Yigal Edery, et al.

Serial No.: 09/861,229

Art Unit: 2131

Filed: May 17, 2001

Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

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

**NOTIFICATION OF LOSS OF ENTITLEMENT TO SMALL ENTITY STATUS  
(37 C.F.R. § 1.27(g)(2))**

Sir:

Applicant asserted small entity status in this application on May 17, 2001 via:

- ☒ payment of the basic ☒ filing ☐ national fee as a small entity (37 C.F.R. § 1.27(c(3))).  
☐ submission of a written assertion of small entity status (37 C.F.R. § 1.27(c(1))).

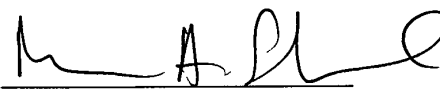
Applicant hereby notifies the Office, in accordance with the requirements of 37 C.F.R. § 1.27(g)(2), that it no longer has status as a small entity.

The undersigned authorizes any fees which may be required, or credit any overpayment to Deposit Account No. 05-0150. Should the Examiner have any questions regarding this communication, the Examiner is invited to contact the undersigned at the telephone number shown below.

Date: August 2, 2005

Respectfully submitted,

SQUIRE, SANDERS & DEMPSEY L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
Telephone (650) 856-6500  
Facsimile (650) 843-8777

  
Marc A. Sockol  
Attorney for Applicant  
Reg. No. 40,823

**CERTIFICATE OF MAILING**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

Date: August 2, 2005

By: 

Eileen M. Janikowski



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421
30256	7590	08/15/2005	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P			REVAK, CHRISTOPHER A	
600 HANSEN WAY			ART UNIT	
PALO ALTO, CA 94304-1043			PAPER NUMBER	

2131

DATE MAILED: 08/15/2005

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

47



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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
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EXAMINER
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ART UNIT	PAPER
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081105

DATE MAILED:

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

**Commissioner for Patents**

See attached comments concerning the applicant's petition to correct inventorship.

*Cell*  
 A213)  
 3/11/05

### RESPONSE TO CORRECTION OF INVENTORSHIP

In response to the applicant's petition filed on August 4, 2005, the Examiner has found the petition to be compliant in order to add an inventive entity and hereby grants the petition.

#### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Revak whose telephone number is 571-272-3794. The examiner can normally be reached on Monday-Friday, 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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).

Christopher Revak  
Primary Examiner  
Art Group 2131

CR

  
August 11, 2005





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Bib Data Sheet

CONFIRMATION NO. 5421

<b>SERIAL NUMBER</b> 09/861,229	<b>FILING OR 371(c) DATE</b> 05/17/2001 <b>RULE</b>	<b>CLASS</b> 713	<b>GROUP ART UNIT</b> 2131	<b>ATTORNEY DOCKET NO.</b> 43426.00014	
<b>APPLICANTS</b> Yigal Mordechai Edery, Pardesia, ISRAEL; Nimrod Itzhak Vered, Goosh Tel-Mond, ISRAEL; David R. Kroll, San Jose, CA;					
<b>** CONTINUING DATA *****</b> This appln claims benefit of 60/205,591 05/17/2000 and is a CIP of 09/539,667 03/30/2000 PAT 6,804,780 and is a CIP of 09/551,302 04/18/2000 PAT 6,480,962					
<b>** FOREIGN APPLICATIONS *****</b>					
<b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> <b>** 07/18/2001</b>					
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged _____ Examiner's Signature Initials		<b>STATE OR COUNTRY</b> ISRAEL	<b>SHEETS DRAWING</b> 10	<b>TOTAL CLAIMS</b> 76	<b>INDEPENDENT CLAIMS</b> 11
<b>ADDRESS</b> 30256					
<b>TITLE</b> MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS					
<b>FILING FEE RECEIVED</b> 1544	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit		

B/TFW



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT(S): EDERY, Yigal  
Mordechai et al. EXAMINER: Not yet assigned

Serial No.: 09/861,229 GROUP ART UNIT: 2131

Filing Date: May 17, 2001 ATTORNEY DOCKET No.: P-9139-US

FOR: *Malicious Mobile code runtime monitoring system and methods*

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

**POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS  
NOTIFICATION**

Sir:

Enclosed please find an executed Power of Attorney and Change of Address Notification for filing in the above referenced patent application. Both the Power of Attorney and Change of Address Notification have been signed by the Assignee of the above referenced patent application.

No fee is deemed necessary in connection with this Communication. If, however, any fee is necessary, Applicants hereby authorize the Receiving Office to charge any fee or deficiency in connection with the above-identified Application to Deposit Account No. 50-3400.

Respectfully submitted,

Vladimir Sherman  
Attorney for Applicant(s)  
Registration No. 43,116

Dated: September 18, 2005

Eitan Law Group  
C/O LandonIP Inc.  
1700 Diagonal Road, Suite 450  
Alexandria, VA 22314  
Tel: (703) 486-1150  
Fax: (703) 892-4510



IN THE UNITED STATES PATENT  
&  
TRADEMARK OFFICE

POWER OF ATTORNEY  
AND CHANGE OF CORRESPONDENCE ADDRESS NOTIFICATION

I, the undersigned, am the Assignee of Record for each of the patents and/or patent applications listed in Appendix A (attached hereto), and hereby revoke all previous powers of attorney given in all of the patents and patent applications listed in Appendix A.

I, the undersigned, hereby appoint as my attorney and agent:

Vladimir Sherman (Attorney, Registration No. 43,116)

with full power of attorney, substitution and revocation to prosecute all of the patents and patent applications listed in Appendix A and to transact all business in the Patent and Trademark Office connected with respect to all of the patents and patent applications listed in Appendix A.

Please address all correspondence regarding all of the patents and patent applications listed in Appendix A to:

Eitan Law Group  
C/O Landon IP, Inc.  
1700 Diagonal Road, Suite 450  
Alexandria, VA 22314, USA

Please direct all telephone calls to (703) 486-1150 and all facsimiles at (703) 892-4510.

Assignee: FINJAN SOFTWARE LTD.

By: Asher Polani

Title: CEO

Signature: [Signature]

Date: SEP. 7, 2005

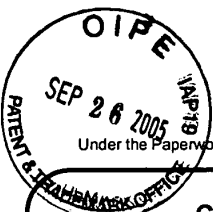


**IN THE UNITED STATES PATENT  
&  
TRADEMARK OFFICE**

APPENDIX A

1. US Patent Application Number 09/595,814
2. US Patent Application Number 09/774,236
3. US Patent Application Number 09/861,229
4. US Patent Application Number 11/159,455
5. US Patent Application Number 11/169,823

2-0-6



B

IF 2131

PTO/SB/122 (04-05)

Approved for use through 07/31/2006. OMB 0651-0035

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

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<b>CHANGE OF CORRESPONDENCE ADDRESS Application</b>  Address to: Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450.	Application Number	09/861,229
	Filing Date	May 17, 2001
	First Named Inventor	Yigal Mordechai EDERY
	Art Unit	2131
	Examiner Name	Christopher A. Revak
	Attorney Docket Number	43426.00014

Please change the Correspondence Address for the above-identified application to:

☐ The address associated with Customer Number:

OR

☒ **Firm or Individual Name** EITAN LAW GROUP

**Address** 7 Shenkar Street  
POB 2081

**City** Herzlia **State** **Zip** 46120

**Country** ISRAEL

**Telephone** 972-9-972-6000 **Email** main@eitangroup.com

This form cannot be used to change the data associated with a Customer Number. To change the data associated with an existing Customer Number use "Request for Customer Number Data Change" (PTO/SB/124).

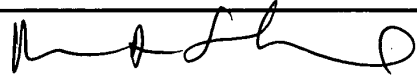
I am the :

☐ Applicant/Inventor.

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

☒ Attorney or agent of record. Registration Number 40,823.

☐ Registered practitioner named in the application transmittal letter in an application without an executed oath or declaration. See 37 CFR 1.33(a)(1). Registration Number \_\_\_\_\_.

**Signature** 

**Typed or Printed Name** Marc A. Sockol

**Date** September 22, 2005 **Telephone** (650) 856-6500

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 1.33. 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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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014

30256  
 SQUIRE, SANDERS & DEMPSEY L.L.P.  
 600 HANSEN WAY  
 PALO ALTO, CA 94304-1043

CONFIRMATION NO. 5421



\*OC000000017113914\*

Date Mailed: 09/27/2005

## NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/21/2005.

- 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).

*John Ingram*  
 \_\_\_\_\_  
 JOHN INGRAM  
 PUBS O-

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APPLICATION NUMBER	FILING OR 371 (e) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014

Eitan Law Group  
 C/O Landon IP, Inc.  
 1700 Diagonal Road  
 Suite 450  
 Alexandria, VA 22314

CONFIRMATION NO. 5421



\*OC000000017113950\*

Date Mailed: 09/27/2005

## NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/21/2005.

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.

*[Handwritten Signature]*  
 for JOHN INGRAM  
 PUBS O-

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Bib Data Sheet

CONFIRMATION NO. 5421

<b>SERIAL NUMBER</b> 09/861,229	<b>FILING OR 371(c) DATE</b> 05/17/2001 <b>RULE</b>	<b>CLASS</b> 713	<b>GROUP ART UNIT</b> 2131	<b>ATTORNEY DOCKET NO.</b> 43426.00014
<b>APPLICANTS</b> Yigal Mordechai Edery, Pardesia, ISRAEL; Nimrod Itzhak Vered, Goosh Tel-Mond, ISRAEL; David R. Kroll, San Jose, CA;				
<b>** CONTINUING DATA *****</b> This appln claims benefit of 60/205,591 05/17/2000 and is a CIP of 09/539,667 03/30/2000 PAT 6,804,780 and is a CIP of 09/551,302 04/18/2000 PAT 6,480,962				
<b>** FOREIGN APPLICATIONS *****</b>				
<b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> <b>** 07/18/2001</b>				
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged <u>                    </u> Examiner's Signature Initials		<b>STATE OR COUNTRY</b> ISRAEL	<b>SHEETS DRAWING</b> 10	<b>TOTAL CLAIMS</b> 76
				<b>INDEPENDENT CLAIMS</b> 11
<b>ADDRESS</b> Eitan Law Group C/O Landon IP, Inc. 1700 Diagonal Road Suite 450 Alexandria , VA 22314				
<b>TITLE</b> MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS				
<b>FILING FEE RECEIVED</b> 1544	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	



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**\*BIBDATASHEET\***

CONFIRMATION NO. 5421

Bib Data Sheet

<b>SERIAL NUMBER</b> 09/861,229	<b>FILING OR 371(c) DATE</b> 05/17/2001 <b>RULE</b>	<b>CLASS</b> 713	<b>GROUP ART UNIT</b> 2131	<b>ATTORNEY DOCKET NO.</b> 43426.00014
<b>APPLICANTS</b> Yigal Mordechai Edery, Pardesia, ISRAEL; Nimrod Itzhak Vered, Goosh Tel-Mond, ISRAEL; David R. Kroll, San Jose, CA;				
<b>** CONTINUING DATA *****</b> This appln claims benefit of 60/205,591 05/17/2000 and is a CIP of 09/539,667 03/30/2000 PAT 6,804,780 and is a CIP of 09/551,302 04/18/2000 PAT 6,480,962				
<b>** FOREIGN APPLICATIONS *****</b>				
<b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> <b>** 07/18/2001</b>				
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged _____ Examiner's Signature Initials		<b>STATE OR COUNTRY</b> ISRAEL	<b>SHEETS DRAWING</b> 10	<b>TOTAL CLAIMS</b> 76
				<b>INDEPENDENT CLAIMS</b> 11
<b>ADDRESS</b> <div style="text-align: right;">AIR MAIL</div> EITAN LAW GROUP 7 Shenkar Street POB 2081 Herzlia , 46120 ISRAEL				
<b>TITLE</b> MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS				
<b>FILING FEE RECEIVED</b> 1544	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	



Sample Form (09-04)

**AUTHORIZATION TO ACT IN A REPRESENTATIVE CAPACITY**

In re Application of: Finjan Software Ltd.

Application No 09/861,229

Filed: 17-May-2001

Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

Attorney Docket No: P-9139-US

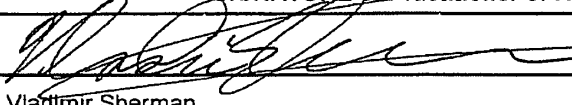
Art Unit: 2131

The practitioner named below is authorized to conduct interviews and has the authority to bind the principal concerned. Furthermore, the practitioner is authorized to file correspondence in the above-identified application pursuant to 37 CFR 1.34:

Name	Registration Number
Marc Berger	44,029

**This is not a Power of Attorney to the above-named practitioner.** Accordingly, the practitioner named above does not have authority to sign a request to change the correspondence address, a request for an express abandonment, a disclaimer, a power of attorney, or other document requiring the signature of the applicant, assignee of the entire interest or an attorney of record. If appropriate, a separate Power of Attorney to the above-named practitioner should be executed and filed in the United States Patent and Trademark Office.

**SIGNATURE of Practitioner of Record**

Signature		Date: 14 November 2005
Name	Vladimir Sherman	Registration No., if applicable: 43,116
Telephone	1-703-486-1150	

This form offers a sample or suggested format for an authorization for an agent. See MPEP § 713.05 for more information. This sample form is not an OMB officially approved form.

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

09/861229 (1631)



UNITED STATES PATENT AND TRADEMARK OFFICE

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Address: COMMISSIONER FOR PATENTS  
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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421

7590 03/03/2006  
EITAN LAW GROUP  
7 Shenkar Street  
POB 2081  
Herzlia, 46120  
ISRAEL

EXAMINER

REVAK, CHRISTOPHER A

ART UNIT PAPER NUMBER

2131

DATE MAILED: 03/03/2006

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



09/86/229 (1631)

## UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND  
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

### NOTICE OF DRAWING INCONSISTENCY WITH SPECIFICATION

The drawings filed 09 – 18 – 2001 have been received. However, an inconsistency exists between the drawings and the Brief Description of the Drawings in the specification.

Figure 7C is listed in the Brief Description of the Drawings in the specification but not contained in the Drawings.

Figure \_\_\_\_ is contained in the Drawings but not listed in the Brief Description of the Drawings in the specification.

Applicant is required to correct the above-noted inconsistency within a time period of **ONE MONTH or THIRTY (30) DAYS, whichever is longer**, from the mailing date of this Notice, or within the time remaining in the time period set forth in the Notice of Allowability (Form PTOL-37) to file corrected drawings, whichever is longer. **NO EXTENSION OF THIS TIME PERIOD MAY BE GRANTED UNDER EITHER 37 CFR 1.136 (a) OR (b)**

Failure to correct the above noted inconsistency will result in **abandonment** of the application.

The file will be held in the Publishing Division to await the correction of the inconsistency.

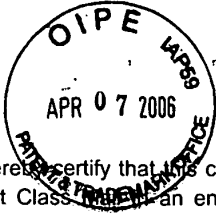
#### **Return Corrected Drawings/Specification to:**

Mail Stop Issue Fee  
Commissioner for Patents  
P.O. Box 1450

Alexandria, VA 22313-1450

Office of Patent Publication/Publishing Division  
Customer Service: 571-272-4200  
1-888-786-0101

FORM PTO-1631 (REV. 10-03)



60644-8000.US01

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class ~~mail~~ in an envelope addressed to: Mail Stop Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on:

Date: April 3, 2006

By: Valeri J. Sterg  
**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

IN RE APPLICATION OF:

Yigal Edery, et al.

APPLICATION NO.: 09/861,229

FILED: May 17, 2001

FOR: **MALICIOUS MOBILE CODE RUNTIME  
MONITORING AND METHODS**

EXAMINER: Christopher A. Revak

ART UNIT: 2131

CONF. NO: 5421

**RESPONSE TO NOTICE OF DRAWING INCONSISTENCY WITH  
SPECIFICATION**

Mail Stop Issue Fee  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This paper is submitted in response to the Notice of Drawing Inconsistency with Specification dated March 3, 2006. The response is due on April 3, 2006, thus this response is being timely filed.

**IN THE SPECIFICATION**

Please amend the Specification, amending paragraph 0030 and deleting paragraph 0031 of the application as published.

On page 3 of the application as published, please replace paragraph 0030 with the following paragraph:

[0030] FIG. ~~7~~ 8 is a block diagram illustrating a mobile protection code according to an embodiment of the invention;

On page 3 of the application as published, please delete paragraph 0031.

**IN THE DRAWINGS**

The attached sheet of drawings includes changes to Fig. 8. This sheet, which includes Figs. 7a, 7b and 8, replaces the original sheet 6 of 10 including Figs. 7a, 7b and 8. In Fig. 8, element 361 has been renumbered as element 341, to conform the figure with the specification. Element 341 of Fig. 8 is referred to in paragraph 0100 of the application as published, there is no reference to an element 361.

**REMARKS**

Applicant has amended the Specification to correct the identification of Figure 7c and the description of Figure 8.


Applicant has amended Figure 8 to correct element number "361" to "341". No new matter has been added. The drawings have been conformed to the specification, and the changes were necessitated due to error and not deceptive intent.

**CONCLUSION**

If the Examiner believes that a conference would be of value in expediting the prosecution of this application, the Examiner is cordially invited to telephone the undersigned counsel at (650) 838-4300 to arrange for such a conference. No fees are believed to be due; however, the Commissioner is authorized to charge any underpayment in fees to Deposit Account No. 50-2207. To the extent necessary and not otherwise requested, Applicant requests an Extension of Time to respond to the Office Action, and requests that the fee for such an extension be charged to Deposit Account number 50-2207.

Respectfully submitted,  
Perkins Coie LLP

Date: April 3, 2006

  
\_\_\_\_\_  
Glenn E. Von Tersch  
Registration No. 41,364

**Correspondence Address:**

Customer No. 22918  
Perkins Coie LLP  
P.O. Box 2168  
Menlo Park, California 94026  
(650) 838-4300



Attorney Docket No. 60644-8000.US01

B 7K11

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF:

Yigal Edery, et al.

APPLICATION NO.: 09/861,229

FILED: May 17, 2001

FOR: **MALICIOUS MOBILE CODE RUNTIME  
MONITORING AND METHODS**

EXAMINER: Christopher A. Revak

ART UNIT: 2131

CONF. NO: 5421

Transmittal

Mail Stop Issue Fee  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450


Sir:

In response to the Notice of Drawing Inconsistency With Specification dated March 3, 2006, applicant herewith submits the following:

- ☒ Response To Notice Of Drawing Inconsistency With Specification
- ☒ Corrected drawing sheet of Fig. 7a, Fig. 7b, and Fig. 8.
- ☒ Replacement drawing sheet of Fig. 7a, Fig. 7b, and Fig. 8.
- ☒ No fees are believed to be due, however the Commissioner is authorized to charge any additional fees necessary for consideration of this paper to Deposit Account No. 50-2207.

Respectfully submitted,  
Perkins Coie LLP

Date: April 3, 2006

  
Glenn E. Von Tersch  
Registration No. 41,364

**Correspondence Address:**

PERKINS COIE LLP  
Customer No. 22918  
P.O. Box 2168  
Menlo Park, CA 94026-2168  
Telephone: (650) 838-4300

[00000-0000/BY060930.153]



CORRECTED SHEET  
Title: *Malicious Mobile Code runtime Monitoring System And Methods*  
Inventors: Edery, et al.  
Serial No.: 09/861,229  
Docket No. 60644-8000.US01  
Perkins Coie LLP

(650) 838-4300  
Sheet 1 of 1

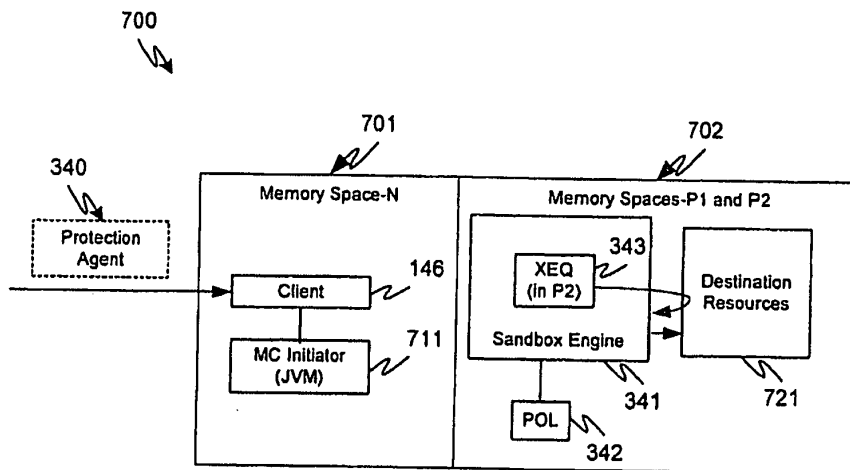


FIG. 7a

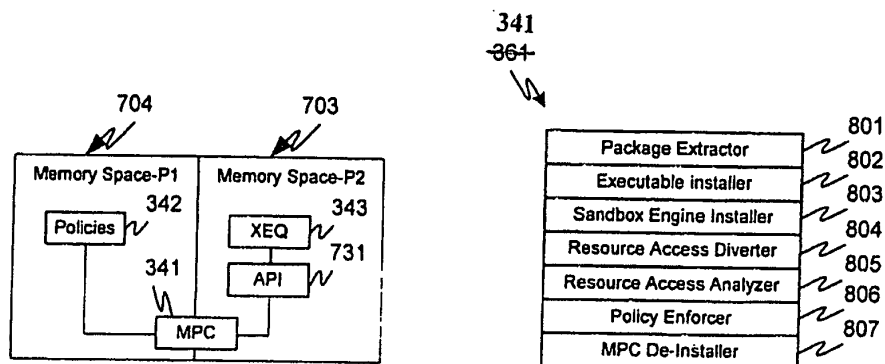


FIG. 7b

FIG. 8

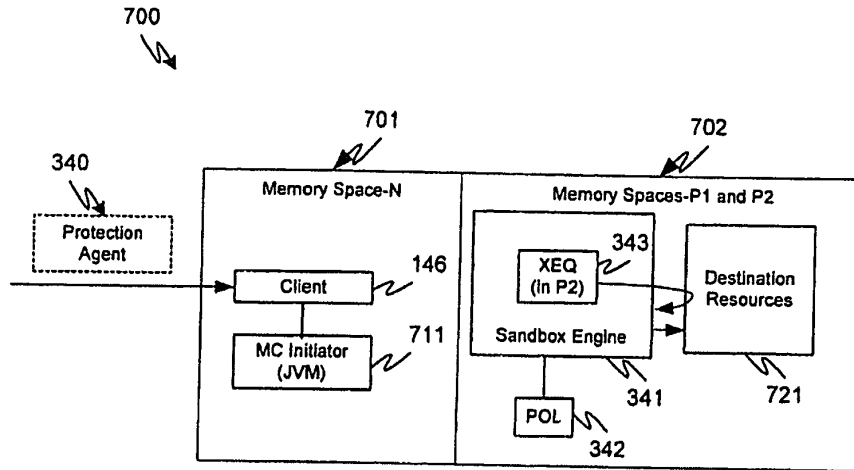


FIG. 7a

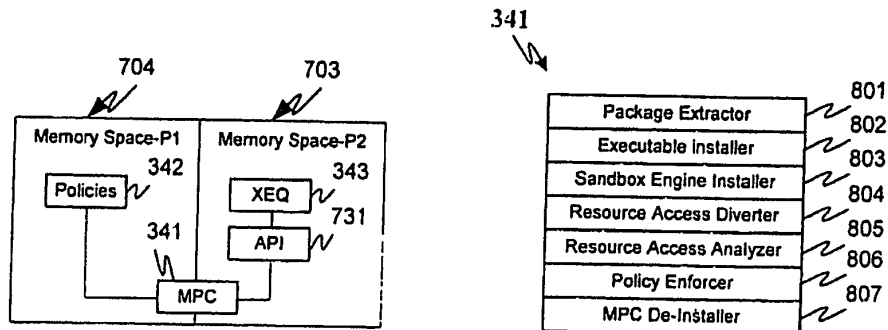


FIG. 7b

FIG. 8



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421
7590 04/20/2006				
EITAN LAW GROUP 7 Shenkar Street POB 2081 Herzlia, 46120 ISRAEL			EXAMINER REVAK, CHRISTOPHER A	
			ART UNIT 2131	PAPER NUMBER
DATE MAILED: 04/20/2006				

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

**Response to Rule 312 Communication**

Application No.

09/861229

Applicant(s)

Examiner

Art Unit

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

1. ☒ The amendment filed on 4/7/06 under 37 CFR 1.312 has been considered, and has been:

- a) ☒ entered.
- b) ☐ entered as directed to matters of form not affecting the scope of the invention.
- c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

- d) ☐ disapproved. See explanation below.
- e) ☐ entered in part. See explanation below.

  
for  
Publishing Division

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

in re Application of: EDERY et al.

Application No.: 09/861,229

Filed: May 17, 2001

Patent No.: 7,058,822

Issued: June 6, 2006

For: Malicious Mobile Code Runtime  
Monitoring System and Methods

Examiner: REVAK, Christopher A.

Art Unit: 2131

Conf. No: 5421

Attorney Docket No.:  
60644-8001.US01

**Change of Address**

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

Sir:

Effective immediately, please direct all further communications in the above-identified patent to the following address, which is associated with Customer No. 22918:

**Glenn E. Von Tersch  
Perkins Coie LLP  
P. O. Box 2168  
Menlo Park, CA 95026-2168**

Respectfully submitted,  
Perkins Coie LLP

Date: June 14, 2006

\Glenn E. Von Tersch\  
Glenn E. Von Tersch  
Registration No. 41,364

**Correspondence Address:**

Customer No. 22918  
Perkins Coie LLP  
P. O. Box 2168  
Menlo Park, California 94026-2168  
(650) 838-4300

**STATEMENT UNDER 37 CFR 3.73(b)**

Applicant: Yigal M. Edery et al.

Application No./Patent No.: 7,058,822 Filed/Issue Date: June 6, 2006

Entitled: Malicious Mobile Code Runtime Monitoring System and Methods

Finjan Software, Ltd., 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 engine 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 \_\_\_\_\_, Frame \_\_\_\_\_, 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 shown below:

1. From: Yigal M. Edery, Nimrod I. Vered, David R. Kroll To: Finjan Software, Ltd.  
The document was recorded in the United States Patent and Trademark Office at Reel 012748, Frame 0843, or for which a copy thereof is attached.
2. From: Shlomo Touboul To: Finjan Software, Ltd.  
The document was recorded in the United States Patent and Trademark Office at Reel 016830, Frame 0387, or for which a copy thereof is attached.

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

- ☐ Copies of assignments or other documents in the chain of title are attached.  
[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, if the assignment is to be recorded 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.

June 14, 2006

Date

Glenn E. Von Tersch

Typed of printed name

650-838-4328

Telephone number

\Glenn E. Von Tersch\

Signature

Authorized Practitioner

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 1.14. 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.*

PTO/SB/90 (12-03)

Approved for use through 11/30/2005. OMB 0651-0036

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

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

**POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO**

I hereby appoint

☒ Practitioners associated with the Customer Number:**22918**

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

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).

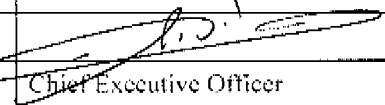
Assignee Name and Address:

Finjan Software, Ltd.  
Shoham House  
1 Hamachshev Street  
New Industrial Area  
Netanya 42504, ISRAEL

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

Name	Asher Polani		
Signature		Date	20 March 06
Title	Chief Executive Officer	Telephone	011-972-9-864-8200

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 1.14. This collection is estimated to take 5 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.

[BY060760 089]

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	1079371
<b>Application Number:</b>	09861229
<b>Confirmation Number:</b>	5421
<b>Title of Invention:</b>	MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS
<b>First Named Inventor:</b>	Yigal Mordechai Edery
<b>Correspondence Address:</b>	EITAN LAW GROUP - 7 Shenkar Street POB 2081 Herzlia - 46120 IL 972-9-9726000 main@eltangroup.com
<b>Filer:</b>	Glenn E. Von Tersch
<b>Filer Authorized By:</b>	
<b>Attorney Docket Number:</b>	43426.00014
<b>Receipt Date:</b>	14-JUN-2006
<b>Filing Date:</b>	17-MAY-2001
<b>Time Stamp:</b>	23:17:18
<b>Application Type:</b>	Utility
<b>International Application Number:</b>	

### Payment information:

Submitted with Payment	no
------------------------	----

**File Listing:**

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part	Pages
1	Change of Address	60644-8001US01_Change_of_Address.pdf	64794	no	1
Warnings:					
Information:					
2	Assignee showing of ownership per 37 CFR 3.73(b).	60644-8001US01_Statement_Under_Rule_73.pdf	92774	no	1
Warnings:					
Information:					
3	Power of Attorney (may include Associate POA)	60644_General_POA.pdf	25923	no	1
Warnings:					
Information:					
Total Files Size (in bytes):			183491		
<p>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.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b> 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.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b> 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.</p>					



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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014

CONFIRMATION NO. 5421

EITAN LAW GROUP  
 7 Shenkar Street  
 POB 2081  
 Herzlia, 46120  
 ISRAEL



\*OC000000019309420\*

Date Mailed: 06/16/2006

## NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/14/2006.

- 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).

BERHANU GIRUM  
 PTOSS (703) 305-0677

OFFICE COPY



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
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Address: COMMISSIONER FOR PATENTS  
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Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/861,229	05/17/2001	Yigal Mordechai Edery	60644-8001.US01

CONFIRMATION NO. 5421

22918  
PERKINS COIE LLP  
P.O. BOX 2168  
MENLO PARK, CA 94026



\*OC000000019309472\*

Date Mailed: 06/16/2006

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 06/14/2006.

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.

BERHANU GIRUM  
PTOSS (703) 305-0677

OFFICE COPY

**DOCKET NO. FIN0001-CON1-CIP1**

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:

Yigal Mordechai EDERY, et al.	Group Art Unit:	2131	
App. Serial No.:	09/861,229	Examiner:	Christopher A. Revak
Patent No.:	7,058,822		
Filing date:	May 17, 2001		
Issue date:	June 6, 2006		
For:	MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS		

**REQUEST FOR CERTIFICATE OF CORRECTION**

U.S. Patent and Trademark Office  
Customer Service Window  
Attn: Certificate of Correction Branch  
Randolph Building  
401 Dulany Street  
Alexandria, VA 22314

Sir:

The undersigned requests that a Certificate of Correction be issued for the above-identified patent as indicated on the attached Form PTO/SB/44 (09-07).

This request is being made in order to correct the inventorship of the patent. The inventors listed on the patent should include Shlomo Touboul.

On June 23, 2005, a Request to Correct Inventorship was filed with the U.S. Patent and Trademark Office (see Attachment A attached) to amend the inventorship to add Shlomo

Touboul as an inventor. On August 15, 2005 the Examiner issued a Response to Correction of Inventorship (see Attachment B attached) stating that the request was found to be compliant and granting the request. Unfortunately, when preparing the patent for printing, Mr. Touboul's name was left off of Section (75) (Inventors) of the patent.

Pursuant to 37 C.F.R. 1.322, "The Director may issue a certificate of correction pursuant to 35 U.S.C. 254 to correct a mistake in a patent, incurred through the fault of the Office, which mistake is clearly disclosed in the records of the Office." Based on the record for this patent, it clearly shows that a Request for Correct Inventorship adding Shlomo Touboul as an inventor was filed on June 23, 2005, with the Examiner granting the request on August 15, 2005. Even though the Examiner cites the incorrect date for filing of the Request to Correct Inventorship, there is no doubt he is granting the Request filed on June 23, 2005.

Since this Request for Certificate of Correction is being filed due to an error by the U.S. Patent and Trademark Office, no fees are believed to be necessary. However, the Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment, to Deposit Account No. 50-4402.

Respectfully submitted,

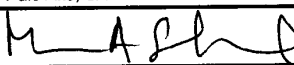
Date: November 1, 2012

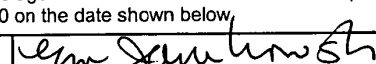
By: /Dawn-Marie Bey - 44,442/  
Dawn-Marie Bey  
Registration No. 44,442

KING & SPALDING LLP  
1700 Pennsylvania Avenue, N.W.  
Suite 200  
Washington, DC 20006  
(202) 737-0500  
15157/105041  
Doc. No. 19772500

<b>TRANSMITTAL FORM</b> (to be used for all correspondence after initial filing) Total Number of Pages in This Submission	Application Number	09/861,229
	Filing Date	May 17, 2001
	First Named Inventor	Yigal Mordechai EDERY
	Art Unit	2131
	Examiner Name	Christopher A. REVAK
14	Attorney Docket Number	43426.00014

ENCLOSURES (check all that apply)		
<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input checked="" type="checkbox"/> Assent of Assignee To Correction And/Or Addition of Inventor(s) (2 pgs) <input checked="" type="checkbox"/> Inventor Statement Regarding Inventorship Error (1 page) <input checked="" type="checkbox"/> Statement Under 37 CFR 3.73 (b) (1 pg) <input checked="" type="checkbox"/> Declaration For Utility Or Design Patent Application (37 CFR 1.63) (5 pages) <input checked="" type="checkbox"/> Copy of Assignment of Shlomo Touboul (2 pages) <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Return Receipt Postcard
<b>Remarks</b>		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT			
Firm	Squire, Sanders & Dempsey, L.L.P. 600 Hansen Way Palo Alto, CA 94304-1043		
Signature			
Printed Name	Marc A. Sockol		
Date	June 21, 2005	Reg. No.	40,823

CERTIFICATE OF TRANSMISSION/MAILING			
I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.			
Signature			
Typed or printed name	Eileen M. Janikowski	Date	June 21, 2005

This collection of information is required by 37 CFR 1.5. 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 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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ATTACHMENT A

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Effective on 12/08/2004.

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

# **FREE TRANSMITTAL for FY 2005**

☐ Applicant claims small entity status. See 37 CFR 1.27

**TOTAL AMOUNT OF PAYMENT** (\$) 130.00

## **Complete if Known**

Application Number 09/861,229  
Filing Date May 17, 2001  
First Named Inventor Yigal Mordechai EDERY  
Examiner Name Christopher A. REVAK  
Art Unit 2131  
Attorney Docket No. 43426.00014

## **METHOD OF PAYMENT (check all that apply)**

- ☐ Check ☐ Credit Card ☐ Money Order ☐ None ☐ Other (please identify) : \_\_\_\_\_  
☒ Deposit Account Deposit Account Number: 05-0150 Deposit Account Name: Squire, Sanders & Dempsey, L.L.P.  
For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)  
☒ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee  
☒ Charge any additional fee(s) or underpayments of fee(s) ☒ Credit any overpayments  
Under 37 CFR 1.16 and 1.17

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

## **FEE CALCULATION**

### **1. BASIC FILING, SEARCH, AND EXAMINATION FEES**

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

### **2. EXCESS CLAIM FEES**

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

### **3. APPLICATION SIZE FEE**

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

**Total Sheets** **Extra Sheets** **Number of each additional 50 or fraction thereof** **Fee (\$)** **Fee Paid (\$)**  
\_\_\_\_\_ - 100 = \_\_\_\_\_ / 50 = \_\_\_\_\_ (round up to a whole number) x \_\_\_\_\_ = \_\_\_\_\_

### **4. OTHER FEE(S)**

Non-English Specification, \$130 fee (no small entity discount) \_\_\_\_\_  
Other (e.g., late filing surcharge) : Request to Correct Inventorship 130.00

## **SUBMITTED BY**

Signature <u>M. A. Sockol</u>	Registration No. (Attorney/Agent) 40,823	Telephone (650) 856-6500
Name (Print/Type) Marc A. Sockol		Date June 21, 2005

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing this form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

**ATTACHMENT A**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**



In re Application of:

Examiner: Christopher A. REVAK

Yigal Mordechai EDERY, et al.

Serial No.: 09/861,229

Art Unit: 2131

Filed: May 17, 2001

Title: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

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

**REQUEST TO CORRECT INVENTORSHIP**

Sir:

Please amend the inventorship to add Shlomo Touboul, Pardesia Israel, citizen of Israel as an inventor.

Respectfully Submitted,

Dated: June 21, 2005

SQUIRE, SANDERS & DEMPSEY L.L.P.  
600 Hansen Way  
Palo Alto, CA 94304-1043  
650-856-6500

Marc A. Sockol  
Attorney for Applicants  
Reg. No. 40,823

**CERTIFICATE OF MAILING**

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on

Date: June 21, 2005

By:

Eileen M. Janikowski

06/24/2005 CCHAU1 00000059 050150 09861229

01 FC:1464 130.00 DA

In Re Yigal Mordechai Edery, et al.

1

85428.1

ATTACHMENT A



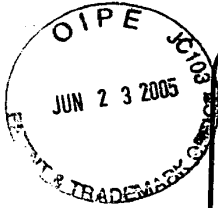
43426.00014  
Application No. 09/861,229

**INVENTOR STATEMENT REGARDING INVENTORSHIP ERROR**

The error in inventorship occurred inadvertently. There was no deceptive intention on my part. Therefore, I would like my name to be added to application no. 09/861,229..

Date: March 6, 2005

  
\_\_\_\_\_  
Shlomo Touboul



PTO/SB/A01 (08-03)  
Approved for use through 07/31/2006. OMB 0651-0032  
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE  
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**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 43426.00014

First Named Inventor Yigal EDERY

COMPLETE IF KNOWN

Application Number 09/861,229

Filing Date May 17, 2001

Art Unit 2152

Examiner Name Unknown

**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:

**MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS**

the specification of which (Title of the Invention)

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 5/17/2001 as United States Application Number or PCT International

Application Number 09/861,229 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 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
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

[Page 1 of 3]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

## DECLARATION — Utility or Design Patent Application

Direct all correspondence to:		<input checked="" type="checkbox"/> Customer Number		30258		OR		<input type="checkbox"/> Correspondence address below	
Name									
Address									
City				State			ZIP		
Country				Telephone			Fax		
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:						<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle (if any))				Yigal Mordechai			Family Name or Surname		
				EDERY					
Inventor's Signature						Date			
						17/4/2005			
Residence: City				State		Country		Citizenship	
Pardesia				N/A		Israel		Israel	
Mailing Address									
Hashikma 11, POB 1116									
City				State		Zip		Country	
Pardesia				N/A		42815		Israel	
NAME OF SECOND INVENTOR:						<input type="checkbox"/> A petition has been filed for this unsigned inventor			
Given Name (first and middle (if any))				Nimrod Itzhak			Family Name or Surname		
				VERED					
Inventor's Signature						Date			
Residence: City				State		Country		Citizenship	
Goosh Tel-Mond				N/A		Israel		Israel	
Mailing Address									
Moshav Mismaret #81									
City				State		Zip		Country	
Goosh Tel-Mond				N/A		40695		Israel	
<input checked="" type="checkbox"/> Additional inventors or a legal representative are being named on the 1 supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.									

[Page 2 of 3]

ATTACHMENT A

TOTAL P. 11

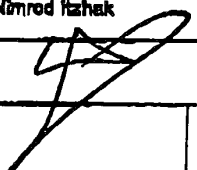
PTO/SB/01 (09-08)

Approved for use through 07/01/2008, OMB 0851-0032

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

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**DECLARATION — Utility or Design Patent Application**

Direct all correspondence to: <input checked="" type="checkbox"/> Customer Number <b>30256</b> <input type="checkbox"/> OR <input type="checkbox"/> Correspondence address below			
Name			
Address			
City	State	ZIP	
Country	Telephone	Fax	
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:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any)) <b>Yigal Mordechai</b>		Family Name or Surname <b>EDERY</b>	
Inventor's Signature		Date	
Residence: City <b>Pardesia</b>	State <b>N/A</b>	Country <b>Israel</b>	Citizenship <b>Israel</b>
Mailing Address <b>Hashikma 11, POB 1115</b>			
City <b>Pardesia</b>	State <b>N/A</b>	Zip <b>42815</b>	Country <b>Israel</b>
NAME OF SECOND INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle (if any)) <b>Nimrod Itzhak</b>		Family Name or Surname <b>VERED</b>	
Inventor's Signature 		Date <b>18/5/05</b>	
Residence: City <b>Gosh Tel-Mond</b>	State <b>N/A</b>	Country <b>Israel</b>	Citizenship <b>Israel</b>
Mailing Address <b>Moshav Mismaret #81</b>			
City <b>Gosh Tel-Mond</b>	State <b>N/A</b>	Zip <b>40895</b>	Country <b>Israel</b>
<input checked="" type="checkbox"/> Additional inventors or a legal representative are being named on the 1 supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.			

(Page 2 of 3)

ATTACHMENT A

MAY-11-2005 WED 08:50 AM

FAX NO. 97482036

P. 02

TOTAL P.02

PTO/BB/02A (05-04)

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<b>DECLARATION</b>	<b>ADDITIONAL INVENTOR(S)</b> Supplemental Sheet	Page 3 of 3
--------------------	---	-------------

Name of Additional Inventor, if any		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle if any)		Family Name or Surname	
David S.		KROLL	
Inventor's Signature		Date May 8, 2005	
Residence: City	San Jose	State	CA
		Country	USA
		Citizenship	USA
Mailing Address			
4050 Kingsbrook Drive			
Mailing Address			
City	San Jose	State	CA
		Zip	95134
		Country	USA
Name of Additional Inventor, if any		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle if any)		Family Name or Surname	
Shlomo		TOULOU	
Inventor's Signature		Date MARCH 6, 2005	
Residence: City	Kefar-Haim	State	N/A
		Country	Israel
		Citizenship	Israel
Mailing Address			
Mailing Address			
City	Kefar-Haim	State	N/A
		Zip	42946
		Country	Israel
Name of Additional Inventor, if any		<input type="checkbox"/> 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			
Mailing Address			
City		State	
		Zip	
		Country	

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00148874922036 P.02

TO

03-MAY-2005 11:33 FROM FINJON SOFTWARE

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May. 18 2005 03:54PM P2

FAX NO. :




FROM :

SOPHOS  
EXHIBIT 1013 - PAGE 0317

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**DECLARATION****ADDITIONAL INVENTOR(S)  
Supplemental Sheet**

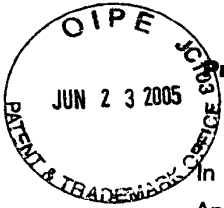
Page 3 of 3

<b>Name of Additional Inventor, if any</b>		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
<b>Given Name (first and middle (if any))</b>		<b>Family Name or Surname</b>	
David R.		KROLL	
<b>Inventor's Signature</b> 		<b>Date</b> 	
<b>Residence: City</b>	San Jose	<b>State</b>	CA
<b>Country</b>	USA		
<b>Citizenship</b>	USA		
<b>Mailing Address</b> 4856 Kingbrook Drive			
<b>Mailing Address</b>			
<b>City</b>	San Jose	<b>State</b>	CA
<b>ZIP</b>	95124	<b>Country</b>	USA
<b>Name of Additional Inventor, if any</b>		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
<b>Given Name (first and middle (if any))</b>		<b>Family Name or Surname</b>	
Shlomo		TOUBOUL	
<b>Inventor's Signature</b> 		<b>Date</b> MARCH 6, 2005	
<b>Residence: City</b>	Kefar-Haim	<b>State</b>	N/A
<b>Country</b>	Israel		
<b>Citizenship</b>	Israel		
<b>Mailing Address</b>			
<b>Mailing Address</b>			
<b>City</b>	Kefar-Haim	<b>State</b>	N/A
<b>Zip</b>	42945	<b>Country</b>	Israel
<b>Name of Additional Inventor, if any</b>		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
<b>Given Name (first and middle (if any))</b>		<b>Family Name or Surname</b>	
<b>Inventor's Signature</b>		<b>Date</b>	
<b>Residence: City</b>		<b>State</b>	
<b>Country</b>			
<b>Citizenship</b>			
<b>Mailing Address</b>			
<b>Mailing Address</b>			
<b>City</b>		<b>State</b>	
<b>Zip</b>		<b>Country</b>	

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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 (1-800-786-9199) and select option 2.

ATTACHMENT A



Practitioner's Docket No. 43426.00014

**PATENT****IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: Yigal Edery

Application No.: 09/861,229 Group No.: 2131

Filed: May 17, 2001

Examiner: Christopher A. Revak

For: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

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

**ASSENT OF ASSIGNEE TO CORRECTION  
AND/OR ADDITION OF INVENTOR(S)**  
Finjan Software, Ltd.

(type or print name of assignee)  
Citco Building, Giborai Israel Street

Address  
South Netanya, Israel 42504

**Assignment**☒ recorded on March 14, 2002Reel 012748Frame 0843☐ recorded herewith☐ A separate ☐ "ASSIGNMENT" (DOCUMENT) COVER SHEET is attached.

or

☐ FORM PTO 1595 is attached.

Assignee hereby assents to the correction of inventorship filed

☒ herewith.☐ on \_\_\_\_\_**CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. § 1.8(a))**

I hereby certify that this correspondence is, on the date shown below, being:

**MAILING**

☒ deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450

**FACSIMILE**☐ transmitted by facsimile to the Patent and Trademark Office.Date: June 21, 2005

Signature

Marc A. Sockol, Reg. No. 40,823

(type or print name of person certifying)

(Assent of Assignee to Correction and/or Addition of Inventor(s) [9-23]—page 1 of 2)

ATTACHMENT A

**ASSIGNEE STATEMENT**

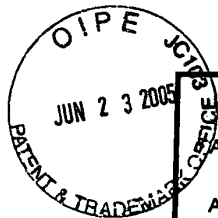
A "STATEMENT UNDER 37 C.F.R. § 3.73(b)" is attached.

  
\_\_\_\_\_  
Signature

Shlomo Touboul, President and CEO

\_\_\_\_\_  
(type or print name and title of person authorized to sign  
on behalf of assignee)

(Assent of Assignee to Correction and/or Addition of Inventor(s) [9-23]—page 2 of 2)



PTO/SB/96 (09-04)

Approved for use through 07/31/2006. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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: Finjan Software, Ltd.Application No./Patent No.: 09/861,229Filed/Issue Date: May 17, 2001Entitled: MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODSFinjan Software, Ltd., 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 012748, Frame 0843, 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 shown below:

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.

☐ Copies of assignments or other documents in the chain of title are attached.

[NOTE: A separate copy (i.e., a true copy of the original document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded 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.

March 6, 2005

Signature

Shlomo Touboul

Printed or Typed Name

President and CEO

Title

Date

011-972-8-931-5207

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.

ATTACHMENT A

# ASSIGNMENT

(1-8) *Insert Name(s) of Inventor(s)*

(1) Shlomo TOUBOUL (2) \_\_\_\_\_  
 (3) \_\_\_\_\_ (4) \_\_\_\_\_  
 (5) \_\_\_\_\_ (6) \_\_\_\_\_  
 (7) \_\_\_\_\_ (8) \_\_\_\_\_

For good and valuable consideration receipt of which is hereby acknowledged, the undersigned agree(s) to assign, and hereby do(es) assign, transfer and set over to:

(9) *Insert name of Assignee* (9) Finjan Software, Ltd.  
 (10) *Insert state of incorporation of Assignee* (10) Israel  
 (11) *Insert address of Assignee* (11) of Citco Building, Giborai Israel Street, South Netanya 42504, Israel  
 (hereinafter designated as the Assignee) the entire worldwide right, title, interest, and patent applications and patents for every country, including divisions, reissues, continuations and all other extensions, rights and priorities in the invention known as and subject matter contained in  
 (12) *Insert Identification of Invention, such as Title, Case Number or Foreign Application Number* (12) MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS  
 (Case No. 43426.00014, Serial No. 09/861,229) for which the undersigned has (have) executed an application for patent in United States of America  
 (13) *Insert Date of Signing of Application* (13) on March 6, 2005

1) The undersigned agree(s) to execute all papers necessary in connection with the application and any continuing or division applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

5) The undersigned hereby authorize(s) and request(s) the Commissioner for Patents and the duly constituted authorities of foreign countries to issue any and all Letters Patents resulting from said application or any division or divisions or continuing or reissue applications thereof to the said Assignee, its successors and assigns, as Assignee of the entire right, title and interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed and will not execute, any agreement in conflict herewith.

6) *The undersigned hereby grant(s)*

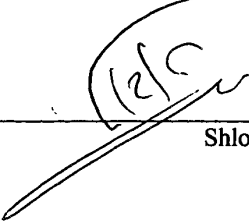
**Marc A. Sockol, Reg. No. 40,823; Vidya R. Bhakar, Reg. No. 42,323; Cameron K. Kerrigan, Reg. No. 44,826; David B. Abel, Reg. No. 32,394; Nathan Lane III, Reg. No. 43,738; Michael A. Lechter, Reg. No. 27,350; David E. Rogers, Reg. No. 38,287; William R. Bachand, Reg. No. 34,980; Aaron Wininger, Reg. No. 45,229; Paul J. Meyer 47,791; Douglas H. Goldhush, Reg. No.**

ATTACHMENT-A

**33,125; Kevin F. Turner, Reg. No. 43,437; Charles E. Runyan, Reg. No. 43,066; Allen J. Moss, Reg. No. 38,567; Sung I. Oh, Reg. No. 45,583; Zhaoyang Li, Reg. No. 46,872; Brian S. Boyer, Reg. No. 52,643; Mark Lupkowski, Reg. No. 49,010; William F. Nixon, Reg. No. 44,262; and Donnie L. Kidd, Reg. No. 50,285.**

*the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.*

Date March 6, 2005

  
\_\_\_\_\_  
Shlomo TOUBOUL

PaloAlto/76894.1

ATTACHMENT-A



# 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 NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/861,229	05/17/2001	Yigal Mordechai Edery	43426.00014	5421
30256	7590	08/15/2005	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P. 600 HANSEN WAY PALO ALTO, CA 94304-1043			REVAK, CHRISTOPHER A	
			ART UNIT	PAPER NUMBER
			2131	

DATE MAILED: 08/15/2005

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

47



**UNITED STATES DEPARTMENT OF COMMERCE**  
**U.S. Patent and Trademark Office**  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
---------------------------------	-------------	---	---------------------

EXAMINER
----------

ART UNIT	PAPER
----------	-------

081105

DATE MAILED:

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

**Commissioner for Patents**

See attached comments concerning the applicant's petition to correct inventorship.

*Cell*  
 A2131  
 3/11/05

### RESPONSE TO CORRECTION OF INVENTORSHIP

In response to the applicant's petition filed on August 4, 2005, the Examiner has found the petition to be compliant in order to add an inventive entity and hereby grants the petition.


#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher A. Revak whose telephone number is 571-272-3794. The examiner can normally be reached on Monday-Friday, 6:30am-3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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).

Christopher Revak  
Primary Examiner  
Art Group 2131

CR  
  
August 11, 2005



ATTACHMENT B

**UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION**

Page 1 of 1

PATENT NO. : 7,058,822

APPLICATION NO.: 09/861,229

ISSUE DATE : June 6, 2006

INVENTOR(S) : MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**IN THE INVENTORS SECTION (75) -**

Please add -- Shlomo Touboul, Kefar-Haim (IL) -- after David R. Kroll, San Jose, CA (US).

**MAILING ADDRESS OF SENDER (Please do not use customer number below):**

King & Spalding LLP  
1700 Pennsylvania Avenue, N.W., Suite 200  
Washington, DC 20006

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. 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 1.0 hour 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: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Electronic Acknowledgement Receipt	
EFS ID:	14122495
Application Number:	09861229
International Application Number:	
Confirmation Number:	5421
Title of Invention:	MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS
First Named Inventor/Applicant Name:	Yigal Mordechai Edery
Customer Number:	22918
Filer:	Dawn-Marie Bey./Jeanne Paolella-Bald
Filer Authorized By:	Dawn-Marie Bey.
Attorney Docket Number:	60644-8001.US01
Receipt Date:	01-NOV-2012
Filing Date:	17-MAY-2001
Time Stamp:	10:34:39
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	Request for Certificate of Correction	fin0001con1cip1_reqforcertcor r.pdf	13754390 ddff62810747f3d90ae13a691a2a57933d1d d6df	no	19

### Warnings:

### Information:

2	Request for Certificate of Correction	fin0001con1cip1_certcorr.pdf	41373 3e392edbd824ef7da67ddf52e63aed43c4835eb7	no	1
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>				13795763	
<p>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.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  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.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  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.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  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.</p>					

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 7,058,822 B2  
APPLICATION NO. : 09/861229  
DATED : June 6, 2006  
INVENTOR(S) : Edery et al.

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title Page, item [75] INVENTORS -

Add -- Shlomo Touboul, Kefar-Haim (IL) -- after David R. Kroll, San Jose, CA (US).

Signed and Sealed this  
Twenty-seventh Day of November, 2012

A handwritten signature in black ink, reading "David J. Kappos". The signature is written in a cursive, flowing style with a large initial "D".

David J. Kappos  
*Director of the United States Patent and Trademark Office*

AO 120 (Rev. 2/99)

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

In Compliance with 35 § 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 Northern District of California on the following ☒ Patents or ☐ Trademarks:

DOCKET NO. <b>CV 13-03133 SBA</b>	DATE FILED <b>07/08/2013</b>	U.S. DISTRICT COURT <b>Northern District of California</b>
PLAINTIFF <b>FINJAN, INC.</b>		DEFENDANT <b>FIREEYE, INC.</b>
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 <b>6,804,780</b>		***SEE COMPLAINT***
2 <b>8,079,086</b>		
3 <b>7,975,305</b>		
4 <b>8,225,408</b>		
5 <b>7,058,822</b>		

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

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 <b>7,647,633</b>			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK <b>Richard W. Wiekling</b>	(BY) DEPUTY CLERK <b>Jessie Mosley</b>	DATE <b>July 10, 2013</b>
-------------------------------------	---	------------------------------

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

<b>PATENT - POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS</b>	Patent Number	7,058,822
	Issue Date	June 6, 2006
	First Named Inventor	Yigal Mordechai EDERY, et al.
	Title	Malicious Mobile Code Runtime Monitoring System and Methods
	Attorney Docket Number	FIN0001-CON1-CIP1

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

☐ A Power of Attorney is submitted herewith.

OR

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

115222

OR

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

Practitioner(s) Name	Registration Number

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

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

OR

☒ The address associated with Customer Number:

115222

OR

☐ Firm or Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the:

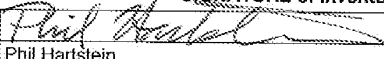
☐ Inventor, having ownership of the patent.

OR

☒ Patent owner.

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

**SIGNATURE of Inventor or Patent Owner**

Signature		Date	10/21/13
Name	Phil Hartstein	Telephone	646-568-2091
Title and Company	President, Finjan, Inc.		

**NOTE:** Signatures of all the inventors or patent owners 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, 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.

**STATEMENT UNDER 37 CFR 3.73(c)**

Applicant/Patent Owner: Finjan, Inc.

Application No./Patent No.: 7,058,822 Filed/Issue Date: June 6, 2006

Titled: Malicious Mobile Code Runtime Monitoring System and Methods

Finjan, Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is \_\_\_\_%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- 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 thereof is attached.

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

1. From: Yigal M. Edery, Nimrod I. Vered, David R. Kroll To: Finjan Software, Ltd.

The document was recorded in the United States Patent and Trademark Office at  
Reel 022885, Frame 0070, or for which a copy thereof is attached.

2. From: Shlomo Touboul To: Finjan Software, Ltd.

The document was recorded in the United States Patent and Trademark Office at  
Reel 022885, Frame 0084, or for which a copy thereof is attached.

[Page 1 of 2]

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.*

**STATEMENT UNDER 37 CFR 3.73(c)**

3. From: Finjan Software, Ltd. To: Finjan, Inc.

The document was recorded in the United States Patent and Trademark Office at  
Reel 023556, Frame 0853, or for which a copy thereof is attached.

4. 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.

5. 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.

6. 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(c)(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.

/Dawn-Marie Bey/

Signature

Dawn-Marie Bey, Bey & Cotropia PLLC

Printed or Typed Name

October 21, 2013

Date

44,442

Title or Registration Number

Electronic Acknowledgement Receipt	
<b>EFS ID:</b>	17180398
<b>Application Number:</b>	09861229
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	5421
<b>Title of Invention:</b>	MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS
<b>First Named Inventor/Applicant Name:</b>	Yigal Mordechai Edery
<b>Customer Number:</b>	22918
<b>Filer:</b>	Dawn-Marie Bey./Jeanne Paolella-Bald
<b>Filer Authorized By:</b>	Dawn-Marie Bey.
<b>Attorney Docket Number:</b>	60644-8001.US01
<b>Receipt Date:</b>	21-OCT-2013
<b>Filing Date:</b>	17-MAY-2001
<b>Time Stamp:</b>	14:34:21
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	7058822_executed_poa.pdf	1392943 4c42ada67aeeaf865df1093c13bb9ed6ede7e6c3	no	1

### Warnings:

### Information:

2	Assignee showing of ownership per 37 CFR 3.73.	7058822_executed_373b.pdf	83918 aa73c459fd4a5659ade5965781bff46284e15a0	no	2
<b>Warnings:</b>					
<b>Information:</b>					
<b>Total Files Size (in bytes):</b>				1476861	
<p>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.</p> <p><b><u>New Applications Under 35 U.S.C. 111</u></b>  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.</p> <p><b><u>National Stage of an International Application under 35 U.S.C. 371</u></b>  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.</p> <p><b><u>New International Application Filed with the USPTO as a Receiving Office</u></b>  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.</p>					



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Bib Data Sheet

CONFIRMATION NO. 5421

<b>SERIAL NUMBER</b> 09/861,229	<b>FILING OR 371(c) DATE</b> 05/17/2001 <b>RULE</b>	<b>CLASS</b> 713	<b>GROUP ART UNIT</b> 2131	<b>ATTORNEY DOCKET NO.</b> 60644-8001.US01
<b>APPLICANTS</b> Yigal Mordechai Edery, Pardesia, ISRAEL; Nimrod Itzhak Vered, Goosh Tel-Mond, ISRAEL; David R. Kroll, San Jose, CA;				
<b>** CONTINUING DATA *****</b> This appln claims benefit of 60/205,591 05/17/2000 and is a CIP of 09/539,667 03/30/2000 PAT 6804780 and is a CIP of 09/551,302 04/18/2000 PAT 6480962				
<b>** FOREIGN APPLICATIONS *****</b>				
<b>IF REQUIRED, FOREIGN FILING LICENSE GRANTED</b> <b>** 07/18/2001</b>				
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance Verified and Acknowledged _____ Examiner's Signature _____ Initials _____		<b>STATE OR COUNTRY</b> ISRAEL	<b>SHEETS DRAWING</b> 10	<b>TOTAL CLAIMS</b> 76
		<b>INDEPENDENT CLAIMS</b> 11		
<b>ADDRESS</b> 115222				
<b>TITLE</b> MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS				
<b>FILING FEE RECEIVED</b> 1544	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/861,229	05/17/2001	Yigal Mordechai Edery	60644-8001.US01

**CONFIRMATION NO. 5421**

**POWER OF ATTORNEY NOTICE**

22918  
PERKINS COIE LLP - PAO General  
P.O. BOX 1247  
SEATTLE, WA 98111-1247



Date Mailed: 10/23/2013

**NOTICE REGARDING CHANGE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/21/2013.

- 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).

/rbell/

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



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
09/861,229	05/17/2001	Yigal Mordechai Edery	60644-8001.US01

**CONFIRMATION NO. 5421**

**POA ACCEPTANCE LETTER**

115222  
Bey & Cotropia PLLC (Finjan Inc.)  
213 Bayly Court  
Richmond, VA 23229



Date Mailed: 10/23/2013

**NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY**

This is in response to the Power of Attorney filed 10/21/2013.

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.

/rbell/

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

<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 § 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 NDCA on the following ☒ Patents or ☐ Trademarks:

DOCKET NO. CV 13-05808 DMR	DATE FILED 12/16/2013	U.S. DISTRICT COURT Oakland Division, 1301 Clay St., Suite 400S, Oakland, CA 94612
PLAINTIFF FINJAN INC		DEFENDANT PROOFPOINT INC ET AL
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7, 058, 822		
2 7, 647, 633	SEE ATTACHED	
3 6, 154, 844		
4 7, 975, 305		
5 8, 225, 408		

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

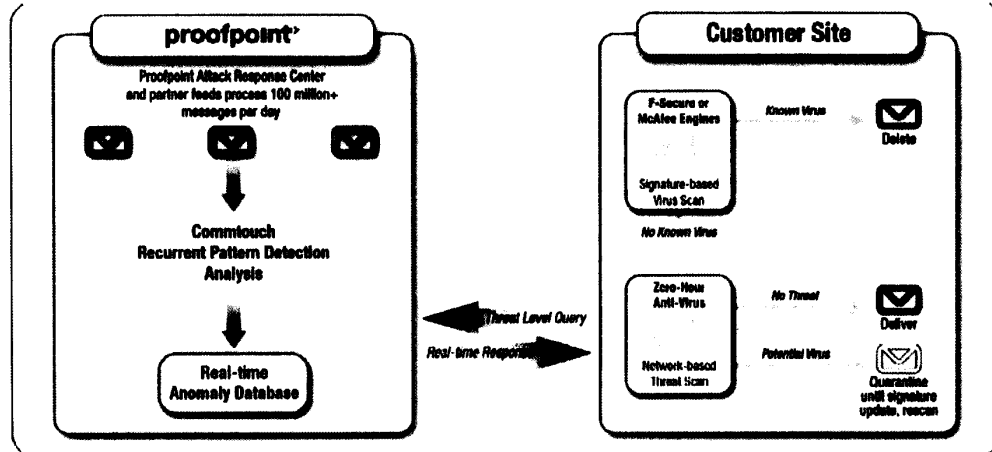
DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 8, 079, 086		
2 8, 141, 154		
3 7, 613, 918		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK Richard W. Wieking	(BY) DEPUTY CLERK Valerie Kyono	DATE December 17, 2013
-----------------------------	------------------------------------	---------------------------

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

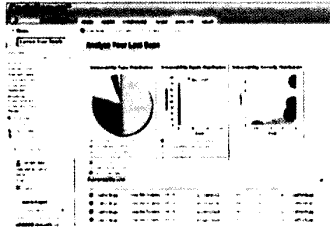


See WP-Proofpoint-Close-the-Zero-Hour-Gap (attached as Exhibit I).

38. Proofpoint's Targeted Attack Protection and Malware Analysis Service (also known as Next Generation Detection) allow unknown malicious attacks that are missed by traditional signature based detection to be caught. Proofpoint's Malware Analysis Service utilizes analytics to identify suspicious files and begins the process of analyzing the files in a sandbox for signs of a malware attack. DS-Proofpoint-Targeted-Attack-Protection (attached as Exhibit J).

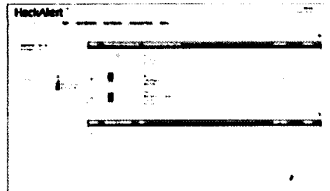
39. On September 5, 2013, a wholly-owned subsidiary of Proofpoint merged with and into Armorize Technologies, Inc. ("Armorize"), with Armorize surviving as a wholly-owned subsidiary of Proofpoint. Armorize develops and markets SaaS anti-malware products and real-time dynamic detection of next generation threats. Proofpoint Form 10-Q (attached as Exhibit K).

40. Proofpoint paid \$25,000,000 in cash for Armorize and has been utilizing Armorize technologies in Proofpoint's products for nearly a year before the acquisition. See Proofpoint, Inc. to Acquire Armorize Technologies, Inc.pdf (attached as Exhibit L). Armorize products include HackAlert Anti-Malware, CodeSecure Automated Static Source Code Analysis and SmartWAF Web Application Firewall. Information concerning these products is shown below:



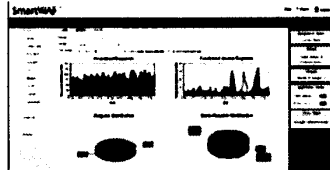
**CodeSecure™ Automated Static Source Code Analysis Platform**

- Delivers formal static source code analysis and software verification on a plug-and-play appliance
- Identifies critical security vulnerabilities throughout development
- Facilitates proactive Web application vulnerability remediation
- Implements built-in compiler technology for increased accuracy and speed
- Deploys as browser-accessible appliance to ensure zero software installation overhead
- Exports results to SmartWAF™ for immediate vulnerable entry point protection
- Supports enterprise, consulting and SaaS deployments



**HackAlert™ Web Malware Monitoring and Alerting SaaS**

- Monitors subscriber websites 24x7 for malicious code injection and malware Drive-by-Downloads
- Identifies malware download file type, source and destination on target PC
- Supports automated and on-demand website crawling as well as individual URL scans
- Generates console, SMS and Email alerts upon malware injection or defacement
- Represents a critical component of Web application Incident Response process
- Protects business and customers from Drive-by-Downloads



**SmartWAF™ Web Application Firewall**

- Defends network perimeter at the Web application layer
- Protects against attacks that target vulnerable Web applications
- Protects website, corporate resources and end-users
- Supports all major Web servers and operating systems
- Implements cluster management through a centralized Web console
- Imports CodeSecure™ scan results for immediate vulnerable entry point protection

See Armorize Technologies End-to-End Web Application Security (attached as Exhibit M).

41. Armorize, now integrated into Proofpoint, uses, sells, offers for sale, and/or imports into the United States and this District products and services that utilize HackAlert Anti-Malware, CodeSecure Automated Static Source Code Analysis and SmartWAF Web Application Firewall, including but not limited to the following: HackAlert Suite, HackAlert Website Monitoring, HackAlert Safe Impressions, HackAlert SafeImpressions, HackAlert CodeSecure, HackAlert Vulnerability Assessment and SmartWAF.

1           42.    HackAlert is a service that analyzes, detects, prevents, and mitigates malware  
2 infections in online advertisements, documents and e-mails. HackAlert focuses on scanning for zero-  
3 day malware and exploits used in Advanced Persistent Threat (“APT”) attacks, which are  
4 undetectable by typical virus or malware scanners. HackAlert’s sandbox analyzes these zero-day  
5 exploits and APT, such as malicious binaries, document exploits (PDF, Word, Excel, PowerPoint,  
6 Flash), Java exploits, browser exploits, drive-by downloads and click-to downloads. *See* Take APT  
7 Malware By Storm (attached as Exhibit N).  
8

9           43.    CodeSecure is an automatic static code analysis platform that identifies security  
10 vulnerabilities and works with SmartWAF and HackAlert to provide vulnerability entry point  
11 protection. CodeSecure identifies vulnerabilities such as Cross Site Scripting, File Inclusion,  
12 Malicious File Execution, Information Leakage and SQL Injection. CodeSecure checks for  
13 vulnerabilities based on algorithms to determine behavior outcomes of input data. *See* CodeSecure  
14 (attached as Exhibit O).  
15

16           44.    SmartWAF is a web application firewall. It defends against web application attacks  
17 such as SQL Injection, Cross Site Scripting, Cross Site Request Forgery, Cookie Tampering,  
18 Directory Indexing, Information Leakage, Content Spoofing, Application Fingerprinting and Web  
19 Server Fingerprinting. SmartWAF may also integrate with CodeSecure by importing source code  
20 analysis findings and reconfiguring its rule set to block web application exploits targeted at  
21 vulnerabilities identified by CodeSecure.  
22

23           45.    Armorize deploys a developers’ API for HackAlert Scanning and Forensics Extraction  
24 for Malware. With the API, developers can detect malware not normally caught by normal anti-virus  
25 technologies, such as zero-day exploits or Advanced Persistent Threats; automatically induce  
26 malware behavior and collect forensics information; and scan individual URLs for Web malware,  
27  
28

1 such as drive-by downloads and click-to downloads, and generate trackbacks, exploitation steps,  
2 JavaScript execution and malware execution. *See* APT-malware-malvertising-scanning-api (attached  
3 as Exhibit P).

4 **DEFENDANT'S INFRINGEMENT OF FINJAN'S PATENTS**

5 46. Defendants have been and are now infringing the '822 Patent, the '633 Patent, the  
6 '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent, the '154 Patent and the '918 Patent  
7 (collectively "the Patents-In-Suit") in this judicial District, and elsewhere in the United States by,  
8 among other things, making, using, importing, selling, and/or offering for sale the claimed systems  
9 and methods that utilize Proofpoint's Zero-Hour Threat Detection, Proofpoint's Malware Analysis  
10 Service, Proofpoint's Targeted Attack Protection, HackAlert, and CodeSecure, including without  
11 limitation on Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint  
12 Essentials, Proofpoint Protection Server, Proofpoint Messaging Security GatewayHackAlert Suite,  
13 HackAlert Website Monitoring, HackAlert Safe Impressions, HackAlert SafeImpressions, HackAlert  
14 CodeSecure, HackAlert Vulnerability Assessment and SmartWAF..

15  
16  
17 47. In addition to directly infringing the Patents-In-Suit pursuant to 35 U.S.C. § 271(a)  
18 either literally or under the doctrine of equivalents, Defendants indirectly infringe the '822 Patent, the  
19 '633 Patent, the '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent and the '918 Patent  
20 pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including its users  
21 and developers, to perform all or some of the steps of method claims of the Patents-In-Suit, either  
22 literally or under the doctrine of equivalents.

23 **COUNT I**

24 **(Direct Infringement of the '822 Patent pursuant to 35 U.S.C. § 271(a))**

25 48. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
26 allegations of the preceding paragraphs, as set forth above.  
27  
28

1 49. Defendants have infringed and continue to infringe one or more claims of the '822  
2 Patent in violation of 35 U.S.C. § 271(a).

3 50. Defendants' infringement is based upon literal infringement or, in the alternative,  
4 infringement under the doctrine of equivalents.

5 51. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing  
6 products and services have been without the permission, consent, authorization or license of Finjan.

7 52. Defendants' infringement includes, but is not limited to, the manufacture, use, sale,  
8 importation and/or offer for sale of Defendants' products and services, including but not limited to  
9 HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection, which  
10 embody the patented invention of the '822 Patent.  
11

12 53. As a result of Defendants' unlawful activities, Finjan has suffered and will continue to  
13 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
14 to preliminary and/or permanent injunctive relief.  
15

16 54. Defendants' infringement of the '822 Patent has injured and continues to injure Finjan  
17 in an amount to be proven at trial.

18 **COUNT II**

19 **(Indirect Infringement of the '822 Patent pursuant to 35 U.S.C. § 271(b))**

20 55. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
21 allegations of the preceding paragraphs, as set forth above.

22 56. Defendants have induced and continue to induce infringement of at least claims 1-3, 4-  
23 8, and 16-27 of the '822 Patent under 35 U.S.C. § 271(b).

24 57. In addition to directly infringing the '822 Patent, Defendants indirectly infringe the  
25 '822 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
26 but not limited to its customers, users and developers, to perform all or some of the steps of the  
27  
28

1 method claims, either literally or under the doctrine of equivalents, of the '822 Patent, where all the  
2 steps of the method claims are performed by either Defendants or their customers, users or  
3 developers, or some combination thereof. Defendants have known or have been willfully blind to the  
4 fact that they are inducing others, including customers, users and developers, to infringe by  
5 practicing, either themselves or in conjunction with Defendants, one or more method claims of the  
6 '822 Patent.

7  
8 58. Defendants knowingly and actively aid and abet the direct infringement of the '822  
9 Patent by instructing and encouraging their customers, users and developers to use the HackAlert,  
10 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection. Such instructions  
11 and encouragement include, but are not limited to, advising third parties to use the HackAlert,  
12 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection in an infringing  
13 manner; providing a mechanism through which third parties may infringe the '822 Patent, specifically  
14 through the use of the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted  
15 Attack Protection; advertising and promoting the use of the HackAlert, Proofpoint Malware Analysis  
16 Service, and Proofpoint Targeted Attack Protection in an infringing manner; and distributing  
17 guidelines and instructions to third parties on how to use the HackAlert, Proofpoint Malware Analysis  
18 Service, and Proofpoint Targeted Attack Protection in an infringing manner.

19  
20 59. Defendants provide detailed instructions to their customers and users regarding all  
21 aspects of the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack  
22 Protection, including HackAlert Suite, HackAlert Website Monitoring, HackAlert Safe Impressions,  
23 HackAlert SafeImpressions, HackAlert Vulnerability Assessment, Proofpoint Enterprise Protection,  
24 Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of Beginner,  
25 Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging Security  
26  
27  
28

1 Gateway. Examples of these instructions can be found at the Armorize Resource Center (at  
2 [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product)), Armorize Forums / Tutorials, FAQs (at  
3 <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>), and Proofpoint Resources  
4 (at <http://www.proofpoint.com/resources/index.php>).

5 60. Proofpoint itself and through its authorized partners regularly provides classroom style  
6 training, demonstrations, webinars, and certification programs to help users use Proofpoint Targeted  
7 Attack Protection and Malware Analysis Service, including without limitation the following:  
8

- 9 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
10 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
11 Combatting 2013's Most Dangerous Attacks, and Spearphishing: How  
12 to Reliably Defeat Targeted Attacks. *See*  
13 <http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).  
14
- 15 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
16 Enterprise Protection Live Demo. The demonstrations show how to use the  
17 Targeted Attack Protection to protect organizations. *See*  
18 <http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).  
19
- 20 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
21 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
22 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
23 Attacks. *See* <http://www.proofpoint.com/resources/white-papers.php> (attached as  
24 Exhibit S).
- 25 • Proofpoint Education Portal which offers courses in Enterprise Protection  
26 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
27 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
28 on Email, and Enterprise Protection Associate Level Training. *See*  
<http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).
- Proofpoint Education Portal which offers On-Site Training where a group of up to 8  
people can be trained live by Proofpoint to use their Protection products. *See*  
<http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as  
Exhibit U).

61. Proofpoint offers Professional Services, which helps customers design and implement  
Proofpoint's products onto the customers' network. Professional Services also offers integration,  
customization, training and maintenance of Proofpoint's products.

62. Armorize posts tutorials, user guides, troubleshooting and explanations on its online forum on how to use Armorize technology. These include without limitation HackAlert Resources, HackAlert SafeImpression question documents, tutorials on what to do “when a drive-by-download knocks at your door,” tutorial on “How to add a website into HackAlert to be monitored,” and tutorial on “what to do when receiving an alert.” See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources> (attached as Exhibit V).

63. Armorize provides the HackAlert V5 API, which encourages developers and customers to use HackAlert with step-by-step instructions on how to integrate into the HackAlert Software. See [Armorize Malware Scanning and Forensics Extraction API](#) (attached as Exhibit P).

64. Defendants actively and intentionally maintains and updates websites, including Proofpoint.com and Armorize.com, to promote and provide demonstration, instruction and technical assistance for the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection products, and to encourage customers, users and developers to use the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection products and practice the methods taught in the ‘822 Patent.

65. Defendants have had knowledge of the ‘822 Patent at least as of the time they learned of this action for infringement, and by continuing their actions described above, Defendants have had the specific intent to or were willfully blind to the fact that their actions would induce infringement of the ‘822 Patent.

### **COUNT III**

#### **(Direct Infringement of the ‘633 Patent pursuant to 35 U.S.C. § 271(a))**

66. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

67. Defendants have infringed and continue to infringe one or more claims of the '633 Patent in violation of 35 U.S.C. § 271(a).

68. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

69. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization or license of Finjan.

70. Defendants' infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of Defendants' products and services, including but not limited to the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection, which embody the patented invention of the '633 Patent.

71. As a result of Defendants' unlawful activities, Finjan has suffered and will continue to suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled to preliminary and/or permanent injunctive relief.

72. Defendants' infringement of the '633 Patent has injured and continues to injure Finjan in an amount to be proven at trial.

**COUNT IV**

**(Indirect Infringement of the '633 Patent pursuant to 35 U.S.C. §§ 271(b))**

73. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

74. Defendants have induced and continue to induce infringement of at least claims 1-7 and 28-33 of the '633 Patent under 35 U.S.C. § 271(b).

75. In addition to directly infringing the '633 Patent, Defendants indirectly infringe the '633 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including but not limited to its customers, users and developers, to perform all or some of the steps of the

1 method claims, either literally or under the doctrine of equivalents, of the '633 Patent, where all the  
2 steps of the method claims are performed by either Defendants or their customers, users or  
3 developers, or some combination thereof. Defendants have known or have been willfully blind to the  
4 fact that they are inducing others, including customers, users and developers, to infringe by  
5 practicing, either themselves or in conjunction with Defendants, one or more method claims of the  
6 '633 Patent.

7  
8 76. Defendants knowingly and actively aid and abet the direct infringement of the '633  
9 Patent by instructing and encouraging their customers, users and developers to use the HackAlert,  
10 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection. Such instructions  
11 and encouragement include but are not limited to, advising third parties to use HackAlert, Proofpoint  
12 Malware Analysis Service, and Proofpoint Targeted Attack Protection in an infringing manner;  
13 providing a mechanism through which third parties may infringe the '633 Patent, specifically through  
14 the use of HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack  
15 Protection; advertising and promoting the use of HackAlert, Proofpoint Malware Analysis Service,  
16 and Proofpoint Targeted Attack Protection in an infringing manner; and distributing guidelines and  
17 instructions to third parties on how to use HackAlert, Proofpoint Malware Analysis Service, and  
18 Proofpoint Targeted Attack Protection in an infringing manner.

19  
20 77. Defendants provide detailed instruction to its customers and users regarding all aspects  
21 of the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection  
22 including, HackAlert Suite, HackAlert Website Monitoring, HackAlert Safe Impressions, HackAlert  
23 SafeImpressions, HackAlert Vulnerability Assessment, Proofpoint Enterprise Protection,  
24 Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of Beginner,  
25 Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging Security  
26  
27  
28

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11 Facsimile: (650) 752-1800

12 *Attorneys for Plaintiff*  
13 FINJAN, INC.

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IN THE UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA

FINJAN, INC.,

Plaintiff,

v.

PROOFPOINT, INC. AND ARMORIZE  
TECHNOLOGIES, INC.

Defendants.

Case No.:

COMPLAINT FOR PATENT  
INFRINGEMENT

DEMAND FOR JURY TRIAL

COMPLAINT FOR PATENT INFRINGEMENT

CASE NO.

1 Gateway. Examples of these instructions can be found at the Armorize Resource Center located at  
2 [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product), Armorize Forums / Tutorials, FAQs (at  
3 <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>), and Proofpoint Resources  
4 (at <http://www.proofpoint.com/resources/index.php>).

5 78. Proofpoint itself and through its authorized partners regularly provides class-room  
6 style training, demonstrations, webinars, and certification programs to help users use Proofpoint  
7 Targeted Attack Protection and Malware Analysis Service, including without limitation the  
8 following:  
9

- 10 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
11 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
12 Combatting 2013's Most Dangerous Attacks, and Spearphishing: How  
13 to Reliably Defeat Targeted Attacks. See  
14 <http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
- 15 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
16 Enterprise Protection Live Demo. The demonstrations show how to use the  
17 Targeted Attack Protection to protect organizations. See  
18 <http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 19 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
20 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
21 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
22 Attacks. See <http://www.proofpoint.com/resources/white-papers.php> (attached as  
23 Exhibit S).
- 24 • Proofpoint Education Portal, which offers courses in Enterprise Protection  
25 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
26 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
27 on E-mail, and Enterprise Protection Associate Level Training. See  
28 <http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).
- Proofpoint Education Portal which offers On-Site Training where a group of up to 8  
people can be trained live by Proofpoint to use their Protection products. See  
<http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as  
Exhibit U).

1 79. Proofpoint offers Professional Services, which helps customers design and implement  
2 Proofpoint's products onto the customers' network. Professional Services also offers integration,  
3 customization, training and maintenance of Proofpoint's products.

4 80. Armorize posts tutorials, user guides, troubleshooting and explanations on its online  
5 forum on how to use Armorize technology. These include without limitation HackAlert Resources,  
6 HackAlert SafeImpression question documents, tutorials on what to do "when a drive-by-download  
7 knocks at your door," tutorial on "How to add a website into HackAlert to be monitored," and  
8 tutorial on "what to do when receiving an alert." See [https://armorize.zendesk.com/categories/5972-](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources)  
9 [Tutorials-FAQs-Resources](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources) (attached as Exhibit V).  
10

11 81. Armorize provides the HackAlert V5 API, which encourages developers and  
12 customers to use HackAlert with step-by-step instructions on how to integrate into the HackAlert  
13 Software. See Armorize Malware Scanning and Forensics Extraction API (attached as Exhibit P).  
14

15 82. Defendants actively and intentionally maintain and update their websites, including  
16 Proofpoint.com and Armorize.com, to promote and provide demonstration, instruction and technical  
17 assistance for the HackAlert, Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack  
18 Protection products, and to encourage customers, users and developers to use the HackAlert,  
19 Proofpoint Malware Analysis Service, and Proofpoint Targeted Attack Protection products and  
20 practice the methods taught in the '633 Patent.

21 83. Defendants have had knowledge of the '633 Patent at least as of the time they learned  
22 of this action for infringement, and by continuing the actions described above, Defendants have had  
23 the specific intent to or was willfully blind to the fact that their actions would induce infringement of  
24 the '633 Patent.  
25  
26  
27  
28

**COUNT V**

**(Direct Infringement of the '844 Patent pursuant to 35 U.S.C. § 271(a))**

84. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

85. Proofpoint has infringed and continues to infringe one or more claims of the '844 Patent in violation of 35 U.S.C. § 271(a).

86. Proofpoint's infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

87. Proofpoint's acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization or license of Finjan.

88. Proofpoint's infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of Proofpoint's products and services, including but not limited to Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection, which embodies the patented invention of the '844 Patent.

89. As a result of Proofpoint's unlawful activities, Finjan has suffered and will continue to suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled to preliminary and/or permanent injunctive relief.

90. Proofpoint's infringement of the '844 Patent has injured and continues to injure Finjan in an amount to be proven at trial.

**COUNT VI**

**(Indirect Infringement of the '844 Patent pursuant to 35 U.S.C. § 271(b))**

91. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

92. Proofpoint has induced and continues to induce infringement of at least claims 1-14 and 22-27 of the '844 Patent under 35 U.S.C. § 271(b).

1           93. In addition to directly infringing the '844 Patent, Proofpoint indirectly infringes the  
2 '844 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
3 but not limited to its customers, users and developers, to perform all or some of the steps of the  
4 method claims, either literally or under the doctrine of equivalents, of the '844 Patent, where all the  
5 steps of the method claims are performed by either Proofpoint or its customers, users or developers,  
6 or some combination thereof. Proofpoint has known or has been willfully blind to the fact that it is  
7 inducing others, including customers, users and developers, to infringe by practicing, either  
8 themselves or in conjunction with Proofpoint, one or more method claims of the '844 Patent.  
9

10           94. Proofpoint knowingly and actively aids and abets the direct infringement of the '844  
11 Patent by instructing and encouraging its customers, users and developers to use the Proofpoint  
12 Malware Analysis Service and Proofpoint Targeted Attack Protection. Such instructions and  
13 encouragement include but are not limited to, advising third parties to use the Proofpoint Malware  
14 Analysis Service and Proofpoint Targeted Attack Protection in an infringing manner; providing a  
15 mechanism through which third parties may infringe the '844 Patent, specifically through the use of  
16 the Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection; advertising and  
17 promoting the use of the Proofpoint Malware Analysis Service and Proofpoint Targeted Attack  
18 Protection in an infringing manner; and distributing guidelines and instructions to third parties on  
19 how to use the Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection in an  
20 infringing manner.  
21

22           95. Proofpoint provides detailed instructions to its customers and users regarding all  
23 aspects of the Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection  
24 including, Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint  
25 Essentials (including the packages of Beginner, Business, and Professional), Proofpoint Protection  
26  
27  
28

1 Server, and Proofpoint Messaging Security Gateway. Examples of these instructions can be found at  
2 the Proofpoint Resources located at <http://www.proofpoint.com/resources/index.php>.

3 96. Proofpoint itself and through its authorized partners regularly provides class-room  
4 style training, demonstrations, webinars, and certification programs to help users use Proofpoint  
5 Targeted Attack Protection and Malware Analysis Service, including without limitation the  
6 following:

- 7 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
8 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
9 Combatting 2013's Most Dangerous Attacks, and Spearphishing: How  
10 to Reliably Defeat Targeted Attacks. See  
<http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
- 11 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
12 Enterprise Protection Live Demo. The demonstrations show how to use the  
13 Targeted Attack Protection to protect organizations. See  
<http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 14 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
15 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
16 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
17 Attacks. See <http://www.proofpoint.com/resources/white-papers.php> (attached as  
18 Exhibit S).
- 19 • Proofpoint Education Portal, which offers courses in Enterprise Protection,  
20 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
21 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
22 on E-mail, and Enterprise Protection Associate Level Training. See  
<http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).
- 23 • Proofpoint Education Portal which offers On-Site Training where a group of up to 8  
24 people can be trained live by Proofpoint to use their Protection products. See  
25 <http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as  
26 Exhibit U).

27 97. Proofpoint offers Professional Services, which helps customers design and implement  
28 Proofpoint's products onto the customers' network. Professional Services also offers integration,  
customization, training and maintenance of Proofpoint's products.

1 98. Proofpoint actively and intentionally maintains and updates websites, including  
2 Proofpoint.com, to promote and provide demonstration, instruction and technical assistance for the  
3 Proofpoint Malware Analysis Service and Proofpoint Targeted Attack Protection, and to encourage  
4 customers, users and developers to use Proofpoint Malware Analysis Service and Proofpoint Targeted  
5 Attack Protection and practice the methods taught in the '844 Patent.

6 99. Proofpoint has had knowledge of the '844 Patent at least as of the time it learned of  
7 this action for infringement, and by continuing the actions described above, Proofpoint has had the  
8 specific intent to or was willfully blind to the fact that its actions would induce infringement of the  
9 '844 Patent.  
10

11 **COUNT VII**

12 **(Direct Infringement of the '305 Patent pursuant to 35 U.S.C. § 271(a))**

13 100. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
14 allegations of the preceding paragraphs, as set forth above.

15 101. Defendants have infringed and continue to infringe one or more claims of the '305  
16 Patent in violation of 35 U.S.C. § 271(a).  
17

18 102. Defendants' infringement is based upon literal infringement or, in the alternative,  
19 infringement under the doctrine of equivalents.

20 103. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing  
21 products and services have been without the permission, consent, authorization or license of Finjan.

22 104. Defendants' infringement includes, but is not limited to, the manufacture, use, sale,  
23 importation and/or offer for sale of Defendants' products and services, including but not limited to,  
24 Proofpoint Zero-Hour and CodeSecure, which embody the patented invention of the '305 Patent.  
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1 mechanism through which third parties may infringe the '305 Patent, specifically through the use of  
2 the Proofpoint Zero-Hour and CodeSecure; advertising and promoting the use of the Proofpoint Zero-  
3 Hour and CodeSecure in an infringing manner; and distributing guidelines and instructions to third  
4 parties on how to use the Proofpoint Zero-Hour and CodeSecure in an infringing manner.

5 111. Defendants provide detailed instruction to their customers and users regarding all  
6 aspects of the Proofpoint Zero-Hour and CodeSecure. Examples of these instructions can be found at  
7 the Armorize Resource Center located at [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product), Armorize  
8 Forums / Tutorials, FAQs (at [https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources)  
9 [Resources](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources)), and Proofpoint Resources (at <http://www.proofpoint.com/resources/index.php>).

10 112. Proofpoint itself and through its authorized partners regularly provides class-room  
11 style training, demonstrations, webinars, and certification programs to help users use Proofpoint  
12 Targeted Attack Protection and Malware Analysis Service including without limitation the following:  
13

- 14 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
15 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
16 Combatting 2013's Most Dangerous Attacks, and Spearphishing: How  
17 to Reliably Defeat Targeted Attacks. See  
<http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
- 18 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
19 Enterprise Protection Live Demo. The demonstrations show how to use the  
20 Targeted Attack Protection to protect organizations. See  
<http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 21 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
22 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
23 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
24 Attacks. See <http://www.proofpoint.com/resources/white-papers.php> (attached as  
25 Exhibit S).
- 26 • Proofpoint Education Portal, which offers courses in Enterprise Protection,  
27 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
28 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
on E-mail, and Enterprise Protection Associate Level Training. See  
<http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).

- Proofpoint Education Portal which offers On-Site Training where a group of up to 8 people can be trained live by Proofpoint to use their Protection products. *See* <http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as Exhibit U).

113. Proofpoint offers Professional Services, which helps customers design and implement Proofpoint's products onto the customers network. Professional Services also offers integration, customization, training and maintenance of Proofpoint's products.

114. Armorize posts tutorials, user guides, troubleshooting and explanations on its online forum on how to use Armorize technology. These include without limitation documents on Code Secure Quick Start Guides, How to upgrade CodeSecure, and LDAP integration tip with CodeSecure. *See* <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources> (attached as Exhibit V).

115. Defendants actively and intentionally maintain and update websites, including Proofpoint.com and Armorize.com, to promote and provide demonstration, instruction and technical assistance for HackAlert Code Secure, Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of Beginner, Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging Security Gateway, and to encourage customers, users and developers to use HackAlert Code Secure, Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of Beginner, Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging Security Gateway and practice the methods taught in the '305 Patent.

116. Defendants have had knowledge of the '305 Patent at least as of the time they learned of this action for infringement, and by continuing the actions described above, Defendants have had the specific intent to or was willfully blind to the fact that their actions would induce infringement of the '305 Patent.

**COUNT IX**

**(Direct Infringement of the '408 Patent pursuant to 35 U.S.C. § 271(a))**

117. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

118. Defendants have infringed and continues to infringe one or more claims of the '408 Patent in violation of 35 U.S.C. § 271(a).

119. Defendants' infringement is based upon literal infringement or, in the alternative, infringement under the doctrine of equivalents.

120. Defendants' acts of making, using, importing, selling, and/or offering for sale infringing products and services have been without the permission, consent, authorization or license of Finjan.

121. Defendants' infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of Defendants' products and services, including but not limited to, Proofpoint Zero-Hour and CodeSecure, which embody the patented invention of the '408 Patent.

122. As a result of Defendants' unlawful activities, Finjan has suffered and will continue to suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled to preliminary and/or permanent injunctive relief.

123. Defendants' infringement of the '408 Patent has injured and continues to injure Finjan in an amount to be proven at trial.

**COUNT X**

**(Indirect Infringement of the '408 Patent pursuant to 35 U.S.C. § 271(b))**

124. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the allegations of the preceding paragraphs, as set forth above.

125. Defendants have induced and continue to induce infringement of at least claims 1-8 and 23-28, of the '408 Patent under 35 U.S.C. § 271(b).

1           126. In addition to directly infringing the '408 Patent, Defendants indirectly infringe the  
2 '408 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
3 but not limited to its customers, users and developers, to perform all or some of the steps of the  
4 method claims, either literally or under the doctrine of equivalents, of the '408 Patent, where all the  
5 steps of the method claims are performed by either Defendants or their customers, users or  
6 developers, or some combination thereof. Defendants have known or have been willfully blind to the  
7 fact that they are inducing others, including customers, users and developers, to infringe by  
8 practicing, either themselves or in conjunction with Defendants, one or more method claims of the  
9 '408 Patent.  
10

11           127. Defendants knowingly and actively aid and abet the direct infringement of the '408  
12 Patent by instructing and encouraging their customers, users and developers to use Proofpoint Zero-  
13 Hour and CodeSecure. Such instructions and encouragement include, but are not limited to, advising  
14 third parties to use Proofpoint Zero-Hour and CodeSecure in an infringing manner; providing a  
15 mechanism through which third parties may infringe the '408 Patent, specifically through the use of  
16 the Proofpoint Zero-Hour and CodeSecure; advertising and promoting the use of the Proofpoint Zero-  
17 Hour and CodeSecure in an infringing manner; and distributing guidelines and instructions to third  
18 parties on how to use the Proofpoint Zero-Hour and CodeSecure in an infringing manner.  
19

20           128. Defendants provide detailed instructions to their customers and users regarding all  
21 aspects of the Proofpoint Zero-Hour and CodeSecure including HackAlert Code Secure, Proofpoint  
22 Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the  
23 packages of Beginner, Business, and Professional), Proofpoint Protection Server, and Proofpoint  
24 Messaging Security Gateway. Examples of these instructions can be found at the Armorize Resource  
25 Center (at [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product)), Armorize Forums / Tutorials, FAQs (at  
26  
27  
28

**COMPLAINT FOR PATENT INFRINGEMENT**

Plaintiff Finjan, Inc. ("Finjan") files this Complaint for Patent Infringement and Jury Demand against Defendants Proofpoint, Inc. ("Proofpoint") and Armorize Technologies, Inc. ("Armorize"), (collectively "Defendants") and alleges as follows:

**THE PARTIES**

1. Finjan is a Delaware corporation, with its corporate headquarters at 1313 N. Market Street, Suite 5100, Wilmington, Delaware 19801. Finjan's U.S. operating business was previously headquartered at 2025 Gateway Place, San Jose, California 95110.

2. Proofpoint is a Delaware corporation with its principal place of business at 892 Ross Drive, Sunnyvale, California 94089.

3. Armorize is a Delaware corporation with its principal place of business at 5201 Great America Parkway Suite 320, Santa Clara, CA 95054. Armorize is a wholly-owned subsidiary of Proofpoint.

**JURISDICTION AND VENUE**

4. This action arises under the Patent Act, 35 U.S.C. § 101 *et seq.* This Court has original jurisdiction over this controversy pursuant to 28 U.S.C. §§ 1331 and 1338.

5. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(b) and (c) and/or 1400(b).

6. This Court has personal jurisdiction over Defendants. Upon information and belief, Defendants do business in this District and has, and continue to, infringe and/or induce the infringement in this District. Defendants also market their products primarily in and from this District. In addition, the Court has personal jurisdiction over Defendants because they have established minimum contacts with the forum and the exercise of jurisdiction would not offend traditional notions of fair play and substantial justice.

1 <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>), and Proofpoint Resources  
2 (at <http://www.proofpoint.com/resources/index.php>).

3 129. Proofpoint itself and through its authorized partners regularly provide class-room style  
4 training, demonstrations, webinars, and certification programs to help users use Proofpoint Targeted  
5 Attack Protection and Malware Analysis Service including without limitation the following:

- 6 • Webinars on Contextual Security Approach to Protection From Targeted Threats,  
7 Undetected Threats: Finding and protecting against hundreds of missed attacks,  
8 Combatting 2013's Most Dangerous Attacks, and Spearing the Spear Phishers: How  
9 to Reliably Defeat Targeted Attacks. See  
<http://www.proofpoint.com/resources/webinars.php> (attached as Exhibit Q).
- 10 • Demonstrations including Proofpoint Integrated Product Suite Demo and Proofpoint  
11 Enterprise Protection Live Demo. The demonstrations show how to use the  
12 Targeted Attack Protection to protect organizations. See  
<http://www.proofpoint.com/resources/demos.php> (attached as Exhibit R).
- 13 • Technical Briefs on Proofpoint Zero-Hour Anti-Virus and White Papers on Targeted  
14 Attack: The Best Defense, Defense against the Dark Arts: Finding and Stopping  
15 Advanced Threats, and Longline Phishing: A New Class of Advanced Phishing  
16 Attacks. See <http://www.proofpoint.com/resources/white-papers.php> (attached as  
17 Exhibit S).
- 18 • Proofpoint Education Portal, which offers courses in Enterprise Protection,  
19 Accredited Engineer, Enterprise Protection Suite, Enterprise Protection for the  
20 Administrator, Proofpoint Targeted Attack Protection for End Users, Staying Safe  
21 on E-mail, and Enterprise Protection Associate Level Training. See  
<http://www.training.proofpoint.com/courses-draft/> (attached as Exhibit T).
- 22 • Proofpoint Education Portal which offers On-Site Training where a group of up to 8  
23 people can be trained live by Proofpoint to use their Protection products. See  
24 <http://www.training.proofpoint.com/classroom-schedule/on-site/> (attached as  
25 Exhibit U).

26 130. Proofpoint offers Professional Services, which helps customers design and implement  
27 Proofpoint's products onto the customers' network. Professional Services also offers integration,  
28 customization, training and maintenance of Proofpoint's products.

1 131. Armorize posts tutorials, user guides, troubleshooting and explanation on how to use  
2 Armorize technology on its online forum. These include without limitation documents on

1 CodeSecure Quick Start Guides, How to upgrade CodeSecure, and LDAP integration tip with  
2 CodeSecure. See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources> (attached  
3 as Exhibit V).

4 132. Defendants actively and intentionally maintain and update websites, including  
5 Proofpoint.com and Armorize.com, to promote and provide demonstration, instruction and technical  
6 assistance for HackAlert Code Secure, Proofpoint Enterprise Protection, Proofpoint's Targeted  
7 Attack Protection, Proofpoint Essentials (including the packages of Beginner, Business, and  
8 Professional), Proofpoint Protection Server, and Proofpoint Messaging Security Gateway, and to  
9 encourage customers, users and developers to use HackAlert Code Secure, Proofpoint Enterprise  
10 Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials (including the packages of  
11 Beginner, Business, and Professional), Proofpoint Protection Server, and Proofpoint Messaging  
12 Security Gateway products and practice the methods taught in the '408 Patent.

14 133. Defendants have had knowledge of the '408 Patent at least as of the time they learned  
15 of this action for infringement, and by continuing the actions described above, Defendants have had  
16 the specific intent to or was willfully blind to the fact that their actions would induce infringement of  
17 the '408 Patent.

19 **COUNT XI**

20 **(Direct Infringement of the '086 Patent pursuant to 35 U.S.C. § 271(a))**

21 134. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
22 allegations of the preceding paragraphs, as set forth above.

23 135. Armorize has infringed and continues to infringe one or more claims of the '086  
24 Patent in violation of 35 U.S.C. § 271(a).

25 136. Armorize's infringement is based upon literal infringement or, in the alternative,  
26 infringement under the doctrine of equivalents.  
27  
28

1 137. Armorize's acts of making, using, importing, selling, and/or offering for sale infringing  
2 products and services have been without the permission, consent, authorization or license of Finjan.

3 138. Armorize's infringement includes, but is not limited to, the manufacture, use, sale,  
4 importation and/or offer for sale of Armorize's products and services, including but not limited to, the  
5 HackAlert and CodeSecure, which embody the patented invention of the '086 Patent.

6 139. As a result of Armorize's unlawful activities, Finjan has suffered and will continue to  
7 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
8 to preliminary and/or permanent injunctive relief.  
9

10 140. Armorize's infringement of the '086 Patent has injured and continues to injure Finjan  
11 in an amount to be proven at trial.

12 **COUNT XII**  
13 **(Indirect Infringement of the '086 Patent pursuant to 35 U.S.C. § 271(b))**

14 141. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
15 allegations of the preceding paragraphs, as set forth above.

16 142. Armorize has induced and continues to induce infringement of at least claims 1-8, 17-  
17 23, 31, 32, 35, 36, 39, and 41 of the '086 Patent under 35 U.S.C. § 271(b).

18 143. In addition to directly infringing the '086 Patent, Armorize indirectly infringes the  
19 '086 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
20 but not limited to its customers, users and developers, to perform all or some of the steps of the  
21 method claims, either literally or under the doctrine of equivalents, of the '086 Patent, where all the  
22 steps of the method claims are performed by either Armorize or its customers, users or developers, or  
23 some combination thereof. Armorize has known or has been willfully blind to the fact that it is  
24 inducing others, including customers, users and developers, to infringe by practicing, either  
25 themselves or in conjunction with Armorize, one or more method claims of the '086 Patent.  
26  
27  
28

1 144. Armorize knowingly and actively aided and abetted the direct infringement of the '086  
2 Patent by instructing and encouraging its customers, users and developers to use HackAlert and  
3 CodeSecure. Such instructions and encouragement include but are not limited to, advising third  
4 parties to use HackAlert and CodeSecure in an infringing manner; providing a mechanism through  
5 which third parties may infringe the '086 Patent, specifically through the use of HackAlert and  
6 CodeSecure; advertising and promoting the use of HackAlert and CodeSecure in an infringing  
7 manner; and distributing guidelines and instructions to third parties on how to use HackAlert and  
8 CodeSecure in an infringing manner.  
9

10 145. Armorize provides detailed instruction to its customers and users regarding all aspects  
11 of HackAlert and CodeSecure including, HackAlert, HackAlert Suite, HackAlert Website  
12 Monitoring, HackAlert Safe Impressions, HackAlert SafeImpressions, and HackAlert Vulnerability  
13 Assessment, SmartWAF, and HackAlert CodeSecure. Examples of these instructions can be found at  
14 the Armorize Resource Center (at [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product)), Armorize Forums  
15 / Tutorials, FAQs (at <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>), and  
16 Proofpoint Resources (at <http://www.proofpoint.com/resources/index.php>).  
17

18 146. Armorize posts tutorials, user guides, troubleshooting and explanation on how to use  
19 Armorize technology, including CodeSecure and HackAlert, on its online forum. These include  
20 without limitation documents on CodeSecure Quick Start Guides, How to upgrade CodeSecure, and  
21 LDAP integration tip with CodeSecure. See [https://armorize.zendesk.com/categories/5972-Tutorials-](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources)  
22 [FAQs-Resources](https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources) (attached as Exhibit V).  
23

24 147. Armorize also posts tutorials, user guides, troubleshooting and explanation on how to  
25 use HackAlert on its online forum. These include HackAlert Resources, HackAlert SafeImpression  
26 question documents, tutorials on what to do "when a drive-by-download knocks at your door,"  
27  
28

1 tutorial on “How to add a website into HackAlert to be monitored,” and tutorial on “what to do when  
2 receiving an alert.” See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>  
3 (attached as Exhibit V).

4 148. Armorize Provides the HackAlert V5 API, which encourages developers and  
5 customers to use HackAlert with step-by-step instructions on how to integrate into the HackAlert  
6 Software. See Armorize Malware Scanning and Forensics Extraction API (attached as Exhibit P).

7 149. Armorize actively and intentionally maintains and updates websites, including  
8 Armorize.com, to promote and provide demonstration, instruction and technical assistance for  
9 HackAlert and CodeSecure, and to encourage customers, users and developers to use HackAlert and  
10 CodeSecure products and practice the methods taught in the ‘086 Patent.

11 150. Armorize has had knowledge of the ‘086 Patent at least as of the time it learned of this  
12 action for infringement, and by continuing the actions described above, Armorize has had the specific  
13 intent to or was willfully blind to the fact that its actions would induce infringement of the ‘086  
14 Patent.  
15

16  
17 **COUNT XIII**

18 **(Direct Infringement of the ‘154 Patent pursuant to 35 U.S.C. § 271(a))**

19 151. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
20 allegations of the preceding paragraphs, as set forth above.

21 152. Armorize has infringed and continues to infringe one or more claims of the ‘154  
22 Patent in violation of 35 U.S.C. § 271(a).

23 153. Armorize’s infringement is based upon literal infringement or, in the alternative,  
24 infringement under the doctrine of equivalents.

25 154. Armorize’s acts of making, using, importing, selling, and/or offering for sale infringing  
26 products and services have been without the permission, consent, authorization or license of Finjan.  
27  
28

1 155. Armorize's infringement includes, but is not limited to, the manufacture, use, sale,  
2 importation and/or offer for sale of Armorize's products and services, including but not limited to, the  
3 HackAlert and CodeSecure, which embody the patented invention of the '154 Patent.

4 156. As a result of Armorize's unlawful activities, Finjan has suffered and will continue to  
5 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
6 to preliminary and/or permanent injunctive relief.

7 157. Armorize's infringement of the '154 Patent has injured and continues to injure Finjan  
8 in an amount to be proven at trial.

10 **COUNT XIV**  
11 **(Direct Infringement of the '918 Patent pursuant to 35 U.S.C. § 271(a))**

12 158. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
13 allegations of the preceding paragraphs, as set forth above.

14 159. Armorize has infringed and continues to infringe one or more claims of the '918  
15 Patent in violation of 35 U.S.C. § 271(a).

16 160. Armorize's infringement is based upon literal infringement or, in the alternative,  
17 infringement under the doctrine of equivalents.

18 161. Armorize's acts of making, using, importing, selling, and/or offering for sale infringing  
19 products and services have been without the permission, consent, authorization or license of Finjan.

20 162. Armorize's infringement includes, but is not limited to, the manufacture, use, sale,  
21 importation and/or offer for sale of Armorize's products and services, including but not limited to,  
22 HackAlert and CodeSecure, which embody the patented invention of the '918 Patent.

23 163. As a result of Armorize's unlawful activities, Finjan has suffered and will continue to  
24 suffer irreparable harm for which there is no adequate remedy at law. Accordingly, Finjan is entitled  
25 to preliminary and/or permanent injunctive relief.  
26  
27  
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1 164. Defendant's infringement of the '918 Patent has injured and continues to injure Finjan  
2 in an amount to be proven at trial.

3 **COUNT XV**  
4 **(Indirect Infringement of the '918 Patent pursuant to 35 U.S.C. § 271(b))**

5 165. Finjan repeats, realleges, and incorporates by reference, as if fully set forth herein, the  
6 allegations of the preceding paragraphs, as set forth above.

7 166. Armorize has induced and continues to induce infringement of at least claims 1-11,  
8 22-28, and 34 of the '918 Patent under 35 U.S.C. § 271(b).

9 167. In addition to directly infringing the '918 Patent, Armorize indirectly infringes the  
10 '918 Patent pursuant to 35 U.S.C. § 271(b) by instructing, directing and/or requiring others, including  
11 but not limited to its customers, users and developers, to perform all or some of the steps of the  
12 method claims, either literally or under the doctrine of equivalents, of the '918 Patent, where all the  
13 steps of the method claims are performed by either Armorize or its customers, users or developers, or  
14 some combination thereof. Armorize has known or has been willfully blind to the fact that it is  
15 inducing others, including customers, users and developers, to infringe by practicing, either  
16 themselves or in conjunction with Armorize, one or more method claims of the '918 Patent.

17  
18 168. Armorize knowingly and actively aids and abets the direct infringement of the '918  
19 Patent by instructing and encouraging its customers, users and developers to use HackAlert and  
20 CodeSecure. Such instructions and encouragement include but are not limited to, advising third  
21 parties to use HackAlert and CodeSecure in an infringing manner; providing a mechanism through  
22 which third parties may infringe the '918 Patent, specifically through the use of HackAlert and  
23 CodeSecure; advertising and promoting the use of HackAlert and CodeSecure in an infringing  
24 manner; and distributing guidelines and instructions to third parties on how to use HackAlert and  
25 CodeSecure in an infringing manner.  
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1 169. Armorize provides detailed instruction to its customers and users regarding all aspects  
2 of HackAlert and CodeSecure including, HackAlert Suite, HackAlert Website Monitoring, HackAlert  
3 Safe Impressions, HackAlert SafeImpressions, and HackAlert Vulnerability Assessment, SmartWAF,  
4 and HackAlert CodeSecure. Examples of these instructions can be found at the Armorize Resource  
5 Center (at [http://armorize.com/index.php?link\\_id=product](http://armorize.com/index.php?link_id=product)), and Armorize Forums / Tutorials, FAQs  
6 (at <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>).

7  
8 170. Armorize posts tutorials, user guides, troubleshooting and explanation on how to use  
9 Armorize technology, including CodeSecure, on its online forum. These include documents on  
10 CodeSecure Quick Start Guides, How to upgrade CodeSecure, and LDAP integration tip with  
11 CodeSecure. See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources> (attached  
12 as Exhibit V).

13 171. Armorize also posts tutorials, user guides, troubleshooting and explanation on how to  
14 use HackAlert on its online forum. These include HackAlert Resources, HackAlert SafeImpression  
15 question documents, tutorials on what to do “when a drive-by-download knocks at your door,”  
16 tutorial on “How to add a website into HackAlert to be monitored,” and tutorial on “what to do when  
17 receiving an alert.” See <https://armorize.zendesk.com/categories/5972-Tutorials-FAQs-Resources>  
18 (attached as Exhibit V).

19  
20 172. Armorize provides the HackAlert V5 API, which encourages developers and  
21 customers to use HackAlert with step-by-step instructions on how to integrate into the HackAlert  
22 Software. See Armorize Malware Scanning and Forensics Extraction API (attached as Exhibit P).

23  
24 173. Armorize actively and intentionally maintains and updates websites, including  
25 Armorize.com, to promote and provide demonstration, instruction and technical assistance for  
26  
27  
28

1 HackAler and CodeSecure, and to encourage customers, users and developers to use HackAlert and  
2 CodeSecure products and practice the methods taught in the '918 Patent.

3 174. Armorize has had knowledge of the '918 Patent at least as of the time it learned of this  
4 action for infringement, and by continuing the actions described above, Armorize has had the specific  
5 intent to or was willfully blind to the fact that its actions would induce infringement of the '918  
6 Patent.

7 **PRAYER FOR RELIEF**

8 WHEREFORE, Finjan prays for judgment and relief as follows:

9  
10 A. An entry of judgment holding that Defendants have infringed and are infringing the  
11 '822 Patent, the '633 Patent, the '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent, the  
12 '154 Patent and the '918 Patent; and that Defendants have induced and are inducing infringement of  
13 the '822 Patent, the '633 Patent, the '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent and  
14 the '918 Patent;

15  
16 B. A preliminary and permanent injunction against Defendants and their officers,  
17 employees, agents, servants, attorneys, instrumentalities, and/or those in privity with them, from  
18 infringing, or inducing the infringement of, the '822 Patent, the '633 Patent, the '844 Patent, the '305  
19 Patent, the '408 Patent, the '086 Patent, the '154 Patent and the '918 Patent and for all further and  
20 proper injunctive relief pursuant to 35 U.S.C. § 283;

21 C. An award to Finjan of such damages as it shall prove at trial against Defendants that is  
22 adequate to fully compensate Finjan for Defendants' infringement of the '822 Patent, the '633 Patent,  
23 the '844 Patent, the '305 Patent, the '408 Patent, the '086 Patent, the '154 Patent and the '918 Patent,  
24 said damages to be no less than a reasonable royalty;  
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1 D. A finding that this case is “exceptional” and an award to Finjan of its costs and  
2 reasonable attorney’s fees, as provided by 35 U.S.C. § 285;

3 E. An accounting of all infringing sales and revenues, together with postjudgment interest  
4 and prejudgment interest from the first date of infringement of the ‘822 Patent, the ‘633 Patent, the  
5 ‘844 Patent, the ‘305 Patent, the ‘408 Patent, the ‘086 Patent, the ‘154 Patent and the ‘918 Patent; and

6 F. Such further and other relief as the Court may deem proper and just.

7  
8 Respectfully submitted,

9  
10 Dated: December 16, 2013

By: /s/ Paul J. Andre  
Paul J. Andre  
Lisa Kobialka  
James Hannah  
KRAMER LEVIN NAFTALIS  
& FRANKEL LLP  
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17  
18 *Attorneys for Plaintiff*  
FINJAN, INC.

**INTRADISTRICT ASSIGNMENT**

7. Pursuant to Local Rule 3-2(c), Intellectual Property Actions are assigned on a district-wide basis.

**FINJAN'S INNOVATIONS**

8. Finjan was founded in 1997 as a wholly-owned subsidiary of Finjan Software Ltd., an Israeli corporation. Finjan was a pioneer in the developing proactive security technologies capable of detecting previously unknown and emerging online security threats recognized today under the umbrella of "malware." These technologies protect networks and endpoints by identifying suspicious patterns and behaviors of content delivered over the Internet. Finjan has been awarded, and continues to prosecute, numerous patents in the United States and around the world resulting directly from Finjan's more than decade-long research and development efforts, supported by a dozen inventors.

9. Finjan built and sold software, including APIs, and appliances for network security using these patented technologies. These products and customers continue to be supported by Finjan's licensing partners. At its height, Finjan employed nearly 150 employees around the world building and selling security products and operating the Malicious Code Research Center through which it frequently published research regarding network security and current threats on the Internet. Finjan's pioneering approach to online security drew equity investments from two major software and technology companies, the first in 2005, followed by the second in 2006. Through 2009, Finjan has generated millions of dollars in product sales and related services and support revenues.

10. Finjan's founder and original investors are still involved with and invested in the company today, as are a number of other key executives and advisors. Currently, Finjan is a technology company applying its research, development, knowledge and experience with security technologies to working with inventors, investing in and/or acquiring other technology companies,

**DEMAND FOR JURY TRIAL**

Finjan demands a jury trial on all issues so triable.

Respectfully submitted,

Dated: December 16, 2013

By: /s/ Paul J. Andre  
Paul J. Andre  
Lisa Kobialka  
James Hannah  
KRAMER LEVIN NAFTALIS  
& FRANKEL LLP  
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*Attorneys for Plaintiff*  
FINJAN, INC.

1 investing in a variety of research organizations, and evaluating strategic partnerships with large  
2 companies.

3 11. On June 6, 2006, U.S. Patent No. 7,058,822 ("the '822 Patent"), entitled MALICIOUS  
4 MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS, was issued to Yigal  
5 Mordechai Edery, Nimrod Itzhak Vered, David R. Kroll and Shlomo Touboul. A true and correct  
6 copy of the '822 Patent is attached to this Complaint as Exhibit A and is incorporated by reference  
7 herein.  
8

9 12. All rights, title, and interest in the '822 Patent have been assigned to Finjan, who is the  
10 sole owner of the '822 Patent. Finjan has been the sole owner of the '822 Patent since its issuance.

11 13. The '822 Patent is generally directed towards computer networks and more  
12 particularly provides a system that protects devices connected to the Internet from undesirable  
13 operations from web-based content. One of the ways this is accomplished is by determining whether  
14 any part of such web-based content can be executed and then trapping such content and neutralizing  
15 possible harmful effects using mobile protection code. Additionally, the system provides a way to  
16 analyze such web-content to determine whether it can be executed.  
17

18 14. On January 12, 2010, U.S. Patent No. 7,647,633 ("the '633 Patent"), entitled  
19 MALICIOUS MOBILE CODE RUNTIME MONITORING SYSTEM AND METHODS, was issued  
20 to Yigal Mordechai Edery, Nimrod Itzhak Vered, David R. Kroll and Shlomo Touboul. A true and  
21 correct copy of the '633 Patent is attached to this Complaint as Exhibit B and is incorporated by  
22 reference herein.  
23

24 15. All rights, title, and interest in the '633 Patent have been assigned to Finjan, who is the  
25 sole owner of the '633 Patent. Finjan has been the sole owner of the '633 Patent since its issuance.  
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1           16.     The '633 Patent is generally directed towards computer networks, and more  
2 particularly, provides a system that protects devices connected to the Internet from undesirable  
3 operations from web-based content. One of the ways this is accomplished is by determining whether  
4 any part of such web-based content can be executed and then trapping such content and neutralizing  
5 possible harmful effects using mobile protection code.

6           17.     On November 28, 2000, U.S. Patent No. 6,154,844 ("the '844 Patent"), entitled  
7 SYSTEM AND METHOD FOR ATTACHING A DOWNLOADABLE SECURITY PROFILE TO  
8 A DOWNLOADABLE, was issued to Shlomo Touboul and Nachshon Gal. A true and correct copy  
9 of the '844 Patent is attached to this Complaint as Exhibit C and is incorporated by reference herein.

10           18.     All rights, title, and interest in the '844 Patent have been assigned to Finjan, who is the  
11 sole owner of the '844 Patent. Finjan has been the sole owner of the '844 Patent since its issuance.

12           19.     The '844 Patent is generally directed towards computer networks, and more  
13 particularly, provides a system that protects devices connected to the Internet from undesirable  
14 operations from web-based content. One of the ways this is accomplished is by linking a security  
15 profile to such web-based content to facilitate the protection of computers and networks from  
16 malicious web-based content.

17           20.     On July 5, 2011, U.S. Patent No. 7,975,305 ("the '305 Patent"), entitled METHOD  
18 AND SYSTEM FOR ADAPTIVE RULE-BASED CONTENT SCANNERS FOR DESKTOP  
19 COMPUTERS, was issued to Moshe Rubin, Moshe Matitya, Artem Melnick, Shlomo Touboul,  
20 Alexander Yermakov and Amit Shaked. A true and correct copy of the '305 Patent is attached to this  
21 Complaint as Exhibit D and is incorporated by reference herein.

22           21.     All rights, title, and interest in the '305 Patent have been assigned to Finjan, who is the  
23 sole owner of the '305 Patent. Finjan has been the sole owner of the '305 Patent since its issuance.

1           22.     The '305 Patent is generally directed towards network security and, in particular, rule-  
2 based scanning of web-based content for exploits. One of the ways this is accomplished is by using  
3 parser and analyzer rules to describe computer exploits as patterns of types of tokens. Additionally,  
4 the system provides a way to keep these rules updated.

5           23.     On July 17, 2012, U.S. Patent No. 8,225,408 ("the '408 Patent"), entitled METHOD  
6 AND SYSTEM FOR ADAPTIVE RULE-BASED CONTENT SCANNERS, was issued to Moshe  
7 Rubin, Moshe Matitya, Artem Melnick, Shlomo Touboul, Alexander Yermakov and Amit Shaked. A  
8 true and correct copy of the '408 Patent is attached to this Complaint as Exhibit E and is incorporated  
9 by reference herein.  
10

11           24.     All rights, title, and interest in the '408 Patent have been assigned to Finjan, who is the  
12 sole owner of the '408 Patent. Finjan has been the sole owner of the '408 Patent since its issuance.

13           25.     The '408 Patent is generally directed towards network security and, in particular, rule-  
14 based scanning of web-based content for a variety of exploits written in different programming  
15 languages. One of the ways this is accomplished is by expressing the exploits as patterns of tokens.  
16 Additionally, the system provides a way to analyze these exploits by using a parse tree.  
17

18           26.     On December 13, 2011, U.S. Patent No. 8,079,086 ("the '086 Patent"), entitled  
19 MALICIOUS MOBILE CODE RUNETIME MONITORING SYSTEM AND METHODS, was  
20 issued to Yigal Mordechai Edery, Nimrod Itzhak Vered, David R Kroll and Shlomo Touboul. A true  
21 and correct copy of the '086 Patent is attached to this Complaint as Exhibit F and is incorporated  
22 herein.  
23

24           27.     All rights, title, and interest in the '086 Patent have been assigned to Finjan, who is the  
25 sole owner of the '086 Patent. Finjan has been the sole owner of the '086 Patent since its issuance.  
26  
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1           28.     The '086 Patent is generally directed towards computer networks and, more  
2 particularly, provides a system that protects devices connected to the Internet from undesirable  
3 operations from web-based content. One of the ways this is accomplished is by creating a profile of  
4 the web-based content and sending these profiles and corresponding web-content to another computer  
5 for appropriate action.

6           29.     On March 20, 2012, U.S. Patent No. 8,141,154 ("the '154 Patent"), entitled SYSTEM  
7 AND METHOD FOR INSPECTING DYNAMICALLY GENERATED EXECUTABLE CODE, was  
8 issued to David Gruzman and Yuval Ben-Itzhak. A true and correct copy of the '154 Patent is  
9 attached to this Complaint as Exhibit G and is incorporated by reference herein.

11           30.     All rights, title, and interest in the '154 Patent have been assigned to Finjan, who is the  
12 sole owner of the '154 Patent. Finjan has been the sole owner of the '154 Patent since its issuance.

13           31.     The '154 Patent is generally directed towards a gateway computer protecting a client  
14 computer from dynamically generated malicious content. One way this is accomplished is to use a  
15 content processor to process a first function and invoke a second function if a security computer  
16 indicates that it is safe to invoke the second function.

17           32.     On November 3, 2009, U.S. Patent No. 7,613,918 ("the '918 Patent"), entitled  
18 SYSTEM AND METHOD FOR ENFORCING A SECURITY CONTEXT ON A  
19 DOWNLOADABLE, was issued to Yuval Ben-Itzhak. A true and correct copy of the '918 Patent is  
20 attached to this Complaint as Exhibit H and is incorporated by reference herein.

21           33.     All rights, title, and interest in the '918 Patent have been assigned to Finjan, who is the  
22 sole owner of the '918 Patent. Finjan has been the sole owner of the '918 Patent since its issuance.

23           34.     The '918 Patent is generally directed to a system and method for enforcing a security  
24 context on a Downloadable. One way this is accomplished is by making use of security contexts that  
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1 are associated within certain user/group computer accounts when deriving a profile for code received  
2 from the Internet.

3 **PROOFPOINT AND ARMORIZE**

4 35. Proofpoint is a security as a service ("SaaS") vendor that delivers data protection  
5 solutions to help organizations protect data from attacks and enable clients to meet regulatory  
6 compliance and data governance mandates.

7 36. Proofpoint uses, sells, offers for sale, and/or imports into the United States and this  
8 District products and services that utilize Proofpoint's Zero-Hour Threat Detection, Malware  
9 Analysis Service and Targeted Attack Protection, including but not limited to the following:  
10 Proofpoint Enterprise Protection, Proofpoint's Targeted Attack Protection, Proofpoint Essentials  
11 (including the packages of Beginner, Business, and Professional), Proofpoint Protection Server, and  
12 Proofpoint Messaging Security Gateway.

13 37. Proofpoint's Zero-Hour Threat Detection works with other Proofpoint defense  
14 products. First, messages are scanned for policy violations and then scanned by traditional anti-virus  
15 defenses. After traditional anti-virus declares a message clean, it is then sent to the Zero-Hour  
16 module, which analyzes incoming messages for similarities with suspected virus messages.  
17 Messages and attachments that exhibit recurrent pattern characteristics of the emerging virus are  
18 automatically quarantined. The Zero-Hour module determines whether a message has a medium or  
19 high possibility of being infected by a virus. These messages are delayed in quarantine for a period  
20 of time. This process is shown below:  
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<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
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In Compliance with 35 § 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 Northern District of California on the following ☒ Patents or ☐ Trademarks:

DOCKET NO. CV 14-04908 JSC	DATE FILED 11/4/2014	U.S. DISTRICT COURT 450 Golden Gate Avenue, P.O. Box 36060, San Francisco, CA 94102
PLAINTIFF FINJAN INC		DEFENDANT PALO ALTO NETWORKS INC
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 see Complaint		
2 6,804,780		
3 6,965,968		
4 7,058,822		
5 7,418,731		

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

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK	
1 7,613,918			
2 7,613,926			
3 7,647,633			
4 8,141,154			
5 8,225,408			
8,677,494			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
--------------------

CLERK Richard W. Wicking	(BY) DEPUTY CLERK Sheila Rash	DATE November 5, 2014
-----------------------------	----------------------------------	--------------------------

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