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	First Named Inventor	Ric B. Richardson
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	11	20070282615		2007-12-06	Hamilton et al.	
	12	20080065552		2008-03-13	Elazar et al.	
	13	20080086423		2008-04-10	Waites	
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A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/John L. Paik/	Date (YYYY-MM-DD)	2008-11-17
Name/Print	John L. Paik	Registration Number	54355

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SYSTEM AND METHOD FOR ADJUSTABLE LICENSING OF DIGITAL PRODUCTS

Cross-Reference to Related Application(s)

This application claims priority pursuant to 35 U.S.C. §119(e) to U.S. Provisional Application No. 60/ 988,778, entitled "SYSTEM FOR ADJUSTABLE DIGITAL LICENSING OVER TIME," filed November 17, 2007, which application is specifically incorporated herein, in its entirety, by reference.

Background of the Invention

Field of the Invention

The present application relates generally to managing software use, and more specifically to systems and methods to enable the monitoring and adjusting software usage under a software license.

Description of the Related Art

A common capability of digital product license systems is the ability to control how many devices are allowed to be used with each product license which is usually sold to an individual customer or company. For example U.S. Patent No. 5,490,216 refers to a system where a license is given to an individual, but in turn that license is linked to a specific personal computer thereby limiting the copyright holders exposure to copyright abuse if the user decided to share their license with other unauthorized users.

A problem that has arisen over time is the fact that consumers of software have normal patterns of use that include the installation and use of digital products on multiple devices. For example a person may wish to buy software and use it on three computers at their home, a computer at work, a mobile computer and the computers at their holiday home and their parent's house. In addition to these uses, computers are also bought, sold and replaced so over time maybe two or three times this number of

computers may be used by the user over time with a legitimate need to install and use the software on every computer.

Publishers of digital products have a dilemma in that they may want their customers to receive the normal freedom to use the software that they have purchased but they also do not want the software licenses to be freely shared amongst end users or even in worst case shared anonymously over the Internet resulting in massive piracy and copyright abuse of the product.

To solve this problem some publishers have set a relatively high device to license ratio in their control systems in the hope that customers will not exceed the maximum number of devices per license. An example of this is Apple iTunes which enables customers to play a purchased music file on up to a preset number (e.g., five) of devices (e.g., PCs) per license before being requested to buy an additional license. They have also implemented a system that allows customers to turn off the license rights of individual devices with regard to a specific music file license and therefore free up that device installation so that the music file can be used on one additional device.

While this method does go some way to appeasing the problem of a normal customers usage expectations, it does not take into consideration the normal attrition that occurs with the purchase and upgrade of personal computing devices or the like and places an expectation on the user to go through a number of involved steps to retain their rights to use the software. Accordingly, there is a need for an improved technique for allowing for a changing number of device installations on a per license basis over time.

Summary of the Invention

The following presents a simplified summary of one or more embodiments in order to provide a basic understanding of such embodiments. This summary is not an extensive overview of all contemplated embodiments, and is intended to neither identify key or critical elements of all embodiments nor delineate the scope of any or all embodiments. Its sole purpose is to present some concepts of one or more embodiments in a simplified form as a prelude to the more detailed description that is presented later.

In accordance with one or more embodiments and corresponding disclosure thereof, various aspects are described in connection with adjusting a license for a digital product over time. The license may comprise at least one allowed copy count corresponding to a maximum number of devices authorized for use with the digital product. In one embodiment, a system for adjustable licensing includes: a communication module for receiving a request for authorization to use the digital product from a given device; a processor module in operative communication with the communication module; and a memory module in operative communication with the processor module.

The memory module may include executable code for the processor module to: (a) verify that a license data associated with the digital product is valid based at least in part on a device identity associated with the given device; and (b) in response to the device identity already being on a record, allow the digital product to be used on the given device.

The memory module may further include executable code for the processor module to: (c) in response to the device identity not being on the record, set the allowed copy count to a first upper limit for a first time period; (d) calculate a device count corresponding to total number of devices already authorized for use with the digital product; and (e) when the calculated device count is less than the first upper limit, allow the digital product to be used on the given device.

In related aspects, the processor module may be adapted to: (a) in response to the device identity not being on the record, after the first time period has expired, set the allowed copy count to a second upper limit for a second time period; (b) recalculate the device count; and/or (c) when the recalculated device count is less than the second upper limit, allow the digital product to be used on the given device. For example, the second time period may comprise a defined number of days since the initial authorization. The processor module may be adapted to, in response to the calculated device count equaling the second upper limit, send a warning regarding the allowed copy count to the given device. The processor module may be adapted to, in response to the calculated device count exceeding the second upper limit, deny the request for authorization.

In further related aspects, the processor module may be adapted to: (a) in response to the device identity not being on the record, after the second time period has expired, set the allowed copy count to a third upper limit; (b) recalculate the device count; and (c) when the recalculated device count is less than the third upper limit, allow the digital product to be used on the given device. The processor module may be adapted to, in response to the calculated device count equaling the third upper limit, send a warning regarding the allowed copy count to the given device. The processor module may be adapted to, in response to the calculated device count exceeding the third upper limit, deny the request for authorization.

To the accomplishment of the foregoing and related ends, the one or more embodiments comprise the features hereinafter fully described and particularly pointed out in the claims. The following description and the annexed drawings set forth in detail certain illustrative aspects of the one or more embodiments. These aspects are indicative, however, of but a few of the various ways in which the principles of various embodiments may be employed and the described embodiments are intended to include all such aspects and their equivalents.

Brief Description of the Drawings

Figure 1 is an exemplary set of license rules that may be implemented to adjust the number of device installations on a per license basis over time.

Figure 2 shows an exemplary approach for adjusting a license for a digital product.

Figure 3A shows one embodiment for a method for adjusting a license for a digital product.

Figure 3B shows several sample aspects of the method shown in Figure 3A.

Figure 4 shows one embodiment for a system for adjusting a license for a digital product.

Detailed Description

Various embodiments are now described with reference to the drawings, wherein like reference numerals are used to refer to like elements throughout. In the following

description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of one or more embodiments. It may be evident, however, that such embodiment(s) can be practiced without these specific details. In other instances, well-known structures and devices are shown in block diagram form in order to facilitate describing one or more embodiments.

The techniques described herein allow for a changing number of device installations on a per license basis over time. Aspects of the techniques may include a customer feedback system that warns a user when they are nearing the limit of their device installation ceiling for their license. An example scenario could be as follows. A software publisher wants to commence distribution of a software product and to minimize unauthorized copying of their software. Their license may state that the publisher authorizes the user to use their software on up to, for example, five devices, but that the publisher reserves the right to increase this limit at their own discretion. The customer installs the software on the three computers they have at home. Each time the software connects to a license management server controlled by the publisher over the Internet to ensure that the device limit for the individual license has not been exceeded.

The customer may choose to install the same software on their personal computer (PC) at work. Upon contacting the publishers license management server over the Internet a message is displayed to the user warning them that they are nearing the limit of their device count for their license.

Two weeks later the user wishes to install their software on the two computers they own at the customers holiday home. If the publisher uses the proposed invention the maximum number of devices for the license may have been adjusted to accommodate a reasonable small increase in the number of devices linked to a specific license and both PCs may be allowed to install and run even though the publishers stated device limit per license is five.

Then three months later, the user experiences water damage from a flood in their house and a new PC is purchased. Upon installation of the protected software the invention will allow the user to obtain additional device installations from the publishers license management server for the same license (e.g., up to a total of seven devices) even though the device limit is initially set to five. However, if that user shares

their license with all the computer users in a college dormitory, the invention can be set to stop wholesale abuse of the license terms, as described in further detail herein.

In accordance with one or more aspects of the embodiments described herein, there is provided a system for adjustable digital licensing over time allows a software user to increase the number of devices they can use with a particular software license over the period of ownership of that license. The terms or rules 60 of an exemplary software license are shown in Figure 1. For example, initially, the publisher or distributor of the software sets rules 60 that govern the use of the software on a specific number of devices. The number of devices allowed to run the software in an authorized or enabled state may increase over time to reflect the normal usage pattern of software users where the user adds devices, replaces or upgrades devices over time. The rules 60 may reflect this pattern of an increasing number of devices authorized over time. For the first five days of the users use of the software a total of five devices can be authorized on new devices. For the next twenty-five days until the thirtieth day after first authorization, the user is allowed to authorize a total of seven new devices. After the first thirty days an additional four devices can be authorized, delivering the maximum number of copies on separate devices under the license which, in this example embodiment, is eleven.

It is noted that the various numbers used to describe the embodiments herein, such as, for example, the allowed copy counts, the maximum number of devices authorized for use, the upper limit on the number of devices for a given time period, or the like, are purely exemplary, and that other numbers, data, values, or algorithms may be used in lieu of the exemplary numbers herein.

In related aspects, Figure 2 shows an example embodiment of a software system that is designed to manage and implement the rules under a license, such as, for example, the licensing terms 60 described in Figure 1. Device locked license systems such as described in U.S. Patent No. 5,490,216, entitled "SYSTEM FOR SOFTWARE REGISTRATION," which is specifically incorporated herein, in its entirety, by reference, allow a software license to be locked to a license agreement and specific authorized devices. With continued reference to Figure 2, there is shown a system comprising a device 50 that requests authorization via a software process, and a

licensing authority 55 that may be a software system that represents the publisher or distributors interests and regulates the number of devices that can be used with each license.

Typically the device 50 requesting authorization collects license related information 10 and unique device identifying information 11, compiles the collected information into a communication and sends it to the authorization authority 55. Upon receipt of this communication from the device 50, the license authority 55 checks that the license information is valid (step 13). If the request fails, an authorization is disallowed (step 14) and the device based software is sent a message to this effect. In practice this may involve further action by the device based software to notify the user of the failure to authorize and then either terminate the software or allow the software to continue in some form of trial mode or the like.

If the request for authorization 12 includes license information/data that is valid, the license information checking process (at step 13) will pass and the requesting devices unique identity information 11 is checked to see if it exists in the database of prior authorizations 15. If the device identity exists (step 16), meaning that the software has been successfully registered on the same device in the past, then according to the license terms 60 for the software a re-authorization is automatically allowed (step 17). A communication allowing the software to continue in an authorized state is passed to the requesting device software 50 and the software on the device is subsequently authorized (step 18) and allowed to run.

If the unique identity of the device 11 is not in the authorization database 15 of previous device requests, then the licensing authority 55 checks to see if the new authorization request is the first request or is a subsequent request that has occurred in the first five days from the date of the first successful authorization (step 19).

At step 19, if the request is within the first five day period, the authorization database 15 is consulted for a count of how many successful authorizations for new devices have been allowed. Under the license rules 60, if the device count is less than five then a message is sent to the request device that allows the software to continue in an authorized state (step 18). If the device count is equal to five then the licensing authority 55 may send a message to the requesting device 50 allowing the device to run

in an authorized state (step 18), but also may optionally inform the user that the limit of the number of devices available to run under this license has been reached and that subsequent requests for authorization may be denied in the short term (step 22).

If the count of devices authorized for use with the specific license 10 is greater than five (step 23), then the licensing authority 55 sends a message denying authorization (step 25) and the user is optionally notified that the limit of devices that can be authorized with their license terms has been exceeded (step 24). In practice, the software on the requesting device 50 may subsequently terminate the software or may allow the software to run in a limited trial mode if this is available.

If the number of days since the first authorization of a device for the license 10 is not less than six (step 19), then the licensing authority tests the time elapsed from the first successful authorization to see if it is less than thirty-one days since the date and time of the first successful authorization (step 26). If this test at step 26 is successful (i.e., if the time elapsed since the first successful authorization is less than thirty-one days), then a test is made to see if the count of successful new device authorizations is less than seven (step 27). If this is so, a communication is made to the requesting device 50 authorizing the device 50 to run the software (step 28). If the new device count is equal to seven (step 29), then the user is warned that their device limit has been reached (step 30) and the device 50 is subsequently authorized to run (step 28).

However, if the new device count is greater than seven (step 31), a communication is made to the requesting device 50 that the authorization is denied (step 33) and optionally the user is notified that their license device count has been exceeded (step 32).

If the number of days since the first successful authorization is greater than thirty days (step 34), the device count for the license 10 is checked in the authorization database 15 and the device count for the license 10 retrieved. If the number of successful new device authorizations is ten or less (step 35), then the device authorization is allowed (step 36). If the device count is equal to eleven (step 37), then the user is optionally warned that they have reached the limit (step 38) and the device 50 is authorized to run (step 36).

However if the device count is greater than eleven (step 39), then a communication is made to the requesting device 50 that the user be optionally notified that the maximum number of allowed devices under terms of the license has been exceeded (step 40) and the authorization is denied (step 41).

The result is a license system that allows consumers of software to load their software on new or replacement devices as they are purchased over time without exposing the publisher to copying abuses that is common amongst software pirates and casual software copiers.

In one alternative embodiment, there is provided a license management system that is linked to a fixed calendar date rather than the date of first successful authorization. This approach can be used for marketing and distribution purposes such as specifying specific periods of high copy counts to encourage word of mouth and user to user sharing but later restricting the device count to encourage people to begin paying for copies that have been intentionally shared.

It is noted that the example embodiment of Figures 1 and 2 is simple for the purposes of understanding but can include any number of evaluation periods, not just the five, thirty and unlimited day periods described in the example. Also the number of notification stages can be indefinitely expanded, for example the user could be given a polite message encouraging them to be careful with making copies when they are two copies away from their count limit and a stronger message when it is their last copy before being denied authorizations. Messages could also optionally tell the user how many days they have to wait before additional device authorizations will be available.

It is further noted that in Figure 1 and 2 the allowed copy count increases over time. An alternative embodiment could be used where the allowed copy count decreases over time. This may be useful in a situation, for example, where the publisher supplies their software with a fairly open device count license rule but discovers individual instances of copy abuse and decides to limit the license terms of those specific licenses.

The described system could also be used with authorizations for software that is rented or otherwise allowed to be used for a specific period of time or number of uses rather than indefinitely as in the example embodiment of Figures 1 and 2.

Another alternative embodiment of the above scenarios could include an algorithm rather than an arbitrary value in calculating both the time period for the calculation of the device count, and the device count related to that specific measured time period. For example, the algorithm for the available device count could be equal to the number of elapsed days since the first successful activation divided by five in brackets plus five. Using the example algorithm a device count of five would be available from day one, and a device count of eleven at day thirty and so on.

In yet another alternative embodiment, the techniques described herein may be used for security applications where access is granted to data or some other valuable or important item as a result of a successful authorization rather than in the example of Figures 1 and 2 where it is a license that is being granted.

In accordance with one or more aspects of the embodiments described herein, there is provided a method for adjusting a license for a digital product over time. The license rules may comprise at least one allowed copy count corresponding to a maximum number of devices authorized for use with the digital product. With reference to the flow chart shown in Figure 3A, there is provided a method 300 that may involve receiving a request for authorization to use the digital product on a given device (step 310). The method 300 may further involve verifying that a license data associated with the digital product is valid based at least in part on a device identity associated with the given device (step 320).

In response to the device identity already being on a record, the method 300 may involve allowing the digital product to be used on the given device (step 330). In response to the device identity not being on the record, the method 300 may involve setting the allowed copy count to a first upper limit for a first time period after an initial authorization of the digital product (step 340). The method 300 may further involve calculating a device count corresponding to total number of devices already authorized for use with the digital product (step 350), and when the calculated device count is less than the first upper limit, allowing the digital product to be used on the given device (step 360).

With reference to Figure 3B, in one embodiment, the method 300 may also involve, in response to the device identity not being on the record, after the first time

period has expired, setting the allowed copy count to a second upper limit for a second time period (step 370). The method 300 may further involve recalculating the device count (step 372), and when the recalculated device count is less than the second upper limit, allowing the digital product to be used on the given device (step 374).

With continued reference to Figure 3B, at step 380, the method 300 may also involve, in response to the device identity not being on the record, after the second time period has expired, setting the allowed copy count to a third upper limit. The method 300 may further involve recalculating the device count (step 382), and when the recalculated device count is less than the third upper limit, allowing the digital product to be used on the given device (step 384).

In accordance with one or more aspects of the embodiments described herein, there is provided a system for adjusting a license for a digital product over time. For example, the license rules may comprise at least one allowed copy count corresponding to a maximum number of devices authorized for use with the digital product. With reference to the flow chart shown in Figure 4, there is provided a system 400 that may include: a communication module 410 for receiving a request for authorization to use the digital product from a given device; a processor module 420 in operative communication with the communication module; and a memory module 430 in operative communication with the processor module.

The memory module 430 may include executable code for the processor module to: (a) verify that a license data associated with the digital product is valid based at least in part on a device identity associated with the given device; and (b) in response to the device identity already being on a record, allow the digital product to be used on the given device. The memory module 430 may further include executable code for the processor module to: (c) in response to the device identity not being on the record, set the allowed copy count to a first upper limit for a first time period (e.g., a time period after an initial authorization of the digital product); (d) calculate a device count corresponding to total number of devices already authorized for use with the digital product; and (e) when the calculated device count is less than the first upper limit, allow the digital product to be used on the given device. While the various steps or tasks described herein, e.g., steps (a) through (e) above, sometimes involve having executable

code stored in the memory module 430, it is noted that the processor module 420 may otherwise be adapted to perform such steps/tasks.

In related aspects, the digital product may comprise software, and/or the given device may comprise a PC or the like. The license data may comprises information that may be used to verify whether the license for the digital product is valid. The record may comprise an authorization database. In further related aspects, the first time period may comprises a defined number of days since the initial authorization. For example, the defined number of days may comprise six days since the initial authorization, and the first upper limit may comprise five authorized devices. In yet further related aspects, the processor module 420 may comprise one or more processor, and may be adapted to, in response to the calculated device count equaling the first upper limit, send a warning regarding the allowed copy count to the given device. The processor module 420 may be adapted to, in response to the calculated device count exceeding the first upper limit, deny the request for authorization.

In further related aspects, the processor module 420 also be adapted to: (a) in response to the device identity not being on the record, after the first time period has expired, set the allowed copy count to a second upper limit for a second time period; (b) recalculate the device count; and/or (c) when the recalculated device count is less than the second upper limit, allow the digital product to be used on the given device. The second time period may comprise a defined number of days since the initial authorization. For example, the defined number of days may comprise thirty-one days since the initial authorization, and the second upper limit may comprise seven authorized devices. The processor module 420 may be adapted to, in response to the calculated device count equaling the second upper limit, send a warning regarding the allowed copy count to the given device. The processor module 420 may be adapted to, in response to the calculated device count exceeding the second upper limit, deny the request for authorization.

In yet further related aspects, the processor module 420 also be adapted to: (a) in response to the device identity not being on the record, after the second time period has expired, set the allowed copy count to a third upper limit; (b) recalculate the device count; and (c) when the recalculated device count is less than the third upper limit,

allow the digital product to be used on the given device. The third upper limit comprises eleven authorized devices. The processor module 420 may be adapted to, in response to the calculated device count equaling the third upper limit, send a warning regarding the allowed copy count to the given device. The processor module 420 may be adapted to, in response to the calculated device count exceeding the third upper limit, deny the request for authorization.

It is noted that the system 400 may optionally include: a means 450 for verifying that a license data associated with the digital product is valid based at least in part on a device identity associated with the given device; a means 460 for, in response to the device identity already being on a record, allowing the digital product to be used on the given device; a means 470 for, in response to the device identity not being on the record, setting the allowed copy count to a first upper limit for a first time period (e.g. a time period after an initial authorization of the digital product); a means 480 for calculating a device count corresponding to total number of devices already authorized for use with the digital product; and/or a means 490 for, when the calculated device count is less than the first upper limit, allowing the digital product to be used on the given device.

It is also noted that the system 400 may optionally include: a means for, in response to the device identity not being on the record, after the first time period has expired, setting the allowed copy count to a second upper limit for a second time period; a means for recalculating the device count; and/or a means for, when the recalculated device count is less than the second upper limit, allowing the digital product to be used on the given device. It is further noted that the system 400 may optionally include: a means for, in response to the device identity not being on the record, after the second time period has expired, setting the allowed copy count to a third upper limit; a means for recalculating the device count; and/or a means for, when the recalculated device count is less than the third upper limit, allowing the digital product to be used on the given device. The at least one processor of processor module 420, in such case, may be in operative communication with the means 450, 460, 470, 480, and 490 via a bus 440 or similar communication coupling. The processor module 420 may effect initiation and scheduling of the processes or functions performed by the means 450, 460, 470, 480, and 490, and any components thereof.

In still further related aspects, the device identity may comprise unique device identifying information, wherein the unique device identifying information may comprise at least one user-configurable parameter and/or at least one non-user-configurable parameter of the given device. The device identity may be generated by utilizing at least one irreversible transformation of the at least one user-configurable and the at least one non-user-configurable parameters of the given device. The device identity may be generated by utilizing a cryptographic hash function on the at least one user-configurable and the at least one non-user-configurable parameters of the given device.

It is noted that generating the device identity may also be described as generating a device fingerprint and may entail the sampling of physical, non-user configurable properties as well as a variety of additional parameters such as uniquely generated hashes and time sensitive values. Physical device parameters available for sampling may include, for example, unique manufacturer characteristics, carbon and silicone degradation and small device failures.

The process of measuring carbon and silicone degradation may be accomplished by measuring a chip's ability to process complex mathematical computations, and its ability to respond to intensive time variable computations. These processes measure how fast electricity travels through the carbon. Using variable offsets to compensate for factors such as heat and additional stresses placed on a chip during the sampling process allows for each and every benchmark to reproduce the expected values. During a standard operating lifetime, the process of passing electricity through the various switches causes a computer chip to degrade. These degradations manifest as gradually slower speeds that extend the processing time required to compute various benchmarking algorithms.

In addition to the chip benchmarking and degradation measurements, the process for generating a device identity may include measuring physical, non-user-configurable characteristics of disk drives and solid state memory devices. Each data storage device has a large variety of damage and unusable data sectors that are nearly unique to each physical unit. The ability to measure and compare values for damaged sectors and data storage failures provides a method for identifying storage devices.

Device parameter sampling, damage measurement and chip benchmarking make up just a part of device fingerprinting technologies described herein. These tools may be further extended by the use of complex encryption algorithms to convolute the device identity values during transmission and comparisons. Such encryption processes may be used in conjunction with random sampling and key generations.

The device identity may be generated by utilizing machine or device parameters associated with one or more of the following: machine model; machine serial number; machine copyright; machine ROM version; machine bus speed; machine details; machine manufacturer; machine ROM release date; machine ROM size; machine UUID; and machine service tag.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: CPU ID; CPU model; CPU details; CPU actual speed; CPU family; CPU manufacturer; CPU voltage; and CPU external clock.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: memory model; memory slots; memory total; and memory details.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: video model; video details; display model; display details; audio model; and audio details.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: network model; network address; Bluetooth address; Blackbox model (including IDE and SCSI); Blackbox serial; Blackbox details; Blackbox damage map; Blackbox volume name; NetStore details; and NetStore volume name.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: optical model; optical serial; optical details; keyboard model; keyboard details; mouse model; mouse details; printer details; and scanner details.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: baseboard manufacturer; baseboard product name; baseboard version; baseboard serial number; and baseboard asset tag.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: chassis manufacturer; chassis type; chassis version; and chassis serial number.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: IDE controller; SATA controller; RAID controller; and SCSI controller.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: port connector designator; port connector type; port connector port type; and system slot type.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: cache level; cache size; cache max size; cache SRAM type; and cache error correction type.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: fan; PCMCIA; modem; portable battery; tape drive; USB controller; and USB hub.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: device model; device model IMEI; device model IMSI; and device model LCD.

The device identity may also be generated by utilizing machine parameters associated with one or more of the following: wireless 802.11; webcam; game controller; silicone serial; and PCI controller.

While the present invention has been illustrated and described with particularity in terms of preferred embodiments, it should be understood that no limitation of the scope of the invention is intended thereby. Features of any of the foregoing methods and devices may be substituted or added into the others, as will be apparent to those of skill in the art. It should also be understood that variations of the particular embodiments described herein incorporating the principles of the present invention will occur to those of ordinary skill in the art and yet be within the scope of the invention.

As used in this application, the terms "component," "module," "system," and the like are intended to refer to a computer-related entity, either hardware, firmware, a combination of hardware and software, software, or software in execution. For

example, a component can be, but is not limited to being, a process running on a processor, a processor, an object, an executable, a thread of execution, a program, and/or a computer. By way of illustration, both an application running on a computing device and the computing device can be a component. One or more components can reside within a process and/or thread of execution and a component can be localized on one computer and/or distributed between two or more computers. In addition, these components can execute from various computer readable media having various data structures stored thereon. The components can communicate by way of local and/or remote processes such as in accordance with a signal having one or more data packets (e.g., data from one component interacting with another component in a local system, distributed system, and/or across a network such as the Internet with other systems by way of the signal).

It is understood that the specific order or hierarchy of steps in the processes disclosed herein in an example of exemplary approaches. Based upon design preferences, it is understood that the specific order or hierarchy of steps in the processes may be rearranged while remaining within the scope of the present disclosure The accompanying method claims present elements of the various steps in sample order, and are not meant to be limited to the specific order or hierarchy presented.

Those skilled in the art will further appreciate that the various illustrative logical blocks, modules, circuits, methods and algorithms described in connection with the examples disclosed herein may be implemented as electronic hardware, computer software, or combinations of both. To clearly illustrate this interchangeability of hardware and software, various illustrative components, blocks, modules, circuits, methods and algorithms have been described above generally in terms of their functionality. Whether such functionality is implemented as hardware or software depends upon the particular application and design constraints imposed on the overall system. Skilled artisans may implement the described functionality in varying ways for each particular application, but such implementation decisions should not be interpreted as causing a departure from the scope of the present invention

WHAT IS CLAIMED IS:

1. A system for adjusting a license for a digital product over time, the license comprising at least one allowed copy count corresponding to a maximum number of devices authorized for use with the digital product, comprising:

a communication module for receiving a request for authorization to use the digital product from a given device;

a processor module in operative communication with the communication module;

a memory module in operative communication with the processor module and comprising executable code for the processor module to:

verify that a license data associated with the digital product is valid based at least in part on a device identity associated with the given device;

in response to the device identity already being on a record, allow the digital product to be used on the given device;

in response to the device identity not being on the record, set the allowed copy count to a first upper limit for a first time period;

calculate a device count corresponding to total number of devices already authorized for use with the digital product; and

when the calculated device count is less than the first upper limit, allow the digital product to be used on the given device.

2. The system of Claim 1, wherein the digital product comprises software.

3. The system of Claim 1, wherein the license data comprises information that may be used to verify whether the license for the digital product is valid.

4. The system of Claim 1, wherein the record comprises an authorization database.

5. The system of Claim 1, wherein the first time period comprises a defined number of days after an initial authorization of the digital product.

6. The system of Claim 5, wherein the defined number of days comprises six days since the initial authorization, and wherein the first upper limit comprises five authorized devices.

7. The system of Claim 1, wherein the processor module is adapted to, in response to the calculated device count equaling the first upper limit, send a warning regarding the allowed copy count to the given device.

8. The system of Claim 1, wherein the processor module is adapted to, in response to the calculated device count exceeding the first upper limit, deny the request for authorization.

9. The system of Claim 1, wherein the processor module is adapted to:

in response to the device identity not being on the record, after the first time period has expired, set the allowed copy count to a second upper limit for a second time period;

recalculate the device count; and

when the recalculated device count is less than the second upper limit, allow the digital product to be used on the given device.

10. The system of Claim 9, wherein the second time period comprises a defined number of days since the initial authorization.

11. The system of Claim 10, wherein the defined number of days comprises thirty-one days since the initial authorization, and wherein the second upper limit comprises seven authorized devices.

12. The system of Claim 9, wherein the processor module is adapted to, in response to the calculated device count equaling the second upper limit, send a warning regarding the allowed copy count to the given device.

13. The system of Claim 9, wherein the processor module is adapted to, in response to the calculated device count exceeding the second upper limit, deny the request for authorization.

14. The system of Claim 9, wherein the processor module is adapted to:

in response to the device identity not being on the record, after the second time period has expired, set the allowed copy count to a third upper limit;

recalculate the device count; and

when the recalculated device count is less than the third upper limit, allow the digital product to be used on the given device.

15. The system of Claim 14, wherein the third upper limit comprises eleven authorized devices.

16. The system of Claim 14, wherein the processor module is adapted to, in response to the calculated device count equaling the third upper limit, send a warning regarding the allowed copy count to the given device.

17. The system of Claim 14, wherein the processor module is adapted to, in response to the calculated device count exceeding the third upper limit, deny the request for authorization.

18. The system of Claim 1, wherein the device identity comprises unique device identifying information.

19. The system of Claim 18, wherein the unique device identifying information comprises at least one user-configurable parameter and at least one non-user-configurable parameter of the given device.

20. The system of Claim 18, wherein the device identity is generated by utilizing at least one irreversible transformation of the at least one user-configurable and the at least one non-user-configurable parameters of the given device.

21. The system of Claim 18, wherein the device identity is generated by utilizing a cryptographic hash function on the at least one user-configurable and the at least one non-user-configurable parameters of the given device.

22. A method for adjusting a license for a digital product over time, the license comprising at least one allowed copy count corresponding to a maximum number of devices authorized for use with the digital product, comprising:

receiving a request for authorization to use the digital product on a given device;

verifying that a license data associated with the digital product is valid based at least in part on a device identity associated with the given device;

in response to the device identity already being on a record, allowing the digital product to be used on the given device;

in response to the device identity not being on the record, setting the allowed copy count to a first upper limit for a first time period;

calculating a device count corresponding to total number of devices already authorized for use with the digital product; and

when the calculated device count is less than the first upper limit, allowing the digital product to be used on the given device.

23. The method of Claim 22, further comprising:

in response to the device identity not being on the record, after the first time period has expired, setting the allowed copy count to a second upper limit for a second time period;

recalculating the device count; and

when the recalculated device count is less than the second upper limit, allowing the digital product to be used on the given device.

24. The method of Claim 23, further comprising:

in response to the device identity not being on the record, after the second time period has expired, setting the allowed copy count to a third upper limit;

recalculating the device count; and

when the recalculated device count is less than the third upper limit, allowing the digital product to be used on the given device.

25. A computer program product, comprising:

a computer-readable medium comprising:

code for causing a computer to receive a request for authorization to use the digital product;

code for causing a computer to verify that a license data associated with the digital product is valid based at least in part on a device identity associated with the computer;

code for causing a computer to, in response to the device identity already being on a record, allow the digital product to be used on the computer;

code for causing a computer to, in response to the device identity not being on the record, set the allowed copy count to a first upper limit for a first time period after an initial authorization of the digital product;

code for causing a computer to calculate a device count corresponding to total number of devices already authorized for use with the digital product; and

code for causing a computer to, when the calculated device count is less than the first upper limit, allowing the digital product to be used on the computer.

SYSTEM AND METHOD FOR ADJUSTABLE LICENSING OF DIGITAL PRODUCTS

Abstract of the Invention

Techniques are provided for adjusting the number of devices allowed to use a digital product (e.g., software) under a license. In one embodiment, the technique may involve setting the allowed number of devices to a first upper/lower limit for a first time period, and, after the first time period has expired, increasing/lowering the allowed number of devices to a second upper/lower limit for a second time period. The technique may involve, readjusting the allowed number for a third time period, thereby allowing for a changing number of device installations of the digital product.

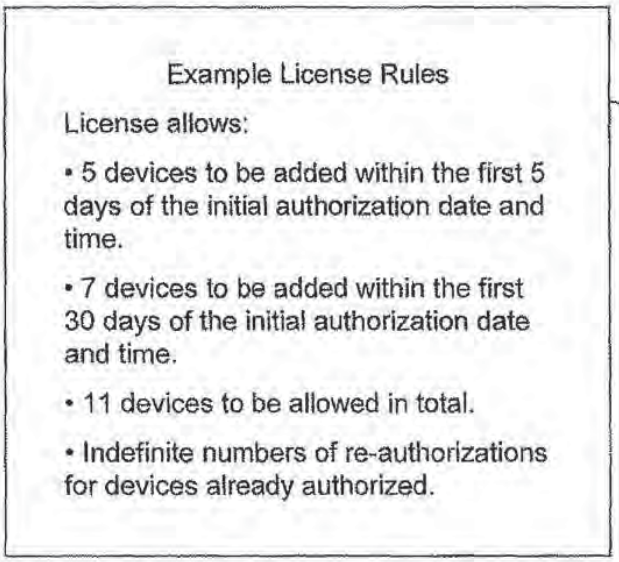
Example License Rules
License allows:
• 5 devices to be added within the first 5 days of the initial authorization date and time.
• 7 devices to be added within the first 30 days of the initial authorization date and time.
• 11 devices to be allowed in total.
• Indefinite numbers of re-authorizations for devices already authorized.
60

Figure 1

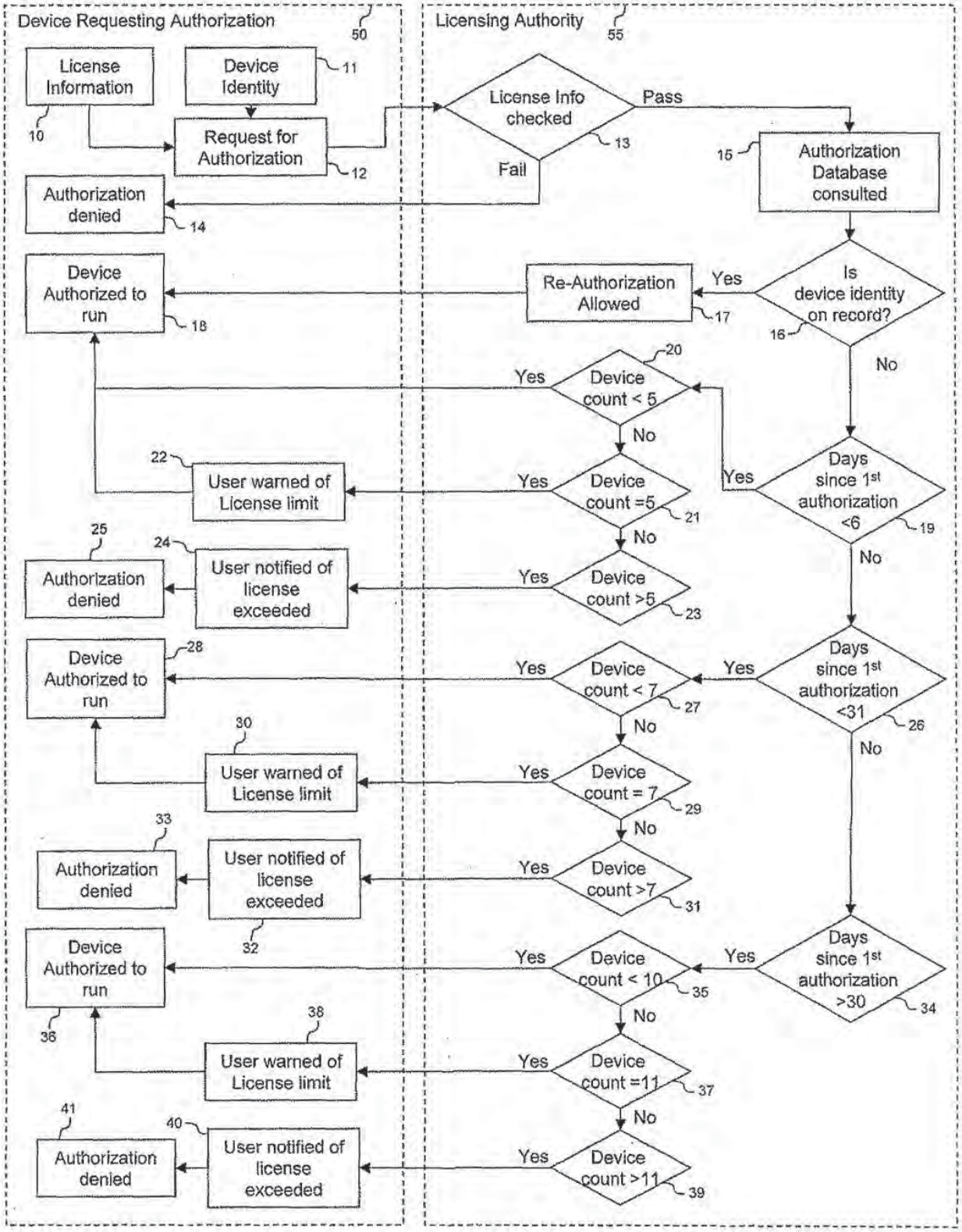
Device Requesting Authorization
50
Licensing Authority
55
License Information
10
Device Identity
11
Request for Authorization
12
License Info checked
13
Pass
Fail
Authorization denied
14
15
Authorization Database consulted
Is device identity on record?
16
Yes
No
Re-Authorization Allowed
17
Device Authorized to run
18
Days since 1st authorization <6
19
Device count < 5
20
Device count =5
21
User warned of License limit
22
Device count >5
23
User notified of license exceeded
24
Authorization denied
25
Days since 1st authorization <31
26
Device count < 7
27
Device Authorized to run
28
Device count = 7
29
User warned of License limit
30
Device count >7
31
User notified of license exceeded
32
Authorization denied
33
Days since 1st authorization >30
34
Device count < 10
35
Device Authorized to run
36
Device count =11
37
User warned of License limit
38
Device count >11
39
User notified of license exceeded
40
Authorization denied
41

Figure 2

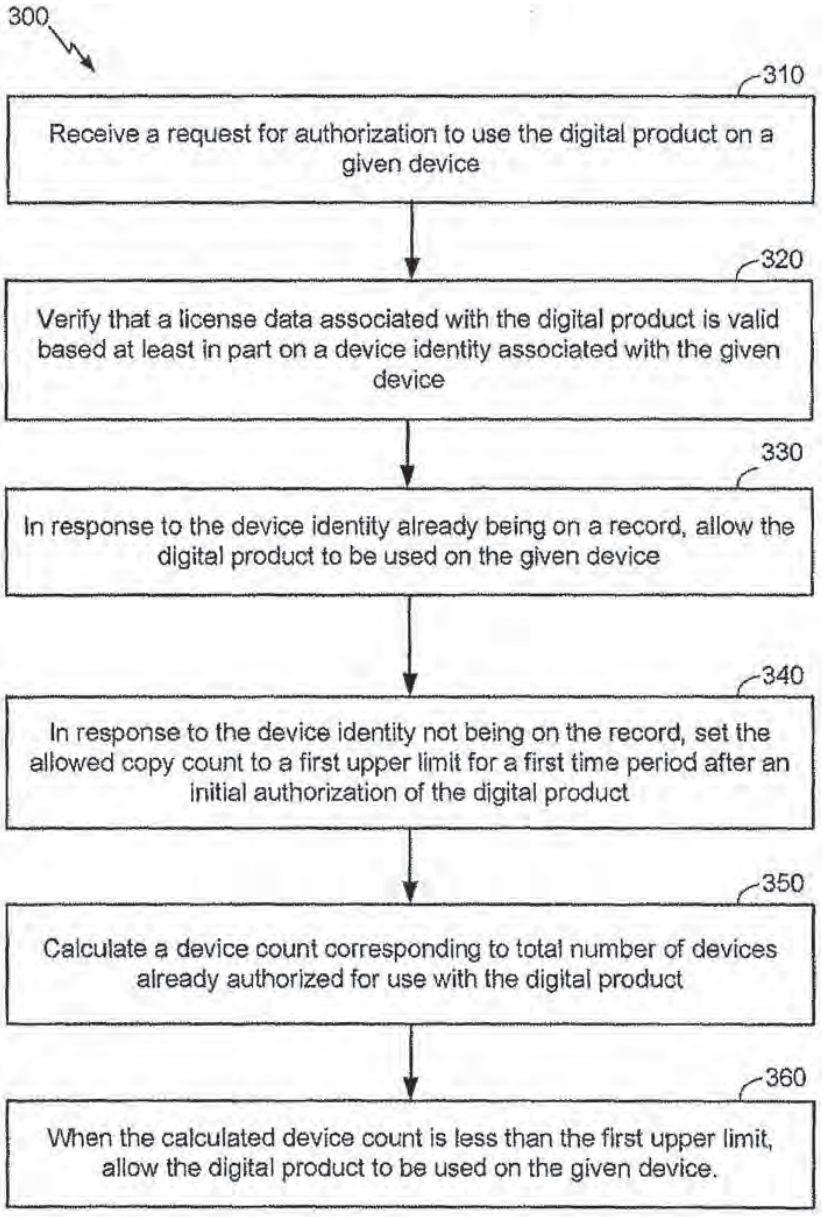
300
310
Receive a request for authorization to use the digital product on a given device
320
Verify that a license data associated with the digital product is valid based at least in part on a device identity associated with the given device
330
In response to the device identity already being on a record, allow the digital product to be used on the given device
340
In response to the device identity not being on the record, set the allowed copy count to a first upper limit for a first time period after an initial authorization of the digital product
350
Calculate a device count corresponding to total number of devices already authorized for use with the digital product
360
When the calculated device count is less than the first upper limit, allow the digital product to be used on the given device.

Figure 3A

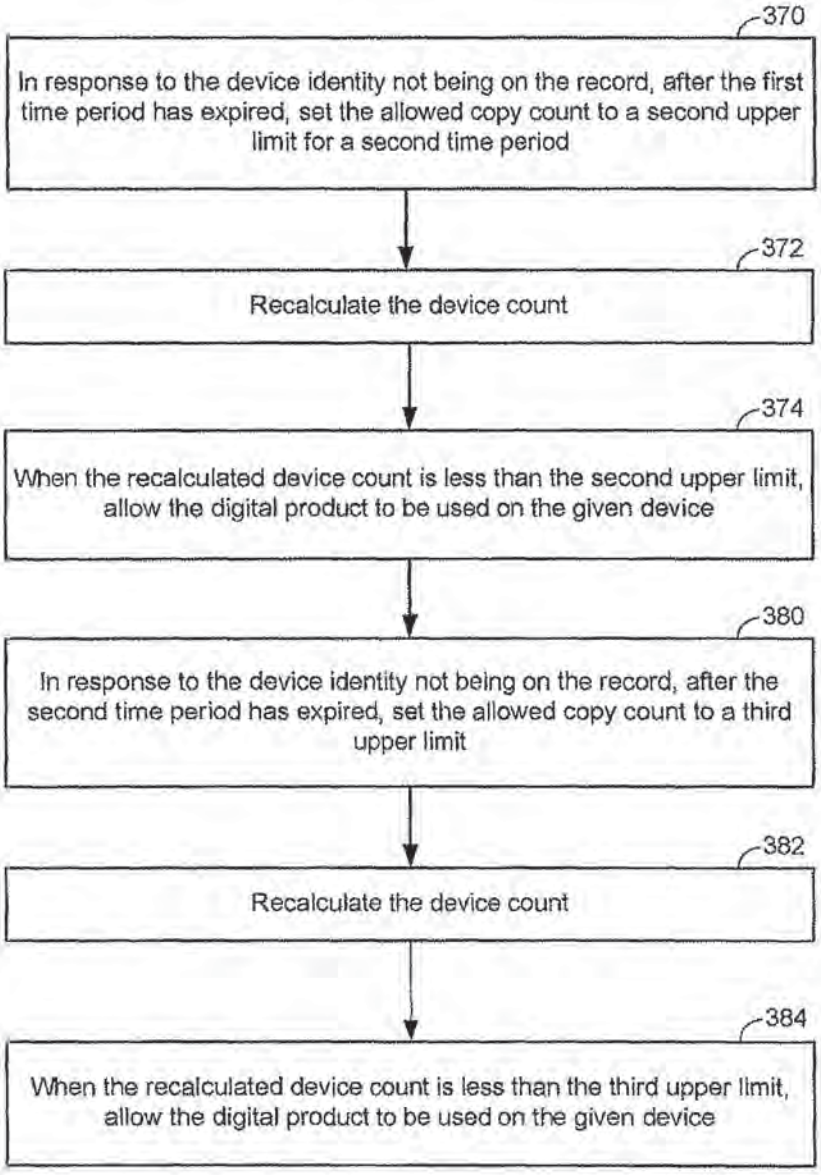
370
In response to the device identity not being on the record, after the first time period has expired, set the allowed copy count to a second upper limit for a second time period
372
Recalculate the device count
374
When the recalculated device count is less than the second upper limit, allow the digital product to be used on the given device
380
In response to the device identity not being on the record, after the second time period has expired, set the allowed copy count to a third upper limit
382
Recalculate the device count
384
When the recalculated device count is less than the third upper limit, allow the digital product to be used on the given device

Figure 3B

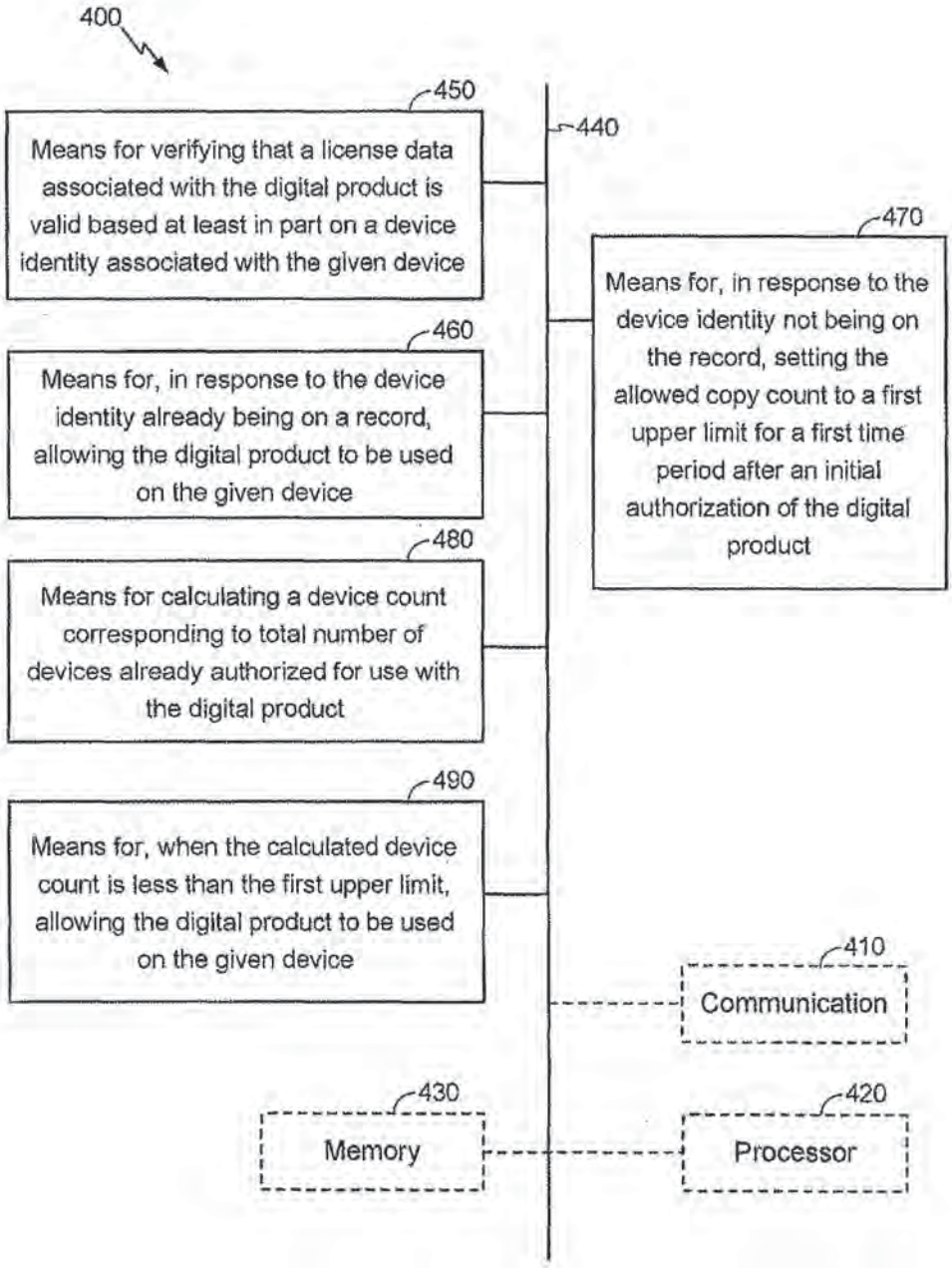
400
450
Means for verifying that a license data associated with the digital product is valid based at least in part on a device identity associated with the given device
440
470
Means for, in response to the device identity not being on the record, setting the allowed copy count to a first upper limit for a first time period after an initial authorization of the digital product
460
Means for, in response to the device identity already being on a record, allowing the digital product to be used on the given device
480
Means for calculating a device count corresponding to total number of devices already authorized for use with the digital product
490
Means for, when the calculated device count is less than the first upper limit, allowing the digital product to be used on the given device
410
Communication
430
Memory
420
Processor

Figure 4

Electronic Patent Application Fee Transmittal

Application Number:	
Filing Date:	
Title of Invention:	SYSTEM AND METHOD FOR ADJUSTABLE LICENSING OF DIGITAL PRODUCTS
First Named Inventor/Applicant Name:	Ric B. Richardson
Filer:	John Paik/Shelia Kemp
Attorney Docket Number:	70243-00018

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	82	82
Utility Search Fee	2111	1	270	270
Utility Examination Fee	2311	1	110	110
Pages:				
Claims:				
Claims in excess of 20	2202	5	26	130
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	592

Electronic Acknowledgement Receipt	
EFS ID:	4304001
Application Number:	12272570
International Application Number:	
Confirmation Number:	6547
Title of Invention:	SYSTEM AND METHOD FOR ADJUSTABLE LICENSING OF DIGITAL PRODUCTS
First Named Inventor/Applicant Name:	Ric B. Richardson
Customer Number:	58688
Filer:	John Paik/Shelia Kemp
Filer Authorized By:	John Paik
Attorney Docket Number:	70243-00018
Receipt Date:	17-NOV-2008
Filing Date:	
Time Stamp:	18:31:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$592
RAM confirmation Number	4175
Deposit Account	503683
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes)/ Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1	Application Data Sheet	70243-00018-ADS.pdf	839174 b16b2be4da63e5922a3d994110853 9bdfb6360b	no	4
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Filed (SB/08)	70243-00018-IDS.pdf	608823 a817b4b4048087ce3c485692086 5345ea471063c	no	6
Warnings:					
Information:					
3		70243-00018-USPatApp.pdf	1556171 f77d5388bba0ded9e6fb0311e2007bda7649262b	yes	28
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	17	
	Claims		18	22	
	Abstract		23	23	
	Drawings-only black and white line drawings		24	28	
Warnings:					
Information:					
4	Fee Worksheet (PTO-06)	fee-info.pdf	36754 151137dfa347d1117443b9c2ea5d35e5367954b8	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	3040922		

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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

Electronic Acknowledgement Receipt	
EFS ID:	4304001
Application Number:	12272570
International Application Number:	
Confirmation Number:	6547
Title of Invention:	SYSTEM AND METHOD FOR ADJUSTABLE LICENSING OF DIGITAL PRODUCTS
First Named Inventor/Applicant Name:	Ric B. Richardson
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Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	$592
RAM confirmation Number	4175
Deposit Account	503683
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes)/ Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1	Application Data Sheet	70243-00018-ADS.pdf	839174 b16b2be4da63e5922a3d994110853 9bdfb6360b	no	4
Warnings:					
Information:					
2	Information Disclosure Statement (IDS) Filed (SB/08)	70243-00018-IDS.pdf	608823 a817b4b4048087ce3c485692086e5345ea471063c	no	6
Warnings:					
Information:					
3		70243-00018-USPatApp.pdf	1556171 f77d5388bba0ded9e6fb0311e2007bda7649262b	yes	28
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Specification		1	17	
	Claims		18	22	
	Abstract		23	23	
	Drawings-only black and white line drawings		24	28	
Warnings:					
Information:					
4	Fee Worksheet (PTO-06)	fee-info.pdf	36754 151137dfa347d1117443b9c2ea56d5e5367954b8	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	3040922		

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

PTO/SB/14 (07-07)
Approved for use through 06/30/2010. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	70243-00018
	Application Number	
Title of Invention	System and Method for Adjustable Licensing of Digital Products	

The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.
This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.

Secrecy Order 37 CFR 5.2

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Applicant Information:

Applicant 1 Remove

Applicant Authority ◉ Inventor ○ Legal Representative under 35 U.S.C. 117 ○ Party of Interest under 35 U.S.C. 118

Prefix	Given Name	Middle Name	Family Name	Suffix
	Ric	B.	Richardson	

Residence Information (Select One) ◉ US Residency ○ Non US Residency ○ Active US Military Service

City	Irvine	State/Province	CA	Country of Residence [i]	US

Citizenship under 37 CFR 1.41(b) [i] AU

Mailing Address of Applicant:

Address 1	19200 Von Karman, Suite 400		
Address 2			
City	Irvine	State/Province	CA
Postal Code	92612	Country [i]	US

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

Correspondence Information:

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

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

Customer Number	58688		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	System and Method for Adjustable Licensing of Digital Products		
Attorney Docket Number	70243-00018	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Suggested Class (if any)		Sub Class (if any)	
Suggested Technology Center (if any)			
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

PTO/SB/14 (07-07)
Approved for use through 06/30/2010. 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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	70243-00018
	Application Number	
Title of Invention	System and Method for Adjustable Licensing of Digital Products	

Publication Information:

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

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32).
Enter either Customer Number or complete the Representative Name section below. If both sections are completed the Customer Number will be used for the Representative Information during processing.

Please Select One:	◉ Customer Number	○ US Patent Practitioner	○ Limited Recognition (37 CFR 11.9)
Customer Number	58688		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, or 365(c) or indicate National Stage entry from a PCT application. Providing this information in the application data sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78(a)(2) or CFR 1.78(a)(4), and need not otherwise be made part of the specification.

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)
	non provisional of	60988778	2007-11-17

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Foreign Priority Information:

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

Remove

Application Number	Country [i]	Parent Filing Date (YYYY-MM-DD)	Priority Claimed
			◉ Yes ○ No

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button. Add

Assignee Information:

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

Assignee 1 Remove

PTO/SB/14 (07-07)
Approved for use through 06/30/2010. 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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	70243-00018
	Application Number	
Title of Invention	System and Method for Adjustable Licensing of Digital Products	

If the Assignee is an Organization check here. ☒			
Organization Name	Uniloc USA		
Mailing Address Information:			
Address 1	3333 Michelson Drive, Suite 600		
Address 2			
City	Irvine	**State/Province**	CA
Country [i]	US	Postal Code	92612
Phone Number		Fax Number	
Email Address			
Additional Assignee Data may be generated within this form by selecting the **Add** button.		Add	

Signature:

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 10.18. Please see 37 CFR 1.4(d) for the form of the signature.					
Signature	/John L. Paik/			Date (YYYY-MM-DD)	2008-11-17
First Name	John L.	Last Name	Paik	Registration Number	54355

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PTO/SB/06 (12-04)

Filing Date: **11/17/08**

Approved for use through 7/31/2006. 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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 12/272,570

APPLICATION AS FILED – PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY FEE ($)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	82		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	270		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	110		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	25 minus 20 =	5	x$26	130	OR	x$52	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x$110			x$220	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $260 ($130 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			195			390	
			TOTAL	592		TOTAL	

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

APPLICATION AS AMENDED – PART II

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
AMENDMENT A	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE ($)	SMALL ENTITY ADDITIONAL FEE ($)	OR	OTHER THAN SMALL ENTITY RATE ($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE ($)
AMENDMENT B	Total (37 CFR 1.16(i))	*	Minus	**	=	x =		OR	x =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x =		OR	x =	
	Application Size Fee (37 CFR 1.16(s))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))					N/A		OR	N/A	
						TOTAL ADD'T FEE		OR	TOTAL ADD'T FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Paten 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.

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/272,570	11/17/2008	3621	592	70243-00018	25	3

CONFIRMATION NO. 6547

58688
CONNOLLY BOVE LODGE & HUTZ LLP
P.O. BOX 2207
WILMINGTON, DE 19899

FILING RECEIPT

Date Mailed: 12/03/2008

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Ric B. Richardson, Irvine, CA;

Assignment For Published Patent Application

UNILOC USA, Irvine, CA

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 60/988,778 11/17/2007

Foreign Applications

If Required, Foreign Filing License Granted: 11/26/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/272,570**

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****

Title

System and Method for Adjustable Licensing of Digital Products

Preliminary Class

705

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

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

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

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

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/272,570	11/17/2008	Ric B. Richardson	70243-00018

CONFIRMATION NO. 6547

58688
CONNOLLY BOVE LODGE & HUTZ LLP
P.O. BOX 2207
WILMINGTON, DE 19899

FORMALITIES LETTER

OC000000033342245

Date Mailed: 12/03/2008

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

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.
  Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.

The applicant needs to satisfy supplemental fees problems indicated below.

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

- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of **$65** for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this notice.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **$65** for a small entity
- **$65** Surcharge.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.
https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at http://www.uspto.gov/ebc.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/agizaw/

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.:	12/272,570	Confirmation No.:	6547
Applicant:	Ric B. Richardson	Group Art Unit:	3621
Filed:	November 17, 2008	Examiner:	To be assigned
Title:	System and Method for Adjustable Licensing of Digital Products	Attorney Docket No.	70243-00018

Mail Stop Missing Parts
Commissioner of Patents
P. O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION FILED UNDER 37 CFR 1.53(b)

Dear Sir:

This is in response to the Notice to File Missing Parts of Nonprovisional Application dated December 3, 2008.

Applicant respectfully submits herewith a Declaration (and Power of Attorney) properly executed and in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date.

The Commissioner is hereby authorized to charge the surcharge for late submission of declaration as set forth in 37 CFR 1.16(f) of $65 for a small entity, and any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm), and to credit any overpayment, to Deposit Account No. 50-3683.

Respectfully submitted,

Date: February 3, 2009

/ Grant T. Langton /

Grant T. Langton
Registration No. 39,739
CONNOLLY BOVE LODGE & HUTZ LLP
P. O. Box 2207
Wilmington, DE 19899
(213) 787-2500
(213) 687-0498 (Fax)
Attorney for Applicant

CUSTOMER NUMBER

58688
PATENT TRADEMARK OFFICE

25213_1

Practitioner's Docket No.: 70243-00018 ***PATENT***

COMBINED DECLARATION AND POWER OF ATTORNEY

(ORIGINAL)

As the below named inventor, I hereby declare that:

TYPE OF DECLARATION

This Combined Declaration and Power of Attorney is for a non-provisional Utility Application.

INVENTORSHIP IDENTIFICATION

My residence, mailing address and citizenship are as stated below, next to my name. I believe that I am an original and first inventor of the subject matter that is claimed, and for which a patent is sought on the invention entitled:

TITLE OF INVENTION

SYSTEM AND METHOD FOR ADJUSTABLE LICENSING OF DIGITAL PRODUCTS

SPECIFICATION IDENTIFICATION

U.S. Patent Application No. 12/272,570 filed on November 17, 2008

ACKNOWLEDGMENT OF REVIEW OF PAPERS AND DUTY OF CANDOR

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

I acknowledge the duty to disclose information, which is material to patentability as defined in 37, Code of Federal Regulations, § 1.56.

CLAIM FOR BENEFIT OF EARLIER U.S./PCT APPLICATION(S) UNDER 35 U.S.C. 120

I hereby claim the benefit, under Title 35, United States Code, § 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, § 112, I acknowledge the duty to disclose information that occurred between the filing date of the prior application(s) and the national or PCT international filing date of this application. (37 C.F.R. § 1.63(e)).

PRIOR U.S. APPLICATIONS OR PCT INTERNATIONAL APPLICATIONS DESIGNATING THE U.S. FOR BENEFIT UNDER 35 USC 120:				
U.S. APPLICATIONS	Status			
U.S. APPLICATIONS	U.S. FILING DATE	Patented	Pending	Abandoned
60/998,778	November 17, 2007			

POWER OF ATTORNEY

I hereby appoint the practitioners associated with the Customer Number provided below to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

CUSTOMER NO. 58688

SEND CORRESPONDENCE TO:

Grant T. Langton, Esq.
Connolly Bove Lodge & Hutz LLP
Suite 2300
Los Angeles, California 90071

Customer No.: 58688

DIRECT TELEPHONE CALLS TO:

Grant T. Langton, Esq.
213-787-2505

DECLARATION

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

SIGNATURE(S)

Inventor Name: Ric B. Richardson

Inventor's Signature: _____

Date of Signature: 02 February 2009

Country of Citizenship: Australia

Residence Address: Irvine, California

Mailing Address: c/o Uniloc Corporation
3333 Michelson Drive, Suite 600
Irvine, CA 92612

Electronic Patent Application Fee Transmittal

Application Number:	12272570
Filing Date:	17-Nov-2008
Title of Invention:	System and Method for Adjustable Licensing of Digital Products
First Named Inventor/Applicant Name:	Ric B. Richardson
Filer:	Grant T. Langton/Grace Forker
Attorney Docket Number:	70243-00018

Filed as Small Entity

Utility under 35 USC 111(a) Filing Fees

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Late filing fee for oath or declaration	2051	1	65	65
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Miscellaneous:				
			Total in USD ($)	**65**

Electronic Acknowledgement Receipt	
EFS ID:	4725055
Application Number:	12272570
International Application Number:	
Confirmation Number:	6547
Title of Invention:	System and Method for Adjustable Licensing of Digital Products
First Named Inventor/Applicant Name:	Ric B. Richardson
Customer Number:	58688
Filer:	Grant T. Langton/Grace Forker
Filer Authorized By:	Grant T. Langton
Attorney Docket Number:	70243-00018
Receipt Date:	03-FEB-2009
Filing Date:	17-NOV-2008
Time Stamp:	14:35:48
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	$65
RAM confirmation Number	9024
Deposit Account	503683
Authorized User	CONNOLLY BOVE LODGE & HUTZ LLP
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	**Document Description**	**File Name**	**File Size(Bytes)/ Message Digest**	**Multi Part /.zip**	**Pages (if appl.)**
1		70243-00018.pdf	323903 21d2955aa8413eaede166afd449a18d5186 6c123	yes	4
	Multipart Description/PDF files in .zip description				
	Document Description		**Start**	**End**	
	Applicant Response to Pre-Exam Formalities Notice		1	1	
	Oath or Declaration filed		2	4	
Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	30091 51451310ffd345835c2153a8666f6a3c75a2 ced5	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	353994		

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY.DOCKET.NO	TOT CLAIMS	IND CLAIMS
12/272,570	11/17/2008	3621	657	70243-00018	25	3

CONFIRMATION NO. 6547

58688
CONNOLLY BOVE LODGE & HUTZ LLP
P.O. BOX 2207
WILMINGTON, DE 19899

UPDATED FILING RECEIPT

OC000000034460341

Date Mailed: 02/18/2009

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Ric B. Richardson, Irvine, CA;

Assignment For Published Patent Application

UNILOC USA, Irvine, CA

Power of Attorney: The patent practitioners associated with Customer Number 58688

Domestic Priority data as claimed by applicant

This appln claims benefit of 60/988,778 11/17/2007

Foreign Applications

If Required, Foreign Filing License Granted: 11/26/2008

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/272,570**

Projected Publication Date: 05/28/2009

Non-Publication Request: No

Early Publication Request: No
**** SMALL ENTITY ****

Title

System and Method for Adjustable Licensing of Digital Products

Preliminary Class

705

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

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

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

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

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

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

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (04-09)
Approved for use through 05/31/2009. 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 contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)		
	Application Number	12272570
	Filing Date	2008-11-17
	First Named Inventor	Ric B. Richardson
	Art Unit	2431
	Examiner Name	
	Attorney Docket Number	70243-00028

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6243468	B1	2001-06-05	Pearce et al.	
If you wish to add additional U.S. Patent citation information please click the Add button.						Add

U.S.PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20010034712	A1	2001-10-25	Colvin	
	2	20040024860	A1	2004-02-05	Sato et al.	
	3	20040143746	A1	2004-07-22	Ligeti et al.	
	4	20060282511	A1	2006-12-14	Takano et al.	
If you wish to add additional U.S. Published Application citation information please click the Add button.						Add

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]

EFS Web 2.1.13

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12272570
	Filing Date	2008-11-17
	First Named Inventor	Ric B. Richardson
	Art Unit	2431
	Examiner Name	
	Attorney Docket Number	70243-00028

	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button Add

NON-PATENT LITERATURE DOCUMENTS Remove

Examiner Initials*	Cite No	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, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	International Search Report and Written Opinion for corresponding International Application No. PCT/US2008/083809 dated April 29, 2009, total 14 pages	☐

If you wish to add additional non-patent literature document citation information please click the Add button Add

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12272570
	Filing Date	2008-11-17
	First Named Inventor	Ric B. Richardson
	Art Unit	2431
	Examiner Name	
	Attorney Docket Number	70243-00028

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

SIGNATURE

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

Signature	/John L. Paik/	Date (YYYY-MM-DD)	2009-05-06
Name/Print	John L. Paik	Registration Number	39739

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL SEARCH REPORT AND THE WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

To:
CONNOLLY BOVE LODGE & HUTZ LLP
Attn. Paik, John L.
P.O. Box 2207
Wilmington, DE 19899
ETATS-UNIS D'AMERIQUE

Date of mailing *(day/month/year)*	29/04/2009
Applicant's or agent's file reference	**FOR FURTHER ACTION** See paragraphs 1 and 4 below
International application No. PCT/US2008/083809	International filing date *(day/month/year)* 17/11/2008
Applicant UNILOC CORPORATION	

1. [x] The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

   Filing of amendments and statement under Article 19:
   The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

   When? The time limit for filing such amendments is normally two months from the date of transmittal of the International Search Report.

   Where? Directly to the International Bureau of WIPO, 34 chemin des Colombettes 1211 Geneva 20, Switzerland, Fascimile No.: (41-22) 338.82.70

   For more detailed instructions, see the notes on the accompanying sheet.

2. [ ] The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. [ ] **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

   [ ] the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.

   [ ] no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

4. **Reminders**

   Shortly after the expiration of **18 months** from the priority date, the international application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90*bis*.1 and 90*bis*.3, respectively, before the completion of the technical preparations for international publication.

   The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

   Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase **until 30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

   In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

   See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Eva Hehn

Form PCT/ISA/220 (October 2005) *(See notes on accompanying sheet)*

NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the *PCT Applicant's Guide*, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions, respectively.

INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report and the written opinion of the International Searching Authority, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims,description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only (see *PCT Applicant's Guide*, Volume I/A, Annexes B1 and B2).

The attention of the applicant is drawn to the fact that amendments to the claims under Article 19 are not allowed where the International Searching Authority has declared, under Article 17(2), that no international search report would be established (see *PCT Applicant's Guide*, Volume I/A, paragraph 296).

What parts of the international application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

What documents must/may accompany the amendments?

Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped),whether

(i) the claim is unchanged;

(ii) the claim is cancelled;

(iii) the claim is new;

(iv) the claim replaces one or more claims as filed;

(v) the claim is the result of the division of a claim as filed.

The following examples illustrate the manner in which amendments must be explained in the accompanying letter:

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."

2. [Where originally there were 15 claims and after amendment of all claims there are 11]:
"Claims 1 to 15 replaced by amended claims 1 to 11."

3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."

4. [Where various kinds of amendments are made]:
"Claims 1–10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

"Statement under article 19(1)" (Rule 46.4)

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

It must be in the language in which the international application is to be published.

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

Consequence if a demand for international preliminary examination has already been filed

If, at the time of filing any amendments and any accompanying statement, under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the time of filing the amendments (and any statement) with the International Bureau, also file with the International Preliminary Examining Authority a copy of such amendments (and of any statement) and, where required, a translation of such amendments for the procedure before that Authority (see Rules 55.3(a) and 62.2, first sentence). For further information, see the Notes to the demand form (PCT/IPEA/401).

If a demand for international preliminary examination is made, the written opinion of the International Searching Authority will, except in certain cases where the International Preliminary Examining Authority did not act as International Searching Authority and where it has notified the International Bureau under Rule 66.1*bis*(b), be considered to be a written opinion of the International Preliminary Examining Authority. If a demand is made, the applicant may submit to the International Preliminary Examining Authority a reply to the written opinion together, where appropriate, with amendments before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later (Rule 43*bis*.1(c)).

Consequence with regard to translation of the international application for entry into the national phase

The applicant's attention is drawn to the fact that, upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see the *PCT Applicant's Guide*, Volume II.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, Item 5 below.
International application No. PCT/US2008/083809	International filing date *(day/month/year)* 17/11/2008	(Earliest) Priority Date *(day/month/year)* 17/11/2007
Applicant UNILOC CORPORATION		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 3 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**
   a. With regard to the **language,** the international search was carried out on the basis of:
      [X] the international application in the language in which it was filed
      [ ] a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))
   b. [ ] This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).
   c. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box No. II)

3. [ ] **Unity of invention is lacking** (see Box No III)

4. With regard to the **title,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**
   [X] the text is approved as submitted by the applicant
   [ ] the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings,**
   a. the figure of the **drawings** to be published with the abstract is Figure No. 3a
      [X] as suggested by the applicant
      [ ] as selected by this Authority, because the applicant failed to suggest a figure
      [ ] as selected by this Authority, because this figure better characterizes the invention
   b. [ ] none of the figures is to be published with the abstract

Form PCT/ISA/210 (first sheet) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2008/083809

A. CLASSIFICATION OF SUBJECT MATTER
INV. G06F21/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2006/282511 A1 (TAKANO HARUKO [JP] ET AL) 14 December 2006 (2006-12-14) paragraphs [0051] - [0058]	1-25
Y	US 2004/143746 A1 (LIGETI JEAN-ALFRED [CA] ET AL) 22 July 2004 (2004-07-22) paragraph [0143]	1-25
Y	US 2001/034712 A1 (COLVIN DAVID S [US]) 25 October 2001 (2001-10-25) abstract; figure 4b	1-25
Y	US 6 243 468 B1 (PEARCE DAVID B [US] ET AL) 5 June 2001 (2001-06-05) column 2, lines 15-34	1-25
A	US 2004/024860 A1 (SATO KATSUHIKO [JP] ET AL) 5 February 2004 (2004-02-05) abstract; figure 3	1-25

[ ] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 April 2009	29/04/2009

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Kerschbaumer, J

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2008/083809

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2006282511 A1	14-12-2006	JP 2006352289 A	28-12-2006
US 2004143746 A1	22-07-2004	NONE	
US 2001034712 A1	25-10-2001	NONE	
US 6243468 B1	05-06-2001	US 2001044782 A1	22-11-2001
US 2004024860 A1	05-02-2004	WO 0235362 A1	02-05-2002
		JP 3763393 B2	05-04-2006
		JP 2002132584 A	10-05-2002
		TW 565800 B	11-12-2003

Form PCT/ISA/210 (patent family annex) (April 2005)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43*bis*.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US2008/083809	17.11.2008	17.11.2007

International Patent Classification (IPC) or both national classification and IPC
INV. G06F21/00

Applicant
UNILOC CORPORATION

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notifed the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:	Date of completion of this opinion	Authorized Officer
European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Fax: +49 89 2399 - 4465	see form PCT/ISA/210	Kerschbaumer, J Telephone No. +49 89 2399-2999

Form PCT/ISA/237 (Cover Sheet) (April 2005)

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:

   ☒ the international application in the language in which it was filed

   ☐ a translation of the international application into , which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1 (b)).

2. ☐ This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43bis.1(a))

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

   a. type of material:

      ☐ a sequence listing

      ☐ table(s) related to the sequence listing

   b. format of material:

      ☐ on paper

      ☐ in electronic form

   c. time of filing/furnishing:

      ☐ contained in the international application as filed.

      ☐ filed together with the international application in electronic form.

      ☐ furnished subsequently to this Authority for the purposes of search.

4. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-25
	No:	Claims	
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-25
Industrial applicability (IA)	Yes:	Claims	1-25
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V

1 The following document is referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1: US2006282511

2 The present application does not meet the requirements of Article 33(3) PCT, because the subject-matter of independent claim 1 does not involve an inventive step.

2.1 Document D1 is regarded as being the closest prior art source to the subject-matter of claim 1.

Claim 1	**Document D1**
A system (400) for **adjusting a license** for a digital product ~~over time~~,	"[0057] ...The **number of registrations** of the identifiers **can be limited by changing** the size of the identifier registering **area**"
the license comprising at Least one allowed copy count corresponding to a **maximum number of devices**	"[0057] ...when the number of terminals which is allowed to play the content is limited until five terminals by a content provider, there is need to **prepare free space to register five terminal identifiers.**"
authorized for use with the digital **product**, comprising:	"[0057] A system able to personally register the identifier of a terminal for **allowing the utilization** of **content** to the license 300 "
a communication module (410) for **receiving a request** for authorization to use the digital product from a given device;	"[0052] A terminal device 103-2 **sends** a self terminal identifier 405(abb) **to the memory device** 106"

a **processor module (420)** in operative communication with the communication module;	"[0051] ...The memory device 106 **collates**"
a **memory module (430)** in operative communication with the processor module and	"[0051] ...The memory device 106 collates a **terminal identifier list 304(abc, xyz)** within the license 300, and the sent terminal identifier 404(abc). "
comprising **executable code** for the processor module to:	"[0051] ...The memory device 106 **collates**"
verify that a license data associated with the digital product is **valid based** at least in part **on a device identity** associated with the given device (450);	"[0051] ...The memory device 106 **collates** a terminal identifier list 304(abc, xyz) within the license 300, and **the sent terminal identifier 404(abc).** "
in response to the device **identity already being on a record,**	"[0051] ...The terminal identifier of the terminal device 103-1 **exists in the terminal identifier list 304 of the license**"
allow the digital product **to be used** on the **given device (460)**;	"[0051] ...Therefore, the memory device 106 **outputs the license** 300 to the **terminal device 103-1**."
in response to the **device identity not** being on the **record,**	"[0058] ...when there is **no registration** of this terminal **identifier**,"
~~set the allowed copy count to a first upper limit for a first time period (470);~~	
calculate a device count corresponding to **total number of devices already authorized** for use with the digital product (480); and	"[0058] ...the memory device 106 **judges whether there is a space area able to additionally register a new identifier** in the identifier registering area of the license 300 or not (602)"

when the calculated device **count is less** than the first upper limit, **allow** the digital product **to be used** on the given device (490).	"[0058] ... **when a space area exists** in the identifier registering area, the memory device 106 records this terminal identifier to the identifier registering area of the license 300 (603), and **executes the license transfer** processing (604)."

2.2 The subject-matter of claim 1 therefore differs from D1 by

Adjusting a license for a digital product **over time** by, in response to the device identity not being on the record, **set the allowed copy count to a first upper limit for a first time period (470)**

2.3 This features leads to the effect of a user having different amount of devices that can be used in different points in time, according to business requirements.

Defining the license condition is not a technical issue but a business requirement given to the person skilled in the art. Especially the wish of the user having different number of copy counts at different points in time is a clear business concept.

2.4 The problem to be solved by these features may therefore be regarded as how to give the user the possibility to use a different amount of devices in different points of time.

2.5 It would be straight forward for a person skilled in the art to modify the license of D1 according to the business requirement without involving an inventive step.

Especially in view of the license not even being necessary to be modified over time, but the license containing limitations that are connected to time-periods. The license-content is defined by the business person, and the person skilled in the art modifies the system of D1 in order to be able to execute properly the time-commands of the license, without involving an inventive step.

3 The independent claims 22 and 25 define the method and program product

corresponding to the system of claim 1. Therefore the same objection as above applies correspondingly to these claims.

4 The additional features of the dependent claims appear to be either known from the documents listed above, business methods or commonly used methods in the field of DRM and, consequently, do not lead to an inventive subject matter in the sense of Article 33(3) PCT.

4.1 Claim 2 "software" is just one type of digital content.

4.2 Claims 5, 6, 9, 10, 11, 14 and 15 list business requirements without any special technical effect. Give the user 6 days, or more, or less, with a specific number of devices, involves no technical circumstances but reflects business considerations.

4.3 Claim 21 uses a hash to identify a device. D1 par. 41 describes the processor as being able to calculate a hash, and furthermore it is well known that a device can be identified by its properties. Hashing information to get a unique identifier is a well established technology.

Possible steps after receipt of the international search report (ISR) and written opinion of the International Searching Authority (WO-ISA)

General information	For all international applications filed on or after 01/01/2004 the competent ISA will establish an ISR. It is accompanied by the WO-ISA. Unlike the former written opinion of the IPEA (Rule 66.2 PCT), the WO-ISA is not meant to be responded to, but to be taken into consideration for further procedural steps. This document explains about the possibilities.
Amending claims under Art. 19 PCT	Within 2 months after the date of mailing of the ISR and the WO-ISA the applicant may file amended claims under Art. 19 PCT directly with the International Bureau of WIPO. The PCT reform of 2004 did not change this procedure. For further information please see Rule 46 PCT as well as form PCT/ISA/220 and the corresponding Notes to form PCT/ISA/220.
Filing a demand for international preliminary examination	In principle, the WO-ISA will be considered as the written opinion of the IPEA. This should, in many cases, make it unnecessary to file a demand for international preliminary examination. If the applicant nevertheless wishes to file a demand this must be done before expiry of 3 months after the date of mailing of the ISR/WO-ISA or 22 months after priority date, whichever expires later (Rule 54bis PCT). Amendments under Art. 34 PCT can be filed with the IPEA as before, normally at the same time as filing the demand (Rule 66.1 (b) PCT). If a demand for international preliminary examination is filed and no comments/amendments have been received the WO-ISA will be transformed by the IPEA into an IPRP (International Preliminary Report on Patentability) which would merely reflect the content of the WO-ISA. The demand can still be withdrawn (Art. 37 PCT).
Filing informal comments	After receipt of the ISR/WO-ISA the applicant may file informal comments on the WO-ISA directly with the International Bureau of WIPO. These will be communicated to the designated Offices together with the IPRP (International Preliminary Report on Patentability) at 30 months from the priority date. Please also refer to the next box.
End of the international phase	At the end of the international phase the International Bureau of WIPO will transform the WO-ISA or, if a demand was filed, the written opinion of the IPEA into the IPRP, which will then be transmitted together with possible informal comments to the designated Offices. The IPRP replaces the former IPER (international preliminary examination report).
Relevant PCT Rules and more information	Rule 43 PCT, Rule 43bis PCT, Rule 44 PCT, Rule 44bis PCT, PCT Newsletter 12/2003, OJ 11/2003, OJ 12/2003

Electronic Acknowledgement Receipt

EFS ID:	5286851
Application Number:	12272570
International Application Number:	
Confirmation Number:	6547
Title of Invention:	System and Method for Adjustable Licensing of Digital Products
First Named Inventor/Applicant Name:	Ric B. Richardson
Customer Number:	58688
Filer:	John Paik/Grace Forker
Filer Authorized By:	John Paik
Attorney Docket Number:	70243-00018
Receipt Date:	06-MAY-2009
Filing Date:	17-NOV-2008
Time Stamp:	15:08:18
Application Type:	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	Information Disclosure Statement (IDS) Filed (SB/08)	70243-00018_IDS_Supp.pdf	608007 3410641d8301c5f3b2547f4fe74de3c504a908af	no	4
Warnings:					
Information:					

2	NPL Documents	PCT_US2008_083809_Search_Report_2007-04-29.pdf	1664642 39b422a2b9591c7c429e62b18c902796b16375d1	no	14
Warnings:					
Information:					
			Total Files Size (in bytes):	2272649	

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/272,570	11/17/2008	Ric B. Richardson	70243-00018

CONFIRMATION NO. 6547

58688
CONNOLLY BOVE LODGE & HUTZ LLP
P.O. BOX 2207
WILMINGTON, DE 19899

PUBLICATION NOTICE

OC000000036190855

Title: System and Method for Adjustable Licensing of Digital Products

Publication No.US-2009-0138975-A1
Publication Date:05/28/2009

NOTICE OF PUBLICATION OF APPLICATION

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

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

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

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

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

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

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (06-09)
Approved for use through 07/31/2009. 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 contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99**)		
	Application Number	12272570
	Filing Date	2008-11-17
	First Named Inventor	Ric B. Richardson
	Art Unit	2432
	Examiner Name	to be assigned
	Attorney Docket Number	70243-00018

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4351982		1982-09-28	Miller et al.	
	2	4704610		1987-11-03	Smith et al.	
	3	5210795		1993-05-11	Lipner et al.	
	4	5418854		1995-05-23	Kaufman et al.	
	5	5440635		1995-08-08	Bellovin et al.	
	6	5490216		1996-02-06	Richardson, III	
	7	5666415		1997-09-09	Kaufman	
	8	5745879		1998-04-28	Wyman	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12272570
	Filing Date	2008-11-17
	First Named Inventor	Ric B. Richardson
	Art Unit	2432
	Examiner Name	to be assigned
	Attorney Docket Number	70243-00018

	9	5754763		1998-05-19	Bereiter	
	10	5790664		1998-08-04	Coley et al.	
	11	5925127		1999-07-20	Ahmad	
	12	6009401		1999-12-28	Horstmann	
	13	6044471		2000-03-28	Colvin	
	14	6158005		2000-12-05	Bharathan et al.	
	15	6230199		2001-05-08	Revashetti et al.	
	16	6233567		2001-05-15	Cohen	
	17	6330670		2001-12-11	England et al.	
	18	6449645		2002-09-10	Nash	
	19	6785825		2004-08-31	Colvin	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12272570
	Filing Date	2008-11-17
	First Named Inventor	Ric B. Richardson
	Art Unit	2432
	Examiner Name	to be assigned
	Attorney Docket Number	70243-00018

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(54) Title: METHODS AND APPARATUS FOR SECURE DISTRIBUTION OF SOFTWARE

(57) Abstract

Software is securely distributed with limited usage rights. The software may be an executable program and/or one or more data files such as image or multimedia data files. The software includes an access control object which prevents at least some usage of the software without use of a first access control code. The first access control code is produced based on selected information characteristic of the user's computer system. The access control code is produced in a server computer to which the user directs a request for the access control code. The user makes a payment to receive the access control code, which is then downloaded to the user's computer system.

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METHODS AND APPARATUS FOR SECURE DISTRIBUTION OF SOFTWARE

Background of the Invention

The present invention relates to secure methods for distributing software and data objects, as well as to access-controlled software and data objects, and computer systems which practice or utilize any of the foregoing.

Commercial distribution of software and data (such as media files and reports) by data communication is a very rapidly growing form of commerce. It is both efficient and convenient as compared to traditional distribution methods.

Distribution of software and data on a "Try and Buy" basis permits the user to run or "demo" the product before committing to buy it. This assumes that the software licensor or media distributor somehow exercises control over the use of the product at least until the recipient buys the right to use it. The widespread availability of data communication, especially via the Internet, also emphasizes the need for the software licensor and the media distributor to exercise control over their products.

One technique for controlling access to executables involves "wrapping" the executable to be controlled within a second program, termed a "wrapper". In effect, the executable to be controlled and the wrapper are joined into one executable, in which the wrapper is executed first and controls access to the wrapped executable.

However, conventional software protection systems based on wrapping are easily circumvented by class attacks which destroy the security otherwise afforded by a given type of wrapper. This is achieved through a modification of only a single part of the wrapper which is identical in all wrappers of that type. Generic unprotectors can easily be obtained via the Internet.

Another form of attack is the so-called "dump attack" in which the attacker waits for the wrapped application to be decompressed and/or decrypted in memory, and then dumps it to a hard disk in its original, unprotected state. Programs to carry out dump attacks also are easily obtained via the Internet.

A widely used security device injects new code into an existing executable in order to control access to the latter. When the executable is run, a specially-designed DLL executable is loaded for controlling access to the existing executable. The presumed "security" afforded by this scheme is circumvented by eliminating the call to the DLL or by modifying the DLL itself.

It has been proposed to package data objects with executables which carry out such control functions.

A dedicated user program is required to decrypt, decompress and format the data for display by a monitor and/or an audio reproduction device. Consequently, it is necessary to provide a different user program for each data format which may be encountered. For example, a different program is required to play an avi file than is used to display a bmp or JPEG file.

It would, therefore, be desirable to provide methods, software and computer systems which control access to data objects, but do not require different programs to display or present objects in various formats. It would also be desirable to provide methods, software and computer systems which control access to executables but which are not subject to class attacks or dump attacks.

Summary of the Invention

As used in this application, the following terms shall have the indicated meanings:

Software: includes both data and programming instructions.

Package: any software to be stored, accessed, loaded, assembled, prepared for transmission or received as a unit.

Object: any software to be run, utilized or displayed as a unit.

Feature: a "feature" of an object is any function, instruction, capability, or information included therein, or controlled or enabled thereby.

Computer System: includes a single computer or multiple cooperating computers, and includes one or more PC's, mainframes, digital processors, workstations, DSP's or a computer network or networks, or a computer internetwork.

Wrapping: joining one executable with another executable in a package, one of the executables (termed the "Wrapper") being executed first and controlling access to the other executable.

Watermark: includes information in software which either enables identification of an owner, licensee, distributee or another having rights in or an obligation in connection with the software, or enables identification of a version or copy of the software. Usually, but not necessarily, the watermark is imperceptible and preferably is difficult to remove from the software.

Padding Area: a space within a software object or package which does not contain required code or data.

In accordance with an aspect of the present invention, a method of securely distributing software with limited usage rights is provided. The method comprises: supplying software for distribution to a user, the software including an access control object for preventing at least some usage thereof on a computer system without the use of a first access control code; producing the first access control code based on

selected information characteristic of the predetermined computer system; and supplying the first access control code to the predetermined computer system to enable the at least some usage of the software.

In accordance with another aspect of the present invention, an executable object is provided, comprising: a first code portion comprising first predetermined instructions; and a second code portion comprising loading instructions required for loading the first code portion in a memory of a computer system to be programmed thereby, the second code portion being operative to control the computer system to erase the loading instructions from memory upon loading the first code portion in memory.

In accordance with still another aspect of the invention, a software package is provided, comprising: a first executable object, and a wrapper for the first executable object, the wrapper being operative to erase predetermined software from the first executable object when it has been loaded in running format in memory.

In accordance with a further aspect of the present invention, a computer system is provided, comprising: a processor; a memory; an instruction input device; and an executable stored in the computer system, the executable having a first code portion comprising first predetermined instructions for execution by the processor, and a second code portion including loading instructions, the processor being operative upon receipt of a predetermined instruction from the instruction input device to load the second code portion in the memory, the processor being operative under the control of the loading instructions to load the first code portion in the memory and operative under the control of the second code portion to erase the loading instructions from the memory upon loading the first code portion in memory.

In accordance with yet another aspect of the present invention, a software package comprises: a first object providing a first set of a plurality of features; a second object providing a second set of a plurality of features including some, but less than all, of the features included in the first set; and an access control portion affording selective access to the first software object and/or the second software object.

In accordance with still another aspect of the present invention, a software package is provided, comprising: a first executable object, and a wrapper for the first executable object, the first executable object being operative, while running, to access a feature of the wrapper; the wrapper being operative to supply the feature to the first executable object when the feature is accessed thereby.

In accordance with yet another aspect of the invention, a software package is provided, comprising: a first executable object, and a wrapper for the first executable object, the first executable object being operative, while running, to access a feature of the wrapper; the wrapper being operative to supply the feature to the first executable object when the feature is accessed thereby.

In accordance with yet another aspect of the invention, a software package is provided comprising: a first executable object, and a wrapper for the first executable object, the first executable object being operative to call a predetermined feature external thereto; the wrapper being operative upon a call of the predetermined feature by the first executable object to transfer program execution control to a predetermined address within the wrapper to control access by the first executable object to the predetermined feature.

In accordance with a still further aspect of the present invention, a computer system is provided, comprising: a processor; a memory; an instruction input device; and a software package stored in the computer system, the software package having a first object providing a first set of a plurality of features, a second object providing a second set of a plurality of features including some, but less than all, of the features included in the first set, and an access control portion; the processor being operative to load the software package in the memory, the processor being further operative to request access to a selected one of the first and second objects in response to a predetermined instruction from the instruction input device, the access control portion being operative to selectively control access to the selected object.

In accordance with still another aspect of the present invention, a software package is provided, comprising: a first object providing a first set of a plurality of features, the first object being encrypted; and a second object providing a second set of a plurality of features including some, but less than all, of the features included in the first set, the second object being unencrypted.

In accordance with yet still another aspect of the present invention, a driver executable is provided, comprising: first code for accessing a requested file from a storage device; second code for detecting the presence of a predetermined identifier in the accessed file; and decryption code for decrypting at least a portion of the accessed file in response to detection of the identifier therein.

In accordance with a still further aspect of the invention, a software package is provided, comprising: a software object having a first set of features and a second set of features, the first set of features being encrypted and the second set of

features being unencrypted; and a signature readable by a predetermined executable serving to control access to the encrypted first set of features.

In accordance with a yet still further aspect of the present invention, a computer system is provided. The computer system comprises: a processor; a memory; an instruction input device; a storage device storing a file; an operating system; a driver executable; and a device driver serving to control access to the storage device; the instruction input device being operative to input a first request for access to the file; the operating system serving to control the processor to direct a second request for the file to the driver executable in response to the first request for access; the driver executable being operative in response to the second request to control the processor to direct a third request for the file to the driver; the driver being operative in response to the third request to control the processor to read the file from the device to the memory and thereupon return control of the processor to the driver executable; the driver executable being operative upon return of control thereto to control the processor to examine the file in memory to detect the presence of a predetermined identifier in the file and to decrypt at least a portion of the file in response to detection of the predetermined identifier therein.

The foregoing, as well as further aspects of the invention and advantages thereof, will be apparent in the following detailed description of certain illustrative embodiments thereof which is to be read in connection with the accompanying drawings forming a part hereof, and wherein corresponding parts and components are identified by the same reference numerals in the several views of the drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram of a computer system having a single CPU;

Figure 2 is a flow diagram illustrating a method of producing software in the form of a package including a first object, a second object produced from the first object and usage authorization information governing use of the first and second objects;

Figures 3A through 3C illustrate image objects to be included in a package and produced in multiple versions each including a respectively different amount of information, produced by varying the amounts of noise therein;

Figures 3D through 3F illustrate multiple versions of the same image object of Figure 3A in which the amount of information in each version is varied by removing lines and/or portions of lines from certain versions;

Figures 3G through 3I illustrate multiple versions of the image object of Figure 3A in which the amount of information in each version is varied by filtering certain versions;

Figures 3J through 3L illustrate multiple versions of the image object of Figure 3A in which the amount of information is varied by encrypting portions of certain versions;

Figure 4A is a spectral diagram of a segment of an audio signal to be included as a data object in a package, while Figure 4B is a spectral diagram of another version of the segment having relatively less information than the segment of Figure 4A;

Figure 5A illustrates a data format for use in storing usage authorization information governing the use of various objects in a package, while Figures 5B and

5C are tables providing examples of the types of data included in such usage authorization information;

Figure 6 is a diagram illustrating a package produced according to the method of Figure 2 wherein a first object whose use is restricted is encrypted;

Figure 7 is a flow diagram of another method for producing software in the form of a package, wherein multiple objects are watermarked, compressed and encrypted and usage authorization information is watermarked and encrypted;

Figures 8A through 8D are used to describe methods for watermarking software carried out in the method of Figure 7; Figures 8A and 8B schematically illustrate a portion of an executable object and a portion of a code section, to be watermarked; Figures 8C and 8D schematically illustrate methods for watermarking executable objects and code sections of the type illustrated in Figures 8A and 8B;

Figures 9A through 9I are used to describe methods for compressing and encrypting software carried out in the method of Figure 7;

Figure 10 is a diagram of software in the form of a package produced by the method of Figure 7;

Figure 11A is a diagram of software in the form of a package including first and second executable or program objects; Figure 11B is a diagram of an executable notifier included in the package of Figure 11A, while Figure 11C is a diagram of the compressed program objects and access control information of the package of Figure 11A;

Figure 12 is a flow diagram of a method for secure distribution of software by data communication;

Figure 13 is a flow diagram of a method for secure distribution of software stored in a storage medium;

Figure 14 is a schematic diagram illustrating the use of a driver executable for controlling access to predetermined data objects in a computer system;

Figure 15 is a flow diagram of a method of printing a data object to which access is controlled;

Figure 16 illustrates the software package of Figures 11A through 11C when it is first loaded in the memory of a user's computer system;

Figure 17 illustrates portions of the software package of Figure 16 after the executable notifier has loaded a selected one of the program objects in running condition in the memory of the user's computer system; and

Figure 18 illustrates a method for controlling the usage of a given program by means of code in the executable notifier.

DETAILED DESCRIPTION OF CERTAIN PREFERRED EMBODIMENTS

With reference to Fig. 1, a computer system 100 is illustrated schematically having one or more central processing units (CPU) or processors 110, a display 120, other input/output (I/O) apparatus 130 (such as a network or internet connection and a keyboard and/or mouse), and a memory 140 in which executable files 150 and data files 160 may be loaded for execution or use by processor 110. The computer

system 100 also includes a non-volatile mass storage apparatus, such as a hard disk drive (not shown for purposes of simplicity and clarity).

Computer system 100 functions to produce software and to distribute the produced software to users, as well as to produce and distribute various other types of executables and data for controlling access to the produced software and carry out associated license purchasing transactions with users' computer systems. The manner in which system 100 carries out these functions will be apparent from the following discussion in connection with the associated drawings.

Figure 2 illustrates an exemplary method for producing a software package for distribution either on a record medium or by data communication, for example, via the world wide web or a dial-up service. The product thus generated includes multiple objects which either are data objects, such as media or multi-media objects, or are executable objects, such as games, applications or utilities. The method of Figure 2 is especially useful for generating try-and-buy packages.

In the method of Figure 2, a first object is used to produce one or more second objects in a step 210. In certain embodiments of this particular method, the one or more second objects are produced by removing features from the first object. In certain other embodiments, one or more first objects instead are produced from a second object by adding features to the second object.

Various embodiments of step 210 are illustrated in Figures 3A through 3L in which a first data object in the form of a digitized picture is used to produce multiple second objects having progressively less picture information.

In a first embodiment, a first picture object 310 shown in Figure 3A is used to produce a somewhat degraded version 316 as shown in Figure 3B by the addition of

noise to object 310. A further degraded version of object 310 is illustrated in Figure 3C as picture object 320 which is produced either through the addition of noise to object 310 or the addition of further noise to object 315.

A second embodiment of step 210 is illustrated in Figures 3D through 3F. The first picture object 310 is shown again in Figure 3D and is used to produce the moderately degraded version 325 as shown in Figure 3E by removing lines or portions of lines from the data object 310. A further degraded version 330 of object 310 shown in Figure 3F is produced by removing a relatively greater number of lines or portions of lines from object 310 or by removing still further lines from version 325. In still other embodiments the degraded versions are produced by removing multiple contiguous lines.

A further embodiment of step 210 is illustrated in Figures 3G through 3I in which the object 310 is subjected to low-pass filtering in order to remove fine details, such as the edges of objects. A moderately degraded version 335 as shown in Figure 3H is produced by low-pass filtering of object 310 with a relatively high frequency cut-off point, while a further degraded version 340 shown in Figure 3I is produced by low-pass filtering of object 310 with a relatively lower frequency cut-off point.

Yet another embodiment of the step 210 is illustrated in Figures 3J through 3L in which the object 310 is used to produce a somewhat degraded version 345 shown in Figure 3K by encrypting groups of contiguous horizontal lines with a first encryption key. When the object is displayed without decryption, it will appear as version 345 as shown in Figure 3K in which the encrypted portions are displayed as noise. Additional portions are encrypted to produce the still further degraded version

350 as shown in Figure 3L, the additional portions being encrypted with a second key or with the same key used to encrypt the portions shown in Figure 3K. Differently defined regions, such as blocks or vertical lines or regions, or else arbitrarily defined regions, may be selected for encryption.

In still other embodiments, either one, three or more degraded versions of a first picture object are produced.

In yet still further embodiments, further versions of a first picture object are produced by adding features thereto. For example, new elements can be added to the first picture object from other sources.

In other embodiments, the further versions are produced by substituting pixels having further information, such as finer detail or additional picture elements.

An embodiment of step 210 for producing multiple versions of an audio object is illustrated in Figures 4A and 4B. Figure 4A provides an exemplary spectral energy distribution 410 for a segment of a first audio object. A modified or degraded version of the Figure 4A segment is illustrated in the spectral energy distribution 420 of Figure 4B. In Figure 4B, the hatched-line frequency bands 430 represent portions of the energy spectrum which are removed, for example, by filtering, by removal of certain energy bins from an FFT transformed version of the segment, by removal of certain coefficients from a discrete cosine transformation of the segment, or otherwise. In still other embodiments, subbands of the audio signal in MP3 format are easily removed or encrypted to produce a degraded version thereof.

In the case of an executable object, step 210 is carried out in any of a number of ways. In one embodiment, the overall coding of a first executable object is modified to produce a modified executable object lacking one or more features of the

first. This may be done by removing the routines necessary to perform the disenabled features or bypassing such routines. In another embodiment, only one section of the first executable object is modified. For example, executable objects often are provided with resource sections which are readily modified to enable or disable its functions.

In the method of Figure 2, once the first and second objects have been prepared/obtained, the first object is encrypted to provide one means of controlling access thereto. In a try-and-buy transaction, as will be seen in greater detail below, the user is permitted free access to the second object having fewer than all of the features he needs, in order to assess his interest in acquiring rights to the first object which has all of the features he requires. Encryption is a relatively strong protection. The encryption step 220 is carried out so that a unique key or decryption executable is required to decrypt the first object. The key or decryption executable is produced by a server using selected information characteristic of the user's computer system, so that in order to decrypt the first object, both the key and decryption executable as well as the selected information are required. This key or decryption executable is stored in the system 100 and is not included in the package produced in the method of Figure 2. Rather, once the user has purchased the right to use the first object, the system 100 transmits the key or executable to the user's system which stores the key or executable in a package other than that of the first object.

In Step 230 of the Figure 2 method, data specifying permitted uses for each object and their price, if any, are produced and assembled according to each object. That is, for each object included in the package (or external to the package and

referenced thereby) and for each permitted user thereof, a record 510 such as that illustrated in Figure 5A is produced or accessed from storage in the system 100.

In a first field 520 of the record 510, data is provided identifying the object to which the record pertains. In a second field 530, the particular usage of the object for which the record is provided is identified. Examples of various usage types which can be identified in field 530 are listed in the table of Figure 5B.

A third field 540 of the record 510 specifies the extent of the permitted usage for the price specified in a fourth field 550 of the record 510. As indicated in the left-hand column of the table provided in Figure 5C, the extent of usage may be expressed in various ways, for example, by duration of use or numbers of usages. The price specified in the fourth field 550 corresponds to the authorized extent of usage, as can be seen from the table of Figure 5C. For example, if the extent of authorized usage is N times, the price may represent a specified amount of money for each time or for a number of times.

In step 240 of Figure 2, the first and second objects, and the usage authorization information are assembled in a package with a notifier section and, in packages having data objects, a signature. An exemplary structure for the package thus produced is illustrated in Figure 6, wherein the notifier, indicated as element 610 is arranged as the first section of the package.

The notifier 610 can take the form of one or more data objects or an executable object, depending on the type of package. Where the package contains data objects in the form of media objects such as digital images, video data or audio data produced in a standard format, the notifier includes at least one unencrypted and uncompressed image to be displayed to the user, as needed. As will be

explained in greater detail below, packages having data objects in standard formats preferably are accessed in the user's system by means of a driver executable in accordance with one aspect of the present invention. The first (or only) image stored in the notifier provides a message to the user that he needs to download the driver executable in order to make use of the data objects in the package. The notifier can also include a version of an object in the package having less information than such object, but which is unencrypted and readily displayed by the user's system. Once the driver executable has been downloaded and installed, it presents a dialog box to the user indicating the available objects, their authorized usages and the prices of each.

The driver executable is able to detect the type of accessed package as one including data objects requiring access control by the driver executable based on the package's signature which, in the embodiment of Figure 6, is appended at the end of the package. Where the driver executable detects that the accessed package has no recognizable signature or instead includes executable objects, it simply passes such packages on to the operating system without exercising any form of access control.

Packages including executable objects have notifiers including executables which serve both to control access to the executable objects in the package and to display necessary images to the user. These functions of the executable notifiers will be described in greater detail below. Since the driver executable is only required for accessing packages having data objects, there is no need to include a signature in a package having only executable objects.

Figure 7 illustrates another method for producing a software package including data or executable objects. In a first step 710 of the Figure 7 method, it is assumed that first, second and third objects, as well as an appropriate notifier and usage authorization information have been provided. In step 710, a watermark is placed in each of the foregoing objects, notifier and usage authorization information to provide a means of identifying the licensed user if any of these should be redistributed by him without authorization.

Data objects may be watermarked by any of a number of known methods which add data to the objects or modify the original data in order to embed the data of the watermark. However, watermarking of executable objects has, until now, been impractical, since any change to the code in the objects will interfere with the proper operation of the executable, and will likely render it inoperable. In addition, it is necessary for any such watermarking methodology for executable objects to enable the production of many variations in the watermark (at least one for each user) and, thus, in the anatomy of the executable, but wherein each variation of the executable is semantically equivalent to all other variations.

A further requirement is resistance to collusion attacks in which two or more dishonest purchasers combine their versions of the executable to derive one copy from which the watermark has been eliminated. To be considered resistant to such attacks, the number of different buyers whose individual revisions are all required to produce a watermark-free version or a version in which the watermark is useless, should be made impractically large.

In a further aspect of the present invention, watermarks are embedded in executable objects so that the watermarks are highly resistant to collusion attacks.

Advantageous watermarking techniques in accordance with certain features of the invention are illustrated in Figures 8A through 8D. In general, the method comprises: determining a location of at least one padding area in an executable object, and inserting a predetermined watermark in the at least one padding area. In certain embodiments, the watermark is encoded. A particularly advantageous form of encoding the watermark comprises including a plurality of software portions copied from the executable object or which mimic the same in the padding area to represent the encoded watermark.

Example of padding areas are provided with reference to Figures 8A and 8B. Figure 8A schematically illustrates a portion of an executable object in a storage medium, the object including a header 810, an executable code section 820 and a data section 830. The executable object of Figure 8A is formatted so that each section begins at a predetermined boundary. For example, the formats of an executable in the Win 32 platform would align the beginnings of the sections 820 and 830 at a 4 Kbyte boundary. Similar alignment conventions have been devised for other software formats, such as the Common Object File Format (COFF) used in UNIX and the Portable Executable format (PE) which is an extension of the COFF utilized in Windows™ platforms. The technique of aligning the beginning of each section at a predetermined boundary is convenient for programming purposes.

As a result, padding areas 812, 822 and 832 are formed between the ends of the sections 810, 820 and 830, respectively, and the following boundaries.

The padding areas either contain code or data which is unimportant or are simply empty.

Padding areas also exist within sections. With reference to Figure 8B, a schematic diagram of a code section is illustrated having instructions 1, 2, 3, ..., n, (n+1), ...

In this example padding areas are located after instruction 10 as well as after instruction (n+1). Such padding areas may be produced, for example, by a compiler which is designed so that each routine or calling point is arranged according to cache-line size. Codes designed to run on Intel™ processors include sequences of opcodes 0 x 90 (NOP) in these padding areas, so that it is relatively easy to locate such areas.

There are a number of ways to include watermarks in the padding areas as shown in Figures 8A and 8B. In certain embodiments, the watermark data is inserted in the padding areas in an unencoded form. Less knowledgeable users and licensees are not likely to take steps to locate and remove such watermarks. However, in more secure embodiments, the watermark is generated as a random number or selected as a pseudorandom number so that it is not easily recognized in order to remove or alter it.

However, padding areas associated with executable code sections or routines normally are filled with code which is not to be executed but rather serves only as filler. To substitute a random number for such codes would likely arouse suspicion by a would-be software pirate. Accordingly, in particularly advantageous embodiments, the watermark is encoded in software which mimics software present in the object before the watermark is inserted. An efficient way to carry out this method is to copy portions of the preexisting software (code or data) to represent the watermark. In certain embodiments the copied code is modified to encode the

watermark. Preferably, however, the copied portions are unmodified, but rather are selected to replace the existing contents of the padding area in a sequence representing the watermark. This is carried out in certain embodiments by selecting the copied portions according to their parities, so that a predetermined watermark can be recovered from the watermarked object simply by calculating the parities of the objects' contents until a known random or psuedo-random number constituting a predetermined watermark, is found.

Examples of this encoding technique are illustrated in Figures 8C and 8D. Figure 8C illustrates a technique for inserting watermarks in the padding areas 822 and 832 in the executable of Figure 8A. Once the padding areas 822 and 832 have been located, their contents are substituted with software from the adjacent segments 820 and 832 to encode the watermark. In order to encode the watermark in padding area 822, the parities of various code blocks from the code section 820 are determined. Then the blocks are inserted in the padding area 822 based on their parities, so that when the parities of these blocks are later determined, they reveal the watermark, preferably a random-generated or pseudorandom number.

As an example, if the watermark to be inserted in area 822 is 1011, a block 823 is selected having a parity of "1" and is inserted in area 822. Then a block 824 having a parity of "0" is inserted in the area 822, followed in turn by blocks 825 and 826 having parities "1", and "1", respectively. Similarly, blocks 833, 834, 835 and 836 are inserted in area 832 to continue the watermark.

Figure 8D provides an example of a method for encoding a watermark in the padding areas between routines in a code section of the type illustrated in Figure 8B. Routines Ø, 1 and 2, also identified by reference numerals 850, 860 and 870, are

separated by padding areas 852, 862 and 872. The watermark is inserted in the identified padding areas 852, 862 and 872 by copying portion of the sections, 850, 860 and 870 and inserting these in the padding areas. In the example of Figure 8D, an initial portion of routine Ø is inserted in a first portion of padding area 852 and a concluding portion of routine 1 is inserted in a final portion of padding area 852. Similar selections and insertions are made in padding areas 862 and 872. In this example, the watermark is encoded in the selection of the portions of the routines inserted in the various padding areas.

Various other encoding techniques are available. In other embodiments, NOP opcodes are replaced by opcodes having the same effect, just in case the NOP's are actually executed. For example, opcodes such as [mov al, a1], [mov c1, c1] [mov ah, ah] and [fnop] have the same effect as an NOP opcode and may be substituted therefor in order to encode a watermark.

In still other embodiments, the lengths of the blocks and/or fake routines are selected to encode all or part of the watermark.

In a subsequent step 720 of the method as illustrated in Figure 7, the first, second and third objects are compressed in accordance with still another aspect of the present invention. In a third step 730 of the method as shown in Figure 7, each of the blocks and assembly information representing the compressed first, second and third objects, as well as the Usage Authorization Information is encrypted. Preferably each is encrypted using a respective, unique key. The keys are not included in the resulting software package, but are retained to be distributed subsequently to authorized users.

The inventive compression technique carried out in step 720 of Figure 7, as well as the encryption step 730 thereof, are illustrated in greater detail in Figure 9A. As shown therein, software objects I through n, identified by 910, which may take the form of separate software packages, are subject to an inventive macrocompression method 920 to convert the objects I-n into one or more blocks 937 and assembly information objects 935, one for each object I-n, each indicating how to reconstruct the various strings of the respective one of the objects I-n from the one or more blocks 937. In summary, the macrocompression method 920, (1) produces matches of reference strings within the software objects 910 with comparison strings therein, the reference strings and the comparison strings having a predetermined minimum length, each comparison string within the same package as a matching reference string being separated therefrom by a predetermined minimum distance within the package, (2) expands the sizes of matching strings by including adjacent, matching software therein, and (3) forms compressed software objects comprising at least one software block corresponding to a selected one of the expanded, matching strings and assembly information indicating how to reconstruct others of the matching strings from the at least one software block. In certain embodiments, the software objects 910 comprise data. In other embodiments the software objects 910 comprise executables. While Figure 9A shows multiple objects I-n, the macrocompression method 920 also serves to compress a single object in certain embodiments.

The macrocompression method 920 is illustrated in greater detail in Figure 9B. String matching is carried out on the contents of the 1 through n objects 910, as indicated in a step 932. In certain embodiments, the string matching step is

facilitated by producing a hash head table grouping possible string matches together according to their hashing functions.

A hashing function of a given string calculates a hashing value based on the values of the bytes in the string. In certain embodiments of the present invention, a minimum string length of n bytes is employed and a hashing function is selected to calculate a hashing value for each string of n bytes. In general, the hashing value for each string of n bytes in each of the objects to be compressed is carried out, although this is not essential. In the general case, the hashing function is carried out for each string in the object $[p_0, p_1, \ldots, p_{n-1}]$, $[p_1, p_2, \ldots, p_n]$, . . $[p_i, p_{i+1}, \ldots p_{i+n-1}]$, etc. where p_i represents a value of the i'th byte in the object. As the hashing value of each string having an offset j is determined, its offset j is added to a hash head table, indexed according to its hash value.

An exemplary hash head table is illustrated in Figure 9C and stores data identifying each string of n bytes in three objects M_1, M_2, and M_3 indexed according to the hashing value of each string. As shown in Figure 9C, all strings having a hashing value h equal to zero are identified by offset and object numbers in an initial record of the hash head table, and so on, until a final record is provided to identify those strings whose hashing value is a maximum among all hashing values in this case, h_{max}. It will be appreciated that the maximum possible number of different hashing values in this case will be $(L_1-n) + (L_2-n) + (L_3-n)$ which will occur in the event that each string yields a different hashing value. Accordingly, this is the maximum possible length of the hash head table for which memory space need be set aside in memory 140.

A particularly advantageous hashing function calculates the hashing value of each string of n bytes as a summation of their values:

$$h(j) = \sum_{i=j}^{j+n-1} p_i,$$

Wherein h(j) represents the hashing value of the jth string in the object and p_i is the value of the i'th byte of the object. One advantage flows from the commutative property of this function. That is, the function is commutative since it may be carried out using the byte value p_i in any arbitrary order. Consequently, in certain advantageous embodiments, once the hash value h(j) has been calculated as above for the string $(p_j, p_{j+1}, \ldots p_{j+n-1})$, the hashing value for the next string is determined using relatively fewer operations (and processing time) as follows:

$$H_{(j+1)} = h_{(j)} - p_j + p_{j+n}$$

Also, the contents of most objects yield hashing values which are clumped, that is, unevenly distributed over the range of hashing values. This tends to reduce the usefulness of the hashing function as a means of separating strings which do not match from those which possibly do match. Where the invention implements a hashing function of the type:

$$h(j) = \sum_{i=j}^{j+n-1} p_i,$$

in certain embodiments utilizing this function, clumping is reduced by increasing the range of hashing values. That is, where the hashing function is carried out in the form illustrated above for the strings of length n bytes in an object having a total of L

bytes, the maximum number of different hashing values is (L-n). In the presently described embodiments, the hashing function is modified so that it takes the form:

$$h = K_1 h_1 \text{ (bytes a)} + K_2 h_2 \text{ (bytes n-a)},$$

wherein (bytes a) are the first (a) bytes within the string, so that a<n; (bytes n-a) represents the following (n-a) bytes within the same string; a selected one of K_1 and K_2 is equal to 1 and the other of K_1 and K_2 is an integer greater than 1; the function h_1 is calculated: $h_1 = \_$ (bytes a); and the function h_2 is calculated: $h_2 = \_$ (bytes n-a).

In a particularly advantageous form of this embodiment, memory space is conserved by assigning the value (255a+1) to the other of K_1 and K_2 so that the maximum value of h_1, which is (255a), immediately precedes the minimum non-zero value of K_2, which is (255a+1). As a consequence, there is no wasted memory space between these two possible hashing values.

Still other types of hashing functions may be employed in place of the above-described summation function. In particular, other commutative hashing functions are similarly advantageous. For example, an appropriate commutative hashing function h can take the form:

$$h(j) = p_j \times p_{j+1} \times \ldots \times p_{j+n-1},$$

or the form:

$$h(j) = p_j \oplus p_{j+1} \oplus \ldots \oplus p_{j+n-1}.$$

Since these functions are commutative, they can also be implemented in a simplified fashion as

$$H(j+1) = h(j) \text{ (inv\_op) } p_j \text{ (op) } P_{j+n},$$

where (op) represents a selected commutative operation (such as addition, multiplication or exclusive OR) and (inv_op) represents the inverse of such operation.

As noted above, the hash head table produces records containing possible matches. So, once the table is produced, the string matching process continues by searching for matches within each record of the table on the condition that, to qualify as an acceptable match, two matching strings within the same package (such as strings from the same file) must be separated by a predetermined minimum distance within the package. The following Table 1 provides an example of a possible sequence by byte values within a given package wherein each row of byte values is a continuation of the preceding row of values:

TABLE 1

Column

	1	2	3	4	5	6	7	8	9
Row 1	3	2	5	1	7	9	10	5	7
Row 2	10	11	31	2	5	1	7	9	10
Row 3	9	21	24	0	0	0	0	X_1	X_2
				. . .					
Row k	X_N	2	5	1	7	9	Y_1	Y_2	Y_3

From Table 1 it will be seen that four different strings of five bytes each have the hashing value h(j) = 24 where

$$h(j) = \sum_{i=j}^{j+4} p_i.$$

namely, (a) the string (a) from row 1, column 2 to row 1, column 6 having the values (2, 5, 1, 7, 9), (b) the string (b) from row 2, column 4 to row 2, column 8 having the values (2, 5, 1, 7, 9), (c) the string (c) from row 3, column 3 to row 3, column 7 having the values (24, 0, 0, 0, 0), and the string (d) from row k, column 2 to row k, column 6 having the values (2, 5, 1, 7, 9). While strings (a) and (c) have the same hashing values, they clearly do not match. Also, since to qualify as an acceptable match, the matching strings must be separated at least by a minimum distance if within the same package, strings (a) and (b), while matching, will not qualify if the minimum distance exceeds 11 bytes. Typically, the minimum distance will be substantially greater than 11 bytes in order to provide the ability to compress further through microcompression, as explained in greater detail below. If it is assumed that the matching strings (a) and (d) are separated at least by such minimum distance, therefore, strings (a) and (d) form a qualifying match.

An example of a search for matching strings in multiple packages is now provided with reference to Figure 9C. Packages M_1, M_2 and M_3 are illustrated therein having two types of exemplary strings of length n bytes, strings A and B. Where matching strings are contained in different packages, as in the case of strings B in packages M_1 and M_3, there is no need to require a minimum distance between them, as they would not be matched in the subsequent microcompression process. However, if it is assumed that the minimum distance between strings is q bytes as shown in Figure 9C, then the two strings A in M_1 will not form a qualifying match as they are offset by less than q bytes. However, the two strings A in M_2 will form a qualifying match as the strings of this pair are separated within package M_2 by more than q bytes.

Once all of the qualifying matches of a given type of string have been found, their identifiers are collected under a common group designation. When all of the qualifying matches of each type of string in the package or package being compressed, have been found and so grouped, the sizes of the matching strings are expanded by including adjacent matching bytes therein. An exemplary string expansion technique is explained in connection with Figure 9D which is a schematic illustration of a portion of a package or object having various types of strings K, L, P and Q, in which the matching process has located three qualified matching strings 1, 2 and 3 of type K. In order to expand these strings in one embodiment, each of the strings 1, 2 and 3 is expanded to the right by one byte and then the various combinations of matching string pairs (1 and 2, 2 and 3, 1 and 3) are compared for a match. If a match is still found for a given pair, the strings of the matching pair are repeatedly expanded by one byte and compared until a match is no longer found. At that point the identity of the pair and its matching length is entered in a table of the various string pair combinations, as shown in Figure 9E.

In other embodiments, the matching strings of each group instead are expanded to the left, while in still other embodiments the matching string are expanded in both directions.

Once the expanded matching pairs have been entered in the table of Figure 9E, they are removed from the hash head table.

When all of the matching strings have been expanded as explained above, the software blocks and the assembly information constituting the compressed package or packages are produced in a step 935 of Figure 9B. Preferably, representative ones of the largest expanded, matching strings are selected as the

software blocks, represented schematically at 937 in Figure 9B, and copied as indicated in step 939. Then the assembly information is produced as information referencing the remaining strings to all or a portion of each of the software blocks, as their contents correspond. This step is illustrated by the example of Figures 9D through 9F. As described above, in this example, the matches for each pair of strings (1, 2), (1, 3) and (2, 3) as seen in Figure 9D were separately expanded to produce the data shown in the table of Figure 9E. From Figure 9E it will be seen that the largest expanded, matching strings are strings 2 and 3. In this example, string 2 is selected as a software block for reference in reproducing each of the expanded strings 1, 2 and 3, since the contents of each is either contained in or corresponds to the contents of expanded string 2. The assembly information necessary to reconstruct strings 1, 2 and 3 is arranged in the table in Figure 9F. For example, string 1 is identified by its offset in the original package or object and its contents are reproduced from string 2 (software block) as the source, based on the offset within string 2 at which its contents is located (the source offset) and the length of such contents within string 2. In this manner, relatively large blocks of data from the original, uncompressed package or object can be represented as only a few bytes within the assembly information in the compressed form thereof, resulting in substantial reductions in the amount of data required to represent the package or object when it has been compressed according to the macrocompression method of step 920.

Where it is desired to remove information from a given package, for example, in order to produce images such as those illustrated by Figures 3E and 3K, or a sound segment such as that shown in Figure 4B, a technique as illustrated in

Figures 9G and 9H is advantageous. In Figure 9G, it is assumed that a segment B is to be removed from a package P and substituted with zero values throughout, or else by some other constant or by noise. As shown in Figure 9G, the segment B is located at an offset 2 and has a length L_B. Segment B is flanked by a segment A located at an offset 1 and a segment C located at an offset 3.

The desired result is illustrated in Figure 9H wherein the segment B is replaced by zero-value data, represented by double cross-hatching. The resulting package P' is achieved by specifying the source for each of the three segments, as shown in the table T of Figure 9H, wherein the source for the segment at offset 2 extending for a length L_B is specified as the constant value zero, which thus replaces the original contents of segment B.

Once the new package P' has thus been specified, macrocompression is carried out only for the first and third segments at offsets 1 and 3. This is achieved preferably by constructing a hash head table only for the strings in the first and third segments A and C, and prohibiting the use of any strings in the second segment in producing the hash head table. Thereafter, both the macrocompressed segments at offsets 1 and 3 and the uncompressed segment at offset 2, may be compressed by microcompression as discussed below.

This technique is useful not only in producing degraded objects and packages, but also for preparing a partially compressed package or object having an uncompressed portion which is thus readily modified.

Returning to Figure 9A, after the macrocompression method 920 has been carried out, the resulting blocks and assembly information are further compressed by microcompression, as indicated by step 950. As used herein, microcompression

identifies a software compression technique which compares strings having a predetermined maximum size with other strings of the same size which are located no more than a predetermined distance or window from one another in the same package, in order to eliminate redundant strings. An example of a microcompression executable is the PK Zip™ utility. The result of microcompression is further compressed assembly information AI* and software blocks BLKS* as shown in Figure 9A.

Preferably, the window used in the microcompression process is smaller than the minimum distance between qualified matching blocks in the macrocompression method of step 920. In this manner, different strings are compared in the two compression techniques, thus affording more effective compression. In accordance with another aspect of the invention, a method of compressing software in one or more packages comprises: producing first compressed software by matching strings selected so that matching strings within the same package are separated at least by a minimum predetermined distance within the package, and producing second compressed software by matching strings of the first compressed software within the same package and within a maximum predetermined distance of one another. Preferably, the minimum predetermined distance is greater than the maximum predetermined distance.

The further compressed assembly information AI* and software blocks BLKS*, along with the Usage Authorization Information, are then encrypted in a step 960 so that the Usage Authorization Information and the assembly information AI* for each object 1 through n, is encrypted using a respectively different encryption key. Preferably, each of the blocks BLKS* is also encrypted with a respectively different

encryption key. As will be explained in greater detail below, each encryption key is produced based on information characteristic of the user's computer system, and so that decryption requires the use of both the encryption key and such characteristic information. This ensures that the encrypted information and software cannot be decrypted using a system other than the user's particular system.

In accordance with a further aspect of the invention, a method of encrypting software representing a plurality of compressed objects is provided. The software includes at least one software block and assembly information for each of the objects, the assembly information for each object enabling the reconstruction thereof from the at least one software block. The method comprises: encrypting each of the software blocks with an encryption key; and encrypting the assembly information for each object using a respectively different encryption key. Preferably, a respectively different encryption key is used to encrypt each of the software blocks.

The encrypted assembly information AI** and the encrypted software blocks BLKS**, together with the encrypted Usage Authorization Information, are formed into a single composite package 970.

In a final step 740 of the method as shown in Figure 7, an appropriate notifier and signature (if necessary) are added to the encrypted blocks, assembly information and usage authorization information to complete the software package.

An advantageous format for the software package is illustrated in Figure 10, wherein the notifier 1010 is placed at the head of the package. Where the package includes data objects, placing the notifier at the head of the package will result in the display of the correct image when the package is first accessed. Where the package includes executable objects, the first portion of the package may simply be a header

indicating the entry point for an executable notifier located anywhere in the package. Packages including data objects have a signature 1020 appended thereto. Placing the signature at the end of the package enables the executable driver to readily locate the signature in order to determine if it is to exercise access control over data objects in the package as well as perform other functions, such as decryption and decompression of the data objects. Although the signature 1020 is shown appended at the end of the package, in the alternative, it may be located elsewhere, such as at the beginning of the package or after the notifier.

Between the notifier 1010 and the signature 1020, the encrypted sections 1030 (indicated by cross-hatching) are arranged in a predetermined order to be accessed by the driver executable or the executable notifier, as the case may be.

Figures 11A through 11C illustrate the structure of a software package including multiple program objects. Figure 11A provides an overall view of the software package illustrating the arrangement of an executable notifier 1110 at the head of the package, an optional signature section 1120 at the end of the package, with encrypted and compressed program objects 1 and 2 and encrypted access control information 1130 arranged between the executable notifier 1110 and the signature section 1120.

The executable notifier 1110 is illustrated in greater detail in Figure 11B. As shown therein, the executable notifier 1110 includes a header section 1135 at the beginning of the software package, followed in turn by an executable code section 1140 and a data section 1145. The data section 1145 is followed sequentially by a resource section 1150 and an import table 1155. The resource section 1150 supplies various resources which may be employed by the executable code of

section 1140, such as dialog boxes or menus. The import table 1155 includes links to various routines supplied by the operating system, such as print, copy, readfile, createfile, etc.

Figure 11C illustrates the encrypted portions of the software package, including the encrypted access control information 1160 and the compressed program objects in the form of N blocks 1165 and respective assembly information sections 1170 for each program object.

With reference again to Figure 11B, the executable code section 1140 of the executable notifier 1110, in general, exercises control over access to the program objects 1 and 2 and performs certain ancillary functions, as follows:

(1) When the user's system first loads the software package in memory, the executable code section 1140 runs a setup routine utilizing displays and dialog boxes supplied from the resource section 1150. The setup routine performs normal setup functions, such as a display of the relevant user license and securing the user's agreement to the license terms. The executable code section 1140 refers to information in the operating system of the user's computer to determine the language (e.g., English, French, German) in which the displays and dialog boxes are presented.

(2) The executable code section 1140 solicits and evaluates the user's requests for access to the program objects. This is achieved by displaying a dialog box when the software package is accessed by the user. The dialog box explains the user's options, such as which programs and/or program options are available without charge, which are available for a fee and which of the latter have been purchased and are still available to be used. To provide such a display, the

executable code section references both the access control information section 1160 (after decrypting section 1160) and a purchase status file which is produced when the user purchases rights to use one or more objects.

(3) Where a requested use is either free, or already purchased, if not free, the executable code section 1140 decrypts and decompresses the relevant program or data object, and then loads it in memory to be run so that the requested use may be carried out. The section 1140 prevents access to unavailable uses by hooking the functions referenced in the import table of the running program object to control routines in the executable code section 1140, as explained below.

(4) The executable code section 1140 serves to deter dump attacks by erasing from memory certain necessary information from the program object when it loads the program object in running format in memory. Consequently, even if the decrypted and decompressed program object is somehow copied from the memory to some storage device, it could not be reloaded in running format in memory and, thus, is useless after a dump attack.

It will be understood that the executable code section 1140 functions as a "wrapper" or access control executable but without being susceptible to various types of attacks that prior art wrappers have been subject to.

Fig 12 is a flow diagram of a method for secure distribution of software by data communication. For the purposes of Figure 12, it will be assumed that a user's computer has been connected to a server computer by a data communication channel, such as the internet. According to an initial step 1210 in Fig. 12, the server sends a software product, which is either an executable object or a data object, to

the user's computer, in response to a request sent to the server from the user's computer.

If the software product is a data object, the user's computer will require a driver executable in order to make use of the data. If the user's computer lacks the required driver executable, the user's attempt to access the data object will result only in the display of a notification to download the driver executable from the server computer. When the server computer receives such a request, it responds as indicated in step 1220 by sending the driver executable to the user's computer where it is installed to operate between its operating system and the appropriate disk or other mass storage driver thereof, as explained below in connection with Figure 14.

Then, at step 1230, and in response to input from the user, an access control executable portion of the software product (if an executable object) or of the driver executable (if the software product is a data object) causes the user's computer to transmit a purchase request for partial or full access to the software product, and the server receives the purchase request. Step 1240 follows, at which the server sends to the user's computer a program which generates system identification information based on data that is specific to the user's computer. For example, the data used to generate the system identification information may include serial numbers of such components of the user's computer as the hard disk, the network interface card, the motherboard, and so forth. The user's computer then sends to the server the resulting system identification information, as well as information, such as a credit card number, which is required to complete the transaction. This information is received at the server, as indicated at step 1250.

Following step 1250 is step 1260, at which the server validates the credit card information and generates a decryption key and/or a decryption executable program on the basis of the system identification information received from, and specific to, the user's computer. According to one method of implementing the invention, the required decryption key is split into two parts, of which one part is calculated in the server, and the other is calculated in real time in the user's computer, using the data which is specific to components of the user's computer. The decryption key and/or decryption executable program are then transmitted to the user's computer from the server, as indicated at step 1270. The decryption key and/or decryption executable program are then used in the user's computer to decrypt the software object to which the user has just purchased usage rights. In certain embodiments, a watermark is added to the software object to store data indicative of the transaction in which the usage rights were purchased.

According to certain embodiments of the invention, the software product sent at step 1210 includes three objects, of which a first object has all of the features of a second object plus at least one additional feature. A third of the three objects has all of the features of the first object plus at least one additional object. Access to the second object is free, but access to the first and third objects requires two separate payments. If a payment arrangement is made for both of the first and third objects, the server computer provides different access control codes, such as different decryption keys, for the first and third objects, respectively. The different control codes are based on different respective information characteristic of the user's computer system.

Fig. 13 is a flow diagram of a method for secure distribution of software stored in a storage medium.

According to a first step 1310 in Fig. 13, software which is distributed on a storage medium is acquired by the user of a computer and installed on the user's computer. This step 1310 may have taken place a substantial period of time prior to the subsequent steps. Next, at step 1320, a server computer receives a request from the user's computer to purchase partial or full access to a software object which was installed on the user's computer in step 1310. It again is assumed that the user's computer has been connected by a communication channel to the server. Preferably the information received by the server at step 1320 includes an identification code (such as a CD serial number) which identifies the particular storage medium on which the software was distributed.

Following step 1320 are steps 1330, 1340, 1350 and 1360. These steps may be identical to steps 1240-1270 which were described above in connection with Fig. 12, except that the decryption key generated by the server at step 1350 may be based in part on the storage medium identification code. In view of the previous discussion of the corresponding steps in Fig. 12, no further explanation of Fig. 13 is necessary.

Fig. 14 is a schematic diagram illustrating the use of a driver executable controlling access to data objects stored in a computer system. The software architecture illustrated in Fig. 14 includes a media player application 1405 which is provided to read or play data objects such as images. Also included is a conventional operating system 1410 and a driver executable program 1415 of the

type referred to in connection with step 1220 in Fig. 12, or which is distributed on the storage medium referred to at step 310 in Fig. 13.

Also illustrated in Fig. 14 are a conventional driver program 1420 which is provided for managing a storage device, and a storage device 1425 on which one or more data objects are stored.

Fig. 14 also illustrates a process by which a data object stored on the storage device 1425 is accessed by the media player application 1405, as well as a process for requesting printing of the accessed object.

When the user of the computer system enters an input to request access to a data object stored on the storage device 1425, a request to that effect is passed from the media player application 1405 to the operating system 1410, as indicated at reference numeral 1430 in Fig. 14. In response to the request 1430, the operating system 1410 passes a second request (represented by reference numeral 1432) to the driver executable 1415. In response to the request 1432, the driver executable 1415 passes a third request (reference numeral 1434) to the storage device driver 1420. In response to the request 1434, the storage device driver 1420 retrieves the desired data object from the storage device 1425. The desired object is then passed from the storage device driver 1420 to the driver executable 1415 either in encrypted form, as indicated at 1436, or in unencrypted form. If the user has satisfied the condition for access to the data object (e.g., by paying the purchase price for access), then the driver executable decrypts the encrypted data object and passes the decrypted data object to the operating system 1410, as indicated at 1438. The decrypted data object is then passed from the operating system to the media player application, as indicated at 1440.

If the user wishes to print the data object, then a request 1442 is passed from the media player application to the driver executable, which then passes another print request 1444 to the operating system.

Fig. 15 is a flow diagram which shows additional details of a method of printing a data object to which access is controlled. In response to input from the user of the computer, the media player transmits the print request (reference numeral 1442 in Fig. 14), as represented by step 1510 in Fig. 15, to the driver executable. The driver executable then examines the object to determine whether identifier data such as a signature is present in the object to indicate that printing of the object is subject to some restriction (step 1520). If at step 1520 no such identifier is found, then, as indicated at step 1530, the driver executable provides the data object in an unmodified form to the operating system.

If at step 1520 the driver executable finds the signature which identifies the object as one for which access is controlled, step 1540 follows. At step 1540 the driver executable saves or modifies the target address in the media player application to which the application directs calls for a print routine. Consequently, as indicated at step 1550, when the media player calls a print routine, the call is directed to the driver executable. However, if step 1540 has already been carried out as a result of a previous print request from the media player, this step need not be repeated.

At step 1560, and in response to the call for the print routine from the media player application, the driver executable determines whether the customer has satisfied the conditions required to authorize printing of the data object. If not, the driver executable causes the computer system to display a suitable notice to indicate

to the user that printing is denied, and to invite the user to purchase the right to print the data object (step 1570), as described hereinabove.

If at step 1560 the driver executable determines that printing is authorized, then the driver executable calls the print routine provided by the operating system (step 1580).

Fig. 16 illustrates the software package of Figs. 11A-11C when the software package is first loaded into the working memory of a user's computer system. As before, the executable notifier 1110 is made up of a header section 1135, followed in turn by a executable code section 1140, a data section 1145, a resource section 1150 and an import table 1155.

Following the executable notifier 1110 are the encrypted and compressed program objects and encrypted access control information, all indicated by reference numeral 1130, and the signature section 1120, which were referred to above in connection with Fig.11A.

If the user requests access to one of the program objects, say object 1, and if access to the object has been authorized, then the executable notifier decrypts and decompresses the program object and causes the program object to be written in executable form as indicated in Figure 17. As seen from Fig. 17, the decrypted, decompressed program object includes a header section 1710, followed in turn by an executable code section 1720, a data section 1730, a resource section 1740, and an import table 1750.

After the program object has been written in memory in executable form as shown in Fig. 17, the executable notifier modifies the program object in a manner to defeat dump attacks. This is achieved by erasing or modifying certain portions of the

program object after it is written in memory. In certain embodiments, one or more of the program object's relocation information, directory pointers or its entry point pointer are erased or modified for this purpose. In other embodiments, one or more of the references to exterior routines in the import table of the program object are modified to enable the executable notifier to control access to such routines. This modification of the program object is referred to as "hooking" routine calls by the program objects. This is done by modifying the import table 1750 so that routine calls are routed through the executable notifier instead of directly to the operating system. Details of the "hooking" process will now be described with reference to Figure 18.

As indicated at 1810 in Fig. 18, the executable notifier erases portions of the import table that identify the routines to be called by the corresponding virtual address such as "read file", "create file", or "print". Instead of addresses to the operating system routines, the executable notifier inserts virtual addresses in the import table which cause jumps to the code section 1140 of the executable notifier. The code section 1140 is programmed to interpret each jump to determine the particular routine requested by the program object. The executable notifier then determines whether the user has satisfied the conditions to perform the function in question. If so, the executable notifier calls the appropriate routine in the operating system. To elaborate details of the "hooking" process shown in Fig. 18, the executable notifier stores in an address record portion of the import table 1750 addresses within the executable notifier in place of the addresses of the relevant routines in the operating system. Instead of erasing part of, and making substitutions for, the import table 1750 of the program object, the executable notifier

may erase and substitute for other portions of the program object, such as relocation information, a directory pointer or an entry point pointer.

The above description of the invention is intended to be illustrative and not limiting. Various changes or modifications in the embodiments described may occur to those skilled in the art. These can be made without departing from the spirit or scope of the invention.

CLAIMS

1. A method of securely distributing software with limited usage rights, comprising:

supplying software for distribution to a user, the software including an access control object for preventing at least some usage thereof on a computer system without the use of a first access control code;

producing the first access control code based on selected information characteristic of a predetermined computer system; and

supplying the first access control code to the predetermined computer system to enable the at least some usage of the software.

2. The method of claim 1, wherein the step of supplying software comprises supplying the software to the predetermined computer system, the software having a first object and a second object, the access control object comprising an access control executable controlling access to the first and second objects by referencing the first access control code and the selected information in the computer system.

3. The method of claim 2, wherein the step of supplying the first access control code comprises supplying a usage authorization package including the first access control code and information identifying authorized usages of the software, the access control executable being operative to reference the usage authorization package in controlling access to the first and second objects, the software being operative to store the usage authorization package apart from the first and second objects.

4. The method of claim 2, wherein the first object provides a first set of a plurality of features, the second object provides a second set of a plurality of features including some, but less than all, of the features included in the first set and the access control executable is operative to prevent access to the first object in the absence of the first access control code and the selected information but to enable access to the second object without reference to the first access control code or the selected information.

5. The method of claim 4, wherein the software includes a third object providing the first set of a plurality of features together with a third set including at least one feature not included in the first set, the executable being operative to prevent access to the third object in the absence of a second access control code different from the first access control code and further selected information characteristic of the predetermined computer system, the second access control code being produced based on the further selected information, the method further comprising:

supplying the second access control code to the predetermined computer system.

6. The method of claim 2, wherein the access control executable comprises a wrapper for the first and second objects.

7. The method of claim 1, wherein the first access control code is a decryption key produced from the selected information.

8. The method of claim 1, wherein the first access control code is an executable required for decrypting at least a portion of the software.

9. The method of claim 1, wherein the first access control code is a watermark in an object supplied to the predetermined computer system.

10. The method of claim 1, wherein the software includes transaction information relating to a transaction by which the software is supplied to the user, and the access control object is operative to prevent the at least some usage of the software in the absence of the transaction information in the software.

11. The method of claim 1, wherein the transaction information is supplied as a watermark in the software.

12. The method of claim 1, further comprising the steps of storing the first access control code at a location in the computer system apart from a location at which the software is stored therein.

13. The method of claim 1, further comprising receiving at a server a request from the user to purchase rights to predetermined usage of the software, receiving at the server the selected information characteristic of the predetermined computer system, obtaining payment information from the user assuring payment for the rights and supplying the first access control code from the server to the predetermined computer system in response to receipt of the payment information.

14. The method of claim 13, further comprising supplying a system information collection code from the server to the predetermined computer system, the system information collection code being operative to obtain the selected information characteristic of the predetermined computer system.

15. The method of claim 13, wherein the software includes data defining a notifier which the software causes to be displayed by means of the predetermined computer system, the notifier conveying information required by the user for ordering rights to predetermined usage of the software and enabling entry of first transaction information required for the purchase of the rights, the software being operative to obtain the selected information from the predetermined computer system in response to entry of the payment information and to cause the predetermined computer system to transmit the selected information and the first transaction information to the server.

16. The method of claim 15, wherein the software is operative to reference information in an operating system of the predetermined computer system identifying a language selected for providing outputs to a user and to cause the software to provide such outputs in the selected language.

17. The method of claim 15, wherein the software is supplied as a software copy on a storage medium for distribution to the user, the software including an identification code identifying the software copy, the software is operative to transmit the identification code to the server, the server being operative to produce the first access control code based on the identification code.

18. The method of claim 15, wherein the software is supplied by data communication from a server to the predetermined computer system in response to a request, the request including second transaction information, the server being operative to insert transaction identification information in the software based on the second transaction information.

19. The method of claim 18, wherein the server is operative to insert the transaction identification information in the software as a watermark.

20. The method of claim 18, wherein the server is operative to produce the first access control code based on the second transaction information.

21. The method of claim 20, wherein the server is operative to supply the first access control code with an identifying watermark.

22. The method of claim 1, wherein the software comprises a first data object.

23. The method of claim 22, wherein the first data object includes a first set of features and a second set of features, the first set of features being encrypted and the second set of features being unencrypted, and wherein the step of supplying software comprises supplying a driver executable to the predetermined computer system, the driver executable including first code for accessing the first data object and decryption code for controlling decryption of the first data object.

24. The method of claim 22, wherein the first data object is encrypted, the step of supplying software including supplying a driver executable to the predetermined computer system, the driver executable including first code for accessing the first data object and decryption code for decrypting the accessed first data object.

25. The method of claim 24, wherein the driver executable is operative to receive a request for the first data object from an operating system of the predetermined computer system and to transfer the request to a preexisting driver of

the predetermined computer system, the driver executable being further operative to receive the first data object from the preexisting driver, to decrypt the first predetermined object and supply the decrypted first predetermined object to the operating system.

26. The method of claim 25, wherein the first data object includes a predetermined identifier therein and the driver executable includes second code for detecting the presence of the predetermined identifier in the first data object, the decryption code being operative to decrypt the first data object in response to the presence of the predetermined identifier therein.

27. The method of claim 26, wherein the driver executable is operative to transfer a file from the preexisting driver to the operating system without modification in the absence of the predetermined identifier in the file as received from the preexisting driver.

28. The method of claim 24 wherein the first data object provides a first set of a plurality of features, the software further comprising a second data object providing a second set of a plurality of features including some, but less than all, of the features included in the first set, and a usage authorization package including information identifying authorized usages of the first and second data objects, the driver executable being operative to selectively enable usage of the first and second data objects based on the usage authorization package.

29. The method of claim 28, wherein the driver executable is operative upon a first request for access to the first or second data object to return a dialog box

object for displaying a dialog box to the user, the dialog box providing the user with options for accessing the first and second data objects on a pay and/or no-pay basis.

30. The method of claim 29, wherein the driver executable is operative upon the first request for access to the first or second data object to reference information in the operating system identifying a display language selected for producing displays to a user and to provide the dialog box with text in the display language.

31. The method of claim 22, wherein only a portion of the first data object is encrypted, and wherein the step of supplying software comprises supplying a driver executable and a usage authorization package to the predetermined computer system, the usage authorization package including information identifying authorized usages of the first data object, the driver executable being operative to access the first data object and to transfer the first data object to an operating system of the predetermined computer system, wherein the driver executable selectively decrypts the portion of the first data object before transferring the first data object to the operating system based on the usage authorization package.

32. The method of claim 22, wherein the step of supplying software comprises supplying a driver executable to the predetermined computer system, the driver executable including first code for accessing the first data object in response to a request from an operating system of the predetermined computer system and being operative to determine whether a requested action utilizing the first data object is authorized, the driver executable being operative to block execution of the requested action when the same is not authorized.

33. The method of claim 32, wherein the driver executable is operative to block execution of the requested action by hooking a routine of an external executable required for performing the requested action.

34. The method of claim 22, wherein the software comprises a second data object, wherein the method further comprises producing the second data object from the first data object by reducing the information content of the first data object.

35. The method of claim 34, wherein the second data object is produced by eliminating data from the first data object.

36. The method of claim 34, wherein the second data object is produced by adding noise to the first data object.

37. The method of claim 34, wherein the second data object is produced by filtering the first data object.

38. The method of claim 34, wherein the second data object is produced by encrypting portions of the first data object.

39. The method of claim 22, wherein the software comprises a second data object, and wherein the method further comprises producing the first data object from the second data object by adding data to the second data object.

40. The method of claim 1, wherein the software comprises a first executable object.

41. A software package comprising:

a first object providing a first set of a plurality of features;

a second object providing a second set of a plurality of features including some, but less than all, of the features included in the first set; and

an access control portion affording selective access to the first software object and/or the second software object.

42. The software package of claim 41, wherein the first and second objects are executables.

43. The software package of claim 41, wherein the first and second objects are data objects.

44. A software package, comprising:

a first object providing a first set of a plurality of features, the first object being encrypted; and

a second object providing a second set of a plurality of features including some, but less than all, of the features included in the first set, the second object being unencrypted.

45. A driver executable, comprising:

first code for accessing a requested file from a storage device;

second code for detecting the presence of a predetermined identifier in the accessed file; and

decryption code for decrypting at least a portion of the accessed file in response to detection of the predetermined identifier therein.

46. A software package, comprising:

a first executable object; and

a wrapper for the first executable object, the wrapper being operative to erase predetermined software from the first executable object when it has been loaded in running format in memory.

47. The software package of claim 46, wherein the predetermined software comprises an import table.

48. The software package of claim 46, wherein the predetermined software comprises relocation information.

49. The software package of claim 46, wherein the predetermined software comprises a directory pointer.

50. The software package of claim 46, wherein the predetermined software comprises an entry point pointer.

51. The software package of claim 46, further comprising usage information defining at least one permitted use of the first executable object, the wrapper being operative to reference the usage information to control usage of the first executable object.

52. The software package of claim 51, wherein the first executable object is operative to access a file external to the software package and the wrapper is operative to control usage of the first executable object to access the external file based on the usage information.

53. The software package of claim 52, wherein the external file is encrypted and the wrapper is operative to control decryption of the external file.

54. The software package of claim 51, wherein the wrapper is operative to detect an unauthorized request for access to the external file and upon such detection to control the display of a dialog box to a user soliciting payment for the requested access.

55. A software package, comprising:

a first executable object; and

a wrapper for the first executable object;

the first executable object being operative, while running, to access a feature of the wrapper;

the wrapper being operative to supply the feature to the first executable object when the feature is accessed thereby.

56. The software package of claim 55, wherein the first executable object is operative to access a print control feature of the wrapper, and the wrapper is operative to control execution of a print feature in response to access of the print control feature thereof by the first executable object.

57. The software package of claim 55, wherein the first executable object is operative to access a copy control feature of the wrapper, and the wrapper is operative to control execution of a copy feature in response to access of the copy control feature thereof by the first executable object.

58. The software package of claim 55, wherein the first executable object is operative to access a read-file control feature of the wrapper, and the wrapper is

operative to control execution of the read file feature in response to access of the read-file control feature thereof by the first executable object.

59. The software package of claim 55, wherein the wrapper is operative to control execution of a decryption feature in response to the access by the first executable object.

60. The software package of claim 55, wherein the first executable object includes at least one record storing an address of the wrapper, the first executable object being operative to access the feature of the wrapper by transferring program execution control to the address of the wrapper.

61. The software package of claim 60, wherein the wrapper is operated to supply the feature by calling an executable routine external to the software package.

62. A software package, comprising:

a first executable object, and

a wrapper for the first executable object;

the first executable object being operative to call a predetermined feature external thereto;

the wrapper being operative upon a call of the predetermined feature by the first executable object to transfer program execution control to a predetermined address within the wrapper to control access by the first executable object to the predetermined feature.

63. The software package of claim 62, wherein the first executable object stores an address record for an address of software providing the predetermined feature, and the wrapper is operative to store an address of the wrapper in the address record.

64. The software package of claim 63, wherein the first executable object stores the address record in an import table including a plurality of address records for calling a plurality of routines external to the software package, the wrapper being operative to resolve the addresses of the plurality of routines and to insert a predetermined one of the routine addresses as the address record in the import table.

65. The software package of claim 64, wherein the wrapper is operative to insert each of a plurality of the routine addresses in a respective one of the plurality of address records in the import table.

66. A software package, comprising:

a software object having a first set of features and a second set of features, the first set of features being encrypted and the second set of features being unencrypted; and

a signature readable by a predetermined executable serving to control access to the encrypted first set of features.

67. The software package of claim 66, wherein the software object comprises an executable.

68. The software package of claim 66, wherein the software object comprises a data object.

69. The software package of claim 68, wherein the data object comprises music data.

70. The software package of claim 69, wherein the music data is encoded as a plurality of frequency coefficients produced by a discrete cosine transform, the coefficients including relatively low frequency coefficients and relatively high frequency coefficients, the relatively high frequency coefficients being encrypted and the relatively low frequency coefficients being unencrypted.

71. The software package of claim 69, wherein the music data is arranged in a plurality of subbands, at least some of the subbands of data being encrypted and others of the subbands being unencrypted.

72. The software package of claim 69, wherein the music data is frequency domain data, at least some of the frequency domain data being encrypted and other of the frequency domain being unencrypted.

73. The software package of claim 68, wherein the data object comprises image data.

74. The software package of claim 73, wherein the image data is encoded as a plurality of frequency coefficients produced by discrete cosine transform, the coefficients including relatively low frequency coefficients and relatively high frequency coefficients, the relatively high frequency coefficients being encrypted and the relatively low frequency coefficients being unencrypted.

75. The software package of claim 73, wherein the image data comprises color components, at least some of the color components being encrypted.

76. The software package of claim 75, wherein at least one of the color components is unencrypted.

77. The software package of claim 75, wherein the image data further comprises an unencrypted luminance component, and wherein all of the color components are encrypted.

78. The software package of claim 73, wherein the image data comprises line data, at least some of the line data being encrypted.

79. The software package of claim 73, wherein the image data is arranged in a plurality of lines, at least portions of some of the lines being encrypted and at least other portions of other lines being unencrypted.

80. The software package of claim 73, wherein the image data is arranged at least in part as a plurality of blocks, at least one of the blocks being encrypted.

81. An executable object, comprising:

a first code portion comprising first predetermined instructions; and

a second code portion comprising loading instructions required for loading the first code portion in a memory of a computer system to be programmed thereby, the second code portion being operative to control the computer system to erase the loading instructions from memory upon loading the first code portion in memory.

82. A computer system, comprising:

a processor;

a memory;

an instruction input device; and

an executable object stored in the computer system, the executable object having a first code portion comprising first predetermined instructions for execution by the processor, and a second code portion including loading instructions, the processor being operative upon receipt of a predetermined instruction from the instruction input device to load the second code portion in the memory, the processor being operative under the control of the loading instructions to load the first code portion in the memory and operative under the control of the second code portion to erase the loading instructions from the memory upon loading the first code portion in memory.

83. A computer system, comprising:

a processor;

a memory;

an instruction input device; and

a software package stored in the computer system, the software packing having a first object providing a first set of a plurality of features, a second object providing a second set of a plurality of features including some, but less than all, of the features included in the first set, and an access control portion; the

processor being operative to load the software package in the memory, the processor being further operative to request access to a selected one of the first and second objects in response to a predetermined instruction from the instruction input device, the access control portion being operative to selectively control access to the selected object.

84. A computer system, comprising:

a processor;

a memory;

an instruction input device;

a storage device storing a file;

an operating system;

a driver executable; and

a device driver serving to control access to the storage device;

the instruction input device being operative to input a first request for access to the file;

the operating system serving to control the processor to direct a second request for the file to the driver executable in response to the first request for access;

the driver executable being operative in response to the second request to control the processor to direct a third request for the file to the driver;

the driver being operative in response to the third request to control the processor to read the file from the device to the memory and thereupon return control of the processor to the driver executable;

the driver executable being operative upon return of control thereto to control the processor to examine the file in memory to detect the presence of a predetermined identifier in the file and to decrypt at least a portion of the file in response to detection of the predetermined identifier therein.

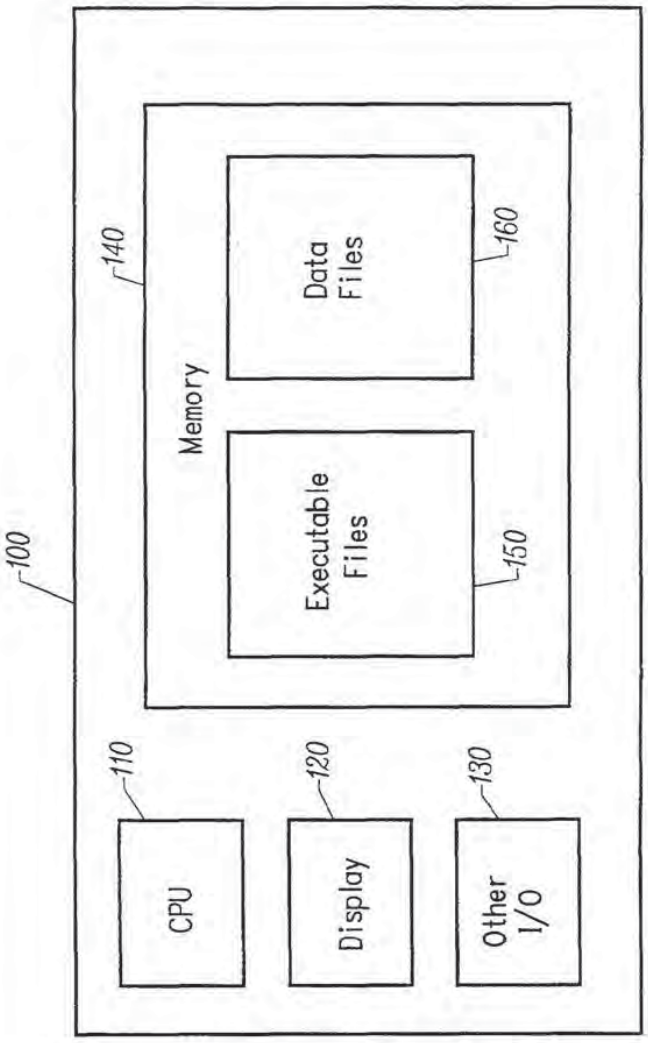
100
140
Memory
Data Files
160
Executable Files
150
110
CPU
120
Display
130
Other I/O

FIG. 1

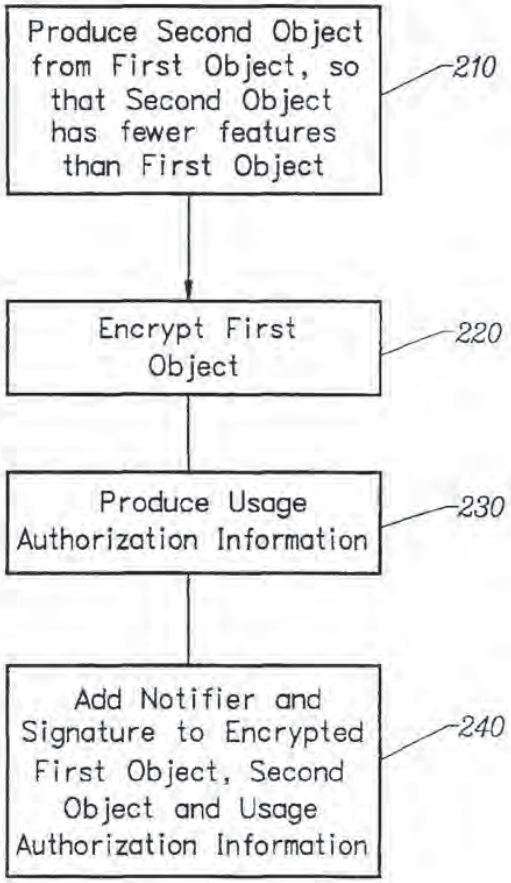
Produce Second Object from First Object, so that Second Object has fewer features than First Object
210
Encrypt First Object
220
Produce Usage Authorization Information
230
Add Notifier and Signature to Encrypted First Object, Second Object and Usage Authorization Information
240

FIG. 2

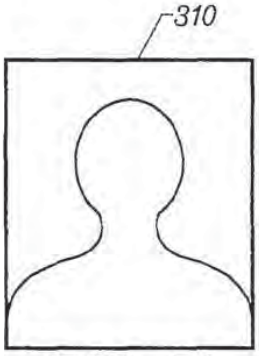

FIG. 3A

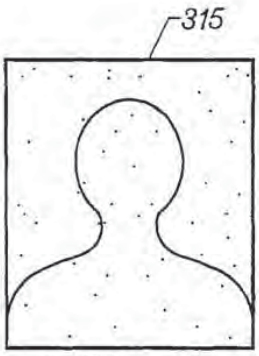

FIG. 3B

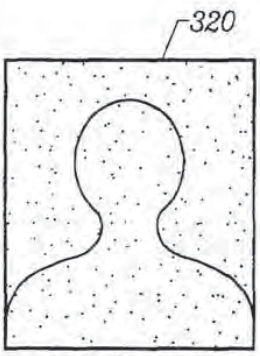

FIG. 3C

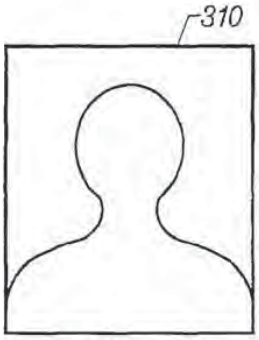

FIG. 3D

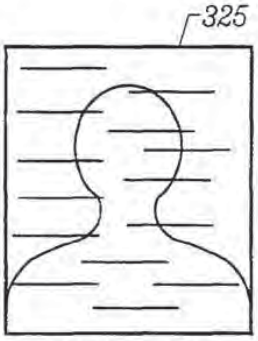

FIG. 3E

FIG. 3F

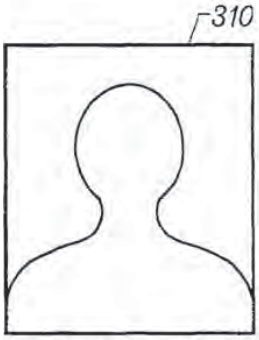

FIG. 3G

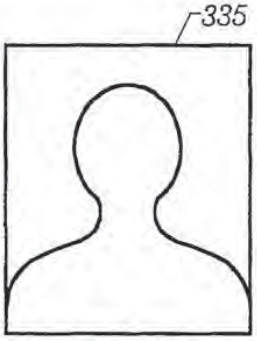

FIG. 3H

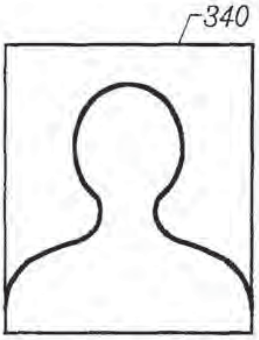

FIG. 3I

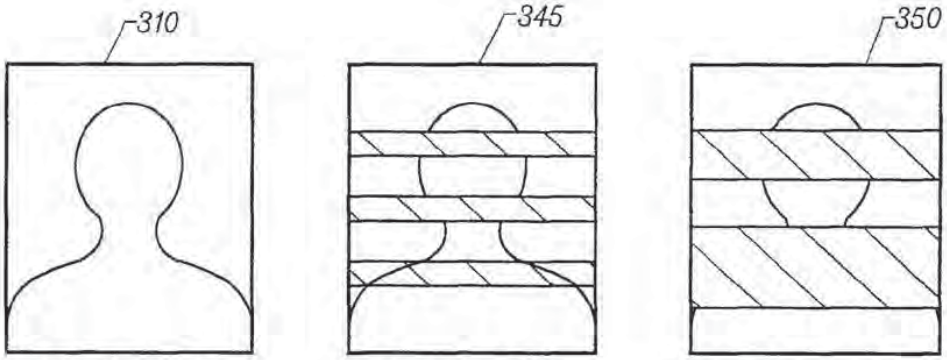

FIG. 3J FIG. 3K FIG. 3L

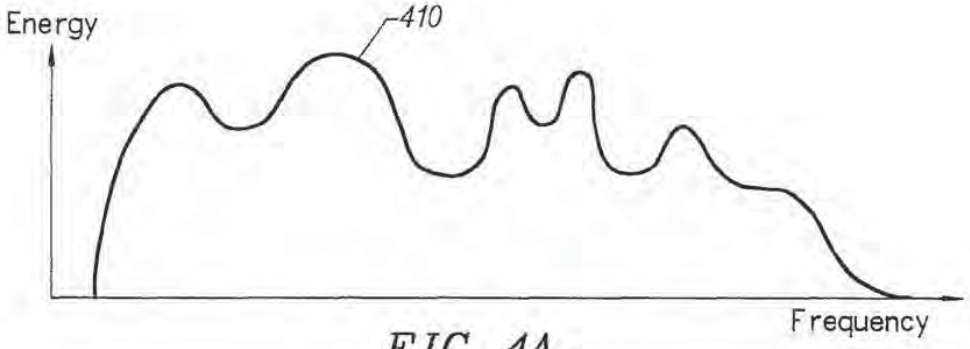

FIG. 4A

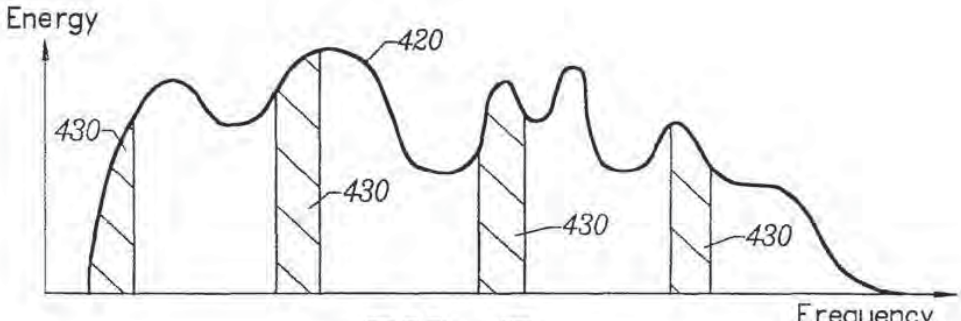

FIG. 4B

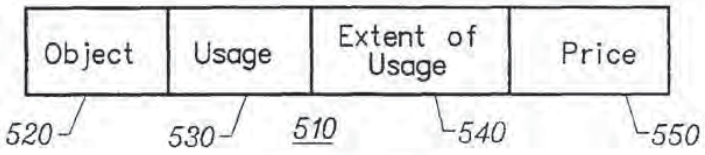

FIG. 5A

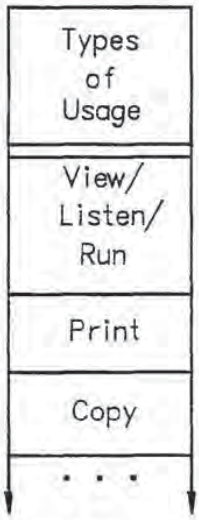

FIG. 5B

FIG. 5C

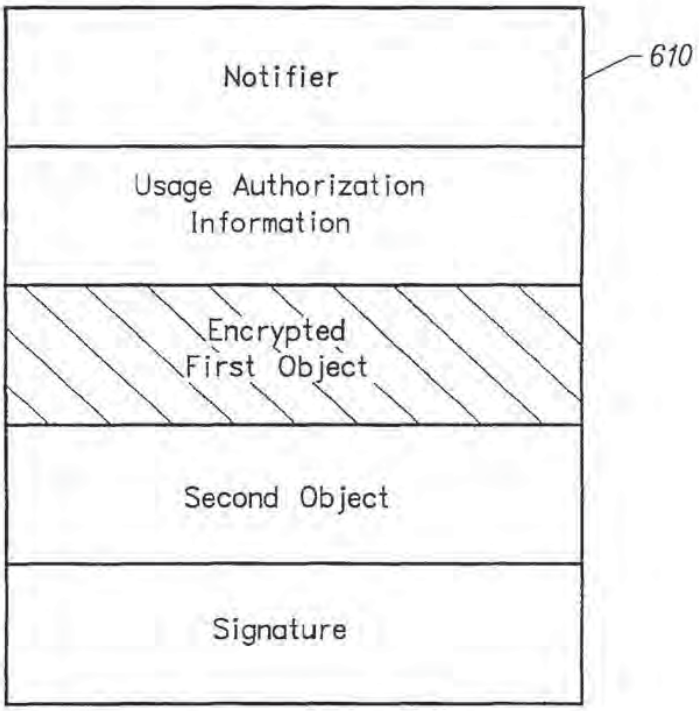
Notifier
610
Usage Authorization Information
Encrypted First Object
Second Object
Signature

FIG. 6

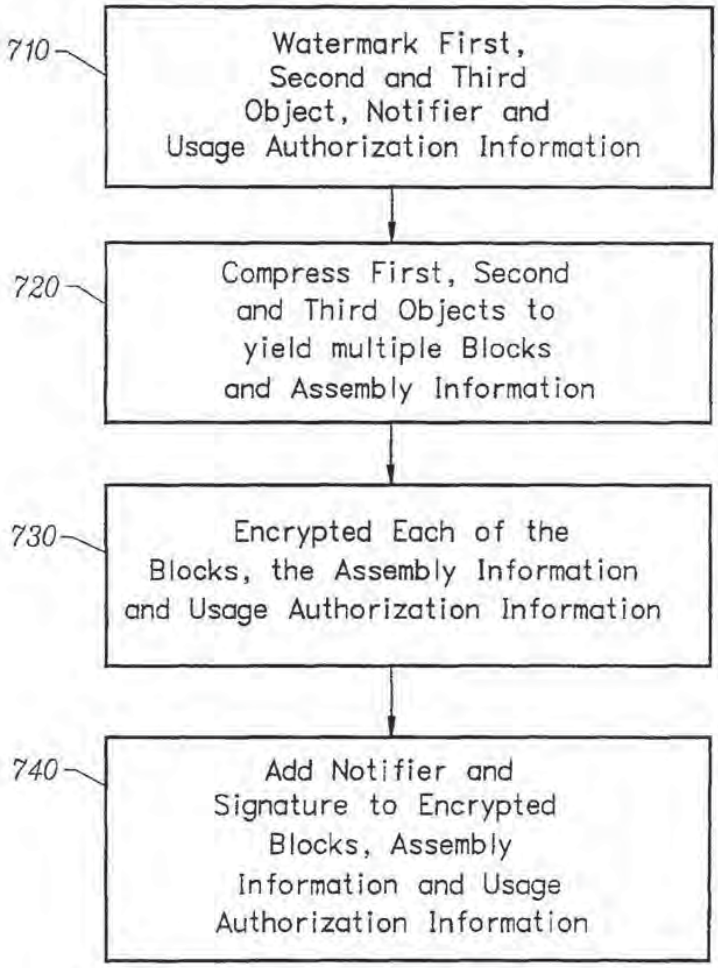
710
Watermark First, Second and Third Object, Notifier and Usage Authorization Information
720
Compress First, Second and Third Objects to yield multiple Blocks and Assembly Information
730
Encrypted Each of the Blocks, the Assembly Information and Usage Authorization Information
740
Add Notifier and Signature to Encrypted Blocks, Assembly Information and Usage Authorization Information

FIG. 7

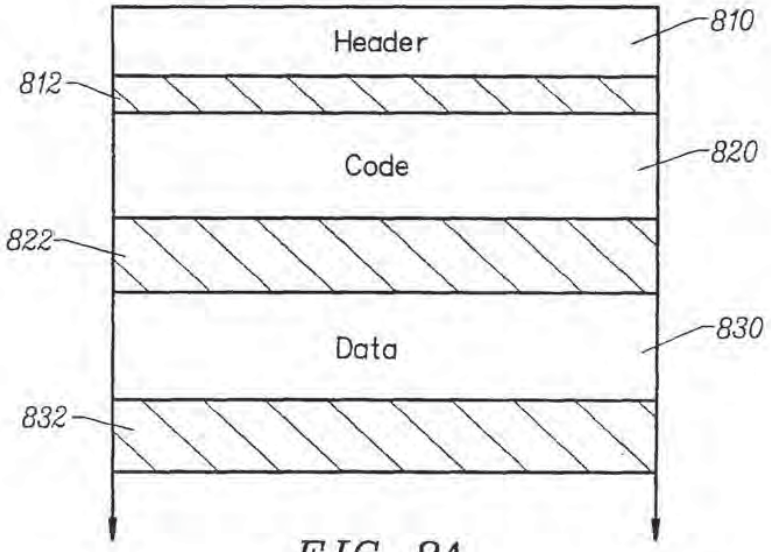
Header
810
812
Code
820
822
Data
830
832

FIG. 8A

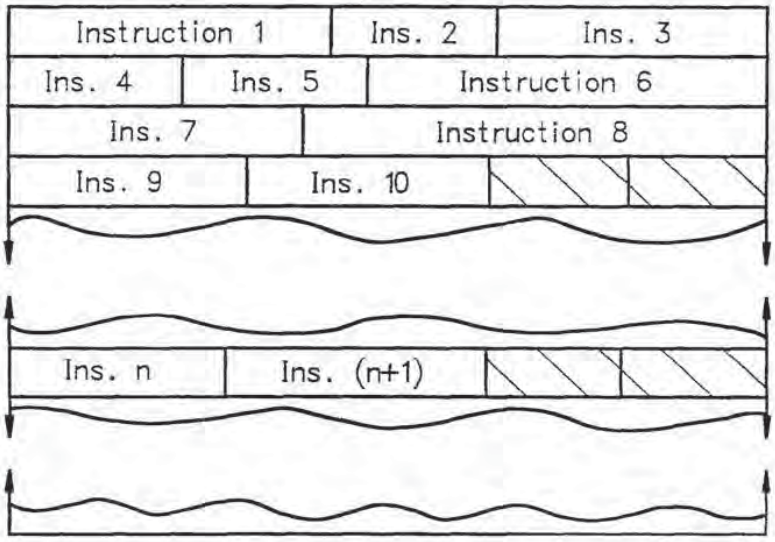
Instruction 1
Ins. 2
Ins. 3
Ins. 4
Ins. 5
Instruction 6
Ins. 7
Instruction 8
Ins. 9
Ins. 10
Ins. n
Ins. (n+1)

FIG. 8B

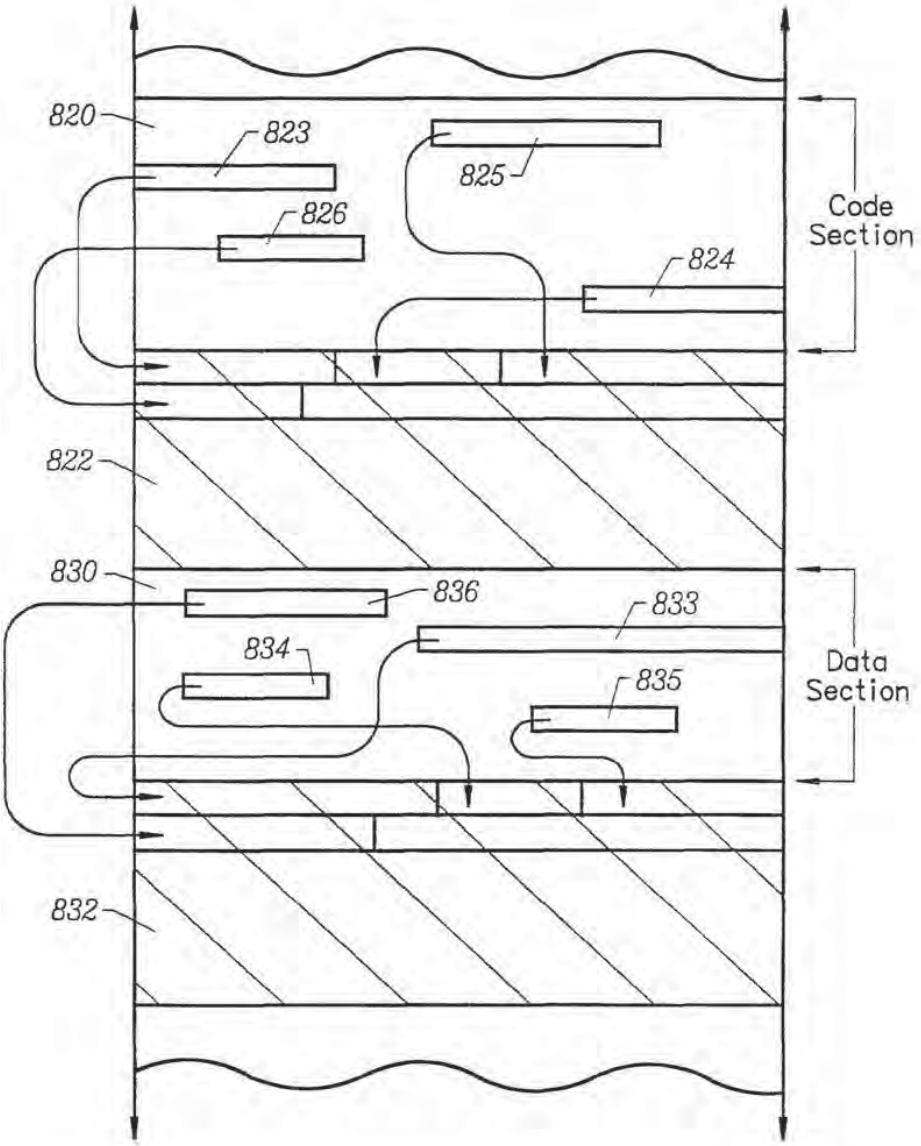
820
823
825
826
824
Code Section
822
830
836
833
834
835
Data Section
832

FIG. 8C

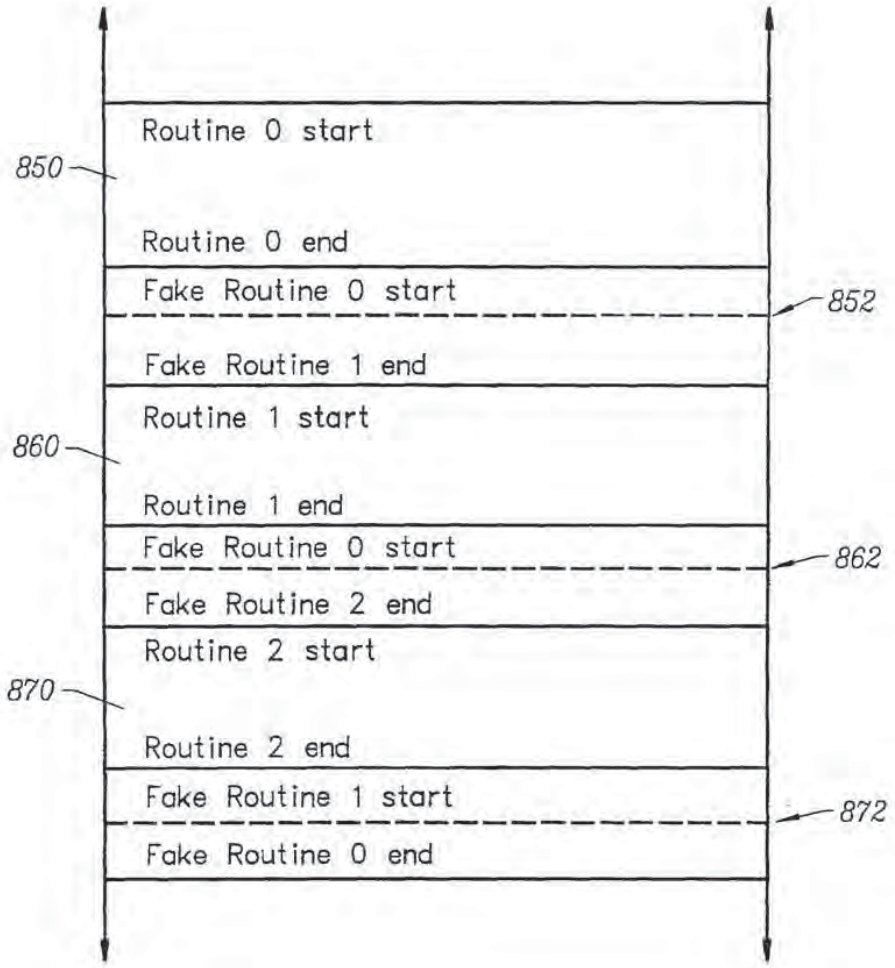
Routine 0 start
850
Routine 0 end
Fake Routine 0 start
852
Fake Routine 1 end
Routine 1 start
860
Routine 1 end
Fake Routine 0 start
862
Fake Routine 2 end
Routine 2 start
870
Routine 2 end
Fake Routine 1 start
872
Fake Routine 0 end

FIG. 8D

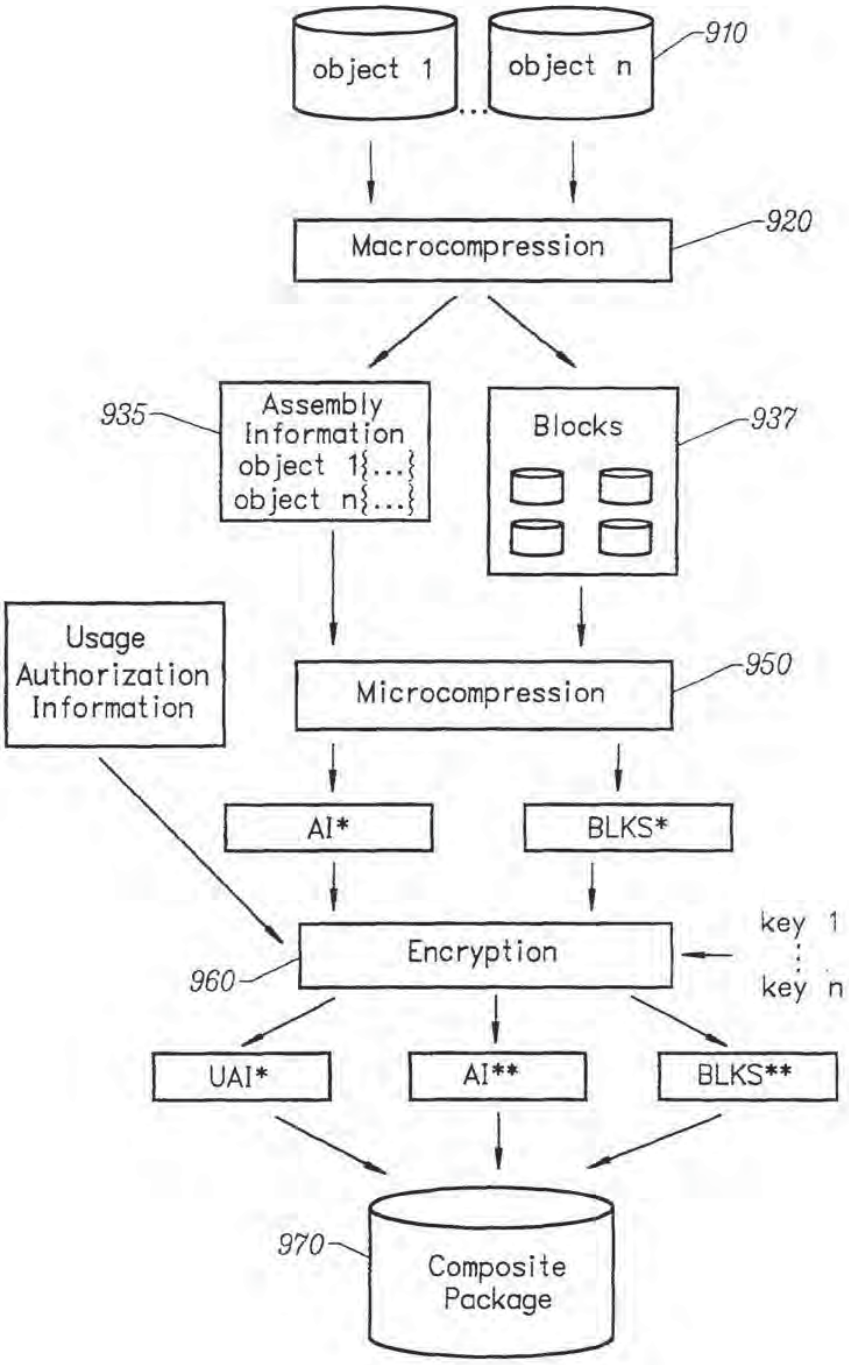
object 1
object n
910
Macrocompression
920
935
Assembly Information
object 1{...}
object n{...}
Blocks
937
Usage Authorization Information
Microcompression
950
AI*
BLKS*
key 1
key n
Encryption
960
UAI*
AI**
BLKS**
970
Composite Package

FIG. 9A

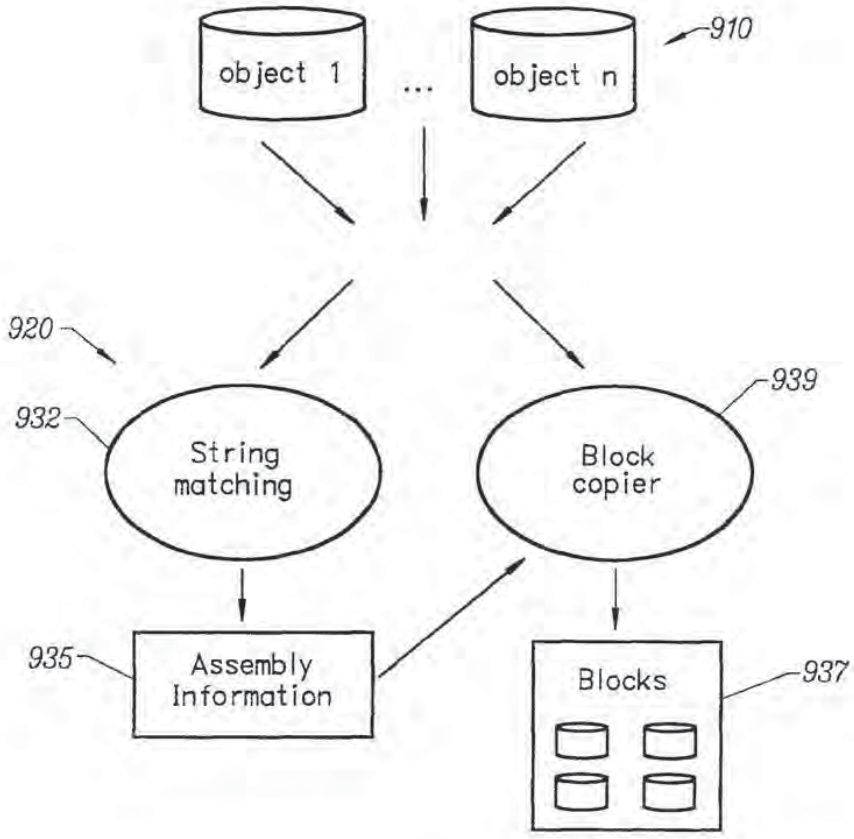
object 1
...
object n
910
920
932
String matching
939
Block copier
935
Assembly Information
Blocks
937

FIG. 9B

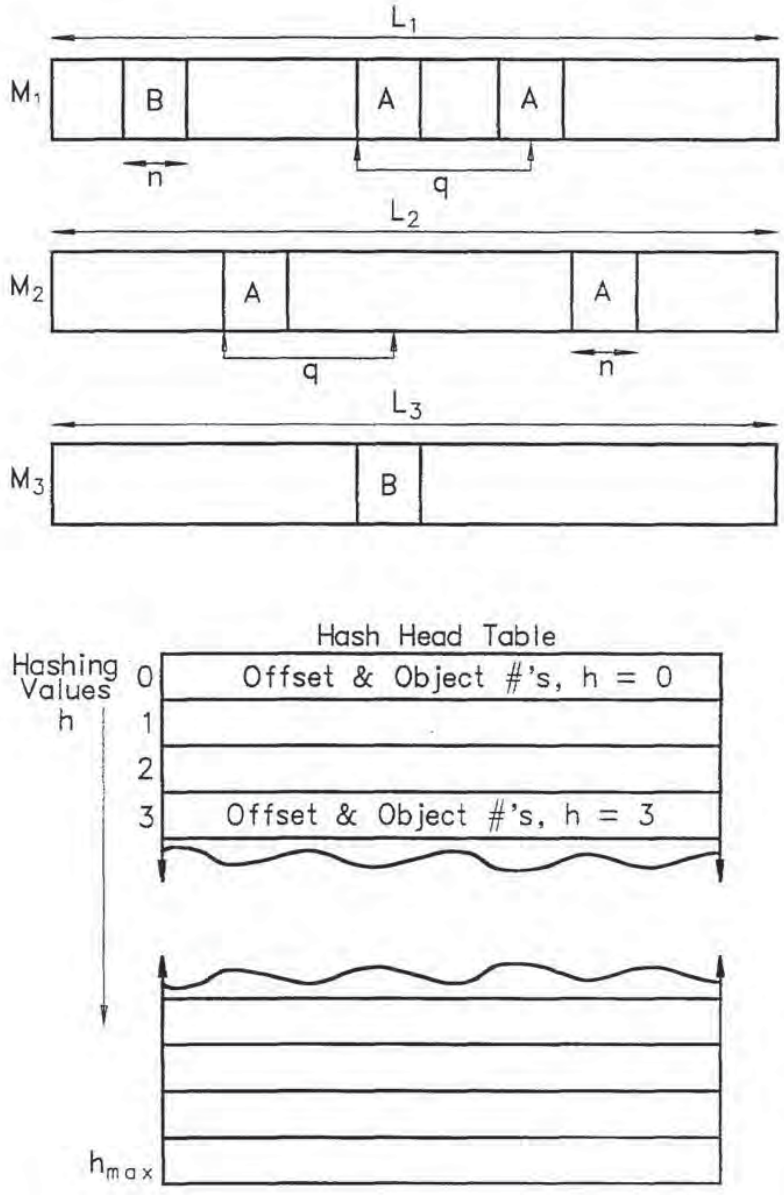
L1
M1
B
A
A
n
q
L2
M2
A
A
q
n
L3
M3
B
Hash Head Table
Hashing Values h
0
1
2
3
Offset & Object #'s, h = 0
Offset & Object #'s, h = 3
hmax

FIG. 9C

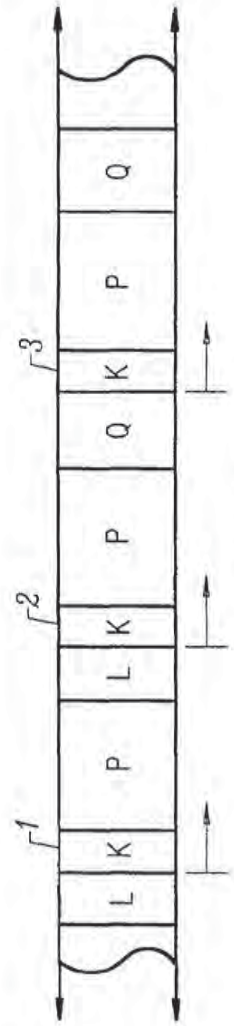

FIG. 9D

Strings	Matching Length
1, 2	K+P
1, 3	K+P
2, 3	K+P+Q

FIG. 9E

String ID	Source Offset	Length
1(Offset)	2(Offset)	K+P
2(Offset)	2(Offset)	K+P+Q
3(Offset)	2(Offset)	K+P+Q

FIG. 9F

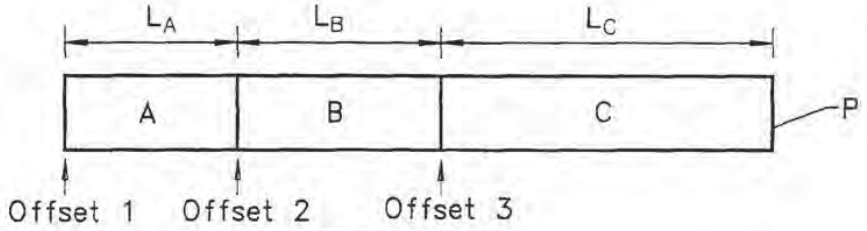

FIG. 9G

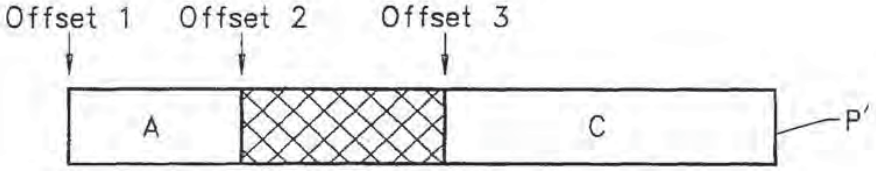

FIG. 9G

Segment	Source	Length
Offset 1	Off 1, P	L_A
Offset 2	0's	L_B
Offset 3	Off 3, P	L_C

T

FIG. 9H

Segment	Source	Length
Offset 1	Offset 1, P	L_A
Offset 2	Source Fct	L_B
Offset 3	Offset 3, P	L_C

FIG. 9I

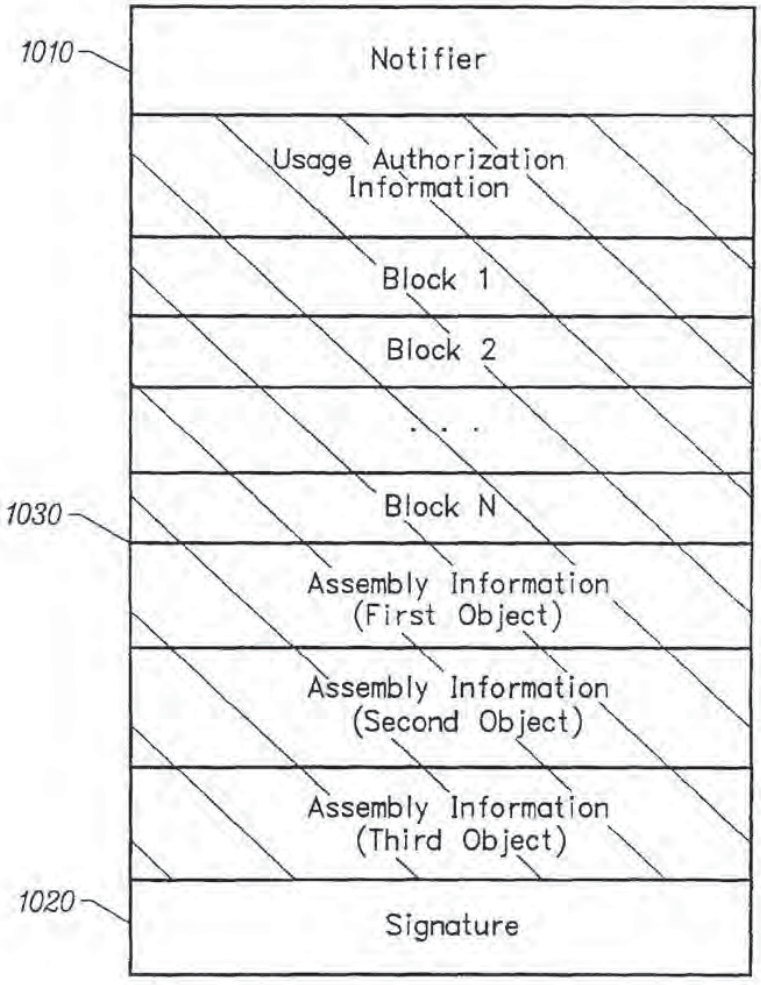
1010
Notifier
Usage Authorization Information
Block 1
Block 2
. . .
Block N
1030
Assembly Information (First Object)
Assembly Information (Second Object)
Assembly Information (Third Object)
1020
Signature

FIG. 10

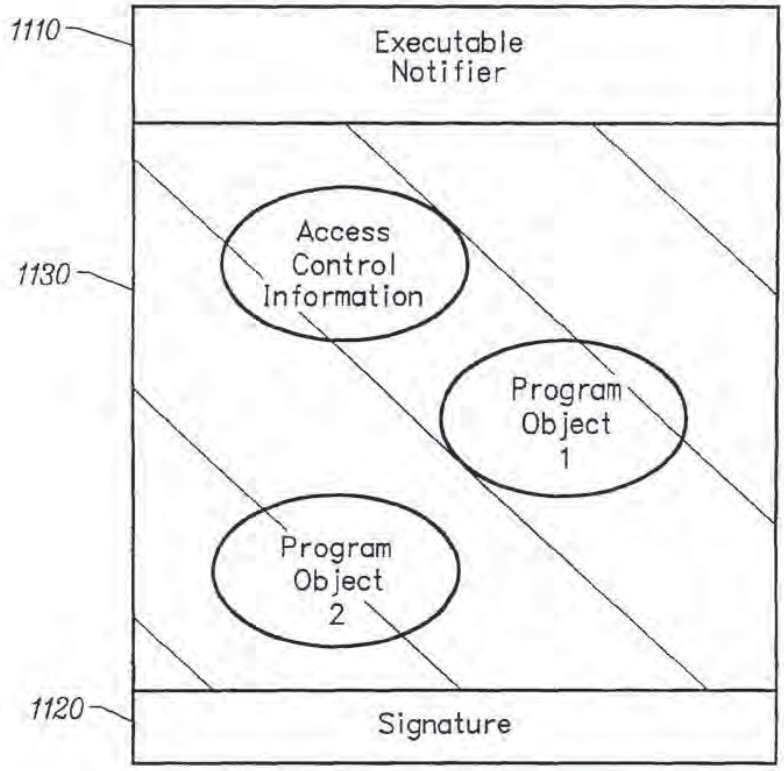
1110
Executable Notifier
1130
Access Control Information
Program Object 1
Program Object 2
1120
Signature

FIG. 11A

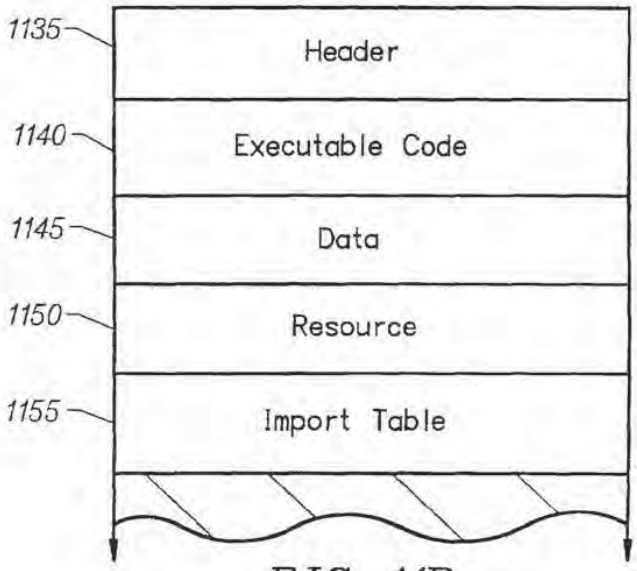

FIG. 11B

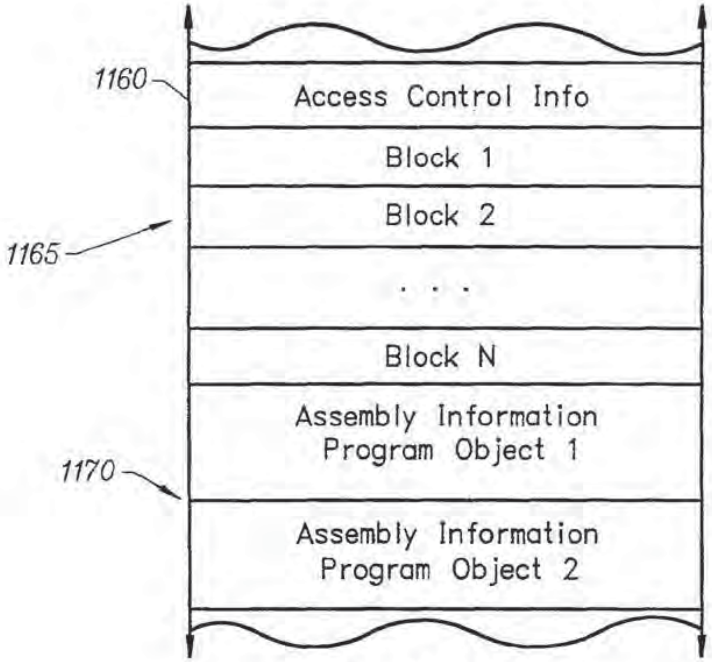

FIG. 11C

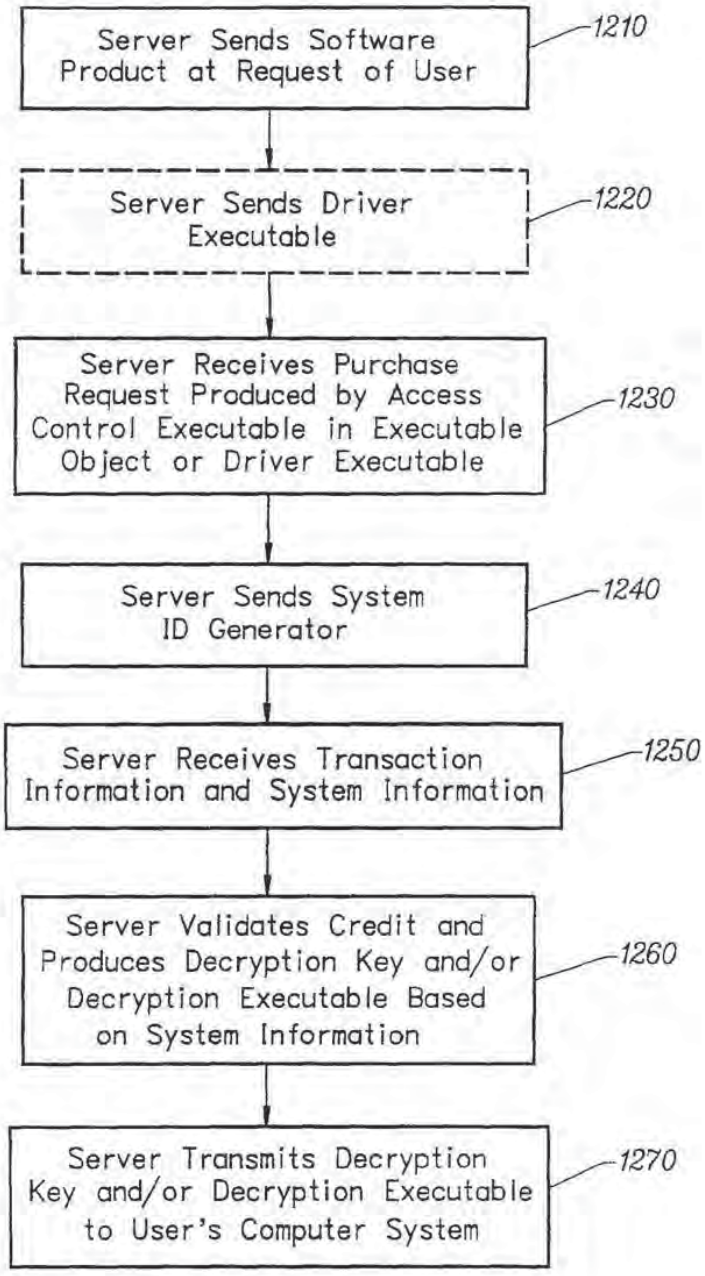
Server Sends Software Product at Request of User
1210
Server Sends Driver Executable
1220
Server Receives Purchase Request Produced by Access Control Executable in Executable Object or Driver Executable
1230
Server Sends System ID Generator
1240
Server Receives Transaction Information and System Information
1250
Server Validates Credit and Produces Decryption Key and/or Decryption Executable Based on System Information
1260
Server Transmits Decryption Key and/or Decryption Executable to User's Computer System
1270

FIG. 12

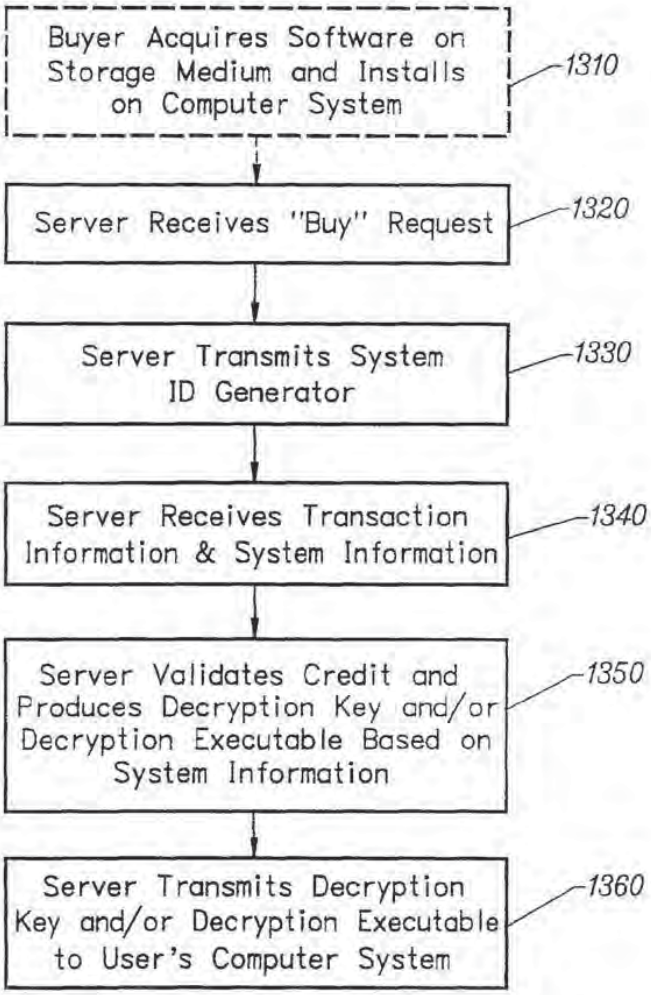
Buyer Acquires Software on Storage Medium and Installs on Computer System
1310
Server Receives "Buy" Request
1320
Server Transmits System ID Generator
1330
Server Receives Transaction Information & System Information
1340
Server Validates Credit and Produces Decryption Key and/or Decryption Executable Based on System Information
1350
Server Transmits Decryption Key and/or Decryption Executable to User's Computer System
1360

FIG. 13

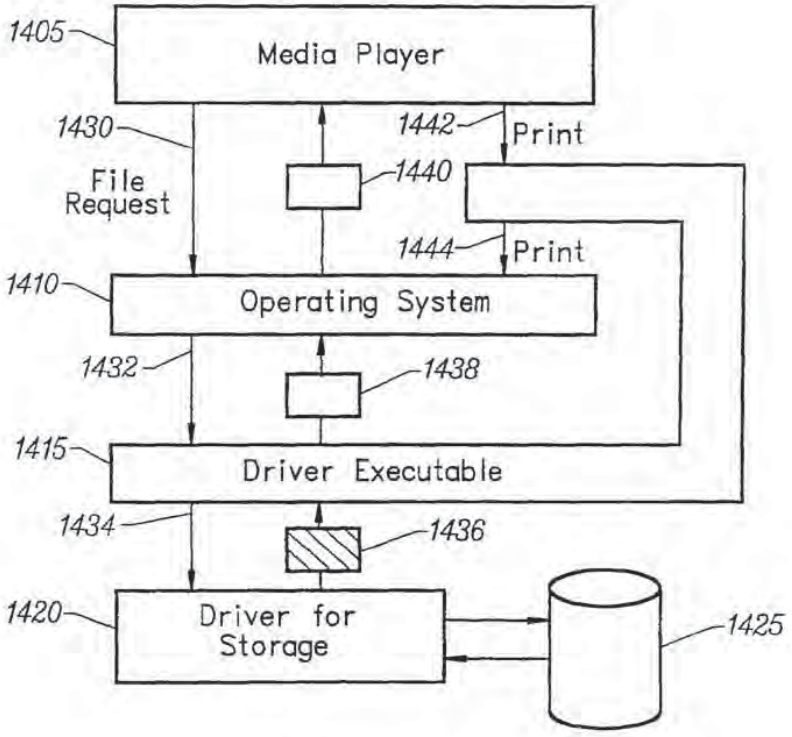
1405
Media Player
1430
File Request
1442
Print
1440
1444
Print
1410
Operating System
1432
1438
1415
Driver Executable
1434
1436
1420
Driver for Storage
1425

FIG. 14

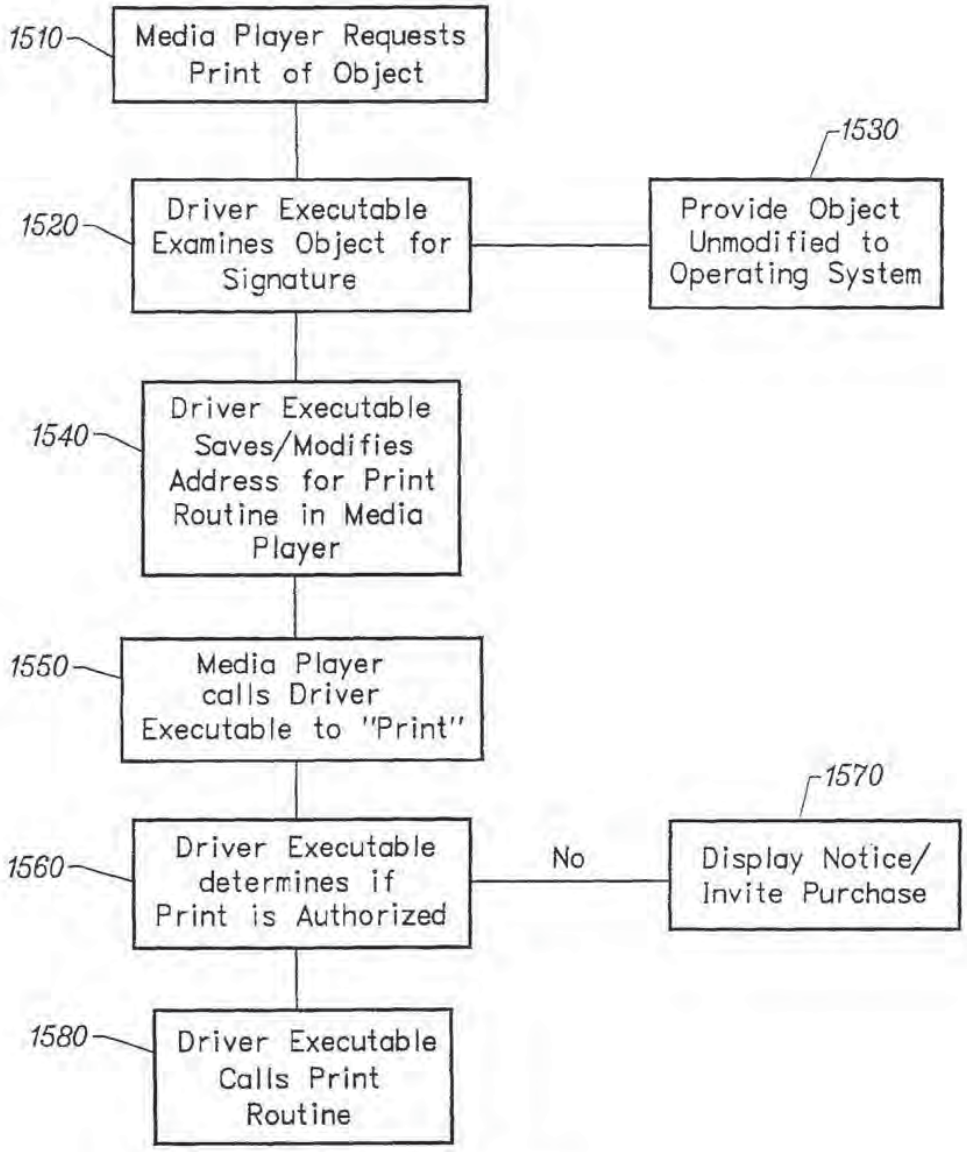
1510
Media Player Requests Print of Object
1520
Driver Executable Examines Object for Signature
1530
Provide Object Unmodified to Operating System
1540
Driver Executable Saves/Modifies Address for Print Routine in Media Player
1550
Media Player calls Driver Executable to "Print"
1560
Driver Executable determines if Print is Authorized
No
1570
Display Notice/ Invite Purchase
1580
Driver Executable Calls Print Routine

FIG. 15

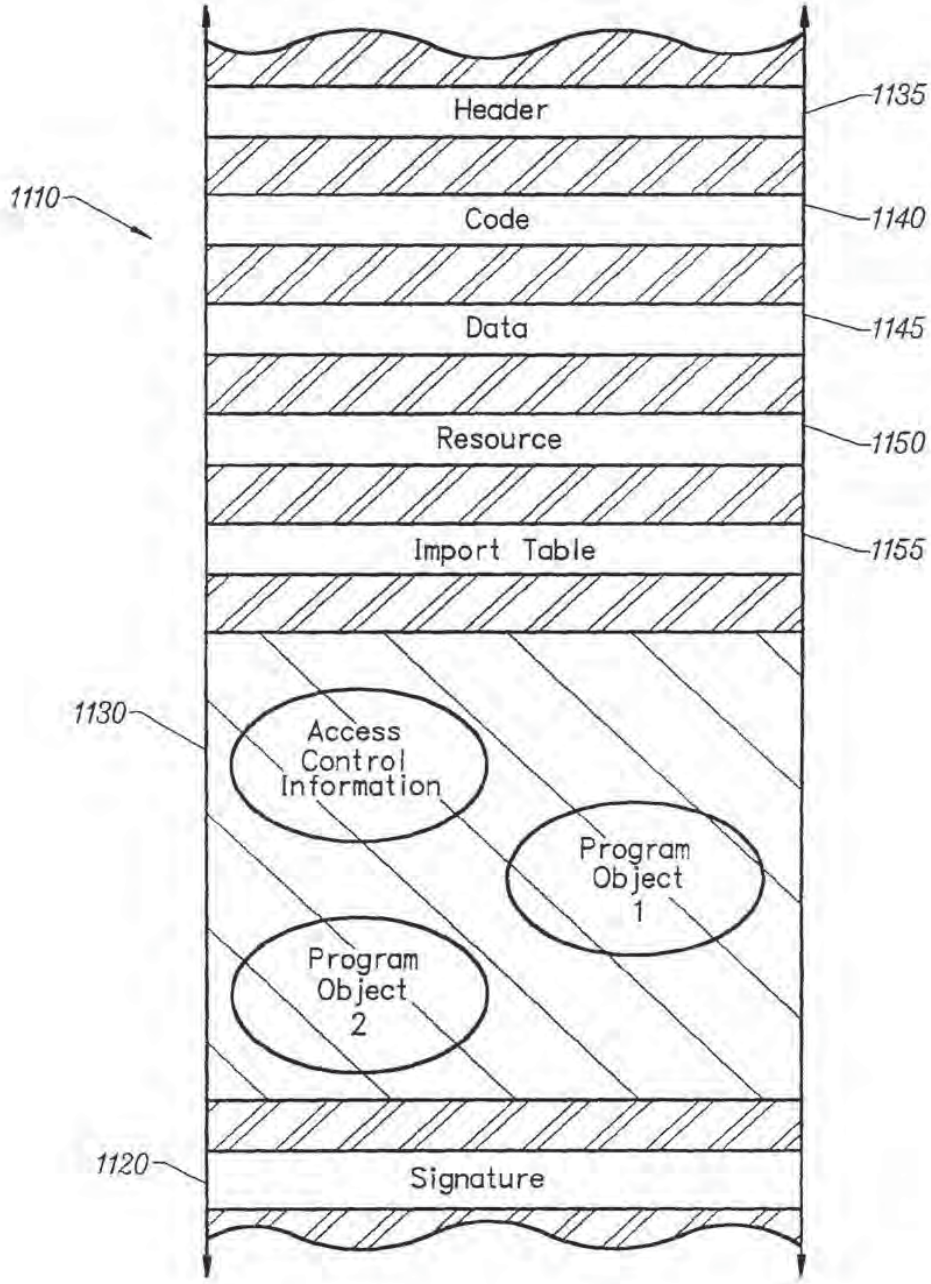
1110
Header
1135
Code
1140
Data
1145
Resource
1150
Import Table
1155
1130
Access Control Information
Program Object 1
Program Object 2
1120
Signature

FIG. 16

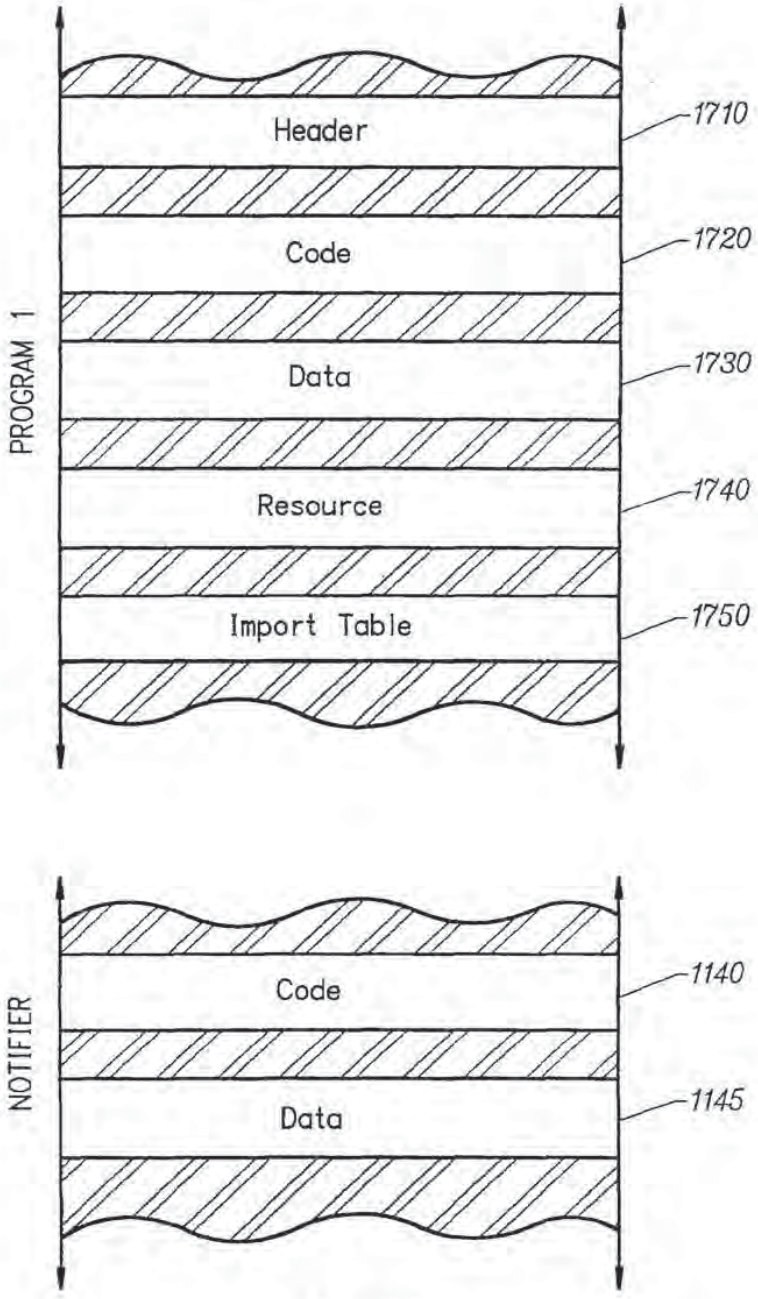
PROGRAM 1
Header
Code
Data
Resource
Import Table
1710
1720
1730
1740
1750
NOTIFIER
Code
Data
1140
1145

FIG. 17

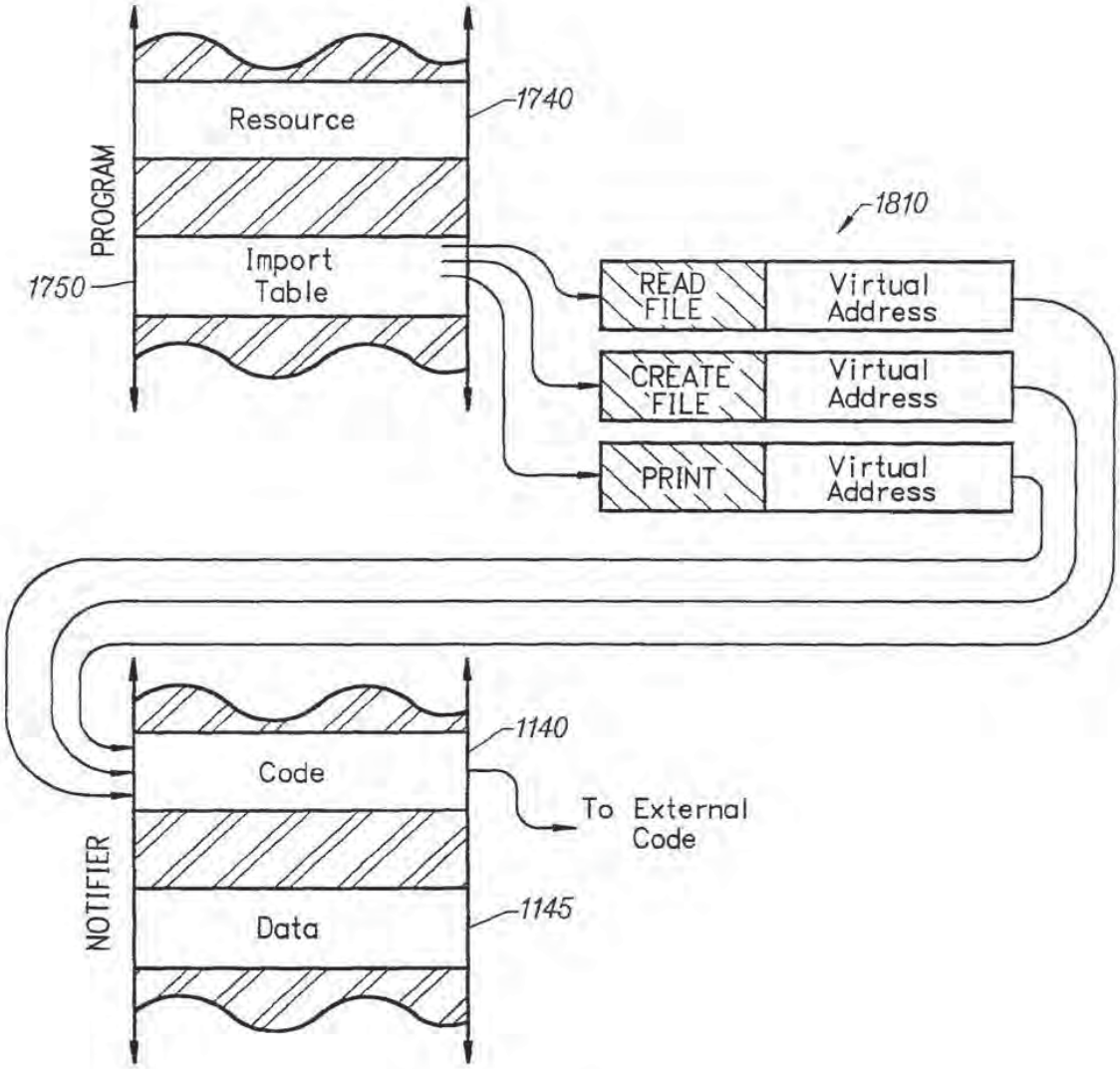
PROGRAM
Resource
1740
Import Table
1750
1810
READ FILE
Virtual Address
CREATE FILE
Virtual Address
PRINT
Virtual Address
NOTIFIER
Code
1140
To External Code
Data
1145

FIG. 18

INTERNATIONAL SEARCH REPORT

Int. tional Application No
PCT/US 00/11545

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 G06F1/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 758 068 A (BRAND ET AL.) 26 May 1998 (1998-05-26)	1,2,7,8, 13-15, 17, 22-28, 31-33, 40-45
A	column 2, line 51 -column 8, line 9; figures	46-84
X	MARY TORK ROTH, PETER SCHWARTZ: "A Wrapper architecture for legacy data sources" IBM ALMADEN RESEARCH CENTER, 'Online! 1997, pages 1-21, XP002145099 Retrieved from the Internet: <URL:http://www.almaden.ibm.com/cs/garlic/ vldb97wraprj.ps> 'retrieved on 2000-08-16!	55-65
A	the whole document	1-54

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
16 August 2000	07/09/2000

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31–70) 340–2040, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Soler, J

1

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. .tional Application No
PCT/US 00/11545

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5758068 A	26-05-1998	NONE	

Form PCT/ISA/210 (patent family annex) (July 1992)

Electronic Acknowledgement Receipt

EFS ID:	5663275
Application Number:	12272570
International Application Number:	
Confirmation Number:	6547
Title of Invention:	System and Method for Adjustable Licensing of Digital Products
First Named Inventor/Applicant Name:	Ric B. Richardson
Customer Number:	58688
Filer:	John Paik/Grace Forker
Filer Authorized By:	John Paik
Attorney Docket Number:	70243-00018
Receipt Date:	08-JUL-2009
Filing Date:	17-NOV-2008
Time Stamp:	14:14:10
Application Type:	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	Information Disclosure Statement (IDS) Filed (SB/08)	70243-00018_IDS3.pdf	611659 29d1916409da554dd464cf8a99a5ecfdc31b2b9	no	7

Warnings:	
Information:	

2	Foreign Reference	EP1637961A2_Microsoft.pdf	599654 c31e48588f5ae43b7bea4c6ee417d9119db6d32e	no	9
Warnings:					
Information:					
3	Foreign Reference	WO9220022A1_Digital.pdf	4921780 52c1e45c1ce027a65ceacc11c3535f7099a4eab0	no	137
Warnings:					
Information:					
4	Foreign Reference	WO9301550A1_Infologic.pdf	2345022 10f07370b82e7d3527800e147778b5b88a2e09a4	no	64
Warnings:					
Information:					
5	Foreign Reference	WO9535533A1_Megalode.pdf	2282748 104b0829680a628482858970 4ff188fa6b51089f	no	58
Warnings:					
Information:					
6	Foreign Reference	WO0067095A1_Trymedia.pdf	2850889 42c63dc0e7c9abe3b2fedf044d875b118efc45d5	no	90
Warnings:					
Information:					
		Total Files Size (in bytes):	13611752		

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

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

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

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

Doc code: IDS
Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)
Approved for use through 07/31/2012. 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 contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)

Application Number	12272570
Filing Date	2008-12-05
First Named Inventor	Ric B. Richardson
Art Unit	2432
Examiner Name	Gilberto Barron, Jr.
Attorney Docket Number	70243-00018

U.S.PATENTS Remove

Examiner Initial*	Cite No	Patent Number	Kind Code[1]	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	4658093		1987-04-14	Hellman	
	2	4796220		1989-01-03	Wolfe	
	3	5291598		1994-03-01	Grundy	

If you wish to add additional U.S. Patent citation information please click the Add button. Add

U.S.PATENT APPLICATION PUBLICATIONS Remove

Examiner Initial*	Cite No	Publication Number	Kind Code[1]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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FOREIGN PATENT DOCUMENTS Remove

Examiner Initial*	Cite No	Foreign Document Number[3]	Country Code[2] i	Kind Code[4]	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T[5]
	1	678985	AU		1997-06-19	Uniloc Corporation Pty Limited		☐

EFS Web 2.1.17

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12272570
	Filing Date	2008-12-05
	First Named Inventor	Ric B. Richardson
	Art Unit	2432
	Examiner Name	Gilberto Barron, Jr.
	Attorney Docket Number	70243-00018

	2	1 670 188	EP	A2	2006-06-14	Alcatel		☐
	3	2005/104686	WO	A2	2005-11-10	IPASS INC.		☐
	4	2007/060516	WO	A2	2007-05-31	Lo		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button [Add]

NON-PATENT LITERATURE DOCUMENTS [Remove]

Examiner Initials*	Cite No	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, pages(s), volume-issue number(s), publisher, city and/or country where published.	T[5]
	1	Angha et al.; Securing Transportation Network Infrastructure with Patented Technology of Device Locking - Developed by Uniloc USA; http://www.dksassociates.com/admin/paperfile/ITS%20World%20Paper%20Submission_Uniloc%20_2_.pdf; Oct. 24, 2006.	☐
	2	Econolite; Econolite and Uniloc Partner to Bring Unmatched Infrastructure Security to Advanced Traffic Control Networks with Launch of StrongPoint; http://www.econolite.com/docs/press/20080304_Econolite_StrongPoint.pdf; Mar. 4, 2008.	☐
	3	Williams, "A Painless Guide to CRC Error Detection Algorithms," 33 pages, www.ross.net/crc/download/crc_v3.txt	☐

If you wish to add additional non-patent literature document citation information please click the Add button [Add]

EXAMINER SIGNATURE

Examiner Signature		Date Considered	

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

[1] See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. [2] Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). [3] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [4] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. [5] Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	12272570
	Filing Date	2008-12-05
	First Named Inventor	Ric B. Richardson
	Art Unit	2432
	Examiner Name	Gilberto Barron, Jr.
	Attorney Docket Number	70243-00018

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

☐ See attached certification statement.

☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ None

SIGNATURE

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

Signature	/Grant T. Langton/	Date (YYYY-MM-DD)	2010-04-13
Name/Print	Grant T. Langton	Registration Number	39739

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

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these record s.

2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.

3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.

4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).

5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.

6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).

7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.

8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.

9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	7406868
Application Number:	12272570
International Application Number:	
Confirmation Number:	6547
Title of Invention:	System and Method for Adjustable Licensing of Digital Products
First Named Inventor/Applicant Name:	Ric B. Richardson
Customer Number:	58688
Filer:	Grant T. Langton/Grace Forker
Filer Authorized By:	Grant T. Langton
Attorney Docket Number:	70243-00018
Receipt Date:	13-APR-2010
Filing Date:	17-NOV-2008
Time Stamp:	16:43:40
Application Type:	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	Information Disclosure Statement (IDS) Filed (SB/08)	70243-00018_IDS4.pdf	612441 ae46a0ab44939acbe67433f7baffe5ae8da0 0a8	no	4

Warnings:	
Information:	

2	Foreign Reference	AU678985B2_Uniloc.pdf	1976251 a1c1052f02ccdf43f7c78f37e2611e16c0462879	no	55
Warnings:					
Information:					
3	Foreign Reference	EP1670188A2_Alcatel.pdf	1097488 628cd559667ac490d6fech7d8785ae93cf0550cc	no	17
Warnings:					
Information:					
4	Foreign Reference	WO2005104686A2_IPASS.pdf	1849440 d344974c8e3c7956150a890dca46ce271d00560b	no	40
Warnings:					
Information:					
5	Foreign Reference	WO2007060516A2_Lo.pdf	1120432 adf31056043506e1f733b75a0804b7ad63da46f64	no	26
Warnings:					
Information:					
6	NPL Documents	Angha_et_al.pdf	119169 1303b8ae5bc262718b9b986f1717f8cf62cf390c	no	7
Warnings:					
Information:					
7	NPL Documents	Econolite_StrongPoint.pdf	148062 d14269a7fc98e018084d5d07021a57403312ee1d	no	3
Warnings:					
Information:					
8	NPL Documents	Williams_APainlessGuideToCRC ErrorDetectionAlgorithms.pdf	189188 9e24b0e0f597dd3118f26eb6c4fb757547d8ec27	no	35
Warnings:					
Information:					
		Total Files Size (in bytes):	7112471		

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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

PTO/SB/81 (01-09)
Approved for use through 11/30/2011. OMB 0651-0035
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POWER OF ATTORNEY OR REVOCATION OF POWER OF ATTORNEY WITH A NEW POWER OF ATTORNEY AND CHANGE OF CORRESPONDENCE ADDRESS

Application Number	12/272,570
Filing Date	November 17, 2008
First Named Inventor	Ric B. Richardson
Title	S & M for Adjustable Licensing of Digital P
Art Unit	2432
Examiner Name	Gilberto Barron Jr.
Attorney Docket Number	70243-00018

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

☐ A Power of Attorney is submitted herewith.

OR

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

96051

OR

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

Practitioner(s) Name	Registration Number

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

☒ The address associated with the above-mentioned Customer Number

OR

☐ The address associated with Customer Number:

OR

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

I am the:

☐ Applicant/inventor.

OR

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

SIGNATURE of Applicant or Assignee of Record

Signature		Date	May 6, 2010
Name	Brad Davis	Telephone	949-788-1470
Title and Company	CEO, Unilloc USA, Inc.		

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

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.31, 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.

PTO/SB/96 (07-09)
Approved for use through 07/31/2012. 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: Uniloc USA, Inc.

Application No./Patent No.: 12/272,570 Filed/Issue Date: November 17, 2008

Titled: System and Method for Adjustable Licensing of Digital Products

Uniloc USA, Inc., a corporation

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

states that it is:

1. [X] the assignee of the entire right, title, and interest in;

2. [ ] an assignee of less than the entire right, title, and interest in (The extent (by percentage) of its ownership interest is ____ %), or

3. [ ] the assignee of an undivided interest in the entirety of (a complete assignment from one of the joint inventors was made) the patent application/patent identified above, by virtue of either:

A. [X] 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 022197, Frame 0613, or for which a copy therefore is attached.

OR

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

1. From: ____ To: ____

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

2. From: ____ To: ____

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

3. From: ____ To: ____

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

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

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

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

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

Signature — May 6, 2010 (Date)

Brad Davis — CEO

Printed or Typed Name — Title

Electronic Acknowledgement Receipt

EFS ID:	7575364
Application Number:	12272570
International Application Number:	
Confirmation Number:	6547
Title of Invention:	System and Method for Adjustable Licensing of Digital Products
First Named Inventor/Applicant Name:	Ric B. Richardson
Customer Number:	58688
Filer:	Sean Dylan Burdick
Filer Authorized By:	
Attorney Docket Number:	70243-00018
Receipt Date:	07-MAY-2010
Filing Date:	17-NOV-2008
Time Stamp:	19:11:54
Application Type:	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_atty_12272570.pdf	817503 def2b3420314e1160a5949344e58b26e87ad2 3eb9	yes	2

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Power of Attorney	1	1
	Assignee showing of ownership per 37 CFR 3.73(b).	2	2
Warnings:			
Information:			
	Total Files Size (in bytes):	817503	

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New Applications Under 35 U.S.C. 111
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National Stage of an International Application under 35 U.S.C. 371
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New International Application Filed with the USPTO as a Receiving Office
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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
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/272,570	11/17/2008	Ric B. Richardson	70243-00018

CONFIRMATION NO. 6547

96051
Uniloc USA Inc.
2151 Michelson Ste. 100
Irvine, CA 92612

POA ACCEPTANCE LETTER

OC000000041635375

Date Mailed: 05/18/2010

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/07/2010.

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.

/mtcklemichael/

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/272,570	11/17/2008	Ric B. Richardson	70243-00018

CONFIRMATION NO. 6547

POWER OF ATTORNEY NOTICE

58688
CONNOLLY BOVE LODGE & HUTZ LLP
P.O. BOX 2207
WILMINGTON, DE 19899

OC000000041635337

Date Mailed: 05/18/2010

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 05/07/2010.

- 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).

/mteklemichael/

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

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
12/272,570		2432	

OC000000041778513

Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 96051 on 05/24/2010

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

The address of record for Customer Number 96051 is:

96051
Uniloc USA Inc.
2151 Michelson Ste. 100
Irvine, CA 92612

PART 1 - ATTORNEY/APPLICANT COPY
page 1 of 1

PTO/SB/08a (07-09)
Approved for use through 07/31/2010. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449/PTO
(modified by Applicant)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet 1 of 1

Complete if Known	
Application Number	12/272,570
Filing Date	11-17-2008
First Named Inventor	Ric B. Richardson
Art Unit	2432
Examiner Name	Gilberto Barron
Attorney Docket Number	UN-NP-SA-001

U.S. Patent Documents

Examiner Initial	Desig. ID	Document Number	Publication Date	Patentee	Class	Subclass	Filing Date If Appropriate
		5,260,999	11/09/1993	Wyman			
		5,414,269	05/09/1995	Takahashi			
		5,974,150	10/26/1999	Kaish, et al.			
		6,029,141	02/22/2000	Bezos, et al.			
		6,294,793	09/25/2001	Brunfeld, et al.			
		6,536,005	03/18/2003	Augarten			
		6,920,567	07/19/2005	Doherty et al.			
		7,319,987	01/15/2008	Hoffman et al.			
		7,463,945	12/09/2008	Kiesel, et al.			
		7,653,899	01/26/2010	Lindahl et al.			
		2001/0044782	11/22/2001	Hughes et al.			
		2004/0030912	02/12/2004	Merkle Jr. et al.			
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Foreign Patent Documents or Published Foreign Patent Applications

Examiner Initial	Desig. ID	Document Number	Publication Date	Country or Patent Office	Class	Subclass	Translation Yes	Translation No
		1 637 958	03/22/2006	EPO				
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Other Documents (include Author, Title, Date, and Place of Publication)

Examiner Initial	Desig. ID	Document

Examiner Signature	Date Considered

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Electronic Acknowledgement Receipt

EFS ID:	9382587
Application Number:	12272570
International Application Number:	
Confirmation Number:	6547
Title of Invention:	System and Method for Adjustable Licensing of Digital Products
First Named Inventor/Applicant Name:	Ric B. Richardson
Customer Number:	96051
Filer:	Sean Dylan Burdick
Filer Authorized By:	
Attorney Docket Number:	UN-NP-SA-001
Receipt Date:	11-FEB-2011
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Time Stamp:	15:07:09
Application Type:	Utility under 35 USC 111(a)

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Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	SA-001-IDS_transmittal.pdf	28363 1930618767f162ff96433d4b6062 4d9387bc992	no	2

Warnings:	
Information:	

2	Foreign Reference	EP1637958A2_Microsoft.pdf	2137091 3353a3048297345aef470f0d31adeba5e5a6 2aed	no	35
Warnings:					
Information:					
3	Foreign Reference	WO2008013504_Starhub.pdf	962755 c559c8a5000c9b592bc096e6b0a478dbd59 c5aa2	no	22
Warnings:					
Information:					
4	Foreign Reference	98042098.pdf	2375224 ec21d1c8aa157a186c4a9fa950b9d508580 62f25	no	63
Warnings:					
Information:					
5	Information Disclosure Statement (IDS) Filed (SB/08)	SA-001_SB08.pdf	36589 571bd2ddd7d501e93d51086c837835ab14 3717b5	no	1
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New Applications Under 35 U.S.C. 111

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

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

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