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October 22, 1993

Attorney Docket No.: 06154/004001

BOX PATENT APPLICATION Commissioner of Patents and Trademarks Washington, DC 20231

Presented for filing new original patent application of:

Applicant: Tītle

KAHN AND DAVID K. ROBERT E ELY

IDENTIFYING, MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Enclosed are the following papers, including all those required for a filing date under 37 CFR $\S1.53(b)$:

Pages of Specification Pages of Claims Pages of Abstract Signed Declaration Sheets of Drawing Small Entity Statement

61 13

[To Be Filed At A Later Date] 25

[To Be Filed At A Later Date]

Basic filing fee Total claims in excess of 20 times \$11.00 Independent claims in excess of 3 times \$37.00 Multiple dependent claims Total filing fee:

355.00 275.00 370.00 0.00

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A check for the filing fee is enclosed. Please charge any other required fees, or apply any credits, to Deposit Account No. 06-1050, referencing the Attorney Docket number shown above.

If this application is found to be INCOMPLETE, or if it appears that a telephone conference would helpfully advance prosecution, please telephone the undersigned at 617/542-5070.

"Express Mail" mailing label number <u>18577/2/8/X</u>

10-22-93 Date of Deposit I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

FISH & RICHARDSON

BOX PATENT APPLICATION October 22, 1993 Page 2

Kindly acknowledge receipt of this application by returning the enclosed postcard.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Enclosures

08/142161

PATENT APPLICATION SERIAL NO.

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APPLICATION

FOR

UNITED STATES LETTERS PATENT

TITLE:	IDENTIFYING, MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND
APPLICANT:	PAYMENTS ROBERT E. KAHN, DAVID K. ELY

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G, MANAGING, ACCESSING, AND TRACKING DIGITAL

CTS AND ASSOCIATED RIGHTS AND PAYMENTS

月1 >Background

associated rights and payments.

By a "digital object" we broadly mean any set of sequences of bits or digits and an associated unique identifier which we call a "handle". A digital object may incorporate information or material in which rights (e.g., copyright rights) or other interests are or may be claimed. There may also be rights associated with the digital object Thus digital objects may include conventional itself. digital representations of works (books, papers, images, sounds, software), and more broadly any digital material which is capable of producing desired manifestations for a computer user. Thus, a digital object could include programs and data which, though not directly a representation of the text of a work, enable the delivery over a network and the subsequent reproduction on a computer screen of selected portions of the text of the work. By the notion of rights which are or may be claimed in a digital object, we mean rights which exist under statute (e.g., copyright, patent, trade secret, trademark), or as a result of private action (e.g., via secrecy, cooperative ventures, or negotiation).

Rights are normally protected under the law by mechanisms that are paper-based. Patent and trademark applications are prosecuted by exchanges of paper with the Patent and Trademark Office. Trade secret rights are often protected by appropriate legends on paper, and by physically guarding paper copies against disclosure. Registration of claims in copyright is largely based on a paper system. Registration systems generally involve providing physical

copies (sometimes voluminous) to the registering authority of the object to be registered.

Holders of rights may get value from those rights by allowing others to copy, use, or perform the object covered by the rights in exchange for consideration (e.g., a photographer may sell copies of his photographs). In some situations there may no need for negotiation of the terms, which may be simple and well understood. The working out of compensation may be done automatically by private clearing house operations, such as the Copyright Clearance Center (as to photocopying) or ASCAP and BMI (in the music field).

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In other situations the rights holders may derive value by granting to others exclusive rights to disseminate the object in exchange for a royalty (e.g., a book author grants a publisher the North American paperback distribution rights). Exclusive rights are typically subject to direct negotiation.

It is common to provide for central registration of ownership and other exclusive rights so that others may know the timing and terms of those rights.

Making digital objects available on networks (e.g., Internet), gives rise to at least four specific activities of concern. The first is the ease of movement of digital objects already contained in a computer network environment allowing the creation of multiple copies in multiple machines in fractions of a second. The second is the importation of external information, such as print material or isolated CD-ROM based material, which must first be scanned or read into the system before it can be used. The third is export of internal network based information to paper using digital printers or facsimile machines or copying to separable media such as tape or DAT for external transport to others. The fourth is that digital objects may

be easily manipulated on a computer to produce derivative works. The derivative works can also be easily moved about in a computer network environment and be subject to further manipulation by other parties. Parallel and concurrent manipulation can generate an exponential proliferation of derivative works.

Several technologies are known for handling privacy and authentication in a digital network environment, including public key cryptography, digital signatures, privacy enhanced mail, and notarization.

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Summary of the Invention

In general, in one aspect, the invention features a method of managing digital objects in a network, the objects are stored at locations accessible in the network using a storage technique which renders the digital objects secure against unauthorized access. Pointer information which associates each digital object identifier with a pointer indicating the location of the stored digital object is also stored in the network. For each digital object validation information is stored, separately from the digital object, and is sufficient to permit a determination whether a purported instance of a digital object is identical to the original. In examples of the invention, an authorized user may have access to the validation information, using the digital object identifier, to determine whether a purported instance of a digital object is identical to the original. The validation information comprises a digital signature over the digital object.

Another general aspect of the invention concerns managing reference information about digital objects in a network. The reference information is stored for each of the digital objects. Validation information is also stored and is substantially smaller in size than the corresponding

digital object. In examples of the invention, an authorized user may have access to the reference information using the unique identifier. The reference information includes information concerning at least one of the following: registration of rights in the digital object including performance of the object; accesses to and uses of digital object; the terms and conditions for use of digital objects; the ownership and transfer of rights to disseminate digital objects; links between different digital objects.

In another general aspect of the invention, which concerns the storing of the digital objects in a network, the verification information is stored separately from the digital object. In examples of this aspect of the invention, the pointer to the object (versus identifier information for the object) is stored in multiple servers on the network. The identifiers are generated in a manner to distribute the pointer information with the unique identifier information) relatively evenly among the servers, using a hashing algorithm.

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Another general aspect of the invention concerns enabling users of a network to access or perform digital objects stored in the network. There are multiple pointer servers each of which accepts identifiers of a subset of the digital objects and returns corresponding pointers to the locations of the digital objects in the network. A directory server accepts identifiers of any of the digital objects and maintains and returns a table containing the locations of the pointer servers which accept those identifiers.

Another general aspect of the invention concerns applying for registration of rights in digital objects by submitting to a registering authority an application for registration of rights including the validation information

and the unique identifier of a digital object and its properties.

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Another general aspect of the invention concerns enabling holders of rights in digital objects to control terms and conditions under which they are accessed or performed by users in a network. Information is stored about terms and conditions for access to and performance of each digital object. The information is made available to a user in connection with a request for access to a digital object. The user is enabled to indicate assent to the terms and conditions. Access is permitted to the user only upon the user indicating assent to the terms and conditions.

Another general aspect of the invention concerns enabling holders of rights in digital objects to control terms and conditions under which rights in the digital objects may be granted to others. Terms and conditions for the granting of rights is stored in the network. The terms and conditions are made available to potential rights holders upon request via the network. The potential rights holder and the current rights holder interact via the network to reach agreement on terms and conditions for grant of dissemination rights. Information identifying grants of such rights for digital objects on the network are stored in a recordation server on the network. This will generally be part of the reference service.

Another general aspect of the invention concerns maintaining a record of information concerning digital objects stored on a network. The digital objects are stored on the network in a manner that restricts unauthorized access to and transactions associated with the digital objects. A reference service is provided on the network, separate from the storage of the digital objects, for recording information about accesses to and transactions

associated with the digital objects. Information about accesses to and transactions associated with the digital objects is recorded in the reference service. Access to the records of the reference service is permitted to authorized users.

Another general aspect of the invention relates to managing registration of claims to rights in digital objects. Copies of the digital objects are stored in a repository in a manner that enables only authorized accesses to the digital objects and permits verification that the stored digital objects have not been subjected to unauthorized alteration. At a registrar which is accessible on the network at a different network address from the repository, registration services are provided including receipt via the network of registration requests and delivery via the network of registration certifications. The objects are accessed at the repository via the network for use in providing the registration services.

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Examples of the invention include the following features. Owners of rights in digital objects may deposit copies of the digital objects in the repository, via the network. There may be multiple repositories. A set of servers, accessible on the network, are provided for the purpose of generating a unique handle for each digital object. The handle for a digital object is unique both across the network and over time. A service, accessible on the network, is provided for locating the handle associated with a digital object. The handle is used to obtain a pointer to the network location of an accessible copy (by "copy" we intend a broader concept then the conventional notion of copy; see other sections of this application for explanation) of the digital object. The handle is used to obtain a pointer to the network location of information

concerning obtaining authorization to use the digital The services are provided at multiple different locations on the network. The handles comprise unique character strings associated with the servers which generated them. A handle server, accessible on the network, provides the pointer in response to presentation of a handle. Multiple servers provide the service, each serving a portion of the handle space. Multiple handle generation servers may generate handles independently. Information concerning simple terms and conditions is stored in the repository. Information concerning non-simple terms is held in a rights management system (it may also contain the Each of the handles is used simple terms and conditions). to obtain a pointer to a rights management system in which information concerning non-simple terms is held. Hash values are computed on the handles and the hash values are distributed among multiple handle servers, each handle server having a table which associates handles with pointers.

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Another general aspect of the invention features a method for providing network based regulation of claims in rights in digital objects, and, in connection with actions (e.g., registration of rights or obtaining copies for consideration) pertaining to regulation of claims in rights in the digital objects, using handles to obtain authorized access to the digital objects in the repository. actions include registration of claims in the rights.

Another general aspect of the invention features a network-based method for managing compensation for access to digital objects and transfer of rights in digital objects. Information is stored on the network identifying the ownership of rights in digital objects. At a rights management system available on the network, requests for

rights in digital objects are received. In response to the requests for rights (e.g., exclusive rights), and after successful negotiation of rights transfers, requests are issued from the rights management system to the recordation system via the network, to record transfers of rights in the digital objects.

Examples of the invention include the following features. The transfer of rights is recorded in the recordation system in a manner which is secure against alteration. The request for transfer of rights typically occurs after the owner is compensated using a network based method of compensation or other method, or a commitment has been obtained to compensate the owner of the rights using the network-based compensation method or other method.

Among the advantages of the invention are the following.

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Any kind of digital object may be dealt with. Owners of digital objects may deposit them in a secure manner that both restricts access and allows for later verification that the deposit has not been altered. Detailed records of the history of deposits and of transactions related to the objects (e.g., transfers of rights) may be kept in a protected location in the system, while access to those records may be allowed to any authorized party on the network. The records may include information about the history of revisions and derivative versions of objects, and may link objects based on other relationships among them.

Thus, in combination the information and reference server (e.g., the registrar) and the repositories provide a unique capability, applicable to any digital object, to provide for protected storage in electronic storage facilities and, in a separate facility, secure maintenance

of validation information needed to assure the unaltered nature of the stored object and historical information about the object. In this way, it is not necessary to store the objects at the same location as the validation information and any authorized person on the network (e.g., a court, or a government employee, or the rights holder, or a user) may have access to the validation and historical information and, if authorized, the object itself. When applied broadly to a large number and variety of rights holders and users, the system will produce a digital object infrastructure of enormous value to the conduct of business.

The digital signature, privacy enhanced messaging, and other protection mechanisms assure the integrity of the system.

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The present manual paper system for mediating rights in the use of and dissemination of digital objects is replaced by a network-based system that operates rapidly, accurately, and efficiently, and will produce a freer, higher velocity market in such rights, thus greatly enhancing the value of the rights.

Corporations and private institutions may apply the invention in a variety of contexts.

The handles used to uniquely identify digital objects are designed to be extensible and expandable to accommodate virtually any number of objects over many years. The hashing mechanism provides an efficient and reliable implementation.

Other advantages and features will become apparent from the following description and from the claims.

Description

Figure 1 is a block diagram of a system for managing digital objects.

. _ 9 _

Figure 2 is a block diagram of an example of a system for registration of rights, recordation of transfers of rights, and rights management.

Figure 3 is a block diagram of digital signing and 5 verification processes.

Figure 4 is a block diagram of a public key distribution arrangement.

Figures 5 and 6 are diagrams of handles.

Figure 7 is a diagram of hash code space.

Figure 8 is a flow chart of handle processing.

Figure 9 is a flow chart of a process for applying for rights registration.

Figure 10 is a block diagram of portions of the system.

Figures 11 through 13 are flow charts of a registration process.

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Figure 14 is a block diagram of portions of the system.

Figures 15 through 17 are flow charts of a process 20 of depositing an object in a repository.

Figure 18 is a block diagram of portions of the system.

Figures 19 through 22 are flow charts of a registration application process.

Figure 23 is a block diagram of portions of the system.

Figure 24 is a flow chart of a process of setting up an account.

Figures 25, 26, and 27 are flow charts of processes 30 of retrieving an object.

Preliminarily we define several terms which are used in the following discussion (see Figure 1).

A "repository" 1002 is a digital storage system into which digital objects 1004 may be placed and retained for possible subsequent retrieval. The repository may contain other related information 1006 as well as management systems 1008. Where appropriate, such information may be provided to an "information and reference server" 1010. The result of retrieving a digital object from a repository may be a performance of the digital object (e.g., execution of a program) or the digital object itself (e.g., the program). This is important in the case of digital objects which are only intended to be performed by users (e.g., a video game) rather than making the object itself available. performance of a digital object may be stored as a new digital object and there may be separate terms and 1.5 conditions associated with it.

Digital objects are "typed". Thus one can tell in a concatenated sequence of digital objects what kind of digital object is present (e.g., the object itself or a "performance of the object") and where each digital object starts and ends. One simple way to accomplish this is to include a type field as the first part of the sequence of binary digits which contains the necessary information. It could also be externally maintained (e.g., in a properties record, described below).

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A digital object may contain other digital objects in the sequence of binary digits following its handle. A user will be able to identify these contained objects from the type fields of those digital objects contained therein.

Each digital object has a "handle", a concise unique identifier for a digital object used for storage and retrieval operations and other repository functions.

A digital object may have associated with it, in the repository or elsewhere, as part of the related information

1006, a "properties record" 1014 which is a set of database entries that describe properties of the digital object.

A digital object also may have associated with it, in the repository or elsewhere, an associated "transaction record" 1016 which records transactions involving the digital object.

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The properties record may contain entries such as the identity of a rights management system 1018 (i.e., the system that has control over transfers of and compensation for rights in that object), the handle 1012 for that object, the originator of the object 1020, the name of the object (if any) 1022, a description of any work or other information or material incorporated in the object 1024, the time and date of deposit 1026, format information 1028, and stated terms and conditions for access and usage of the object 1030. The terms and conditions in the properties record may allow the user to select which type of action to allow (e.g., retrieve object or perform object). The user may be allowed to negotiate type of action with the RMS. The user also may be given no choice of options. In many retrieval cases, the user will not know if an option exists.

The transaction record may contain entries such as the time and date of each request for retrieval 1032, the identity of the requesting party 1034, the handle 1012 for the object, and the applicable terms and conditions including amount and method of payment 1036.

The properties record, the transaction record, and the digital object all are normally accessible using the handle.

The "rights management system" 1038 is a system used to negotiate access rights and other rights not otherwise specified in the properties record. It retains information about transactions, and communicates information about

- 12 -

approved transactions and associated terms and conditions to the repository. Where authorized, it also informs the information and reference server about transactions involving rights management for recordation purposes.

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The information and reference server 1010 receives information from the repository and the rights management system. It retains a copy of the properties record for each digital object, a digital signature or other "fingerprint" of the digital object (the digital signature and other fingerprint is typically considerably smaller than the object itself) suitable for verification purposes and a temporal history list of related objects. In retains a history of chain of title 1052 to digital objects. The information and reference server is intended to be used for browsing, verification purposes, and to alert users to changes in the system. It some implementations it can be used as a registration and recordation server for copyright and other purposes. The server may be part of a governmental department, or of a private service operation. The information and reference server typically would not retain complete digital objects for storage and retrieval purposes.

The network would also be accessible to a wide variety of rights holders 10 (e.g., authors, owners, holders of exclusive rights). The rights holders may have access, when authorized, to the information and reference server, the repositories and the rights management system. The information and reference server, the repositories, and the rights management system are also potentially accessible by network users 14, who may wish to obtain, use, modify, transmit, perform, and enhance selected digital objects, or the results of operations performed by or on digital objects. The medium of the network (e.g., the cables,

airwaves, public switched telephone network) is not shown in the figure; but the network medium could be organized as a single local area network, a wide area network, or a broader network structure (e.g., the Internet).

5 The overall system also includes a handle management system 1042 comprising multiple servers which provide handle server directory services, handle-to-pointer translation services (called "handle servers"), and handle generation services; payment servers 1044 which provide payment 10 authorization services; and a wide variety of other possible servers 1046 including those which would provide intermediary services between rights holders and users, on one hand, and other servers on the other hand. For example a server might provide a service of receiving a conventional bibliographic citation to a journal article and 15 communicating with an appropriate handle server to identify the location of the article on the network. That service and others could be provided as commercial services. should also be clear that services can be provided on a 20 widely distributed basis by multiple similar servers at different locations on the network, or by single centralized servers. Furthermore, not all of the digital objects which may exist on the network need be covered by the servers of Figure 1. Only when rights holders choose to subject their 25 objects to the system would the services need to be provided.

In what follows, we provide examples of operations which may be conducted with assistance of the servers and services of the kind shown in Figure 1. The operations include registration of rights, recordation of transfers of rights, deposit of objects in repositories, generation and use of handles, arranging compensation for use of objects and for licensing and transfer of rights (e.g., exclusive

rights) in objects (under simple or non-simple terms), use of digital signature and other protective mechanisms to insure the integrity of the transactions within the system, management of rights, and obtaining objects from repositories.

Overview of an Example System

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As seen in Figure 2, an example system 31 includes a digital object management system 32 which includes hardware and software to create and store digital objects and manage rights to the objects. In the system, a user agent (UA) 34 provides a user interface for interactions with other elements of the system. The UA is in the form of software running on a workstation. The UA may be used to initiate storage of an object within a repository 36 by passing the object to the repository or by transmitting information which the repository can use to retrieve the document. The UA also interacts with the repository to initiate a rights registration application process.

system (RMS) 38 to initiate recordation of transfers of rights. The UA interacts with the registration system 40 directly (or indirectly through the repository) to initiate the rights registration application process and with the public access registration database 41 to allow users to browse and search for information about registered rights. System 40 and database 41 are part of a rights registrar facility (and serve as an example of the information and reference server of Figure 1).

Rights holders may prepare digital objects for entry into the system using a workstation and file server 42 which transfers objects in any of several well known formats (e.g., ASCII or Group IV facsimile) to the workstation

hosting the UA for rights registration application processing.

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The RMS 38 provides information about terms and conditions for use of digital objects and enters into negotiations with users for rights. The RMS interfaces with the information and reference server to obtain relevant reference information. The RMS also controls conditions for access to objects stored in repositories. The RMS may delegate to the repositories the responsibility to handle simple terms and conditions. The repository 36 holds copies of digital objects in a secure and verifiable manner and controls access to the objects. The repository also sends copies of digital objects to other systems when instructed to do so by an RMS.

In the rights registrar facility 43, the public access registration database 41 will provide access to information about registered rights and provides a read-only interface to a cataloging system 44. The registration system 40 holds digitally submitted rights registration applications during application processing. The application information is submitted to a tracking system 46 for tracking purposes (e.g., for tracking examination or status) when the digitally submitted application is received. The recordation system 48 stores and provides information about transfers of rights (and other information pertaining to rights and interests. The recordation and registration systems in this example form part of a more general information and reference service.

The cataloging system 46 stores information about registered rights and provides the basis for public (network) access to registration information.

A registrar workstation 50 allows a registrar user to view and print rights registration applications and

accompanying documents and recordation information and accompanying documents. The workstation interacts with the registration system to obtain registration application information, with the rights management systems and repositories to obtain digital objects whose rights are being registered, and with the recordation system to obtain recordation information and associated documents.

The handle management systems 54 are used to find the location of digital objects and the locations of each object's associated RMS. A handle for an object may be associated with zero or more object pointers. Object pointers contain location information for locating digital objects and/or associated RMSs. Each object may have an associated RMS which manages rights in the object on behalf of the rights holders.

Handle generators 56 in the handle management systems 54 create the globally unique handles.

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Handle servers 58 process handle query requests. If the handle which is the subject of the query is found by a handle server, the object pointers associated with the handle are returned to the requesting client. A handle server accepts a handle as input and returns a list of pointers associated with the handle, where each pointer = { domain name of storage system (repository), domain name of RMS }. The domain name of the RMS may be null, e.g., if there are no terms and conditions stored in the RMS. The domain name of the storage system may be null if the rights stored in the RMS do not include obtaining a copy of the object, or if the rights apply to a "physical" object.

The handle server directory 59 allows users to find the correct handle server for processing a given handle. Users which obtain handles from servers associate them with digital objects. The handle server directory 59 distributes



handles to handle servers based upon a hash of handles. The handle server directory provides a list of domain names of handle servers and identifies the set of hash values of handles which each of the handle servers can map to pointers. Each country has its own collection of handle servers and handle server directories.

Public Key and Digital Signature Technology

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There are several security issues that the system must solve. The registration system must be able to verify the identity of the rights registration applicant. This is required since the applicant will charge the registration to an account, and it is also required for legal reasons.

When an object is transmitted to either the registration system or the repository, the recipient system must be able to determine that the object was not altered in any way. When an object is stored on a repository, the rights holder of the object must also be able to determine that the object was not altered by the repository in any way. Similarly, when an RMS tells a repository to send a copy to an object requester, the repository must be able to verify that a valid RMS is sending the command to the repository. When any correspondence is sent to the rights registration applicant from the registration system, the applicant must be able to determine that the registration system was truly the source. As objects and other information are transmitted between the various system components, the privacy of the information must be ensured.

The system uses available public key and digital signature technology to handle privacy and authentication in the system as follows.

In conventional cryptography, a mathematical function and a secret key are shared by parties who wish to communicate confidentially. Each message to be sent is

encrypted using the function and key, and the recipients decrypt it using the same function and key.

In conventional cryptography the keys must be kept secret and must be distributed by secure means. The notions of two Stanford University researchers, Martin Hellman and Whitefield Diffie, opened up a new way of thinking about key management. One key could be made public (e.g. the one used for encryption) and the other key would be kept private. Anyone knowing the public part of a pair of keys could use it to prepare a message which would remain confidential until the person knowing the private key used it to decrypt the message. The public keys could be listed in public directories since knowing them did not help anyone decrypt messages encrypted using the public key.

Three researchers at MIT, Rivest, Shamir and Adelman, later developed a pair of functions meeting the requirements specified by Diffie and Hellman. These functions are now known as the RSA algorithms. There are also other known ways to implement public key algorithms.

Since either key of a public key cryptography pair can be used to perform the initial encryption, an interesting effect can be achieved by using the secret key of the pair to encrypt messages to be sent. Anyone with access to the public key can decrypt the message and on doing so successfully, knows that the message must have been sent by the person holding the corresponding secret key. This use of the secret key acts like a signature, since the decryption only works with the matching public key. If the public key for the sender is stored in a public directory, any recipient can verify the identity of the sender.

As shown in Figure 3, the private key 100 can also be used to prove that an object 102 has not been altered by anyone after the object's rights holder (e.g., an author)

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has fixed the representation of the object. If the author performs a hash 104 over all of the object's bits, and then encrypts 106 the hash value with his secret key 100 to produce a digital signature 105, a recipient can decrypt the hash value, rehash the original object and compare the two hash values to ensure that the object has not been altered.

One problem that must still be addressed is knowing whether a public key 108 found in a directory for a given correspondent is valid or a bogus key inserted by a malicious person. One way to deal with this is to create certificates 110 containing the name 112 of the owner of the public key and the public key 108 itself. This certificate is signed with the private key of a well-known certificate signing authority 114, shown in Figure 6. The public key of the signing authority is also published in a certificate which is signed by a higher-level signing authority 116. In essence, a hierarchy of certificate authorities has been created.

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In order to make an object be private in an efficient manner, a combination of public key cryptography and conventional private key cryptography is used. Since public key cryptographic algorithms require a substantial amount of computing power, an object will initially be encrypted with a secret key algorithm, such as DES, which is computationally more efficient. The DES private key will then be encrypted with the public key of the recipient. This encrypted DES key will be sent to the recipient, along with the encrypted object.

Many of the object and information transfers performed in the system are provided by Privacy Enhanced Mail (PEM,) which was developed by Trusted Information Systems of Glenwood, Maryland. The PEM system (and other similar available systems) can provide message privacy and

correspondent authentication. There are other systems Other messages will be sent between system components via direct connections (e.g., "TCP/IP"). The TISPEM library, developed by RSA, is used to provide message privacy and correspondent authentication.

Object Handles

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Handles should be globally unique across the network and over time; should be essentially permanent, since rights on an object may last many years; should not have any location information encoded in the identifier's namespace, since an object may be located at multiple and changing locations over time; the identifier's namespace must be variable and unrestricted, since the number of digital objects created may be expected to increase; once a user acquires an object's identifier, he should be able use the handle to ascertain the current location of the object; multiple authorities should be able to generate the identifiers.

In addition, the following constraints on the use of an object handle are preferred: users of an object do not need to know its location, only its identifier; objects may be moved from one storage facility to another without affecting users; users should be able to choose object providers based upon the terms and conditions associated with an object, including its costs.

The authorization and rules for creating a handle are determined on a country-by-country basis. As seen in Figure 5, handles are printable strings 130, having a country code 132 appended to a variable length string defined on a per country basis 134.

Within the United States, the variable length string will be generated in a form similar to a domain name within the Internet, Figure 6. Authority zones will be

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established, and each zone authority will be able to assign handles directly or create subzone 140 authorities. A time stamp 142 and serial number 144 are used to create a unique identifier within an authority zone.

Handle generators create new handles on demand of object rights holders who wish to have handles assigned to objects.

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When an object is deposited in a repository, the repository contains a copy of the object plus identification of certain simple terms and conditions for a obtaining a copy of the object and using it. The rights management system contains non-simple (i.e., requiring additional negotiation) terms and conditions for obtaining a digital object and using it, and could also contain simple terms. The pointer to the repository may be null if the object is not available on-line. Certain objects may be required to be persistent for legal and other reasons. The pointer to the rights management system may be null if only simple terms and conditions contained in the repository (or null terms and conditions) govern the use of the object.

Handle servers have the following characteristics: a handle server holds pointers associated with a subset of all handles; handles are assigned to handle servers based upon hash values computed on the handles; handle servers are assigned ranges of hash values; the set of all hash values is partitioned among the set of all handle servers. This leads to a highly efficient and reliable mechanism for locating objects and from handles. Other less efficient or less reliable methods could also be used. Handle servers may be configured to broadcast requests for handles to other handles servers, further enhancing the reliability and effectiveness of the system.

The handle server directory 59 holds a table 149 which associates hash ranges 150 with domain names of handle servers 58 (Figure 7).

Obtaining Pointers from a Handle

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Given a handle, the following steps, shown in Figure 8, are followed to obtain a set of pointers associated with the handle.

In a first step 170, a client system downloads the table that associates hash ranges with handle server domain names from the handle server directory for future use. The client also can omit this step if it has previously stored the table; frequent changes in the table may necessitate doing this every time. In a later step 172, assume the system obtains a handle for which pointers are desired. The system then generates the hash code for the handle using a predetermined hashing algorithm (step 174) and consults the hash range/handle-server-domain-name table to determine the domain name of the appropriate handle server (step 176). The system subsequently sends the handle to the handle server as part of a request pointer information UDP packet (step 178).

The handle server then returns its response to the requesting system. If the handle server found the pointers, a list of pointers is returned (step 180). This could include pointers to use one or more repositories and one or more RMS's. If the handle was sent to the wrong handle server, it returns a not-responsible-for-handle message (step 182). In this case, the client system should download the hash range/handle-server-domain-name table from the handle server directory again and attempt the mapping again. The requester will determine how many times to try before giving up (and this same approach is used in other similar situations described below).





If the request was sent to the correct handle server, but the requested handle could not be found, the handle server returns a handle-not-found message (step 184).

Overview of Application for Rights Registration

There are two mechanisms used to register rights: an applicant may apply for a rights registration on an object which is located on his own system 42 or on an object which has been stored in a repository 36.

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In order to submit and process a rights registration application the following general steps (described in more detail later) must occur.

First, as seen in Figure 9, the rights registration application is created, and the application and the associated object are submitted to the registration system. 15 The steps required to perform this depend on the location of the digital object. In registering an object which is located on the applicant's own system, the applicant first makes the object available to his own system (if it was created somewhere else) (step 60). The applicant then runs 20 a rights registration program in a step 62, and he fills in a rights registration application template. The application and the associated object are electronically mailed (as a PEM message) to the registration system (step 64), which performs simple syntactic checking on the application (step 25 66), and verifies that the associated object has not been corrupted (step 68).

If the object has not yet been placed in the repository, the applicant first places the object in the repository (step 70). The applicant then runs the rights registration program, and he fills in the copyright registration application template (step 62). The application and the object's handle are electronically mailed (PEM) to the registration system (step 64), which

performs simple syntactic checking on the application (step 66). The registration system then retrieves the object from the repository in a step 72 and verifies that the retrieved associated object has not been corrupted (step 68).

After the registration system has checked the object, it creates an initial Receipt In Progress (RIP) record and sends it to the tracking system (step 74). The tracking system verifies that the account number presented in the record is valid and that sufficient funds exist in the account to process the application (step 76).

The application and the associated object can now be accessed by the rights examiner, by running an examiner's user interface program on the examiner's workstation (step 78). Once the examiner approves the application, the registration system assigns a registration number, and the system creates the rights registration certificate (step 80). A copy of the certificate is mailed electronically to the rights registrant. An updated RIP record which shows the registration application's final status is subsequently sent to the tracking system (step 82).

Registering an Object not in a Repository

The detailed steps for registering without first depositing a copy in a repository are shown in Figures 10 through 13.

First, the user 42 (the rights applicant) generates a digital signature for the object (step 250) using a private key and makes the object 43 (in one file), digital signature 45 (in a second file), and public key certificate chain 47 (in a third file) available to the UA system 34 (step 252). The UA user supplies rights registration application information 49 by filling out a form on the screen. If the user does not fill in the publication date field, then the object is considered unpublished by the

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rights registrar. If the field is filled in, then the object is treated like a published work. The UA user digitally signs the rights application information in a step 254.

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The UA then sends a PEM/MIME message 202 to the registration system 40. (MIME is a multimedia electronic mail specification to allow for multimedia objects to be handled.) The message contains the object, the user's digital signature 45 over the object, the public key certificate chain 47 for the user, the rights registration application 49 information, a digital signature (not shown) over the rights registration application information, and the UA user's public key certificate chain (not shown) (step 256). The entire message is signed by the UA user.

The registration system 40 receives the PEM/MIME message. An entry recording the receipt of the message is placed into a log file in a step 258.

The registration system verifies that it accepts rights applications from the distinguished name of the UA user (step 260). If not, it returns a message to the UA user, and the verification failure is recorded in the log file (step 262).

The registration system attempts to validate the digital signature over the entire message in step 264. If validation fails (i.e., the decrypted hash value does not match the computed message hash or one of the certificates in the public key certificate chain has been revoked), a message is returned to the UA user. The validation failure is recorded in the log file (step 262). If the validation succeeds, then an application received message is sent to the UA user (step 266).

The registration system attempts to validate the rights registration information (only simple checks are

performed) in step 268. If validation fails, a message is returned to the UA user. The validation failure is recorded in the log file (step 262).

If the object was included in the PEM/MIME message (step 270), the registration system attempts to validate the digital signature over the object (step 272). If validation fails, a message is returned to the UA user. The validation failure is recorded in the log file (step 262).

If the validations of the application information
and the object (if it was included in the PEM/MIME message)
were successful, then the following are entered in step 274
into the registration system's work in progress database:
the application information; the digital signatures; the
public key certificate chains; and the object (if
available). The entry into the work in progress database is
recorded in the log file.

If the PEM/MIME message did not include the object (step 276), the registration system attempts to retrieve a copy of it in step 278. If the attempt fails, a message is sent to the UA user (step 280). The application information, digital signatures, and public key certificates are removed from the work in progress database. Entries are made in the log file recording the retrieval failure and the removal of the information from the work in progress database in step 282.

If the retrieval attempt succeeds, then the registration system attempts to validate the digital signature over the object in step 284. If validation fails, a message is sent to the UA user (step 280). The application information, digital signatures, and public key certificates are removed from the work in progress database. Entries are made in the log file recording the validation

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failure and the removals from the work in progress database (step 282).

If the object has been published (the rights user filled in the published date field) (step 286), then the object is placed in the acquisition queue in step 288.

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The registration system now prepares an initial Receipt In Progress (RIP) record (step 290). The registration system converts the information located in the title and claimant name fields in the registration request into the title and claimant name fields in the RIP record. The following conversions are performed: title words that are located in a stop word list are deleted and title words that are located in an abbreviated terms list are abbreviated.

A bar-code number (or other identifier) is assigned to the registration request (step 290). A verify and debit request, which contains the bar-code number (and other RIP record information) is formatted and sent to the tracking system via the File Transfer Protocol (FTP) in step 292.

The tracking system verifies the account (step 294) and debits the requested amount from the account. If the account is not valid, the tracking system will send an invalid account number presented message to the registration system (step 296). If the account is valid, but insufficient funds exist for this transaction (step 298), then the tracking system will send an insufficient funds message to the registration system (step 296). error case, the validation failure is recorded in the registration system's log file; and the rights registration application is removed from the works in progress database (step 282). If the object was unpublished, it is deleted from the registration system in step 300. If a published object and registration request is resubmitted, it is

possible that a object might be placed in the acquisition queue multiple times. Manual procedures catch the duplicate entries.

If the tracking system 46 (Figure 10) successfully performed the account verification and debit processing, it sends an account is OK message to the registration system in step 302. the tracking system prepares an initial RIP record and places it in it's database. If the object was unpublished, a copy of it is placed into the acquisition queue.

The registration system moves the registration request to the examiner queue database in step 304. The registrar user's workstation 50 (Figure 10) now has access to the registration request. The examiner uses workstation 50 to view the object on the screen, to add his name to the examined by line on the application form and to record the class designation for the rights registration (step 306). The converted form of the author and title (as stored in the RIP record) are also shown to the examiner.

If the examiner approves the application (step 308), 20 an examination-is-approved message is sent from the workstation to the registration system in a step 310. registration system assigns a registration number (step 312), and the system creates and digitally signs the rights registration certificate, which includes the registration 25 number and the date on which registration was granted (step The rights registration certificate is sent in a PEM message to the UA user in a step 314. The certificate may be sent directly to the UA or indirectly via the repository. 30 The certificate is archived on the registration system (step 312). The certificate also could be stored on a system that retains the scanned images of the manually created certificates.





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If the examination results in the rights registration application being rejected, the examiner uses the workstation to send a rights registration rejection PEM message via the UA to the applicant explaining the rejection (step 318).

If the registration was approved or denied, an updated RIP record is forwarded to the tracking system in a step 320. Once the tracking system has added the record to its database, it sends a RIP-record-update-OK message to the registration system (step 322).

In step 324, the registration system moves the registration request to the cataloging system. The cataloger's workstation 57 (Figure 10) now has access to this registration request.

Using a connection to the cataloging system, the cataloger creates the cataloging information in step 326. When the task is finished, the workstation sends a finished catalog message to the registration system (step 328). The registration system places a registration-application-processing-complete message in the log file (step 330). Placing an Object into a Repository

Alternatively, the rights holder may choose first to place an object into a repository, as shown in Figures 14 through 17.

In a first step 350, the user 42 makes the object (object) available to the UA 34. The UA then sends a request for a handle to a handle generator system 36 (step 352).

The handle generator system sends a handle to the UA system (udp) in step 354.

The UA sends a PEM message to the rights management system 38 containing the handle, any non-simple terms and conditions for obtaining a copy of the object (which must



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include free access to the object for the registrar), and the list of distinguished names of those who are allowed to make changes to the information (stored in the RMS) which is associated with the handle (step 356). The PEM message is signed by the UA user.

The RMS verifies that it accepts new submissions from the distinguished name of the UA user in step 358. If not, the RMS sends an invalid-distinguished-name PEM message to the UA user and discards the contents of the received message (step 360).

The RMS validates the digital signature on the received PEM message (step 362). If the validation fails, the RMS sends an invalid-digital-signature PEM to the UA user and discards the contents of the received message (step 360).

The RMS verifies that it does not already have a set of terms and conditions stored for the handle (step 364). If it does, it sends a terms-and-conditions-already-registered PEM to the UA user and discards the contents of the received message (step 360).

The RMS stores the handle and the associated terms and conditions (step 366) and sends a confirming PEM to the UA user (step 368).

In a step 370, the UA system computes the digital signature over: the object's handle; a date/time group (the nominal date/time of submission of the object to the repository); and the object.

The UA system sends a PEM/MIME message to the repository 36 (Figure 14) containing the object's handle, the submission date/time group, the object (or the information needed to retrieve a copy of the object), the UA user's digital signature over the above, the UA user's public key certificate chain, the simple terms and

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conditions for the object, if any, and the distinguished name or names of the RMS(s) holding the non-simple terms and conditions for the object, if applicable. The entire message is signed by the UA user (step 372).

The repository verifies that it accepts object submissions from the distinguished name of the UA user in a step 374. If not, it sends an invalid-distinguished-name PEM message to the UA user and discards the received message (step 376).

The repository validates the digital signature over the entire message in step 378. If the validation fails, the repository sends an invalid-digital-signature PEM message to the UA user and discards the received message (step 376).

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If the object was not included in the received PEM/MIME message (step 380), the repository attempts to retrieve a copy of the object (e.g., via anonymous FTP) in a step 382. If retrieval fails, the repository sends an object-retrieval-failed PEM message to the UA user and discards the received message (step 376).

The repository validates the UA user's digital signature over the handle, nominal submission date/time group, the object (step 384), and the reasonableness of the submission date/time group (not in the future, not too far in the past) (step 386). If either of these validations fail, the repository sends an invalid-submission PEM to the UA user and discards the received message (step 376).

In step 388, the repository stores the object's handle, the submission date/time group, the object, the UA user's digital signature over the above, the UA user's public key certificate chain, the simple terms and conditions for the object, if any, the distinguished name of RMS, if applicable, and other properties. The repository



then computes its own digital signature over the handle, the submission date/time group from the received message and the object (step 390). In step 392, the repository sends a PEM to the UA user containing the handle, the repository's digital signature, and the repository's public key certificate chain.

In step 394, the UA system verifies the repository's digital signature over the handle, date/time group, and object. The UA system then stores the handle, the nominal submission date/time group, the object, the repository's digital signature, and the repository's public key certificate chain (step 396).

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The UA system computes the hash of the object's handle using the handle system hashing function (step 398). The UA system then looks up the domain name of the handle server 38 responsible for the handle in its cached copy of the hash value/handle server table (step 400).

In step 402, the UA system sends a PEM to the handle server containing the handle, and one or more pairs of domain name of repository and domain name of the RMS, and a list of distinguished names of persons who are permitted to change the pairs of domain names associated with the handle. The message is signed by the UA user.

The handle server receives the PEM message and verifies that it is responsible for the handle in step 404. If not, it sends an invalid-handle-server-selected PEM to the UA user and discards the other information (step 406). If the UA system receives an invalid-handle-server-selected rejection message from the handle server, it downloads a new copy of the hash value/handle server table from the handle server directory 59 (Figure 15) (step 408) and repeats steps 398 through 404.

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If the handle server is responsible for the handle submitted by the UA system, it validates the digital signature over the PEM message in step 410. If the validation fails, the handle server sends an invalid-digital-signature PEM message to the UA user and discards the other information (step 412).

The handle server verifies that it accepts submissions from the distinguished name of the UA user in step 414. If not, the handle server sends an invalid-distinguished-name PEM message to the UA user and discards the other information (step 412).

The handle server verifies the syntax of the pairs of domain names submitted with the handle in step 416. If it detects any errors, it sends an invalid-handle-submission-record syntax PEM message to the UA user and discards the other information (step 412).

The handle server stores the handle, the pairs of domain names, and the list of distinguished names (step 418) and sends a PEM acceptance message to the UA user (step 420).

Registering an Object Already in a Repository

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After the object has been deposited, an application to register may be submitted (Figures 18 through 22).

The user (the rights applicant) 42 first generates a digital signature for the object (step 450) and makes the digital signature (in a file), and public key certificate chain (in a second file) available to the UA system 34 (step 452).

The UA user supplies the rights registration
30 application information by filling out a form on the screen
in step 454. This includes the handle 203 for the object
already stored in a repository. Any object stored in a
repository is considered published by the rights registrar.

Therefore, the publication date field must be entered in the application form. The UA user digitally signs the rights application information.

In step 456, the UA system sends a PEM/MIME message to the registration system 40 containing the object's handle, the user's digital signature over the object, the public key certificate chain for the user, the rights registration application information, the digital signature over the rights registration application information, and the UA user's public key certificate chain. The entire message is signed by the UA user.

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The registration system receives the PEM message. An entry recording the receipt of the message is placed into a log file in step 458. The registration system then verifies that it accepts rights applications from the distinguished name of the UA user (step 460). If not, it returns an unknown-account PEM to the UA user, and the verification failure is recorded in the log file (step 462).

The registration system attempts to validate the

digital signature over the entire message in step 464. If

validation fails (i.e., the decrypted hash value does not

match the computed message hash or one of the certificates

in the public key certificate chain has been revoked), a

received-corrupted-application PEM is returned to the UA

user. The validation failure is recorded in the log file in

step 462.

If the validation succeeds, then an application-received PEM is sent to the UA user in step 466.

The registration system attempts to validate the rights registration information (only simple checks are performed) in step 468. If validation fails, a rights-application-is-formatted-incorrectly PEM is returned to the UA

user. The validation failure is recorded in the log file (step 462).

If the validation of the application information was successful, then the following are entered into the registration system's work in progress database: the application information, the digital signatures, and the public key certificate chains. The entry into the work in progress database is recorded in the log file in step 470.

The registration system hashes the object's handle in step 472. It uses this hash to perform a table lookup in the hash code/handle server table (step 474), which was previously obtained from the handle server directory. The registration system then sends a request-for-pointer-information UDP packet to a handle server 58 (Figure 18) in step 476.

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In step 478, the handle server verifies that the handle falls within the set of handles for which hash values it is responsible. If it is not in this set, the handle server sends an invalid-handle-server-selected response UDP packet to the registration system (step 480).

If the registration system receives an invalidhandle-server-selected response UDP packet, it refreshes its hash code/handle server table from the handle server directory (step 482), and the registration system repeats steps 472 and 474.

If the handle server is responsible for the handle, it verifies that the handle is present in its database in step 484. If not, it sends a handle-not-found response UDP packet to the registration system (step 486).

If the registration system receives a handle-not-found response UDP packet, it returns a requested-object-is-unavailable PEM message to the UA user (step 488), and the handle lookup failure is recorded in the log file. The

- 36 -

registration system removes the entry for the registration request from the work in progress database in step 490.

If the handle server has the handle in its database, it returns the pointers associated with the handle in a UDP packet to the registration system in step 492.

For each pointer returned by the handle server, the registration system tries to obtain a copy of the object. If a copy is successfully obtained from one repository 36 (Figure 18), then the rest of the pointers are ignored. If the registration system cannot obtain the object from any of the repositories, the registration system returns an unable-to-obtain-a-copy-of-the-object PEM to the UA user (step 494). The failure to retrieve the object is recorded in the registration system's log file, and the rights registration entry is removed from the work in progress database (step 496).

If a pointer does not indicate that RMS 38 (Figure 18) negotiation is required, the registration system ignores the object pointer. If a pointer does indicate that RMS negotiation is required (step 498), the registration system attempts to obtain the object via the RMS. First, in step 500, the registration system connects to the RMS.

The RMS returns a random-value tag to the registration system in step 502. In step 504, the registration system sends the following information to the RMS: the object's handle, the registrar's digital signature over the RMS generated random-value tag, the registrar's public key certificate chain, the domain name and the port number which will be used by the registration system to receive the object.

The RMS validates the digital signature over the random-value tag in step 506. If the signature is not correct, the RMS sends an invalid-random-value-tag response



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to the registration system in step 494. The registration system logs this error and removes the rights registration information from the work in progress database (step 496).

The RMS verifies in step 508 that the registration system meets the terms and conditions for the object. the registration system does not meet the terms and conditions, a requester-unauthorized-rejection response is returned to the registration system (step 494). registration system logs this error and removes the rights registration information from the work-in-progress database (step 496).

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The RMS connects to the repository in step 510, and the repository returns a random-value tag to the RMS (step 512).

The RMS sends the following information to the repository in step 514: the object's handle; the RMS digital signature over the repository generated random-value tag; the RMS public key certificate chain; and the domain name and the port number which are used by the registration system to receive the object. 20

The repository verifies the digital signature of the RMS over the random-value tag in step 516. If the signature is not correct, the repository sends an invalid-randomvalue-tag response to the RMS (step 518). The RMS logs the error and sends a remote-RMS-error-invalid-random-value-tag error to the registration system in step 520. registration system then logs this error and removes the rights registration information from the work in progress database (step 522).

In step 524, the repository verifies that the RMS is allowed to request object transfers for the object. If the transfer is not allowed, the repository sends an invalid-RMS response to the RMS (step 518), which forwards the response

to the registration system (step 520). The registration system logs the error in its log file, and the rights registration information is removed from the work in progress database (step 522).

The repository sends a object-retrieval-is-allowed response to the RMS (step 526), and the repository disconnects from the RMS (step 528).

The RMS forwards the object-retrieval-is-allowed response to the registration system (step 530), and the RMS disconnects from the registration system (step 532).

The repository connects to the address/port specified in the original request, and it transmits to the registration system the object's handle and the object, signed by the repository in step 534. The repository then sends a object-has-been-delivered confirmation to the RMS (step 536).

The registration system validates the user's digital signature over the object in step 538. If validation fails, an invalid-object-digital-signature-presented PEM message is returned to the UA user in step 540. In step 542, the validation failure is recorded in the log file, and the rights registration is removed from the works in progress database.

Steps 286 et seq. (Figure 11) are then followed.

The registration system prepares an initial receipt in progress (RIP) record (step 290). The registration system converts the information located in the title and claimant name fields in the registration request into the title and claimant name fields in the RIP record. The following conversions are performed: title words that are located in a stop word list are deleted and title words that are located in an abbreviated terms list are abbreviated.



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The object is placed into the work in progress database. A bar-code number is assigned to the registration request (step 290). A verify-and-debit request, which contains the bar-code number (and other RIP record information) is formatted and sent to the tracking system in step 292.

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The tracking system verifies the account and debits the requested amount from the account in step 294. If the account is not valid, the tracking system will send an invalid-account-number presented message to the registration system (step 296). If the account is valid, but insufficient funds exist for this transaction (step 298), then the tracking system will send an insufficient-funds message to the registration system (step 296). In either error case, the validation failure is recorded in the registration system's log file; the rights registration is removed from the works in progress database (step 282).

If the tracking system successfully performed the account verification and debit processing, it sends a account-is-OK message to the registration system in step 302. the tracking system prepares an initial RIP record and places it in its database.

The registration system then moves the registration request to the examiner queue database in step 304. The examiner's workstation now has access to this registration request. The examiner uses the workstation 50 (Figure 18) to view the object on the screen, to add his name to the examined by line on the application form and to record the class designation for the rights registration (step 306). The converted form of the author and title (as stored in the RIP record) are also shown to the examiner.

If the examiner approves the application in step 308, an examination-is-approved message is sent from the

workstation to the registration system (step 310). The registration system assigns a registration number (step 312), and the system creates and digitally signs the rights registration certificate, which includes the registration number and the date on which registration was granted (step 314). The rights registration certificate" is sent in a PEM message to the UA user in step 316. The certificate is archived on the registration system.

If the examination results in the rights
registration application being rejected, the examiner uses
the workstation to send a rights-registration-rejection PEM
message to the applicant explaining the rejection (step
318).

If the registration was approved or denied, an updated RIP record is forwarded to the tracking system in step 320. Once the tracking system has added the record to its database, it sends a RIP-record-update-OK message to the registration system (step 322).

The registration system moves the registration

20 request to the catalog queue database in step 324. The
cataloger's workstation 57 (Figure 19) now has access to
this registration request. Using a telnet window connected
to the cataloging system, the cataloger creates the
cataloging information (step 326). When he is finished, the

25 workstation sends a finished catalog message to the
registration system in a step 328. In step 330, the
registration system places a registration-applicationprocessing-complete message in the log file.

Once the registrar has completed its work, the

30 object itself may be purged from the files of the registrar
because the digital signature and the existence of the full
object at a repository are sufficient to assure that a valid
copy of the object may be obtained at any time. This

significantly reduces the storage requirements at the registrar.

Software Organization

The following software packages run on workstation

5 42:

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MH w/PEM and MIME extensions

MH is a full featured user agent for handling Internet mail. Rather then being a single comprehensive program, MH consists of a collection of fairly simple single-purpose programs to send, receive, save, and retrieve messages. MH is extensible, other user agents may be layered on top of the MH executables. The MIME extensions provide multiple part multiple body type message capabilities (e.g., for multimedia mail).

PEM administrative tools

These tools are used to generate private and public keys and user certificates.

The following executables run on the rights user's workstation 42:

submit_registration

This tool is used to create and submit a rights registration application.

install ipms

This tool will install the MH/PEM and submit_registration tools on the rights user's workstation.

- 42 -

The registration and recordation system (RRS) must perform the following activities: the RRS must provide the user interface (as an X-windows client) for rights office personnel to view, edit, approve, reject or defer rights registration applications; the RRS must provide the user interface (as an X-windows client) for rights office personnel to view digital objects; the RRS must support electronic mail transmission and reception; the RRS must maintain several queues of the rights registration application as it passes through the various states of 10 reception, examining and approval/disapproval; until the repository is completed, the RRS must save all of the digital objects received (as a temporary repository; until another storage is facility is created/found, the RRS must retain all of the registration certificates that have been 15 generated.

The following software packages run on the UA host:

MH w/PEM and MIME extensions

MH is a full featured user agent for handling internet mail. Rather then being a single comprehensive program, MH consists of a collection of fairly simple single-purpose programs to send, receive, save, and retrieve messages. MH is extensible, other user agents may be layered on top of the MH executables.

20 tools

PEM administrative These tools are used to generate private and public keys and user certificates.

The following executables run on the rights user's workstation:

Program/Daemon

Performs

- 43 -

receive_application

When **sendmail** receives a message

addressed to

"submit_registration", it will

pass the message to

receive_application, which will

perform the initial

verifications on the message.

retrieve_object

If the object was not included in the original message, this program attempts to retrieve the object. This program is executed periodically by **cron**. This program is also responsible for performing time-out functions (for retrieving the object).

prepare_init_RIP_record

This program, which is started

by receive_application or retrieve_object is used to create and queue the initial RIP record, which will be sent to

the tracking system.

xmit_files_to_the
tracking system

This program, started by cron,

is used to send already

formatted files to the tracking

system.

get_files_from_the
tracking system

This program, started by cron, is used to retrieve response files from the tracking system.



process_init_RIP_response If get_files_from_the tracking system receives an initial RIP record response, it invokes this program to handle the response from the tracking system.

view_application

This user application is invoked by the Examiner to view, edit, accept or reject the rights application. This program also displays the digital objects to the Examiner. The Cataloger may also use this program to view the application and associated digital object.

application_queue_server

This is the "back-end" process that manages application/object requests received from user programs (i.e. view_application.)

send_resp_to_applicant

This program, which is invoked by view_application, is used to send the application approval and certificate or the application rejection to the rights applicant.

update_RIP_record

This program, which is invoked by view_application, is used to create an updated RIP record, which will be transmitted to the tracking system, using xmit_files_to_the tracking system.

process_update_RIP_resp

If get_files_from_the tracking system receives an updated RIP record response, it invokes this program to handle the response from the tracking system.

install_rrs

This program is used to install the additional configuration files and software required for the RRS system.

retrieve_object

5 prepare_init_RIP_record
 xmit_files_to_the tracking system
 get_files_from_the tracking system
 process_init_RIP_response
 view_application

10 application_queue_server
 send_resp_to_applicant
 update_RIP_record

update_RIP_record
process_update_RIP_resp
install_rrs

15 Obtaining a Digital Object from a Repository

This section describes how a user may obtain an account and retrieve digital objects from repositories.

Before a user can retrieve any objects for which payment is required, the user must first establish an account with a payment server system 702 on the network (Figure 25). This system will be used to create new accounts, debit and credit user accounts, and interface with one or more credit service centers 704. Payment servers have the following attributes:

Payment servers must be qualified; it must be possible to verify that a payment server is valid. This may be accomplished by establishing payment server distinguished names; if a signed message is received from a server with a payment server distinguished name, then the payment server is valid.

Payment servers may charge users for establishing accounts.

Users may request server information (including establishing account charges) from a server before attempting to set up a new account.

The following steps (Figure 26) illustrate how a user can establish a new account with a payment server. A user must have a certificate and a valid credit card number in order to establish an account.

The user (or his software agent) formats (706) a setup-new-account message containing the following:

The user's credit card number or other credit information;

Other identifying information, such as a street address, phone number;

Requested credit amount;

A list of valid signatures (either public key certificates and their associated certificate





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chains or distinguished names) for people allowed to charge to the account.

Optional category of use (e.g. this account is used to retrieve video objects only.)

Optional time limit (e.g. this account will be valid until December 31, 1995.) The payment server will normally keep an account active as long as a minimum line of credit is available.

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The setup-new-account message is digitally signed by the person establishing the account, and the signed message is sent (708) to the payment server with the above information.

The payment server verifies the signature on the received message (710). If the signature is invalid, the payment server sends an invalid-signature message to the user's system (712). Optionally, it may identify a maximum allowed credit limit.

If the signature is valid, using standard electronic credit card checking protocols or other methods as appropriate, the payment server electronically verifies the credit card number or other credit information, and requested credit line with a credit card service center or other credit authority (714). If the credit card number or other credit information is not valid (718), the payment server will send an invalid-credit-card message to the user's system (720).

If the requested credit limit is too high, the payment server will send a requested-credit-limit-is-too-high message to the user's system.

The payment server will verify that the other authorized user's identities are valid (722). If

any are invalid, an invalid-authorized-userspecified message is sent (724) to the user's system.

The payment server assigns an account number to the user (726) and stores the account information in a database for later use.

The payment server formats a new-account-response message (728) containing the following:

Account Number

10 Credit Limit Amount

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Time Limit

Categories of Use

List of authorized users (public key certificates plus the certificate chains.)
The requesting system or user's public key certificate chain, which will be used to verify the requestor's identity. Other less efficient methods can also be used, e.g. the payment server could be given sufficient information (the distinguished name) about the user to obtain the certificate chain from another database.

The payment server signs the formatted message and sends it to the user's system. Optionally, the user may be charged a fee for establishing this account and for maintaining it.

The user's system encrypts and stores (730) the received signed message. This account data will be submitted with any activity that may be billed.

Retrieving from a Repository (Simple Terms and Conditions)

Once an account is established, the user may retrieve an object from the repository by the following steps (Figures 25 and 27).

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The system requesting the digital object obtains (740) the hash code/handle server table from the handle server directory 59. This is done during the system's initialization.

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A user (or more likely, his software agent) obtains a handle 743 for an object (742). The handle may be obtained as part of a result of a bibliographic search or be provided by some other electronic means such as an electronic reference list in another object, or by scanning a barcoded sequence on paper. The system that is retrieving the digital object is referred to as the requesting system 745. Once the handle is obtained, the system that retrieves the object "hashes" the object's handle and uses this hashed value to perform a table lookup in the hash code/handle server table 744. The requesting system sends a request-for-pointerinformation UDP packet 748 to the handle server. One or more pointers, once returned, identifies the network location of the one or more repositories (if one is associated with the object) and one or more rights management system, if one is associated with the object. This strategy assures a random distribution of handle server requests among many handle servers distributed on a network without a central nodal point in the system (for reliability). The handle server verifies that the handle falls within the set of handles for whose hash values it is responsible 750.

If it is not in this set, due to some dynamic system change or error condition, the handle server sends an invalid-handle-server-selected response UDP packet to the requestor 752.

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If the requesting system receives an invalid-handleserver-selected response UDP packet, it refreshes its hash code/handle server table from the handle server directory, and the requesting system repeats 5 prior steps. This will typically be needed only if the table has changed between the time the table was downloaded and the actual request was made. If the handle server is responsible for the handle, it verifies that the handle is present in its 10 database 756. If not, it sends a handle-not-found response UDP packet to the requesting system 758. If the requesting system receives a handle-not-found response UDP packet, it informs (760) the user that it is unable to retrieve the object. 15 An object may be stored in several repositories. Multiple pointers to these repositories may be returned to the requesting system. For each pointer returned by the handle server, the requesting system uses the pointer to attempt to obtain a copy of the digital object 762. If a copy is successfully 20 obtained from one repository, the rest of the pointers will generally be ignored. If the requesting system cannot obtain the object from any of the repositories, it informs the user that it is 25 unable to retrieve the object 764. For retrieval purposes, the requesting system establishes a connection to the repository 766, which takes the form of a small set of transactions. The repository may examine the calling network 30 address or the requesting system in order to determine if the repository is being inundated with requests from one system. If the repository

determines that it is being bombarded, the

repository may disconnect from the requesting system and refuse to accept additional requests for a period of time 768.

Normally, however, the repository returns a randomvalue tag to the requesting system 770. A flag indicating if payment is required to obtain "Terms and Conditions" is included.

The requesting system needs the object's "Terms and Conditions" before the object can be retrieved. The requesting system signs and sends the following request-terms-and-conditions message 772 to the repository:

the object's handle;

the requesting system or user's digital signature over the repository generated random-value tag;

the requesting system or user's public key certificate chain, which will be used to verify the requestor's identity. Other less efficient methods can also be used, e.g. the repository could be given sufficient information (the distinguished name) about the user to obtain the certificate chain from another database. This is needed in the event the repository needs to bill for providing the Terms and Conditions;

a unique tag, assigned by the requesting system;

account information, previously signed by the payment server.

The repository verifies the digital signature of the requestor over the repository generated random-value tag 774. If the signature is not correct, the

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repository sends an invalid-random-value-tag response to the requesting system. The requesting system should log this error.

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The repository verifies the payment server's signature over the account information 778. If the signature is not correct, the repository sends an invalid-account-information response to the requesting system. The requesting system should log this error.

The repository retrieves the Terms and Conditions associated with the specified handle 790. If no object is associated with the handle, the repository sends an object-not-found message to the requesting system. The requesting system should log this error.

Otherwise, the repository signs the "Terms and Condition" message and sends 792 it to the requesting system, including:

The objectized list of terms/conditions/rights, along with the charge associated with each object and a status flag showing if the term/condition/right is mandatory;
The user-assigned unique key, which was received in the request-terms-and-conditions message;

Either the original random-value tag or possible a new random-value tag, generated by the repository. This is to avoid play back protection in the event the object identified by the handle is retrieved later.

The requesting system verifies the repository's

The requesting system verifies the repository's signature over the received "Terms and

Conditions" message 794. If the signature is invalid, the error is logged.

The user selects the terms and conditions desired 796, including the number of terms (e.g., A user may buy the right to make 5 copies of the object or to perform it ten times). The requesting system uses this information to create the retrieve-object message, including:

the object's handle 798;

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the repository generated random value tag; a list of the accepted "Terms and Conditions", including the quantity of each, where applicable;

the user's account information, which was originally signed by the payment server; the requesting system or user's public key certificate chain, which will be used to verify the requestor's identity. Other less efficient methods can also be used, e.g. the repository could be given sufficient information (the distinguished name) about the user to obtain the certificate chain from another database. the domain name and the port number which are used by the requesting system to receive the object.

limitations, if any, on the object by the requesting system (e.g. maximum object size it can receive)

The entire message is signed by the requestor. This is similar to signing a credit card slip.

The repository verifies the digital signature of the requestor over the random-value tag 800. If the signature is not correct, the repository sends an

invalid-random-value-tag response to the requesting system 802. The requesting system should log this error.

The repository establishes a connection to the payment server, 804.

The payment server returns a random-value tag to the repository 806.

The repository formats a debit-account message 808, including:

The retrieve-object message, as received by the repository and signed by the requestor;
The random value tag received from the payment server;

The repository's public key certificate chain, which will be used to verify the repository's identity. Other less efficient methods can also be used, e.g. the payment server could be given sufficient information (the distinguished name) about the user to obtain the certificate chain from another database.

The repository signs the retrieve-object and random-value portion of the message. The repository sends the debit-account message to the payment server system.

The payment server system validates the repository's signature over the debit-account message 810. If the signature is invalid, the payment server logs the error and sends a invalid-vendor-signature message to the repository.

The payment server system then validates the requestor's signature over the contained retrieveobject message 812. If the signature is invalid, an

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invalid-requestor-signature message is sent to the repository.

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The payment server validates the account information sent to it and verifies that the account is valid. If the requestor is not a valid user of the account, a invalid-user-for-account message is sent to the repository, and the payment server logs the event. Otherwise, the payment server, using already existing electronic credit verification methods, verifies that the amount may be charged to the account 816.

If the credit check is not successful, the appropriate error message (e.g. "Credit Line is insufficient", "Credit Card has Expired") is logged and sent to the repository.

Otherwise an account-has-been-debited message is signed by the payment server and sent to the repository 818.

The repository connects to the address/port specified in the request, and it transmits 820 to the requesting system:

the object's handle; the total amount debited from the account; the object, signed by the repository; portions of the relevant terms and conditions, if appropriate.

Retrieving Under Non-Simple Terms and Conditions

The following steps are followed for retrieving an object under non-simple terms and conditions.

If the user does not know the current terms and conditions associated with the object, steps 740 through 794 (Figures 27 and 28) are first performed. If the user determines that the terms and conditions returned by the

repository are not appropriate by themselves, then additional negotiations with the RMS associated with the digital object are required.

If a user already knows that negotiations are required with an RMS, but the RMS associated with the digital object is not yet known, then the user's system must perform steps 740 through 764 (Figure 27).

Otherwise, referring to Figure 29, the requesting system establishes a connection to the RMS 830.

The RMS returns a random-value tag to the requesting system 832.

The requesting system sends the following information to the RMS:

the object's handle;

the requestor's digital signature over the RMS generated random-value tag;

the requestor's public key certificate chain; the domain name and the port number which will be used by the requesting system to receive the chiest.

object;

a random value tag, assigned by the requesting system;

the accounting data previously signed by the payment server.

The RMS validates the digital signature over the signed random-value tag 836. If the signature is not correct, the RMS sends an invalid-random-value-tag response to the requesting system. The requesting system logs this error.

The repository verifies the payment server's signature over the account information 838. If the signature is not correct, the repository sends an invalid-account-information response to the

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requesting system. The requesting system should log this error.

The RMS enters into a mixed initiative dialog 840 with the user to determine what terms and conditions are mutually acceptable, if any. This may also entail human interaction.

The RMS connects to the repository 842, and the repository returns a random-value tag to the RMS 844.

The RMS sends 846 the following information to the repository:

the object's handle;

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the RMS's digital signature over the repository generated random-value tag;

the RMS public key certificate chain; the domain name and the port number which are used by the requesting system to receive the object;

the account information, previously signed by the payment server.

The repository verifies the digital signature of the RMS over the random-value tag 848. If the signature is not correct, the repository sends an invalid-random-value-tag response to the RMS. The RMS logs the error and sends a remote-RMS-error-invalid-random-value-tag error to the requesting system. The requesting system logs this error.

The repository verifies that the RMS is allowed to request object transfers for the object. If the transfer is not allowed, the repository sends an "invalid RMS" response to the RMS, which forwards the response to the requesting system. The requesting system logs the error in its log file.

The repository establishes a connection to the payment server 850.

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The payment server returns a random-value tag to the repository 852.

The repository formats a debit-account message 854, including:

The retrieve-object message, as received by the repository and signed by the requestor;
The random value tag received from the payment server;

The repository's public key certificate chain, which will be used to verify the repository's identity. Other less efficient methods can also be used, e.g. the payment server could be given sufficient information (the distinguished name) about the user to obtain the certificate chain from another database.

The repository signs the retrieve-object and random-value portion of the message.

The repository sends the debit-Account message to the payment server system.

The payment server system validates the repository's signature over the debit-account message. If the signature is invalid, the payment server logs the error and sends a invalid-vendor-signature-message to the repository.

The payment server system then validates the requestor's signature over the contained retrieveobject message. If the signature is invalid, an invalid-requestor-signature message is sent to the repository.

The payment server validates the account information sent to it and verifies that the account is valid.

a invalid-user-for-account message is sent to the repository, and the payment server logs the event. Otherwise, the payment server, using already existing electronic credit verification, verifies that the amount may be charged to the credit card associated with the account 860. If the credit check is not successful, the appropriate error message (e.g. "Credit Line is insufficient", "Credit Card has Expired") is logged and sent to the repository. Otherwise an account-has-been-debited message is signed by the payment server and sent to the repository 862. The repository sends 864 a object-retrieval-isallowed response to the RMS, and the repository disconnects from the RMS. The RMS forwards 866 the object-retrieval-is-allowed

If the requestor is not a valid user of the account,

response to the requesting system, and the RMS disconnects from the system.

The repository connects to the address/port specified in the request, and it transmits to the requesting system 868:

the object's handle;

the total amount debited from the account; the object, signed by the repository.

The repository sends a object-has-been-delivered confirmation to the RMS 870.

All of the transactions tracked and recorded in the above system could be used to feed an automated accounting system for a variety of purposes.

Retrieving Registration Information

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The public access system will be based on a commercial DBMS. Queries to this system will be performed using standard database techniques via a direct connection or over a network.

Other embodiments are within the scope of the following claims.

What is claimed is:

- 5

A method of managing digital objects in a 1; network, each of the digital objects comprising a set of 2 sequences of digits and having an associated identifier 3 which is unique across the network, the method comprising 4 storing the digital objects at locations accessible 5 in the network using a storage technique which renders the 6 digital objects secure against unauthorized access, 7 storing pointer information which associates each 8 digital object identifier with a pointer indicating the 9 location of the stored digital object in the network, and 10 for each of the digital objects, storing, separately 11 from the digital object, validation information sufficient 12 to permit a determination whether a purported instance of a 13 digital object is identical to the original instance. 14 2. The method of claim 1 further comprising 1 permitting an authorized user to have access to the 2 validation information, using the digital object identifier, 3 to determine whether a purported instance of a digital 4 object is identical to the original instance. 5 3. The method of claim 1 wherein the validation 1 information comprises a digital signature over the digital 2

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object.

A method of managing reference information about 1 digital objects in a network, each of the digital objects comprising a \set of sequences of digits and having an associated identifier which is unique across the network, the method comprising storing the digital objects, 6 storing\reference information for each of the 7 digital objects, and 8 storing Walidation information for each of the 9 digital objects which is substantially smaller in size than 10 the corresponding digital object and which enables a 11 determination of whether a purported instance of a digital 12 object is identical to the original instance. 13 The method of claim 4 further comprising 1 permitting authorized users to have access to the 2 reference information using the whique identifier. 3 6. The method of claim 4 wherein the reference 1 information comprises information concerning at least one of 2 the following: registration of rights in digital objects; 3 accesses to and uses of digital objects; the terms and 4 conditions for access and use of digital objects; the 5 ownership and licensing of rights to digital objects; links 6 between different digital objects.

7. A method of storing digital objects in a 1 network, each of the digital objects comprising a set of 2 sequences of digits, the method comprising generating an identifier for each of the digital objects which is unique across the network, storing the digital objects in the network, 6 7 storing pointer information that associates each identifier of a digital object with the location of the 8 digital object in the network, 9 generating verification information for each of the 10 digital objects, the verification information being 11 sufficient to determine whether a purported instance of the 12 digital object is identical to the original instance, and 13 . storing the verification information separately from 14 15 the digital object. 8. The method of claim 7 wherein the pointer versus 1 identifier information is stored in multiple servers on the 2 network, and the identifiers are generated in a manner to distribute the pointer versus unique identifier information relatively evenly amond the servers. 1 9. The method of claim 8 wherein the distribution of pointer versus unique identifiers to the multiple servers 2 is based on a hashing algorithm. 3

A method for enabling users of a network to 1 access digital objects stored in the network, each of the digital objects comprising a set of sequences of digits and having an associated identifier which is unique across the 5 network, the method domprising providing multiple pointer servers each of which 6 accepts identifiers of a subset of the digital objects and 7 returns corresponding pointers to the locations of the 8 digital objects in the network, and 9 providing a directory server which accepts 10 identifiers of any of the digital objects and returns the 11 locations of the pointer servers which accept those 12 13 identifiers. 11. A method of applying for registration of rights 1 in digital objects comprising 2 3 storing the digital objects in a network, generating validation information for each of the 5 digital objects sufficient to determine whether a purported instance of a digital object is identical to the original, 6 generating a unique identifier for each of the 7 digital objects, 8 associating with each of the unique identifiers a 9 pointer to the location of the digital object in the 10 network, and 11 submitting to a registering authority, an 12 application for registration of rights including the 13 validation information and the unique identifier. 14

A method of enabling holders of rights in digital objects to control terms and conditions under which they are accessed by users in a network, comprising storing the digital objects in the network in a 5 manner that permits only authorized access, storing, in the network, information about terms and 6 conditions for access to each digital object, 7 making the information about terms and conditions 8 available to a user in connection with a request for access 9 to a digital object 10 enabling the user to indicate assent to the terms 11 12 and conditions, and permitting access to the user only upon the user 13 indicating assent to the terms and donditions. 14 13. A method of enabling holders of rights in 1 digital objects to control terms under which rights in the 2 3 digital objects may be granted to others, comprising storing, in the network, terms/and conditions for 4 5 licensing rights, 6 providing information on terms and conditions pertaining to works or other information or material that 7 8 the digital object may be based on or incorporate, 9 making the terms and conditions available to potential rights holders and useks, as appropriate, upon 10 11 request via the network, enabling the potential rights holder and the current 12 rights holder to interact via the network to reach agreement 13 on terms and conditions for grant of rights, storing, in a recordation server on the network, 15 16 information identifying grants of rights for digital objects

on the network.

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A method to permit a user to comply with terms 1 2 and conditions of access to digital objects stored in a network, each of the digital objects comprising a set of 3 sequences of digits and having an associated identifier 5 which is unique across the network, the method comprising storing in the network information which associates 6 7 with each of the unique identifiers, a pointer to a rights management system including a terms and conditions server 8 9 containing terms and conditions, providing to the user in response to presentation of 10 11 a unique identifier the pointer to the terms and conditions 12 server, providing to the user in response to presentation of 13 the pointer, terms and conditions information, 14 enabling the user to indicate assent to the terms 15 and conditions, 16 in response to the assent, permitting the user to 17 access the digital object including performance of the 18 object. 19

A method for maintaining a record of information concerning digital objects stored on a network, each of the digital objects comprising a set of digits and having an associated identifier which is unique across the network, the method comprising 5 storing the digital objects on the network in a 6 7 manner that restricts unauthorized access to and transactions associated with the digital objects, 8 providing a reference service on the network, 9 separate from the storage of the digital objects, for 10 recording information about accesses to and transactions 11 associated with the digital objects, 12 recording in the reference service information about 13 accesses to and transactions associated with the digital 14 objects, and 15 permitting adcess to the records of the reference 16 service to authorized users. 17

A method for managing registration of claims to 1 rights in digital objects and any works or other information 2 or material that the object may be based on or incorporate, 3 comprising 4 storing, in a repository which is accessible on a 5 wide area network, copies of the digital objects, in a 6 manner that enables only authorized accesses to the digital 7 objects and permits verification that the stored digital 8 objects have not\been subjected to unauthorized alteration, 9 at an information and reference server which is 10 accessible on the hetwork at a different network address 11 from the repository providing registration services including receipt via the network of registration requests and delivery via the network of registration certifications, 14 and 15 accessing, from the repository va the network, the 16 objects for use in providing the registration services. 17 17. The method of claim 16 further comprising 1 enabling owners of rights in digital objects to 2 deposit copies of the digital objects in the repository, via 3 the network. 4 18. The method of claim 17 further comprising 1 providing a service, accessible on the network, for 2 generating a unique handle for each digital object. 3 19. The method of claim 18 wherein 1 the handle for a digital object is unique both 2 across the network and over time. 3 20. The method of claim 18 further comprising 1 providing a service, accessible on the network, for 2 generating the handle and locating the pointer associated 3 with the handle for a digital object.

21. The method of claim 18 wherein the handle is used to obtain a pointer to the network location of an 2 accessible copy of the digital object. 3 The method of claim 18 wherein the handle 1 2 comprises a pointer to the network location of information concerning obtaining authorization to use the digital 3 4 object. The method of claim 18 wherein the service is 1 23. provided at multiple different/locations on the network. 2 The method of clafim 20 wherein the service is 1 provided at multiple different locations on the network. 2 The method of claim 18 wherein the handles 1 comprise character strings associated with the servers which 2 3 generated them. The method of claim 21 further comprising 1 26. providing a service, accessible on the network, for 2 3 providing the pointer in response to a handle. 27. The method of claim 26 wherein there are 1 multiple servers providing the service, each serving a 2 portion of the handle space. 3 The method of claim 18 wherein there are 1 multiple handle generation servers that may generate handles 2 independently. 3 The method of claim 16 further comprising 29. 1 2 storing information concerning terms and conditions for access to and use of the digital objects. 3 The method of claim 29 wherein information 1 concerning simple terms and conditions is stored in the 2

information concerning non-simple terms is held in a rights

The method of claim 16 wherein additional

repository.

management system.

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The method of claim 18 wherein each of the 1 handles may be used to obtain one or more pointers to a location or locations on the network where a copy of the digital object to which the handle is assigned is accessible. 33. The method of claim 32 wherein each of the

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handles may be used to obtain one or more pointers to one or more rights management system in which information concerning non-simple terms is held and where rights negotiation may be carried out

34. The method of claim 18 wherein hash values are computed on the handles and the hash values are distributed 2 among multiple handle servers, each handle server having a table which associates handles with pointers.

- 35. The method of claim 16 further comprising responding to requests, received via the network, for copies of the stored digital objects.
- 36. The method of claim 35 further comprising 2 determining whether the requests for copies are authorized.
- 37. The method of claim 16 further comprising 1 2 providing multiple repositories.

38. A method for providing a repository for use in 1 network based regulation of claims in rights in digital 2 3 objects comprising storing copies of the digital objects in a 4 repository accessible on the network, the copies being 5 stored in a secure manner that precludes other than authorized access and that permits subsequent verification 7 that there have been no unauthorized changes to the objects, 8 9 providing handles for the digital objects, each handle being unique across the network and over time, each 10 handle including /information sufficient to locate a copy of 11 the digital object on the network, and 12 in connection with actions pertaining to regulation 13 of claims in rights in the digital objects, using the 14 handles to obtain authorized access to the digital objects. 15 The method of claim 38 wherein the actions 39. 1 include registration of claims in the rights. 2 The method of claim 39 wherein the actions 2 include obtaining copies of the digital objects in exchange for compensation.

A\network-based method for managing compensation for licensing of rights and other operations in digital objects comprising storing, \in a recordation system available to authorized access on the network, information identifying 5 the ownership of rights in digital objects, 6 7 receiving, \at a rights management system available on the network, requests for rights in digital objects were 8 the terms and conditions have not been stipulated in the 9 properties record, and 10 in response to the requests for rights, issuing, 11 from the rights management system to the recordation system 12 via the network, requests to record information or transfers 13 of rights in and other information pertaining to the digital 14 objects and in works or other information or material on 15 which the object may be based or incorporate. 16 42. The method of claim 41 wherein the rights 1 comprise exclusive rights. 2 43. The method of claim 41 further comprising recording the transfer of \rights in the recordation system 2 in a manner which is secure against alteration. 44. The method of claim 41 wherein the request for 1 transfer of rights is associated with a commitment to 2 compensate the owner of the rights.

45. A method for compensating owners of rights in digital objects stored in a network for access to the digital objects by users via the network, comprising storing on the network information associated with the digital objects and identifying the terms and conditions 5 on which a user may have access to the digital objects via 7 the network, in connection with a request by/a user for access to 8 a digital object, fetching and providing to the user the 9 terms and conditions, and 10 construing an action taken by the user in connection 11 with requesting access to the digital object as agreement 12 with the terms, and charging the user accordingly. 13

08/808050

IDENTIFYING, MANAGING, ACCESSING, A DESCRING DIGITAL OBJECTS AND ASSOCIATED ROSTS PAYMENTS

Abstract of the Disclosure

A method of managing digital objects in a network is presented. The objects are stored at locations accessible in the network using a storage technique which renders the digital objects secure against unauthorized access. Pointer information which associates each digital object identifier with a pointer indicating the location of the stored digital object is also stored in the network. For each digital object validation information is stored, separately from the digital object, and is sufficient to permit a determination whether a purported instance of a digital object is identical to the original. Other aspects include storing validation information which is substantially smaller in size than the corresponding digital object; storing validation information separately from the digital object; providing multiple servers each of which accepts identifiers of a subset of the digital objects and returns corresponding pointers to the locations of the digital objects in the network; registering raights in digital objects by submitting an application including the validation information and the unique identifier of a digital object; enabling holders of rights in digital objects to control terms and conditions under which they are accessed by users in a network; enabling holders of rights in digital objects to control terms and conditions under which rights in the digital objects may be granted to others; maintaining a record of information concerning digital objects stored on a network; providing a repository service; tracking events in the system; cataloging digital objects, and handling payment for access to digital objects and for obtaining rights using a network-based payment mechanism or compensation. #54047.811

- 75 **-**

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name, I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled IDENTIFYING , MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS, the specification of
which
■ is attached hereto. □ was filed on as Application Serial No
and was amended on
☐ was described and claimed in PCT International Application No
filed on and as amended under PCT Article 19 on
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 all information I know to be material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(a). I hereby appoint the following attorneys and/or agents to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: David L. Feigenbaum, Esq., Reg. No. 30,378; Robert E. Hillman, Esq., Reg. No. 22,837.
Address all telephone calls to <u>David L. Feigenbaum, Esq.</u> at telephone number 617/542-5070. Address all correspondence to <u>David L. Feigenbaum, Esq.</u> , Fish & Richardson, 225 Franklin Street, Boston, MA 02110-2804.
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 patents issued thereon.
Full Name of Inventor: Robert E. Kahn
Inventor's Signature: Date:
Residence Address: 909 Lynton Place, McLean, VA 22102
Citizen of: U.S.A.
Post Office Address: 909 Lynton Place, McLean, VA 22102
Full Name of Inventor: David K. Ely
Inventor's Signature: Date:
Residence Address: 3015 Miller Heights Road, Oakton, VA 22124
Citizen of: U.S.A.
Post Office Address: 3015 Miller Heights Road, Oakton, VA 22124
Revised: July 24, 1993 (391DECL, MRG)

Revised: July 24, 1993 (391DECL.MRG)

Applicant or Patentee: Robert E. Kahn et al.

Serial or Patent No.: Filed or

ROOM

October 22, 1993

IDENTIFYING, MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS (37 CFR 1.9(f) and 1.27(c)) - SMALL BUSINESS CONCERN

the owner of the small business concern identified below: an official of the small business concern empowered to act on behalf of the concern identified

Name of Small Business Concern: Corporation for National Research Initiatives Address of Small Business Concern: Suite 100, 1895 Preston White Drive, Reston, VA 22091

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.12, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled IDENTIFYING, MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS by inventor(s) Robert E. Kahn and David K. Ely described in

- [X] the specification filed herewith.
- [] application serial no. , filed .
 [] patent no. , issued .

If the rights held by the above identified small business concern are not exclusive, each individual, concern or organization having rights to the invention is listed below and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e). NOTE: Separate verified statements are required from each named person, concern or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

Full Name:	
Address:	

[] INDIVIDUAL [] SMALL BUSINESS CONCERN [] NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

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, any patent issuing thereon, or any patent on which this verified statement is directed.

Name:	Robert E. Kahn
Title:	President
Address:	1895 Preston White Drive, Reston, VA 22091
Signature:	Date:



Attorneys:

Robert E. Kahn et al.

October 22, 1993
IDENTIFYING, MANAGING, ACCESSING, AND TRACKING
DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

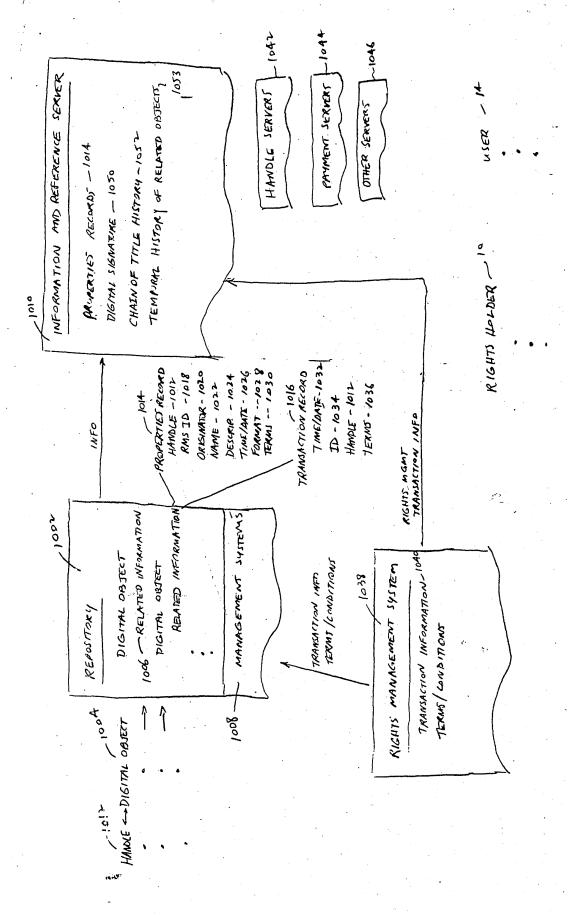
David L. Feigenbaum, Reg. No. 30,378 Fish & Richardson Suite 3100

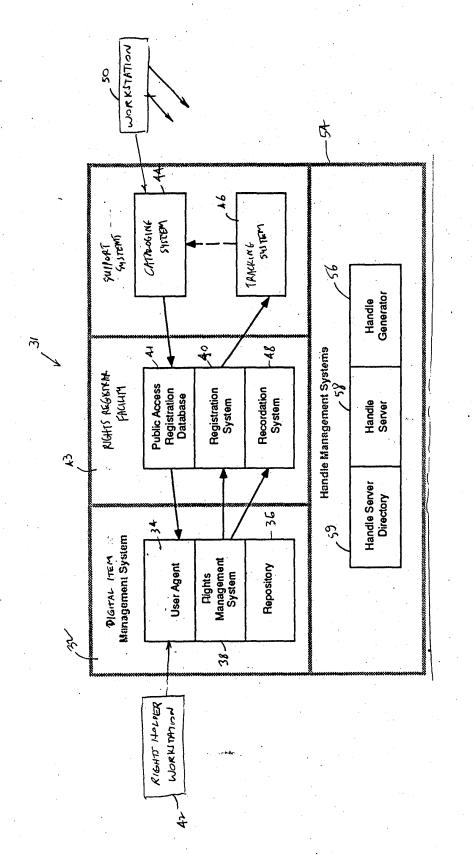
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I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office to Addressee" with sufficient
postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C.
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Petitioner Apple Inc. - Exhibit 1022, p. 90

FIGURE 3

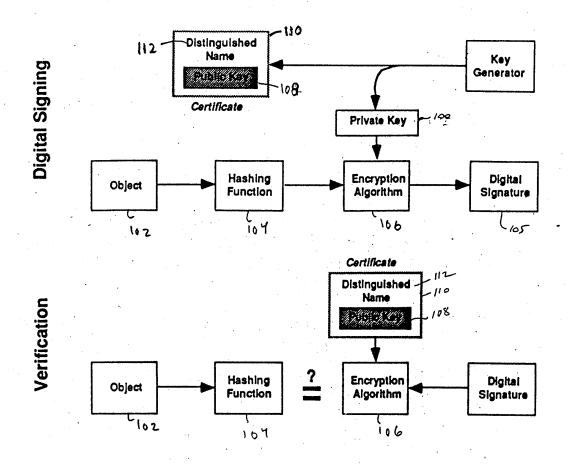


FIGURE A

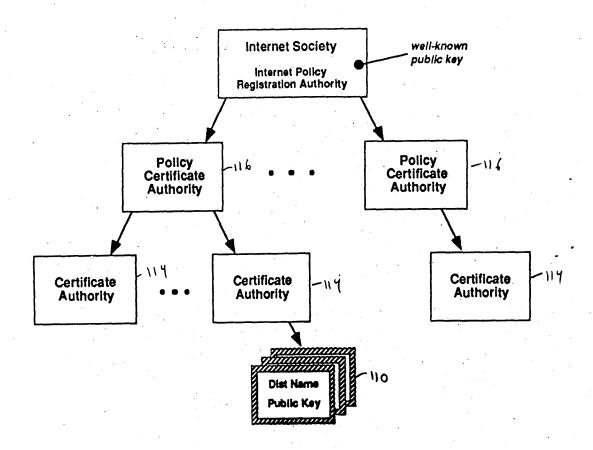
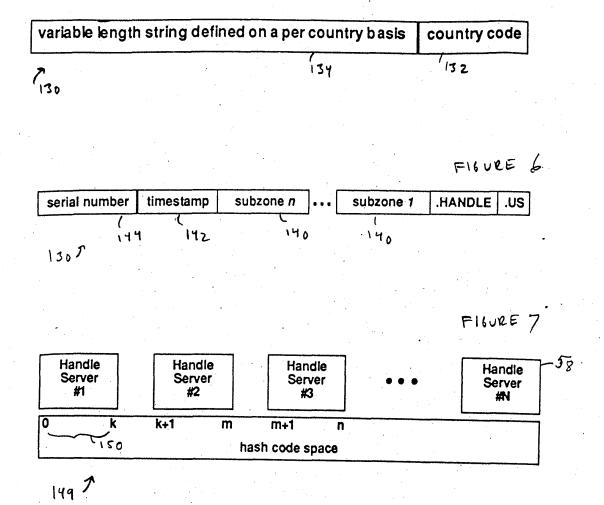


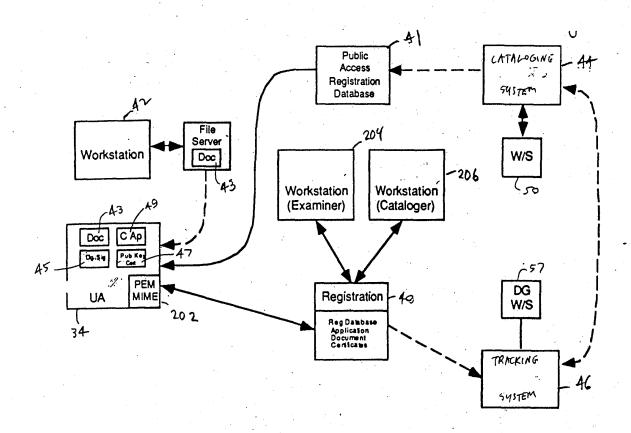
FIGURE - 51

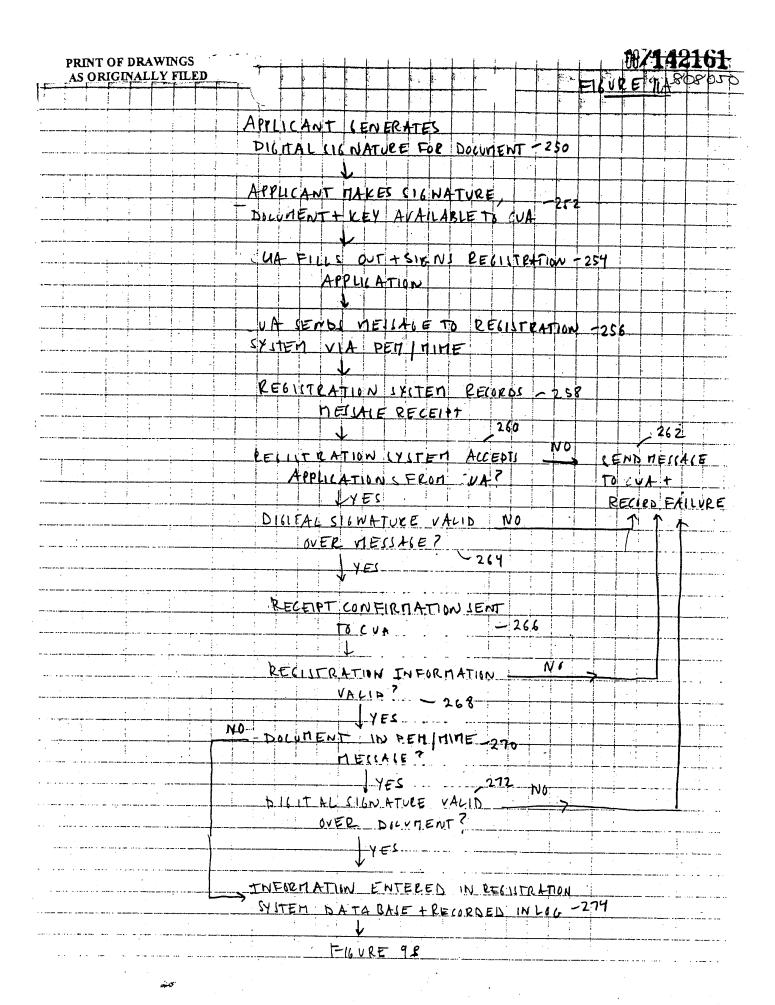


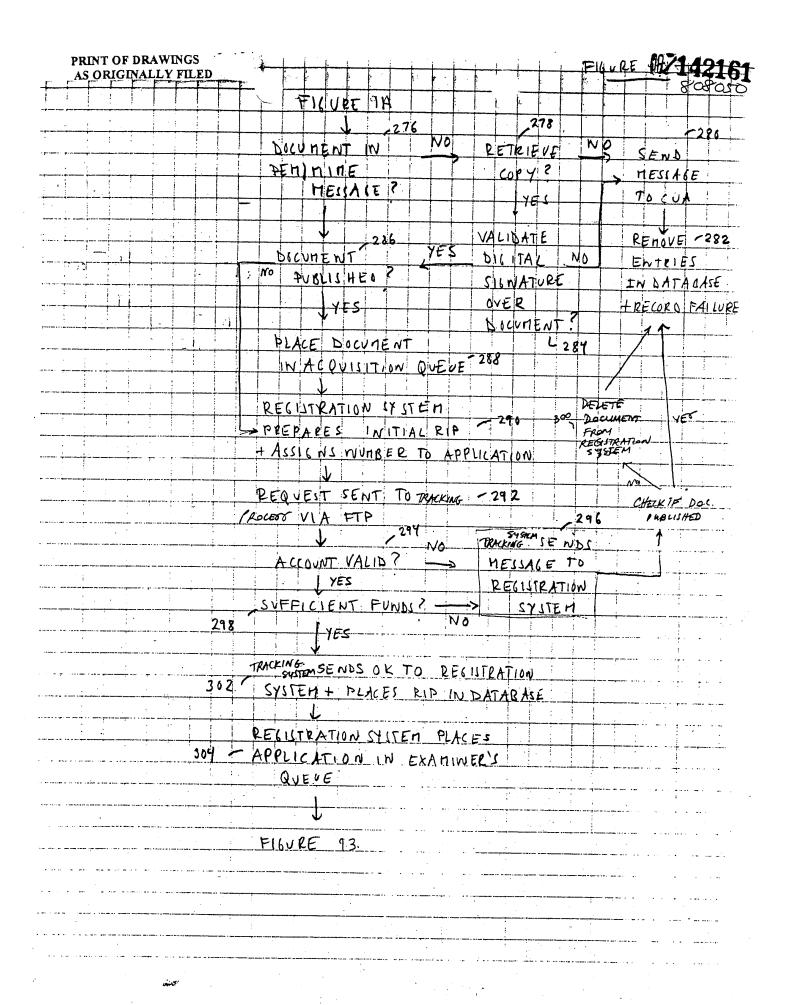
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FIGURE 10







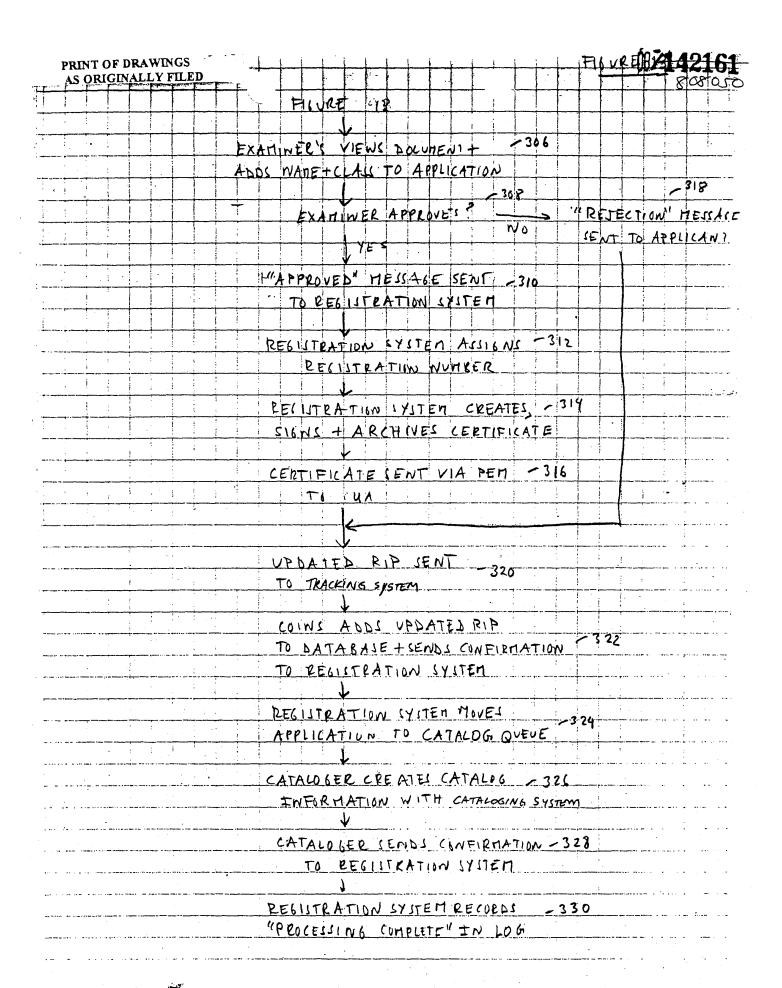
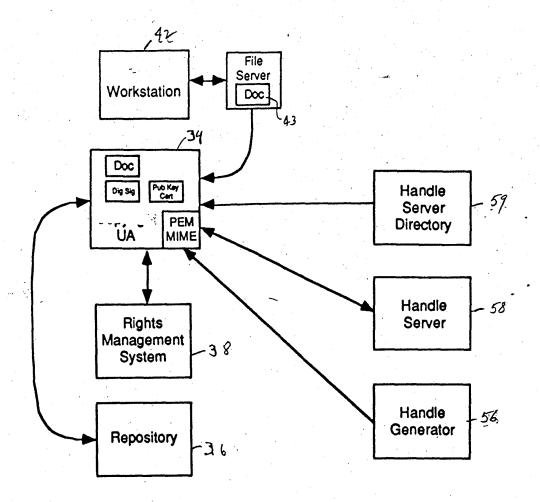


FIGURE 14

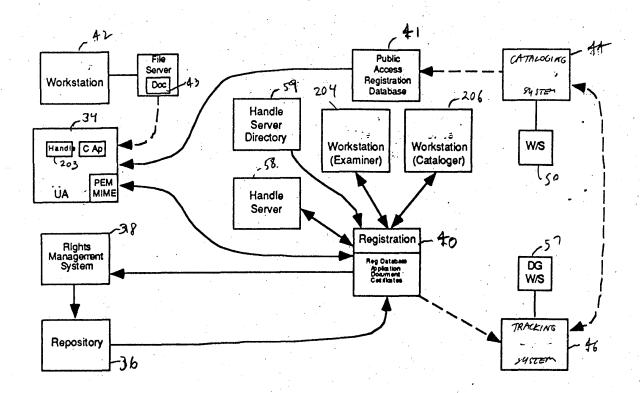


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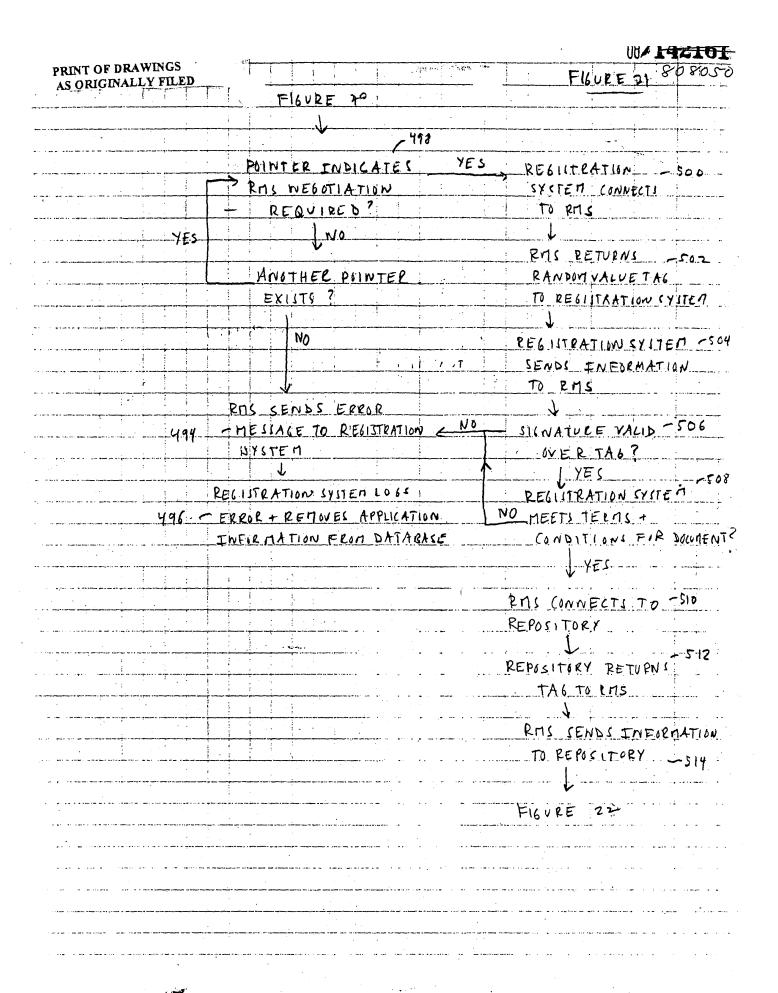
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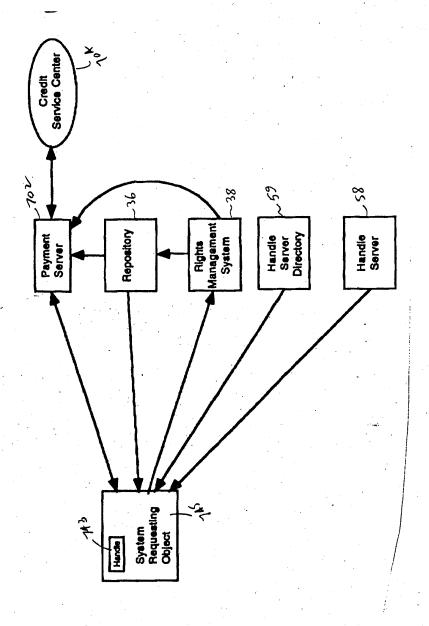
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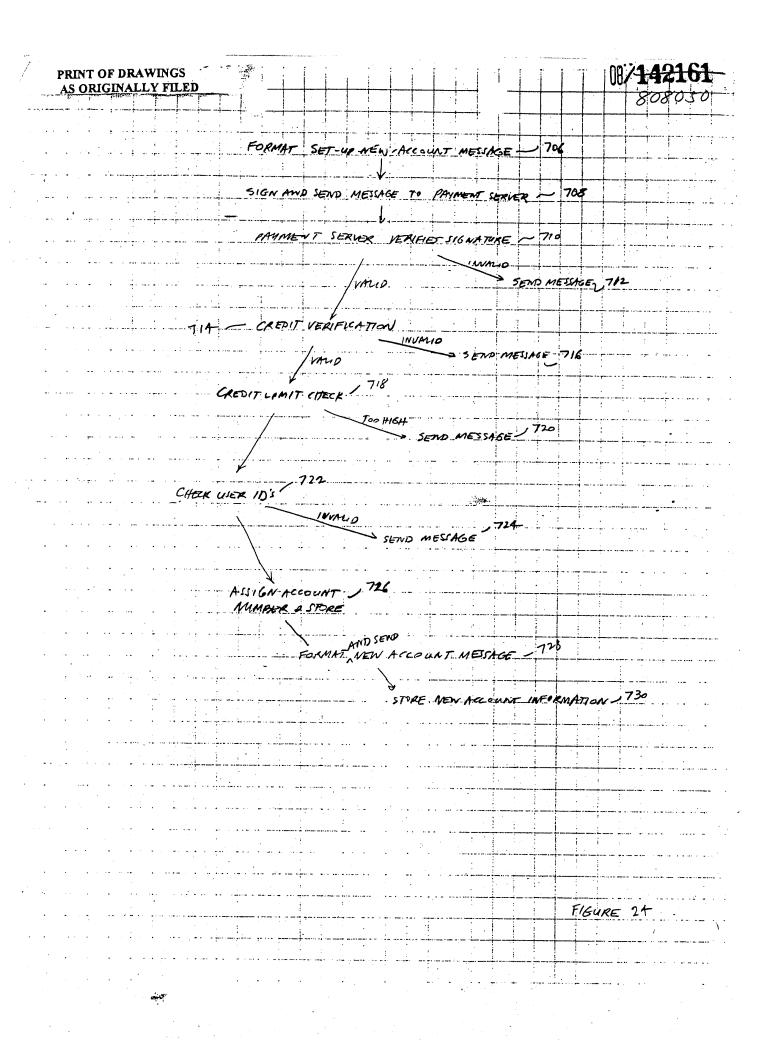
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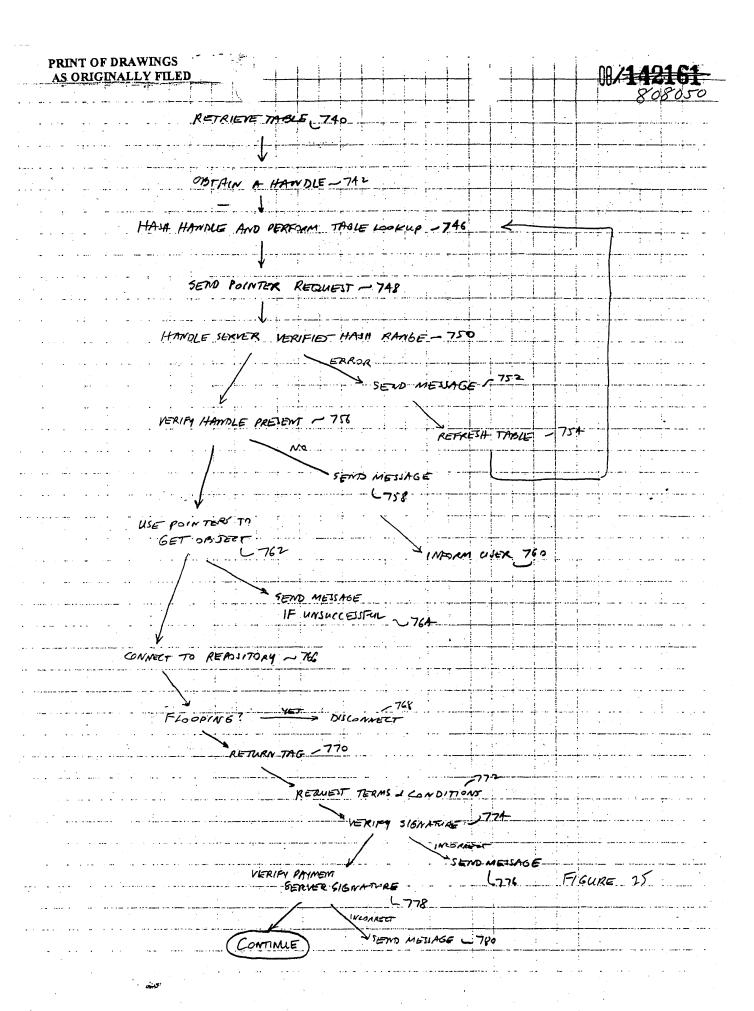
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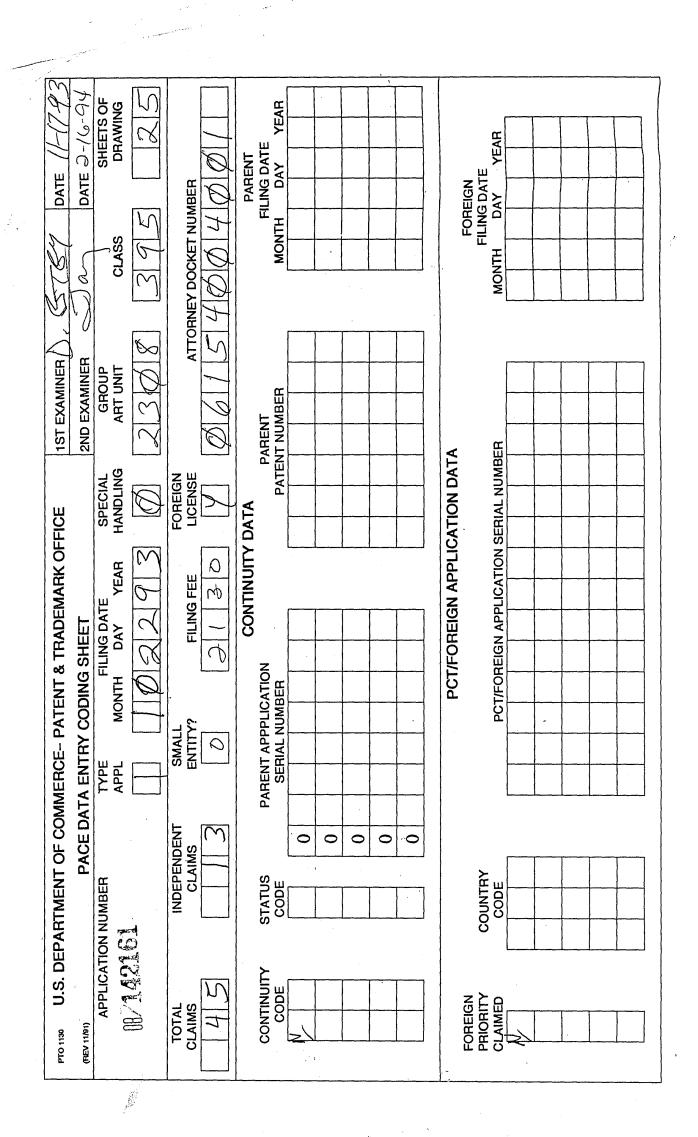
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	CLAIMS AS FILED - PART I SMALL ENTITY OF OTHER THAN										
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	CLAIMS AS AMENDED - PART II (Column 1) (Column 2) (Column 3) SMALL ENTITY OR SMALL ENTITY										
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RA'	TE	ADDI- TIONAL FEE		RATE	ADDI- TIONAL FEE
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NDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RA		ADDI- TIONAL FEE		RATE	ADDI- TIONAL FEE
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AMENDMENT C		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RA	TE	ADDI- TIONAL FEE		RATE	ADDI- TIONAL FEE
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	* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. TOTAL OR TOTAL										

*** 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.

FORM PTO-875
(Rev.10-92)

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



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ATTORNEY REGISTRATION NUMBERS	
CORRESPONDENCE NAME AND ADDRESS	
APPLICANT/INVENTOR DATA	
AUTHORITY CODE	
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UNITED STATES DEPARTMENT OF COMMER Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

FIRST NAMED APPLICANT FILING DATE APPLICATION NUMBER ATTY. DOCKET NO./TITLE

08/142,161

10/22/93

KAHN

06154004001

03A1/1123

FISH & RICHARDSON 225 FRANKLIN STREET BOSTON, MA 02110-2804

DATE MAILED:

NOTICE TO FILE MISSING PARTS OF APPLICATION FILING DATE GRANTED

11/23/93

An Application Number and Filing Date have been assigned to this application. However, the items indicated below are missing. The required items and fees identified below must be timely submitted ALONG WITH THE PAYMENT OF A SURCHARGE for items 1 and 3-6 only of \$ 130 for large entities or \$ 5 for small entities who have filed a verified statement claiming such status. The surcharge is set forth in 37 CFR 1.16(e).
If all required items on this form are filed within the period set below, the total amount owed by applicant as a large entity, \square small entity (verified statement filed), is \$\(\frac{1}{20}\).
Applicant is given ONE MONTH FROM THE DATE OF THIS LETTER, OR TWO MONTHS FROM THE FILING DATE of this application, WHICHEVER IS LATER, within which to file all required items and pay any fees required above 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).
1. ☐ The statutory basic filing fee is: ☐ missing ☐ insufficient. Applicant as a ☐ large entity ☐ small entity, must submit \$to complete the basic filing fee.
2. ☑ Additional claim fees of \$_\(\subseteq \begin{aligned} \begin{aligned} \text{ \int} \\ \
 3. □ The oath or declaration: □ is missing. □ does not cover items omitted at time of execution.
An oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date is required.
4. ☐ The oath or declaration does not identify the application to which it applies. An oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
5. The signature to the oath or declaration is: missing; a reproduction; by a person other than the inventor or a person qualified under 37 CFR 1.42, 1.43, or 1.47. 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.
6. \square The signature of the following joint inventor(s) is missing from the oath or declaration:
An oath or declaration listing the names of all inventors and signed by the omitted inventor(s), identifying this application by the above Application Number and Filing Date, is required.
7. The application was filed in a language other than English. Applicant must file a verified English translation of the application and a fee of \$under 37 CFR 1.17(k), unless this fee has already been paid.
8. \square A \$ processing fee is required for returned checks. (37 CFR 1.21(m)).
$9.\ \square$ Your filing receipt was mailed in error because check was returned without payment.
10. ☐ The application does not comply with the Sequence Rules. See attached Notice to Comply with Sequence Rules 37 CFR 1.821-1.825.
11. □ Other.
Direct the response and any questions about this notice to LUM, Application Processing Division, Special Processing and Correspondence Branch (703) 308-1202.

A copy of this notice \underline{MUST} be returned with the response.

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FIRST NAMED APPLICANT

ATTY. DOCKET NO./TITLE

8/142,161

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06154004001

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FISH & RICHARDSON 225 FRANKLIN STREET BQSTON, MA 02110-2804

DATE MAILED:

NOTICE TO FILE MISSING PARTS OF APPLICATION

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below THE \$	pplication Number and Filing Date have been assigned to this application. However, the vare missing. The required items and fees identified below must be timely submitted a PAYMENT OF A SURCHARGE for items 1 and 3-6 only of \$	ALONG WITH large entities or
If all reentity,	equired items on this form are filed within the period set below, the total amount owed by applican small entity (verified statement filed), is \$ 13.70.	it as a ⊿ Targe
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	is missing.	
	☐ does not cover items omitted at time of execution.	
	An oath or declaration in compliance with 37 CFR 1.63, identifying the application by Application Number and Filing Date is required.	y the above
4. 🗆	The oath or declaration does not identify the application to which it applies. An oath in compliance with 37 CFR 1.63, identifying the application by the above Application Filing Date, is required.	n or declaration n Number and
5. ☑	The signature to the oath or declaration is: ☐missing; ☐ a reproduction; ☐ by a pe the inventor or a person qualified under 37 CFR 1.42, 1.43, or 1.47. A properly sign declaration in compliance with 37 CFR 1.63, identifying the application by the above Number and Filing Date, is required.	ned oath or
6. □	The signature of the following joint inventor(s) is missing from the oath or declaration	on:
	An oath or declaration listing the names of all inventors the omitted inventor(s), identifying this application by the above Application Number Date, is required.	and signed by er and Filing
7.	The application was filed in a language other than English. Applicant must file a vertranslation of the application and a fee of \$under 37 CFR 1.17(k), unleadready been paid.	erified English ss this fee has
8. 🗆	A \$processing fee is required for returned checks. (37 CFR 1.21(m)).	
9. □	Your filing receipt was mailed in error because check was returned without paymen	t.
10. 🗆	The application does not comply with the Sequence Rules. See attached Notice to Consequence Rules 37 CFR 1.821-1.825.	omply with
11. 🗆	Other.	
Direc Divis	Other. the response and any questions about this notice to	ation Processing

A copy of this notice <u>MUST</u> be returned with the response.

COPY TO BE RETURNED WITH RESPONSE

ATTORNEY DOCKET NO. 06154/004001

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Robert E. Kahn et al. Serial No.: 08/142,161

Art Unit:

Examiner:

Filed Title

: October 22, 1993

: IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Commissioner of Patents and Trademarks Washington, DC 20231

Attention: Application Branch

RESPONSE TO NOTICE UNDER 37 CFR 1.53(d)

Responsive to the NOTICE TO FILE MISSING PARTS OF APPLICATION UNDER 37 CFR 1.53(d) mailed November 23, 1993 (copy of Notice enclosed), Applicants submit herewith the following:

Combined Declaration and Power of Attorney

Check for \$130.00, in payment of the Surcharge for late filing of the Declaration.

It is understood that this perfects the application and no additional filing fees are required.

Also submitted herewith is an Assignment for recording and a Deposit Account order form for the required fee.

> Date of Deposit December 22, 1993 I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

> > Kathleen M. O'Shea

080 KJ 01/13/94 08142161

1 105

If there are any other charges, or any credits, please apply them to Deposit Account No. 06-1050.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

61524.B11

COMBINED DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

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

I believe I am the original, first and sole inventor (if only one name is listed below) or an original,
first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for
which a patent is sought on the invention entitled <u>IDENTIFYING, MANAGING, ACCESSING, AND</u>
TRACKING DIGITAL OFFICIES AND ASSOCIATED RIGHTS AND PAYMENTS, the specification of

TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS, the specification of
which
☐ is attached hereto.
was filed on October 22, 1993 as Application Serial No. 08/142,161
and was amended on
☐ was described and claimed in PCT International Application No
med on and as amended under PC1 Article 19 on
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 all information I know to be material to patentability in accordance with Title 37, Code of Federal Regulations, §1.56(a). I hereby appoint the following attorneys and/or agents to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith: David L. Feigenbaum, Esq., Reg. No. 30,378; Robert E. Hillman, Esq., Reg. No. 22,837.
Esq., Reg. 110. 50,570, Robert E. Himman, Esq., Rog. 110. 22,057.
Address all telephone calls to <u>David L. Feigenbaum, Esq.</u> at telephone number 617/542-5070. Address all correspondence to <u>David L. Feigenbaum, Esq.</u> , Fish & Richardson, 225 Franklin Street, Boston, MA 02110-2804.
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 patents issued thereon.
Full Name of Inventor: Robert E. Kahn
Inventor's Signature: /www.silul Date: /1/17/93
Residence Address: 909 Lynton Place, McLean, VA 22102
Citizen of: U.S.A.
Post Office Address: 909 Lynton Place, McLean, VA 22102
Full Name of Inventor: David K. Ely
Inventor's Signature: Jawa K. Ch. Date: 12/17/93
Residence Address: 3015 Miller Heights Road, Oakton, VA 22124
Citizen of: U.S.A.
Post Office Address: 3015 Miller Heights Road, Oakton, VA 22124
Parised: July 24, 1002 (2011) ECT MPG)



ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED

Applicant : Robert E. Kahn et al.

Art Unit:

MAR 0 5 1895

Serial No.: 08/142,161

Examiner:

Filed Title

10/22/93

IDENTIFYING, MANAGING, ACCESSING AND TRACKING DIGITAL

OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Commissioner of Patents and Trademarks Washington, DC 20231

STATUS INQUIRY

Applicant respectfully inquires as to the status of the above application. The application was filed October 22, 1993, and a response to the Notice to File Missing Parts was filed December 22, 1993. Nothing has been received since.

A stamped, self-addressed envelope is enclosed for your reply to this inquiry. If there are any charges or any credits not covered, please apply them to Deposit Account 06-1050.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

114364.B11

Date of Deposit + Lhway 22, 199
I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks.

Washington, D.C. 20231.

eva

#4-



UNITED STATES DEPARTMENT OF COMMERCE Petent and Trademark Office ASSISTANT SECRETARY AND COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

Serial Number: 08 142 16 (
Filing Date: 10/22/93	
Group Art Unit: 2317	
STATUS LETTER REPLY	
ACTION BY THE EXAMINER	•
Expected date for action on this application: Mo. // Yr95	
() APPLICANTS RESPONSE TO THE OFFICE ACTION Is(supply date) has not been received by the Office.	MAILED
() Other (explain)	
<u> </u>	



UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 2D231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
		•		
08/142,163	l 10/22/93	KAHN	R	06154004001
				EXAMINER
		Torona domina a	LUU , L	
DAVID L. F	FEIGENBALM	B3M1/0914	ART UNIT	PAPER NUMBER
FISH & RIC				5
225 FRANKL				•
BUSTUM, MA	4 02110-280	4.	2317	
			DATE MAILED:	09/14/95
		charge of your application.		what is the mass training
COMMISSIONER OF F	ATENTS AND TRADE	MARKS	•	
			•	
1 A				
This application ha	s been examined	Responsive to communication filed on	•	This action is made final.
A shortened statutory n	varied for raspenses to th	is action is set to expire month(a) 7 O days to	om the date of this letter
		se will cause the application to become aban-		on the date of this letter.
·	,			
Part I THE FOLLOW	ING ATTACHMENT(5)	ARE PART OF THIS ACTION:	•	
1. Notice of Re	eferences Cited by Exar	niner, PTO-892. 2.	Notice of Draftsman's Pa	tent Drawing Review, PTO-948.
	t'Cited by Applicant, PT		Notice of Informal Patent	Application, PTO-152.
5. Information	on How to Effect Drawi	ng Changes, PTO-1474. 6	<u> </u>	•
Part II SUMMARY C	F ACTION	· · · · · · · · · · · · · · · · · · ·		
A.i	1-4			
1. X Claims				_ are pending in the application.
Of the at	oove, ciaims		are	withdrawn from consideration.
2. Claims				have been consulted
z Claims				_ have been cancelled.
3. Claims				are allowed.
4.				are rejected.
5. Claims				are objected to.
6. Claims	1-45		are subject to restrict	on or election requirement.
<u> </u>		formal drawings under 37 C.F.R. 1.85 which		·
		-	are acceptable for exam	magon purposes.
		onse to this Office action.		
9. ☐ The corrected are ☐ accept	or substitute drawings habie; □ not acceptable	nave been received on (see explanation or Notice of Draftsman's Pa	Under 37 (atent Drawing Review, F	C.F.R. 1.84 these drawings PTO-948).
		sheet(s) of drawings, filed on miner (see explanation).	has (have) been	□approved by the
11. The proposed	drawing correction, filed	i, has been □ap	proved; 🛘 disapproved	(see explanation).
		n for priority under 35 U.S.C. 119. The certifial no; filed on		received not been received
		in condition for allowance except for formal m k parte Quayle, 1935 C.D. 11; 453 O.G. 213.		o the merits is closed in
14. Other				

EXAMINER'S ACTION

PTOL-326 (Rev. 2/93)

Art Unit: 2317

1. Applicant is advised that the response to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed.

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claims 1-9, and 15 are drawn to DATABASE OR FILE MANAGEMENT SYSTEM, classifiable in class 395 subclass 600.

Group II. Claim 10 is drawn to computer to computer addressing, classifiable in class 395 subclass 200.16.

Group III. Claims 11 and 16-40 are drawn to security in computer network, classifiable in class 395 subclass 187.01.

Group IV. Claims 12-14 are drawn to control terms and conditions in computers and data processing systems, classifiable in class 364 subclass 569.

Art Unit: 2317

Group V. Claims 41-45 are drawn to compensation in using computers and data processing systems, classifiable in class 364 subclass 464.01.

3. The inventions are distinct, each from the other because of the following reasons:

- a. These inventions have acquired a separate status in the art as shown by their different classification
- b. The search required for one Group is not required for the other Groups

For the reasons above restriction for examination purposes as indicated is proper.

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

Art Unit: 2317

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Le H. Luu, whose telephone number is (703) 305-9650. The examiner can normally be reached Monday through Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee, can be reached at (703) 305-9717. The fax phone number for this Group is (703) 305-9564.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Le H. Luu

September 12, 1995

THOMAS C. LEE SUPERVICEDBY PATENT EXAMINEA GROUP 230

BH 11-9-95

PATENT

ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

cant : Robert E. Kahn et al.

Art Unit: 2317

Serial No.: 08/142,161

Examiner: Luu

Filed Title

October 22, 1993 IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Box Non Fee Amendment

Commissioner of Patents and Trademarks Washington, DC 20231

RECEIVED NOV 0 7 1995

RESPONSE TO REQUIREMENT FOR RESTRICTIONGROUP 2300

Applicant elects Group IV without traverse.

Please charge any fees due in connection with this response to Deposit Account No. 06-1050.

Respectfully submitted,

Date:

David L. Feigenbaum

Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

149940.B11

Date of Deposit I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

Petitioner Apple Inc. - Exhibit 1022, p. 129



UNITED STATE: DEPARTMENT OF COMMERCE Patent and Trademark Office Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED IN	VENTOR		ATTORNEY DOCKET NO.
	•				W//
08/142,161	10/22/93	KAHN	,	R	0615400/101
					EXAMINER
		B3M1/1122			
DAVID L. F	EIGENBAUM	Application of the Control of the Application of the Control of th		ART UNIT	PAPER NUMBER
FISH & RIC					~7
225 FRANKL		А		2317	
BOSTON, MA	02110-200	~†			
				DATE MAILED:	11/22/95
This is a communication	n from the examiner in	charge of your application.			
COMMISSIONER OF F	PATENTS AND THAD	EMAHKS			
	`			. 1	-
7_₹		<u></u>		116/15	-
This application ha	s been examined	Responsive to communicati	on filed on(€	10 9	This action is made final.
A shortened statutory o	eriod for response to t	nis action is set to expire	7 month(s),	& days fro	ann dha alada af thia latta.
		is action is set to expire		aay o m	om the date of this letter.
Part The FOLLOWS	ING ATTACHMENT(S) ARE PART OF THIS ACTION:			
1. Notice of Re	eferences Cited by Exa	miner, PTO-892.	2. Notic	e of Draftsman's Pa	tent Drawing Review, PTO-948.
3. Notice of Art	t Cited by Applicant, P	TO-1449.		_	Application, PTO-152.
5. Information	on How to Effect Draw	ing Changes, PTO-1474.	6. 🔲		
Part II SUMMARY O	F ACTION		•		
Δa	1 1/			•	
1. Claims	1-47				_ are pending in the application.
Of the ab	oove, claims(11 and 1	5-45	are	withdrawn from consideration.
2. Claims					_ have been cancelled.
3. Claims					_ are allowed.
4. 💢 Claims	12-14				_ are rejected.
5. Claims					_ are objected to.
7. This application	n has been filed with in	formal drawings under 37 C.F.R.	1.85 which are a	acceptable for exam	Ination purposes.
8. Formal drawing	gs are required in resp	onse to this Office action.			
9. ☐ The corrected of are ☐ accepta	or substitute drawings able: 🗆 not acceptable	have been received on (see explanation or Notice of Dr	aftsman's Patent	Under 37 C Drawing Review, P	F.R. 1.84 these drawings TO-948).
10. The proposed examiner;	additional or substitute disapproved by the exa	sheet(s) of drawings, filed on aminer (see explanation).		. has (have) been	☐ approved by the
11. The proposed of	drawing correction, file	d, has t	oeen □approv	ed; 🛘 disapproved	(see explanation).
12. Acknowledgem	ent is made of the ciai parent application, se	m for priority under 35 U.S.C. 11	9. The certified diled on	copy has 🛘 been r	ecelved
		in condition for allowance except c parte Quayle, 1935 C.D. 11; 45		rs, prosecution as to	the merits is closed in
14. Other					

EXAMINER'S ACTION

PTOL-326 (Rev. 2/93)

Art Unit: 2317

1. Claims 12-14 are presented for examination.

2. Claims 1-11 and 15-45 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b) as being drawn to a non-elected invention. Election was made without traverse in Paper No. 6.

-2-

- 3. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.
- 4. The Abstract of the Disclosure is objected to because there are extraneous characters "#54047.B11". Correction is required. See M.P.E.P. § 608.01(b).
- 5. Applicant is reminded of the proper language and format of an Abstract of the Disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 250 words. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said", should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Art Unit: 2317

-3-

6. Claims 13 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The breadth, scope, and meaning of the term "may be", "potential", and "recordation server" are vague and indefinite.

- 7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:
- A person shall be entitled to a patent unless -(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 37 1(c) of this title before the invention thereof by the applicant for patent.
- 8. Claims 12-14 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wyman patent no. 5,260,999.
- 9. As to claim 12, Wyman teaches the invention substantially as claimed, including a method of enabling holders of rights in digital objects to control terms and conditions under which they are accessed by users in a network, comprising

storing the digital objects in the network in a manner that permits only authorized access (col. 2 lines 35-52),

storing, in the network, information about terms and conditions for access to each digital object (col. 1 lines 48-59),

making the information about terms and conditions available to a user in connection with a request for access to a digital object (col. 21 lines 22-45),

enabling the user to indicate assent to the terms and conditions (col. 11 lines 3-30), and

permitting access to the user only upon the user indicating assent to the terms and conditions (Abstract, and col. 11 lines 3-30).

10. As to claim 13, Wyman teaches the invention substantially as claimed, including a method of enabling holders of rights in digital objects to control terms under which rights in the digital objects can be granted to others, comprising

storing, in the network, terms and conditions for licensing rights (col. 1 lines 27-60),

providing information on terms and conditions pertaining to works or other information or material that the digital object may be based on or incorporate (col. 1 lines 48-59),

making the terms and conditions available to new right holders and users, as appropriate, upon request via the network (col. 21 lines 21 lines 22-45),

enabling the new rights holder and the current rights holder to interact via the network to reach agreement on terms and conditions for grant of rights (col. 11 lines 3-30),

Art Unit: 2317

-5-

storing, in a server on the network, information identifying grants of rights for digital objects on the network (col. 1 lines 48-59).

11. As to claim 14, Wyman teaches the invention substantially as claimed, including a method to permit a user to comply with terms and conditions of access to digital objects stored in a network, each of the digital objects comprising a set of sequences of digits and having an associated identifier which is unique across the network, the method comprising

storing in the network information which associates with each of the unique identifiers, a pointer to a rights management system including a terms and conditions server containing terms and conditions (col. 36 line 64 - col. 37 line 23),

providing to the user in response to presentation of a unique identifier the pointer to the terms and conditions server (col. 36 line 64 - col. 37 line 23),

providing to the user in response to presentation of the pointer, terms and conditions information (col. 21 lines 22-45),

enabling the user to indicate assent to the terms and conditions (col. 11 lines 3-30),

in response to the assent, permitting the user to access the digital object including performance of the object (Abstract).

Art Unit: 2317

12. Further references of interest are cited on Form PTO-892 which

is an attachment to this office action.

13. Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Le H. Luu,

whose telephone number is (703) 305-9650. The examiner can

normally be reached Monday through Friday from 7:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Thomas C. Lee, can be

reached at (703) 305-9717. The fax phone number for this Group is

(703) 308-5359.

Any inquiry of a general nature of relating to the status of

this application should be directed to the Group receptionist whose

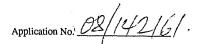
telephone number is (703) 305-9600.

Le H. Luu

November 13, 1995

-6-

	M PTO		U.S. DEPARTMENT PATENT AND TRAI	DEMARK OFFICE	Serial No. 08/808050 08/142,101	GROUP ART UNIT	ATTACHN TO PAPE NUMB	R /	7
INC	NOTICE OF REFERENCES CIT			SCHED	APPLICANT(S)				
						Kahn et	al		
				.S. PATEN	IT DOCUME				
*		DOCUMENT NO	DATE		NAME	CLASS	SUB-CLAS	SS FILING DA	
	Α	5,260,999	11/09/93		Wyman	384	4	06/28/	91
	В	5,357,630	10/18/94	C	prescu et al	395	600	10/21/	91
	С	5,230,051	07/20/93		Quan	395	700		
	D	4,937,863	06/26/90]	Robert et al	380	4	·	
	E	4,953,209	08/28/90	Ry	der, Sr. et al	380	23	N .	
	F	5,339,403	08/16/94		Parker	395	425	05/01/	91
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}	Le F	lien Luu	11/13/95	·				Form 892BMR	12107



NOTICE OF DRAFTSPERSON'S PATENT DRAWING REVIEW

PTO Draftpersons review all originally filed drawings regardless of whether they are designated as formal or informal. Additionally, patent Examiners will review the drawings for compliance with the regulations. Direct telephone inquiries concerning this review to the Drawing Review Branch, 703-305-8404.

The drawings filed (insert date) 10/22/93, are not objected to by the Draftsperson under 37 CFR 1.84 or 1.152.	Modified forms. 37 CFR 1.84(h)(5) Modified forms of construction must be shown in separate views.
B objected to by the Draftsperson under 37 CFR 1.84 or 1.152 as indicated below. The Examiner will require submission of new, corrected	Fig(s)
drawings when necessary. Corrected drawings must be submitted according to the instructions on the back of this Notice.	8. ARRANGEMENT OF VIEWS. 37 CFR 1.84(i) — View placed upon another view or within outline of another.
DRAWINGS. 37 CFR 1.84(a): Acceptable categories of drawings: Black ink. Color. Not black solid lines. Fig(s)	Fig(s) Words do not appear in a horizontal, left-to-right fashion when page is either upright or turned so that the top becomes the right
Color drawings are not acceptable until petition is granted.	side, except for graphs. Fig(s)
 PHOTOGRAPHS. 37 CFR 1.84(b) Photographs are not acceptable until petition is granted. 	9. SCALE. 37 CFR 1.84(k) Scale not large enough to show mechanism without crowding when drawing is reduced in size to two-thirds in reproduction.
 GRAPHIC FORMS. 37 CFR 1.84 (d) Chemical or mathematical formula not labeled as separate figure. 	Fig(s)
Fig(s) Group of waveforms not presented as a single figure, using common vertical axis with time extending along horizontal axis. Fig(s)	Elements of same view not in proportion to each other. Fig(s)
Individuals waveform not identified with a separate letter designation adjacent to the vertical axis. Fig(s)	10. CHARACTER OF LINES, NUMBERS, & LETTERS. 37 CFR 1.84(1) Lines, numbers & letters not uniformly thick and well defined,
4. TYPE OF PAPER. 37 CFR 1.84(e)	clean, durable, and black (except for color drawings). Fig(s)
Paper not flexible, strong, white, smooth, nonshiny, and durable. Sheet(s)	11 STADDIC 27 CED 1 94(-)
Erasures, alterations, overwritings, interlineations, cracks, creases, and folds not allowed. Sheet(s)	 SHADING. 37 CFR 1.84(m) Shading used for other than shape of spherical, cylindrical, and conical elements of an object, or for flat parts.
5. SIZE OF PAPER. 37 CFR 1.84(f): Acceptable paper sizes: 21.6 cm. by 35.6 cm. (8 1/2 by 14 inches)	Fig(s) Solid black shading areas not permitted. Fig(s)
21.6 cm. by 33.1 cm. (8 l/2 by 13 inches) 21.6 cm. by 27.9 cm. (8 l/2 by 11 inches)	12. NUMBERS, LETTERS, & REFERENCE CHARACTERS. 37 CFR
21.0 cm. by 29.7 cm. (DIN size A4)	1.84(f) Numbers and reference characters <u>not</u> plain and legible. 37 CFR
All drawing sheets not the same size. Sheet(s) Drawing sheet not an acceptable size. Sheet(s)	1.84(p)(1) Fig(s)
6. MARGINS. 37 CFR 1.84(g): Acceptable margins:	Numbers and reference characters used in conjuction with brackets, inverted commas, or enclosed within outlines. 37 CFR
Paper size	1.84(p)(1) Fig(s)
21.6 cm. X 35.6 cm. 21.6 cm X 33.1 cm. 21 cm. X 27.9 cm. 21 cm. X 29.7 cm. (8 1/2 X 14 inches) (8 1/2 X 13 inches) (8 1/2 X 11 inches) (OIN Size A4) T 5.1 cm. (2") 2.5 cm. (1") 2.5 cm.	the view. 37 CFR 1.84(p)(l) Fig(s) English alphabet not used. 37 CFR 1.84(p)(2)
L .64 cm. (1/4") .64 cm. (1/4") .65 cm. (1/4") 2.5 cm. R .64 cm. (1/4") .64 cm. (1/4") .65 cm. (1/4") 1.5 cm. B .64 cm. (1/4") .64 cm. (1/4") .64 cm. (1/4") 1.0 cm.	Fig(s) Numbers, letters, and reference characters do not measure at least .32 cm. (1/8 inch) in height. 37 CFR(p)(3)
Margins do not coilform to chast above. 7 19-22, 25-27 Sheet(s) Right (R) Bottom (B)	$7 \cdot \frac{\operatorname{Fig(s)} - 1}{1 - 2}$
0.	13. LEAD LINES. 37 CFR 1.84(q) Lead lines cross each other. Fig(s)
7. VIEWS. 37 CFR 1.84(h) REMINDER: Specification may require revision to correspond to	Lead lines missing. Fig(s)
drawing changes. All views not grouped together. Fig(s)	Lead lines not as short as possible. Fig(s)
Views connected by projection lines. Fig(s)	14. NUMBERING OF SHEETS OF DRAWINGS. 37 CFR 1.84(t)
Views contain center lines. Fig(s) Partial views. 37 CFR 1.84(h)(2)	Number appears in top margin. Fig(s)Number not larger than reference characters.
Separate sheets not linked edge to edge.	Fig(s)
Fig(s) View and enlarged view not labeled separately.	Sheets not numbered consecutively, and in Arabic numerals, beginning with number 1. Sheet(s)
Fig(s) Long view relationship between different parts not clear and	
unambiguous. 37 CFR 1.84(h)(2)(ii)	 NUMBER OF VIEWS. 37 CFR 1.84(u) Views not numbered consecutively, and in Arabic numerals,
Fig(s) Sectional views. 37 CFR 1.84(h)(3)	beginning with number 1. Fig(s)
Hatching not indicated for sectional portions of an object.	View numbers not preceded by the abbreviation Fig. Fig(s)
Fig(s)Hatching of regularly spaced oblique parallel lines not spaced	Single view contains a view number and the abbreviation Fig. Numbers not larger than reference characters.
sufficiently. Fig(s)	Fig(s)
lines. Fig(s) Cross section not drawn same as view with parts in cross section	16. CORRECTIONS. 37 CFR 1.84(w) Corrections not durable and permanent. Fig(s)
with regularly spaced parallel oblique strokes. Fig(s) Hatching of juxtaposed different elements not angled in a different	17. DESIGN DRAWING. 37 CFR 1.152
way, Fig(s)	Surface shading shown not appropriate. Fig(s)
Alternate position. 37 CFR 1.84(h)(4) A separate view required for a moved position.	Solid black shading not used for color contrast. Fig(s)
Fig(s)	
ATTACHMENT TO PAPER NO	REVIEWER TOWN DATE 3/29/94

REMINDER

Drawing changes may also require changes in the specification, e.g., if Fig. 1 is changed to Fig. 1A, Fig. 1B, Fig. 1C, etc., the specification, at the Brief Description of the Drawings, must likewise be changed. Please make such changes by 37 CFR 1.312 Amendment at the time of submitting drawing changes.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

1. Correction of Informalities--37 CFR 1.85

File new drawings with the changes incorporated therein. The application number or the title of the invention, inventor's name, docket number (if any), and the name and telephone number of a person to call if the Office is unable to match the drawings to the proper application, should be placed on the back of each sheet of drawings in accordance with 37 CFR 1.84(c). Applicant may delay filing of the new drawings until receipt of the Notice of Allowability (PTOL-37). Extensions of time may be obtained under the provisions of 37 CFR 1.136. The drawing should be filed as a separate paper with a transmittal letter addressed to the Drawing Review Branch.

2. Timing of Corrections

Applicant is required to submit **acceptable** corrected drawings within the three-month shortened statutory period set in the Notice of Allowability (PTOL-37). If a correction is determined to be unacceptable by the Office, applicant must arrange to have acceptable correction resubmitted within the original three-month period to avoid the necessity of obtaining an extension of time and paying the extension fee. Therefore, applicant should file corrected drawings as soon as possible.

Failure to take corrective action within set (or extended) period will result in **ABANDONMENT** of the Application.

3. Corrections other than Informalities Noted by the Drawing Review Branch on the Form PTO 948

All changes to the drawings, other than informalities noted by the Drawing Review Branch, **MUST** be approved by the examiner before the application will be allowed. No changes will be permitted to be made, other than correction of informalities, unless the examiner has approved the proposed changes.

=> d his (FILE 'USPAT' ENTERED AT 08:53:40 ON 13 NOV 95) ACT C65D13/L _____ 2048) SEA FILE=USPAT AUTHORI? (5A) ACCESS? L1 L2 5892) SEA FILE=USPAT TERM# (5A) CONDITION# (LЗ 12) SEA FILE=USPAT L1 AND L2 -----FILE 'JPOABS' ENTERED AT 10:33:29 ON 13 NOV 95 21 S AUTHORI? (5A) ACCESS? L4L5 249 S TERM# (5A) CONDITION# 0 S L4 AND L5 L6

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06-227087

Aug. 16, 1994

L5: 4 of 249

OPERATING CONDITION SETTING DEVICE

INVENTOR: KATSUTOMO SUZUKI

ASSIGNEE: MINOLTA CAMERA CO LTD, et al. (20)

APPL NO: 05-15654

DATE FILED: Feb. 2, 1993 PATENT ABSTRACTS OF JAPAN

ABS GRP NO: M1705

ABS VOL NO: Vol. 18, No. 602 ABS PUB DATE: Nov. 16, 1994

INT-CL: B41J 29/00

ABSTRACT:

PURPOSE: To provide an operating condition setting device, capable of improving the operability and workability thereof upon effecting a setting work.

CONSTITUTION: The title device is provided with a display 18 for indicating a setting **term**, operating units for setting operating **conditions** with respect to the setting **terms** indicated in the display 18 or push-button switches 11, 14-17 and a printer controller, controlling the operation of a laser printer 1 based on the set operating **conditions** while indicating the set **terms** in the display 18. The printer controller is provided with a full menu mode (first indicating mode) which indicates all of the set terms on the display 18, and a short menu mode (second indicating mode) which indicates set terms, having high frequency of employment, among all of the set terms selectively.

06-201483

Jul. 19, 1994

L5: 8 of 249

THERMOMETER FOR HIGH TEMPERATURE AND HIGH PRESSURE

INVENTOR: TOSHIHIRO MARUKO

ASSIGNEE: KK FURUYA KINZOKU, et al. (50)

APPL NO: 04-349447

DATE FILED: Dec. 28, 1992 PATENT ABSTRACTS OF JAPAN

ABS GRP NO: P1816

ABS VOL NO: Vol. 18, No. 555 ABS PUB DATE: Oct. 21, 1994 INT-CL: G01K 7/02; G01K 1/08

ABSTRACT:

PURPOSE: To enable long-**term** use under temperature **conditions** of temperature in use or higher by forming a main unit constituting body for supporting or protecting a thermocouple.

CONSTITUTION: A support 2, a protector 3 and a protection cylinder 4 constituting a main unit are formed of Ir or Ir-base alloy, and also a plurality of Ir or Ir-base alloy cylinders 4a... having different diameters wherein the protection cylinder 4 has been formed into a thin cylinder are loosely fitted onto the same axis so that heat insulating intervals 5... are securely constituted between the respective cylinders 4a... to provide a multi-layered structure. Ir-base alloy may be produced with Ir metal used as main metal by mixing and fusing a kind of metal such as Os, Rh, Ru, Pt and Ta into the Ir metal by an appropriate amount in a weight ratio. Thus without degradation by long-**term** use under severe temperature **conditions** of 1500.degree.C or higher to 2300.degree.C, a temperature sensing part at the tip of a thermocouple can be securely fixed to and supported by a position where temperature is to be measured.

06-153801 Jun. 3, 1994 L5: 10 of 249 PRODUCTION OF SEMI-NONBAKED COMBINED CONFECTIONERY

INVENTOR: HIROSHI NAKANO, et al. (2) ASSIGNEE: KANEBO LTD, et al. (10)

APPL NO: 04-341609

DATE FILED: Nov. 27, 1992 PATENT ABSTRACTS OF JAPAN

ABS GRP NO: C1245

ABS VOL NO: Vol. 18, No. 471 ABS PUB DATE: Sep. 2, 1994 INT-CL: A23G 3/00; A23G 1/00

ABSTRACT:

PURPOSE: To obtain a semi-nonbaked combined confectionery excellent in flavor, palate feeling and long-**term** preservability by including, under specified **conditions**, specific hydrous contents in a baked confectionery followed by coating with a fatty composition to allow a specified amount of water migrate into the baked confectionery.

CONSTITUTION: Hydrous contents 2 such as cheese cream 20-30wt.% in water content and .ltoreq.0.65 in water activity is included in a hollow baked confectionery 1 such as biscuit 2.5-4.5wt.% in moisture content so as to

be (1:5) to (5:1) in the weight ratio of the hydrous contents 2 to the hollow baked confectionery 1, and the surface of the resulting baked confectionery is coated with a fatty composition 3 such as chocolate to allow the water in the contents 2 migrate into the baked confectionery 1 to effect the moisture content of the baked confectionery to .gtoreq.6.5wt.%, thus obtaining the objective semi-nonbaked combined confectionery.

06-97814 Apr. 8, 1994 L5: 14 of 249 PROGRAMMABLE LOGIC ARRAY AND MICROCOMPUTER USING THE LOGIC ARRAY

INVENTOR: KEISUKE TANAKA

ASSIGNEE: MATSUSHITA ELECTRON CORP, et al. (40)

APPL NO: 04-246284

DATE FILED: Sep. 16, 1992 PATENT ABSTRACTS OF JAPAN

ABS GRP NO: E1575

ABS VOL NO: Vol. 18, No. 364 ABS PUB DATE: Jul. 8, 1994

INT-CL: H03K 19/177; G06F 15/78; H03K 19/173

ABSTRACT:

PURPOSE: To provide a programmable logic array PLA which can work at a high speed by discharging the electric charge through two MOS transistor TR connected in series when the potential of a product term line is puled down to a low level.

CONSTITUTION: A static RAM cell consists of the inverter latches R0 and R1 and the transmission gates TR0 and TR1 on an AND plane of a PLA. NMOS TR ATO decides whether an NMOS TR ANO which generated the AND conditions of the PLA should be connected to a product term line or not based on the information written in the static RAM cell. In such a constitution, the AND plane of the PLA can be programmed in a desired state and the signal showing the desired AND **conditions** is outputted from the product **term** line. The electric charge is discharged through the TR ATO and ANO only when the potential of the product term line is pulled down to a low level.

=>

PATENT

ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Robert E. Kahn et al.

Art Unit: 2317

Serial No.: 08/142,161

Examiner: L.Luu

Filed Title

: October 22, 1993

: IDENTIFYING, MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PRYMENTS

Commissioner of Patents and Trademarks Washington, DC 20231

MAY 2 4 1996

PETITION FOR EXTENSION OF TIME ROUP 2300

Pursuant to 37 C.F.R. §1.136, applicants hereby petition that the period for response to examiner's action mailed November 22, 1995, be extended for 3 months to and including May 22, 1996. A continuation-in-part application was filed on May 13, 1996, as copending with this application.

Enclosed is a check for \$900.00 for the required fee. Please apply any other charges or any credits to our deposit account number 06-1050, reference 06154/004001.

Respectfully submitted,

Date:

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

240 DR 05/21/96 08142161 1 117 900.00 CK

Telephone: 617/542-5070 Facsimile: 617/542-8906

> Date of Deposit 5.15.96
>
> I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Washington, D.C. 20231.



PATENT ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Robert E. Kahn et al. Serial No.: 08/142,161 08/808050 Art Unit: 2317

Examiner: Luu, L.

Filed Title : 10/22/93

IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Commissioner of Patents and Trademarks

Washington, DC 20231

JUN 2 1 1996 6-26-96 GHUUF 2300

RESPONSE TO ACTION DATED NOVEMBER 22,

Please amend the application, as follows:

In the abstract:

Cancel the abstract and insert the following:

A-Methods of managing digital objects in a network are Holders of rights in digital objects are enabled to control terms and conditions under which they are accessed by users in a network, or are granted to others.

<u>In the claims:</u>

(Amended) A method of enabling holders or rights in digital objects to control terms and conditions under which [they] the digital objects are accessed by users in a network,

င္တက္သည္တုန္မ်ားng,

) EK 079 5080 storing the digital objects in the network in a manner that permits [only authorized] access only upon assent to terms and conditions for access to them,

Date of Deposit I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

storing, in the network, information about terms and conditions [for] under which access to each digital object is granted if the assent is given,

making the stored information about terms and conditions available to a user, via the network, in connection with a request by the user for access to [a] one of the digital [object] objects,

[enabling] providing a mechanism for the user to indicate assent to the terms and conditions, and

permitting access to the digital object by the user via the network only upon the user indicating his assent to the terms and conditions.

13. (Amended) A method of enabling [holders] a current holder of rights in a digital [objects] object to control terms and conditions under which licensing rights in the digital [objects] object are [may be] granted to a future rights holder [others,] comprising

storing, in the network, <u>information on</u> terms and conditions <u>under which</u> [for] licensing rights <u>are granted</u>,

[providing information on and terms and conditions pertaining to [works or other information or] material that the digital object [may be] is based on [or incorporate],

making the terms and conditions available <u>via the</u>

<u>network</u> to [potential] <u>a future</u> rights holder[s and users, as appropriate,] upon request via the network,

enabling the [potential] <u>future</u> rights holder and the current rights holder to interact via the network to reach

Petitioner Apple Inc. - Exhibit 1022, p. 145

agreement on terms and conditions for grant of <u>licensing</u> rights,

storing, in a [recordation] server on the network, information [identifying] about the [grants] grant of rights for the digital [objects] object. [on the network.]

14. (Amended) A method to permit a user to comply with terms and conditions of access to digital objects stored in a network, each of the digital objects comprising a set of sequences of digits [and having an associated identifier which is unique across the network,] the method comprising

storing in the network information which associates, with each of the unique identifiers, a pointer to [a rights management system including] a terms and conditions server containing terms and conditions,

providing to the user, via the network in response to presentation of [a] one of the unique identifiers, [identifier] the associated pointer to the terms and conditions server,

providing to the user in response to presentation of the pointer, terms and conditions information for access to the associated one of the digital objects,

enabling the user to indicate assent to the terms and conditions for access to the associated one of the digital objects, and

in response to the assent, permitting the user to access the digital object <u>via the metwork</u> [including performance of the object].

Please add the following new claims.

- --46. The method of claim 12, 13, or 14 further comprising storing records involving transactions involving digital objects.
- 47. The method of claim 46 in which the transaction records include applicable terms and amounts of transactions.
- 48. The method of claim 12, 13, or 14 further comprising

storing property records related to the digital object in a central location.

- 49. The method of claim 48 in which the property records include the identity of a rights management system with respect to the digital objects.
- 50. The method of claim 48 in which the property records include applicable terms and conditions for the digital objects.
- 51. The method of claim 12, 13, or 14 further comprising

providing a rights management system for negotiating access rights to the digital objects.--

REMARKS

Applicant's remarks, below, are preceded by quotations of the related comments of the examiner, in small, bold-face type.

4. The Abstract of the Disclosure is objected to because there are extraneous characters "#54047.B11. Correction is required. See M.P.E.P. § 608.01(b).

The Abstract has been amended.

6. Claim 13 is rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The breadth, scope, and meaning of the term "may be", "potential", and "recordation server" are vague and indefinite.

Amendments have been made.

- 8. Claims 12-14 are rejected under 35 U.S.C. § 102(e) as being anticipated by Wyman patent no. 5,260,999.
- 9. As to claim 12, wyman teaches the invention substantially as claimed, including a method of enabling holders of rights in digital objects to control terms and conditions under which they are accessed by users in a network, comprising

storing the digital objects in the network in a manner that permits only authorized access (col. 1, lines 35-52),

storing, in the network, information about terms and conditions for access to each digital object (col. 1, lines 48-59),

making the information about terms and conditions available to a user in connection with a request for access to a digital object (col. 21, lines 22-45),

permitting access to the user only upon the user indicating assent to the terms and conditions (Abstract, and col. 11, lines 3-30).

Amendments have been made. In claim 12, access to a digital object by a user is permitted only upon the user indicating assent to terms and conditions which are stored on and made available to the user via the network.

In Wyman, access to a software product could be construed as the access obtained by a user when a check is made by the license server to see if usage is permitted; or it could be construed as the access originally obtained by the license server from the license issuer to manage, i.e., the access being

the right that the license server obtains to manage licensed uses by users on a network. It is unclear which of these constructions the examiner is applying. But, either way, Wyman did not anticipate claims 2, nor would have made it obvious.

In the case of a user obtaining access by request to the license server, there is no hint in Wyman that terms and conditions of the access are made available via the network to the user let alone that the user in any way assents or refuses to assent. Once the user seeks access it is neither given nor refused apparently without the user's assent to any terms or conditions.

In the case of the license server obtaining access from the license issuer, Wyman does say that it involves "negotiation with customers" (col. 7, line 55) regarding "terms and conditions" (col. 1, line 57) and that the "license document" may be delivered on "a network" (col. 10, lines 47-48), but does not apparently teach or suggest that in the process of negotiation, the terms and conditions for access be stored in the network and provided via the network to a user who then provides his assent.

10. As to claim 13, Wyman teaches the invention substantially as claimed, including a method of enabling holders of rights in digital objects to control terms under which rights in the digital objects can be granted to others, comprising

storing, in the network, terms and conditions for licensing rights (col. 1, lines 27-60),

providing information on terms and conditions pertaining to works or other information or material that the digital object may be based on or incorporate (col. 1, lines 48-59),

making the terms and conditions available to new right holders and users, as appropriate, upon request via the network (col. 21, lines 21, lines 222-45),

enabling the new rights holder and the current rights holder to interact via the network to reach agreement on terms and conditions for grant of rights (col. 11, lines 3-30),

storing, in a server on the network, information identifying grants of rights for digital objects on the network (col. 1, lines 48-59).

Amendments have been made. Claim 13 is patentable for reasons similar to those given for claim 12.

11. As to claim 14. wyman teaches the invention substantially as claimed, including a method to permit a user to comply with terms and conditions of access to digital objects stored in a network, each of the digital objects comprising a set of sequences of digits and having an associated identifier which is unique across the network, the method comprising

storing in the network information which associates with each of the unique identifiers, a pointer to a rights management system including a terms and conditions server containing terms and conditions (col. 36, line 64 - col. 37, line 23),

providing to the user in response to presentation of a unique identifier the pointer to the terms and conditions server (col. 26, line 64 - col. 27, line 23),

providing to the user in response to presentation of the pointer, terms and conditions information (col. 21, lines 22-45),

enabling the user to indicate assent to the terms and conditions (col. 11, lines 3-30),

in response to the assent, permitting the user to access the digital object including performance of the object (Abstract).

Amendments have been made. Claim 14 is patentable for reasons similar to those given for claim 12.

Applicant asks that all claims be allowed.

Please apply any credits or excess charges to our deposit account number 06-1050, reference 06154/004001.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Date:

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906 173038.B11

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ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit: 2317

Serial No.: 08/142,161

Examiner: Luu, L.

Filed Title

: October 22, 1993 : IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Commissioner of Patents and Trademarks

Washington, DC 20231

2011 2 1 1996

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INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO 1449, copies of which are enclosed.

This statement is being filed after a first Office action on the merits, but before receipt of a final Office action or a Notice of Allowance. A check for \$220 in payment of the late submission fee of §1.17(p) is enclosed. Please apply any additional charges or credits to Deposit Account No. 06-1050.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

184113.B11

first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C. 20231.

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Substitute Disclosure Form (PTO-1449)



UNITED STATE DEPARTMENT OF COMMERCE Patent and Tradomark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

SERIAL NUMBER **FILING DATE** FIRST NAMED INVENTOR ATTORNEY DOCKET NO. KAHN .10/22/93 08/142,161 **EXAMINER** B3M1/0830 DAVID L. FEIGENBAUM **ART UNIT** FISH & RICHARDSON 225 FRANKLIN STREET BOSTON, MA 02110-2804 08/30/96 DATE MAILED: This is a communication from the examiner in charge of your application. COMMISSIONER OF PATENTS AND TRADEMARKS Responsive to communication filed on This application has been examined A shortened statutory period for response to this action is set to expire _month(s), days from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133 Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION: 2. Notice of Draftsman's Patent Drawing Review, PTO-948. 1. Notice of References Cited by Examiner, PTO-892. Notice of Art Cited by Appilcant, PTO-1449. Notice of Informal Patent Application, PTO-152. 5. Information on How to Effect Drawing Changes, PTO-1474. Part II SUMMARY OF ACTION are pending in the application. are withdrawn from consideration. 2. Claims have been cancelled. 3. Claims ___ are allowed. 12-14 5. Ciaims are subject to restriction or election requirement. 7. This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes. 8. Formal drawings are required in response to this Office action. 9. The corrected or substitute drawings have been received on _ . Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948). _. has (have) been approved by the 10. L The proposed additional or substitute sheet(s) of drawings, filed on _ examiner; \Box disapproved by the examiner (see explanation). 11. The proposed drawing correction, filed ___ ___, has been approved; disapproved (see explanation). 12. Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has been received not been received ☐ been filed in parent application, serial no. _ : filed on 13. Since this application apppears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213. 14. Other

EXAMINER'S ACTION

PTOL-326 (Rev. 2193)

Serial Number: 08/142,161 2

Art Unit: 2317

1. Applicant's amendment A filed on 5/22/96 in response to examiner's Office Action has been reviewed.

2. The objection to the Abstract of the Disclosure have been

withdrawn due to applicant's amendment filed 5/22/96.

3. The rejections of claim 13 under 35 U.S.C. § 112, second

paragraph have been withdrawn due to applicant's amendment filed

5/22/96. Claims 46-51 have been added. The following rejections

now apply.

4. Claims 12-14 and 46-51 are presented for examination.

5. The following is a quotation of 35 U.S.C. 103(a) which forms

the basis for all obviousness rejections set forth in this Office

action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which

said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Serial Number: 08/142,161 3

Art Unit: 2317

6. Claims 12-14 and 46-51 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wyman patent no. 5,260,999, and further in view of Waite et al (Waite) patent no. 5,222,134.

- 7. Wyman was cited as prior art in the last office action. The rejections are respectfully maintained and incorporated by reference as set forth in the last office action.
- 8. As to claim 12, Wyman teaches the invention substantially as claimed, including a method of enabling holders of rights in digital objects to control terms and conditions under which the digital objects are accessed by users in a network, comprising:

storing the digital objects in the network in a manner that permits access in accordance with terms and conditions for access to them (col. 1 line 48 - col. 2 line 2, and col. 2 lines 35-52),

storing, in the network, information about terms and conditions under which access to each digital object is granted in accordance with terms and conditions (col. 1 lines 48-59, and license database 23, figure 1),

Serial Number: 08/142,161

Art Unit: 2317

making the information about terms and conditions available to a user, via the network, in connection with a request by the user for access to one of the digital objects (col. 21 lines 22-45),

allowing the user to indicate assent to the terms and conditions (col. 11 lines 3-30), and

permitting access to the digital object by the user via the network only in accordance with terms and conditions (Abstract, and col. 11 lines 3-30).

However, Wyman does not explicitly teach providing a mechanism for the user to indicate assent to the terms and conditions through the network.

Waite teaches a registration computer system allows software user to register, purchase, and activate software program products through a personal computer on a network upon the user agrees to terms of the particular transaction (Abstract, col. 2 lines 13-44, and col. 5 lines 17-22).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of Waite to provide software user a computer on the network to interact with Wyman's license management system because it would provide the user a friendly environment for updating

Serial Number: 08/142,161 5

Art Unit: 2317

license registration agreement so that software products can be purchased and used immediately.

9. As to claim 13, Wyman teaches the invention substantially as claimed, including a method of enabling a current holder of rights in a digital object to control terms and conditions under which licensing rights in the digital object are granted to future rights holder, comprising:

storing, in the network, information on terms and conditions under which licensing rights are granted (col. 1 lines 27-60, license database 23, figure 1),

and terms and conditions pertaining to material that the digital object is based on (col. 1 lines 48-59),

making the terms and conditions available via the network to a future rights holder, upon request via the network (col. 21 lines 21 lines 22-45),

enabling the future rights holder and the current rights holder to reach agreement on terms and conditions for grant of rights (col. 11 lines 3-30),

Serial Number: 08/142,161

Art Unit: 2317

storing, in a server on the network, information about the grant of rights for the digital objects (col. 1 lines 48-59, and license database 23, figure 1).

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However, Wyman does not explicitly teach the future rights holder and the current rights holder to interact via the network to reach agreement on terms and conditions.

Waite teaches a registration computer system allows software user to register, purchase, and activate software program products through a personal computer on a network upon the user agrees to terms of the particular transaction (Abstract, col. 2 lines 13-44, and col. 5 lines 17-22).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of Waite to provide software user a computer on the network to interact with Wyman's license management system because it would provide the user a friendly environment for updating license registration agreement so that software products can be purchased and used immediately.

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Serial Number: 08/142,161

Art Unit: 2317

10. As to claim 14, Wyman teaches the invention substantially as claimed, including a method to permit a user to comply with terms and conditions of access to digital objects stored in a network, each of the digital objects comprising a set of sequences of digits, the method comprising:

storing in the network information which associates, with each of the unique identifiers, a pointer to a terms and conditions server containing terms and conditions (col. 36 line 64 - col. 37 line 23),

providing to the user, via the network in response to presentation of one of the unique identifiers, the associated pointer to the terms and conditions server (col. 21 lines 22-45, col. 36 line 64 - col. 37 line 23, and networks 21-22, figure 1),

providing to the user in response to presentation of the pointer, terms and conditions information for access to the associated one of the digital objects (col. 21 lines 22-45)

enabling the user to indicate assent to the terms and conditions for access to the associated one of the digital objects, and (col. 11 lines 3-30),

permitting the user to access the digital object via the network (Abstract).

Serial Number: 08/142,161 8

Art Unit: 2317

However, Wyman does not explicitly teach permitting the user to access the digital object via the network in response to the user's assent through the network.

Waite teaches a registration computer system allows software user to register, purchase, and activate software program products through a personal computer on a network upon the user agrees to terms of the particular transaction (Abstract, col. 2 lines 13-44, and col. 5 lines 17-22).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of Waite to provide software user a computer on the network to interact with Wyman's license management system because it would provide the user a friendly environment for updating license registration agreement so that software products can be purchased and used immediately.

11. As to claims 46-47, Wyman teaches storing records involving transactions involving digital objects, terms, and amounts of transactions (log 24, figure 1).

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Art Unit: 2317

12. As to claims 48-50, Wyman teaches storing property records in a central location (license database 23, figure 1).

13. As to claim 51, Wyman teaches a rights management system for negotiating access rights to the digital objects (Abstract, and col. 11 lines 3-30).

14. Applicant's arguments with respect to claims 12-14 have been considered but are deemed to be moot in view of the new grounds of rejection.

15. Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR

Serial Number: 08/142,161

Art Unit: 2317

RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL

ACTION.

16. Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Le H. Luu,

whose telephone number is (703) 305-9650. The examiner can

normally be reached Monday through Friday from 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Thomas C. Lee, can be

reached at (703) 305-9717. The fax phone number for this Group is

(703) 308-5359.

Any inquiry of a general nature of relating to the status of

this application should be directed to the Group receptionist whose

telephone number is (703) 305-9600.

UPERVISORY PATENT EXAMINER

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Le H. Luu

August 27, 1996

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L5: 8 of 13

TITLE:

Secure system for activating personal computer software at

remote locations

US PAT NO:

5,222,134

DATE ISSUED:

Jun. 22, 1993

[IMAGE AVAILABLE]

APPL-NO:

07/682,456

DATE FILED:

Apr. 9, 1991

REL-US-DATA:

Continuation-in-part of Ser. No. 610,037, Nov. 7, 1990,

Pat. No. 5,103,476.

TITLE:

Secure system for activating personal computer software at

remote locations

ABSTRACT:

A process and system for activating various programs are provided in a personal computer. The computer is initially provided with a registration shell. A data link is established between the personal computer and a registration computer. By providing the registration computer with various information, a potential licensee can register to utilize the program. Once the registration process is complete, a tamperproof overlay program is constructed at the registration computer and transferred to the personal computer. The tamperproof overlay includes critical portions of the main program, without which the main program would not operate and also contains licensee identification and license control data.

L5: 5 of 13

TITLE:

Method for licensing software

US PAT NO:

5,375,206

Dec. 20, 1994

[IMAGE AVAILABLE]

APPL-NO:

08/198,657

DATE FILED:

DATE ISSUED:

Feb. 18, 1994

REL-US-DATA:

Continuation of Ser. No. 31,063, Mar. 12, 1993, abandoned,

which is a continuation of Ser. No. 667,725, Mar. 11,

1991, abandoned.

TITLE:

Method for licensing software

ABSTRACT:

Disclosed is a system that provides a common application software interface for a variety of vendor supplied license servers. The system provides a single set of program calls and translates this single set of calls into a set of calls for each license server. This translation is performed using a translate table, which is easily updated to interface to newly developed or newly released license servers. The system runs as a separate process within the operating environment to monitor the application program, and as long as the application program continues to provide services to the user, the system sends periodic license renewal messages to the license server. The system also notifies the user when the application program cannot obtain a license in order to provide a consistent user interface across applications.





PATENT ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit: 2317

Serial No.: 08/142,161

Examiner: L.Luu

Filed Title

: October 23, 1993

: IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

BOX AF

PETITION FOR EXTENSION OF TIME

MAR 1 U 1991,

Pursuant to 37 C.F.R. §1.136, applicants hereby petition that the period for response to examiner's action mailed August 30, 1996, be extended for 3 months to and including February 28, 1997.

Enclosed is a check for \$930.00 for the required fee. Please apply any other charges or any credits to our deposit account number 06-1050, reference 06154/004001.

Respectfully submitted,

David L. Feigenbaum

Reg. No. $30,\bar{3}78$

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

229666;B11

Date of Deposi I hereby certify under 37 CFR 1.8(a) that this correspondence is be deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C.

Petitioner Apple Inc. - Exhibit 1022, p. 169



UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

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	2.		Applicant's letter of express aband	onment which is in compliance with	n 37 C.F.R. 1.138.
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PTO-1432 (Rev. 4/93)

PATENT APPLICATION SERIAL NO. 08/808050

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

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PTO-1556 (5/87)

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PATENT ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit: Examiner:

Serial No.: 08/808 050 Filed : February 28, 1997 Filed

: Robert E. Kahn et al.

: IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Box FWC

Title

Assistant Commissioner of Patents Washington, DC 20231

FILE WRAPPER CONTINUATION APPLICATION

This is a request for filing a continuation application under 37 CFR 1.62, of pending prior application Serial No. 08/142,161 filed on October 22, 1993 by Robert E. Kahn and David K. Ely for IDENTIFYING, MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS.

- Please transfer the specification and drawings of the prior application to this new application.
 - 2. A preliminary amendment is enclosed.
 - The filing fee is calculated below:

CLAIMS AS ON FILE IN THE PRIOR APPLICATION, LESS ANY CLAIMS CANCELLED BY AMENDMENT

For	Number Filed	 		Number Extra	Rate	Basic Fee \$770.00		
Total Claims				0	x \$11	\$	0.00	
Independent	4	 3	=	0 80880	x \$40	\$	40.00	
Multiple Dependent					\$130	\$	0.00	

EXPRESS MAIL" Mailing Label Number

refly certify under 37 CFR 1.10 that this correspondence is being at with the United States Postal Service as "Express Mail Significant To Addressee' with sufficient postage on the date dicated above and is addressed to the Assistant Commissioner of

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- 4. A check in the amount of \$810.00 is enclosed.
- 5. The Commissioner is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account No. 06-1050. A duplicate this request is enclosed.
- 6. Please amend the specification by inserting before the first line the sentence: This is a continuation of application Serial No. 08/142,161, filed October 22, 1993, now abandoned.--
- 7. The prior application was assigned to CORPORATION FOR NATIONAL RESEARCH INITIATIVES, a District of Columbia corporation having a place of business at 1895 Preston White Drive, Reston, VA 22091, by virtue of an assignment submitted to the Patent and Trademark Office for recording on December 28, 1993 at Reel 6905, Frame 0310.
- 8. The power of attorney in the prior application is to David L. Feigenbaum, Reg. No. 30,378. Address all future communications to David L. Feigenbaum at Fish & Richardson P.C., 225 Franklin Street, Boston, MA 02110-2804.
- 9. The inventors named in this application are the same as the inventors named in the prior application.
- 10. A copy of a petition for Automatic Extension for the prior application is included. Please charge any additional



fees, or apply any overpayment, to Deposit Account No. 06-1050, reference 06154/004001.

Respectfully submitted,

Date: 2/31/)1

David L. Feigenbaum Reg. No. 30,378

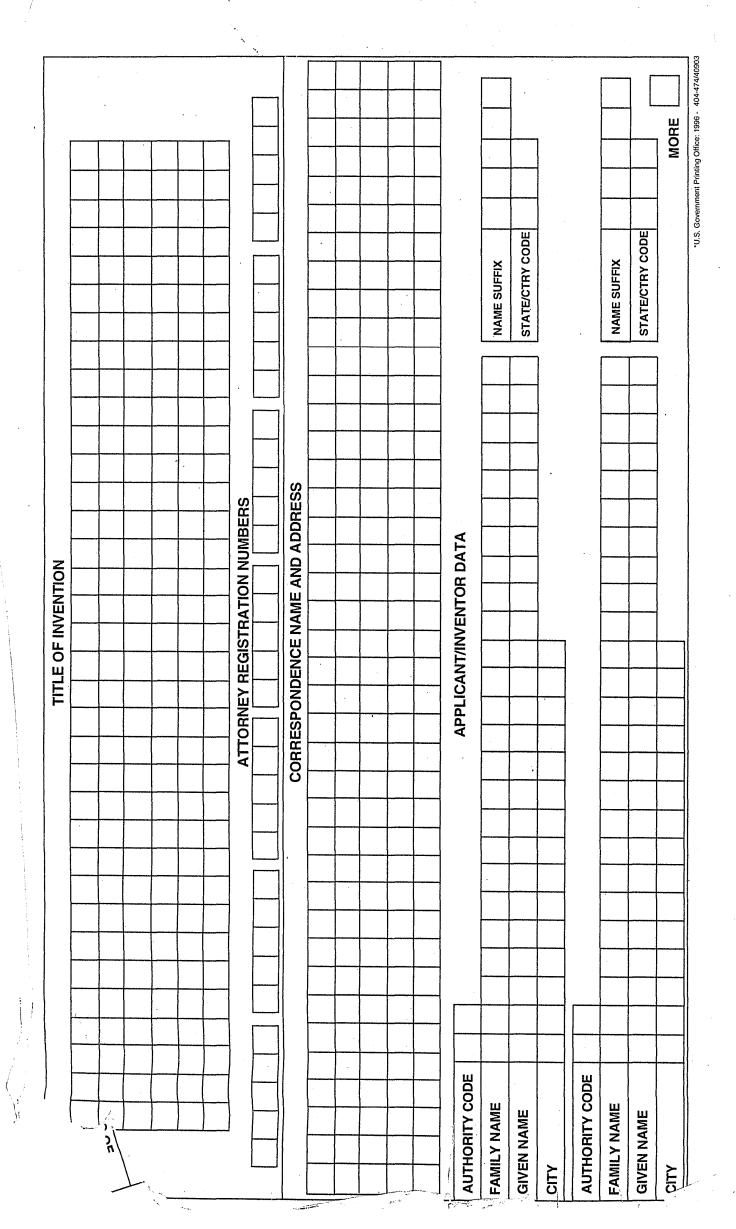
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FORM **PTO-875** (Rev. 10/96)

*U.S. Government Printing Office: 1996 - 413-288/4919

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

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FORM PTO-875

*U.S. Government Printing Office: 1996 - 413-288/4919

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

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PATENT ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit: Examiner:

Serial No.: Filed

Title

: February 28, 1997 : IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

BOX AF

Commissioner of Patents and Trademarks 20231 Washington, DC

PRELIMINARY AMENDMENT

add following new claim.

A method of enabling a holder of rights or interests in information content or in a digital object which incorporates information dontent, to manage conditions for access or the digital object, the method to the information content comprising

configuring the information cont ent and additional related information to form the digital object, the related information including a unique, persistent identifier,

the related information also including the conditions and capabilities that may be invoked to enable access to the

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Februare 100,199 Date of Deposit I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office To Addressee" with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner of

Patents, Washington, D.C. 20231

digital object or the information content based on particular conditions,

locating the digital object using the unique persistent identifier, and

enabling access to the digital object or the information content when the particular conditions have been met.--

Amend the claims as follows:

12. (Amended) A method of enabling holders [or] of rights or interests in respective digital objects to control [terms and] conditions under which the respective digital objects are accessed [by users in a network], comprising,

including in each digital object a unique persistent identifier available to users on the network for use in locating and accessing the respective digital objects.

storing the digital objects [in the network] in a manner that permits access to a given one of the digital objects only upon assent to terms and conditions for access to [them] the given digital object,

storing, in <u>a rights management system</u> [the network], information about [terms and] conditions under which access to

[each digital object] the respective digital objects is granted if the assent is given,

making the stored information about terms and conditions available to [a user] <u>users</u>, via the network, in connection with [a request by the user for access to one] <u>requests by users for access to [of] the digital objects</u>,

optionally providing a mechanism for [the user to indicate] indicating assent to the [terms and] conditions, via the network, [and]

permitting access to the <u>respective</u> digital [object]

objects [by the user] via the network <u>using the unique persistent</u>

identifiers and only upon [the user] and, where necessary, upon

indication of assent [indicating his assent] to the [terms and]

conditions, and

storing, as appropriate, in a system on the network, information recording the assents to conditions made by users with respect to the digital objects, the information being recorded in association with the unique persistent identifiers.

REMARKS

Applicant has added a new claim 53 and made amendments to other claims.

Claim 53 recites a digital object and the method of configuring it, locating it, and accessing it when particular conditions or procedures have been followed. The concept of a "digital object", namely a uniquely identifiable data structure apart from its information content, is at the heart of the invention. This is a concept that simply did not exist prior to its conception by the applicant. A digital object, as recited in claim 53 and explained in the patent application, is an entity that has structure and related information and may incorporate information content and additional related information. related information includes a unique persistent identifier (e.g., the handle), and information associated with a capability that enables access to the digital object, as a data structure, or access to the included information content based on the particular conditions. This notion is simply not found or suggested in the references relied on by the examiner. A digital object is different from the information content itself.

With respect to the rejected claims, which have now been amended, applicant's remarks, below, are preceded by quotations of the related comments of the examiner, in small, bold-face type.

8. As to claim 12, Wyman teaches the invention substantially as claimed, including a method of enabling holders of rights in digital objects

to control terms and conditions under which the digital objects are accessed by users in a network, comprising:

storing the digital objects in the network in a manner that permits access in accordance with terms and conditions for access to them (col. 1 line 48 - col. 2 line 2, and col. 2 lines 35-52),

storing, in the network, information bout terms and conditions under which access to each digital object is granted in accordance with terms and conditions (col. 1 lines 48-59, and license database 23, figure 1),

making the information about terms and conditions available to a user, via the network, in connection with a request by the user for access to one of the digital objects (col. 21 lines 22-45),

allowing the user to indicate assent to the terms and conditions (col. 11 lines 3-30), and

permitting access to the digital object by the user via the network only in accordance with terms and conditions (Abstract, and col. 11 lines 3-30).

However, Wyman does not explicitly teach providing a mechanism for the user to indicate assent to the terms and conditions through the network.

Waite teaches a registration computer system allows software user to register, purchase, and activate software program products through a personal computer on a network upon the user agrees to terms of the particular transaction (Abstract, col. 2 lines 13-44, and col. 5 lines 17-22).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of Waite to provide software user a computer on the network to interact with Wyman's license management system because it would provide the user a friendly environment for updating license registration agreement so that software products can be purchased and used immediately.

Amendments have been made to clarify that the method of the invention enables rights holders in digital objects to control conditions for their use. This arrangement effectively results in a medium for multiple unrelated users and multiple unrelated rights holders to deposit and access digital objects in a way that assures that the digital objects will not be released except upon assent by the users where necessary (or the system attempting to access them) to the conditions. Of specific interest is the fact that these conditions may be in the digital object itself.

Neither Wyman nor Waite shows or suggests "including in each digital object a unique persistent identifier available to users on the network for use in locating and accessing the respective digital objects". Nor does either of them even disclose or suggest digital objects in the sense discussed above or defined in the application.

All other dependent claims incorporate features of the independent claim discussed above and therefore are patentable for at least the same reasons.

Applicant asks that all claims now be allowed.

If there are any charges or credits, please apply them to deposit account 06-1050, reference 06154/004001.

Respectfully submitted,

David L. Feigenbaum

Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

229666.B11

Date:



PATENT ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit: 2317

Serial No.: 08/142,161

Examiner: L.Luu

Filed

October 23, 1993

Title

: IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

BOX AF

PETITION FOR EXTENSION OF TIME

Pursuant to 37 C.F.R. §1.136, applicants hereby petition that the period for response to examiner's action mailed August 30, 1996, be extended for 3 months to and including February 28, 1997.

Enclosed is a check for \$930.00 for the required fee. Please apply any other charges or any credits to our deposit account number 06-1050, reference 06154/004001.

Respectfully submitted,

Date:

David L. Feigenbaum

Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

229666.B11

Date of Deposit I hereby certify under 37 deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Commissioner of Patents and Trademarks, Washington, D.C.

Petitioner Apple Inc. - Exhibit 1022, p. 188



UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST	NAMED APPLICANT	ATTORNEY DOCKETT NO.
08/808,050	2/28/97	Robert	E. Kah	n 06154/00400/
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Petitioner Apple Inc. - Exhibit 1022, p. 189

ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit: 2317

Serial No.: 08/808,050

Examiner:

Filed

Title

: February 28, 1997 : IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Assistant Commissioner for Patents Washington, DC 20231

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

This statement is being filed before the receipt of a first Office action on the merits. Please apply any charges or credits to Deposit Account 06-1050, reference 06154/004001.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

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SUBSTITUTE FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE (MODIFIED) PATENT AND TRADEMARK OFFICE							ATTY. DOCKET NO. 06154/004001	SERIAL NO. 08/808,050							
INFORMATION DISCLOSURE STATEMENT BY APPLICANT							ANT			APPLICANT Robert E. Kahn et al.					
(Use several sheets if necessary) (37 CFR 1.98(b))				FILING DATE February 28, 1997	GROUP 2756										
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PATENT ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit: 2317

Serial No.: 08/808,050

Examiner:

Filed

Title

: February 28, 1997 : IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Assistant Commissioner for Patents Washington, DC 20231

PRELIMINARY AMENDMENT

Preliminarily please cancel all of the pending claims

and add the following new claims:

A system for organizing digital information in a

network comprising:

digital objects, each of the digital objects comprising one or more sequences of structured data or sets of such sequences, each of the sequences or sets of sequences incorporating a work or a portion of a work or other digital information in which a party has rights or interests, or in which there is value, each of the sequences or sets of sequences being structured in a way that is interpretable by one or more computational facilities on the network,

each of the digital objects including an identifier that is unique within the metwork,

a distributed mechanism for managing the uniqueness and persistence of the identifiers,

at least some of the digital objects including other structured data which is useful in processing the digital objects, including managing access to them, and 8-20-97

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a resolution mechanism that provides information over a network about a digital object, given its identifier.

55. The system of claim 54 further comprising

repositories on the network in which digital objects are stored and from which they can be accessed.

The system of claim 54 further comprising

validation information for at least some of the digital objects, the validation information being sufficient to permit a determination whether a purported instance of a digital object is identical to an original instance of the digital object.

The system of claim 56 in which the validation information is stored separately from the corresponding digital object.

data includes information about at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects; links between different digital objects.

The system of claim 58 in which the other structured data is stored separately from the corresponding digital object.

The system of claim 54 in which

the resolution mechanism is scalable and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates each of the identifiers with the location of the corresponding digital object in the network.

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61: The system of claim 60 in which the identifiers distribute the state information relatively evenly among all or a subset of the servers.

The system of claim of further comprising a registering authority that processes applications for registration of rights or interests associated with digital information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical to an original instance.

The system of claim of further comprising

a mechanism for applying terms and conditions for access to each of the digital objects, the mechanism including information about the terms and conditions, and

the mechanism being arranged to make the information about terms and conditions available to a user in connection with a request for access to one of the digital objects, to enable the user to indicate assent to the terms and conditions, and to permit access to the user only upon the user indicating assent to the terms and conditions.

63 64. The system of claim 64 further comprising

a recordation server on the network, the recordation server storing information identifying grants or other information on rights or interests or value pertaining to the digital objects on the network.

The system of claim 54 further comprising

a reference service on the network, separate from the digital objects, for recording information about accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users.

The system of claim 54 further comprising an identifier service, accessible on the network, for generating the unique identifiers, the service including servers each serving a portion of an identifier space.

an authorization server which provides information about terms and conditions for access to a digital object and authorizations for use of the digital object.--

Remarks

Applicant thanks the examiner for the interview conducted on August 12, 1997 at which we discussed the invention. As agreed at the interview, we are now submitting a new set of claims that more clearly recite a key aspect of the invention.

Please apply any charges not covered, or any credits, to Deposit Account 06-1050, reference 06154/004001.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

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225 Franklin Street Boston, Massachusetts 02110-2804

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GROUP 2300

Date August 20, 1997

To Examiner Le Hien Luu

Group 2317

Assistant Commissioner of Patents

and Trademarks

Washington, DC 20231

Facsimile number

06154 00400001 703-308- 9051

From David L. Feigenbaum, Esq.

Re Applicant: Robert E. Kahn

Serial No.: 08/808,050

Filed

: 2/28/97

For

: IDENTIFYING, MANAGING, ACCESSING, AN TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND

PAYMENTS

06154/004001 Handles

Number of pages including this page

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Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231 06154/004

06154/004001 FILING DATE APPLICATION NUMBER ATTORNEY DOCKET NO. FIRST NAMED APPLICANT

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DAVID L FEIGENBAUM FISH AND RICHARDSON 225 FRANKLIN STREET BOSTON MA 02110-2804

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This is a communication from the examiner in charge of your application. COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY	
Responsive to communication(s) filed on 8/20/97	
☐ This action is FINAL .	
Since this application is in condition for allowance except for formal matters, prosecution as to the accordance with the practice under <i>Ex parte Quayle</i> , 1935 D.C. 11; 453 O.G. 213.	ne merits is closed in
A shortened statutory period for response to this action is set to expire mo whichever is longer, from the mailing date of this communication. Failure to respond within the period the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under 1.136(a).	onth(s), or thirty days, d for response will cause the provisions of 37 CFR
Disposition of Claims	
\times Claim(s) is	/are pending in the application.
Of the above, claim(s)is/are	withdrawn from consideration.
☐ Claim(s)	is/are allowed.
□ Claim(s) 5 3 − 66	is/are rejected.
Claim(s)	is/are objected to.
☐ Claims are subject to res	striction or election requirement.
Application Papers	
See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.	•
☐ The drawing(s) filed on is/are objected to by the	e Examiner.
☐ The proposed drawing correction, filed on is [approved D disapproved.
☐ The specification is objected to by the Examiner.	
☐ The oath or declaration is objected to by the Examiner.	
Priority under 35 U.S.C. § 119	
☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).	
☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been	
☐ received.	
☐ received in Application No. (Series Code/Serial Number)	
\Box received in this national stage application from the International Bureau (PCT Rule 17.2(a)).	· · · · · · · · · · · · · · · · · · ·
*Certified copies not received:	•
☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).	•
Attachment(s)	
Notice of Reference Cited, PTO-892	
Information Disclosure Statement(s), PTO-1449, Paper No(s).	
,view Summary, PTO-413	
☐ Notice of Draftsperson's Patent Drawing Review, PTO-948	
☐ Notice of Informal Patent Application, PTO-152	
SEE OFFICE ACTION ON THE FOLLOWING PAGES	

★ U.S. GPO: 1996-409-290/40029

Art Unit: 2317

1. The numbering of claims is not accordance with 37 CFR 1.126. The original numbering of the claims must be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When claims are added, except when presented in accordance with 37 CFR 1.121(b), they must be renumbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

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Misnumbered claims 54-67 have been renumbered as claims 53-66. In addition,

- 'a. Claims 54-55, 57, 59, 61-66, line 1, change "54" to --53--.
 - b. Claim 56, line 1, change "56" to "55".
 - c. Claim 58, line 1, change "58" to "57".
 - d. Claim 60, line 1, change "60" to "59".
- 2. Claims 53-66 are presented for examination.
- 3. Claims 61 and 65 are objected to because of the following informalities:
 - (a) Claim 61, line 1, typographical error "comprisinga".
 - (b) Claim 66, line 1, typographical error "comprisingan".

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was made.

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

action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention

5. Claims 53-55, 57, 59-61, and 65 are rejected under 35 U.S.C.

§ 103 (a) as being unpatentable over "Workshop on the Protection of

Intellectual Property Rights in a Digital Library System" by

Corporation for National Research Initiatives (CFNRI), in view of

Gopal et al (Gopal) patent no. 5,491,817.

6. As to claim 53, CFNRI teaches the invention substantially as claimed, including a system for organizing digital information in a network comprising:

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digital objects, each of the digital objects comprising one or more sequences of structured data or sets of such sequences, each of the sequences of sets of sequences incorporating a work or a portion of a work or other digital information in which a party has rights or interests, or in which there is a value each of the sequences or sets of sequences being structured in a way that is interpretable by one or more computational facilities on the network ("A piece of information ... (see Fig. 1)" in Section a. Object, page 1, and "The participants ... Film/Video Library" in Section 3.2. Some Case Examples: How will conditions Operate in Practices, page 15).

each of the digital objects including an identifier that is unique within the network ("In order for information ... Certificate of Authenticity" in Section 2.1 Import/Registration, page 7),

a mechanism for managing the uniqueness and persistence of the identifiers ("Participants discussed ... software routines" in Section 2.4. Catalog Index, page 10),

at least some of the digital objects including other structured data which is useful in processing the digital objects, including managing access to them ("Natural Language search algorithms" in Section 3.2. Some Case Examples: How will conditions Operate in Practices, page 15), and

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a resolution mechanism that provides information over a network about a digital object, given its identifier ("An active intelligent program ... Knowbots" in Section I. Knowledge Robot (or Knowbot tm), page 2).

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However, CFNRI does not explicitly teach the mechanism for managing the uniqueness and persistence of identifiers is a distributed mechanism.

Gopal teaches X.500 defines a standard protocol directory services to communicate with different local directories which are owned, operated or managed by different entities (col. 1 lines 25-56).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of CFNRI and Gopal to provide a distribute mechanism to manage uniqueness and persistence of the identifiers because it would allow directories to be maintained by different entities and to communicate with one another.

7. As to claim 54, CFNRI teaches repositories on the network in which digital objects are stored from which they can be accessed ("Conceptual understanding ... computer networks" in Section 2. Operation of a Digital Library System, page 5).

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8. As to claim 55, CFNRI teaches validation information for at least some of the digital objects, the validation information being sufficient to permit a determination whether a purported instance of a digital object is identical to an original instance of the digital object ("Some of this information ... at a later time" in Section 2.1 Import/Registration Function, page 7).

- 9. As to claim 57, CFNRI teaches other structured data includes information about at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects; links between different digital objects ("The other transactional framework ... within the database." in Section 4.1.2. "Per Access" Charges, page 19).
- 10. As to claim 59, CFNRI teaches the resolution mechanism is scalable and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates each of the identifiers with the location of the corresponding digital object in the network ("Most participants favors ... Carnegie Mellon University" in Section 4.2.1. DLS Model A: The Multiple DLS Environment, page 22).

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11. As to claim 60, Gopal teaches identifiers distributed the state information relatively evenly among all or a subset of servers (col. 6 lines 51-54).

- 12. As to claim 61, CFNRI teaches a registering authority that processes applications for registration of rights or interests associated with digital information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical OT an original instance ("In order for information ... at a later time" in Section 2.1 Import/Registration Function, page 7).
- 13. As to claim 65, Gopal teaches an identifier service, accessible on the network, for generating the unique identifiers, the service including servers each serving a portion of an identifier space (col. 2 lines 32-39).
- 14. Claims 56 and 58 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over "Workshop on the Protection of Intellectual Property Rights in a Digital Library System" by Corporation for National Research Initiatives (CFNRI), in view of Gopal et al

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(Gopal) patent no. 5,491,817 as applied to claims 55 and 57 above respectively, and further in view of Parker patent no. 5,339,403.

- As to claim 56, CFNRI and Gopal teaches the invention substantially as claimed as discussed above; however, CFNRI and Gopal do not explicitly teach validation information is stored separately from the corresponding digital object. Parker teaches validation unit (APA server 12, figure 2) providing authentication service for target applications in a distributed computer system (col. 1 lines 39-51, and col. 2 lines 9-23). would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of CFNRI, Gopal, and Parker to use a validation unit to store validation information separately from digital object because it would provide control access and security to digital objects in a distributed computer system.
- 16. As to claim 58, it is similar to claim 56; therefore, it is rejected under the same rationale.
- 17. Claims 62-64 and 66 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over "Workshop on the Protection of Intellectual Property Rights in a Digital Library System" by Corporation for

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National Research Initiatives (CFNRI), in view of Gopal et al (Gopal) patent no. 5,491,817 as applied to claim 53 above, and further in view of Wyman patent no. 5,260,999.

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18. As to claim 62, CFNRI and Gopal teaches the invention substantially as claimed as discussed above; in addition, CFNRI teaches terms and conditions for access to each of the digital objects; and the information about terms and conditions available to a user in connection with a request for access to one of the digital objects ("Prior to the ... within the database" in Section 4.1 The Transactional Framework, page 18-19).

However CFNRI and Gopal do not explicitly teach a mechanism for user to apply and indicate assent to terms and conditions.

Wyman teaches a user uses a license document generator program to generate a license in accordance with terms and conditions negotiated between the user and a server before allowing the user accessing a product (col. 1 line 48 - col. 2 line 2, and col. 11 lines 3-30).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of CFNRI, Gopal, and Wyman to provide a license mechanism for user to apply license for a product base on terms and conditions which agreed between the user and provider before

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Serial Number: 08/808,050

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permitting the user to access the product because it would manage licensing of computer resources.

- 19. As to claim 63, Wyman teaches a recordation server on the network, the recordation server storing information identifying grants or other information on rights or interests or value pertaining to the digital objects on the network (license server 10, figure 1).
- 20. As to claim 64, Wyman teaches a reference service on the network, separate from the digital objects, for recording information about accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users (license server 10, figure 1).
- 21. As to claim 66, Wyman teaches an authorization server which provides information about terms and conditions for access to a digital object and authorization for use of the digital object (license server 10, figure 1).
- 22. Further references of interest are cited on Form PTO-892 which is an attachment to this office action.

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23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Le H. Luu, whose telephone number is (703) 305-9650. The examiner can normally be reached Monday through Friday from 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas C. Lee, can be reached at (703) 305-9717.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

Or:

Art Unit: 2317

(703) 308-5359 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Le H. Luu

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August 29, 1997

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	A	5,491,817	02/13/96		Gopal et al	3	395	616	05	5/25/93	
	В	5,339,403	08/16/94		Parker	3	395	421.1	04	04/05/93	
	С	5,260,999	11/09/93		Wyman	3	380	4	09	09/15/92	
	D	5,321,841	06/14/94		East et al	3	395	677	01	./29/93	
	E	4,914,571	04/03/90		Baratz et al	. 3	395	610			
	F	5,596,744	01/21/97	Dao et al			395	610	05	5/20/93	
	G	5,241,671	08/31/93	Reed et al			395	615			
	Н	5,032,979	07/16/91	Hecht et al			395	187.01			
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L12: 31 of 44

TITLE: Filters in license management system

US PAT NO: 5,260,999 DATE ISSUED: Nov. 9, 1993 [IMAGE AVAILABLE]

APPL-NO: 07/946,009 DATE FILED: Sep. 15, 1992

REL-US-DATA: Continuation of Ser. No. 723,457, Jun. 28, 1991,

abandoned.

ABSTRACT:

A distributed computer system employs a **license** management system to account for **software** product usage. A management policy having a variety of alternative styles and contexts is provided. Each licensed product upon start-up. . . the license server checks a database of the licenses, called product use authorizations, that it administers. If the particular use **requested** is permitted, a grant is returned to the **requesting** **user** node. The product use authorization is structured to define a license management policy allowing a variety of license alternatives by. . . use authorization) from an issuer of licenses, where a license document generator is provided. A mechanism is provided for one **user** node to make a call to use a software product located on another **user** node; this is referred to as a "calling card", by which a **user** node obtains permission to make a procedure call to use a program on another node. A management interface allows a. . .

SUMMARY:

BSUM(7)

This invention relates to methods of operation of computer systems, and more particularly to a method and system for managing the **licensing** of **software** executed on computer systems.

SUMMARY:

BSUM(8)

In . . . No. 4,937,863, issued to Robert, Chase and Schafer and assigned to Digital Equipment Corporation, the assignee of this invention, a **Software** **Licensing** Management System is disclosed in which usage of **licensed** **software** may be monitored in a computer system to determine if a use is within the scope of a license. The system maintains a database of **licenses** for **software** products, and stores a unit value indicating the number of licensing units for each product. When a **user** wishes to use a licensed product, a message is sent to the central license management facility **requesting** a license grant. In response to this message, the facility accesses the database to see if a license exits for this product, and, if so, whether units may be allocated to the **user**, depending upon the **user**'s characteristics, such as the configuration of the platform (CPU) which will execute the **software** product. If the **license** management facility determines that a license can be granted, it sends a message to the **user** giving permission to proceed with activation of the product. If not, the message denies permission.

SUMMARY:

BSUM(9)

While . . . different licensing alternatives, instead of being rigidly structured to permit only one or only a few. When negotiating licenses with **users**, vendors should have available a wide variety of **terms** and **conditions**, even though a given vendor may decide to narrow the selection down to a small number. For example, a **software**

product may be **licensed** to a single individual for use on a single CPU, or to an organization for use by anyone on a network, or for use by any **users** at terminals in a cluster, or only for calls from another specific licensed product, or any of a large number. . .

SUMMARY:

BSUM(10)

Distributed . . . additional licensing issues. A distributed system includes a number of processor nodes tied together in a network of servers and **clients**. Each node is a processor which may execute programs locally, and may also execute programs or features (subparts of programs). . .

SUMMARY:

BSUM(11)

In a large organization such as a company or government agency having various departments and divisions, geographically dispersed, a **software** **license** policy is difficult to administer and enforce, and also likely to be more costly, if individual licenses are negotiated, granted and administered by the units of the organization. A preferred arrangement would be to obtain a single **license** from the **software** producer, and then split this **license** into locally-administered parts by delegation. The delays caused by network communication can thus be minimized, as well as budgetary constraints. . .

SUMMARY:

BSUM (12)

Software . . . entire combination as one package, then allow the customer to license the features separately, in various combinations, or under differing **terms**. The customer may have an entire department of the company needing to use the spreadsheet every day, but only a. . . who need to use the graphics a few days a month. It is advantageous, therefore, to provide alternatives for varied **licensing** of parts or features of **software** packages, rather than a fixed policy for the whole package.

SUMMARY:

BSUM(14)

As . . . explained are (1) two products sold together, (2) a give-away that results from narrow choices of licensing alternatives, (3) a **client** licensing method in a **client**/server environment, (4) impact of modular design, and (5) the impact of distributed design.

SUMMARY:

BSUM (15)

A . . . retrieval system to store and retrieve non-mail documents. However, from time to time, the vendor may discover that particularly heavy **users** of mail wish to be able to use the content based retrieval system only to augment the filing capabilities provided. . to pay for an extended mail capability. The vendor might then consider offering these customers a license that grants mail **users** the right to use the content-based retrieval system only when they are using mail and prohibits the use of content. . .

SUMMARY:

BSUM(16)

Another . . . Rdb.TM.) designed for use on a particular operating system, e.g., VMS. This relational database product has two components: (1) A **user** interface used in developing new databases, and (2) a "run-time" system which supports the use of previously developed databases. The. . .

SUMMARY:

BSUM(17)

A proposed **client**/server licensing method provides yet another example of a problem which could be solved by transitive licensing. Typically, a **client** is only used by one **user** at a time, while a server can support an arbitrary number of **clients** depending on the level of **client** activity and the capacity of the machine which is supporting the server. While traditionally, server/**client** applications have been licensed according to the number of **clients** that a server could potentially support, this may not be the most appropriate method for licensing when the alternatives afforded by the invention are considered. The business model for the proposed **client**/server method requires that each **client** be individually licensed and no explicit licensing of servers is required to support properly licensed **clients**. Such a licensing scheme makes it possible to charge customers only for the specific number of **clients** they purchase. Additionally, it means that a single **client** can make use of more than one server without increasing the total cost of the system. Thed 123 date kwic

SUMMARY:

BSUM (25)

In . . . server maintains a store of the licenses, called product use authorizations, that it administers. Upon receiving a call from a **user**, the license server checks the product use authorization to determine if the particular use **requested** is permitted, and, if so, returns a grant to the **requesting** **user** node. The license server maintains a database of product use authorizations for the licensed products, and accesses this database for updating and when a **request** is received from a **user**. While this license management system is perhaps of most utility on a distributed computer system using a local area network, . . . distributed system, a license server executes on a server node and the products for which licenses are administered are on **client** nodes. However, the license management functions and the licensed products may be executing on the same processor in some embodiments.

SUMMARY:

BSUM(26)

The . . . may be allocative or consumptive. An allocative style means the units of the license may be allocated temporarily to a **user** when a **request** is received, then returned to the pool when the **user** is finished, so the units may be reused when another **user** makes a **request**. A consumptive style means the units are deducted from an available pool when a **user** node makes a valid **request**, and "consumed", not to be returned for reuse. The context value defines the context in which the use is to be allowed, such as on a particular network, by a particular type of CPU, by a particular **user** name, by a particular process, etc. The duration value (used in conjunction with the style component) concerns the time when the license units are to be deducted from the available pool of units, whether at the time of **request**, after a use is completed, etc. A usage requirements

determination method may be specified to define or provide information concerning the number of license units charged in response to a license **request** from a **user** node; for example, some CPU platforms may be charged a larger number of license units than others. A table may. . . requirements, and the determination method may specify how to access the table, for example. The important point is that the **user** node (thus the software product) can only make a **request**, identifying itself by **user**, platform, process, etc., and the license management facility calculates whether or not the license can be granted (that is, units are available for allocation), without the **user** node having access to any of the license data or calculation. There is a central facility, the license server, storing the license documents, and, upon **request**, telling the licensed products whether they can operate under the license **terms**.

SUMMARY:

BSUM (27)

An . . . For example, some of the units granted in the product use authorization may be delegated to another server, where the **user** nodes serviced by this server make **requests** and receive grants.

SUMMARY:

BSUM (29)

As explained above, transitive licensing is an important feature of one embodiment. This is the provision of a mechanism for one **user** node to get permission to use another software product located on another **user** node; this is referred to as a calling authorization and a caller authorization, using a "calling card," and these are examples of the optional features which must be specifically permitted by the product use authorization. A **user** node must obtain permission to make a procedure call to use a program on another node; this permission is obtained by a **request** to the license server as before, and the permission takes the form of a calling card. When a calling card is received by a second node (i.e., when the procedure call is made), a **request** is made by the second node to the license server to verify (via the product use authorization) that the calling card is valid, and a grant sent to the **user** node if allowed. In this manner, all nodes may have use of a program by remote calls, but only one. . .

SUMMARY:

BSUM (32)

An important function is the filter function, used in the management interface and also in the **client** interface to select among elements in the data structures.

DRAWING DESC:

DRWD(7)

FIG. 5 is a logic flow chart of a program executed by a **user** node (**client**), in the system of FIG. 1, according to one embodiment of the invention;

DETDESC:

DETD(2)

Referring . . . granted to the server 10, as will be described. The CPUs 13 are in turn serves for a number of **users** 16, which are CPU nodes where the licensed programs 17 are actually executed. The programs

17 executing on the **user** C. . s 16 are applications programs (or operating systems, etc.) which have added to them units 18 and 19, according to. . . to make inquiry to the their server 13 (or 10) before executing and to report back after executing, using a **client** stub 19 in the manner of remote procedure calls, in one embodiment. A **user** node 16 may have many different programs 17 that may be executed, and the various **user** nodes 16 would usually each have a set of programs 17 different from the other **user** nodes, all of which would be administered by the license management program 14 or 11. The **terms** "program" and "licensed product" are used in reference to the element 17, but it is understood that the products being. . . 13 by a network 21, as is usual in large organizations, and the delegatee servers 13 each communicate with their **user** nodes 16 by networks 22; these networks may be of the Ethernet, token ring, FDDI types or the like, or alternatively, the **user** nodes 16 may be merely a cluster of terminals on a multiuser system with the delegatee being a host CPU. The particular hardware construction of the **user** nodes, server nodes, communication networks, etc., and the operating systems 12 or 15, are of no concern regarding the utility of the features of the invention, the only important point being that the **user** CPUs 16 of the software products 17 in question can communicate readily and quickly with their respective server nodes 13. . .

DETDESC:

DETD(3)

The function of the unit 19 is that of a **client** stub, in a remote procedure call sense. The calls to the license server 10 are made through this stub 19,. . .

DETDESC:

DETD(4)

The . . . use authorizations), and also maintains a log 24 which is a record of the usage activity of all of the **user** CPUs 16 of each of the licensed programs. The delegatee servers 13 would maintain similar license databases and logs. The. . . an operating system 27. The license issuer 25 may be under control of the producer 28 of the programs or **software** products being **licensed**, or may be controlled by a distributor who has received the authority to grant licenses from the producer or owner. . . modems, or may include physical delivery by disks or CD ROMs, for example. Likewise, the method of delivery of the **software** products being **licensed**, i.e., the applications programs 17 to be executed on the CPUs 16, is not material to the license management facility. . .

DETDESC:

DETD(6)

In . . . and issuer can be a single entity or multiple entities). The license document generator program 26, under control of a **user** (a person), generates a license (usually the result of negotiation between the **user** of program 26 and a **user** of the server 10). This license is called a product use authorization, and it is transmitted by the link 30. . . where it is likewise stored in a database. Thereafter, administration of the license is only in response to inquiries from **user** nodes 16. When execution of a program 17 begins, the unit 18 is invoked to check on the availability of a license for this particular node. The unit 18 sends (as by an RPC) a **request** to the license management program 14 (or 11 if there is no delegatee), where the product use authorization stored in database 23 is checked to see if use is authorized. If so, a return is sent to the **user** node 16, granting permission to continue. When the program 17 has finished executing, the

unit 18 again is invoked to. ...

DETDESC:

DETD(7)

To implement these operations, the license management program 11 or 14 contains several functions, including a **client** interface 31, a database interface 32, a management interface 33, and an interserver interface 34 for communicating with the delegatees 13 (if any). The **client** interface 31, as described below, handles the **requests** received from the **user** nodes 16, and returns resulting from these **requests**. The database interface 32 handles the storing and retrieval of license information in the database 23, and logging license usage. .

DETDESC:

DETD(8)

The . . . in field 37, and the licensee (usually the owner of the license server 10) identified in field 38. The essential **terms** of the license grant are then defined in fields 40-46. The start date and end date are specified in fields. . . than also a start date as employed here. Each of the nodes, including issuer 25, servers 10 and 13, and **user** nodes 16, maintain a time value by a local clock referenced to a standard, so inherent in the license management. . . 41 will have some subset of the units field in the original product use authorization. As units are granted to **users** 16 or delegated, the remaining units available for grant are indicated in a subfield 42 in the copy of the. . . 44 specifies the location and environment in which product use or license management occurs, i.e., a CPU or an individual **user** or a network, etc. Duration field 45 indicates whether the license granted to a **user** is by assignment, by transaction, or immediate. The LURDM field 46 indicates the license use requirements determination method, in some. . .

DETDESC:

DETD (10)

If . . . network 21 may include a satellite link to a remote facility where the local server 13 has a number of **clients** or **users** 16, in which case the calls to the server 13 would be completed much quicker than would be the case. . .

DETDESC:

DETD(11)

The . . . If the caller authorization in field 49 is true, the product is permitted to receive calls from other named products **requesting** use of the product, and if **conditions** are met (identified caller is authorized) the server can grant a calling card, as described below. If the calling authorization. . . if product 17a wishes to make a remote procedure call to a feature of product 17b running on a different **user** node 16, it makes a call to its server 13 including a **request** for a calling card, and, if permitted, the return to product 17a includes a calling card 49a. The product 17a . . .

DETDESC:

DETD(12)

The combination authorization field 50 of FIG. 2 determines whether or not license **requests** from a **user** node 16 can be satisfied by

combining units from multiple product use authorizations. It may be advantageous to purchase licenses. . . or the like. Or, for other reasons, it may be advantageous to "borrow" and "lend" units among delegated servers or **user** nodes. This function is permitted or denied by the content of field 50.

DETDESC:

DETD(13)

The overdraft field 51 determines whether or not a **requested** allocation from a **user** node 16 will be nevertheless granted, even though the units available field 42 is zero or too small to permit the **requested** use. Overdrafts can be unlimited, or a specific overdraft pool can be set up by a server 10, for a. . . from log 24 indicates the available units have been exceeded. If overdraft is denied, then the units 18 of the **user** nodes making **request** allocations are structured to inform the products 17 that a license grant is not available. The intent is not to. . .

DETDESC:

DETD(14)

An . . . product use authorization 35 of FIG. 2. This field can contain comments or other information desired by the issuer or **user**. For example, a telephone support number may be included in the token field, then when the product 17 shows its "help screen" the number is inserted. This number would be part of the argument, i.e., data transmitted to the **user** node 16, when the server 10 makes a return following a **request** allocation message from the **user**. This field may also be used to store information used in a "private" style, where the information from this field returned to the **user** node is employed by the application prógram 17 or the stub 19 to determine if the application can be activated.

DETDESC:

DETD(16)

Two . . . use allowed by the license. When a product 17 (or a function or feature of a product) makes a license-checking **request**, the license management program 11 on server 10 computes how many license units are required to authorize this particular use. . .

DETDESC:

DETD(17)

The . . . require verification that the appropriate number of license units have been allocated to it prior to performing services to the **user**. Typically, this allocation of units occurs either at the time of activation of the product 17 or at the time that product use is enabled on a particular platform (**user** CPU 16). The units typically remain allocated to the product 17 throughout the period that the product is running or . . . disabling, the allocated units are deallocated and made available for allocation to other instances of the software product 17 (other **users** 16 activating the product). In general, as long as any license units remain unallocated in field 42, the holder of . . . The usage does not deplete the license, however, as the units are returned to the units-available field 42 after a **user** is finished, and can be granted again to another **user**.

DETDESC:

DETD(18)

A . . . consumed, units cannot be reused. Thus, the number of units available for future use declines upon every use of the **licensed** **software** product 17. This may also be referred to as a "metered" policy, being conceptually similar to measured consumption of electricity, . . .

DETDESC:

DETD(19)

Referring . . . circumstances for unique software, the "private" choices are included, which merely mean that the product 17 will generate its own **conditions** of use. It is important to note that, except for the "private" alternative, the license management is totally in control. . . 13), rather than at the product 17. All the product 17 does, via the unit 18, is to make the **request** inquiry to the server 10 via the **client** interface 31, and report when finished.

DETDESC:

DETD(20)

The . . . as a specific network, an execution domain, a login domain, a node, a process ID or a process family, a **user** name, a product name, an operating system, a specific hardware platform, as listed in FIG. 3. Applications contexts are information. . .

DETDESC:

DETD(22)

The . . . for an allocative policy, indicates that license units should be allocated to the specified context upon receipt of a license **request** and that those units should be deallocated and returned to the pool of available units upon receipt of a corresponding license release from a **user** node 16. Abnormal termination of the process or context having made the original license **request** will be semantically equivalent to a license release. On the other hand, when specified for a consumptive policy, this duration type indicates that license units should be allocated to the specified context upon receipt of a license **request** and permanently removed from the available units pool (field 42) upon receipt of a license release which reflects successful completion. . license release which carries an error status or upon abnormal termination of the processor context having made the original license **request**, the allocated units will be deallocated and returned to the pool of available units (field 42).

DETDESC:

DETD(23)

The . . . more often than every 30-days; this would prevent skirting the intent of the license by merely reassigning units whenever a **user** of another context made a **request** allocation call for the product. Related to this assignment constraint, a "reallocation limit" may also be imposed, to state the. . .

DETDESC:

DETD(24)

The . . . of license units from the pool of available units (field 42) should be performed immediately upon receipt of a license **request**. Receipt of license release or abnormal terminations will then have no impact on the license management system. When specified as.

. . will be simply to check in an appropriate number of license units are available at the time of a license **request**. When specified as the duration for a consumptive policy, the effect will be to deduct the appropriate number of license units from the available pool at the time of a license **request**, and, thereafter, abnormal termination, such as a fault at the **user** CPU 16 or failure of the network link, will not reinstate the units.

DETDESC:

DETD(25)

The . . . stores information used in calculating the number of units that should be allocated or consumed in response to a license **request**. If this field specifies a table lookup kind, this means license unit requirements are to be determined by lookup in. . . and if so a row selector must be specified, where a valid row selector is any subcontext, e.g., platform ID, **user** name, time of day, etc. An example of an LURT fragment is shown in FIG. 4, illustrating the license unit. . . products. The reason for the tiers is not mandated by the license management system, but the issuer 25 (actually the **user** of the program 26) would probably be establishing three pricing tiers, each reflecting a different perspective on the relative utility. . .

DETDESC:

DETD(28)

Some . . . a product during one or two months of the year; the product may be FORTRAN and the reason for this **request** may be that the company has a fairly stable set of FORTRAN subroutines that are given regular "annual maintenance" only. . .

DETDESC:

DETD(29)

Another . . . would then specify the name of a font as the value of the application subcontext whenever it does an lm.sub.-- **request**.sub.-- allocation() call. This will allow charges to be varied according to font name.

DETDESC:

DETD(34)

A . . . number of units must be allocated to the processor in advance and then an unlimited product use is available to **users** of the system. The product use authorization would have in the context field 44 a context template for a node. . .

DETDESC:

DETD(35)

A . . . of a licensed product. Concurrent use license units are only allocated when the product is being used and each simultaneous **user** of the licensed product requires their own units. In this case the context template, field 44, is a process ${\rm ID}$, . .

DETDESC:

DETD(36)

A "personal use" license is one that limits the number of named **users** of a licensed product. This style of licensing guarantees the

members of a list of **users** access to a product. Associated with a personal use type of product use authorization there is a list of registered **users**. The administrator is able to assign these **users** as required up to the limit imposed by the product use authorization; the number of units assigned to each **user** is indicated by the LURDM. It may be a constant or it may vary as specified in a LURT. The context template is "**user** name", the duration is "assignment", and the policy is "allocative".

DETDESC:

DETD (38)

Generally, a **license** to use a **software** product is priced according to how much benefit can be gained from using the product, which is related to the. . . A license for unlimited use on a large platform such as a mainframe, where there could be thousands of potential **users** at terminals, would be priced at a high level. Here the style would be "allocative", the context template="node", the duration="assignment". . . available on the mainframe but yet limit the cost, he could perhaps get a license that would allow only five **users** at any given time to use the product; here the fields in the product use authorization would be: units=5; style=allocative; context template=process; duration=transaction; LURDM=constant, 1-unit. This would still be priced fairly high since a large number of **users** may actually use the product if a session of use was short. A lower price would probably be available for. . . 10, not named by the license issuer 25. Here the fields in the product use authorization are: units=5; style=allocative; context template=**user** name; duration=transaction; LURDM=constant, 1-unit.

DETDESC:

DETD(39)

An . . . for in the product use authorization 35 is license combination. Where there are multiple authorizations for a product, license checking **requests** sent by **user** nodes 16 may be satisfied by combining units from multiple authorizations. Individual product use authorizations may prohibit combined use. Thus, . . .

DETDESC:

DETD(40)

The interface between the program executing on the **client** or **user** 16 and the license server 10 or its delegatees 13 includes basically three procedure calls: a **request** allocation, a release allocation and a query allocation. FIG. 5 illustrates in flow chart form some of the events occurring in this **client** interface. The **request** allocation is the basic license checking function, a procedure call invoked when a software product 17 is being instantiated, functioning to **request** an allocation of license units, with the return being a grant or refusal to grant. Note that a product may use **request** allocation calls at a number of points in executing a program, rather than only upon start-up; for example, a **request** allocation may be sent when making use of some particular feature such a special graphics package or the like. The release allocation call is invoked when the **user** no longer needs the allocation, e.g., the task is finished, and this return is often merely an acknowledge; if the.

. number of units consumed, e.g., decrease the number due to some event. The query allocation call is invoked by the **user** to obtain information about an existing allocation, or to obtain a calling card, as will be described.

DETDESC:

DETD(41)

The **request** allocation, referred to as lm.sub.-- **request**.sub.-- allocation(), is a **request** that license units be allocated to the current context. This function returns a grant or denial status that can be. . . of a licensed product or product feature. The function will not cause the product's execution to be terminated should the **request** fail. The decision of what to do in case of failure to obtain allocation of license units is up to the programmer. The arguments in a **request** allocation call are the product name, producer name, version, release date, and **request** extension. The product name, producer name, version and release date are the name of the software product, name of producer, version number and release date for specifically identifying the product which the **user** is **requesting** an allocation be made. The **request** extension argument is an object describing extended attributes of the **request**, such as units required, LURT column, private context, and comment. The results sent back to the calling node are a. .

DETDESC:

DETD (42)

The release allocation, referred to as lm.sub.-- release.sub.allocation(), is an indication from a **user** to the license manager to release or consume units previously allocated. This function releases an allocation grant made in response to a prior call to **request** allocation. Upon release, the license management style 38 determines whether the units should be returned to the pool of available units or consumed. If the caller had specified a **request** extension on the earlier call to **request** allocation which contained a units-required-attribute, and the number of units **requested** at that. time are not the number of units that should be consumed for the completed operation, the caller should. are: grant handle, units consumed, and comment. The grant handle identifies the allocation grant created by a previous call to **request** allocation. The units-consumed argument identifies the number of units which should be consumed if the license policy is consumptive; this argument should only be used in combination with an earlier call to **request** allocation which specified a units requirement in a **request** extension. Omission of this argument indicates that the number of units to be consumed is the same as the number.

DETDESC:

DETD(43)

The query allocation, or lm.sub.-- query.sub.-- allocation(), is used by licensed products which have received allocations by a previous **request** allocation call. The query is to obtain information from the server 10 or delegatee server 13 about the nature of the grant that has been made to the **user** and the license data used in making the grant, or to obtain a calling card (i.e., a **request** that a calling card be issued). Typically, the item read by this query function is the token field 52 which. . . arbitrary information encoded by the license issuer and which may be interpreted as required by the stub 19 for the **licensed** product **software** 17, usually when a "private" allocation style or context is being employed. The arguments in this procedure call are the grant handle, and the subject. The grant handle identifies the allocation grant created by a previous call to **request** allocation. The subject argument is either "product use authorization" or "calling card **request**"; if the former then the result will contain a public copy of the product use authorization. If this argument is a calling card **request** and a calling card which matches the previous constraints specified in that **request** can be made available, the result will

contain a calling card. If the subject argument is omitted, the result will. . .

DETDESC:

DETD(44)

Referring to FIG. 5, the flow chart shows the actions at the **client** in its interface with the server. When the software product 17 is to be invoked, the unit 18 is first executed as indicated by the block 60, and the first action is to make a **request** allocation call via the stub 19, indicated by the block 61. The **client** waits for a return, indicated by the loop 62, and when a return is received it is checked to see. . . is stored, block 66, for later reference. The program 17 is then entered for the main activities intended by the **user**. During this execution of product 17, or before or after, a query allocation call can be made, block 67, though. . .

DETDESC:

DETD(45)

Referring actions of the server 10 or delegatee server 13 in executing the license management program 11 or 14, for the **client** interface, are illustrated in flow diagram form. A loop is shown where the server program is checking for receipt of a **request**, release or query call from its **clients**. The call would be a remote procedure call as discussed above, and would be a message communicated by a network, . . . the argument of the received call, block 75. If the no match, an error code is returned to the **client**, block 76, and network,. If there is control goes back to the initial loop. If the product is found, the authorization is retrieved from. no update is needed. The authorization is stored again in the database, block 85, and a return made to the **client**, block 86, before control passes back to the initial loop. If the decision block 73 indicates that a query allocation. handle matches, the authorization is retrieved from the database 23, at block 89, and a return is made to the **client** giving the **requested** information in the argument, block 90.

DETDESC:

DETD(47)

The first step is formation of full context. The **client** stub 19 is responsible for collecting all specified platform and application subcontexts from the execution environment of the product 17. . . 13 or 10. The collection of subcontexts is referred to as the "full context" for a particular license unit allocation **request**.

DETDESC:

DETD(48)

The next step is retrieval of the context template. When the license manager receives an lm.sub.-- **request**.sub.-- allocation(), it will look in its list of available product use authorizations (PUA) to determine if any of them conform to the product identifier provided in the lm.sub.-- **request**.sub.-- allocation() call. The product identifier is composed of: product name, producer, version, release date. If any match is found, the. . .

DETDESC:

DETD(50)

The follows the step of determining if the **request** is new. The

license manager maintains for each product use authorization a gynamic table which includes the allocation contexts of. . . . some bookkeeping information which records the number of units allocated, the full context, etc. To determine if a recent lm.sub.— **request**.sub.— allocation() requires an allocation of units to be made, the license manager compares the new allocation context with all those. . . PUA and any LURTs that might be required. If an allocation context similar to that specified in the new allocation **request** does exist in the table, the license manager will verify that the number of units previously allocated are equal to or greater than the number of units which would need to be allocated to satisfy the new allocation **request**. If so, the license manager will return a grant handle to the application which indicates that the allocation has been made (i.e., it is a "shared allocation"—the allocated units are shared between two **requests**.) If not, the license manager will attempt to allocate a number of units equal to the difference between the number. .

DETDESC:

DETD (53)

The . . . If the license designer decides that all contexts on a single node should look the same (context template=node-ID), then any **requests** that come from that node will all share allocations. On the other hand, a decision that all contexts should be. . .

DETDESC:

DETD(57)

Referring . . . 17a named "Product-1" and a callee product 17b named "Product-2". When Product-1 starts to run, it will make an lm.sub.-**request**.sub.-- allocation() call to the license management server 10
to obtain a grant handle for an allocation of some number of. . .

DETDESC:

DETD(58)

Once . . . used when starting Product-2. Product-2 will then pass that calling card to the license manager as part of its lm.sub.-**request**.sub.-- allocation() call and the license manager will determine if the calling card is valid. Note that calling cards become invalid. . . passed back to Product-2. If not, the license manager will ignore the calling card and proceed with the normal lm.sub.-**request**.sub.-- allocation() logic.

DETDESC:

DETD(61)

Referring . . . license management program 11 executing on a server 10 includes a license management interface 33 which functions to allow a **user** at a console for the server 10 CPU or at a remote terminal to implement certain necessary operations. The management. . . site to (a) load the various licenses received from issuers 25 into the database 23 and make them available for **request** allocation calls from the **users**, (b) remove the licenses from the machine when expired, (c) to make delegations if permitted, (d) to make assignments, (e). . .

DETDESC:

DETD(64)

The . . . by the name of lm.sub.-- open.sub.-- session() and is used to establish a license management service session between a management

client and the service. Opening a session also creates a workspace to contain objects returned as a result of functions invoked. . .

DETDESC:

DETD(65)

The . . . a lm.sub.-- open.sub.-- session() call are (a) the binding handle, which is binding information that defines one possible binding (a **client**-server relationship), and (b) a comment which will be inserted in the log file 24 if logging is enabled. The results. . . function succeeded, and, if not, why not, (b) a session, which is an established license management session between the management **client** and the license management service, and (c) a workspace that will contain all objects returned as a result of functions. .

DETDESC:

DETD (66)

The . . . go with a lm.sub.-- close.sub.-- session() call are (a) the session which identifies the established lm session between the management **client** and the license management service, and (b) a comment which will be inserted in the log file if logging is. . .

DETDESC:

DETD(67)

The . . . function. The arguments that go with lm.sub.-- list.sub.-- licenses() are (a) session which identifies an established session between the management **client** and the license management service, and (b) a filter which is an object used to select license database 23 objects; . . .

DETDESC:

DETD (68)

The . . . the license data class or history objects. The arguments are (a) session, which identifies an established session between the management **client** and the license management service, (b) license data object which is to be registered; if this argument is omitted, the.

DETDESC:

DETD(69)

The . . . and is called by lm.sub.-- set.sub.-- cursor(). The arguments are (a) session, which identifies an established session between the management **client** and the license management service, (b) forward, which is a boolean value indicating if the direction in which the cursor. . . (a) a return code indicating whether the function succeeded, and, if not, why not, and (b) next-cursor, which is the **requested** cursor. The error codes in the return code may be end-of-list, not-a-cursor, etc.

DETDESC:

DETD(84)

Thus, . . . by the product use authorization. In each case, the license administrator can limit the rights which will be allocated to **users** in some way that may be appropriate for the administrator for control purposes.

DETDESC:

DETD (96)

The . . . concerned, so a processor which does not understand private header data may ignore that data. The Title field is the **user**-visible name of the document. The Author field is the name of the person or persons responsible for the information content. . .

DETDESC:

DETD(97)

The . . . 16 specifies that data, common to all types of license data, which describes the parties to the licensing agreement, the **term** of the agreement, and any constraints that may have been placed on the management of the license data encoded in . . .

DETDESC:

DETD (98)

The . . . individual licensees will specify to those issuing them licenses what the licensee fields on their license data should contain. The **term** field identifies the **term** during which the license data may be used; the validity of license data can be limited by issuers to specific time ranges with given starting and ending dates, which are carried in the **term** element-attempts to use license data or products described by that data either before the start date or after the end. .

DETDESC:

DETD(99)

The . . . administrative or accounting facilities or basic system components. Some examples of potential uses for this field are order information, additional **terms** and **conditions**, and support information. For order information, some issuers may wish to include with their loadable license data some indication of . . . find it useful to include this data in their license databases to assist in the license management process. For additional **terms** and **conditions**, the system will never provide automatic means for the management of all possible license **terms** and **conditions**, and so some issuers may wish to include summaries of non-system managed **terms** and **conditions** in the comment as a reminder. For support information, the IssuerComment could be used to record the phone numbers or . . .

DETDESC:

DETD(100)

A . . . the means that will be used by the license manager to ensure that the licensee's actual use conforms to the **terms** and **conditions** of the license. FIG. 18 illustrates a syntax diagram for a Product Use Authorization. Product-id identifies the name of the. . .

DETDESC:

DETD(109)

The . . . the license data may not be used; this data must be earlier than the end-date specified in the license data's **term** record. The extended-info field allows additional information concerning the state of the License Data and its handling by the license. . .

DETDESC:

DETD(111)

Member

Context Named Value

Distribution Control

Named Value List

Execution Constraints

Product ID

Interval Time

Signature **Term**

License ID LUDRM

Version

Management Constraints

DETDESC:

DETD (113)

The assignment element is shown in syntax diagram in FIG. 27. Assigned-units identifies the number of units which are assigned. Assignment-**term** identifies the start and end of the assignment period. Assignee identifies the context to which the assignment is made.

DETDESC:

DETD(114)

The . . . the caller is executing; (d) login-domain-subcontext means the subcontext value is the name of the management domain within which the **user** of the caller was originally authenticated or "logged in"; (d) node-subcontext means the subcontext value is the name of a. . . identifier for a group of related processes; (f) process-ID-subcontext means the subcontext value is an implementation specific process identifier; (g) **user**-name-subcontext means the subcontext value is a **user** name; (h) product-name-subcontext means the subcontext value is the same as the product name found on the Product Use Authorization; . .

DETDESC:

DETD(115)

As . . . calculating license unit requirements. The management system determines the need to perform a unit allocation each time license units are **requested**. The full context on whose behalf the allocation should be made is obtained for each **requested** authorization. The system will mask the full context to exclude all sub-contexts not specified in the context template and then. . . previously allocated will be shared by the new context. Thus, if a given product authorization contains a context specification of NODE+**USER**.sub.-- NAME, each context which **requests** license unit allocations and which has a unique pair of NODE+**USER**.sub.-- NAME subcontext values will require an explicit grant of license units to be made. On the other hand, any contexts which share the same pair of NODE and **USER**.sub.-- NAME subcontext values will be able to "share " a single allocation of license units. The requirement for specific allocations. . . them are unique when looking only at those portions of each context which are described by the Context Template (ie: NODE+**USER**.sub.-- NAME). A unit allocation must be made for each of the four instances of unique contexts, when masked by the.

DETDESC:

DETD(120)

The . . . where it is found that there are zero or fewer license units available for use at the time of a **request** for the allocation or consumption of additional license units. Operation of overdraft is different depending upon whether allocative, or consumptive. . .

DETDESC:

DETD(121)

The . . . own network), the assumption is that interorganization and internetwork sharing of licenses will normally be considered a violation of license **terms** and **conditions**. The backup-permitted field indicates if the Issuer has authorized the use of backup delegations for this data. Delegation-permitted indicates if. . .

DETDESC:

DETD (122)

The . . . stores information used in calculating the number of units that should be allocated or consumed in response to a license **request**. The allocation-sharing-limit identifies the largest number of execution contexts that may share an allocation made under this management policy; an. . .

DETDESC:

DETD(125)

The . . . in the case of Group Names, the Producer is always also the Issuer of the group. The Product-name identifies a **licensed**
software feature. The First-version identifies the earliest version of the product whose use is authorized. The Last-version identifies the latest version. . .

DETDESC:

DETD(127)

The **term** element defines an interval during which the license data is valid, and is shown in syntax diagram form in FIG. 42. The fields are start-date and end-date. Start-date identifies the first date of the **term**; if not specified, the license data is considered valid on any date prior to the end-date. End-date identifies the last date of the **term**; if not specified, the license data is considered valid on any date after the Start-date. While the Start-date is always. . . has been omitted, the date of license registration will be used as the effective start date in computing the valid **term** of the license data. It should be noted that the system does not specify the mechanism by which system dates. . . accepts that system time returned to it as correct. Thus, the reliability of the management of license data which specifies **terms** is dependent on the time management function of the underlying platform.

DETDESC:

DETD(128)

The version element identifies a four-part version of the **licensed**
software product or feature. A syntax diagram of the version element
is shown in FIG. 43. The schematics of each of. . .

DETDESC:

DETD(130)

An important feature is the use of filters in the license management program 11, including the **client** interface 31 and the management interface 33. A filter is used is select items in the license database 23, for. . . be selected from. The feature that is of importance to this embodiment is the way of specifying items as an **input** to the filter function, rather than the filter function itself. Thus, there is described below a template for specifying **input** to the filter engine. This is as if a form were used as the **input**, with blanks on the form; by filing in certain blanks these would be the items selected on, the blanks not. . .

DETDESC:

DETD(135)

equality less
inequality present
greater or equal select
less or equal **request** candidates
greater simulate **request**

DETDESC:

DETD(136)

(b) . . . is the substring to compare against the final portion of the value of the specified attribute type, and (h) license **request**, if present, this is license **request** against which the appropriate license data objects should be evaluated; this attribute may only be specified if the value of the filter item type is either **Request** . Candidates or Simulate **Request**.

DETDESC:

DETD(138)

An . . . and when the Filter is evaluated against the attributes of that object the Filter is true, and false otherwise; (i) **Request** Candidates which means the filter item is true if the object against which it is evaluated is one which could be used to provide some or all of the units **requested** by the specified License **Request**; the evaluation is made independently of any outstanding allocations or preallocations; and (j) Simulate **Request** which means the filter item is true if the object against which it is evaluated is one which would be used to provide some or all of the units **requested** by the specified License **Request**.

DETDESC:

DETD(139)

The **Request** Candidates and Simulate **Request** filter item types are of special use in testing and prototyping of systems by a license manager at a licensee's. . .

DETDESC:

DETD(141)

Filters can also used in a **request** allocation, being specified in a **request** extension as explained above. That is, a filter is one of the optional items in a **request** extension. For example, if a **user**

wanted to use a version of WordPerfect with French language extension, and there were version with and without on the network, his **request** allocation would have a **request** extension that specified a filter for "French" in the token field. In this manner, a product can describe itself more richly. The filter in the **request** extension can be a Required filter or a Preferred filter, meaning the feature such as "French" is either absolutely necessary,. . .

CLAIMS:

CLMS(1)

What is claimed is:

1. A method operating on a computer system for managing use of
licensed **software** items, comprising the steps of:
maintaining by said computer system a store of **license**
authorizations for said **software** items; each **license**
authorization including an indication of **license** management policy
for a **software** item, said indication being an encoded document
containing a number of attributes defining said license policy;
providing a mechanism for said. . . specifying one of more of said
attributes and a Boolean operator for each selected attribute;
sending to said computer system a **request** by a **user** of one of
said software items to obtain permission to use said software item;
said **request** including an identification of the **user** and said
software item;
accessing said store by said filter to select information from said
license authorization for said **software** item, in response to

license authorization for said **software** item, in response to said **request**, and comparing said identification of said **user** and said software item with said information selected by said filter, to produce a grant or refusal of said **request**; and sending by said computer system said grant or refusal to said **user**.

CLAIMS:

CLMS(3)

3. A method according to claim 1 wherein said store is maintained by a license server, and said **request** is sent to said server.

CLAIMS:

CLMS(4)

4. A method according to claim 1 wherein said **request** is in the form of a remote procedure call, and said grant or refusal sent to said **user** is a return of said procedure call.

CLAIMS:

CLMS(6)

6. A method according to claim 3 wherein said server and said **users** are nodes on a computer network.

CLAIMS:

CLMS(7)

7. Apparatus for execution on a computer system for managing use of **licensed** **software** items, comprising:
means for executing on said computer system for maintaining a store of **license** authorizations for said **software** items; each **license** authorization including an indication of **license** management policy for a **software** item, said indication being an

encoded document of containing a number of attributes defining said license policy;

filter means for executing. . . filter means specifying one of more of said attributes and a Boolean operator for each selected attribute; means for sending a **request** by a **user** of one of said software items to said computer system to obtain permission to use said software item; said **request** identifying the **user** and said software item; means for accessing said store using said filter means to obtain information from said **license** authorization for said **software** item, in response to said **request**, and means for comparing said identification of said **user** and said software item with said information obtained from said store using said filter means, to produce a grant or refusal of said **request** in response to said comparing; and

means for executing on said computer system for sending said grant or refusal to said **user**.

CLAIMS:

CLMS(9)

9. Apparatus according to claim 7 wherein said store is maintained by a license server, and said **request** is sent to said server.

CLAIMS:

CLMS (10)

10. Apparatus according to claim 7 wherein said **request** is in the form of a remote procedure call, and said grant or refusal sent to 'said **user** is a return of said procedure call.

CLAIMS:

CLMS (12)

12. Apparatus according to claim 9 wherein said server and said **users** are nodes on a computer network.

Petitioner Apple Inc. - Exhibit 1022, p. 231

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L23: 12 of 26

Linking system and method for accessing **directory*

information about an object in one context when

information in another context is known

US PAT NO: 5,491,817 DATE ISSUED: Feb. 13, 1996

[IMAGE AVAILABLE]

08/068,822 DATE FILED: May 25, 1993 TITLE: Linking system and method for accessing **directory**

information about an object in one context when

information in another context is known

ABSTRACT:

method is implemented in our linking system which includes an interconnection network, which employs a standard directory protocol, such as **X**.**500**, and linking components. The interconnection network includes interfaces for interconnection users and local directories. The linking components include linking directories.

SUMMARY:

BSUM(6)

The **X**.**500** standard has been developed by the International Telegraph and Telephone Consultative Committee (CCITT) to support the interconnection of local directories holding information and users of **directory** **information** for the purpose of providing **directory** **services**. CCITT, The Directory--Overview Concepts, Models, and Services, **X**.**500** Series Recommendation, Document AP IX-47-E.
X.**500** defines a standard protocol for directory users to communicate with different local directories which are owned, operated, or managed by different entities. This standard also defines **directory** **services** available to users.

SUMMARY:

BSUM(8)

Prior to the **X**.**500** standard being established, a user wishing to contact various local directories maintained by different entities to obtain John Doe's credit. user and various entities. The user had to know and adapt to the specific protocol of each entity maintaining desired **directory** **information** in order to communicate requests for information to the entity in cognizable form and to translate information once retrieved. The **X**.**500** standard provides a standard protocol which reduces these communication barriers and allows users to access information and also permits local.

SUMMARY:

BSUM(9)

FIG. 2 depicts a basic functional model of an interconnection network 100 employing the **X**.**500** standard for providing **directory**
service. This model shows four main elements: **directory** **service** users 10, 15; directory user agents (DUAs) 20, 25; directory system agents (DSAs) 30-60; and local directories 75. Users 10 and 15 are entities utilizing **directory** **services**. Traditionally, a **directory** **service** user has been a human being, but a user could also include a machine such as a computer executing an.

SUMMARY:

BSUM (12)

DSAs support access to information in local directories and manage and retrieve **directory** **information**. Also, after retrieving information from its local directories, the DSA formats the response to directory requests from users, and communicates. . .

SUMMARY:

BSUM(13)

A DSA and a DUA communicate using **X**.**500** directory access protocol (DAP), and two DSAs communicate using standard **X**.**500** directory system protocol (DSP). As shown in FIG. 2, DSAs 30 and 50 are connected to DUA 20 via links. . .

SUMMARY:

BSUM(14)

In addition to minimizing the communication barriers between users and local directories, the **X**.**500** standard also provides some **directory** **services** capabilities to facilitate retrieval of **directory** **information**. FIG. 3 depicts an interconnection of a user and different entities which contain credit information for John Doe, as discussed in the example above and shown in the table of FIG. 1. Under the **X**.**500** standard, user 10 could request John Doe's visa card balance by sending, via its DUA 20, the distinguished name of. . . for John Doe in CC's Visa directory to DSA 130. The distinguished name is a term of art under the **X**.**500** standard and is the distinctive name of a network element (i.e. DSA, DUA, local directory and directory entry) which uniquely. . .

SUMMARY:

BSUM(16)

Upon . . . Doe in the Visa directory 141, DSA 130 has the option of handling this request using different capabilities of the **X**.**500** standard which include chaining, referral, and search capabilities. The chaining, referral, and search capabilities are available through the implementation at. . .

SUMMARY:

BSUM(17)

Upon . . . the Visa directory 141, DSA 130 can either transfer the request to DSA 140 using the chaining capabilities of the **X**.**500** standard or refer the user 10 directly to DSA 140 using the referral capability of the **X**.**500** standard. The chaining capability allows a DSA, which does not hold the requested information, to handle the request for the . . .

SUMMARY:

BSUM(18)

Another capability of the **X**.**500** standard is searching. Illustratively, the search capability allows the user 10 to specify the distinguished name of the CC Company. . . distinguished name for the information sought or cannot contact the proper DSA directly, accessing desired information is difficult, since the **X**. **500** has limited capabilities.

SUMMARY:

BSUM(19)

A drawback of the **X**.**500** standard is that it does not provide an effective mechanism for cross-referencing information in the interconnection network or for efficiently. . .

SUMMARY:

BSUM(20)

X.**500** does not provide a complete solution which permits the user to access requested information about John Doe when other **directory** **information** is known, since this standard does not define DSA mechanisms for relating or cross-referencing directory entries associated with the same object. Such mechanisms are left as a matter for the users and providers of **directory** **services** to agree upon. However, two mechanisms, aliases and seeAlso references, which are defined in the standard, could be used to. . .

SUMMARY:

BSUM(22)

Although the **X**.**500** standard provides interconnection between DSAs and some limited **directory** **service** capabilities, it does not provide a viable method for cross-referencing or narrowing the search scope for directories having entries associated. . . the standard permit a user to access information in one context when information in another context is known. To improve **directory** **services** under the **X**.**500** standard, a linking directory could be employed. A linking directory includes one entry per object which could be a person. . .

SUMMARY:

BSUM(23)

Previous . . . have demonstrated an effective mechanism which allows cross-context information retrieval in a directory network employing a standard protocol, such as **X**.**500**, and which enhances the **directory** **service** capabilities of the standard without changing its structure and characteristics.

SUMMARY:

BSUM (24)

Accordingly, . . . a linking system for improving services in a network of directories which employs a standard directory protocol, such as the **X**.**500** standard. It is a further object of our invention to provide a method for allowing a user to access **directory** **information** about an object in one context by knowing **directory** **information** about the object in another context.

SUMMARY:

BSUM (26)

Our invention relates to a linking system for enhancing **directory**

service in a network of directories employing a standard directory

protocol such as the **X**.**500** standard. Our invention also relates
to a method to be implemented in a network of directories employing a

standard directory protocol for accessing **directory** **information**

about an object in one context, when **directory** **information** about
the object in another context is known.

SUMMARY:

BSUM(27)

This linking system comprises an interconnection network which employs a standard directory protocol, such as **X**.**500**, and linking components. The interconnection network comprises DUAs and DSAs for interconnecting users and directories. DUAs are users' interfaces in. .

SUMMARY:

BSUM (30)

The use of the linking system for retrieving **directory**
information can be explained by taking for example a user who wishes
to access credit information for John Doe, who is. . .

SUMMARY:

BSUM(34)

Enhanced **Directory** **Service**--users can access information even when all the information necessary to compose the distinguished name of the entry containing the information. . .

SUMMARY:

BSUM (36)

Preservation of Standard Directory Protocol--**directory** **service** capabilities are enhanced without changing the functional model of the *X**.**500** standard;

DRAWING DESC:

DRWD(2)

FIG. 1 is a table showing different entities holding **directory** **information** regarding John Doe.

DRAWING DESC:

DRWD(3)

FIG. 2 depicts a functional model of an interconnection network employing the **X**.**500** standard, from the prior art, for interconnecting directories and users of **directory** **information**.

DRAWING DESC:

DRWD(4)

FIG. 3 depicts an **X**.**500** standard network interconnecting a user and multiple directories which contain credit information about John Doe as shown in FIG. 1.

DRAWING DESC:

DRWD(5)

FIG. 4 depicts a representative embodiment of our linking system, in accordance with an aspect of our invention, for enhancing **directory** **service** in a network of directories, which network employs a standard directory protocol, such as the **X**.**500** standard.

DETDESC:

DETD(2)

FIG. 4 depicts a representative embodiment of our linking system for enhancing **directory** **service** in a network of local directories, which network employs a standard directory protocol, such as the **x**.**500** standard. This linking system 500 comprises an interconnection network 550 which employs a standard directory protocol, such as **X**.**500**, and linking components 200 and 300. The interconnection network 550 comprises DUAs 20 and 25 and DSAs 30-70 for interconnecting. . . DSAs are connected to DUAs via links 80 - 82 using standard protocol, such as the DAP protocol of the **X**.**500** standard. Furthermore, DSAs are interconnected by links 90 - 96 using a standard protocol, such as the DSP protocol of the **X**.**500** standard.

DETDESC:

DETD(8)

The . . . distinguished name of the directory entry holding the information about an object in a desired context but, instead inputs known **directory** **information** about the same object in one context and requests information in another desired context. Using the linking components in the interconnection network does not impair the **directory** **service** capabilities available through the standard directory protocol, such as **X**.**500**. Implementation of the linking components enhances the service capabilities of the standard directory protocol without altering the standard. The linking. . .

DETDESC:

DETD(27)

Thus, our linking system enhances **directory** **services** in a network, which interconnects local directories and users and employs a standard directory protocol, such as the **X**.**500** standard, by implementing linking directories and linking applications. Our linking system allows a user to access information about an object. . .

CLAIMS:

CLMS(19)

19. . . . based upon a user's request for information about an object in a particular context, wherein said standard directory protocol is **X**.**500**.

CLAIMS:

CLMS(20)

20.... user's request for information about an object in a particular context, wherein said directory interfaces communicate with one another using **X**.**500** directory system protocol and said user interface communicates with said directory interfaces using **X**.**500** directory access protocol.

Petitioner Apple Inc. - Exhibit 1022, p. 236

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UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

ddress: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKETT NO.
08/808,050	02/28/97	Robert E. Kahn	06154/004001
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		EXAMINER INTERVIEW SUMMARY RECORD	agaington and grafts and are the space of the second second second second second second second second second s
All participants (applicant	t, applicant's representa	tive, PTO personnel):	Section of the section
(1)	Hien	un 3 Robert	E. lahn
(2) DANI	L	Feigenbaum, Patrice	Lyons
Date of interview	01/30/	(5) David	K. Ely
Type: Telephonic	Personal (copy is giv	en to □ applicant □ applicant's representative).	J. S. Carlotte
Exhibit shown or demons	/ \stration conducted: 🗆 \	res (No. If yes, brief description:	
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Agreement was read	ched with respect to son	ne or all of the claims in question. 🗖 was not reached. 💎 🦠	en behan er handstad i still en en
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Claims discussed:			1
Identification of prior art	discussed:	rior ant of	VO LOVA
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Description of the genera	al nature of what was ag	reed to if an agreement was reached, or any other comments:	
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(A fuller description, if no	poessant and a convot	the amendments, if available, which the examiner agreed woul	lid randar the claims allowable must be
		nts which would render the claims allowable is available, a sun	
1. It is not necessa	ry for applicant to provid	de a separate record of the substance of the interview.	
WAIVED AND MUST IN	CLUDE THE SUBSTAN	to indicate to the contrary, A FORMAL WRITTEN RESPONSE ICE OF THE INTERVIEW (e.g., items 1-7 on the reverse side of liven one month from this interview date to provide a statement	of this form). If a response to the last Office
requirements th	at may be present in the	y above (including any attachments) reflects a complete respo e last Office action, and since the claims are now allowable, thi	is completed form is considered to fulfill the
response requir box 1 above is		e action. Applicant is not relieved from provi ding a separate re	corp of the substance of the interview unless
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PTOL-413 (REV. 2 -93)		Examiner's Signature	
		APPLICANT'S COPY	

Petitioner Apple Inc. - Exhibit 1022, p. 238

Manual of Patent Examining Procedure, Section 713.04 Substance of Interview Must Be Made of Record

A complete written statement as to the substance of any face-to-face or telephone interview with regard to an application must be made of record in the application, whether or not an agreement with the examiner was reached at the interview.

§ 1.133 Interviews

(b) In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for response to Office actions as specified in § § 1.111, 1.135. (35 U.S.C.

§ 1.2 Business to be transacted in writing. All business with the Patent and Trademark Office should be transacted in writing. The personal attendance of applicants or their orneys or agents at the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete a two-sheet carbon interleaf interview Summary Form for each interview held after January 1, 1978 where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks in neat handwritten form using a ball point pen. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below.

The interview Summary Form shall be given an appropriate paper number, placed in the right hand portion of the file, and listed on the "Contents" list on the file wrapper. The docket and serial register cards need not be updated to reflect interviews. In a personal interview, the duplicate copy of the Form is removed and given to the applicant (or attorney or agent) at the conclusion of the interview. In case of a telephonic interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the telephonic interview rather than with the next official communication.

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The Form provides for recordation of the following information:
- Serial Number of the application

- Name of applicant
- Name of examiner
- Date of interview Type of interview (personal or telephonic)
- Name of participant(s) (applicant, attorney or agent, etc.)
 An Indication whether or not an exhibit was shown or a demonstration conducted to the control of the contro
- An identification of the claims discussed
- An identification of the claims discussed
 An identification of the specific prior art discussed
 An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). (Agreements as to allowability are tentative and do not restrict further action by the examiner to the contrary.)
 The signature of the examiner who conducted the interview
- Names of other Patent and Trademark Office personnel present.

The Form also contains a statement reminding the applicant of his responsibility to the record the substance of the interview.

It is desirable that the examiner orally remind the applicant of his obligation to record the substance of the interview in each case unless both applicant and examiner agree that the examiner will record same. Where the examiner agrees to record the substance of the interview, or when it is adequately recorded on the Form in an attachment to the form, the examiner should check a box at the Form informing the applicant that he need not supplement the Form by submitting a separate record of the interview.

It should be noted, however, that the interview Summary Form will not be considered and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview:

- A complete and proper recordation of the substance of any interview should include at least the following applicable items:

 1) A brief description of the nature of any exhibit shown or any demonstration conducted.

 2) an identification of the claims discussed.

- an Identification of specific prior art discussed.
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the examiner.
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner. The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application office. Of course, the applicant may desire to emphasize and fully describe those arguments which he feels were or might be persuasive to the examiner.

 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete or accurate, the examiner will give the applicant one month from the date of the notifying letter or the remainder of any period for response, whichever is longer, to complete the response and thereby avoid abandonment of the application (37 CFR 1.135(c)).

Examiner to Check for Accuracy

Applicant's summary of what took place at the interview should be carefully checked to determine the accuracy of any argument or statement attributed to the examiner during the interview. If there is an inaccuracy and it bears directly on the question of patentability, it should be pointed out in the next Office letter. If the claims are allowable for other reasons of record, the examiner should send a letter setting forth his or her version of the statement attributed to him. If the record is complete and accurate, the examiner should place the indication "interview record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.



ATTORNEY DOCKET NO. 0615

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit: 2756

Serial No.: 08/808,050

Examiner: Luu

Filed

: February 28, 1997

Title

: IDENTIFYING MANAGING, ACCESSING, AND TRACKING DIGITAL

OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Assistant Commissioner for Patents Washington, DC 20231

PETITION FOR THREE-MONTH EXTENSION OF TIME

Pursuant to 37 C.F.R. 1.136, applicants hereby petition that the period for response to examiner's action mailed September 4, 1997, be extended for three months to and including March 4, 1998.

Enclosed is a check for \$950 for the required fee. Please apply any other charges or any credits to our deposit account number 06-1050, reference 06154/004001.

Respectfully submitted,

Date:

David L. Feigen Reg. No. 30,378 Feigenbaum

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

> Date of Deposit I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to missioner for Patents, Washington, D.C. the Assistant Cop 20231.



Fish & Kichardson p.c

W.K. Richardson 1859-1951

March 3, 1998

Attorney Docket No.: 06154/004001

Box CPA

Assistant Commissioner for Patents Washington, DC 20231

This paper is a request for a continuation under 37 C.F.R. 1.53(d) of:

BOSTON

SOUTHERN CALIFORNIA

SILICON VALLEY

TWIN CITIES

WASHINGTON, DC

Applicant: Title:

Robert E. Kahn and David K. Ely

IDENTIFYING, MANAGING, ACCESSING, AND

TRACKING DIGITAL OBJECTS AND

ASSOCIATED RIGHTS AND PAYMENTS

Prior U.S. application no:

Filing Date:

08/808,050

February 28, 1997

The prior application was complete as defined by 37 CFR 1.51(b), or was a national stage of an international application filed in compliance with 35 USC §371.

The prior application was filed after June 8, 1995.

This request for a CPA is the reference to the prior application noted above as required by 35 USC §120. Kindly abandon the prior application in favor of the continued proceedings that are requested herein.

The prior application is assigned of record to CORPORATION FOR NATIONAL RESEARCH INITIATIVES, a District of Columbia corporation, by virtue of an assignment submitted to the Patent and Trademark Office for recording on December 28, 1993, at 6905/0310.

03/06/1998 MGORDON 00000017 08808050 790.00 OP

"EXPRESS MAIL" Mailing Label Number EM028/30495
Date of Deposit
I hereby certify under 37 CFR 1.10 that this correspondence is being
deposited with the United States Postal Service as "Express Mail
Post Office To Addressee" with sufficient postage on the date
indicated above and is addressed to the Assistant Commissioner for
Patents, Washington, D.C. 20231.
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Justin Michaera

FISH & CICHARDSON P.C.

March 3, 1998 Page 2

This request includes sheets, and the following:

Enclosures:

- Postcard
- Copy of Petition of Extension of Time

The entire disclosure of the prior application is part of this application and is incorporated by reference.

Basic filing fee	•	790.00
Total claims in excess of 20 times \$22.00		0.00
Independent claims in excess of 3 times \$82.00		0.00
Fee for Multiple dependent claims		0.00
Total filing fee:		\$ 790.00

A check for the filing fee is enclosed. Please apply any other required fees or any credits to deposit account 06-1050, referencing the attorney docket number shown above.

If this application is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at 617/542-5070.

Kindly acknowledge receipt of this application by returning the enclosed postcard.

Please send all correspondence to:

David L. Feigenbaum, Esq. Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Enclosures



PATENT ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit: 2756

Serial No.: 08/808,050

Examiner: Luu

Filed

: February 28, 1997

Title

: IDENTIFYING MANAGING, ACCESSING, AND TRACKING DIGITAL

OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Assistant Commissioner for Patents

Washington, DC 20231

PETITION FOR THREE-MONTH EXTENSION OF TIME

Pursuant to 37 C.F.R. 1.136, applicants hereby petition that the period for response to examiner's action mailed September 4, 1997, be extended for three months to and including March 4, 1998.

Enclosed is a check for \$950 for the required fee. Please apply any other charges or any credits to our deposit account number 06-1050, reference 06154/004001.

03/10/1998 SDAVIS 00000061 08808050 01 FC:117 950.00 DP

Respectfully submitted,

Date:

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906 David L. Feigenbaum Reg. No. 30,378

I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to imissioner for Patents, Washington, D.C. 20231.



UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

APPLICATION NUMBER FILING DATE FIRST NAMED APPLICANT ATTORNEY DOCKET NO.

LM21/0511

08/808,050

02/28/97

KAHN

[...:

06154/004001

DAVID L FEIGENBAUM FISH AND RICHARDSON 225 FRANKLIN STREET BOSTON MA 02110-2804 EXAMINER
LUIU ; L.
ART UNIT PAPER NUMBER
2756 27

DATE MAILED:

05/11/98

This is a communication from the examiner in charge of your application. COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACT	CION SLIMMARY A
Responsive to communication(s) filed on	0/97 and 03/03/98
• `	
This action is FINAL.	
Since this application is in condition for allowance except for accordance with the practice under <i>Ex parte Quayle</i> , 1935.	O.C. 11; 453 O.G. 213.
A shortened statutory period for response to this action is set to whichever is longer, from the mailing date of this communication the application to become abandoned. (35 U.S.C. § 133). Exte 1.136(a).	i. Failure to respond within the perio d for r esponse will cause
Disposition of Claims	
Claim(s) 5 9 - 6 6	is/are pending in the application.
Of the above, claim(s)	is/are pending in the application. is/are withdrawn from consideration.
Claim(s)	is/are allowed
(X Claim(s) 53 - 66	is/are rejected.
Claim(s)	is/are objected to.
	are subject to restriction or election requirement.
Application Papers	
☐ See the attached Notice of Draftsperson's Patent Drawing	Review, PTO-948.
☐ The drawing(s) filed on	is/are objected to by the Examiner.
☐ The proposed drawing correction, filed on	is approved disapproved.
☐ The specification is objected to by the Examiner.	
☐ The oath or declaration is objected to by the Examiner.	
Priority under 35 U.S.C. § 119	
☐ Acknowledgement is made of a claim for foreign priority und	er 35 I I S.C. & 119(a)-(d)
☐ All ☐ Some* ☐ None of the CERTIFIED copies o	
☐ received.	, the priestly account have been
☐ received in Application No. (Series Code/Serial Number	1)
☐ received in this national stage application from the Intel	,
*Certified copies not received:	· · · · · · · · · · · · · · · · · · ·
Acknowledgement is made of a claim for domestic priority u	•
Attachment(s)	
☐ Notice of Reference Cited, PTO-892	
☐ Information Disclosure Statement(s), PTO-1449, Paper N	0(e)
☐ Interview Summary, PTO-413	0(0).
☐ Notice of Draftsperson's Patent Drawing Review, PTO-94	Ω
•	
☐ Notice of Informal Patent Application, PTO-152	ON THE FOLLOWING PAGES
SEE OFFICE ACTION	* U.S. GPO: 1996-400

Serial Number: 08/808,050

Art Unit: 2756

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1. The numbering of claims is not accordance with 37 CFR 1.126. The original numbering of the claims must be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When claims are added, except when presented in accordance with 37 CFR 1.121(b), they must be renumbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claims 54-67 have been renumbered as claims 53-66. In addition,

- a. Claims 54-55, 57, 59, 61-66, line 1, change "54" to --53--.
 - b. Claim 56, line 1, change "56" to "55".
 - c. Claim 58, line 1, change "58" to "57".
 - d. Claim 60, line 1, change "60" to "59".
- 2. Claims 53-66 are presented for examination.
- 3. Claims 61 and 65 are objected to because of the following informalities:
 - (a) Claim 61, line 1, typographical error "comprisinga".
 - (b) Claim 66, line 1, typographical error "comprisingan".

Serial Number: 08/808,050 3

Art Unit: 2756

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

action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention

was made.

5. Claims 53-55, 57, 59-61, and 65 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over "Workshop on the Protection of Intellectual Property Rights in a Digital Library System" by Corporation for National Research Initiatives (CFNRI), in view of Gopal et al (Gopal) patent no. 5,491,817.

6. As to claim 1, CFNRI teaches the invention substantially as claimed, including a system for organizing digital information in a network comprising:

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Serial Number: 08/808,050

Art Unit: 2756

digital objects, each of the digital objects comprising one or more sequences of structured data or sets of such sequences, each of the sequences of sets of sequences incorporating a work or a portion of a work or other digital information in which a party has rights or interests, or in which there is a value each of the sequences or sets of sequences being structured in a way that is interpretable by one or more computational facilities on the network ("A piece of information ... (see Fig. 1)" in Section a. Object, page 1, and "The participants ... Film/Video Library" in Section 3.2. Some Case Examples: How will conditions Operate in Practices, page 15).

each of the digital objects including an identifier that is unique within the network ("In order for information ... Certificate of Authenticity" in Section 2.1 Import/Registration, page 7),

a mechanism for managing the uniqueness and persistence of the identifiers ("Participants discussed ... software routines" in Section 2.4. Catalog Index, page 10),

at least some of the digital objects including other structured data which is useful in processing the digital objects, including managing access to them ("Natural Language search algorithms" in Section 3.2. Some Case Examples: How will conditions Operate in Practices, page 15), and

Serial Number: 08/808,050

Art Unit: 2756

a resolution mechanism that provides information over a network about a digital object, given its identifier ("An active intelligent program ... Knowbots" in Section I. Knowledge Robot (or Knowbot tm), page 2).

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However, CFNRI does not explicitly teach the mechanism for managing the uniqueness and persistence of identifiers is a distributed mechanism.

Gopal teaches X.500 defines a standard protocol directory services to communicate with different local directories which are owned, operated or managed by different entities (col. 1 lines 25-56).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of CFNRI and Gopal to provide a distribute mechanism to manage uniqueness and persistence of the identifiers because it would allow directories to be maintained by different entities and to communicate with one another.

7. As to claim 54, CFNRI teaches repositories on the network in which digital objects are stored from which they can be accessed ("Conceptual understanding ... computer networks" in Section 2. Operation of a Digital Library System, page 5).

Serial Number: 08/808,050 6

Art Unit: 2756

8. As to claim 55, CFNRI teaches validation information for at least some of the digital objects, the validation information being sufficient to permit a determination whether a purported instance of a digital object is identical to an original instance of the digital object ("Some of this information ... at a later time" in Section 2.1 Import/Registration Function, page 7).

- 9. As to claim 57, CFNRI teaches other structured data includes information about at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects; links between different digital objects ("The other transactional framework ... within the database." in Section 4.1.2. "Per Access" Charges, page 19).
- 10. As to claim 59, CFNRI teaches the resolution mechanism is scalable and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates each of the identifiers with the location of the corresponding digital object in the network ("Most participants favors ... Carnegie Mellon University" in Section 4.2.1. DLS Model A: The Multiple DLS Environment, page 22).

Serial Number: 08/808,050 7

Art Unit: 2756

11. As to claim 60, Gopal teaches identifiers distributed the state information relatively evenly among all or a subset of

servers (col. 6 lines 51-54).

12. As to claim 61, CFNRI teaches a registering authority that processes applications for registration of rights or interests associated with digital information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical OT an original instance ("In order for information ... at a later time"

in Section 2.1 Import/Registration Function, page 7).

13. As to claim 65, Gopal teaches an identifier service, accessible on the network, for generating the unique identifiers, the service including servers each serving a portion of an

identifier space (col. 2 lines 32-39).

14. Claims 56 and 58 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over "Workshop on the Protection of Intellectual Property Rights in a Digital Library System" by Corporation for National Research Initiatives (CFNRI), in view of Gopal et al

Serial Number: 08/808,050

Art Unit: 2756

(Gopal) patent no. 5,491,817 as applied to claims 55 and 57 above respectively, and further in view of Parker patent no. 5,339,403.

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- 15. As to claim 56, CFNRI and Gopal teaches the invention substantially as claimed as discussed above; however, CFNRI and Gopal do not explicitly teach validation information is stored separately from the corresponding digital object. Parker teaches validation unit (APA server 12, figure 2) authentication service for target applications in a distributed computer system (col. 1 lines 39-51, and col. 2 lines 9-23). would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of CFNRI, Gopal, and Parker to use a validation unit to store validation information separately from digital object because it would provide control access and security to digital objects in a distributed computer system.
- 16. As to claim 58, it is similar to claim 56; therefore, it is rejected under the same rationale.
- 17. Claims 62-64 and 66 rejected under 35 U.S.C. § 103 (a) as being unpatentable over "Workshop on the Protection of Intellectual Property Rights in a Digital Library System" by Corporation for

Serial Number: 08/808,050

Art Unit: 2756

National Research Initiatives (CFNRI), in view of Gopal et al (Gopal) patent no. 5,491,817 as applied to claim 53 above, and further in view of Wyman patent no. 5,260,999.

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18. As to claim 62, CFNRI and Gopal teaches the invention substantially as claimed as discussed above; in addition, CFNRI teaches terms and conditions for access to each of the digital objects; and the information about terms and conditions available to a user in connection with a request for access to one of the digital objects ("Prior to the ... within the database" in Section 4.1 The Transactional Framework, page 18-19).

However CFNRI and Gopal do not explicitly teach a mechanism for user to apply and indicate assent to terms and conditions.

Wyman teaches a user uses a license document generator program to generate a license in accordance with terms and conditions negotiated between the user and a server before allowing the user accessing a product (col. 1 line 48 - col. 2 line 2, and col. 11 lines 3-30).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of CFNRI, Gopal, and Wyman to provide a license mechanism for user to apply license for a product base on terms and conditions which agreed between the user and provider before

Serial Number: 08/808,050 10

Art Unit: 2756

permitting the user to access the product because it would manage licensing of computer resources.

19. As to claim 63, Wyman teaches a recordation server on the network, the recordation server storing information identifying grants or other information on rights or interests or value pertaining to the digital objects on the network (license server 10, figure 1).

- 20. As to claim 64, Wyman teaches a reference service on the network, separate from the digital objects, for recording information about accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users (license server 10, figure 1).
- 21. As to claim 66, Wyman teaches an authorization server which provides information about terms and conditions for access to a digital object and authorization for use of the digital object (license server 10, figure 1).
- 22. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

Serial Number: 08/808,050 11

Art Unit: 2756

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Le H. Luu, whose telephone number is (703) 305-9650. The examiner can normally be reached Monday through Friday from 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank J. Asta, can be reached at (703) 305-3817.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Any response to this final action should be mailed to:

Box AF

12

Serial Number: 08/808,050

Art Unit: 2756

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications; please mark "EXPEDITED PROCEDURE")

Or:

(703) 308-5359 (for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

Le H. Luu

May 08, 1998



ATTORNEY DOCKET NO. 061

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant :

Robert E. Kahn et al.

Art Unit:

Serial No.:

08/808,050

Examiner:

Filed

Title

February 28, 1997 IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

BOX AF

Assistant Commissioner for Patents Washington, DC 20231

NOV 23 1998

PETITION FOR THREE-MONTH EXTENSION OF TIME Group 2700

Pursuant to 37 C.F.R. 1.136, applicants hereby petition that the period for response to examiner's action mailed May 11, 1998, be extended for three months to and including November 12, 1998, as November 11, 1998, was a federal holiday and the patent office was closed. A Continued Prosecution Application is being filed herewith.

11/19/1998 SLUANG 00000027 08808050

01 FC:R17

435,00 OP

pîn, Ref: 11/19/1998 SLUANG 0009554300 H:06:050 Name/Humber:08808050 \$40.00 CR

11.12.98 Date of Deposit I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to -Ratents, Washington, D.C. 20231.

Enclosed is a check for \$475 for the required fee. Please apply any other charges or any credits to our deposit account number 06-1050, reference 06154/004001.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

319004.B11

DEC 0 1 1998

Group 27QQ_{TENT}

ATTORNEY DOCKET NO. 06154/004001

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Robert E. Kahn et al.

Art Unit:

Serial No.: 08/808,050

Examiner:

Filed Title

: February 28, 1997

: IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Box CPA

Assistant Commissioner for Patents Washington, DC 20231

INFORMATION DISCLOSURE STATEMENT

Copies of the references listed on the attached form PTO 1449 are enclosed.

Reference AA was distributed in many copies more than a year before the effective filing date of the patent application and should be considered prior art.

Reference AE was publicly available on the Internet beginning early in 1994.

Reference AI is dated August 1992 though it was not published until October 22, 1992.

This statement is being filed with the application. Please apply any charges or credits to Deposit Account No. 06-1050.

"EXPRESS MAIL" Mailing Label Number <u>EM 5045755</u> 42 US

Date of Deposit I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office To Addressee" with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for

ashington, D.C. 20231.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906 329387.B11

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OF.	***			She	et1 (A) of1				
SUBSTITUT (MODIFIED	É FORM	PTO	1-1449 U.S. PARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY. DOCKET NO. 06154/004001	SERIAL NO. 08/808,050				
WON 1 5 18	مری ا	TATE	MATION DISCLOSURE MENT BY APPLICANT	APPLICANT Robert E. Kahn et al.	RECEIVED				
See Pro	4. K		al sheets if necessary)	FILING DATE February 28, 1997	GROUDEC 07 1898				
			OTHER DOCUMENTS (Including Author, Ti	tle, Date, Place of Publication)	Group 2700				
,,			Kahn, Robert E. et al., "The Digital Libr	ary Project - Volume I: The World of K	-77-00				
$ \mathcal{V} $	AA		Architecture for a Digital Library System	and a Plan for its Development, 3/88 (49 pp) and 12/87 (75 pp)				
10	AD	Garrett, John R. et al., Copyright Clearance Center, "Text to Screen: Copyright Issues in the E							
	AB		Age", pp. 1-12, Copyright 1989						
()			Garrett, John R. et al., Copyright Cleara	nce Center, "Toward a Copyright Managem	ent System for Digital				
	AC		Libraries", pp. 1-74, Copyright 1991		:				
00	4.0		Kahn, Robert E., "Deposit, Registration a	nd Recordation in an Electronic Copyrig	ht Management System",				
	AD		IMA Intellectual Property Project Proceed	<u>ings</u> , Jan. 1994, Vol. 1, Issue 1, pp. 1	11-120				
0.0	• 1		Kahn, Robert and Robert Wilensky, "Locati	ng Electronic Library Services and Obje	cts: A Frame of Reference				
	AE		for the CS-TR Project", February 1994 and	later versions					
00	45		Kahn, Robert et al., "A Framework for Dis	tributed Digital Objects Services", May	13, 1995				
W	AF								
0.0	40		Kahn, Robert, "National Information Infras	tructure Components", <u>Serials Review</u> , V	ol. 18, No. 1-2, 1992				
	AG								
0.0			Lyons, Patrice A., "Knowledge-Based System	s and Copyright", <u>Serials Review</u> , pp. 8	8-91, 1992				
Il	AH								
10			Kahn, Robert E, "Deposit, Registration and	Recordation in an Electronic Copyright	Management Systems,				
	AI		18 pp (published October 1992)						
0.0			Dunstan, James E. et al., "Access to Digit	al Objects: A Communications Law Persp	pective", Annual Survey of				
	AJ		American Law, NY University School of Law,	1994 Volume, Issue 3					
0/	AK		Lagoze, Carl et al., "Implementation Issue	es in an Open Architectural Framework fo	or Digital Object Services",				
W			June 6, 1995 - Revision 1.3		1				
EXAMIN	ER		mhen	DATE CONSIDERED (2/2	9/98				
			citation considered. Draw line through cita	ation if not in conformance and not cons	sidered. Include copy of				

RECEIVED

DEC 0 1 1998

Group 2700

225 Franklin Street Boston, Massachuset 02110-2804

Telephone 617 542-5070

Facsimile 617 542-8906

Web Site www.fr.com



November 12, 1998

Attorney Docket No.: 06154/004001

Box CPA

Assistant Commissioner for Patents Washington, DC 20231

This paper is a request for a continuation under 37 C.F.R. 1.53(d) of:

NEW YORK

SILICON VALLEY

SOUTHERN CALIFORNIA

TWIN CITIES

WASHINGTON, DC

Applicant:

Robert E. Kahn and David K. Ely

IDENTIFYING, MANAGING, ACCESSING, AND Title:

TRACKING DIGITAL OBJECTS AND

ASSOCIATED RIGHTS AND PAYMENTS

Prior U.S. application no:

08/808,050

Filing Date:

February 28, 1997

The prior application was complete as defined by 37 CFR 1.51(b), or was a national stage of an international application filed in compliance with 35 USC §371.

The prior application was filed after June 8, 1995.

This request for a CPA is the reference to the prior application noted above as required by 35 USC §120. Kindly abandon the prior application in favor of the continued proceedings that are requested herein.

The prior application is assigned of record to CORPORATION FOR NATIONAL RESEARCH INITIATIVES, a District of Columbia corporation, by virtue of an assignment submitted to the Patent and Trademark Office for recording on December 28, 1993 at 6905/0310.

/1598 558ND8AA 00125958 /Number:08208050 *15.00 CR

"EXPRESS MAIL" Mailing Label Number <u>EM 50457</u>

11 · 12 · 98 Date of Deposit I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office To Addressee" with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Washington, D.Q 2023

Petitioner Apple Inc. - Exhibit 1022, p. 261

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Compared to the control of the contr

November 12, 1998 Page 2 RECEIVED
DEC 0 1 1998
Group 2700

This request includes 2 sheets, and the following:

Enclosures:

- Preliminary amendment, 9 pages.
- New disclosure information, including:
 Information disclosure statement, 2 pages.
 PTO-1449, 1 pages.
 References, 11 items.
- Postcard

The entire disclosure of the prior application is part of this application and is incorporated by reference.

This case is entitled to small entity status. Small entity status in a previous case is still proper. Fees are being paid herein at a small entity rate.

Basic filing fee	395.00
Total claims in excess of 20 times \$11.00	0.00
Independent claims in excess of 3 times \$41.00	0.00
Fee for Multiple dependent claims	0.00
Total filing fee:	\$ 395.00

A check for the filing fee is enclosed. Please apply any other required fees or any credits to deposit account 06-1050, referencing the attorney docket number shown above.

If this application is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at 617/542-5070.

Kindly acknowledge receipt of this application by returning the enclosed postcard.

November 12, 1998 Page 3

Please send all correspondence to:

David L. Feigenbaum, Esq. Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378 Enclosures



ATTORNEY DOCKET NO.

THE UNITED STATES PATENT AND TRADEMARK OFFICE

DEC 0 1 1998

Applicant :

Robert E. Kahn et al.

Art Unit: Examiner:

Group 2700

Serial No.: Filed

08/808,050

February 28, 1997

IDENTIFYING, MANAGING, ACCESSING, AND TRACKING

DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

BOX CPA

Title

Assistant Commissioner for Patents Washington, DC 20231

PRELIMINARY AMENDMENT

kindly amend the Preliminarily, claims

(Amended) A system for organizing digital computational facilities nformation in a network that includes comprising:

digital objects, each of the digital objects comprising one or more sequences of structured data or sets of such sequences, each of the sequences or sets of sequences incorporating a work or a portion of a work or other digital information in which a party has rights or interests, or in which there is value, each of the sequences or sets of sequences being structured in a way that is interpretable by one or more of the computational facilities [on] in the network,

"EXPRESS MAIL" Mailing Label Number <u>EM 504575</u>542, US

11 · 12 · 98 Date of Deposit

I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office To Addressee" with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231

ashington, D.C. 2023]

Petitioner Apple Inc. - Exhibit 1022, p. 264

each of the digital objects including an identifier that [is unique] uniquely identifies the digital object within the network and persists, with respect to the digital object, over a period of time that is at least as long as the existence of the digital object,

[a distributed mechanism] an administrative mechanism that (a) is distributed among the computational facilities, (b) assures the uniqueness and persistence of the identifiers over a time period that is at least as long as the existence of the digital objects, and (c) distributes state information that includes the identifiers among computational facilities by an algorithmic process for managing the uniqueness and persistence of the identifiers, at least some of the digital objects including other structured data which is useful in processing the digital objects, including managing access to them, and

a resolution mechanism that accepts unique identifiers
as input and resolves each of the identifiers to state
information that denotes a computational facility or other
digital object that contains the digital object associated with
the unique identifier. [provides information over a network about
a digital object, its identifier including information enabling
the digital object to be located.]

the resolution mechanism is scalable without requiring full replication of the state information and includes servers on

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the network, each of the servers storing information about [the state] states of the digital object including information that associates [each of] the identifiers with the [location] locations of [the] corresponding digital [object] object in the network

(J)

(Amended) The system of claim [59] 52 in which the administrative mechanism distributes [identifiers distribute] the state information relatively evenly among all or a subset of the [servers] computational facilities.

and he

 $\sqrt{0}$ (Amended) The system of claim 53 further omprising

[a] an access mechanism for applying terms and conditions for access to each of the digital objects,

the mechanism including information about the terms and conditions, and

the mechanism being arranged to make the information about terms and conditions available to a user in connection with a request for access to one of the digital objects, to enable the user to indicate assent to the terms and conditions, and to permit access to the user only upon the user indicating assent to the terms and conditions.

(Amended) The system of claim 53 further comprising

a recordation server on the network, the recordation server storing [information identifying grants or other]



information on rights or interests or value pertaining to the digital objects on the network.

REMARKS

Applicant's remarks, below, are preceded by quotations of the related comments of the examiner, in small, bold-face type.

> 1. Misnumbered claims 54-67 have been renumbered as claims 53-66.

- In addition,
 a. Claims 54-55, 57, 59, 61-66, line 1, change "54" to --53--.
 b. Claim 56, line 1, change "56" to "55".
 c. Claim 58, line 1, change "58" to "57".

- Claims 53-56 are presented for examination.

Applicant has included the text of all claims, renumbered, in this response.

- Claims 61 and 65 are objected to because of the following informalities:
- Claim 61, line 1, typographical error "comprising a". Claim 66, line 1, typographical error "comprising an".

The claims have been restated, free of these typographical errors.

- Claims 53-55, 57, 59-61, and 65 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Workshop on the Protection of Intellectual Property Rights in a Digital Library System" by Corporation for National Research Initiatives (CFNRI), in view of Gopal et al. (Gopal) patent no. 5,491,817.
- 6. As to claim 53, CFNRI teaches the invention substantially as claimed, including a system for organizing digital information in a network comprising:

digital objects, each of the digital objects comprising one or more sequences of structured data or sets of such sequences, each of the sequences of sets of sequences incorporating a work or a portion of a work or other digital information in which a party has rights or interests, or in which there is a value each of the sequences or sets of sequences being structured in a way that is interpretable by one or more computational

facilities on the network ("A piece of information ... (see Fig. 1)" in Section a. Object, page 1, and "The participants ... Film/Video Library" in Section 3.2. Some Case Examples: How will conditions Operate in Practices, page 15).

each of the digital objects including an identifier that is unique within the network ("In order for information ... Certificate of Authenticity" in Section 2.1 Import/Registration, page 7,

The Corporation for National Research Initiatives is known by the acronym "CNRI" rather than "CNFRI". Applicant uses "CNRI" in this response.

Applicant disagrees with the examiner's inference that the "objects" referred to in the CNRI reference are equivalent to the "digital objects" in the claims. In particular, the CNRI reference does not describe or suggest objects as being sequences of structured data or sets of such sequences as recited in claim 53 and claim 58, nor does it describe any mechanism for mapping or resolving identifiers to digital objects.

The examiner is reading way too much into the word "name" as used in the CNRI reference. That reference says nothing more than that the information required to register an object should include a "name of object." The reference neither describes nor hints what characteristics the name should have; that the name should be anything other than, e.g., a possibly non-unique name assigned by the person applying for the registration; that the name could be useful in taking actions with respect to the object; or that the name could be used to identify portions of an object. The reference certainly doesn't say that the name should, in the words of claim 53, "uniquely identify the digital object among the digital objects within the

network" (including, for example, digital objects contained in other digital objects) nor is there the slightest suggestion of that.

a mechanism for managing the uniqueness and persistence of the identifiers ("Participants discussed ... software routines" in Section 2.4. Catalog Index, page 10),

Again, the examiner has attributed far more substance to what is said in the reference than is actually there or suggested. Although the cited paragraph mentions indexing and cataloging of objects, it is completely silent on if and whether the indexing or cataloging would be tied in any way to the "name" of the object--there would certainly be other valuable ways to index and catalog. But even if it did somehow suggest a link between cataloging and the names referred to elsewhere in the document, it surely cannot be read to imply anything about "an administrative mechanism that ... assures the uniqueness of the identifiers"; and even less so about such a mechanism being, in the words of claim 53, "distributed among the computational facilities."

at least some of the digital objects including other structured data which is useful in processing the digital objects, including managing access to them ("Natural Language search algorithms" in Section 3.2. Some Case Examples: How will conditions Operate in Practices, page 15), and

a resolution mechanism that provides information over a network about a digital object, given its identifier ("An active intelligent program ... Knowbots" in Section I. Knowledge Robot (or Knowbot $^{\text{IM}}$), page 2)

But CFNRI neither describes nor hints at a resolution mechanism that "accepts the unique

identifiers as input and, in response to an identifier, provides information over the network about the digital object, including information enabling the digital object to be located."

However, CFNRI does not explicitly teach the mechanism for managing the uniqueness and persistence of identifiers is a distributed mechanism.

As mentioned above, CNRI not only does not explicitly teach the administrative mechanism, it does not even hint at it. Nor does it teach or suggest that the administrative mechanism should be "distributed among the computational facilities."

Gopal teaches x.500 defines a standard protocol directory services to communicate with different local directories which are owned, operated or managed by different entities (col. 1 lines 25-56).

It would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to combine the teachings of CFNRI and Gopal to provide a distribute mechanism to manage uniqueness and persistence of the identifiers because it would allow directories to be maintained by different entities and to communicate with one another.

Claim 53 requires "an administrative mechanism that ... distributes the identifiers among the computational facilities by an algorithmic process." Even if one were to construe the "distinguished name" in Gopal (col 2, line 60) to be the "identifier" of claim 53, Gopal neither describes nor suggests that the identifiers be distributed by an administrative mechanism, let alone by one that uses an algorithmic process.

Gopal does specify a link identifier, which is used to identify X.500 records located in various DSA's. But Gopal does not disclose or suggest that the link ID be globally unique. Nor does Gopal say anything about persistence.

Thus, even if Gopal were combined with CNRI, the invention would not result.

- 7. As to claim 54 ...
- 8. As to claim 55 ...
- 9. As to claim 57 ...
- 10. As to claim 59 ...
- 11. As to claim 60 ...
- 12. As to claim 61 ...
- 13. As to claim 65 ...
- 14. Claims 56 and 58 are rejected under 35 U.S.C. 103(a) as being unpatentable ...
- 15. As to claim 56 ...
- 16. As to claim 58 ...
- $\,$ 17. Claims 62-64 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable ...
 - 18. As to claim 62 ...
 - 19. As to claim 63 ...
 - 20. As to claim 64 ...
 - 21. A to claim 66 ...

The dependent claims are patentable for at least the same reasons as the independent claims from which they depend.

Applicant asks that all claims be allowed.

Please apply any credits or excess charges to our deposit account number 06-1050, reference 06154/004001.

Respectfully submitted,

Date: _____(<u>//12/9</u>8

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

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PATENT

ATTORNEY DOCKET NO.

STATES PATENT AND TRADEMARK OFFICE IN THE UNITED

DEC 0 1 1998

Applicant : Serial Filed

Robert E. Kahn et al. 08/808,050

Art Unit:

Examiner:

Group 2700

Titl∉

February 28, 1997

IDENTIFYING, MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

BOX AFTER TRANS

Assistant Commissioner for Patents Washington, DC 20231

PETITION FOR THREE-MONTH EXTENSION OF TIME

Pursuant to 37 C.F.R. 1.136, applicants hereby petition that the period for response to examiner's action mailed May 11, 1998, be extended for three months to and including November 12, 1998, as November 11, 1998, was a federal holiday and the patent office was closed. A Continued Prosecution Application is being filed herewith.

> 11.12.98 Date of Deposit I hereby certify under 37 CFR 1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Ratents, Washington, D.C. 20231.

Enclosed is a check for \$475 for the required fee.

Please apply any other charges or any credits to our deposit

account number 06-1050, reference 06154/004001.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

319004.B11

_



Name/Number: '08808050' Total Records Found: 11

Start Date: Any Date End Date: Any Date

Accounting Date	Sequence Num.	Tran Type	Fee Code	Fee Amount	Mailroom Date	Payment Method
03/31/1997	00002301	1	<u>101</u>	\$810.00	02/28/1997	OP
04/10/1997	02900201	<u>1</u>	<u>101</u>	\$40.00	01/30/1997	DA 061050
06/12/1997	00000131	1	<u>102</u>	\$800.00	02/28/1997	DA 061050
06/12/1997	00000132	<u>1</u>	<u>103</u>	\$968.00	02/28/1997	DA 061050
06/12/1997	00000133	<u>1</u>	<u>104</u>	\$260.00	02/28/1997	DA 061050
03/06/1998	00000029	<u>1</u>	<u>131</u>	\$790.00	03/03/1998	OP
03/10/1998	00000100	<u>1</u>	<u>117</u>	\$950.00	03/05/1998	OP
11/19/1998	00000044	1	<u>217</u>	\$435.00	11/17/1998	OP
11/19/1998	00000045	<u>4</u>	<u>704</u>	-\$40.00	11/19/1998	OP
11/30/1998	00000134	1	<u>231</u>	\$380.00	11/12/1998	OP
11/30/1998	00000135	<u>4</u>	<u>704</u>	-\$15.00	11/30/1998	OP

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1	ID	TPE	NAME OR ACCOUNT	C-NBR	MLEDTE	CURRITE	F-C	TVIUCMA
	OP	1.	08808050	00002301	022897	033197	101	810.00
	DΑ	1	061050	02900201	013097	041097	101	40.00
	DΑ	1.	061050	00000131,	022897	061297	102	80000
	DA	1	061050	00000132	022897	061297	103	968.00
	DA	1.	061050	00000133	022897	061297	104	260.00
	OP	1	08808050	00000029	030398	030698	131	79 <u>0.00</u>
		1	08808050	00000100	030598	031098	117	950.00
			,	•				

0007/0007 DISPLAYED



UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

KAHN FIRST NAMED APPLICANT SHALENDAMBENTO FILING 6AFE/ 97 ATPENTED 68CKEP Rd. LM21/0105 LULL EXAMINER DAVID L FEIGENBAUM FISH AND RICHARDSON 225 FRANKLIN STREET BOSTON MA 02110-2804 art Jinat DATE MAILED: **NOTICE OF ALLOWABILITY** 2. All the claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice Of Allowance And Issue Fee Due or other appropriate communication will be sent in due 3. The allowed claims are .
4. The drawings filed on __ are acceptable. 5. 🗆 Acknowledgment is made of the claim for priority under 35 U.S.C. 119. The certified copy has [_] been received. [_] not been received. [...] been filed in parent application Serial No. , filed on . 6. X Note the attached Examiner's Amendment. 7.

Note the attached Examiner Interview Summary Record, PTOL-413. 8.
Note the attached Examiner's Statement of Reasons for Aliowance. 9.

Note the attached NOTICE OF REFERENCES CITED, PTO-892. 10. Note the attached INFORMATION DISCLOSURE CITATION, PTO-1449. A SHORTENED STATUTORY PERIOD FOR RESPONSE to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" indicated on this form. Failure to timely comply will result in the ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a). 1.

Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED. 2. APPLICANT MUST MAKE THE DRAWING CHANGES INDICATED BELOW IN THE MANNER SET FORTH ON THE REVERSE SIDE OF THIS PAPER. a. M Drawing informalities are indicated on the NOTICE RE PATENT DRAWINGS, PTO-948, attached hereto or to Paper No. .. CORRECTION IS REQUIRED. b. \square The proposed drawing correction filed on _ has been approved by the examiner. CORRECTION IS REQUIRED. c. \square Approved drawing corrections are described by the examiner in the attached EXAMINER'S AMENDMENT. CORRECTION IS REQUIRED. Formal drawings are now REQUIRED. Any response to this letter should include in the upper right hand corner, the following information from the NOTICE OF ALLOWANCE AND ISSUE FEE DUE: ISSUE BATCH NUMBER, DATE OF THE NOTICE OF ALLOWANCE, AND SERIAL NUMBER. Examiner's Amendment Notice of Informal Application, PTO-152

PTOL-37 (REV. 4-89) *

Examiner Interview Summary Record, PTOL- 413

Notice of References Cited. PTO-892

Aniormation Disclosure Citation, PTO-1449

Reasons for Allowance

La H. Luu

_ Notice re Patent Drawings, PTO-948

_ Listing of Bonded Draftsmen

_ Other

8.300 d 1.15.799

Serial Number: 08/808,050

Art Uffit: 2756

- 1. An Examiner's Amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 C.F.R. § 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the Issue Fee.
- 2. Pursuant to MPEP 606.01, the title has been changed to read:
 - -- A SYSTEM USING ADMINISTRATIVE MECHANISM AND RESOLUTION MECHANISM WITH ALGORITHMIC PROCESS FOR UNIQUELY AND PERSISTENTLY IDENTIFYING MANAGING AND TRACKING DIGITAL OBJECTS
- 3. Any comments considered necessary by applicant must be submitted no later than the payment of the Issue Fee and, to avoid processing delays, should preferably accompany the Issue Fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."
- 4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Le H. Luu, whose telephone number is (703) 305-9650. The examiner can normally be reached Monday through Friday from 7:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

Serial Number:

08/808,050

Art Unit: 2756

supervisor, Frank J. Asta, can be reached at (703) 305-3817. The fax phone number for this Group is (703) 308-5359.

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-9600.

Le H. Luu

3

Primary Examiner

December 29, 1998



UNITED STA. SEPARTMENT OF COMMERCE Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

LM21/0105

DAVID L FEIGENBAUM FISH AND RICHARDSON 225 FRANKLIN STREET BOSTON MA 02110-2804

APPLIC	ATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT		DATE MAILED
	08/808,050	02/28/9	7 014	Lill, L	275	6' 01/05/99
First Named Applicant	KAHN,		- 25	USC 154(b) term ext. =	0, D	ays.

TITLE OF

A SYSTEM USING ADMINISTRATIVE MECHANISM AND RESOLUTION MECHANISM WITH ALGORITHMIC PROCESS FOR UNIQUELY AND PERSISTENTLY IDENTIFYING MANAGING AND TRACKING DIGITAL OBJECTS (AS AMENDED)

ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN	I. TYPE	SMALL ENTITY	FEE DUE	DATE DUE
2 .06154/00	4001 395	-200.470	N57	UTIL	CLA NO	\$1210.0	0 . 04705798

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN <u>THREE MONTHS</u> FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. <u>THIS STATUTORY PERIOD CANNOT BE EXTENDED.</u>

HOW TO RESPOND TO THIS NOTICE:

- I. Review the SMALL ENTITY status shown above. If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:
 - A. If the status is changed, pay twice the amount of the FEE DUE shown above and notify the Patent and Trademark Office of the change in status, or
 - B. If the status is the same, pay the FEE DUE shown above.

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.
- II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.
- III. All communications regarding this application must give application number and batch number. Please direct all communications prior to issuance to Box ISSUE FEE unless advised to the contrary.

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

PATENT AND TRADEMARK OFFICE COPY

PTOL-85 (REV. 10-96) Approved for use through 06/30/99. (0651-0033)

Q,

FISH & RICHARDSON P.C.

225 Franklin Street Boston, Massachusetts 02110-2804

Telephone 617 542-5070

Facsimile 617 542-8906

Web Site www.fr.com

FAX RECEIVED

FEB 0 4 1999

Group 2700

February 3, 1999 Date

To Examiner L.Luu Group Art Unit 2756

06154/004001

USPatent and Trademark Office Washington, DC 20231

Facsimile number

06154 00400001 (703) 308-5359

From

Re

David L. Feigenbaum, Esq.

Handles - USSN 08/808,050

Number of pages including this page

PLEASE DELIVER TO EXAMINER L. LUU IMMEDIATELY.

UFFOAL

NOTE: This facsimile is intended for the addressee only and may contain privileged or confidential information. If you have received this facsimile in error, please call us collect at (617) 542-5070 immediately to arrange for its return. Thank you.

OFFICIAL PATENT ATTORNEY DOCKET NO. 06154/004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE FAX RECEIVED

Applicant : Robert E. Kahn et al.

Art Unit: 2756

FEB 0 4 1999

Serial No.: 08/808,050

Examiner: L.Luu

Filed

: February 28, 1997

Group 2700

Title

: A SYSTEM USING ADMINISTRATIVE MECHANISM AND

RESOLUTION MECHANISM WITH ALGORITHMIC PROCESS FOR UNIQUELY AND PERSISTENTLY IDENTIFYING MANAGING AND TRACKING DIGITAL OBJECTS

Assistant Commissioner for Patents Washington, DC 20231

LETTER TO THE EXAMINER

Applicants enclose the one page Abstract as requested by the examiner in a telephone conference.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Telephone: 617/542-5070 Facsimile: 617/542-8906

> 2-3-99 Date of Deposit

I hereby certify that this correspondence is being facsimile transmitted to the Patent and Trademark Office on the date Indicated above.

Petitioner Apple Inc. - Exhibit 1022, p. 282

1

08/808050

ABSTRACT OF THE DISCLOSURE

IDENTIFYING, MANAGING, ACCESSING, AND TRACKING DIGITAL OBJECTS AND ASSOCIATED RIGHTS AND PAYMENTS

Methods of managing digital objects in a network are presented. Holders of rights in digital objects are enabled to control terms and conditions under which they are accessed by users in a network, or are granted to others.

JAV 2756

225 Franklin Stree Boston, Massachu 02110-2804

Telephone 617 542-5070

Facsimile

Web Site

617 542-8906

www.fr.com

Fish & Richardson p.c.

Frederick P. Fish 55-1930

W.K. Richardson 1859-1951



April 5, 1999

Attorney Docket No.: 06154/004001

Box CPA

Assistant Commissioner for Patents Washington, DC 20231

BOSTON

NEW YORK

SOUTHERN CALIFORNIA

WASHINGTON, DC

This paper is a request for a continuation under 37 C.F.R. 1.53(d) of: Applicant:

Title:

ROBERT E. KAHN AND DAVID K. ELY

A SYSTEM USING ADMINISTRATIVE

MECHANISM AND RESOLUTION MECHANISM WITH ALGORITHMIC PROCESS FOR UNIQUELY AND PERSISTENTLY IDENTIFYING MANAGING

AND TRACKING DIGITAL OBJECTS

Prior U.S. application no:

Filing Date:

08/808,050

February 28, 1997

The prior application was complete as defined by 37 CFR 1.51(b), or was a national stage of an international application filed in compliance with 35 USC §371.

The prior application was filed after June 8, 1995.

This request for a CPA is the reference to the prior application noted above as required by 35 USC §120. Kindly abandon the prior application in favor of the continued proceedings that are requested herein.

04/07/1999 CHOANG 00000013 08808050

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"EXPRESS MAIL" Mailing Label Number EL224617273505 Date of Deposit I hereby certify under 37 CFR 1.10 that this correspondence is being

deposited with the United States Postal Service as "Express Mail Post Office To Addressee" with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

April 5, 1999 Page 2

The prior application is assigned of record to CORPORATION FOR NATIONAL RESEARCH INITIATIVES, a District of Columbia corporation, by virtue of an assignment submitted to the Patent and Trademark Office for recording on December 28, 1993 at 6905/0310.

This request includes 3 sheets, and the following:

Enclosures:

Postcard

The entire disclosure of the prior application is part of this application and is incorporated by reference.

This case is entitled to small entity status. Small entity status in a previous case is still proper. Fees are being paid herein at a small entity rate.

Basic filing fee	380.00
Total claims in excess of 20 times \$9.00	0.00
Independent claims in excess of 3 times \$39.00	0.00
Fee for Multiple dependent claims	0.00
Total filing fee:	\$ 380.00

A check for the filing fee is enclosed. Please apply any other required fees or any credits to deposit account 06-1050, referencing the attorney docket number shown above.

If this application is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at 617/542-5070.

Fish & Richardson P.C.

April 5, 1999 Page 3

Kindly acknowledge receipt of this application by returning the enclosed postcard.

Please send all correspondence to:

David L. Feigenbaum, Esq. Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Enclosures

365966.B11



UNITED STATE
Patent and Tray
Park Office
Address: COMMISSIQ MER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

FILING DATE FIRST NAMED APPLICANT ATTORNEY DOCKET NO. APPLICATION NUMBER

08/808,050

02/28/97

KAHN

06154/004001

LM51/0915

DAVID L FEIGENBAUM FISH AND RICHARDSON 225 FRANKLIN STREET BOSTON MA 02110-2804

EXAMINER LUL, L ART UNIT PAPER NUMBER 2756

DATE MAILED:

09/15/99

This is a communication from the examiner in charge of your application. COMMISSIONER OF PATENTS AND TRADEMARKS

NOTICE OF ALLOWABILITY

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course.
This communication is responsive to Regunt for CPA filed on 04/05/99
The allowed claim(s) is/are 53-156
☐ The drawings filed on are acceptable.
Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
received.
received in Application No. (Series Code/Serial Number)
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
*Certified copies not received:
Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
A SHORTENED STATUTORY PERIOD FOR REPLY to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).
Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
Applicant MUST submit NEW FORMAL DRAWINGS
because the originally filed drawings were declared by applicant to be informal.
including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No
including changes required by the proposed drawing correction filed on, which has been approved by the examiner.
 including changes required by the proposed drawing correction filed on, which has been approved by the examiner. including changes required by the attached Examiner's Amendment/Comment.
by the examiner.
by the examiner. including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings.
by the examiner. including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.
by the examiner. including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Any reply to this notice should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF
by the examiner. including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Any reply to this notice should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included.
by the examiner. including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Any reply to this notice should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included. Attachment(s)
including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Any reply to this notice should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included. Attachment(s) □ Notice of References Cited, PTO-892
including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Any reply to this notice should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included. Attachment(s) Notice of References Cited, PTO-892 Information Disclosure Statement(s), PTO-1449, Paper No(s).
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by the examiner. including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Any reply to this notice should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included. Attachment(s) Notice of References Cited, PTO-892 Information Disclosure Statement(s), PTO-1449, Paper No(s). Notice of Draftsperson's Patent Drawing Review, PTO-948 Notice of Informal Patent Application, PTO-152
by the examiner. including changes required by the attached Examiner's Amendment/Comment. Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Any reply to this notice should include, in the upper right hand corner, the APPLICATION NUMBER (SERIES CODE/SERIAL NUMBER). If applicant has received a Notice of Allowance and Issue Fee Due, the ISSUE BATCH NUMBER and DATE of the NOTICE OF ALLOWANCE should also be included. Attachment(s) Notice of References Cited, PTO-892 Information Disclosure Statement(s), PTO-1449, Paper No(s). Notice of Informal Patent Application, PTO-152 Interview Summary, PTO-413
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UNITED STATES AMENT OF COMMERCE Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

LM51/0915

DAVID L FEIGENBAUM FISH AND RICHARDSON 225 FRANKLIN STREET BOSTON MA 02110-2804

APPLICATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT		DATE MAILED
08/808,050	02/28/97	014	LUU, L	72756	09/15/99
First Named Applicant KAHN ,		- 35 U	SC 154(b) Keym ext. =	b Day	#
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ALGORITHMIC	: PROCESS FO	R UNIQUELY	AND PERSISTENTLY IDENTIFIED (AS AMENDED)	E DUE TO	DATE DUE

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT.
PROSECUTION ON THE MERITS IS CLOSED.

B62

709-217,000

THE ISSUE FEE MUST BE PAID WITHIN <u>THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED.</u>

HOW TO RESPOND TO THIS NOTICE:

06154/004001

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 - B. If the status is the same, pay the FEE DUE shown above.

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- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.

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- II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.
- III. All communications regarding this application must give application number and batch number.

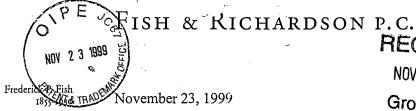
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IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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PTOL-85 (REV. 10-96) Approved for use through 06/30/99. (0651-0033)

*U.S. GPO: 1998-437-639/80023



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Group 2700

617 542-8906

Web Site

Attorney Docket No.: 06154-004001

Box CPA

Title:

Assistant Commissioner for Patents Washington, DC 20231

This paper is a request for a continuation under 37 CFR 1.53(d) of:

BOSTON DELAWARE

W.K. Richardson 1859-1951

SOUTHERN CALIFORNIA

TWIN CITIES WASHINGTON, DC Applicant: ROBERT E. KAHN AND DAVID K. ELY

A SYSTEM USING ADMINISTRATIVE MECHANISM AND 🌯 1899 RESOLUTION MECHANISM WITH ALGORITHMIC PROCESS FOR UNIQUELY AND PERSISTENTLY IDENTIFYING MANAGING

AND TRACKING DIGITAL OBJECTS

Prior U.S. application no:

Filing Date:

08/808,050

November 23, 1999

The prior application was complete as defined by 37 CFR 1.51(b), or was a national stage of an international application filed in compliance with 35 USC §371.

The prior application was filed after June 8, 1995.

This request for a CPA is the reference to the prior application noted above as required by 35 USC §120. Kindly abandon the prior application in favor of the continued proceedings that are requested herein.

The prior application is assigned of record to CORPORATION FOR NATIONAL RESEARCH INITIATIVES, a District of Columbia corporation, by virtue of an assignment submitted to the Patent and Trademark Office for recording on December 28, 1993 at 6905/0310.

Express Mail Label No .-

This request includes 2 sheets, and the following:

CERTIFICATE OF MAILING BY EXPRESS MAIL EL224673041US

11/25/1999 SLUANG1 00000067 08808050

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380.00 OP

I hereby certify under 37 CFR §1.10 that this correspondence is being deposited with the United States Postal Service as Express Mail Post Office to Addressee with sufficient postage on the date indicated below and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Date of Depo

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FISH & RICHARDSON P.C.

Assistant Commissioner for Patents
November 23, 1999
Page 2

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Group 2700

Enclosures:

- Preliminary amendment, 4 pages.
- New disclosure information, including:
 Information disclosure statement, 1 pages.
 PTO-1449, 2 pages.
 - References, 9 items.
- This application is still entitled to small entity status.
- Postcard.

The entire disclosure of the prior application is part of this application and is incorporated by reference.

Basic filing fee	\$380
Total claims in excess of 20 times \$9	\$0
Independent claims in excess of 3 times \$39	\$0
Fee for multiple dependent claims	\$0
Total filing fee:	\$380

A check for the filing fee is enclosed. Please apply any other required fees or any credits to deposit account 06-1050, referencing the attorney docket number shown above.

If this application is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at (617) 542-5070.

Kindly acknowledge receipt of this application by returning the enclosed postcard.

Please send all correspondence to:

DAVID L. FEIGENBAUM Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804

Respectfully submitted,

David L. Feigenbaum

Reg. No. 30378

Enclosures



Attorney's Docket No.: 06154-004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE NOV 26 1999

Applicant: Robert E. Kahn et al. Serial No.:

Art Unit Examiner:

Group 2700

Filed Title

08/808,050

November 23 1999

A SYSTEM USING ADMINISTRATIVE MECHANSIM AND RESOLUTION

MECHANISM WITH ALGORITHMIC PROCESS FOR UNIQUELY AND PERSISTENTLY IDENTIFYING MANAGING AND TRACKING DIGITAL

OBJECTS

BOX CPA

Assistant Commissioner for Patents Washington, D.C. 20231

PRELIMINARY AMENDMENT

Please amend the title to read: --A SYSTEM FOR UNIQUELY AND PERSISTENTLY IDENTIFYING, MANAGING, AND TRACKING DIGITAL OBJECTS--.

Please amend the claims as follows (for convenience, all claims have been recited, including those which have not been changed):

(twice amended) A system for organizing [digital] information in a network that includes computational facilities comprising:

digital objects each of the digital objects comprising one or more sequences of bits [structured data] or sets of such sequences, each of the sequences or sets of sequences incorporating a work or a portion of a work or other [digital] information in which a party has rights or interests, or in which there is value, each of the sequences or sets of sequences being structured in a way that is interpretable by one or more of the computational facilities in the network,

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Date of Deposi

Signature

Typed or Printed Name of Person Signing Certificat

each of the digital objects [including] <u>having</u> an identifier that uniquely identifies the digital object within the network and persists with respect to the digital object over a period of time that is at least as long as the existence of the digital object,

an administrative mechanism that (a) is distributed among the computational facilities,
(b) assures the uniqueness and persistence of the identifiers over a time period that is at least as
long as the existence of the digital objects, and (c) distributes state information that includes the
identifiers among computational facilities by an algorithmic process for managing the
uniqueness and persistence of the identifiers, at least some of the digital objects including other
[structured data] <u>information</u> which is useful in processing the digital objects, including
managing access to them, and

a resolution mechanism that accepts unique identifiers as input and resolves each of the identifiers to state information that denotes a computational facility or other digital object that contains the digital object associated with the unique identifier.

- 54. (unchanged) The system of claim 53 further comprising repositories on the network in which digital objects are stored and from which they can be accessed.
- 55. (unchanged) The system of claim 53 further comprising validation information for at least some of the digital objects, the validation information being sufficient to permit a determination whether a purported instance of a digital object is identical to an original instance of the digital object.
- 56. (mchanged) The system of claim 55 in which the validation information is stored separately from the corresponding digital object.
- 57. (twice amended) The system of claim 53 wherein the other [structured data includes] information [about] includes at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects, links between different digital objects.

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58. (amended) The system of claim 57 in which the other [structured data] NOV 2

information is stored separately from the corresponding digital object.

Group 2700

(twice amended) The system of claim 33 in which

the resolution mechanism is scalable without requiring full replication of the state information and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates the identifiers with the locations of corresponding digital [object] objects in the network.

60. (unchanged) The system of claim 53 in which the administrative mechanism distributes the state information relatively evenly among all or a subset of the computational facilities.

61. (amended) The system of claim 53 further comprising

a registration authority that processes applications for registration of rights or interests associated with [digital] information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical to an original instance.

1062. (twice amended) The system of claim 52 further comprising

an access mechanism for applying terms and conditions for access to each of the digital objects and/or the information incorporated therein,

the mechanism including information about the terms and conditions, and
the mechanism being arranged to make the information about terms and conditions
available to a user in connection with a request for access to one of the digital objects and/or the
information incorporated therein, to enable the user to indicate assent to the terms and
conditions, and to permit access to the user only upon the user indicating assent to the terms and
conditions.

63. (unchanged) The system of claim 53 further comprising

a recordation server on the network, the recordation server storing information on rights or interests or value pertaining to the digital objects on the network.

(amended) The system of claim further comprising

a reference service on the network, separate from the digital objects, for recording information about <u>digital objects including</u> accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users.

- 65. (unchanged) The system of claim 53 further comprising an identifier service, accessible on the network, for generating the unique identifiers, the service including servers each serving a portion of an identifier space.
 - 66. (amended) The system of claim 53 further comprising

an authorization server which provides information about terms and conditions for access to a digital object and/or the information incorporated therein and access to and authorizations for use of the digital objects and/or the information incorporated therein.

REMARKS

Applicant asks that all claims be allowed.

Please apply any excess charges or credits to deposit account 06-1050, reference 06254-004001.

Respectfully submitted,

Date: 11 23 9?

David L. Feigenbaum

Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804 (617) 542-5070 telephone (617) 542-8906 facsimile www.fr.com web site

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Attorney's Docket No.: 06154-00406

TES PATENT AND TRADEMARK OFFICE NOV 26 1999 IN THE DEVINE DO

Applicant: Robert E. Kahn et al.

Art Unit Examiner: Group 2700

Serial No.: Filed

08/808,050

Title

: November 23, 1999

A SYSTEM USING ADMINISTRATIVE MECHANISM AND RESOLUTION

MECHANISM WITH ALGORITHMIC PROCESS FOR UNIQUELY AND PERSISTENTLY IDENTIFYING MANAGING AND TRACKING DIGITAL

OBJECTS

BOX CPA

Assistant Commissioner for Patents Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Applicant submits the references listed on the attached form PTO-1449, copies of which are enclosed.

This statement is being filed with the application. Please apply any charges or credits to Deposit Account No. 06-1050, reference 06154-004001.

Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

DLF/lja

Fish & Richardson P.C. 225 Franklin Street Boston, MA 02110-2804 (617) 542-5070 telephone (617) 542-8906 facsimile www.fr.com web site

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Sheet Z of X STORM

Substitute Form PTO-1449 (Modified)	U.S. Department of Commerce Patent and Trademark Office	Attorney's Docket No. 06154-004001	Application No. 08/808,050	
Information Disclosure Statement by Applicant (Use several sheets if necessary)		Applicant Robert E. Kahn et al.		
		Filing Date November 23, 1999	Group Art Unit	

	U.S. Patent Documents										
Examiner Iŋitjal	Desig. ID	Patent Number	Issue Date	Patentee	Class	Subclass	Filing Date If Appropriate				
	AA	5,638,443	6/10/97	Stefik et al.	380	4					
	AB										
	AC										
	AD										
	AE	(TP	E								
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Foreign Patent Documents or Published Foreign Patent Applications									
Examiner Initial	Desig.		Publication Date	Country or Patent Office	Class	Subclass	Yes	lation No	
	AL								
	AM					1			
	AN								
	AO								
	AP								

	Other Documents (include Author, Title, Date, and Place of Publication)							
Examiner	Desig.							
Initjal	ID	Document						
	AQ	Copyright Clearance Center Online, April 6, 1995, Danvers, MA, Press Release.						
D	AR	EPR Electronic Commerce Technologies Press Release, "Breakthrough Digital Rights Protection Information Metering Architecture with a Universal Digital Content and Commerce Container", April 10, 1995, Press Release, San Jose, CA, Internet World 95 – EPR Inc.						
D	AS	Cerf et al., "A Protocol for Packet Network Intercommunication", IEEE Transactions On Communications, Vol. Com-22, No. 5, May 1974, pp. 637-648.						
12	AT	Cerf et al., "Issues in Packet-Network Interconnection", Proceedings of the IEEE, Vol. 66, No. 11, November 1978, pp. 1386-1408.						

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Examiner Signature	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Date Considered	1	/			
	men	5	10/	2000			
EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with							
next communication to applican	t						
		C., b.	Aldres Din-	Language Course (DTO 4440)			

Substitute Form PTO-1449 (Modified)	ied) Patent and Trademark Office		Application No. 08/808,050
Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b))		Applicant Robert E. Kahn et al.	RECEIVED
		Filing Date November 23, 1999	Group Art Unit NOV 2 6 1999

(Other Documents (include Author, Title, Date, and Place of Publication)						
Examiner Initial	Desig. ID	Document					
ll	AU	Kahn, "Resource-Sharing Computer Communications Networks", Proceedings of the IEEE, Vol. 60, No. 11, November 1972, pp. 1397-1407.					
U	AV	Postel, "NCP/TCP Transition Plan", USC/Information Sciences Institute, November 1981.					
N	AW	Mockapetris, "Domain NamesConcepts and Facilities", http://www.ietf.org/rfc/rfc0882.txt ., November, 1983. pp. 1-28.					
Ol -	AX	Mockapetris, "Domain Names—Implementation and Specification", ' http://www.ietf.org/rfc/rfc0883.text ., November, 1983, pp. 1-67.					

Examiner Signature

Date Considered

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.

Substitute Disclosure Form (PTO-1449)



UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

Address: COMMISSIONER OF PATENTS AND TRADEMARKS Washington, D.C. 20231

Washington, D.C. 20231

APPLICATION NUMBER FILING DATE FIRST NAMED APPLICANT ATTORNEY DOCKET NO.

08/808,050

02/28/97

KAHN

R 06154/004001

EXAMINER

LM12/0515

DAVID L FEIGENBAUM FISH AND RICHARDSON 225 FRANKLIN STREET BOSTON MA 02110-2804

ARTUNIT: L. PAPER NUMBER

35

DATE MAILED

05/15/00

This is a communication from the examiner in charge of your application. COMMISSIONER OF PATENTS AND TRADEMARKS

NOTICE OF ALLOWABILITY
All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance and Issue Fee Due or other appropriate communication will be mailed in due course
M This communication is responsive to Amendment H filed on 11/27/99
The allowed claim(s) is/are 53-56
The drawings filed on are acceptable.
☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.
received in Application No. (Series Code/Serial Number)
☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
*Certified copies not received:
Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
A SHORTENED STATUTORY PERIOD FOR REPLY to comply with the requirements noted below is set to EXPIRE THREE MONTHS FROM THE "DATE MAILED" of this Office action. Failure to timely comply will result in ABANDONMENT of this application. Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).
□ Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL APPLICATION, PTO-152, which discloses that the oath or declaration is deficient. A SUBSTITUTE OATH OR DECLARATION IS REQUIRED.
Applicant MUST submit NEW FORMAL DRAWINGS
because the originally filed drawings were declared by applicant to be informal.
including changes required by the Notice of Draftperson's Patent Drawing Review, PTO-948, attached hereto or to Paper No.
including changes required by the proposed drawing correction filed on, which has been approved by the examiner.
including changes required by the attached Examiner's Amendment/Comment.
Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the reverse side of the drawings. The drawings should be filed as a separate paper with a transmittal letter addressed to the Official Draftperson.
☐ Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.
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Attachment(s)
☐ Notice of References Cited, PTO-892
Information Disclosure Statement(s), PTO-1449, Paper No(s).
☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
☐ Notice of Informal Patent Application, PTO-152
☐ Interview Summary, PTO-413
☐ Examiner's Amendment/Comment
☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
☐ Examiner's Statement of Reasons for Allowance
PTOL-दा (Rev. 8/97)

PRIMARY EXAMINER



UNITED STATES DEPARTMENT OF COMMERCE Patent and Trademark Office

NOTICE OF ALLOWANCE AND ISSUE FEE DUE

LM12/0515

DAVID L FEIGENBAUM FISH AND RICHARDSON 225 FRANKLIN STREET BOSTON MA 02:10-280%

APPLI	CATION NO.	FILING DATE	TOTAL CLAIMS	EXAMINER AND GROUP ART UNIT	DATE MAILED
	08/808,050	02/28/97	014	LIU, L	2756 05/15/00
First Named Applicant	KAHN,		35	USC 154(b) temm ext. =	0 Days.

TITLE OF A SYSTEM FOR UNIQUELY AND PERSISTENTLY IDENTIFYING, MANAGING, AND INVENTION TRACKING DIGITAL OBJECTS (AS AMENDED)

	ĄTTY'S	DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPL	N. TYPE	SMALL	NTITY	FEE DUE	DATE DUE
	2	06154/00	04001 709-3	217.000	M46	UTILI	TY	NO	\$1210.00	08/15/00
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THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED.

THE ISSUE FEE MUST BE PAID WITHIN <u>THREE MONTHS</u> FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. <u>THIS STATUTORY PERIOD CANNOT BE EXTENDED.</u>

HOW TO RESPOND TO THIS NOTICE:

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 - B. If the status is the same, pay the FEE DUE shown above

If the SMALL ENTITY is shown as NO:

- A. Pay FEE DUE shown above, or
- B. File verified statement of Small Entity Status before, or with, payment of 1/2 the FEE DUE shown above.
- II. Part B-Issue Fee Transmittal should be completed and returned to the Patent and Trademark Office (PTO) with your ISSUE FEE. Even if the ISSUE FEE has already been paid by charge to deposit account, Part B Issue Fee Transmittal should be completed and returned. If you are charging the ISSUE FEE to your deposit account, section "4b" of Part B-Issue Fee Transmittal should be completed and an extra copy of the form should be submitted.
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	08/808,050	02/28/97	014	LUU, L		2756	05/15/00
First Named Applicant	KAHN,		35	USC 154(b) term ext. =	0 Days	7 11

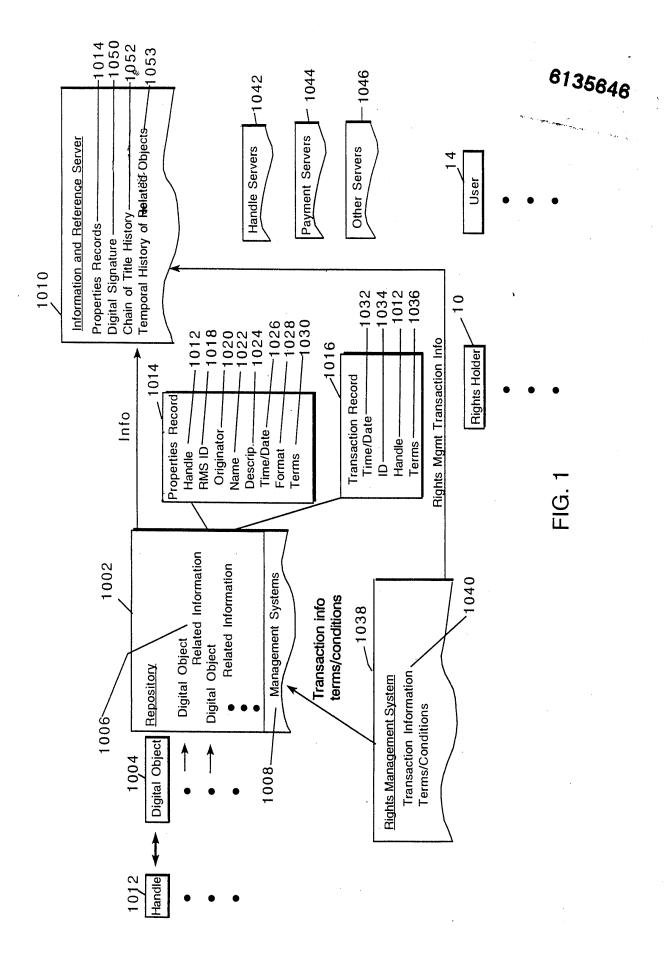
TITLE OF A SYSTEM FOR UNIQUELY AND PERSISTENTLY IDENTIFYING, MANAGING, AND INVENTION TRACKING DIGITAL OBJECTS (AS AMENDED)

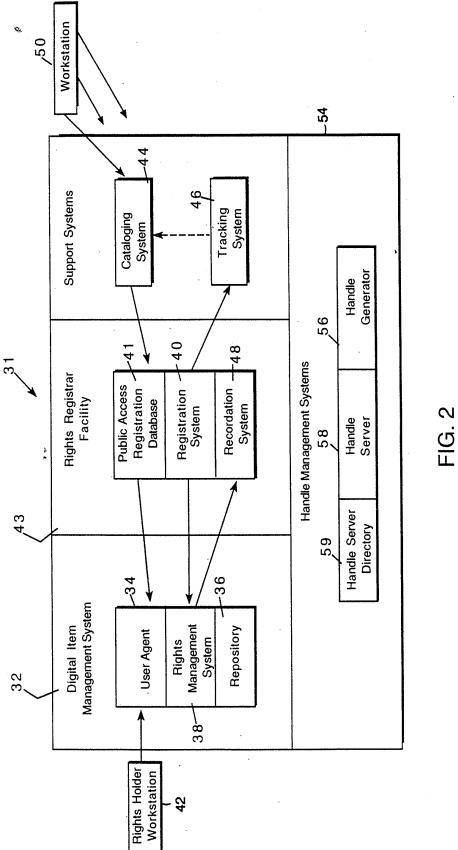
ATTY'S DOCKET NO.	CLASS-SUBCLASS	BATCH NO.	APPLN. TYPE	SI	MALL ENTITY	FEE DUE	DATE DUE
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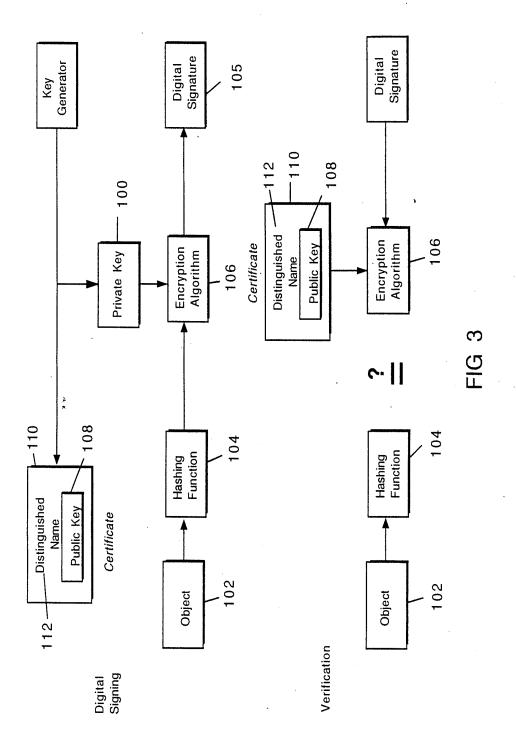
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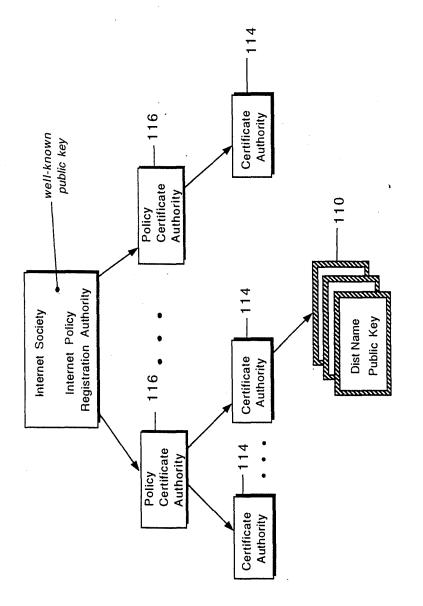


FIG. 1

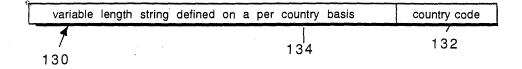


FIG 5

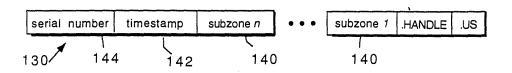
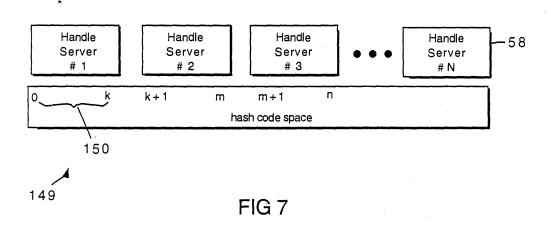


FIG 6



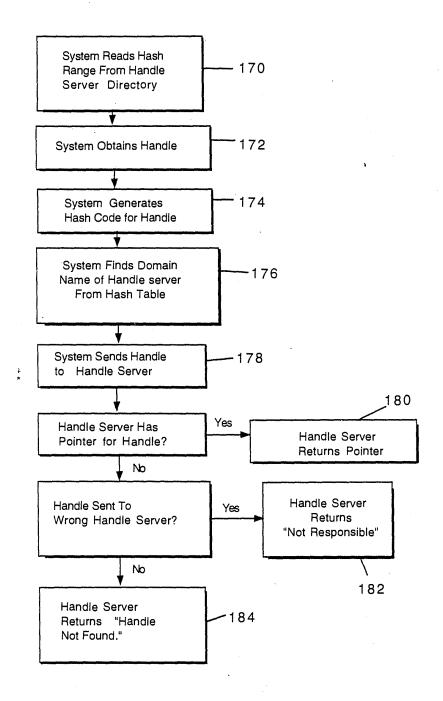
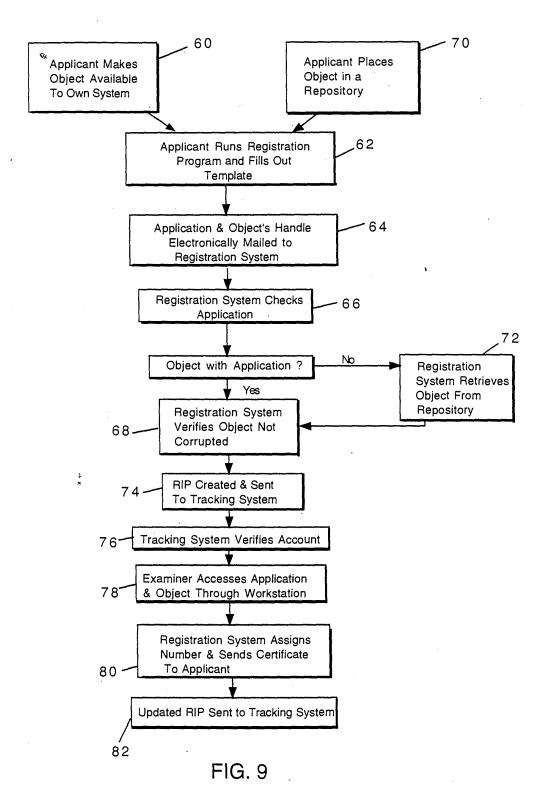
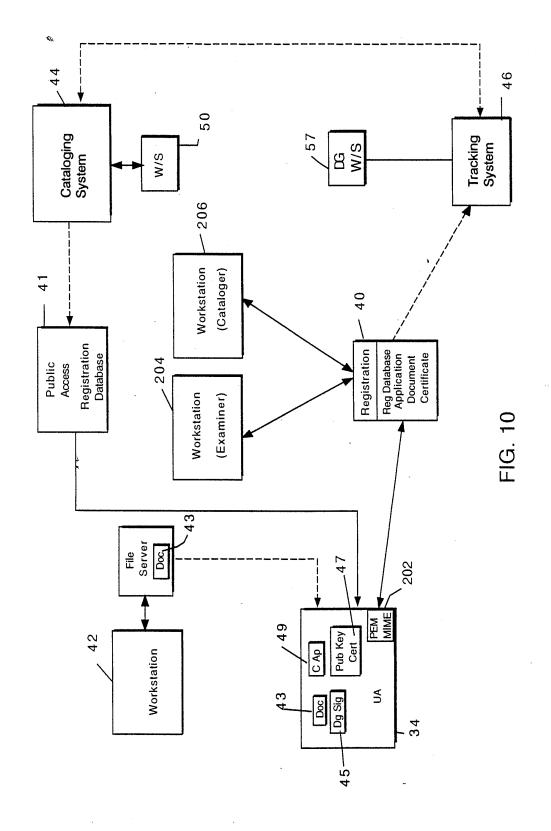
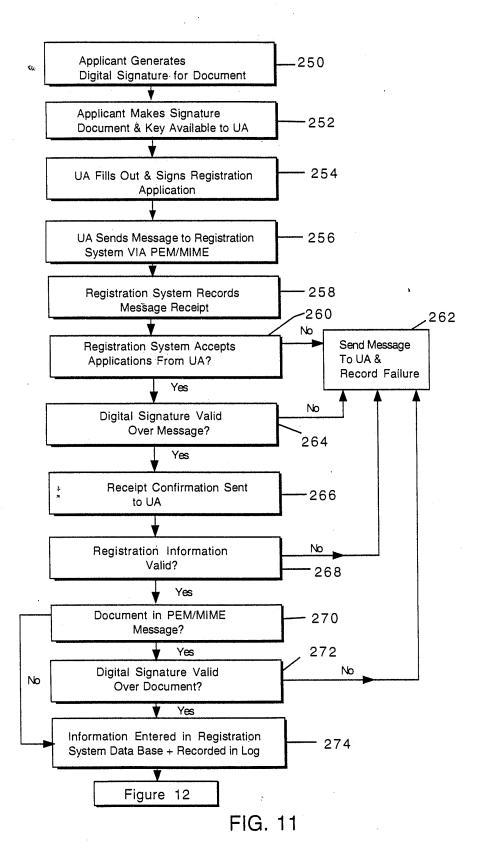


FIG. 8







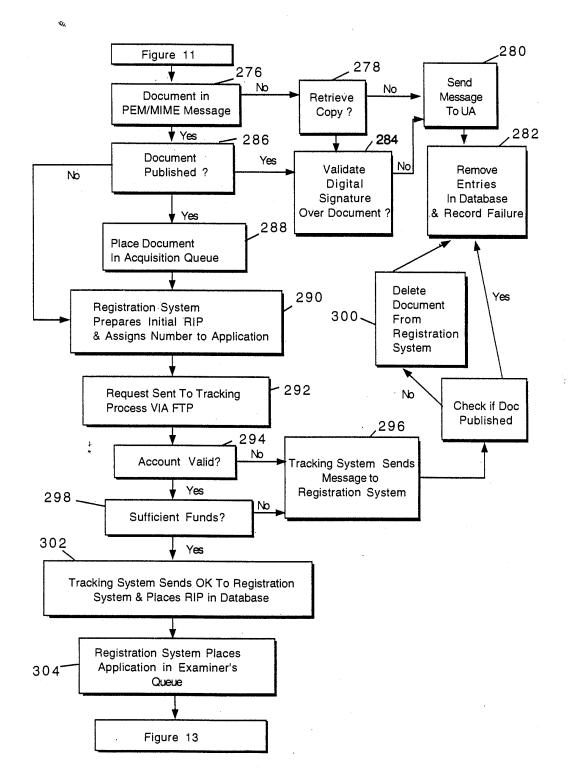


FIG 12

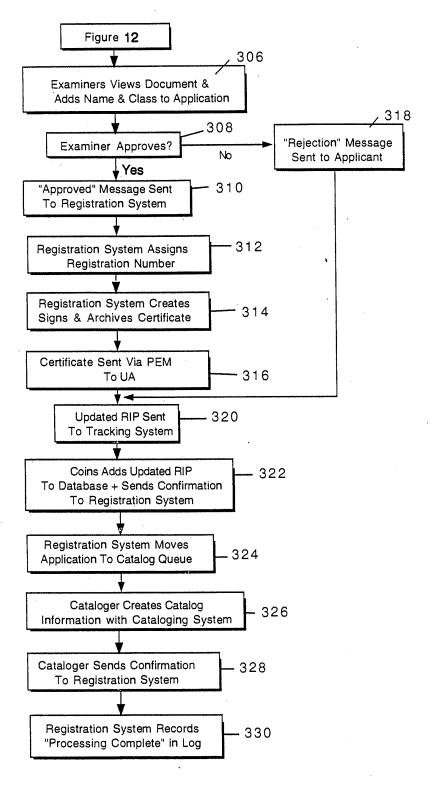


FIG.13

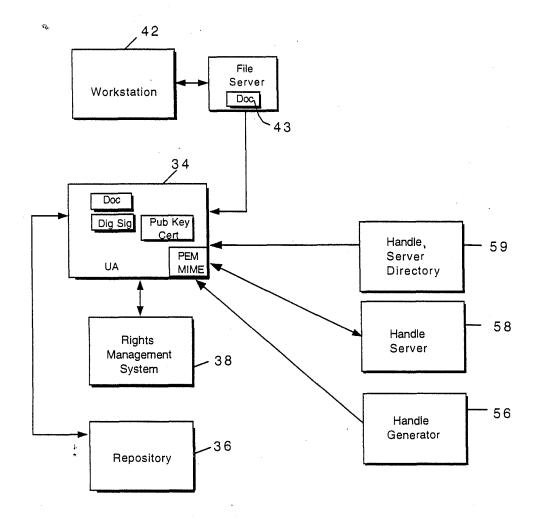
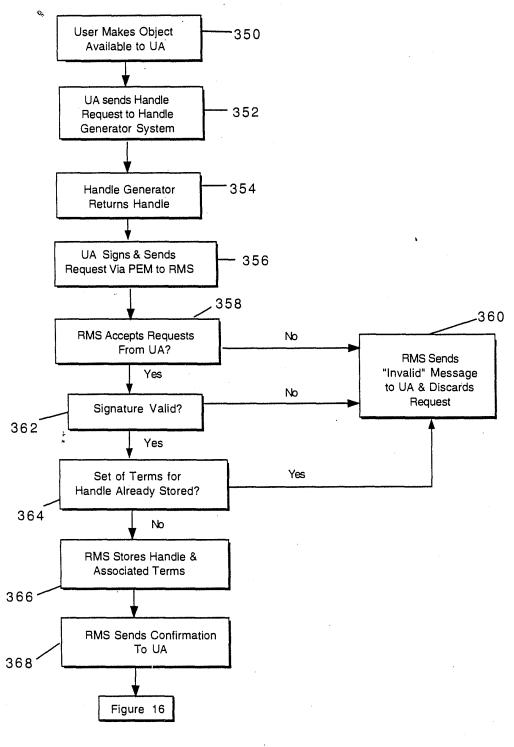
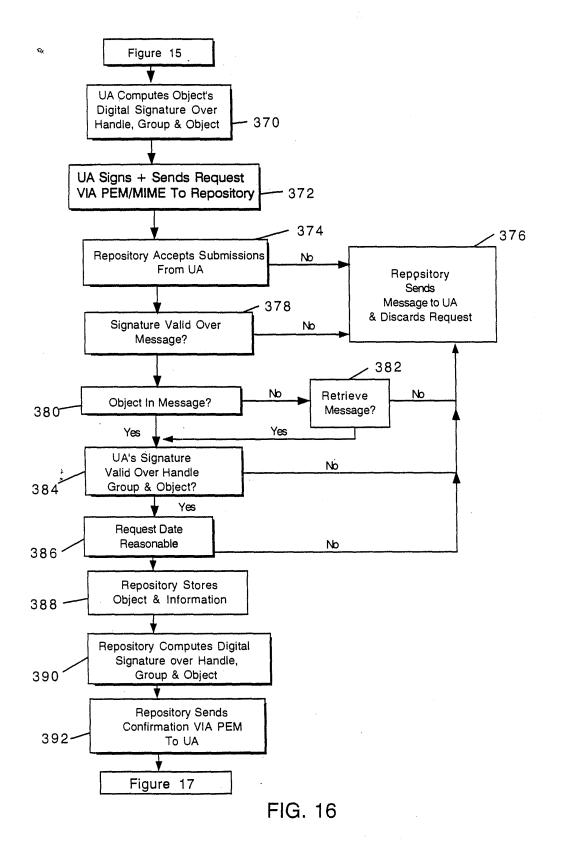


FIG. 14





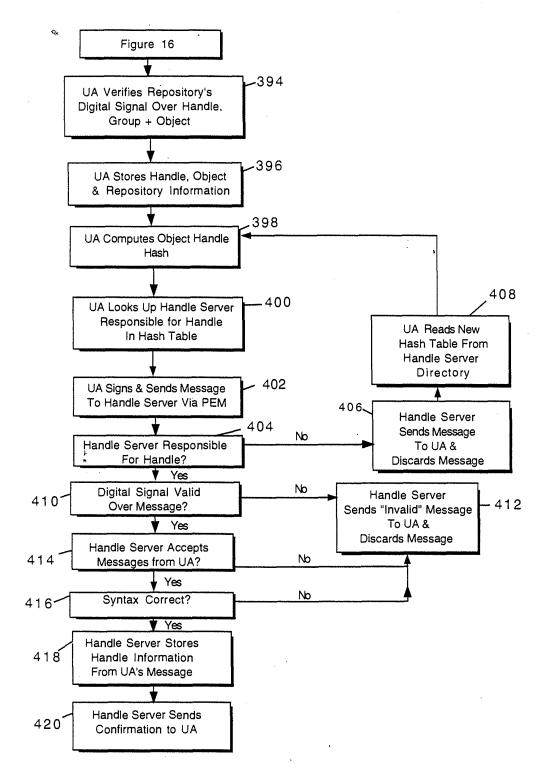
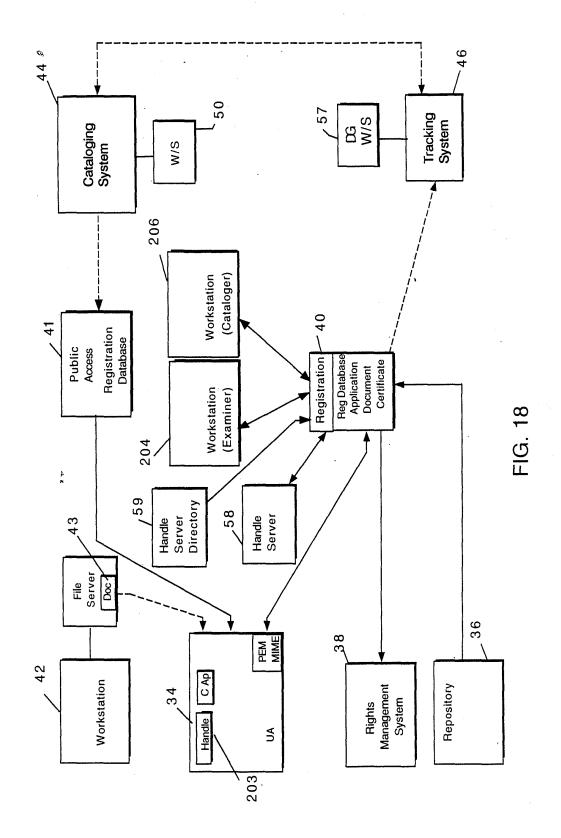
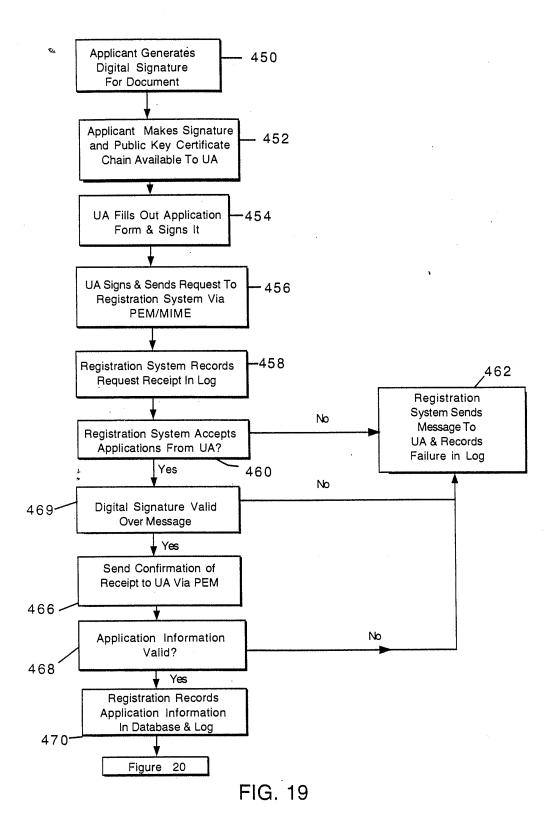


FIG. 17





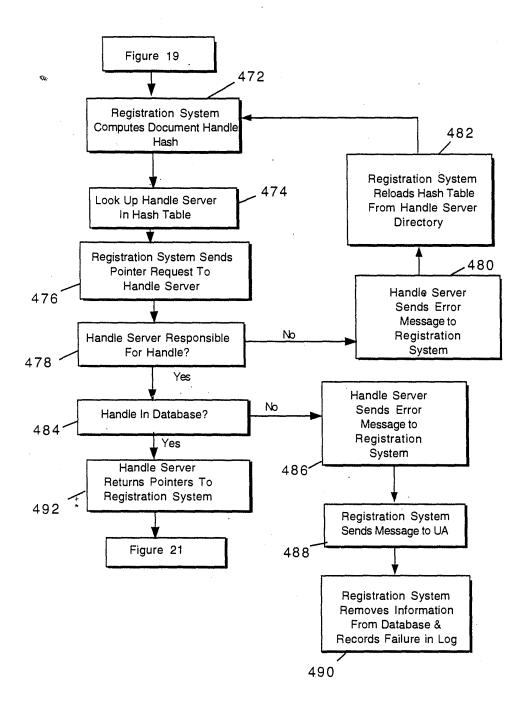


FIG. 20

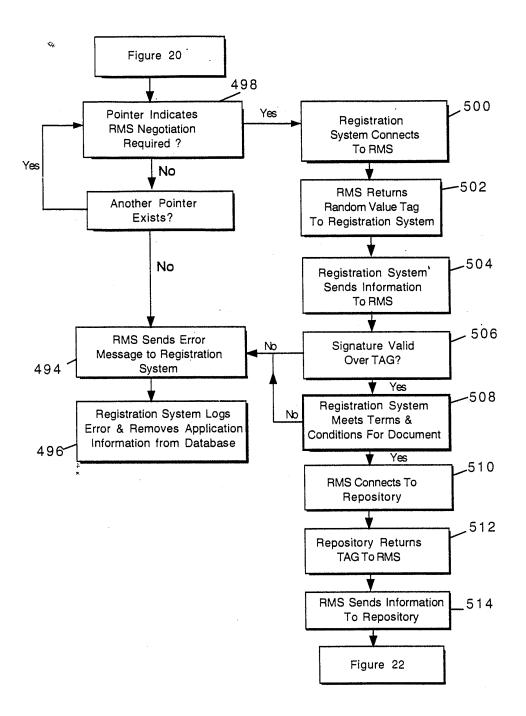
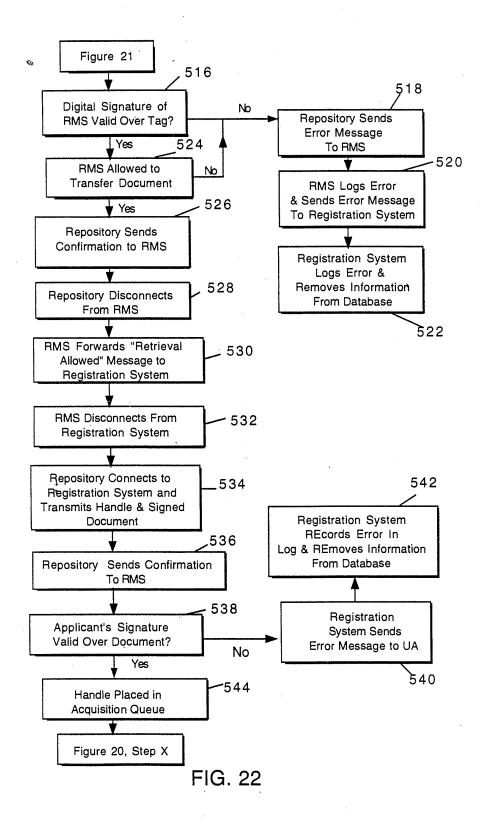
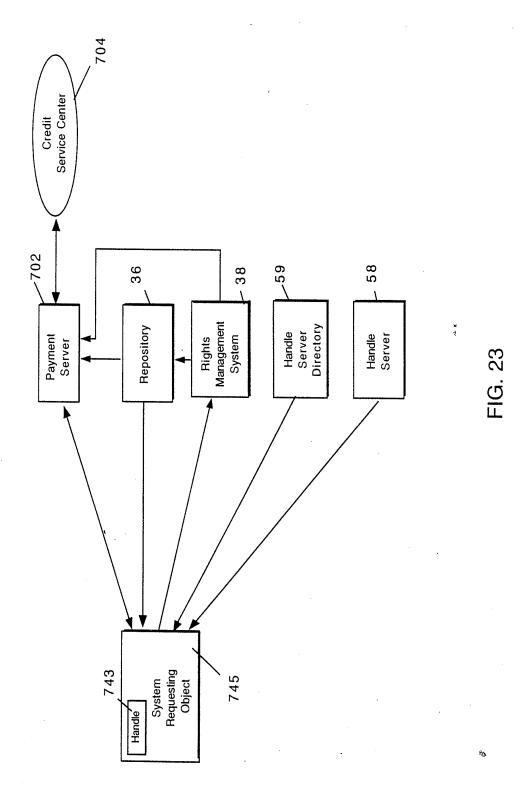


FIG. 21





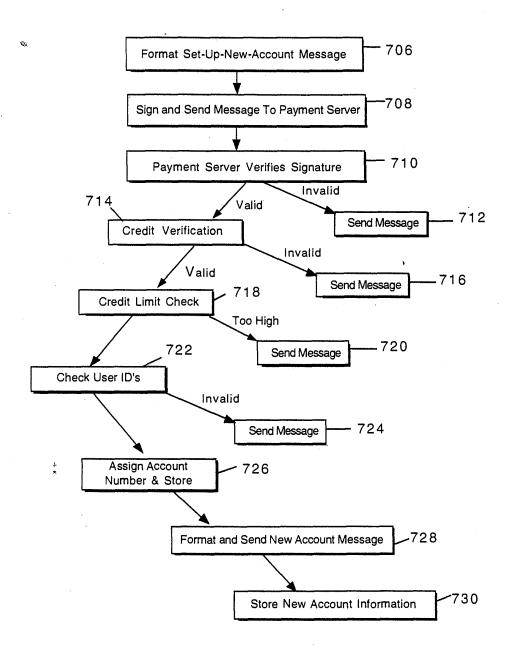
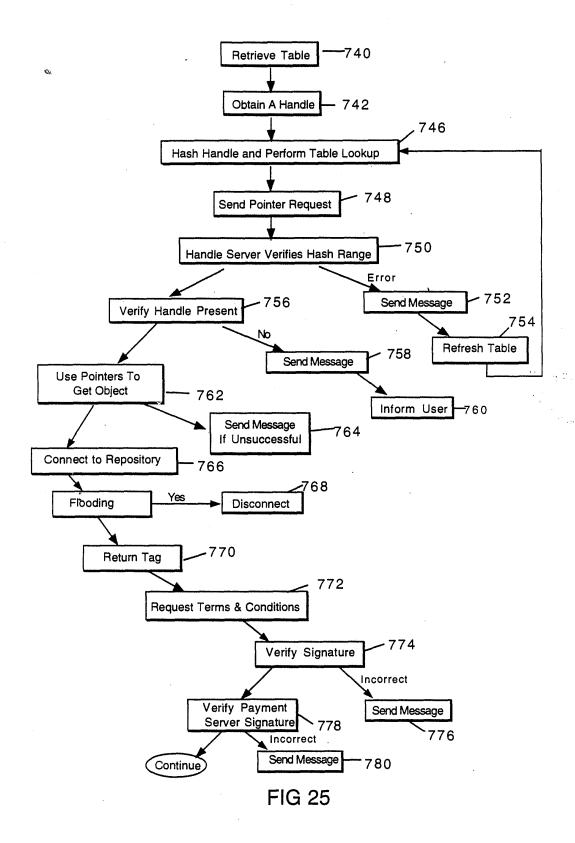
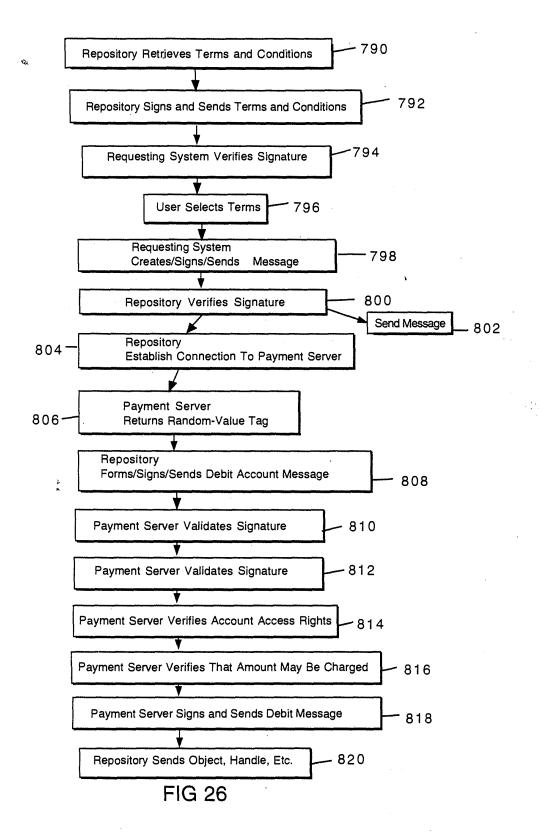
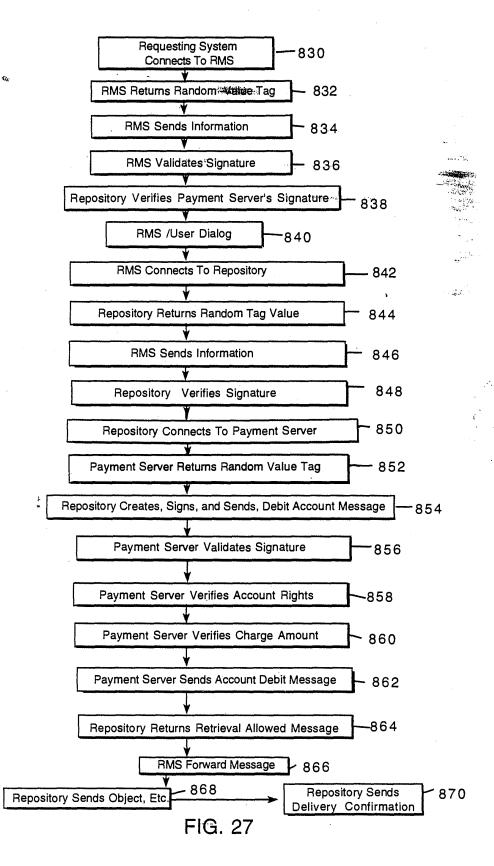


FIG 24









Attorney's Docket No.: 06154-004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Robert E. Kahn et al.

Art Unit : 2756

Certificate

Patent No.: 6,135,646

Examiner: Le Luu

Issue Date: October 24, 2000

JUN 3 0 2004

Serial No.: 08/808,050

of Correction

Filed

Title

: February 28, 1997

: SYSTEM FOR UNIQUELY AND PERSISTENTLY IDENTIFYING.

MANAGING, AND TRACKING DIGITAL OBJECTS

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Respectfully submitted,

David L. Feigenbaum Reg. No. 30,378

Fish & Richardson P.C. 225 Franklin Street

Boston, MA 02110-2804 Telephone: (617) 542-5070 Facsimile: (617) 542-8906

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT No.

: 6,135,646

DATED

: OCTOBER 24, 2000

INVENTOR(S)

It is certified that an error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 28

Line 3, replace claim 1 with

--1. A system for organizing information in a network that includes computational facilities comprising:

digital objects, each of the digital objects comprising one or more sequences of bits or sets of such sequences, each of the sequences or sets of sequences incorporating a work or a portion of a work or other information in which a party has rights or interests, or in which there is value, each of the sequences or sets of sequences being structured in a way that is interpretable by one or more of the computational facilities in the network, each of the digital objects having an identifier that uniquely identifies the digital object

each of the digital objects having an identifier that uniquely identifies the digital object within the network and persists with respect to the digital object over a period of time that is at least as long as the existence of the digital object,

an administrative mechanism that (a) is distributed among the computational facilities, (b) assures the uniqueness and persistence of the identifiers over a time period that is at least as long as the existence of the digital objects, and (c) distributes state information that includes the identifiers among computational facilities by an algorithmic process for managing the uniqueness and persistence of the identifiers, at least some of the digital objects including other information which is useful in processing the digital objects, including managing access to them, and

a resolution mechanism that accepts unique identifiers as input and resolves each of the identifiers to state information that denotes a computational facility or other digital object that contains the digital object associated with the unique identifier.--

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PATENT No. 6,135,646

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT No.

: 6.135,646

DATED

: OCTOBER 24, 2000

INVENTOR(S)

It is certified that an error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 29

Line 9, replace claim 5 with

--5. The system of claim 1 wherein the other information includes at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects, links between different digital objects.

Line 16, replace claim 6 with

--6. The system of claim 5 in which the other information is stored separately from the corresponding digital object.--

Line 18, replace claim 7 with

--7. The system of claim 1 in which

the resolution mechanism is scalable without requiring full replication of the state information and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates the identifiers with the locations of corresponding digital objects in the network.--

Line 29, replace claim 9 with

--9. The system of claim 1 further comprising

a registration authority that processes applications for registration of rights or interests associated with information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical to an original instance.--

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: 6,135,646

DATED

: OCTOBER 24, 2000

INVENTOR(S)

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Column 30

Line 1, replace claim 10 with

--10. The system of claim 1 further comprising

an access mechanism for applying terms and conditions for access to each of the digital objects and/or the information incorporated therein,

the mechanism including information about the terms and conditions, and the mechanism being arranged to make the information about terms and conditions available to a user in connection with a request for access to one of the digital objects and/or the information incorporated therein, to enable the user to indicate assent to the terms and conditions, and to permit access to the user only upon the user indicating assent to the terms and conditions.--

Line 19, replace claim 12 with

--12. The system of claim 1 further comprising

a reference service on the network, separate from the digital objects, for recording information about digital objects including accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users.--

Line 30, replace claim 14 with

--14. The system of claim 1 further comprising

an authorization server which provides information about terms and conditions for access to a digital object and/or the information incorporated therein and access to and authorizations for use of the digital objects and/or the information incorporated therein.--

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each of the digital objects having an identifier that uniquely identifies the digital object within the network and persists with respect to the digital object over a period of time that is at least as long as the existence of the digital object,

an administrative mechanism that (a) is distributed among the computational facilities, (b) assures the uniqueness and persistence of the identifiers over a time period that is at least as long as the existence of the digital objects, and (c) distributes state information that includes the identifiers among computational facilities by an algorithmic process for managing the uniqueness and persistence of the identifiers, at least some of the digital objects including other information which is useful in processing the digital objects, including managing access to them, and

a resolution mechanism that accepts unique identifiers as input and resolves each of the identifiers to state information that denotes a computational facility or other digital object that contains the digital object associated with the unique identifier.--

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: 6,135,646

DATED

: OCTOBER 24, 2000

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: 6,135,646

DATED

: OCTOBER 24, 2000

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PATENT NO.

: 6,135,646

Page 1 of 3

DATED

: October 24, 2000

INVENTOR(S): Robert E. Khan and David K. Ely

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Column 28,

Line 3, replace with:

-- 1. A system for organizing information in a network that includes computational

facilities comprising:

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a resolution mechanism that accepts unique identifiers as input and resolves each of the identifiers to state information that denotes a computational facility or other digital object that contains the digital object associated with the unique identifier .--

Column 29,

Line 9, replace claim 5 with

--5. The system of claim 1 wherein the other information includes at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects, links between different digital objects.

Line 16, replace claim 6 with

-- 6. The system of claim 5 in which the other information is stored separately from the corresponding digital object. --Line 18, replace claim 7 with

-7. The system of claim 1 in which

the resolution mechanism is scalable without requiring full replication of the state information and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates the identifiers with the locations of corresponding digital objects in the network.-

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO.

: 6,135,646

DATED

: October 24, 2000

INVENTOR(S)

: Robert E. Khan and David K. Ely

Page 2 of 3

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 29 cont'd.,

Line 29, replace claim 9 with

--9. The system of claim 1 further comprising a registration authority that processes applications for registration of rights or interests associated with information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical to an original instance.--

Column 30,

Line 1, replace with

--10. The system of claim 1 further comprising an access mechanism for applying terms and conditions for access to each of the digital objects and/or the information incorporated therein, the mechanism including information about the terms and conditions, and the mechanism being arranged to make the information about terms and conditions available to a user in connection with a request for access to one of the digital objects and/or the information incorporated therein, to enable the user to indicate assent to the terms and conditions, and to permit access to the user only upon the user indicating assent to the terms and conditions.—

Line 19, replace claim 12 with

--12. The system of claim 1 further comprising a reference service on the network, separate from the digital objects, for recording information about digital objects including accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users.--

UNITED STATES PATENT AND TRADEMARK OFFICE **CERTIFICATE OF CORRECTION**

PATENT NO. : 6,135,646

: October 24, 2000 DATED

Page 3 of 3

INVENTOR(S): Robert E. Khan and David K. Ely

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

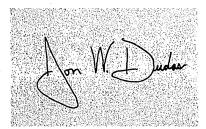
Column 30, cont'd.,

Line 30, replace claim 14 with

--14. The system of claim 1 further comprising an authorization server which provides information about terms and conditions for access to a digital object and/or the information incorporated therein and access to and authorizations for use of the digital objects and/or the information incorporated therein.--

Signed and Sealed this

Twelfth Day of October, 2004



JON W. DUDAS Director of the United States Patent and Trademark Office

Attorney's Docket No.: 06154-0004001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor

: Robert E. Kahn

Art Unit : 2756

Patent No.

6,135,646

Examiner: Le Hien Luu Conf. No.: 5839

Issue Date Serial No.

October 24, 2000

08/808,050

Filed Title

February 28, 1997

: SYSTEM FOR UNIQUELY AND PERSISTENTLY IDENTIFYING,

MANAGING, AND TRACKING DIGITAL OBJECTS

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REQUEST FOR CERTIFICATE OF CORRECTION

Please issue a certificate of correction in accordance with the attached form.

One or more of the errors to be corrected were made by applicant. The fee of \$100 is being paid with this request.

Apply any other necessary charges or credits to Deposit Account 06- 1050, referencing the above attorney docket number.

Respectfully submitted,

/David L. Feigenbaum/_

David L. Feigenbaum

Reg. No. 30,378

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Telephone: (617) 542-5070 Facsimile: (877) 769-7945

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PTO/SB/44 (09-07)
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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 6

PATENT NO.

6,135,646

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

It is certified that errors appear in the Certificate of Correction issued on October 12, 2004 for the above-identified patent, and that said Certificate of Correction is hereby corrected and shown below:

Column 7

Line 3, replace "In" with --It--.

Line 6, replace "It" with --In--.

Column 8

Line 41, replace "interests." with --interests).--.

Column 10

Line 44, delete "There are other systems".

Line 58, after "able" insert --to--.

Column 11

Line 38, replace the second instance of "handles" with --handle--.

Column 14

Line 25, replace "a" with --an--.

Line 31, replace "the" with -- The--.

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 2 of 6

PATENT NO.

6,135,646

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 15

Line 25, replace "PEN" with --PEM--.

Column 19

Line 63, replace "certificate"" with --certificate --.

Column 20

Line 65, delete the first instance of "is".

Column 25

Line 22, replace "possible" with --possibly--.

Line 46, replace "database." with --database;--.

Line 46, "the domain" should be moved to the next line at the margin like the other items listed in the paragraph.

Column 27

Line 32, delete the first instance of "transfer is not".

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 3 of 6

PATENT NO.

6,135,646

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 28

Line 32, replace claim 1 with:

--1. A system for organizing information in a network that includes computational facilities comprising:

digital objects each of the digital objects comprising one or more sequences of bits or sets of such sequences each of the sequences or sets of sequences incorporating a work or a portion of a work or other information in which a party has rights or interests, or in which there is value, each of the sequences or sets of sequences being structured in a way that is interpretable by one or more of the computational facilities in the network,

each of the digital objects having an identifier that uniquely identifies the digital object within the network and persists with respect to the digital object over a period of time that is at least as long as the existence of the digital object, an administrative mechanism that (a) is distributed among the computational facilities, (b) assures the uniqueness and persistence of the identifiers over a time period that is at least as long as the existence of the digital objects, and (c) distributes state information that includes the identifiers among computational facilities by an algorithmic process for managing the uniqueness and persistence of the identifiers, at least some of the digital objects including other information which is useful in processing the digital objects, including managing access to them, and

a resolution mechanism that accepts unique identifiers as input and resolves each of the identifiers to state information that denotes a computational facility or other digital object that contains the digital object associated with the unique identifier.—

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(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

PATENT NO.

6,135,646

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 29

Line 7, replace claim 4 with:

--4. The system of claim 3 in which the validation information is stored separately from the corresponding digital object .--

Line 9, replace claim 5 with:

--5. The system of claim 1 wherein the other information includes at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects, links between different digital objects .--

Line 16, replace claim 6 with:

--6. The system of claim 5 in which the other information is stored separately from the corresponding digital object .--

Line 18, replace claim 7 with:

--7. The system of claim 1 in which

the resolution mechanism is scalable without requiring full replication of the state information and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates the identifiers with the locations of corresponding digital objects in the network.--

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 5 of 6

PATENT NO.

6,135,646

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 29 (cont'd)

Line 29, replace claim 9 with:

--9. The system of claim 1 further comprising a registration authority that processes applications for registration of rights or interests associated with information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical to an original instance .--

Column 30

Line 1, replace claim 10 with:

--10. The system of claim 1 further comprising an access mechanism for applying terms and conditions for access to each of the digital objects and/or the information incorporated therein, the mechanism including information about the terms and conditions, and the mechanism being arranged to make the information about terms and conditions available to a user in connection with a request for access to one of the digital objects and/or the information incorporated therein, to enable the user to indicate assent to the terms and conditions, and to permit access to the user only upon the user indicating assent to the terms and conditions .--

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 6 of 6

PATENT NO.

6,135,646

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 30 (cont'd)

Line 19, replace claim 12 with:

--12. The system of claim 1 further comprising a reference service on the network, separate from the digital objects, for recording information about digital objects including accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users.--

Line 26, replace claim 13 with:

--13. The system of claim 1 further comprising an identifier service, accessible on the network, for generating the unique identifiers, the service including servers each serving a portion of an identifier space.--

Line 30, replace claim 14 with:

--14. The system of claim 1 further comprising an authorization server which provides information about terms and conditions for access to a digital object and/or the information incorporated therein and access to and authorizations for use of the digital objects and/or the information incorporated therein.--

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	\pp	lication Fee	Transmi	ttal	
Application Number:	088	808050			
Filing Date:	28-	Feb-1997			·
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Title of Invention:		YSTEM FOR UNIQUI ACKING DIGITAL OB		STENTLY IDENTIFYI	NG, MANAGING, AND
First Named Inventor/Applicant Name:	RO	BERT E. KAHN			
Filer:	Da	vid L Feigenbaum/0	Cathy O'Brien		
Attorney Docket Number:	06	54/004001			-
Filed as Large Entity				•	
Utility under 35 USC 111(a) Filing Fees					
Description		Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:					
Pages:					
Claims:					
Miscellaneous-Filing:					
Petition:					
Patent-Appeals-and-Interference:		_			
Post-Allowance-and-Post-Issuance:				,	•
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Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
	Tot	al in USD (\$)	100

Electronic Ack	nowledgement Receipt
قه EFS ID:	19668064
Application Number:	08808050
International Application Number:	
Confirmation Number:	5839
Title of Invention:	A SYSTEM FOR UNIQUELY AND PERSISTENTLY IDENTIFYING, MANAGING, AND TRACKING DIGITAL OBJECTS
First Named Inventor/Applicant Name	DODEDTE MALIN
First Named Inventor/Applicant Name:	ROBERT E. KAHN DAVID L FEIGENBAUM
t in the second	FISH AND RICHARDSON 225 FRANKLIN STREET
Correspondence Address:	-
	BOSTON MA 021102804 US -
Filer:	David L Feigenbaum/Cathy O'Brien
Filer Authorized By:	David L Feigenbaum
Attorney Docket Number:	06154/004001
Receipt Date:	24-JUL-2014
Filing Date:	28-FEB-1997
Time Stamp:	09:42:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
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Payment was successfully received in RAM	\$100

RAM confirmation Number		9902	9902					
Deposit Account 0610		061050	061050					
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)			
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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/44 (09-07)
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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 6

PATENT NO.

6,135,646

MP1, certran NO. 08/808,050

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

It is certified that errors appear in the Certificate of Correction issued on October 12, 2004 for the above-identified patent, and that said Certificate of Correction is hereby corrected and shown below:

Column 7

Line 3, replace "In" with --It--.

Line 6, replace "It" with --In--.

Column 8

Line 41, replace "interests." with --interests).--.

Column 10

Line 44, delete "There are other systems".

Line 58, after "able" insert --to--.

Column 11

Line 38, replace the second instance of "handles" with --handle--.

Column 14

Line 25, replace "a" with --an--.

Line 31, replace "the" with -- The--.

certificate supersedes Certificate if Correction issued October 12, 2001

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Minneapolis, MN 55440-1022

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 2 of 6

PATENT NO.

6,135,646

Application No. 08/808,030

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 15

Line 25, replace "PEN" with --PEM--.

Column 19

Line 63, replace "certificate"" with --certificate --.

Column 20

Line 65, delete the first instance of "is".

Column 25

Line 22, replace "possible" with --possibly--.

Line*46, replace "database." with --database;--.

Line 46, "the domain" should be moved to the next line at the margin like the other items listed in the paragraph.

Column 27

Line 32, delete the first instance of "transfer is not".

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 3 of 6

PATENT NO.

6,135,646

Application No.

08/808,050

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 28

Line 32, replace claim 1 with:

--1. A system for organizing information in a network that includes computational facilities comprising:

digital objects, each of the digital objects comprising one or more sequences of bits or sets of such sequences, each of the sequences or sets of sequences incorporating a work or a portion of a work or other information in which a party has rights or interests, or in which there is value, each of the sequences or sets of sequences being structured in a way that is interpretable by one or more of the computational facilities in the network,

each of the digital objects having an identifier that uniquely identifies the digital object within the network and persists with respect to the digital object over a period of time that is at least as long as the existence of the digital object, an administrative mechanism that (a) is distributed among the computational facilities, (b) assures the uniqueness and persistence of the identifiers over a time period that is at least as long as the existence of the digital objects, and (c) distributes state information that includes the identifiers among computational facilities by an algorithmic process for managing the uniqueness and persistence of the identifiers, at least some of the digital objects including other information which is useful in processing the digital objects, including managing access to them, and

a resolution mechanism that accepts unique identifiers as input and resolves each of the identifiers to state information that denotes a computational facility or other digital object that contains the digital object associated with the unique identifier.—

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 4 of 6

PATENT NO.

6,135,646

Application No. 08/808,050

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 29

Line 7, replace claim 4 with:

--4. The system of claim 3 in which the validation information is stored separately from the corresponding digital object.--

Line 9, replace claim 5 with:

--5. The system of claim 1 wherein the other information includes at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects, links between different digital objects.--

Line 16, replace claim 6 with:

--6. The system of claim 5 in which the other information is stored separately from the corresponding digital object.--

Line 18, replace claim 7 with:

--7. The system of claim 1 in which the resolution mechanism is scalable without requiring full replication of the state information and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates the identifiers with the locations of corresponding digital objects in the network.--

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 5 of 6

PATENT NO.

6,135,646

Application No. 08/808,050

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 29 (cont'd)

Line 29, replace claim 9 with:

--9. The system of claim 1 further comprising a registration authority that processes applications for registration of rights or interests associated with information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical to an original instance.--

Column 30

Line 1, replace claim 10 with:

--10. The system of claim 1 further comprising an access mechanism for applying terms and conditions for access to each of the digital objects and/or the information incorporated therein, the mechanism including information about the terms and conditions, and the mechanism being arranged to make the information about terms and conditions available to a user in connection with a request for access to one of the digital objects and/or the information incorporated therein, to enable the user to indicate assent to the terms and conditions, and to permit access to the user only upon the user indicating assent to the terms and conditions.--

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UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 6 of 6

PATENT NO.

6,135,646

Application

No. 04/808,050

ISSUE DATE

October 24, 2000

INVENTOR(S)

Robert E. Kahn and David K. Ely

Column 30 (cont'd)

Line 19, replace claim 12 with:

--12. The system of claim 1 further comprising a reference service on the network, separate from the digital objects, for recording information about digital objects including accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users.--

Line 26, replace claim 13 with:

--13. The system of claim 1 further comprising an identifier service, accessible on the network, for generating the unique identifiers, the service including servers each serving a portion of an identifier space.--

Line 30, replace claim 14 with:

--14. The system of claim 1 further comprising an authorization server which provides information about terms and conditions for access to a digital object and/or the information incorporated therein and access to and authorizations for use of the digital objects and/or the information incorporated therein.--

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UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO.

: 6,135,646

Page 1 of 4

APPLICATION NO.

: 08/808050

DATED

: October 24, 2000

INVENTOR(S)

: Robert E. Kahn and David K. Ely

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Specification

Column 7

Line 3, replace "In" with --It--.

Line 6, replace "It" with --In--.

Column 8

Line 41, replace "interests." with --interests).--.

Column 10

Line 44, delete "There are other systems".

Line 58, after "able" insert --to--.

Column 11

Line 38, replace the second instance of "handles" with --handle--.

Column 14

Line 25, replace "a" with --an--.

Line 31, replace "the" with -- The--.

Column 15

Line 25, replace "PEN" with --PEM--.

This certificate supersedes the Certificate of Correction issued October 12, 2004.

Signed and Sealed this Thirtieth Day of September, 2014

Michelle K. Lee

Wichelle K.

Deputy Director of the United States Patent and Trademark Office

CERTIFICATE OF CORRECTION (continued) U.S. Pat. No. 6,135,646

Column 19

Line 63, replace "certificate" with --certificate--.

Column 20

Line 65, delete the first instance of "is".

Column 25

Line 22, replace "possible" with --possibly--.

Line 46, replace "database." with --database;--.

Line 46, "the domain" should be moved to the next line at the margin like the other items listed in the paragraph.

Column 27

Line 32, delete the first instance of "transfer is not".

In the Claims

Column 28

Line 32, replace claim 1 with:

--1. A system for organizing information in a network that includes computational facilities comprising:

digital objects each of the digital objects comprising one or more sequences of bits or sets of such sequences each of the sequences or sets of sequences incorporating a work or a portion of a work or other information in which a party has rights or interests, or in which there is value, each of the sequences or sets of sequences being structured in a way that is interpretable by one or more of the computational facilities in the network,

each of the digital objects having an identifier that uniquely identifies the digital object within the network and persists with respect to the digital object over a period of time that is at least as long as the existence of the digital object, an administrative mechanism that (a) is distributed among the computational facilities, (b) assures the uniqueness and persistence of the identifiers over a time period that is at least as long as the existence of the digital objects, and (c) distributes state information that includes the identifiers among computational facilities by an algorithmic process for managing the uniqueness and persistence of the identifiers, at least some of the digital objects including other information which is useful in processing the digital objects, including managing access to them, and a resolution mechanism that accepts unique identifiers as input and resolves each of the identifiers to state information that denotes a computational facility or other digital object that contains the digital object associated with the unique identifier.--

Column 29

CERTIFICATE OF CORRECTION (continued) U.S. Pat. No. 6,135,646

Line 7, replace claim 4 with:

--4. The system of claim 3 in which the validation information is stored separately from the corresponding digital object.--

Line 9, replace claim 5 with:

--5. The system of claim 1 wherein the other information includes at least one of the following: registration of rights in the digital objects; accesses to and uses of digital objects; the terms and conditions for access and use of digital objects; the ownership and licensing of rights to digital objects, links between different digital objects.--

Line 16, replace claim 6 with:

--6. The system of claim 5 in which the other information is stored separately from the corresponding digital object.--

Line 18, replace claim 7 with:

--7. The system of claim 1 in which

the resolution mechanism is scalable without requiring full replication of the state information and includes servers on the network, each of the servers storing information about the state of the digital object including information that associates the identifiers with the locations of corresponding digital objects in the network.—

Line 29, replace claim 9 with:

--9. The system of claim 1 further comprising

a registration authority that processes applications for registration of rights or interests associated with information structured as digital objects, based on the digital objects, their identifiers, and validation information for each of the digital objects sufficient to determine whether a purported instance of a digital object is identical to an original instance.--

Column 30

Line 1, replace claim 10 with:

--10. The system of claim 1 further comprising

an access mechanism for applying terms and conditions for access to each of the digital objects and/or the information incorporated therein,

the mechanism including information about the terms and conditions, and

the mechanism being arranged to make the information about terms and conditions available to a user in connection with a request for access to one of the digital objects and/or the information incorporated therein, to enable the user to indicate assent to the terms and conditions, and to permit access to the user only upon the user indicating assent to the terms and conditions.--

Column 30 (cont'd)

CERTIFICATE OF CORRECTION (continued) U.S. Pat. No. 6,135,646

Line 19, replace claim 12 with:

--12. The system of claim 1 further comprising a reference service on the network, separate from the digital objects, for recording information about digital objects including accesses to and transactions associated with the digital objects, the information in the reference service being accessible to authorized users.--

Line 26, replace claim 13 with:

--13. The system of claim 1 further comprising an identifier service, accessible on the network, for generating the unique identifiers, the service including servers each serving a portion of an identifier space.--

Line 30, replace claim 14 with:

--14. The system of claim 1 further comprising an authorization server which provides information about terms and conditions for access to a digital object and/or the information incorporated therein and access to and authorizations for use of the digital objects and/or the information incorporated therein.--

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