

require, as an aspect of their control structures, that an end user make usage information available for analysis purposes. Other containers may give an end user the option of either allowing the usage information to be used for analysis, or denying some or all such uses of such information. Some users may elect to allow analysis of certain information, and deny this permission for other information. End users 3310 in this example may, for example, elect to limit the granularity of information that may be used for analysis purposes (e.g. an end user may allow analysis of the number of movies viewed in a time period but disallow use of specific titles, an end user may allow release of their ZIP code for demographic analysis, but disallow use of their name and address, etc.) Authors and/or the repository 3302 may, for example, choose to charge end users 3310 smaller fees if they agree to release certain usage information for analysis purposes.

In this example, the repository 3302 may receive content produced by more than one author. For example, author B, author C, and author D may each create portions of content that will be delivered to end users 3310 in a single container. For example, author B may produce a reference work. Author C may produce a commentary on author B's reference work, and author D may produce a set of illustrations for author B's reference work and author C's commentary. Author B may collect together

author C's and author D's content and add further content (e.g. the reference work described above) and include such content in a single container which is then transmitted to the repository 3302. Alternatively, each of the authors may transmit their works to the repository 3302 independently, with an indication that a template should be used to combine their respective works prior to shipping a container to an end user. Still alternatively, a container reflecting the overall content structure may be transmitted to the repository 3302 and some or all of the content may be referenced in the content references rather than delivered to the repository 3302 for storage in content storage.

When an end user makes use of container content, their content usage information may, for example, be segregated in accordance with control structures that organize usage information based at least in part on the author who created that segment. Alternatively, the authors and/or the VDE repository 3302 may negotiate one or more other techniques for securely dividing and/or sharing usage information in accordance with VDE control information. Furthermore, control structures associated with a container may implement models that differentiate any usage fees associated with portions of content based on usage of particular portions, overall usage of the container, particular patterns of usage, or other mechanism

negotiated (or otherwise agreed to) by the authors. Reports of usage information, analysis results, disbursements, and other clearinghouse processes may also be generated in a manner that reflects agreements reached by repository 3302 participants
5 (authors, end users 3310 and/or the repository 3302) with respect to such processes. These agreements may be the result of a VDE control information negotiation amongst these participants.

In this example, one type of author is a publisher 3308.
10 The publisher 3308 in this example communicates over an "internal" network with a VDE based local repository 3302 and over the network described above with the public repository 3302. The publisher 3308 may create or otherwise provide content and/or VDE control structure templates that are
15 delivered to the local repository 3302 for use by other participants who have access to the "internal" network. These templates may be used to describe the structure of containers, and may further describe whom in the publisher 3308's organization may take which actions with respect to the content
20 created within the organization related to publication for delivery to (and/or referencing by) the repository 3302. For example, the publisher 3308 may decide (and control by use of said temple) that a periodical publication will have a certain format with respect to the structure of its content and the types

of information that may be included (e.g. text, graphics, multimedia presentations, advertisements, etc.), the relative location and/or order of presentation of its content, the length of certain segments, etc. Furthermore, the publisher 3308 may, for example, determine (through distribution of appropriate permissions) that the publication editor is the only party that may grant permissions to write into the container, and that the organization librarian is the only party that may index and/or abstract the content. In addition, the publisher 3308 may, for example, allow only certain one or more parties to finalize a container for delivery to the repository 3302 in usable form (e.g. by maintaining control over the type of permissions, including distribution permissions, that may be required by the repository 3302 to perform subsequent distribution activities related to repository end users 3310).

In this example, author 3306E is connected directly to the publisher 3308, such that the publisher 3308 can provide templates for that author that establish the character of containers for author 3306E's content. For example, if author 3306E creates books for distribution by the publisher 3308, the publisher 3308 may define the VDE control structure template which provides control method options for author 3306E to select from and which provides VDE control structures for securely

distributing author 3306E's works. Author 3306E and the publisher 3308 may employ VDE negotiations for the template characteristics, specific control structures, and/or parameter data used by author 3306E. Author 3306E may then use the
5 template(s) to create control structures for their content containers. The publisher 3308 may then deliver these works to the repository 3302 under a VDE extended agreement comprising electronic agreements between author 3306E and the publisher 3308 and the repository 3302 and the publisher 3308.

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In this example, the publisher 3308 may also make author 3306E's work available on the local repository 3302. The editor may authorize (e.g. through distribution of appropriate permissions) author F to create certain portions of content for a
15 publication. In this example, the editor may review and/or modify author F's work and further include it in a container with content provided by author 3306E (available on the local repository 3302). The editor may or may not have permissions from the publisher 3308 to modify author 3306E's content
20 (depending on any negotiation(s) that may have occurred between the publisher 3308 and author 3306E, and the publisher 3308's decision to extend such rights to the editor if permissions to modify author 3306E's content are held in redistributable form by the publisher 3308). The editor may also include content from

5 other authors by (a) using a process of granting permissions to authors to write directly into the containers and/or (b) retrieving containers from the local repository 3302 for inclusion. The local repository 3302 may also be used for other material used by the publisher 3308's organization (e.g. databases, other reference works, internal documents, draft works for review, training videos, etc.), such material may, given appropriate permissions, be employed in VDE container collections of content created by the editor.

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The librarian in this example has responsibility for building and/or editing inverted indexes, keyword lists (e.g. from a restricted vocabulary), abstracts of content, revision histories, etc. The publisher 3308 may, for example, grant permissions to only the librarian for creating this type of content. The publisher 3308 may further require that this building and/or editing occur prior to release of content to the repository 3302.

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20 Example -- Evolution and Transformation of VDE Managed Content and Control Information

The VDE content control architecture allows content control information (such as control information for governing content usage) to be shaped to conform to VDE control information requirements of multiple parties. Formulating such

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multiple party content control information normally involves securely deriving control information from control information securely contributed by parties who play a role in a content handling and control model (e.g. content creator(s), provider(s), user(s), clearinghouse(s), etc.). Multiple party control information may be necessary in order to combine multiple pieces of independently managed VDE content into a single VDE container object (particularly if such independently managed content pieces have differing, for example conflicting, content control information). Such secure combination of VDE managed pieces of content will frequently require VDE's ability to securely derive content control information which accommodates the control information requirements, including any combinatorial rules, of the respective VDE managed pieces of content and reflects an acceptable agreement between such plural control information sets.

The combination of VDE managed content pieces may result in a VDE managed composite of content. Combining VDE managed content must be carried out in accordance with relevant content control information associated with said content pieces and processed through the use of one or more secure VDE sub-system PPEs 650. VDE's ability to support the embedding, or otherwise combining, of VDE managed content pieces, so as to

create a combination product comprised of various pieces of VDE content, enables VDE content providers to optimize their VDE electronic content products. The combining of VDE managed content pieces may result in a VDE content container which

5 "holds" consolidated content and/or concomitant, separate, nested VDE content containers.

VDE's support for creation of content containers holding distinct pieces of VDE content portions that were previously

10 managed separately allows VDE content providers to develop products whose content control information reflects value propositions consistent with the objectives of the providers of content pieces, and further are consistent with the objectives of a content aggregator who may be producing a certain content

15 combination as a product for commercial distribution. For example, a content product "launched" by a certain content provider into a commercial channel (such as a network repository) may be incorporated by different content providers and/or end-users into VDE content containers (so long as such

20 incorporation is allowed by the launched product's content control information). These different content providers and/or end-users may, for example, submit differing control information for regulating use of such content. They may also combine in different combinations a certain portion of launched content with

content received from other parties (and/or produced by themselves) to produce different content collections, given appropriate authorizations.

5 VDE thus enables copies of a given piece of VDE managed content to be securely combined into differing consolidations of content, each of which reflects a product strategy of a different VDE content aggregator. VDE's content aggregation capability will result in a wider range of competitive electronic content
10 products which offer differing overall collections of content and may employ differing content control information for content that may be common to such multiple products. Importantly, VDE securely and flexibly supports editing the content in, extracting content from, embedding content into, and otherwise shaping the
15 content composition of VDE content containers. Such capabilities allow VDE supported product models to evolve by progressively reflecting the requirements of "next" participants in an electronic commercial model. As a result, a given piece of VDE managed content, as it moves through pathways of
20 handling and branching, can participate in many different content container and content control information commercial models.

VDE content, and the electronic agreements associated with said content, can be employed and progressively manipulated in commercial ways which reflect traditional business practices for non-electronic products (though VDE supports greater flexibility and efficiency compared with most of such traditional models). Limited only by the VDE control information employed by content creators, other providers, and other pathway of handling and control participants, VDE allows a "natural" and unhindered flow of, and creation of, electronic content product models. VDE provides for this flow of VDE products and services through a network of creators, providers, and users who successively and securely shape and reshape product composition through content combining, extracting, and editing within a Virtual Distribution Environment.

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VDE provides means to securely combine content provided at different times, by differing sources, and or representing differing content types. These types, timings, and/or different sources of content can be employed to form a complex array of content within a VDE content container. For example, a VDE content container may contain a plurality of different content container objects, each containing different content whose usage can be controlled, at least in part, by its own container's set of VDE content control information.

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A VDE content container object may, through the use of a secure VDE sub-system, be "safely" embedded within a "parent" VDE content container. This embedding process may involve the creation of an embedded object, or, alternatively, the containing, within a VDE content container, of a previously independent and now embedded object by, at minimum, appropriately referencing said object as to its location.

An embedded content object within a parent VDE content container:

(1) may have been a previously created VDE content container which has been embedded into a parent VDE content container by securely transforming it from an independent to an embedded object through the secure processing of one or more VDE component assemblies within a VDE secure sub-system PPE 650. In this instance, an embedded object may be subject to content control information, including one or more permissions records associated with the parent container, but may not, for example, have its own content control information other than content identification information, or the embedded object may be more extensively controlled by its own content control information (e.g. permissions records).

(2) may include content which was extracted from another VDE content container (along with content control information, as may be applicable) for inclusion into a parent VDE content container in the form of an embedded VDE content container object. In this case, said extraction and embedding may use one or more VDE processes which run securely within a VDE secure sub-system PPE 650 and which may securely remove (or copy) the desired content from a source VDE content container and place such content in a new or existing container object, either of which may be or become embedded into a parent VDE content container.

(3) may include content which was first created and then placed in a VDE content container object. Said receiving container may already be embedded in a parent VDE content container and may already contain other content. The container in which such content is placed may be specified using a VDE aware application which interacts with content and a secure VDE subsystem to securely create such VDE container and place such content therein followed by securely embedding such container into the destination, parent container. Alternatively, content may be specified without the use of a VDE aware

application, and then manipulated using a VDE aware application in order to manage movement of the content into a VDE content container. Such an application may be a VDE aware word processor, desktop and/or multimedia publishing package, graphics and/or presentation package, etc. It may also be an operating system function (e.g. part of a VDE aware operating system or mini-application operating with an O/S such as a Microsoft Windows compatible object packaging application) and movement of content from "outside" VDE to within a VDE object may, for example, be based on a "drag and drop" metaphor that involves "dragging" a file to a VDE container object using a pointing device such as a mouse. Alternatively, a user may "cut" a portion of content and "paste" such a portion into a VDE container by first placing content into a "clipboard," then selecting a target content object and pasting the content into such an object. Such processes may, at the direction of VDE content control information and under the control of a VDE secure subsystem, put the content automatically at some position in the target object, such as at the end of the object or in a portion of the object that corresponds to an identifier carried by or with the content such as a field identifier, or the embedding process might pop-up a user interface that allows a user to browse

a target object's contents and/or table of contents and/or other directories, indexes, etc. Such processes may further allow a user to make certain decisions concerning VDE content control information (budgets limiting use, reporting pathway(s), usage registration requirements, etc.) to be applied to such embedded content and/or may involve selecting the specific location for embedding the content, all such processes to be performed as transparently as practical for the application.

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(4) may be accessed in conjunction with one or more operating system utilities for object embedding and linking, such as utilities conforming to the Microsoft OLE standard. In this case, a VDE container may be associated with an OLE "link." Accesses (including reading content from, and writing content to) to a VDE protected container may be passed from an OLE aware application to a VDE aware OLE application that accesses protected content in conjunction with control information associated with such content.

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A VDE aware application may also interact with component assemblies within a PPE to allow direct editing of the content of a VDE container, whether the content is in a parent or

embedded VDE content container. This may include the use of a VDE aware word processor, for example, to directly edit (add to, delete, or otherwise modify) a VDE container's content. The secure VDE processes underlying VDE container content editing
5 may be largely or entirely transparent to the editor (user) and may transparently enable the editor to securely browse through (using a VDE aware application) some or all of the contents of, and securely modify one or more of the VDE content containers embedded in, a VDE content container hierarchy.

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The embedding processes for all VDE embedded content containers normally involves securely identifying the appropriate content control information for the embedded content. For example, VDE content control information for a VDE installation
15 and/or a VDE content container may securely, and transparently to an embedder (user), apply the same content control information to edited (such as modified or additional) container content as is applied to one or more portions (including all, for example) of previously "in place" content of said container and/or
20 securely apply control information generated through a VDE control information negotiation between control sets, and/or it may apply control information previously applied to said content. Application of control information may occur regardless of whether the edited content is in a parent or embedded container.

This same capability of securely applying content control information (which may be automatically and/or transparently applied), may also be employed with content that is embedded into a VDE container through extracting and embedding content, or through the moving, or copying and embedding, of VDE container objects. Application of content control information normally occurs securely within one or more VDE secure sub-system PPEs 650. This process may employ a VDE template that enables a user, through easy to use GUI user interface tools, to specify VDE content control information for certain or all embedded content, and which may include menu driven, user selectable and/or definable options, such as picking amongst alternative control methods (e.g. between different forms of metering) which may be represented by different icons picturing (symbolizing) different control functions and apply such functions to an increment of VDE secured content, such as an embedded object listed on an object directory display.

Extracting content from a VDE content container, or editing or otherwise creating VDE content with a VDE aware application, provides content which may be placed within a new VDE content container object for embedding into said parent VDE container, or such content may be directly placed into a previously existing content container. All of these processes may

be managed by processing VDE content control information within one or more VDE installation secure sub-systems.

5 VDE content container objects may be embedded in a parent object through control information referenced by a parent object permissions record that resolves said embedded object's location and/or contents. In this case, little or no change to the embedded object's previously existing content control information may be required. VDE securely managed content which is
10 relocated to a certain VDE content container may be relocated through the use of VDE sub-system secure processes which may, for example, continue to maintain relocated content as encrypted or otherwise protected (e.g. by secure tamper resistant barrier 502) during a relocation/embedding process.

15 Embedded content (and/or content objects) may have been contributed by different parties and may be integrated into a VDE container through a VDE content and content control information integration process securely managed through the
20 use of one or more secure VDE subsystems. This process may, for example, involve one or more of:

(1.) securely applying instructions controlling the embedding and/or use of said submitted content, wherein said

instructions were securely put in place, at least in part, by a content provider and/or user of said VDE container. For example, said user and/or provider may interact with one or more user interfaces offering a selection of content embedding and/or control options (e.g. in the form of a VDE template). Such options may include which, and/or whether, one or more controls should be applied to one or more portions of said content and/or the entry of content control parameter data (such a time period before which said content may not be used, cost of use of content, and/or pricing discount control parameters such as software program suite sale discounting). Once required and/or optional content control information is established by a provider and/or user, it may function as content control information which may be, in part or in full, applied automatically to certain, or all, content which is embedded in a VDE content container.

(2.) secure VDE managed negotiation activities, including the use of a user interface interaction between a user at a receiving VDE installation and VDE content control information associated with the content being submitted for embedding. For example, such associated control information may propose certain content information and the content receiver may, for example, accept, select from a plurality, reject, offer alternative control information, and/or apply conditions to the use of certain

content control information (for example, accept a certain one or more controls if said content is used by a certain one or more users and/or if the volume of usage of certain content exceeds a certain level).

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(3.) a secure, automated, VDE electronic negotiation process involving VDE content control information of the receiving VDE content container and/or VDE installation and content control information associated with the submitted content (such as control information in a permissions record of a contributed VDE object, certain component assemblies, parameter data in one or more UDEs and/or MDEs, etc.).

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Content embedded into a VDE content container may be embedded in the form of:

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(1.) content that is directly, securely integrated into previously existing content of a VDE content container (said container may be a parent or embedded content container) without the formation of a new container object. Content control information associated with said content after embedding must be consistent with any pre-embedding content control information controlling, at least in part, the establishment of control information required after embedding. Content control

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information for such directly integrated, embedded content may be integrated into, and/or otherwise comprise a portion of, control information (e.g. in one or more permissions records containing content control information) for said VDE container, and/or

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(2.) content that is integrated into said container in one or more objects which are nested within said VDE content container object. In this instance, control information for said content may be carried by either the content control information for the parent VDE content container, or it may, for example, be in part or in full carried by one or more permissions records contained within and/or specifically associated with one or more content containing nested VDE objects. Such nesting of VDE content containing objects within a parent VDE content container may employ a number of levels, that is a VDE content container nested in a VDE content container may itself contain one or more nested VDE content containers.

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VDE content containers may have a nested structure comprising one or more nested containers (objects) that may themselves store further containers and/or one or more types of content, for example, text, images, audio, and/or any other type of electronic information (object content may be specified by content control information referencing, for example, byte offset

locations on storage media). Such content may be stored, communicated, and/or used in stream (such as dynamically accumulating and/or flowing) and/or static (fixed, such as predefined, complete file) form. Such content may be derived by
5 extracting a subset of the content of one or more VDE content containers to directly produce one or more resulting VDE content containers. VDE securely managed content (e.g. through the use of a VDE aware application or operating system having extraction capability) may be identified for extraction from each
10 of one or more locations within one or more VDE content containers and may then be securely embedded into a new or existing VDE content container through processes executing VDE controls in a secure subsystem PPE 650. Such extraction and embedding (VDE "exporting") involves securely protecting,
15 including securely executing, the VDE exporting processes.

A VDE activity related to VDE exporting and embedding involves performing one or more transformations of VDE content from one secure form to one or more other secure forms. Such
20 transformation(s) may be performed with or without moving transformed content to a new VDE content container (e.g. by component assemblies operating within a PPE that do not reveal, in unprotected form, the results or other output of such transforming processes without further VDE processes governing

use of at least a portion of said content). One example of such a transformation process may involve performing mathematical transformations and producing results, such as mathematical results, while retaining, none, some, or all of the content information on which said transformation was performed. Other examples of such transformations include converting a document format (such as from a WordPerfect format to a Word for Windows format, or an SGML document to a Postscript document), changing a video format (such as a QuickTime video format to a MPEG video format), performing an artificial intelligence process (such as analyzing text to produce a summary report), and other processing that derives VDE secured content from other VDE secured content.

Figure 79 shows an example of an arrangement of commercial VDE users. The users in this example create, distribute, redistribute, and use content in a variety of ways. This example shows how certain aspects of control information associated with content may evolve as control information passes through a chain of handling and control. These VDE users and controls are explained in more detail below.

Creator A in this example creates a VDE container and provides associated content control information that includes

references (amongst other things) to several examples of possible "types" of VDE control information. In order to help illustrate this example, some of the VDE control information passed to another VDE participant is grouped into three categories in the following more detailed discussion: distribution control information, redistribution control information, and usage control information. In this example, a fourth category of embedding control information can be considered an element of all three of the preceding categories. Other groupings of control information are possible (VDE does not require organizing control information in this way). The content control information associated with this example of a container created by creator A is indicated on Figure 80 as C_A . Figure 80 further shows the VDE participants who may receive enabling control information related to creator A's VDE content container. Some of the control information in this example is explained in more detail below.

Some of the distribution control information (in this example, control information primarily associated with creation, modification, and/or use of control information by distributors) specified by creator A includes: (a) distributors will compensate creator A for each active user of the content of the container at the rate of \$10 per user per month, (b) distributors are budgeted such that they may allow no more than 100 independent users to

gain access to such content (i.e. may create no more than 100 permissions records reflecting content access rights) without replenishing this budget, and (c) no distribution rights may be passed on in enabling control information (e.g. permissions records and associated component assemblies) created for
5 distribution to other participants.

Some of the content redistribution control information (in this example, control information produced by a distributor
10 within the scope permitted by a more senior participant in a chain of handling and control and passed to user/providers (in this example, user/distributors) and associated with controls and/or other requirements associated with redistribution activities by such user/distributors) specified by creator A
15 includes: (a) a requirement that control information enabling content access may be redistributed by user/distributors no more than 2 levels, and further requires that each redistribution decrease this value by one, such that a first redistributor is restricted to two levels of redistribution, and a second
20 redistributor to whom the first redistributor delivers permissions will be restricted to one additional level of redistribution, and users receiving permissions from the second redistributor will be unable to perform further redistribution (such a restriction may be enforced, for example, by including as one aspect of a VDE

control method associated with creating new permissions a requirement to invoke one or more methods that: (i) locate the current level of redistribution stored, for example, as an integer value in a UDE associated with such one or more methods, (ii) 5 compare the level of redistribution value to a limiting value, and (iii) if such level of redistribution value is less than the limiting value, increment such level of redistribution value by one before delivering such a UDE to a user as an aspect of content control information associated with VDE managed content, or fail the 10 process if such value is equal to such a limiting value), and (b) no other special restrictions are placed on redistributors.

Some of the usage control information (in this example, control information that a creator requires a distributor to 15 provide in control information passed to users and/or user/distributors) specified by creator A may include, for example: (a) no moves (a form of distribution explained elsewhere in this document) of the content are permitted, and (b) distributors will be required to preserve (at a minimum) 20 sufficient metering information within usage permissions in order to calculate the number of users who have accessed the container in a month and to prevent further usage after a rental has expired (e.g. by using a meter method designed to report access usages to creator A through a chain of handling and

reporting, and/or the use of expiration dates and/or time-aged encryption keys within a permissions record or other required control information).

5 Some of the extracting and/or embedding control information specified by creator A in this example may include a requirement that no extracting and/or embedding of the content is or will be permitted by parties in a chain of handling and control associated with this control information, except for users
10 who have no redistribution rights related to such VDE secured content provided by Creator A. Alternatively, or in addition, as regards different portions of said content, control information enabling certain extraction and/or embedding may be provided along with the redistribution rights described in this example for
15 use by user/distributors (who may include user content aggregators, that is they may provide content created by, and/or received from, different sources so as to create their own content products).

20 Distributor A in this example has selected a basic approach that distributor A prefers when offering enabling content control information to users and/or user/distributors that favors rental of content access rights over other approaches. In this example, some of the control information provided by

creators will permit distributor A to fulfill this favored approach directly, and other control structures may disallow this favored approach (unless, for example, distributor A completes a successful VDE negotiation allowing such an approach and supporting appropriate control information). Many of the control structures received by distributor A, in this example, are derived from (and reflect the results of) a VDE negotiation process in which distributor A indicates a preference for distribution control information that authorizes the creation of usage control information reflecting rental based usage rights. Such distribution control information may allow distributor A to introduce and/or modify control structures provided by creators in such a way as to create control information for distribution to users and/or user/distributors that, in effect, "rent" access rights. Furthermore, distributor A in this example services requests from user/distributors for redistribution rights, and therefore also favors distribution control information negotiated (or otherwise agreed to) with creators that permits distributor A to include such rights as an aspect of control information produced by distributor A.

In this example, distributor A and creator A may use VDE to negotiate (for example, VDE negotiate) for a distribution relationship. Since in this example creator A has produced a

VDE content container and associated control information that indicates creator A's desire to receive compensation based on rental of usage rights, and such control information further indicates that creator A has placed acceptable restrictions in redistribution control information that distributor A may use to service requests from user/distributors, distributor A may accept creator A's distribution control information without any negotiated changes.

10 After receiving enabling distribution control information from creator A, distributor A may manipulate an application program to specify some or all of the particulars of usage control information for users and/or user/distributors enabled by distributor A (as allowed, or not prevented, by senior control information). Distributor A may, for example, determine that a price of \$15 per month per user would meet distributor A's business objectives with respect to payments from users for creator A's container. Distributor A must specify usage control information that fulfill the requirements of the distribution control information given to distributor A by creator A. For example, distributor A may include any required expiration dates and/or time-aged encryption keys in the specification of control information in accordance with creator A's requirements. If distributor A failed to include such information (or to meet

5 other requirements) in their specification of control information, the control method(s) referenced in creator A's permissions record and securely invoked within a PPE 650 to actually create this control information would, in this example, fail to execute in the desired way (e.g. based on checks of proposed values in certain fields, a requirement that certain methods be included in permissions, etc.) until acceptable information were included in distributor A's control information specification.

10 In this example, user A may have established an account with distributor A such that user A may receive VDE managed content usage control information from distributor A. User A may receive content usage control information from distributor A to access and use creator A's content. Since the usage control
15 information has passed through (and been added to, and/or modified by) a chain of handling including distributor A, the usage control information requested from distributor A to make use of creator A's content will, in this example, reflect a composite of control information from creator A and distributor
20 A. For example, creator A may have established a meter method that will generate an audit record if a user accesses creator A's VDE controlled content container if the user has not previously accessed the container within the same calendar month (e.g. by storing the date of the user's last access in a UDE associated

with an open container event referenced in a method core of such a meter method and comparing such a date upon subsequent access to determine if such access has occurred within the same calendar month). Distributor A may make use of such a meter method in a control method (e.g. also created and/or provided by creator A, or created and/or provided by distributor A) associated with opening creator A's container that invokes one or more billing and/or budget methods created, modified, referenced in one or more permissions records and/or parameterized by distributor A to reflect a charge for monthly usage as described above. If distributor A has specified usage and/or redistribution control information within the boundaries permitted by creator A's senior control information, a new set of control information (shown as $D_A(C_A)$ in Figure 80) may be associated with creator A's VDE content container when control information associated with that container by distributor A are delivered to users and/or user/distributors (user A, user B, and user distributor A in this example).

20 In this example, user A may receive control information related to creator A's VDE content container from distributor A. This control information may represent an extended agreement between user A and distributor A (e.g. regarding fees associated with use of content, limited redistribution rights, etc.) and

distributor A and creator A (e.g. regarding the character, extent, handling, reporting, and/or other aspects of the use and/or creation of VDE controlled content usage information and/or content control information received, for example, by distributor A from creator A, or vice versa, or in other VDE content usage information handling). Such an extended agreement is enforced by processes operating within a secure subsystem of each participant's VDE installation. The portion of such an extended agreement representing control information of creator A as modified by distributor A in this example is represented by $D_A(C_A)$, including, for example, (a) control structures (e.g. one or more component assemblies, one or more permissions records, etc.), (b) the recording of usage information generated in the course of using creator A's content in conformance with requirements stated in such control information, (c) making payments (including automatic electronic credit and/or currency payments "executed" in response to such usage) as a consequence of such usage (wherein such consequences may also include electronically, securely and automatically receiving a bill delivered through use of VDE, wherein such a bill is derived from said usage), (d) other actions by user A and/or a VDE secure subsystem at user A's VDE installation that are a consequence of such usage and/or such control information.

In addition to control information $D_A(C_A)$, user A may enforce her own control information on her usage of creator A's VDE content container (within the limits of senior content control information). This control information may include, for example, (a) transaction, session, time based, and/or other thresholds placed on usage such that if such thresholds (e.g. quantity limits, for example, self imposed limits on the amount of expenditure per activity parameter) are exceeded user A must give explicit approval before continuing, (b) privacy requirements of user A with respect to the recording and/or transmission of certain usage related details relating to user A's usage of creator A's content, (c) backup requirements that user A places on herself in order to help ensure a preservation of value remaining in creator A's content container and/or local store of electronic credit and/or currency that might otherwise be lost due to system failure or other causes. The right to perform in some or all of these examples of user A's control information, in some examples, may be negotiated with distributor A. Other such user specified control information may be enforced independent of any control information received from any content provider and may be set in relationship to a user's, or more generally, a VDE installation's, control information for one or more classes, or for all classes, of content and/or electronic appliance usage. The entire set of VDE control information that may be in place

during user A's usage of creator A's content container is referred to on Figure 80 as $U_A(D_A(C_A))$. This set may represent the control information originated by creator A, as modified by distributor A, as further modified by user A, all in accordance with control information from value chain parties providing more senior control information, and therefore constitutes, for this example, a "complete" VDE extended agreement between user A, distributor A, and creator A regarding creator A's VDE content container. User B may, for example, also receive such control information $D_A(C_A)$ from distributor A, and add her own control information in authorized ways to form the set $U_B(D_A(C_A))$.

User/distributor A may also receive VDE control information from distributor A related to creator A's VDE content container. User/distributor A may, for example, both use creator A's content as a user and act as a redistributor of control information. In this example, control information $D_A(C_A)$ both enables and limits these two activities. To the extent permitted by $D_A(C_A)$, user/distributor A may create their own control information based on $D_A(C_A)$ -- $UD_A(D_A(C_A))$ -- that controls both user/distributor A's usage (in a manner similar to that described above in connection with user A and user B), and control information redistributed by user/distributor A (in a manner similar to that described above in connection with distributor A).

For example, if user/distributor A redistributes $UD_A(D_A(C_A))$ to user/distributor B, user/distributor B may be required to report certain usage information to user/distributor A that was not required by either creator A or distributor A. Alternatively or in addition, user/distributor B may, for example, agree to pay user/distributor A a fee to use creator A's content based on the number of minutes user/distributor B uses creator A's content (rather than the monthly fee charged to user/distributor A by distributor A for user/distributor B's usage).

10

In this example, user/distributor A may distribute control information $UD_A(D_A(C_A))$ to user/distributor B that permits user/distributor B to further redistribute control information associated with creator A's content. User/distributor B may make a new set of control information $UD_B(UD_A(D_A(C_A)))$. If the control information $UD_A(D_A(C_A))$ permits user/distributor B to redistribute, the restrictions on redistribution from creator A in this example will prohibit the set $UD_B(UD_A(D_A(C_A)))$ from including further redistribution rights (e.g. providing redistribution rights to user B) because the chain of handling from distributor A to user/distributor A (distribution) and the continuation of that chain from user/distributor A to user/distributor B (first level of redistribution) and the further continuation of that chain to another user represents two levels

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of redistribution, and, therefore, a set $UD_B(UD_A(D_A(C_A)))$ may not, in this example, include further redistribution rights.

As indicated in Figure 79, user B may employ content from both user/distributor B and distributor A (amongst others). In this example, as illustrated in Figure 80, user B may receive control information associated with creator A's content from distributor A and/or user/distributor B. In either case, user B may be able to establish their own control information on $D_A(C_A)$ and/or $UD_B(UD_A(D_A(C_A)))$, respectively (if allowed by such control information. The resulting set(s) of control information, $U_B(D_A(C_A))$ and/or $U_B(UD_B(UD_A(D_A(C_A))))$ respectively, may represent different control scenarios, each of which may have benefits for user B. As described in connection with an earlier example, user B may have received control information from user/distributor B along a chain of handling including user/distributor A that bases fees on the number of minutes that user B makes use of creator A's content (and requiring user/distributor A to pay fees of \$15 per month per user to distributor A regardless of the amount of usage by user B in a calendar month). This may be more favorable under some circumstances than the fees required by a direct use of control information provided by distributor A, but may also have the disadvantage of an exhausted chain of redistribution and, for

example, further usage information reporting requirements included in $UD_B(UD_A(D_A(C_A)))$. If the two sets of control information $D_A(C_A)$ and $UD_B(UD_A(D_A(C_A)))$ permit (e.g. do not require exclusivity enforced, for example, by using a registration interval in an object registry used by a secure subsystem of user B's VDE installation to prevent deregistration and reregistration of different sets of control information related to a certain container (or registration of plural copies of the same content having different control information and/or being supplied by different content providers) within a particular interval of time as an aspect of an extended agreement for a chain of handling and control reflected in $D_A(C_A)$ and/or $UD_B(UD_A(D_A(C_A)))$), user B may have both sets of control information registered and may make use of the set that they find preferable under a given usage scenario.

In this example, creator B creates a VDE content container and associates a set of VDE control information with such container indicated in Figure 81 as C_B . Figure 81 further shows the VDE participants who may receive enabling control information related to creator B's VDE content container. In this example, control information may indicate that distributors of creator B's content: (a) must pay creator B \$0.50 per kilobyte of information decrypted by users and/or user/distributors

authorized by such a distributor, (b) may allow users and/or
user/distributors to embed their content container in another
container while maintaining a requirement that creator B
receive \$0.50 per kilobyte of content decrypted, (c) have no
5 restrictions on the number of enabling control information sets
that may be generated for users and/or user/distributors, (d)
must report information concerning the number of such
distributed control information sets at certain time intervals (e.g.
at least once per month), (e) may create control information that
10 allows users and/or user/distributors to perform up to three
moves of their control information, (f) may allow redistribution of
control information by user/distributors up to three levels of
redistribution, (g) may allow up to one move per user receiving
redistributed control information from a user/distributor.

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In this example, distributor A may request control
information from creator B that enables distributor A to
distribute control information to users and/or user/distributors
that is associated with the VDE container described above in
20 connection with creator B. As stated earlier, distributor A has
established a business model that favors "rental" of access rights
to users and user/distributors receiving such rights from
distributor A. Creator B's distribution control information in
this example does not force a model including "rental" of rights.

but rather bases payment amounts on the quantity of content decrypted by a user or user/distributor. In this example, distributor A may use VDE to negotiate with creator B to include a different usage information recording model allowed by creator B. This model may be based on including one or more meter methods in control structures associated with creator B's container that will record the number of bytes decrypted by end users, but not charge users a fee based on such decryptions; rather distributor A proposes, and creator B's control information agrees to allow, a "rental" model to charge users, and determines the amount of payments to creator B based on information recorded by the bytes decrypted meter methods and/or collections of payment from users.

15 Creator B may, for example, (a) accept such a new control model with distributor A acting as the auditor (e.g. trusting a control method associated with processing audit information received by distributor A from users of creator B's content using a VDE secure subsystem at distributor A's site, and further to
20 securely calculate amounts owed by distributor A to creator B and, for example, making payments to creator B using a mutually acceptable budget method managing payments to creator B from credit and/or currency held by distributor A), (b) accept such a new control model based on distributor A's

acceptance of a third party to perform all audit functions associated with this content, (c) may accept such a model if information associated with the one or more meter methods that record the number of bytes decrypted by users is securely packaged by distributor B's VDE secure subsystem and is securely, employing VDE communications techniques, sent to creator B in addition to distributor A, and/or (d) other mutually acceptable conditions. Control information produced by distributor A based on modifications performed by distributor A as permitted by C_B are referred to in this example as $D_A(C_B)$.

User A may receive a set of control information $D_A(C_B)$ from distributor A. As indicated above in connection with content received from creator A via a chain of handling including distributor A, user A may apply their own control information to the control information $D_A(C_B)$, to the extent permitted by $D_A(C_B)$, to produce a set of control information $U_A(D_A(C_B))$. The set of control information $D_A(C_B)$ may include one or more meter methods that record the number of bytes of content from creator B's container decrypted by user A (in order to allow correct calculation of amounts owed by distributor A to creator B for user A's usage of creator B's content in accordance with the control information of C_B that requires payment of \$0.50 per kilobyte of decrypted information), and a further meter method

associated with recording usage such that distributor A may gather sufficient information to securely generate billings associated with user A's usage of creator B's content and based on a "rental" model (e.g. distributor A may, for example, have
5 included a meter method that records each calendar month that user A makes use of creator B's content, and relates to further control information that charges user A \$10 per month for each such month during which user A makes use of such content.)

10 User/distributor A may receive control information C_B directly from creator B. In this case, creator B may use VDE to negotiate with user/distributor A and deliver a set of control information C_B that may be the same or differ from that described above in connection with the distribution relationship
15 established between creator B and distributor A. For example, user/distributor A may receive control information C_B that includes a requirement that user/distributor A pay creator B for content decrypted by user/distributor A (and any participant receiving distributed and/or redistributed control information
20 from user/distributor A) at the rate of \$0.50 per kilobyte. As indicated above, user/distributor A also may receive control information associated with creator B's VDE content container from distributor A. In this example, user/distributor A may have a choice between paying a "rental" fee through a chain of

handling passing through distributor A, and a fee based on the quantity of decryption through a chain of handling direct to creator B. In this case, user/distributor A may have the ability to choose to use either or both of C_B and $D_A(C_B)$. As indicated
5 earlier in connection with a chain of handling including creator A and distributor A, user/distributor A may apply her own control information to the extent permitted by C_B and/or $D_A(C_B)$ to form the sets of control information $UD_A(C_B)$ and $UD_A(D_A(C_B))$, respectively.

10

As illustrated in Figure 81, in this example, user B may receive control information associated with creator B's VDE content container from six different sources: C_B directly from creator B, $D_A(C_B)$ from distributor A, $UD_B(UD_A(D_A(C_B)))$ and/or
15 $UD_B(UD_A(C_B))$ from user/distributor B, $D_C(C_B)$ from distributor C, and/or $D_B(D_C(C_B))$ from distributor B. This represents six chains of handling through which user B may enter into extended agreements with other participants in this example. Two of these chains pass through user/distributor B. Based on a
20 VDE negotiation between user/distributor B and user B, an extended agreement may be reached (if permitted by control information governing both parties) that reflects the conditions under which user B may use one or both sets of control information. In this example, two chains of handling and control

may "converge" at user/distributor B, and then pass to user B (and if control information permits, later diverge once again based on distribution and/or redistribution by user B).

5 In this example, creator C produces one or more sets of control information C_C associated with a VDE content container created by creator C, as shown in Figure 82. Figure 82 further shows the VDE participants who may receive enabling control information related to creator C's VDE content container. The
10 content in such a container is, in this example, organized into a set of text articles. In this example control information may include one or more component assemblies that describe the articles within such a container (e.g. one or more event methods referencing map tables and/or algorithms that describe the
15 extent of each article). C_C may further include, for example: (a) a requirement that distributors ensure that creator C receive \$1 per article accessed by users and/or user/distributors, which payment allows a user to access such an article for a period of no more than six months (e.g. using a map-type meter method that
20 is aged once per month, time aged decryption keys, expiration dates associated with relevant permissions records, etc.), (b) control information that allows articles from creator C's container to be extracted and embedded into another container for a one time charge per extract/embed of \$10, (c) prohibits

extracted/embedded articles from being reextracted, (d) permits distributors to create enabling control information for up to 1000 users or user/distributors per month, (e) requires that information regarding the number of users and user/distributors enabled by a distributor be reported to creator C at least once per week, (f) permits distributors to enable users or user/distributors to perform up to one move of enabling control information, and (g) permits up to 2 levels of redistribution by user/distributors.

10 In this example, distributor B may establish a distribution relationship with creator C. Distributor B in this example may have established a business model that favors the distribution of control information to users and user/distributors that bases payments to distributor B based on the number of accesses performed by such VDE participants. In this example, distributor B may create a modified set $D_B(C_C)$ of enabling control information for distribution to users and/or user/distributors. This set $D_B(C_C)$ may, for example, be based on a negotiation using VDE to establish a fee of \$0.10 per access per user for users and/or user/distributors who receive control information from distributor B. For example, if one or more map-type meter methods have been included in C_C to ensure that adequate information may be gathered from users and/or user/distributors to ensure correct payments to creator C by

distributor B based on C_C , such methods may be preserved in the set $D_B(C_C)$, and one or more further meter methods (and any other necessary control structures such as billing and/or budget methods) may be included to record each access such that the set
5 $D_B(C_C)$ will also ensure that distributor B will receive payments based on each access.

The client administrator in this example may receive a set of content control information $D_B(C_C)$ that differs, for example,
10 from control information received by user B from distributor B. For example, the client administrator may use VDE to negotiate with distributor B to establish a set of control information for content from all creators for whom distributor B may provide enabling content control information to the client administrator.
15 For example, the client administrator may receive a set of control information $D_B(C_C)$ that reflects the results of a VDE negotiation between the client administrator and distributor B. The client administrator may include a set of modifications to $D_B(C_C)$ and form a new set $CA(D_B(C_C))$ that includes control information
20 that may only be available to users and user/distributors within the same organization as the client administrator (e.g. coworkers, employees, consultants, etc.) In order to enforce such an arrangement, $CA(D_B(C_C))$ may, for example, include control structures that examine name services information associated

with a user or user/distributor during registration, establish a new budget method administered by the client administrator and required for use of the content, etc.

5 A distributor may provide redistribution rights to a client administrator which allows said administrator to redistribute rights to create permissions records for certain content (redistribute rights to use said content) only within the administrator's organization and to no other parties. Similarly,
10 such administrator may extend such a "limited" right to redistribute to department and/or other administrator within his organization such that they may redistribute such rights to use content based on one or more restricted lists of individuals and/or classes and/or other groupings of organization personnel
15 as defined by said administrator. This VDE capability to limit redistribution to certain one or more parties and/or classes and/or other groupings of VDE users and/or installations can be applied to content by any VDE content provider, so long as such a control is allowed by senior control information.

20

User D in this example may receive control information from either the client administrator and/or user/distributor C. User/distributor C may, for example, distribute control information $UD_C(CA(D_B(C_C)))$ to user D that includes a

departmental budget method managed by user/distributor C to allow user/distributor C to maintain an additional level of control over the actions of user D. In this case, $UD_C(CA(D_B(C_C)))$ may include multiple levels of organizational controls (e.g. controls originating with the client administrator and further controls originating with user/distributor C) in addition to controls resulting from a commercial distribution channel. In addition or alternatively, the client administrator may refuse to distribute certain classes of control information to user D even if the client administrator has adequate control information (e.g. control information distributed to user/distributor C that allows redistribution to users such as user D) to help ensure that control information flows through the client administrator's organization in accordance with policies, procedures, and/or other administrative processes.

In this example, user E may receive control information from the client administrator and/or distributor B. For example, user E may have an account with distributor B even though some control information may be received from the client administrator. In this case, user E may be permitted to request and receive control information from distributor B without restriction, or the client administrator may have, as a matter of organizational policy, control information in place associated

with user E's electronic appliance that limits the scope of user E's interaction with distributor B. In the latter case, the client administrator may, for example, have limited user E to registering control information with the secure subsystem of user E's electronic appliance that is not available from the client administrator, is from one or more certain classes of distributors and/or creators, and/or has a cost for usage, such as a certain price point (e.g. \$50 per hour of usage). Alternatively or in addition, the client administrator may, for example, limit user E to receiving control information from distributor B in which user E receives a more favorable price (or other control information criteria) than the price (or other criteria) available in control information from the client administrator.

15 In this example, creator D may create a VDE content container that is designed primarily for integration with other content (e.g. through use of a VDE extracting/embedding process), for example, content provided by creator B and creator C. Figure 83 shows the VDE participants who may receive enabling control information related a VDE content container produced by creator D. Control information associated with creator D's content (C_D in Figure 83) may include, for example:

20 (a) a requirement that distributors make payment of either \$1.50 per open per user, or \$25 per user for an unlimited number of

opens, (b) a discount of 20% for any user that has previously paid for an unlimited number of opens for certain other content created by creator D (e.g. implemented by including one or more billing methods that analyze a secure database of a user's VDE installation to determine if any of such certain other containers are registered, and further determines the character of rights held by a user purchasing rights to this container), (c) a requirement that distributors report the number of users and user/distributors enabled by control information produced in accordance with C_D after such number exceeds 1000, (d) a requirement that distributors limit the number of moves by users and/or user/distributors to no more than one, (e) a requirement that distributors limit user/distributors to no more than four levels of redistribution, and (f) that distributors may create enabling control information that permits other distributors to create control information as distributors, but may not pass this capability to such enabled distributors, and further requires that audit information associated with use of control information by such enabled distributors shall pass directly to creator D without processing by such enabling distributor and that creator D shall pay such an enabling distributor 10% of any payments received by creator D from such an enabled distributor.

In this example, distributor C may receive VDE content containers from creator B, creator C, and creator D, and associated sets of control information C_B , C_C , and C_D . Distributor C may use the embedding control information and other control information to produce a new container with two or more VDE objects received from creator B, creator C, and creator D. In addition or alternatively, distributor C may create enabling control information for distribution to users and/or user/distributors (or in the case of C_D , for distributors) for such received containers individually. For example, distributor C may create a container including content portions (e.g. embedded containers) from creator B, creator C, and creator D in which each such portion has control information related to its access and use that records, and allows an auditor to gather, sufficient information for each such creator to securely and reliably receive payments from distributor C based on usage activities related to users and/or user/distributors enabled by distributor C.

Furthermore, distributor C may negotiate using VDE with some or all of such creators to enable a model in which distributor C provides overall control information for the entire container based on a "uniform" fee (e.g. calculated per month, per access, from a combined model, etc.) charged to users and/or user/distributors, while preserving the models of each such creator with respect to payments due to them by distributor C

based on C_B , C_C , and/or C_D , and, for example, resulting from each of their differing models for the collection of content usage information and any related (e.g. advertising) information.

5 In this example, distributor B may receive a VDE content container and associated content control information C_E from creator E as shown in Figure 83. If C_E permits, distributor B may extract a portion of the content in such a container. Distributor B may then, for example, embed this portion in a
10 container received from distributor C that contains an aggregation of VDE objects created by creator B, creator C, and creator D. Depending on the particular restrictions and/or permissions in the sets of control information received from each creator and distributor C, distributor B may, for example, be able
15 to embed such an extracted portion into the container received from distributor C as an independent VDE object, or directly into content of "in place" objects from creator B, creator C, and/or creator D. Alternatively, or in addition, distributor B may, if permitted by C_E , choose to distribute such an extracted portion
20 of content as an independent VDE object.

 User B may, in this example, receive a VDE content container from distributor C that is comprised of VDE objects created by creator B, creator C, and creator D. In addition, user

B may receive a VDE content container from distributor B that contains the same content created by creator B, creator C, and creator D in addition to one or more extracted/embedded portions of content created by creator E. User B may base decisions
5 concerning which of such containers they choose to use (including which embedded containers she may wish to use), and under which circumstances, based on, for example, the character of such extracted/embedded portions (e.g. multimedia presentations illustrating potential areas of interest in the
10 remainder of the content, commentary explaining and/or expositing other elements of content, related works, improved application software delivered as an element of content, etc.); the quality, utility, and/or price (or other attributes of control information) of such portions; and other considerations which
15 distinguish the containers and/or content control information received, in this example, from distributor B and distributor C.

User B may receive content control information from distributor B for such a VDE content container that permits user
20 B to add and/or modify content contained therein. User B may, for example, desire an ability to annotate content in such a container using a VDE aware word processor or other application(s). If permitted by senior control information, some or all of the content may be available to user B for modification

and/or additions. In this case, user B is acting as a VDE creator for added and/or modified content. User B may, for example, provide new control information for such content, or may be required (or desire to) make use of existing control information
5 (or control information included by senior members of a chain of handling for this purpose) to manage such content (based on control information related to such a container and/or contained objects).

10 In this example, VDE 100 has been used to enable an environment including, for example, content distribution, redistribution, aggregation (extracting and/or embedding), reaggregation, modification, and usage. The environment in this example allows competitive models in which both control
15 information and content may be negotiated for and have different particulars based on the chain of handling through which control information and/or content has been passed. Furthermore, the environment in this example permits content to be added to, and/or modified by, VDE participants receiving
20 control information that enables such activities.

Example -- Content Distribution Through a Content VDE Chain of Handling

5 Figure 84 reflects certain aspects of a relatively simple
model 3400 of VDE content distribution involving several
categories of VDE participants. In this instance, and for
simplicity of reference purposes, various portions of content are
represented as discrete items in the form of VDE content
container objects. One or more of such content portions may also
10 be integrated together in a single object and may (as may the
contents of any VDE content container object if allowed by
content control information) be extracted in whole or part by a
user. In this example, publishers of historical/educational
multimedia content have created VDE content containers
15 through the use of content objects available from three content
resources:

- 20 • a Video Library 3402 product available to Publishers on
optical discs and containing video clip VDE objects
representing various historical situations,

- 25 • an Internet Repository 3404 which stores history
information text and picture resources in VDE objects
which are available for downloading to Publishers and
other users, and

- an Audio Library 3406, also available on optical discs, and containing various pieces of musical performances and vocal performances (for example, historical narrations) which can be used alone or to accompany other educational historical materials.

The information provided in library 3402, repository 3404, and library 3406 may be provided to different publishers 3408(a), 3408(b), ..., 3408(n). Publishers 3408 may, in turn, provide some or all of the information they obtain to end users 3410.

In this example, the Video Library 3402 control information allows publishers to extract objects from the Video Library product container and content control information enabling use of each extracted object during a calendar year if the object has a license cost of \$50 or less, and is shorter than 45 minutes in duration, and 20,000 copies of each of any other extracted objects, and further requires all video objects to be VDE fingerprinted upon decryption. The Audio Library 3404 has established similar controls that match its business model. The Internet Repository 3406 VDE containerizes, including encrypts, selected object content as it streams out of the Repository in response to an online, user request to download an object. The Repository 3406 may fingerprint the identification of the

receiving VDE installation into its content prior to encryption and communication to a publisher, and may further require user identification fingerprinting of their content when decrypted by said Publisher or other content user.

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The Publishers 3408 in this example have selected, under terms and conditions VDE negotiated (or otherwise agreed to) with the providing resources, various content pieces which they combine together to form their VDE object container products for their teacher customers. Publisher 3408(A) has combined video objects extracted from the Video Library 3402 (as indicated by circles), text and image objects extracted from the Internet Repository 3404 (indicated by diamonds), and one musical piece and one historical narration extracted from the Audio Library 3406 (as indicated by rectangles). Publisher 3408(B) has extracted a similar array of objects to be combined into his product, and has further added graphical elements (indicated by a hexagon) created by Publisher 3408(B) to enhance the product. Publisher 3408(C) has also created a product by combining objects from the Internet Repository 3404 and the Audio Library 3406. In this example, all publisher products are delivered, on their respective optical discs, in the form of VDE content container objects with embedded objects, to a modern high school for installation on the high school's computer network.

In this particular example, End-Users 3410 are teachers who use their VDE node's secure subsystems to access the VDE installation on their high school server that supports the publishers' products (in an alternative example, the high school may maintain only a server based VDE installation). These teachers license the VDE products from one or more of the publishers and extract desired objects from the VDE product content containers and either download the extracted VDE content in the form of VDE content containers for storage on their classroom computers and/or as appropriate and/or efficient. The teachers may store extracted content in the form of VDE content containers on server mass storage (and/or if desired and available to an end-user, and further according to acceptable pricing and/or other terms and conditions and/or senior content control information, they may store extracted information in "clear" unencrypted form on their nodes' and/or server storage means). This allows the teachers to play, and/or otherwise use, the selected portions of said publishers' products, and as shown in two instances in this example, add further teacher and/or student created content to said objects. End-user 3410(2), for example, has selected a video piece 1 received from Publisher A, who received said object from the Video Library. End-user 3410(3) has also received a video piece 3 from the same Publisher 3408(A) wherein said piece was also available to her from

Publisher 3408(B), but perhaps under not as favorable terms and conditions (such as a support consultation telephone line). In addition, end-user 3410(3) has received an audio historical narration from Publisher 3408(B) which corresponds to the
5 content of historical reference piece 7. End-user 3410(3) has also received a corresponding historical reference piece 7 (a book) from publisher 3408(2) who received said book from the Internet Repository 3404. In this instance, perhaps publisher 3408(2) charged less for said book because end-user 3410(3) has also
10 licensed historical reference piece 7 from him, rather than publisher 3408(1), who also carried the same book. End-user 3410(3), as a teacher, has selected the items she considers most appropriate for her classes and, through use of VDE, has been able to flexibly extract such items from resources available to her
15 (in this instance, extracting objects from various optical products provided by publishers and available on the local high school network server).

20 **Example -- Distribution of Content Control Information Within an Organization**

Figure 85 shows two VDE content containers, Container 300(A) and Container 300(B), that have been distributed to a VDE Client Administrator 3450 in a large organization. As
25 shown in the figure, Container 300(A) and Container 300(B), as

they arrive at the corporation, carry certain control information specifying available usage rights for the organization. As can be further seen in Figure 85, the client administrator 3450 has distributed certain subsets of these rights to certain department administrators 3452 of her organization, such as Sales and Marketing Administrator 3452(1), Planning Administrator 3452(2), and Research and Development Administrator 3452(k). In each instance, the Client Administrator 3450 has decided which usage options and how much budget should be made available to each department.

Figure 85 is a simplified example and, for example, the Client Administrator 3450 could have added further VDE controls created by herself and/or modified and/or deleted in place controls (if allowed by senior content control information) and/or (if allowed by control information) she could have further divided the available monetary budget (or other budgets) among specific usage activities. In this example, departmental administrators have the same rights to determine the rights of departmental end-users as the client administrator has in regard to departments. In addition, in this example (but not shown in Figure 85) the client administrator 3450 and/or content provider(s) may also determine certain control information which must directly control (including providing rights related to) end-

user content usage and/or the consequences of said usage for all or certain classes of end-users. In the example shown in Figure 85, there are only three levels of VDE participants within the organization:

- 5 a Client Administrator 3450,
 department administrators 3452, and
 end-users 3454.

In other examples, VDE will support many levels of VDE administration (including overlapping groups) within an
10 organization (e.g., division, department, project, network, group, end-users, etc). In addition, administrators in a VDE model may also themselves be VDE content users.

 Within an organization, VDE installations may be at each
15 end-user 3454 node, only on servers or other multiple user computers or other electronic appliances, or there may be a mixed environment. Determination as to the mix of VDE server and/or node usage may be based on organization and/or content provider security, performance, cost overhead, or other
20 considerations.

 In this example, communications between VDE participants in Figure 85 employs VDE secure communication techniques between VDE secure subsystems supporting PPEs

and other VDE secure system components at each VDE installation within the organization.

Example -- Another Content Distribution Example

5 Creators of VDE protected content may interact with other
VDE participants in many different ways. A VDE creator 102
may, for example, distribute content and/or content control
information directly to users, distribute content and/or content
control information to commercial content repositories, distribute
10 content and/or content control information to corporate content
repositories, and/or distribute content and/or content control
information to other VDE participants. If a creator 102 does not
interact directly with all users of her content, she may transmit
distribution permissions to other VDE participants that permit
15 such participants to further distribute content and/or content
control information. She may also allow further distribution of
VDE content and/or content control information by, for example,
not restricting redistribution of control information, or allowing a
VDE participant to act as a "conduit" for one or more permissions
20 records that can be passed along to another party, wherein said
permissions record provides for including the identification of the
first receiving party and/or the second receiving party.

Figure 86 shows one possible arrangement of VDE participants. In this example, creator 102 may employ one or more application software programs and one or more VDE secure subsystems to place unencrypted content into VDE protected form (i.e., into one or more VDE content containers). In addition, creator 102 may produce one or more distribution permissions 3502 and/or usage permissions 3500 as an aspect of control information associated with such VDE protected content. Such distribution and/or usage permissions 3500, 3502 may be the same (e.g., all distribution permissions may have substantively all the same characteristics), or they may differ based on the category and/or class of participant for whom they are produced, the circumstances under which they are requested and/or transmitted, changing content control models of either creator 102 or a recipient, etc.

In this example, creator 102 transmits (e.g., over a network, via broadcast, and/or through transfer of physical media) VDE protected content to user 112a, user 112b, and/or user 112c. In addition, creator 102 transmits, using VDE secure communications techniques, usage permissions to such users. User 112a, user 112b, and user 112c may use such VDE protected content within the restrictions of control information specified by usage permissions received from creator 102. In this

case, creator 102 may, for example, manage all aspects of such users activities related to VDE protected content transmitted to them by creator 102. Alternatively, creator 102 may, for example, include references to control information that must be
5 available to users that is not provided by creator 102 (e.g., component assemblies managed by another party).

Commercial content repository 200g, in this example, may receive VDE protected (or otherwise securely delivered) content
10 and distribution, permissions and/or other content usage control information from creator 102. Commercial content repository 200g may store content securely such that users may obtain such, when any required conditions are met, content from the repository 200g. The distribution permissions 3502 may, for
15 example, permit commercial content repository 200g to create redistribution permissions and/or usage permissions 3500, 3502 using a VDE protected subsystem within certain restrictions described in content control information received from creator 102 (e.g., not to exceed a certain number of copies, requiring
20 certain payments by commercial content repository 200g to creator 102, requiring recipients of such permissions to meet certain reporting requirements related to content usage information, etc.). Such content control information may be stored at the repository installation and be applied to

unencrypted content as it is transmitted from said repository in response to a user request, wherein said content is placed into a VDE container as a step in a secure process of communicating such content to a user. Redistribution permissions may, for example, permit a recipient of such permissions to create a certain number of usage permissions within certain restrictions (e.g., only to members of the same household, business other organization, etc.). Repository 200g may, for example, be required by control information received from creator 102 to gather and report content usage information from all VDE participants to whom the repository has distributed permissions.

In this example, power user 112d may receive VDE protected content and redistribution permissions from commercial content repository 200g using the desktop computer 3504. Power user 112d may, for example, then use application software in conjunction with a VDE secure subsystem of such desktop computer 3504 in order to produce usage permissions for the desktop computer 3504, laptop computer 3506 and/or settop appliance 3508 (assuming redistribution permissions received from commercial content repository 200g permit such activities). If permitted by senior control information (for example, from creator 102 as may be modified by the repository 200g), power user 112d may add her own restrictions to such usage

permissions (e.g., restricting certain members of power user 112d's household using the settop appliance to certain times of day, amounts of usage, etc. based on their user identification information). Power user 112d may then transmit such VDE
5 protected content and usage permissions to the laptop computer 3506 and the settop appliance 3508 using VDE secure communications techniques. In this case, power user 112d has redistributed permissions from the desktop computer 3504 to the settop appliance 3508 and the laptop computer 3506, and
10 periodically the settop appliance and the laptop computer may be required to report content usage information to the desktop computer, which in turn may aggregate, and/or otherwise process, and report user usage information to the repository 200g.

15

User 112e and/or user 112f may receive usage permissions and VDE protected content from commercial content repository 200g. These users may be able to use such content in ways authorized by such usage information. In contrast to power user
20 112d, these users may not have requested and/or received redistribution permissions from the repository 200g. In this case, these users may still be able to transfer some or all usage rights to another electronic appliance 600, and/or they may be permitted to move some of their rights to another electronic

appliance, if such transferring and/or moving is permitted by the usage permissions received from the repository 200g. In this case, such other appliances may be able to report usage information directly to the repository 200g.

5

In this example, corporate content repository 702 within corporation 700 may receive VDE protected content and distribution permissions from creator 102. The distribution permissions received by corporate repository 702 may, for example, include restrictions that limit repository 702 to distribution activities within corporation 700.

10

The repository 702 may, for example, employ an automated system operating in conjunction with a VDE secure subsystem to receive and/or transmit VDE protected content, and/or redistribution and/or usage permissions. In this case, an automated system may, for example, rely on criteria defined by corporate policies, departmental policies, and/or user preferences to determine the character of permissions and/or content delivered to various parties (corporation groups and/or individuals) within corporation 700. Such a system may, for example, automatically produce redistribution permissions for a departmental content repository 704 in response to corporation

15

20

700 receiving distribution permissions from creator 102, and/or produce usage permissions for user 112j and/or user 112k.

5 The departmental repository 704 may automatically produce usage permissions for user 112g, user 112h, and/or user 112i. Such users may access content from the corporate content repository 702, yet receive usage permissions from departmental repository 704. In this case, user 112g, user 112h, and/or user 10 112i may receive usage permissions from departmental repository 704 that incorporate departmental restrictions in addition to restrictions imposed by senior control information (in this example, from creator 102, as may be modified by corporate repository 702, as may be further modified by departmental repository 704, that reflect a VDE extended agreement 15 incorporating commercial requirements of creator 102 and corporation 700 in addition to corporate and/or departmental policies and agreements with corporate personnel of corporation 700).

20 **Example—"Virtual Silicon Container"**

As discussed above, VDE in one example provides a "virtual silicon container" ("virtual black box") in that several different instances of SPU 500 may securely communicate together to provide an overall secure hardware environment that

"virtually" exists at multiple locations and multiple electronic appliances 600. Figure 87 shows one model 3600 of a virtual silicon container. This virtual container model 3600 includes a content creator 102, a content distributor 106, one or more content redistributors 106a, one or more client administrators 700, one or more client users 3602, and one or more clearinghouses 116. Each of these various VDE participants has an electronic appliance 600 including a protected processing environment 655 that may comprise, at least in part, a silicon-based semiconductor hardware element secure processing unit 500. The various SPUs 500 each encapsulate a part of the virtual distribution environment, and thus, together form the virtual silicon container 3600.

15 Example -- Testing/Examinations

A scheduled SAT examination for high school seniors is prepared by the Educational Testing Service. The examination is placed in a VDE container for scheduled release on November 15, 1994 at 1:00 PM Eastern Standard time. The SAT prepares one copy of the container for each school or other location which will conduct the examination. The school or other location ("test site") will be provided with a distributed examination container securely containing the VDE identification for the "administration" electronic appliance and/or test administrator

at the test site (such as, a testing organization) and a budget enabling, for example, the creation of 200 test VDE content containers. Each container created at the test site may have a permissions record containing secure identification information for each electronic appliance 600, on the test site's network, that will be used by a test taker, as well as, for example, an identification for the student who will take the test. The student identification could, for example, be in the form of a secure PIN password which is entered by the student prior to taking the test (a test monitor or administrator might verify the student identification by entering in a PIN password). Of course, identification might take the form of automated voice recognition, handwriting recognition (signature recognition), fingerprint information, eye recognition, or similar one or more recognition forms which may be used either to confirm the identity of the test taker (and/or test monitor/administrator) and/or may be stored with the test results in a VDE container or the like or in a location pointed to by certain container information. This identification may be stored in encrypted or unencrypted form. If stored in encrypted or otherwise protected form, certain summary information, such as error correction information, may be stored with the identification information to authenticate the associated test as corresponding to the identification.

As the student takes the test using the computer terminal, the answers selected may be immediately securely stored (but may be changed by the student during the test session). Upon the completion of the test, the student's answers, along with a
5 reference to the test, are securely stored in a VDE reporting object which is passed along to the network to the test administrator and the administration electronic appliance 600. All test objects for all students could then be placed in a VDE object 300 for communication to the Educational Testing Service,
10 along with whatever other relevant information (which may also be secured by VDE 100), including summary information giving average and mean scores, and other information that might be desirable to summarize and/or act as an authentication of the test objects sent. For example, certain information might be sent
15 separately from each student summary object containing information which helps validate the object as an "authentic" test object.

Applying VDE to testing scenarios would largely eliminate
20 cheating resulting from access to tests prior to testing (normally the tests are stolen from a teacher or test administrator). At ETS, individuals who have access to tests could be limited to only a portion of the test to eliminate the risk of the theft of a "whole" test. Employing VDE would also ensure against processing

errors or other manipulation of test answers, since absolutely authentic test results can be archived for a reasonable period of time.

5 Overall, employing VDE 100 for electronic testing will enable the benefits of electronic testing to be provided without the substantial risks associated with electronic storing, communicating, and processing of test materials and testing results. Electronic testing will provide enormous efficiency
10 improvements, significantly lowering the cost of conducting and processing tests by eliminating printing, shipping, handling, and human processing of tests. At the same time, electronic testing will allow users to receive a copy (encrypted or unencrypted) of their test results when they leave the test sessions. This will
15 help protect the tested individual against lost of, or improperly processed, test results. Electronic testing employing VDE 100 may also ensure that timing related variables of testing (for example precise starting, duration, and stopping times) can be reliably managed. And, of course, proper use of VDE 100 for the
20 testing process can prevent improper access to test contents prior to testing and ensure that test taking is properly audited and authenticated, that is which person took which test, at which time, on which electronic appliance, at which location. Retesting

due to lost, stolen, improperly timed, or other variables can be avoided or eliminated.

5 VDE assisted testing may, of course, be employed for many
different applications including secure identification of
10 individuals for security/authentication purposes, for employment
(e.g. applying for jobs) applications, and for a full range of
evaluation testing. For example, an airline pilot, or a truck,
train, or bus driver might take a test immediately prior to
15 departure or during travel, with the test evaluating alertness to
test for fatigue, drug use, etc. A certain test may have a different
order and/or combination of test activities each time, or each
group of times, the test is taken. The test or a master test might
20 be stored in a VDE container (the order of, and which, test
questions might be determined by a process executed securely
within an PPE 650). The test responses may be encrypted as
they occur and either locally stored for aggregated (or other test
result) transmission or dynamically transmitted (for example, to
a central test administration computer). If the test taker
"flunks" the test, perhaps he or she is then prevented from
operating the vehicle, either by a local PPE 650 issuing control
instructions to that effect on some portion of the vehicle's
electronic control system or a local PPE failing to decrypt or

otherwise provide certain key information required for vehicle operation.

Example -- Appliance Rental

5 Through use of the present invention, electronic appliances can be "leased" or otherwise provided to customers who, rather than purchasing a given appliance for unlimited usage, may acquire the appliance (such as a VCR, television, microwave oven, etc.) and be charged according to one or more aspects of
10 use. For example, the charge for a microwave might be for each time it is used to prepare an item and/or for the duration of time used. A telephone jack could be attached, either consistently or periodically, to an inexpensive modem operatively attached or within the microwave (the modem might alternatively be located
15 at a location which services a plurality of items and/or functions -- such as burglar alarm, light and/or heat control). Alternatively, such appliances may make use of a network formed by the power cables in a building to transmit and receive signals.

20 At a periodic interval, usage information (in summary form and/or detailed) could be automatically sent to a remote information utility that collects information on appliance usage (the utility might service a certain brand, a certain type of appliance, and/or a collection of brands and/or types). The usage

information would be sent in VDE form (e.g. as a VDE object
300). The information utility might then distribute information
to financial clearinghouse(s) if it did not itself perform the billing
function, or the information "belonging" to each appliance
5 manufacturer and/or lessor (retailer) might be sent to them or to
their agents. In this way a new industry would be enabled of
leased usage of appliances where the leases might be analogous
to car leasing.

10 With VDE installed, appliances could also be managed by
secure identification (PIN, voice or signature recognition, etc.).
This might be required each time a unit is used, or on some
periodic basis. Failure to use the secure identification or use it
on a timely basis could disable an appliance if a PPE 650 issued
15 one or more instructions (or failed to decrypt or otherwise
provide certain information critical to appliance operation) that
prevented use of a portion or all of the appliance's functions.
This feature would greatly reduce the desirability of stealing an
electronic appliance. A further, allied use of VDE is the
20 "registration" of a VDE secure subsystem in a given appliance
with a VDE secure subsystem at some control location in a home
or business. This control location might also be responsible for
VDE remote communications and/or centralized administration
(including, for example, restricting your children from viewing R

rated movies either on television or videocassettes through the recognition of data indicating that a given movie, song, channel, game, etc. was R rated and allowing a parent to restrict viewing or listening). Such a control location may, for example, also

5 gather information on consumption of water, gas, electricity, telephone usage, etc. (either through use of PPEs 650 integrated in control means for measuring and/or controlling such consumption, or through one or more signals generated by non-VDE systems and delivered to a VDE secure subsystem, for

10 example, for processing, usage control (e.g. usage limiting), and/or billing), transmit such information to one or more utilities, pay for such consumption using VDE secured electronic currency and/or credit, etc.

15 In addition, one or more budgets for usage could be managed by VDE which would prevent improper, excessive use of a certain, leased appliance, that might, for example lead to failure of the appliance, such as making far more copies using a photocopier than specified by the duty cycle. Such improper use

20 could result in a message, for example on a display panel or television screen, or in the form of a communication from a central clearinghouse, that the user should upgrade to a more robust model.

While the invention has been described in connection with what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention is not to be limited to the disclosed embodiment, but on the
5 contrary, is intended to cover various modifications and equivalent arrangements included within the spirit and scope of the appended claims.

WE CLAIM:

1. A rights management appliance including:
 - a user input device,
 - 5 a user display device,
 - at least one processor, and
 - at least one element defining a protected processing environment,
 - characterized in that the protected processing environment
 - 10 stores and uses permissions, methods, keys, programs and/or other information to electronically manage rights.

2. In a rights management appliance including:
 - a user input device,
 - 15 a user display device,
 - at least one processor, and
 - at least one element defining a protected processing environment,
 - a method of operating the appliance characterized by the
 - 20 step of storing and using permissions, methods, keys, programs and/or other information to electronically manage rights.

3. A rights management appliance including at least one processor element at least in part defining a protected processing

environment, characterized in that the protected processing environment stores and uses permissions, methods, keys, programs and/or other information to electronically manage rights.

5

4. In a rights management appliance including at least one processor element at least in part defining a protected processing environment, a method comprising storing and using permissions, methods, keys, programs and/or other information to electronically manage rights.

10

5. An electronic appliance arrangement containing at least one secure processing unit and at least one secure database operatively connected to at least one of said secure processing unit(s), said arrangement including means to monitor usage of at least one aspect of appliance usage and control said usage based at least in part upon protected appliance usage control information.

15

6. In an electronic appliance arrangement containing at least one secure processing unit and at least one secure database operatively connected to at least one of said secure processing unit(s), a method characterized by the steps of monitoring usage of at least one aspect of appliance usage and controlling said

20

usage based at least in part upon protected appliance usage control information.

5 7. An electronic appliance arrangement containing a protected processing environment and at least one secure database operatively connected to said protected processing environment, said arrangement including means to monitor usage of at least one aspect of an amount of appliance usage and control said usage based at least in part upon protected
10 appliance usage control information processed at least in part through use of said protected processing environment.

15 8. In an electronic appliance arrangement containing a protected processing environment and at least one secure database operatively connected to said protected processing environment, a method characterized by the steps of monitoring usage of at least one aspect of appliance usage and controlling said usage based at least in part upon protected appliance usage control information processed at least in part through use of said
20 protected processing environment.

9. An electronic appliance arrangement containing one or more CPUs wherein at least one of the CPUs incorporates an integrated secure processing unit, said arrangement storing

protected appliance usage control information designed to be securely processed by said integrated secure processing unit.

5 10. In an electronic appliance arrangement containing one or more CPUs wherein at least one of the CPUs incorporates an integrated secure processing unit, a method including the step of storing and securely processing protected modular component appliance usage control information with said integrated secure processing unit.

10

11. A method of compromising a distributed electronic rights management system comprising plural nodes having protected processing environments, characterized by the following steps:

- 15 (a) exposing a certification private key,
- (b) passing at least one challenge/response protocol and/or exposing at least one external communication key based at least in part on the key exposed by the exposing step,
- (c) creating a processing environment based at least in part on steps (a) and (b), and
- 20 participating in distributed rights management using the processing environment created by step (c).

12. A processing environment for compromising a distributed electronic rights management system comprising plural nodes having protected processing environments, characterized by the following:

5 protocol passing means including an exposed certification private key for passing at least one challenge/response protocol, means coupled to the protocol passing means for at least one of (a) defeating an initialization challenge/response security, and/or (b) exposing external communication keys, and
10 means coupled to the security detecting means for participating in distributed rights management.

13. A method of compromising a distributed electronic rights management system comprising plural nodes having associated protected processing environments, characterized by the steps of:
15 compromising the permissions record of an electronic container, and
 using the compromised permissions record to access and/or use electronic information.

20
14. A system for compromising a distributed electronic rights management system comprising plural nodes having associated protected processing environments, characterized by means for

using a compromised permissions record of an electronic container for accessing and/or using electronic information.

- 5 15. A method of tampering with a protected processing environment characterized by the steps of:
- discovering at least one system-wide key, and
 - using the key to obtain access to content and/or administrative information without authorization.
- 10 16. An arrangement including means for using at least one compromised system-wide key to decrypt and compromise content and/or administrative information of a protected processing environment without authorization.
- 15 17. A combination general and secure processing computation element comprising:
- a central processing unit;
 - at least one secure resource; and
 - a secure mode interface switch coupled between a centra
- 20 processing unit and the secure resource, the switch operable alternately in a secure mode and in a non secure mode, the switch blocking access by a central processing unit to the secure resource except when the switch is operating in the secure mode.

18. A secure printing method comprising:
- downloading a decryption program to an intelligent printer;
 - sending an encrypted print stream to the printer;
 - 5 decrypting the encrypted print stream within the printer using the decryption program; and
 - destroying the downloaded decryption program.

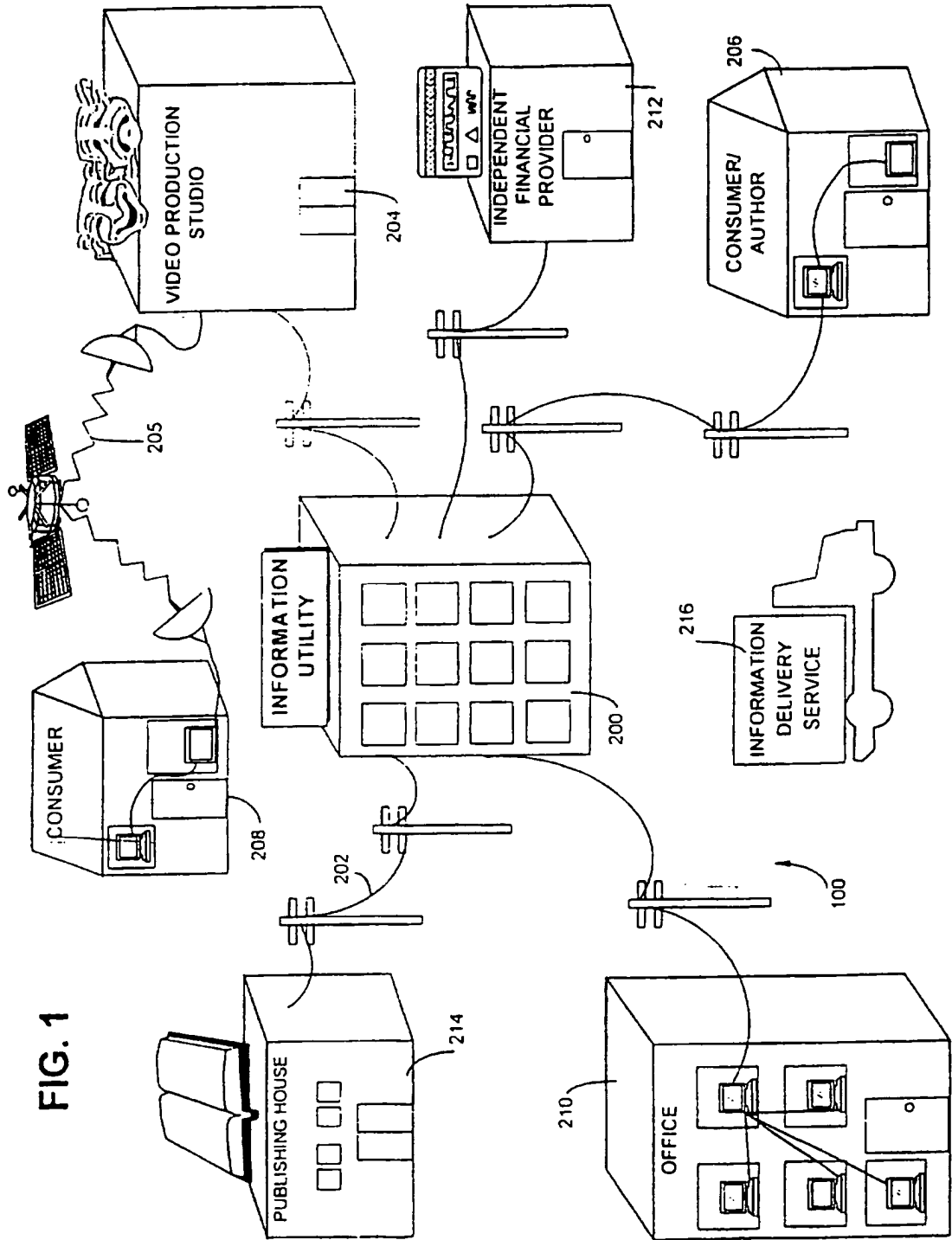


FIG. 1

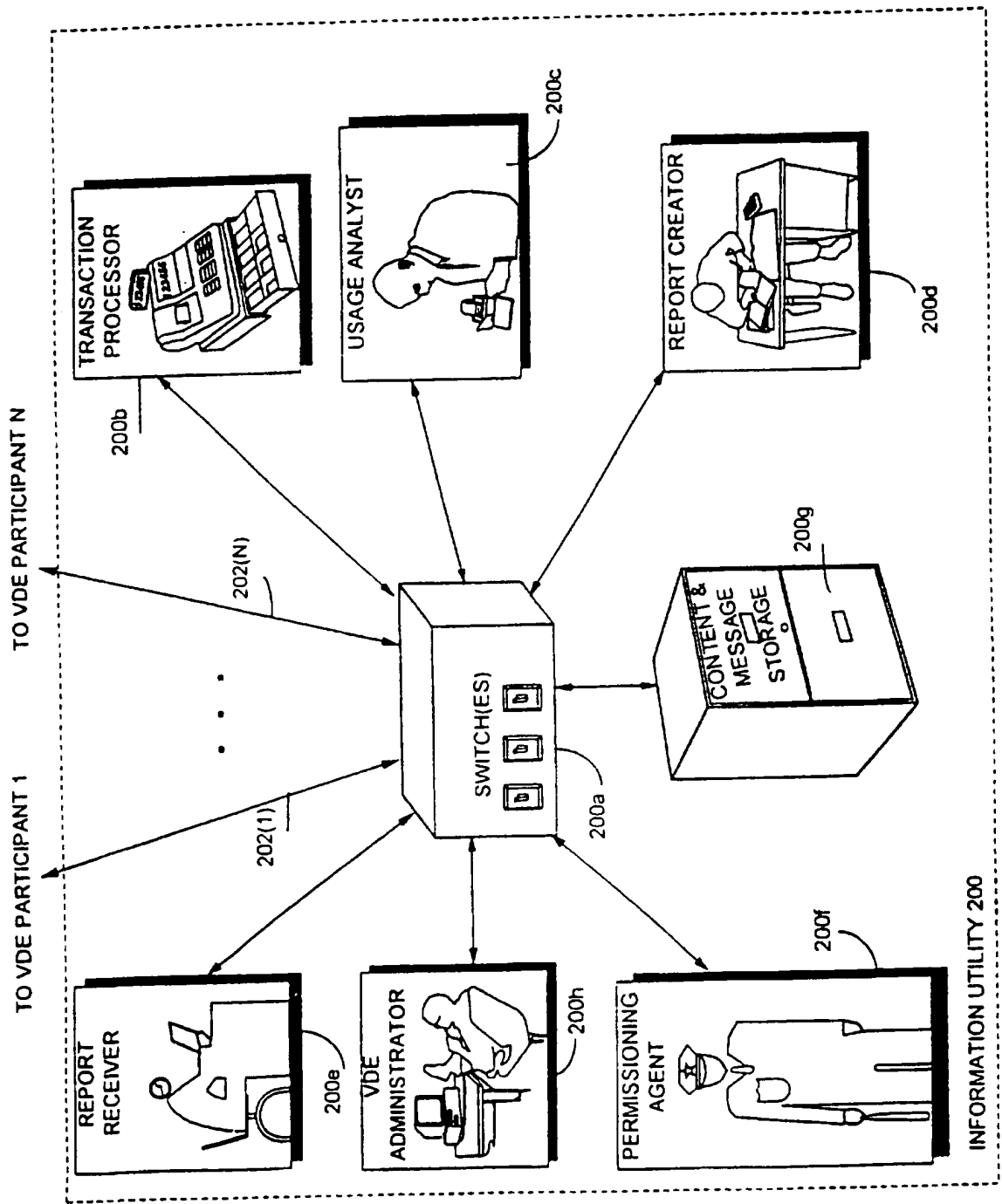
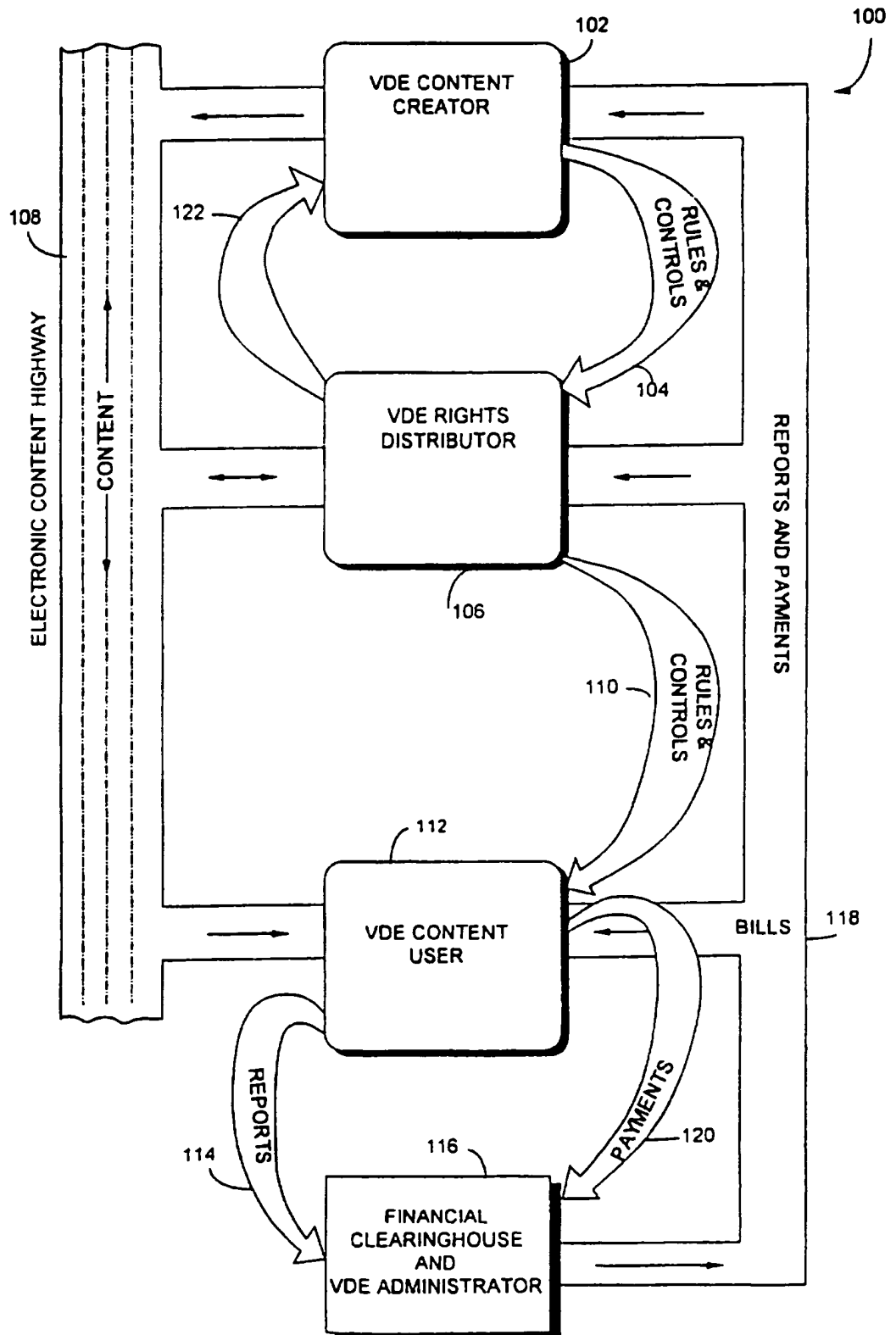


FIG. 1A

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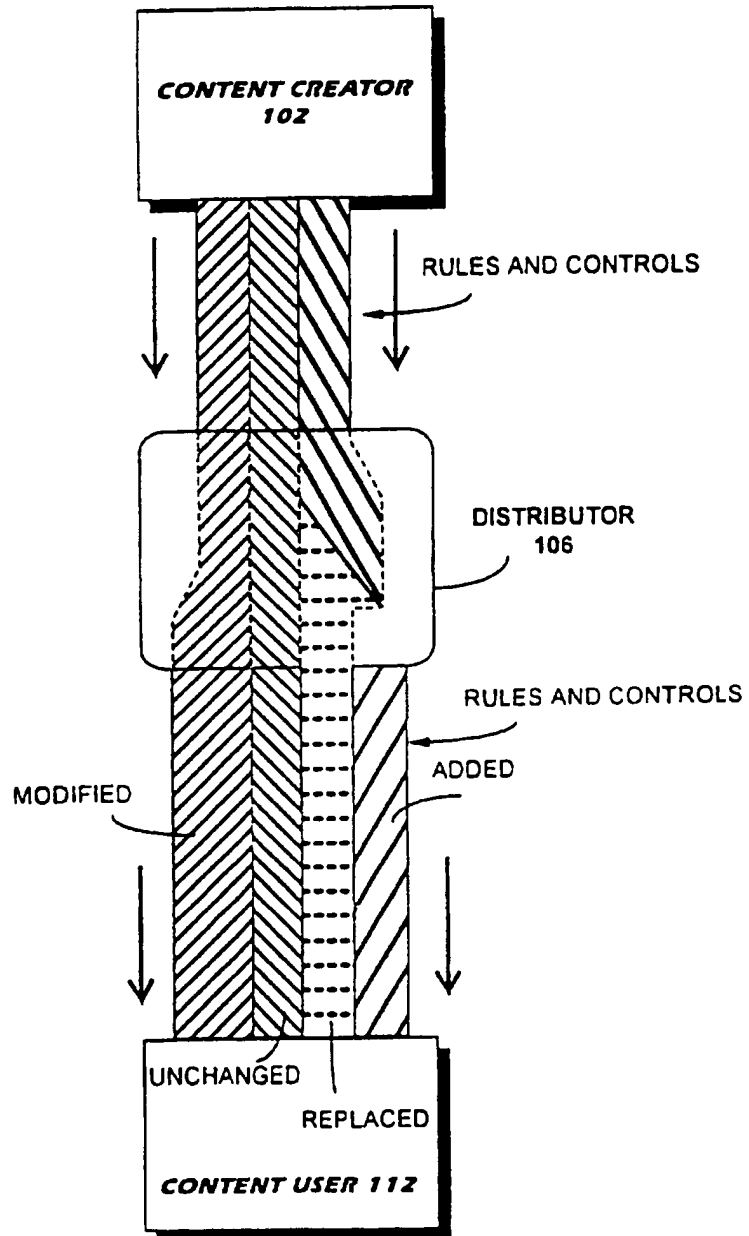
FIG. 2



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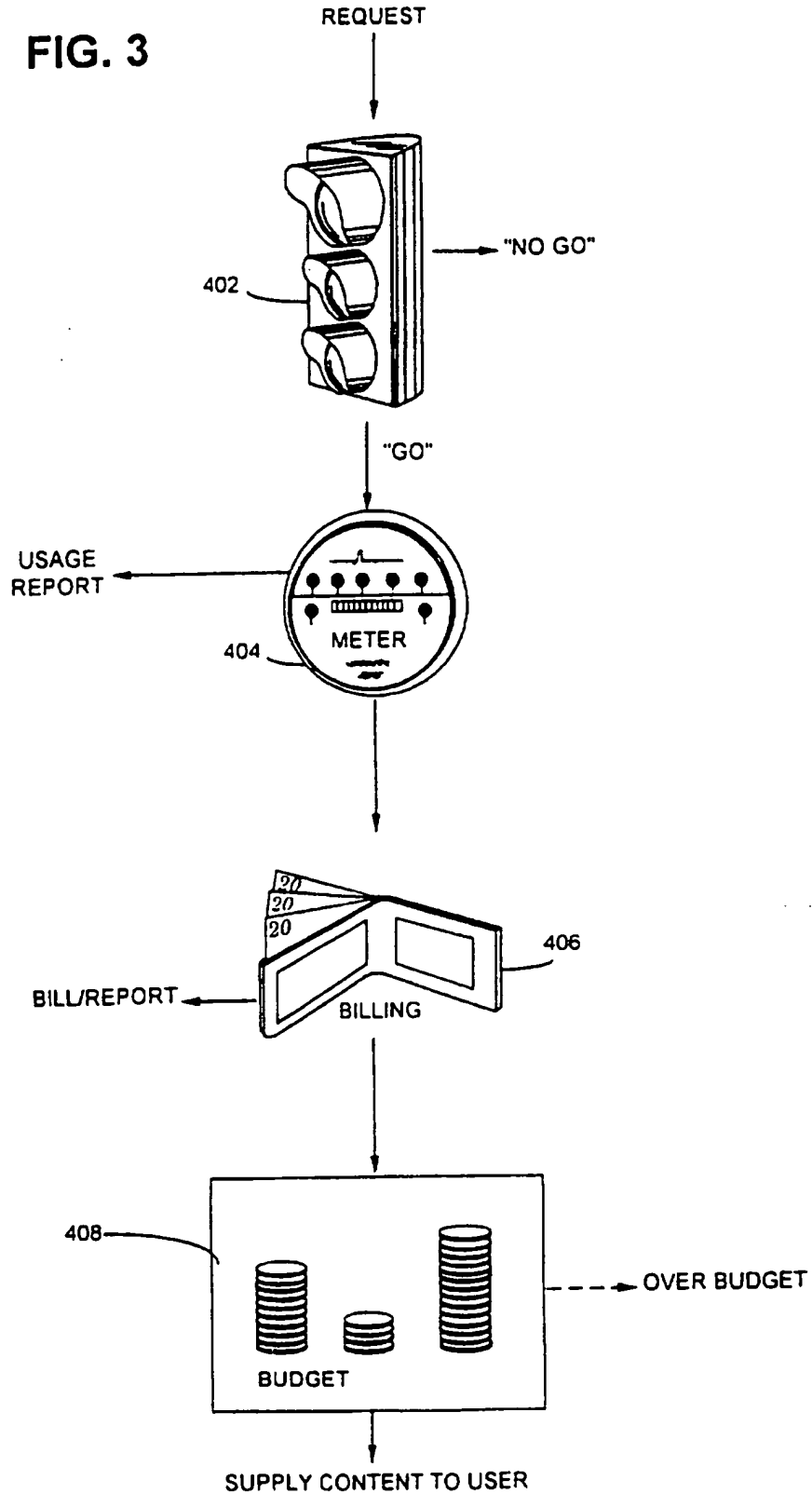
FIG. 2A



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FIG. 3



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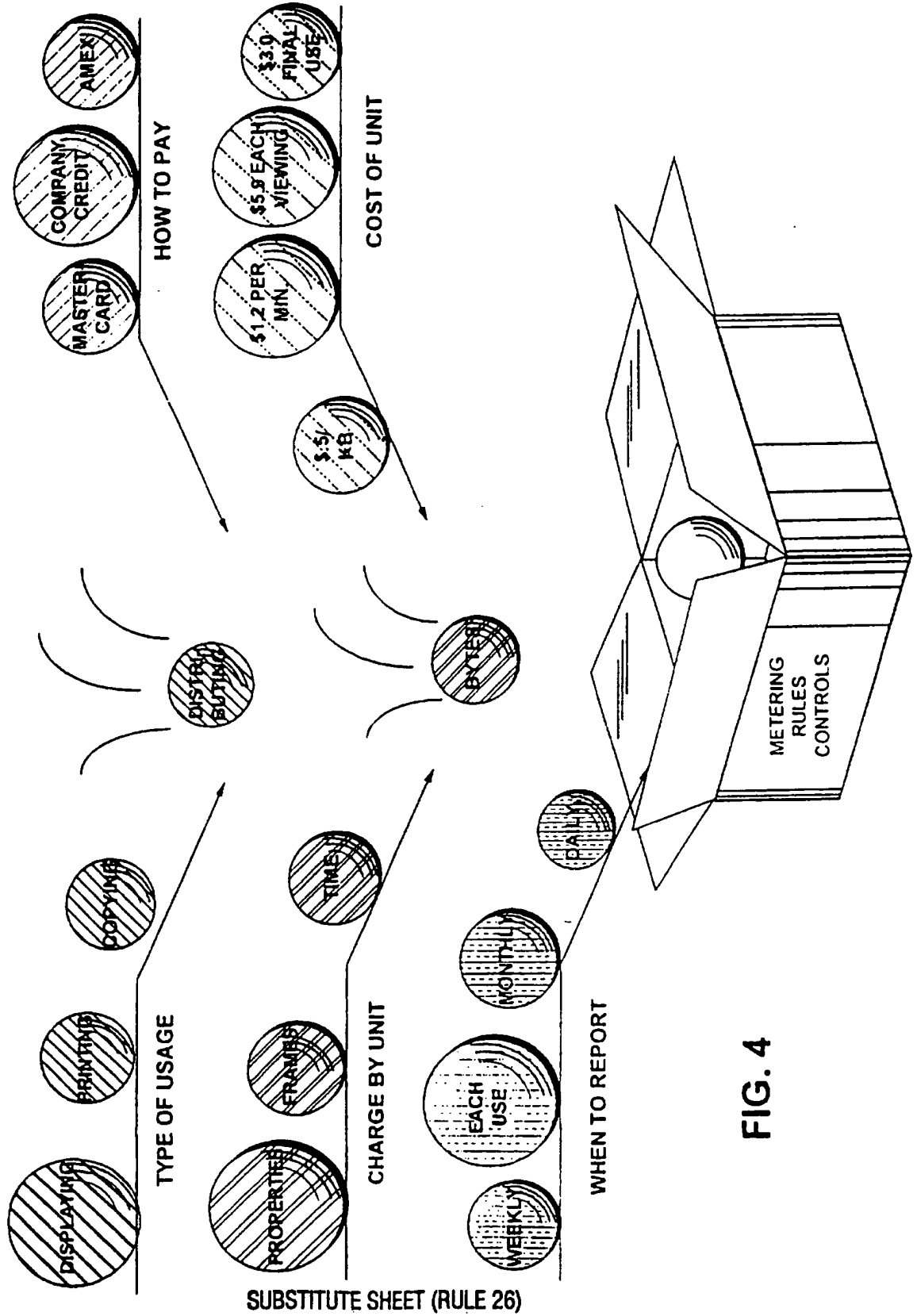
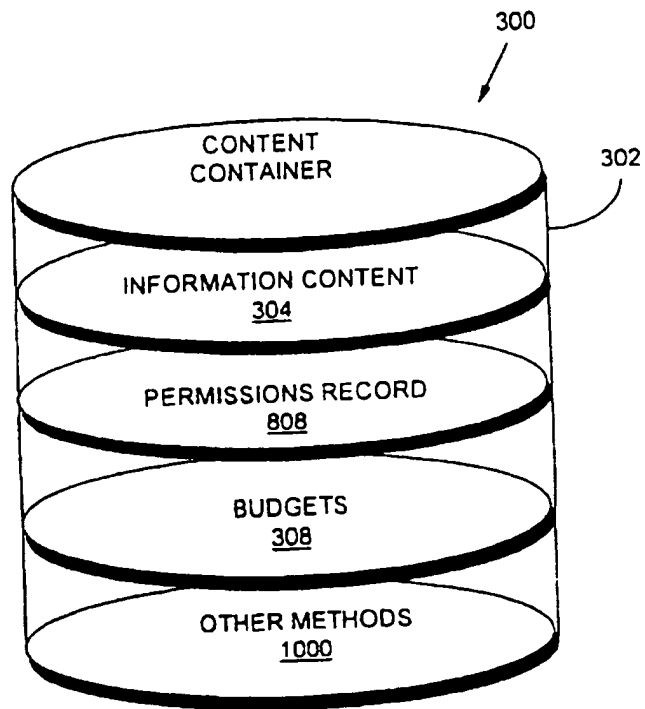


FIG. 4

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FIG. 5A



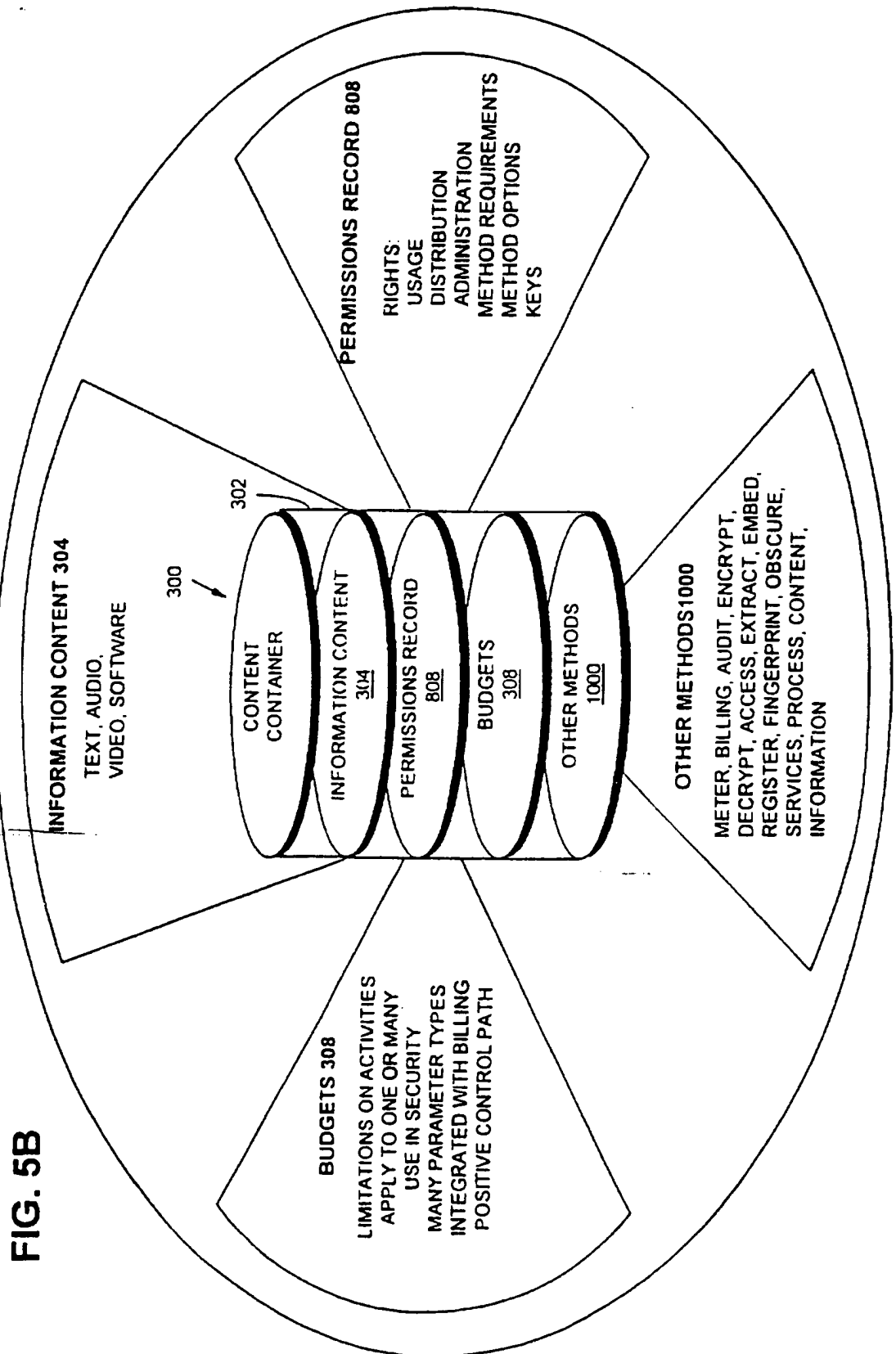
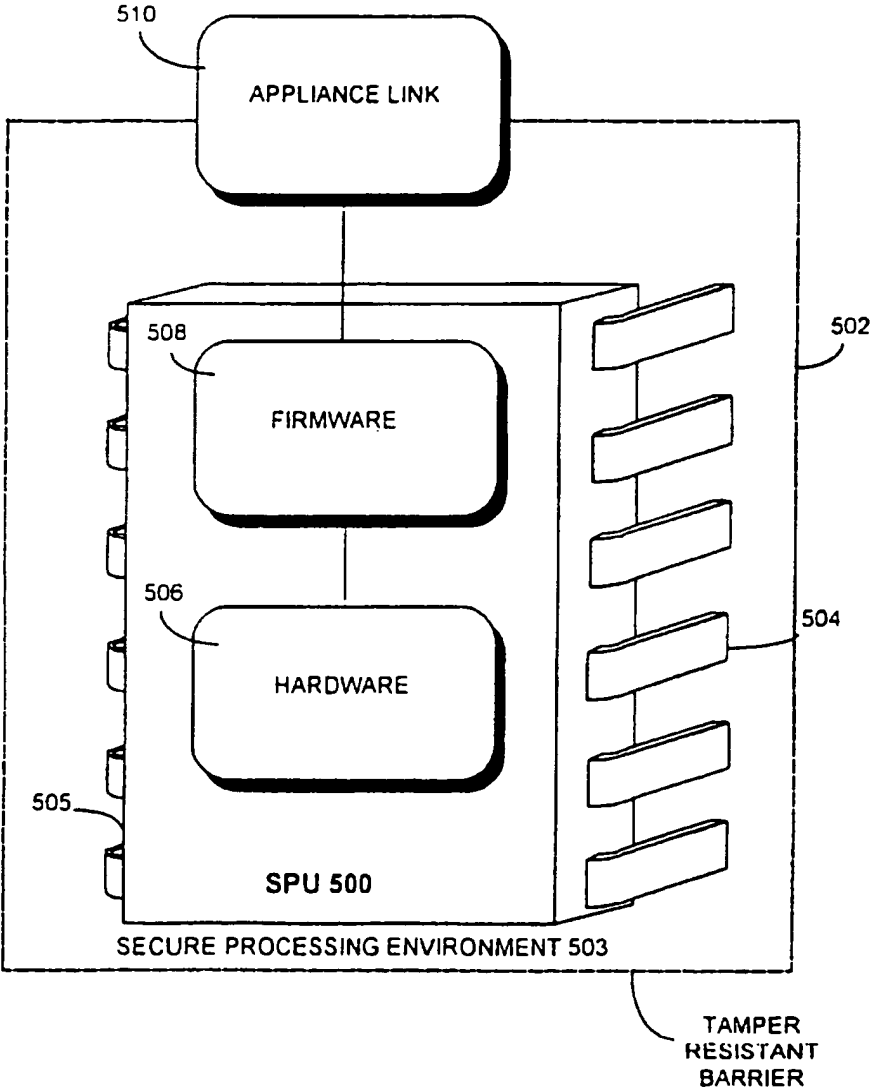


FIG. 5B

FIG. 6



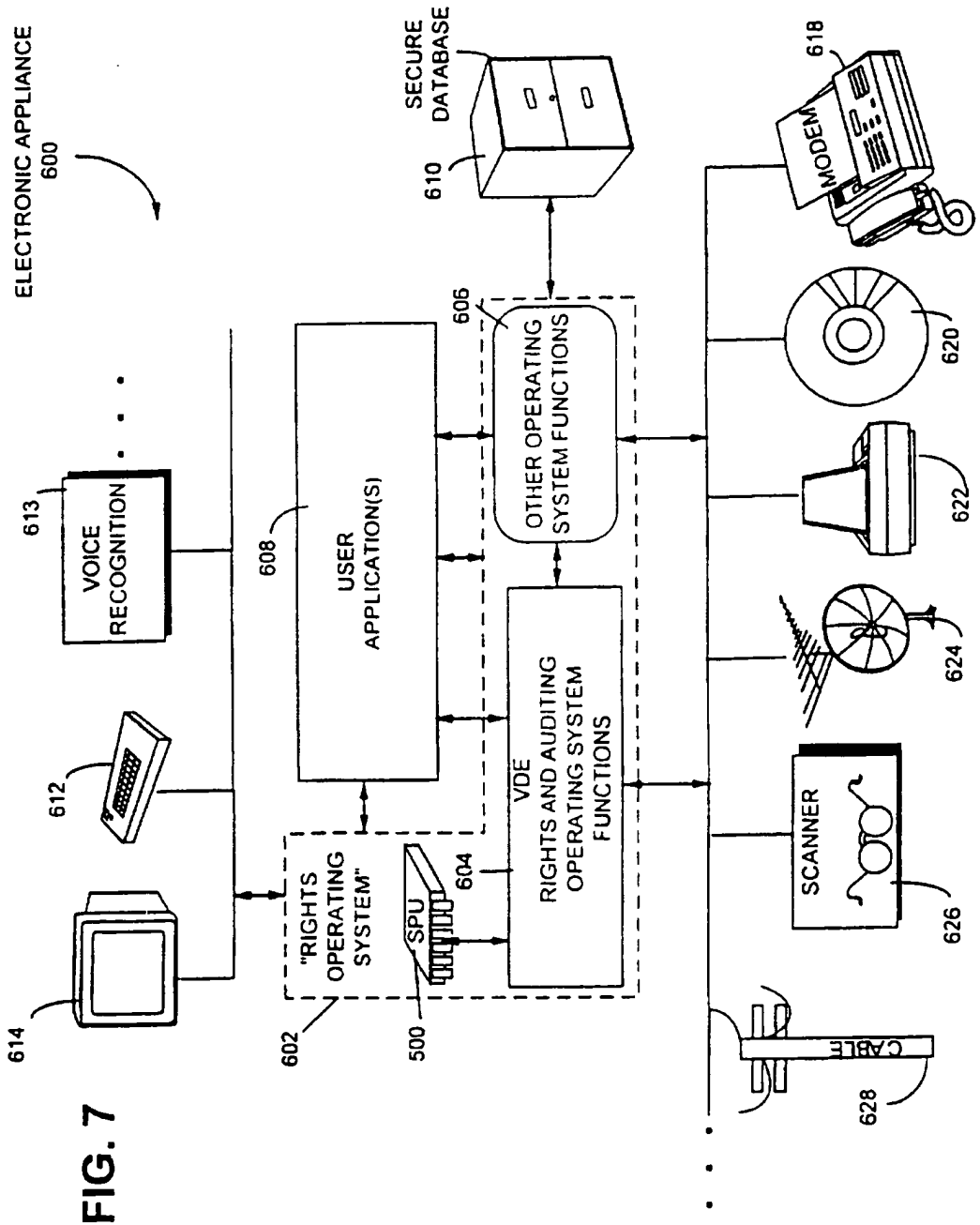
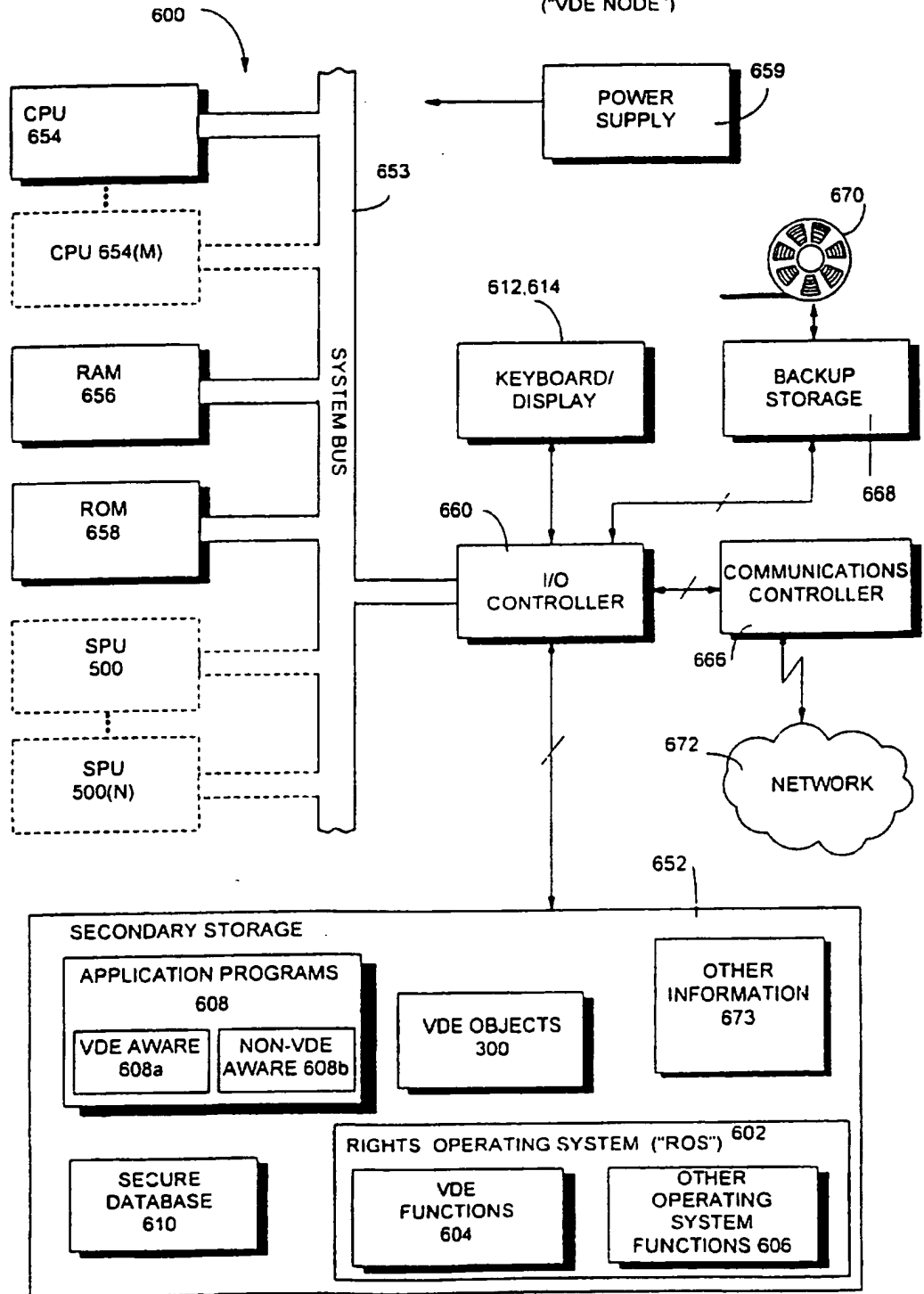


FIG. 7

FIG. 8 ELECTRONIC APPLIANCE 600 ("VDE NODE")



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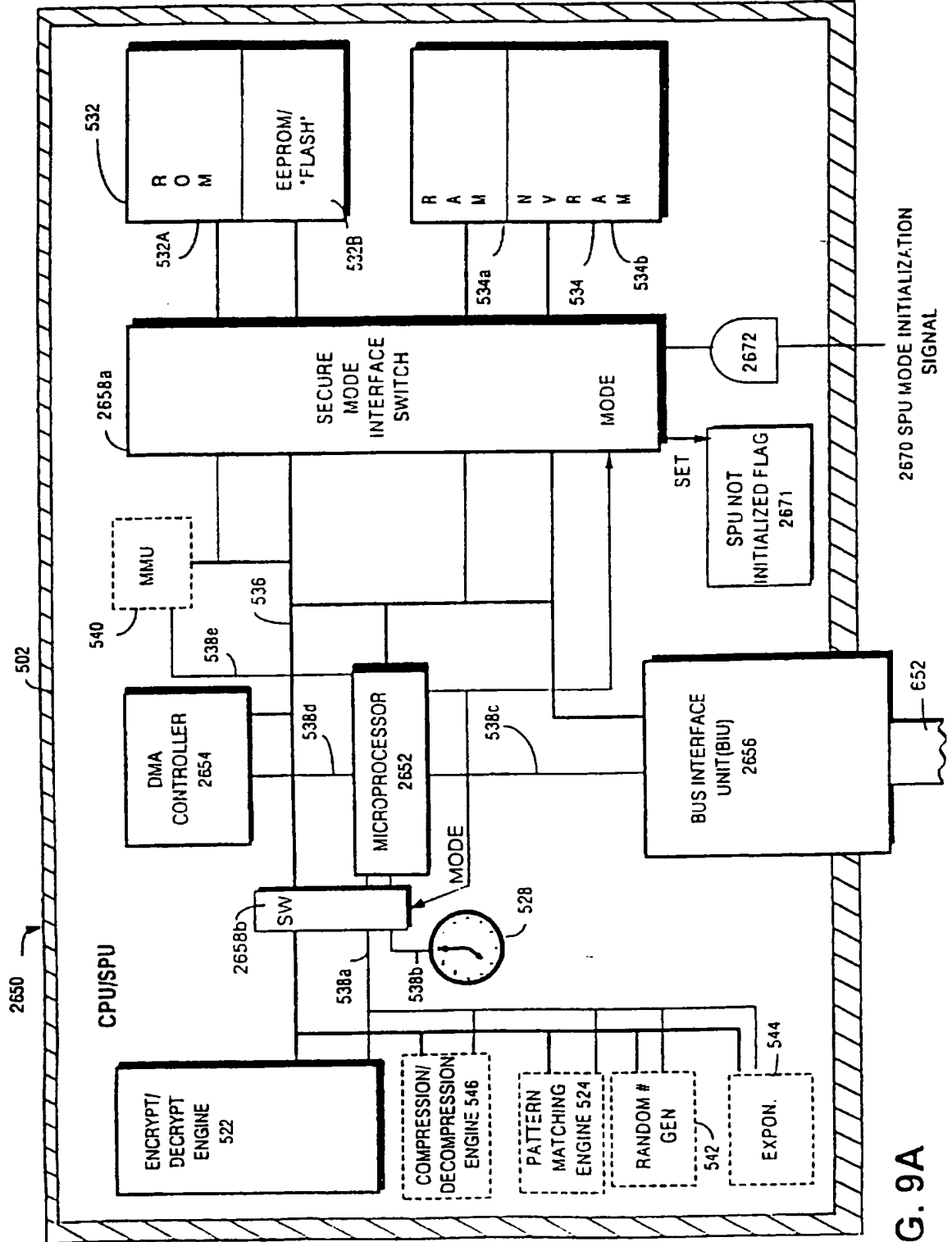


FIG. 9A

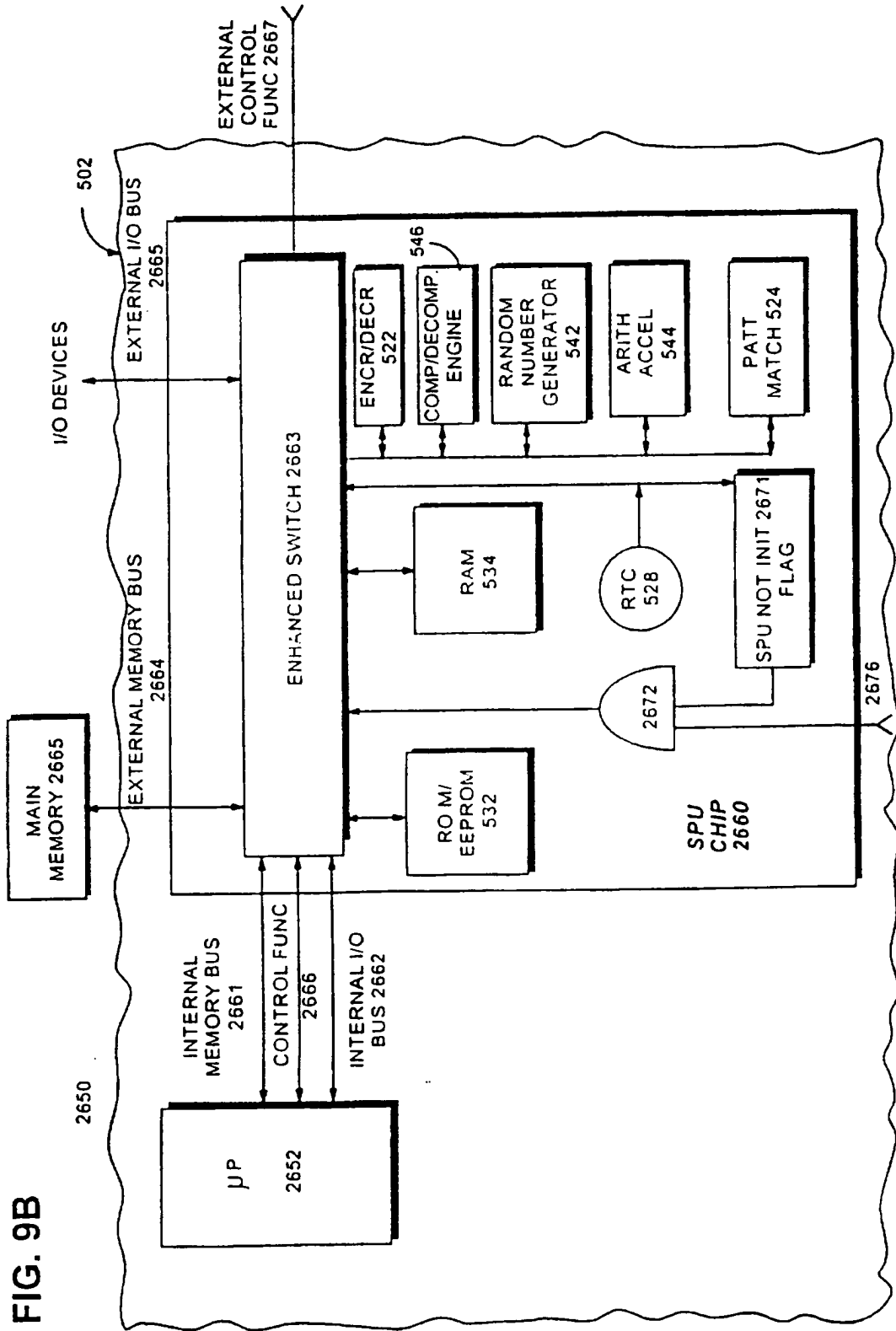


FIG. 9B

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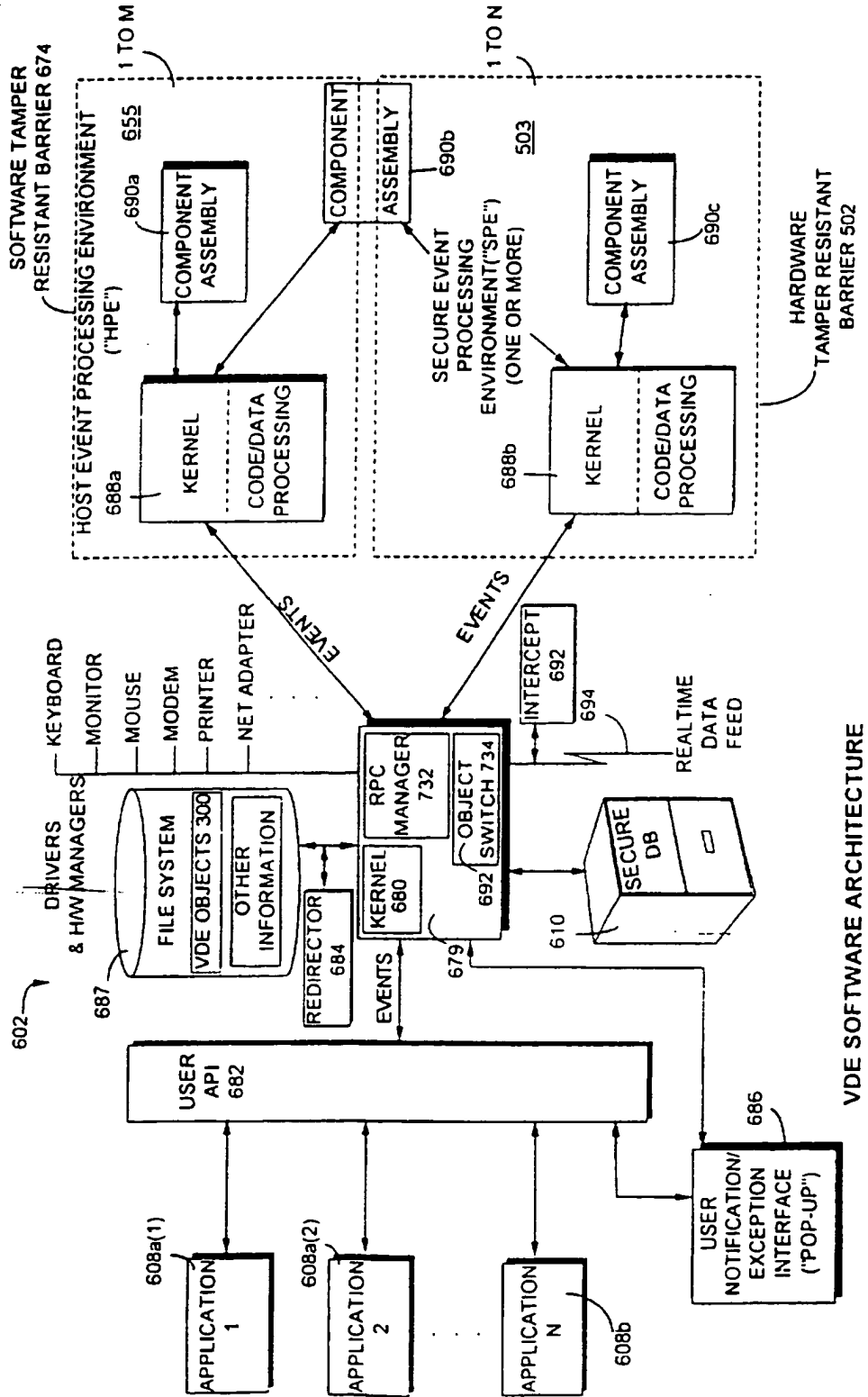


FIG. 10

FIG. 11C

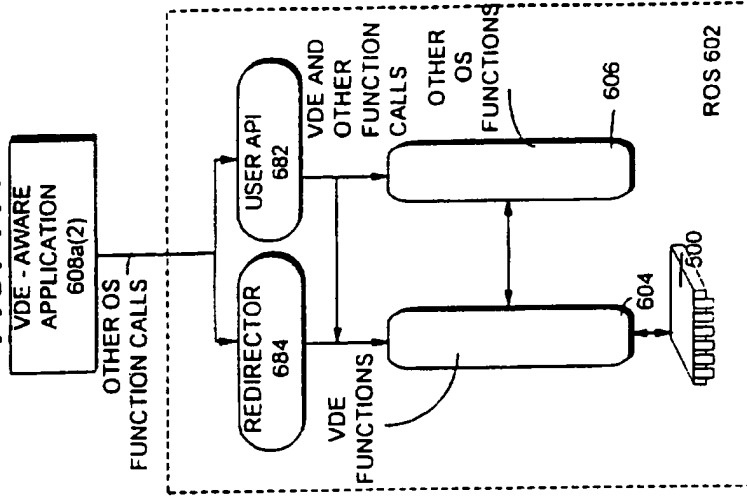


FIG. 11B

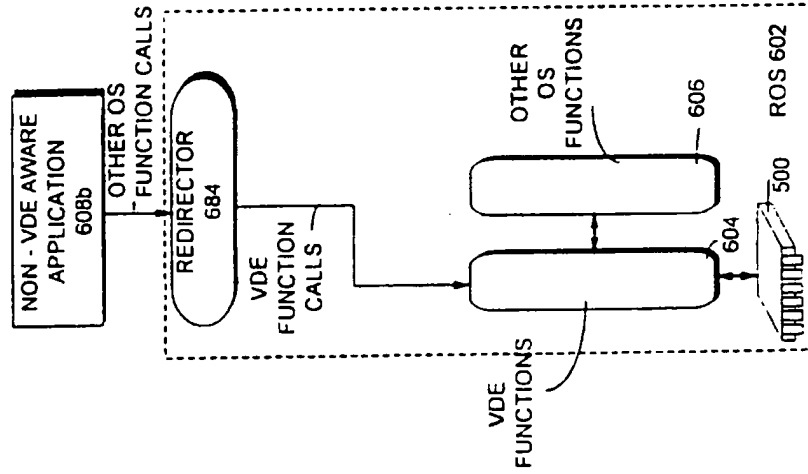
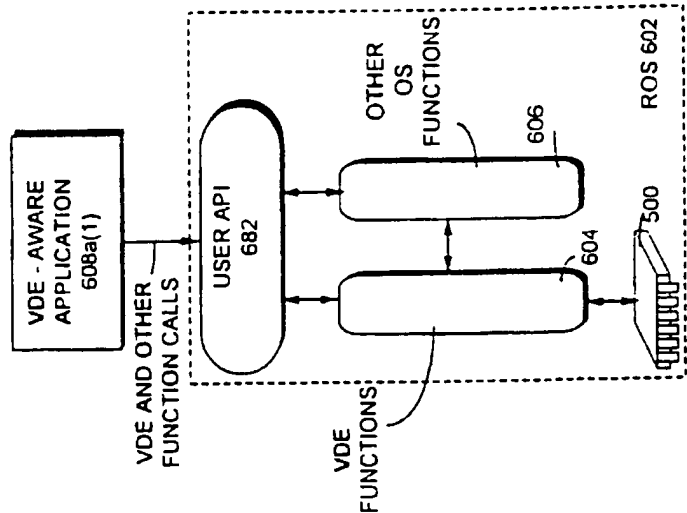


FIG. 11A



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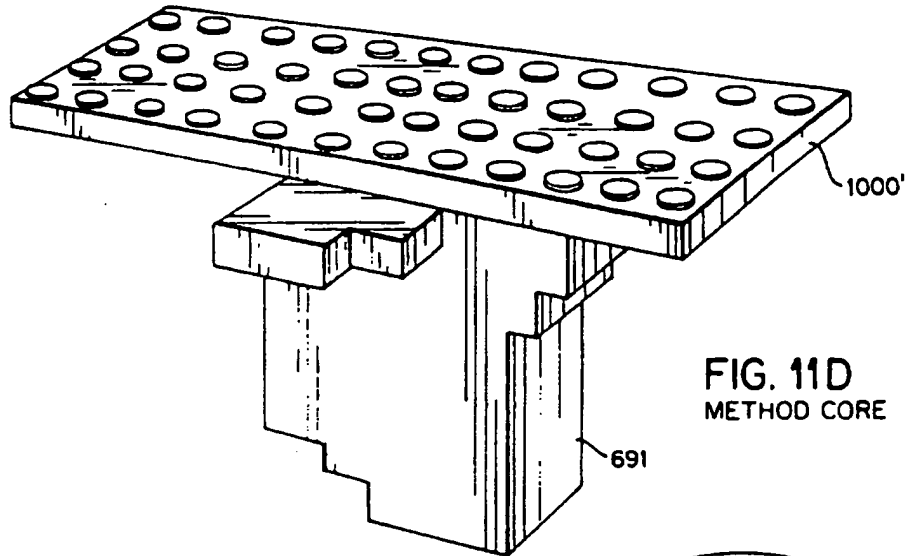


FIG. 11D
METHOD CORE

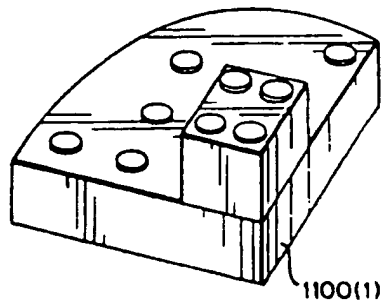


FIG. 11E
LOAD MODULE
WITH DTD

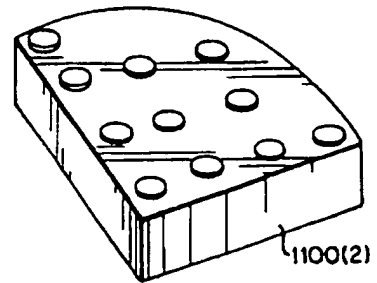


FIG. 11F
LOAD MODULE

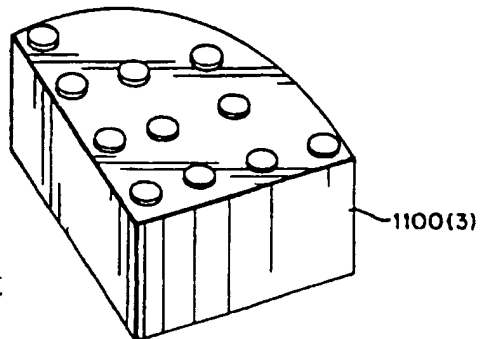


FIG. 11G
LOAD MODULE

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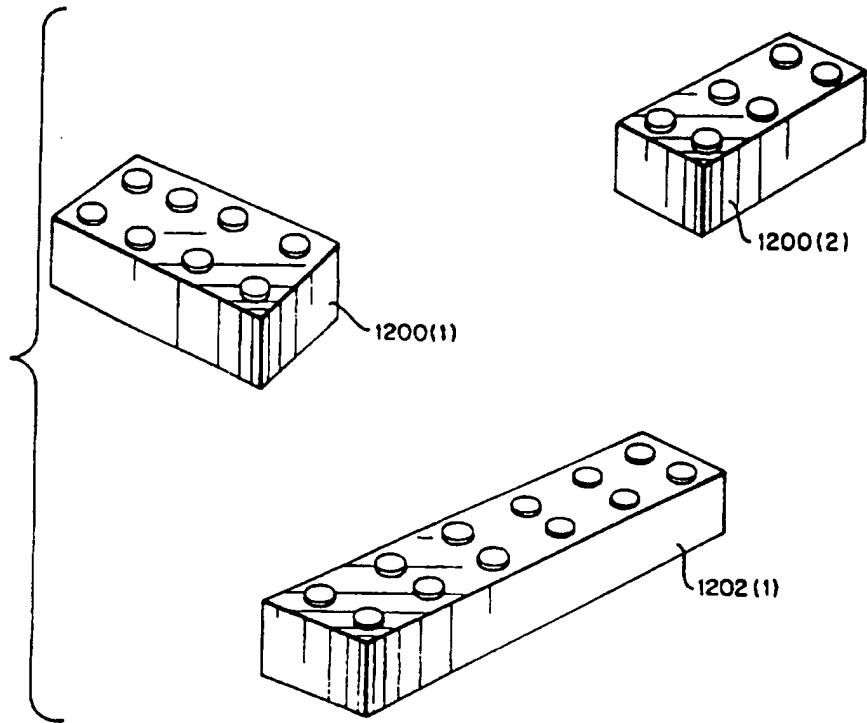
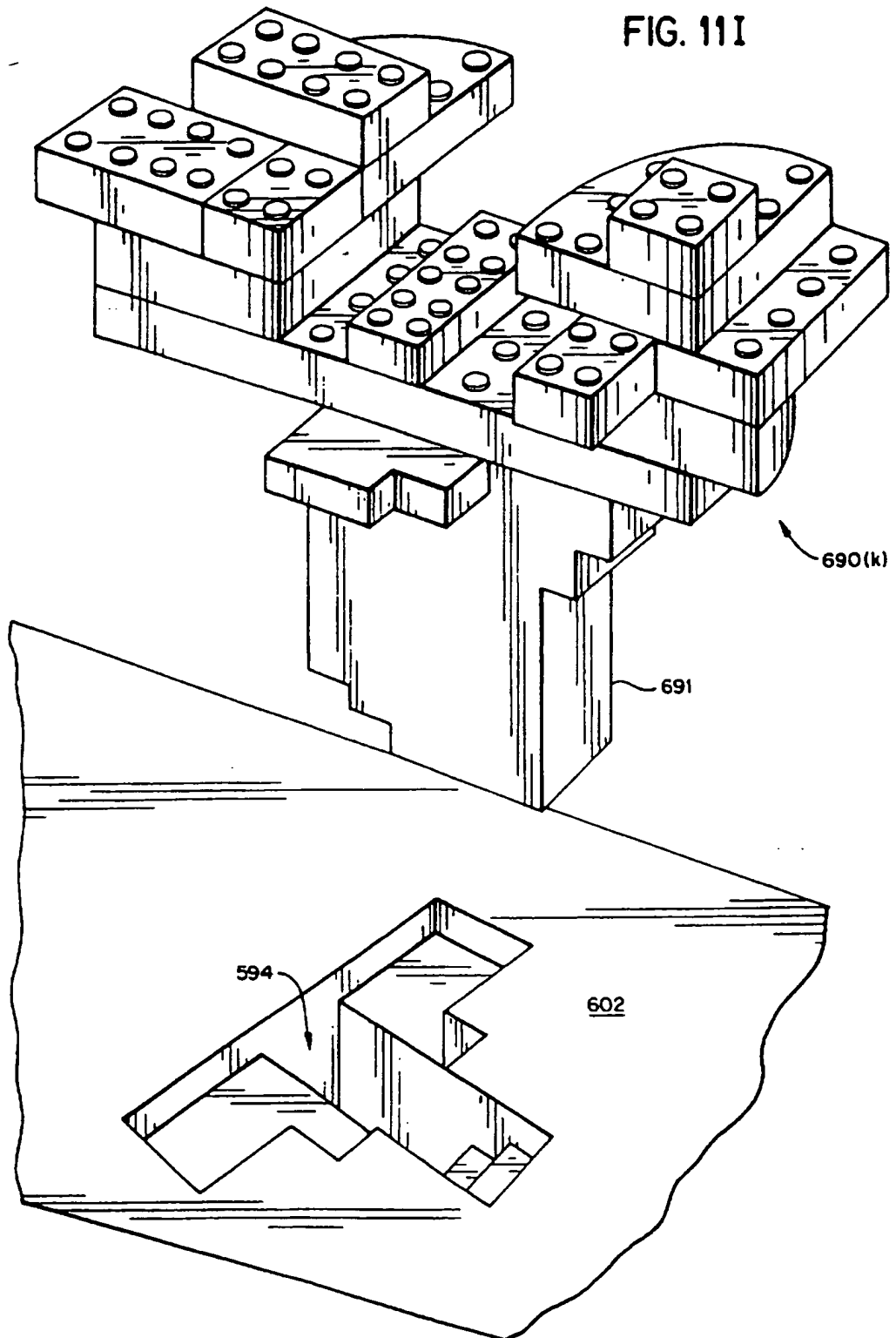


FIG. 11H
DATA STRUCTURES

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FIG. 11I



SUBSTITUTE SHEET (RULE 26)

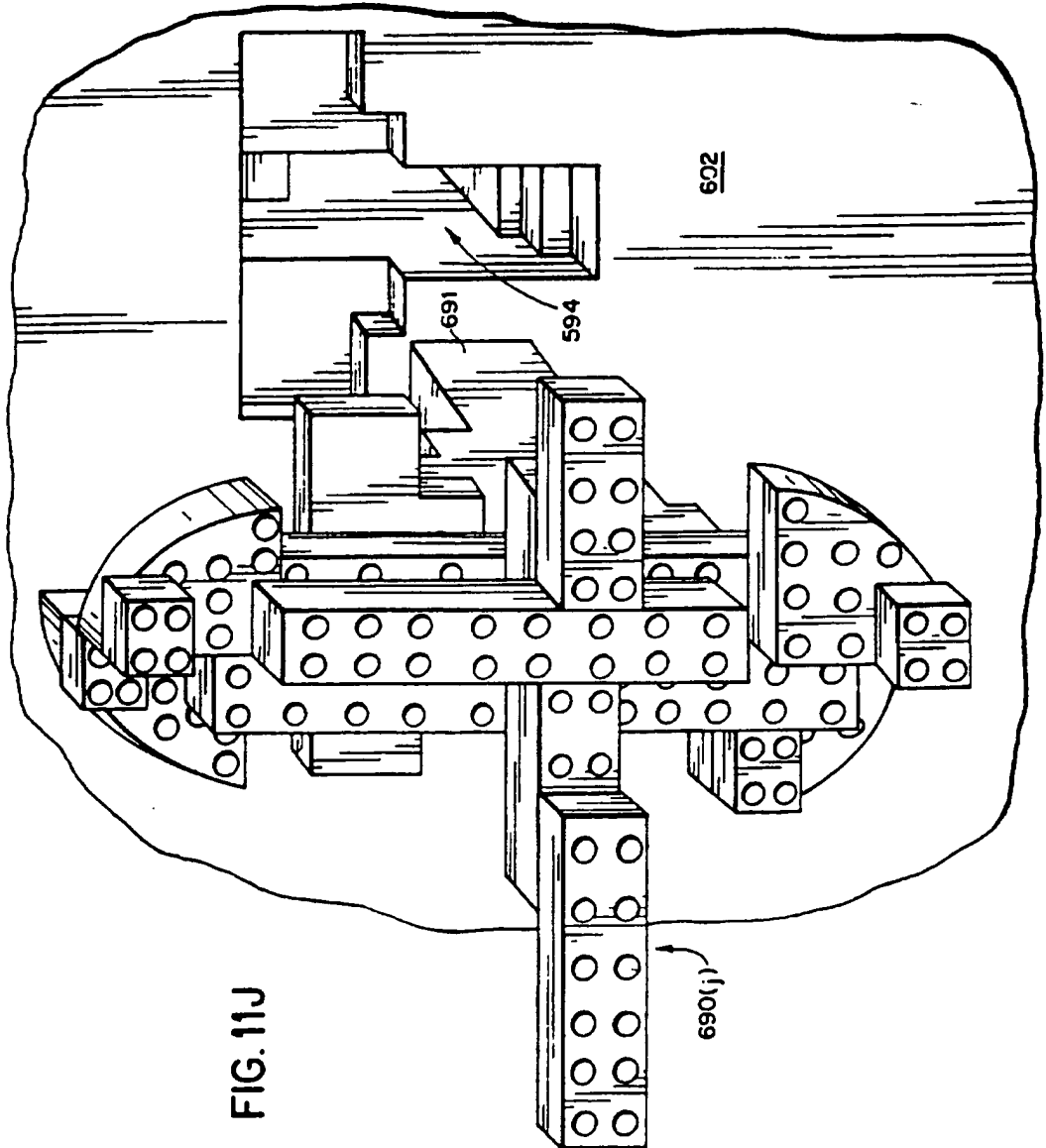


FIG. 11J

SUBSTITUTE SHEET (RULE 26)

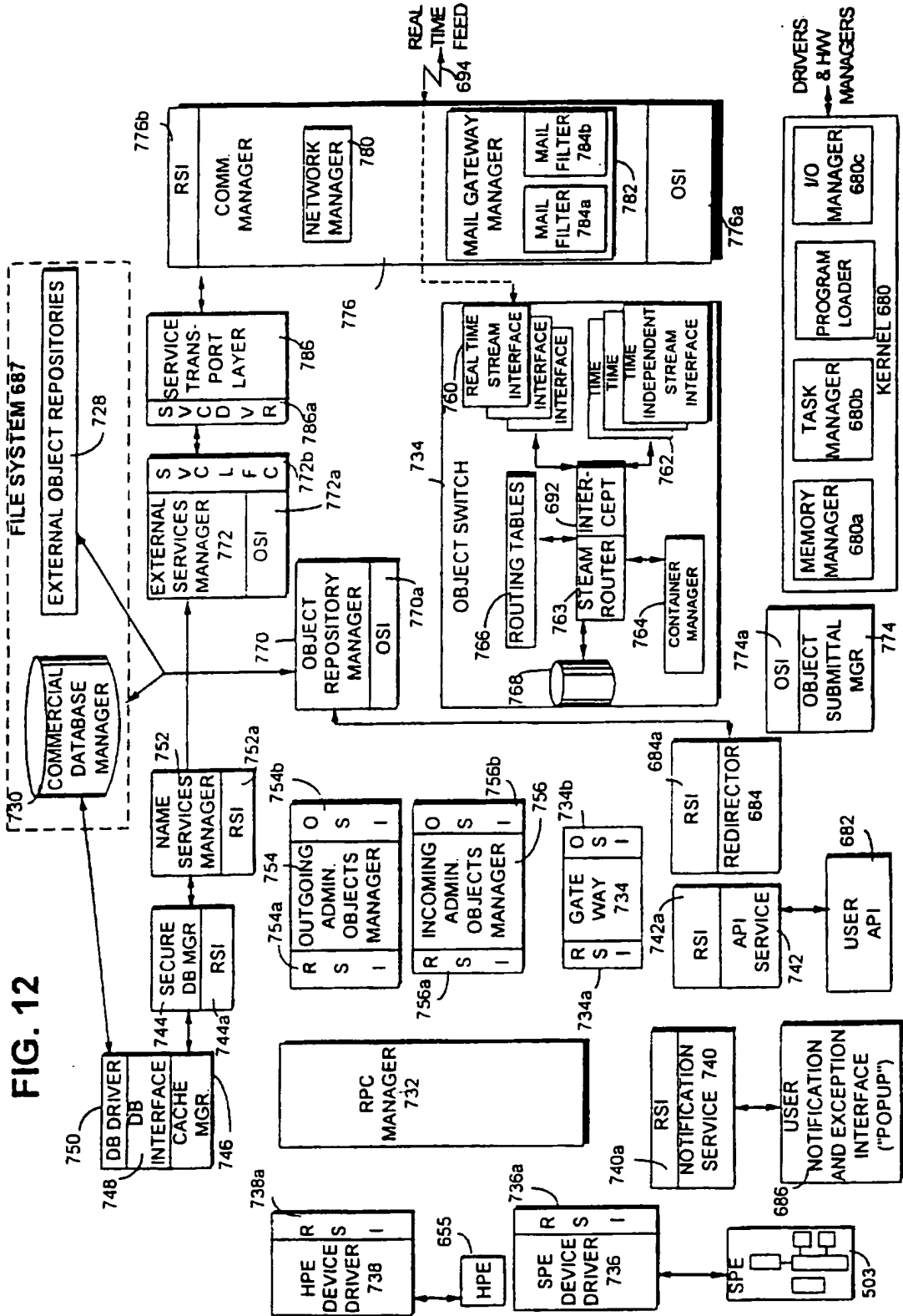


FIG. 12

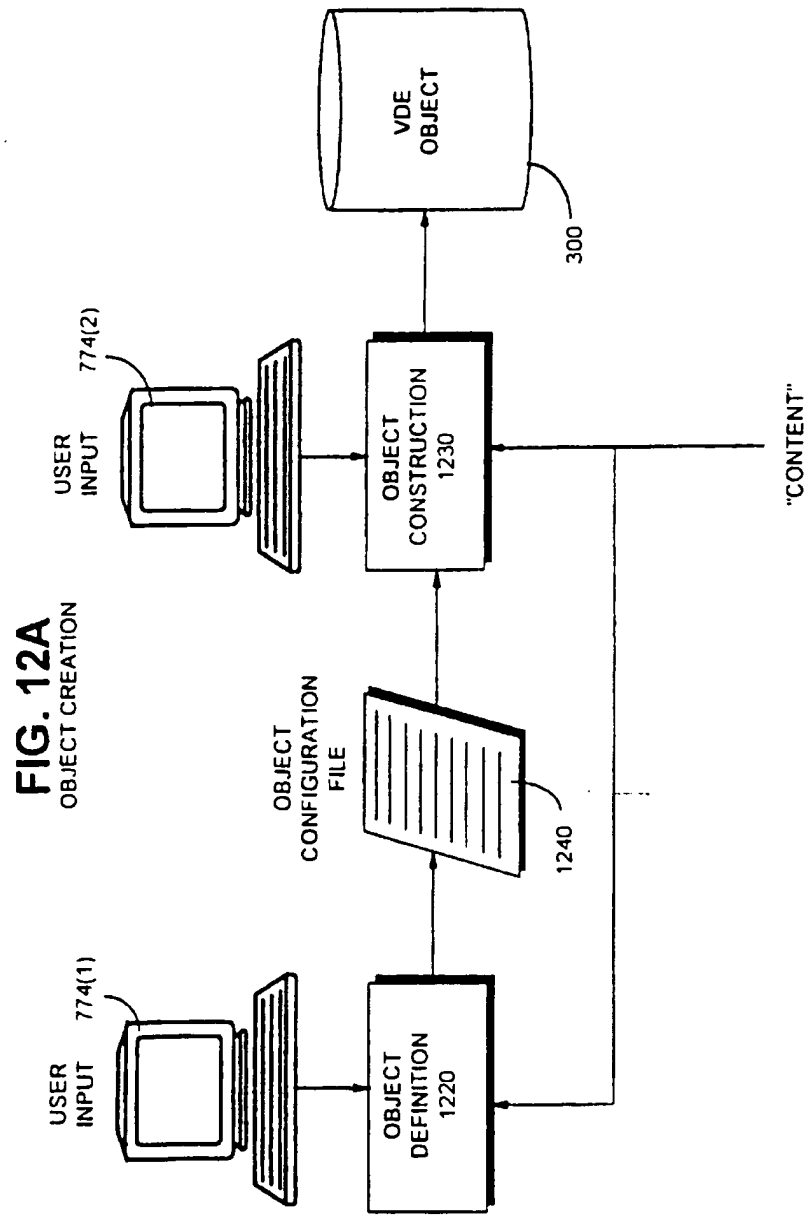


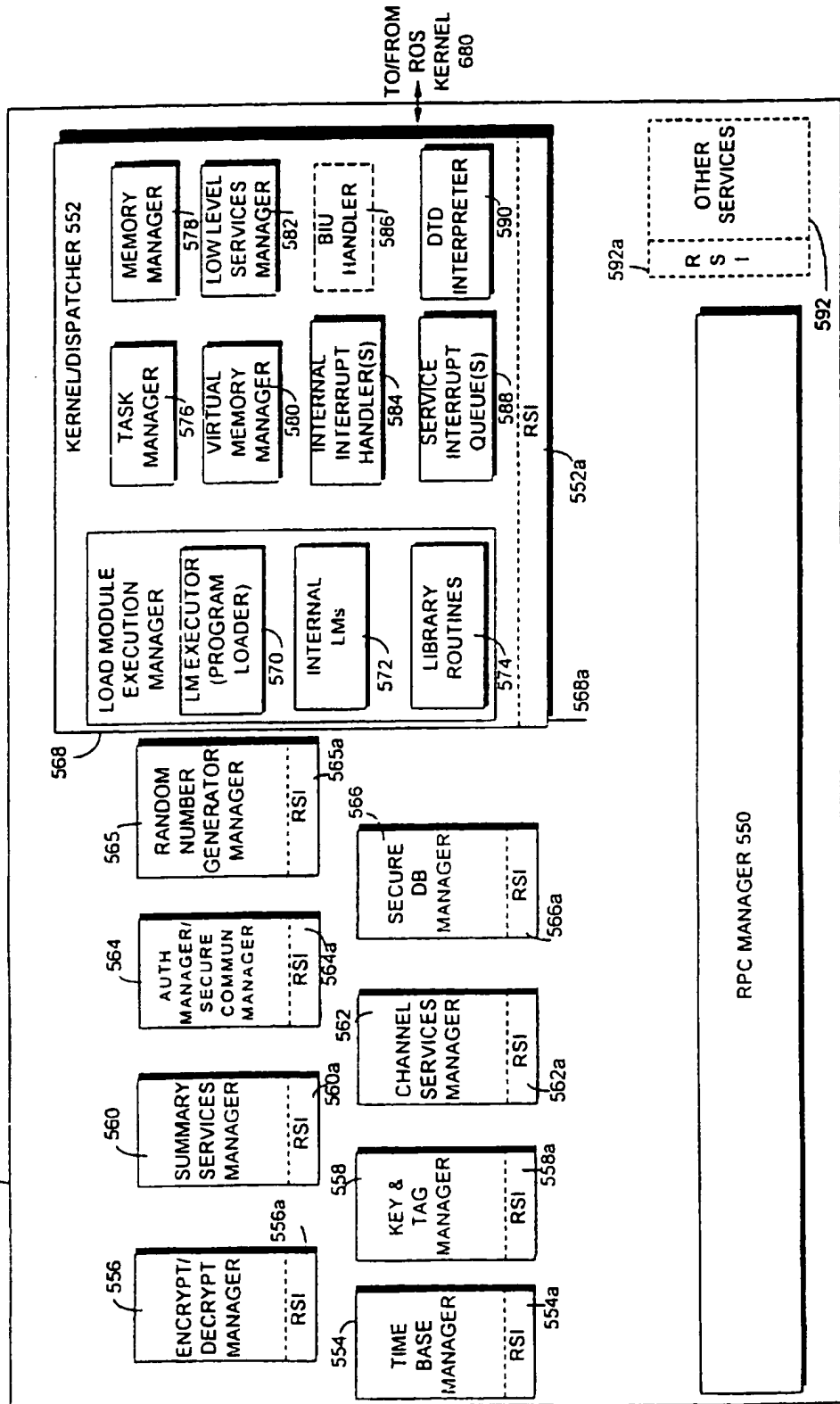
FIG. 12A
OBJECT CREATION

SUBSTITUTE SHEET (RULE 26)

FIG. 13

PROTECTED PROCESSING ENVIRONMENT 650

503, 655



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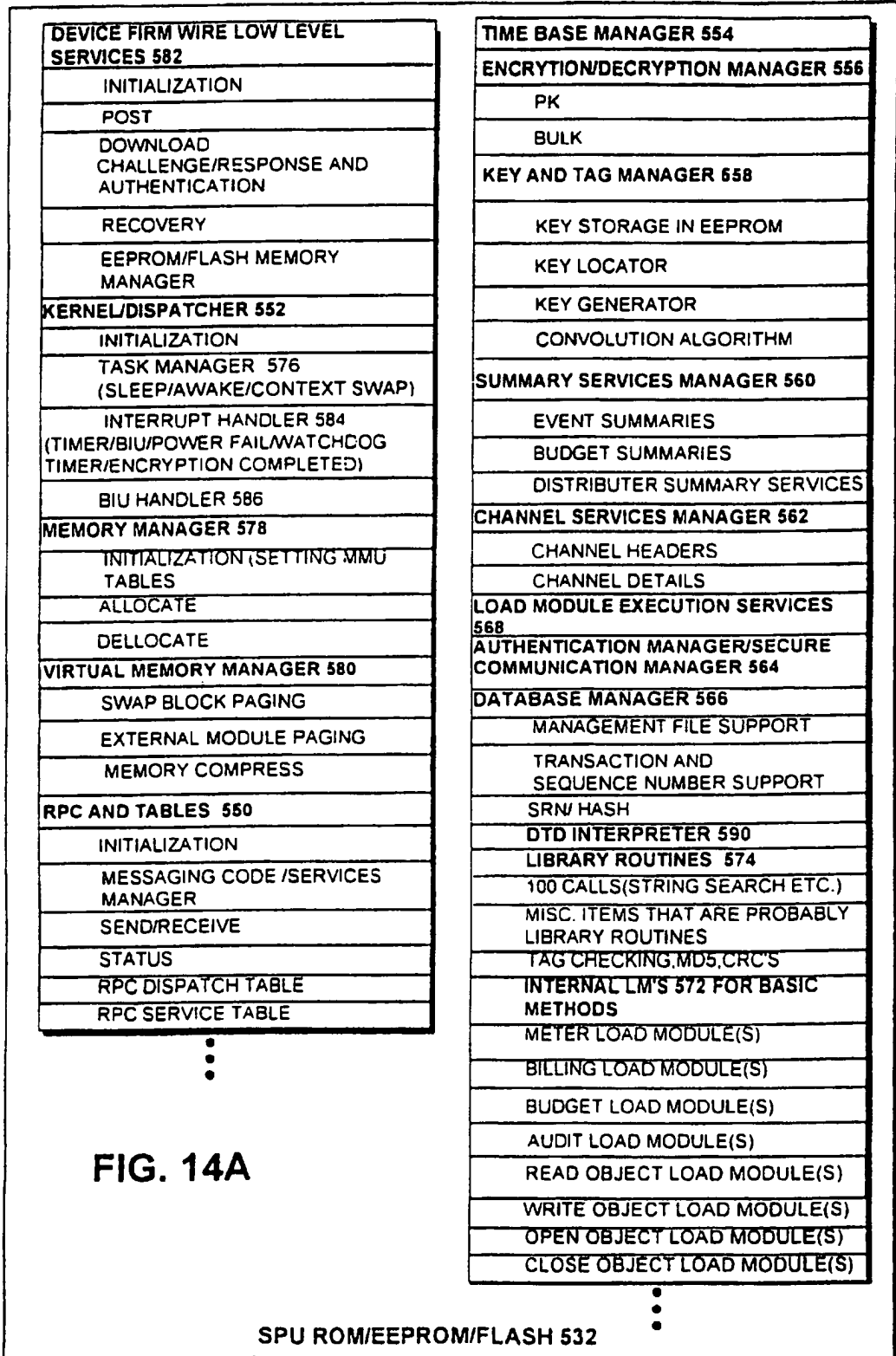
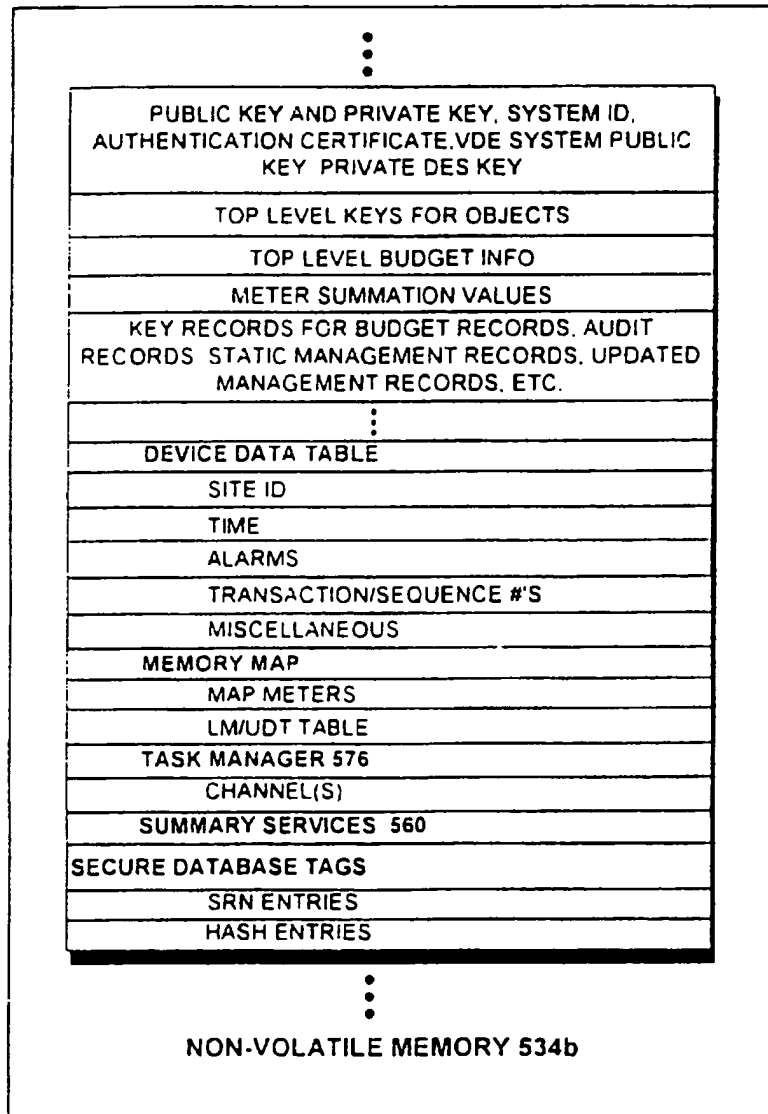


FIG. 14A

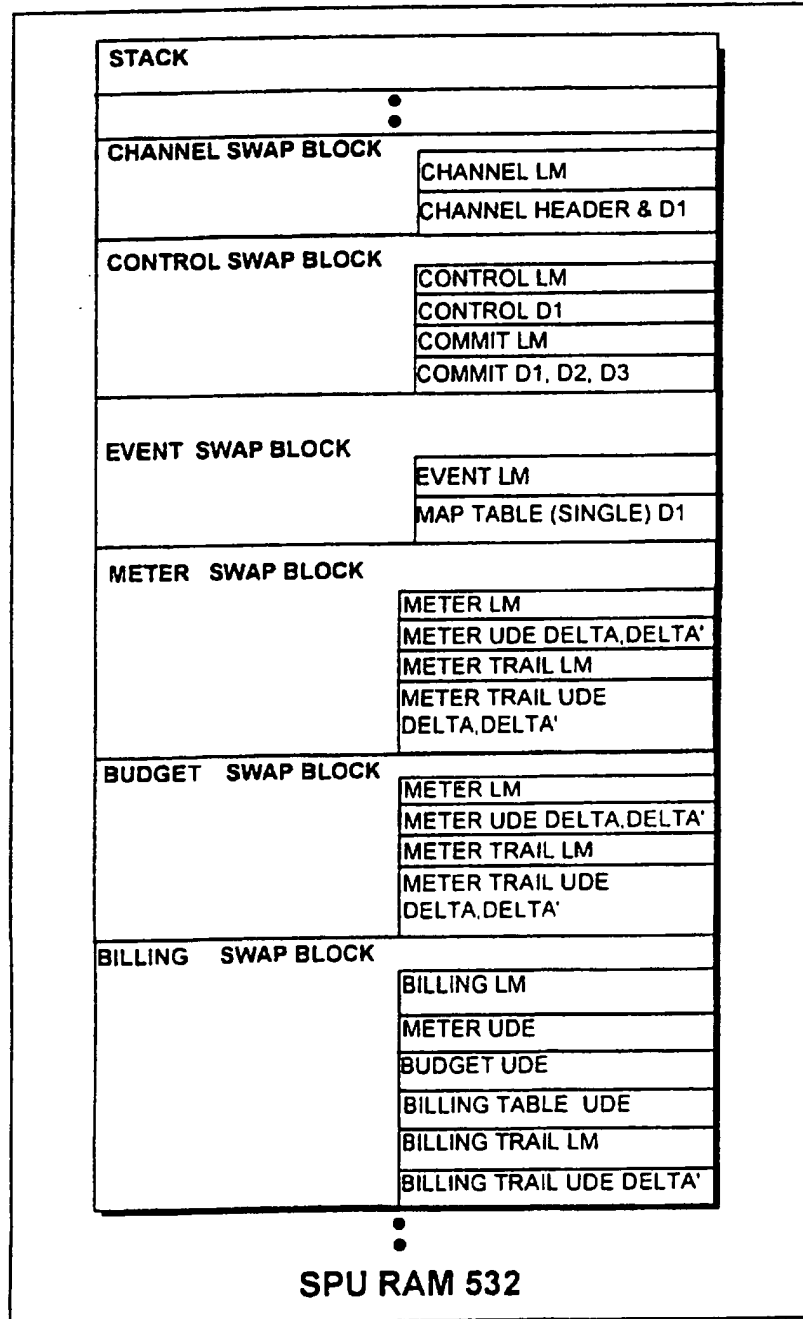
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FIG. 14B



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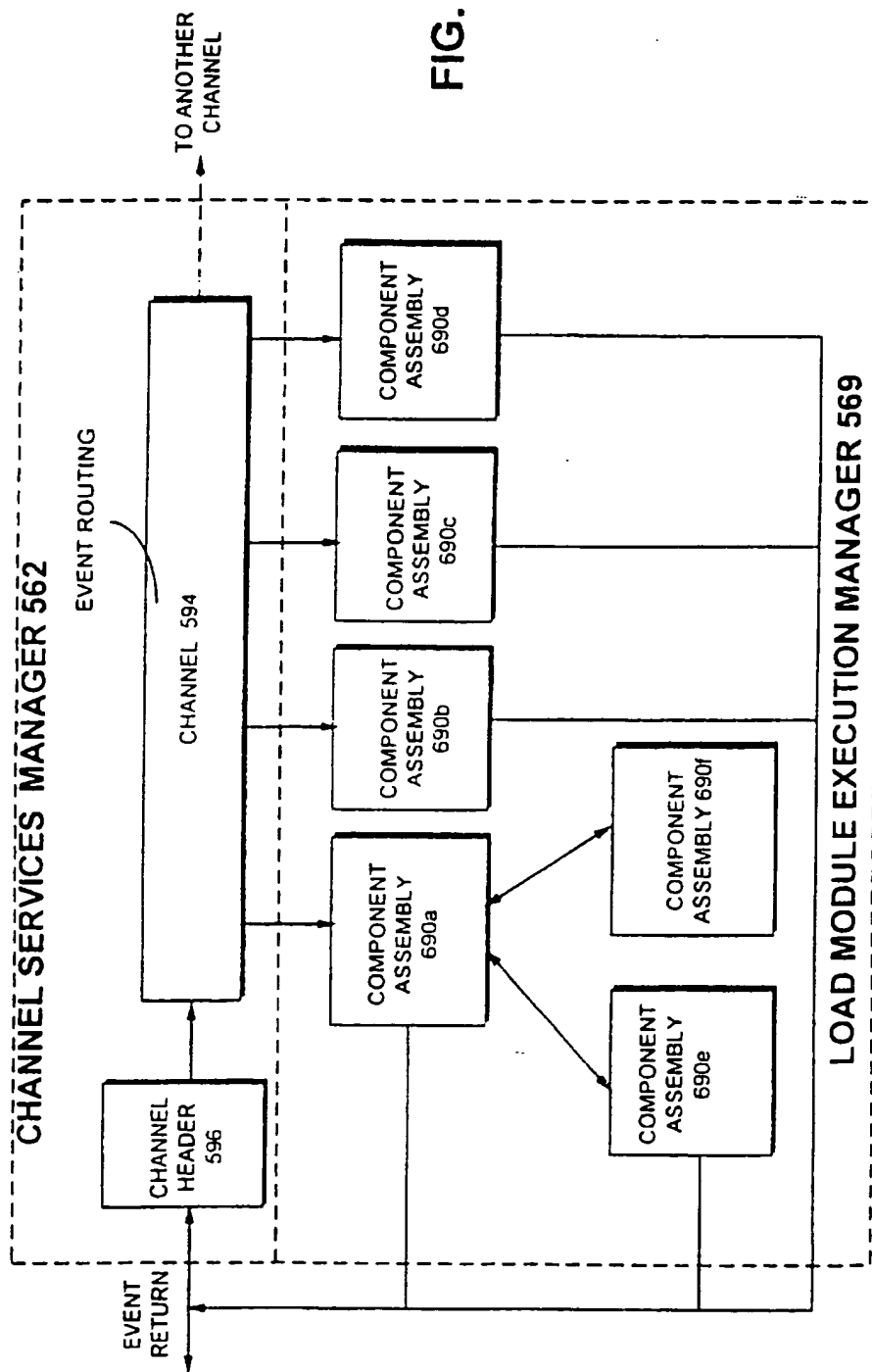
FIG. 14C



SUBSTITUTE SHEET (RULE 26)

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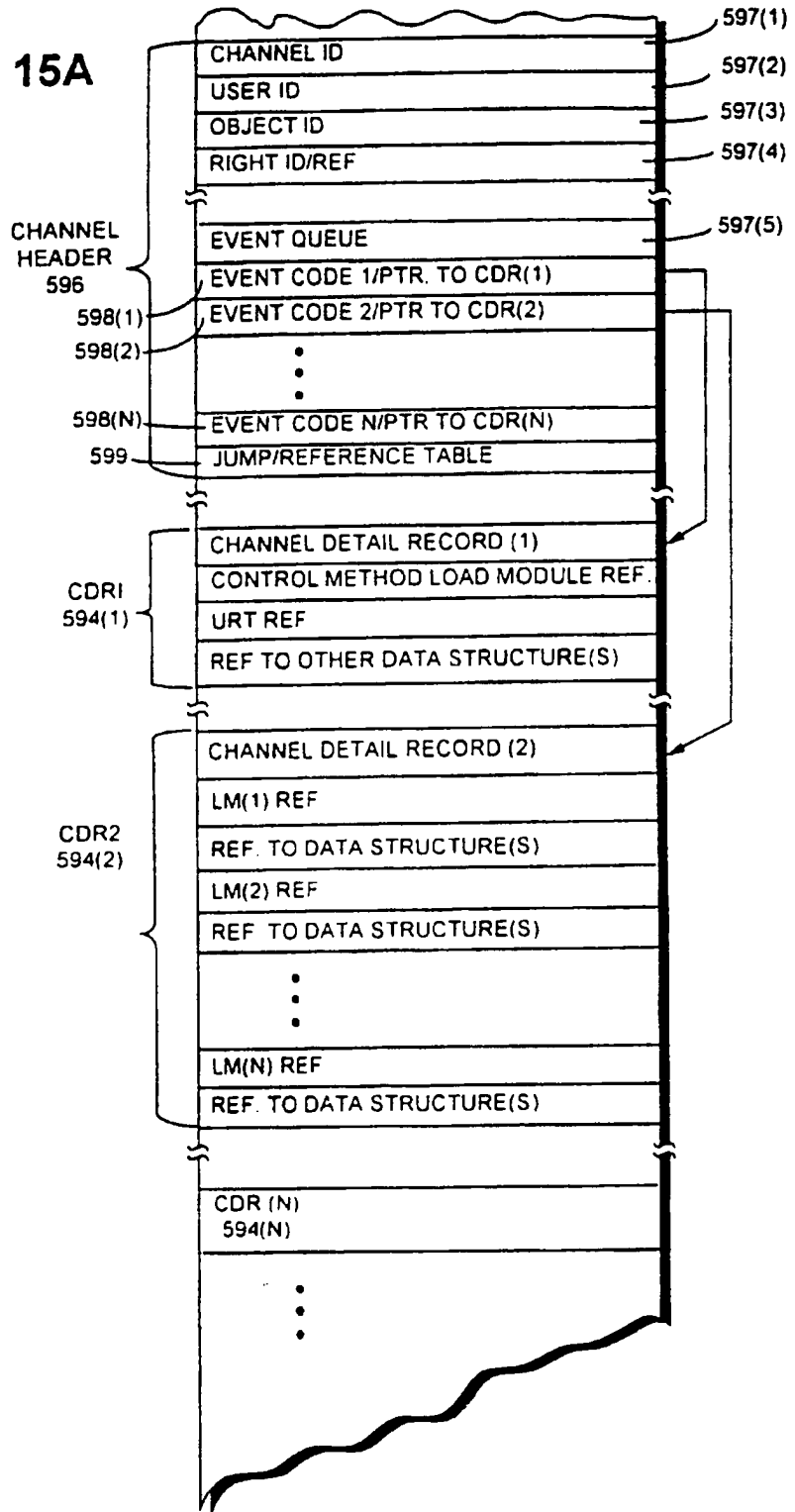
FIG. 15



SUBSTITUTE SHEET (RULE 26)

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FIG. 15A



SUBSTITUTE SHEET (RULE 26)

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FIG. 15B

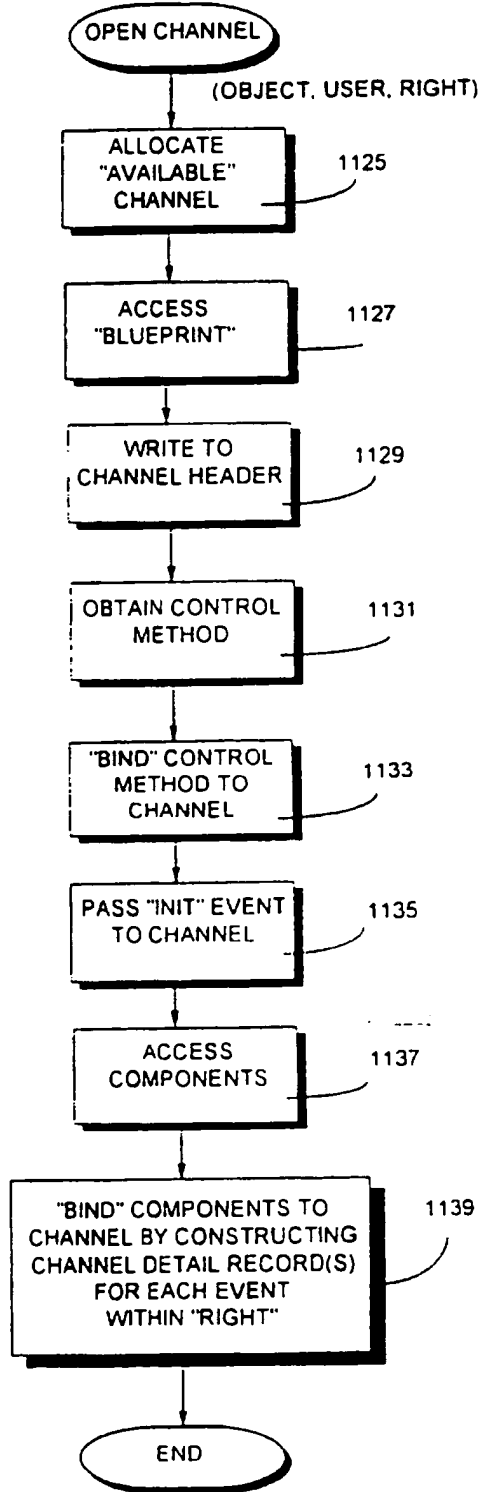
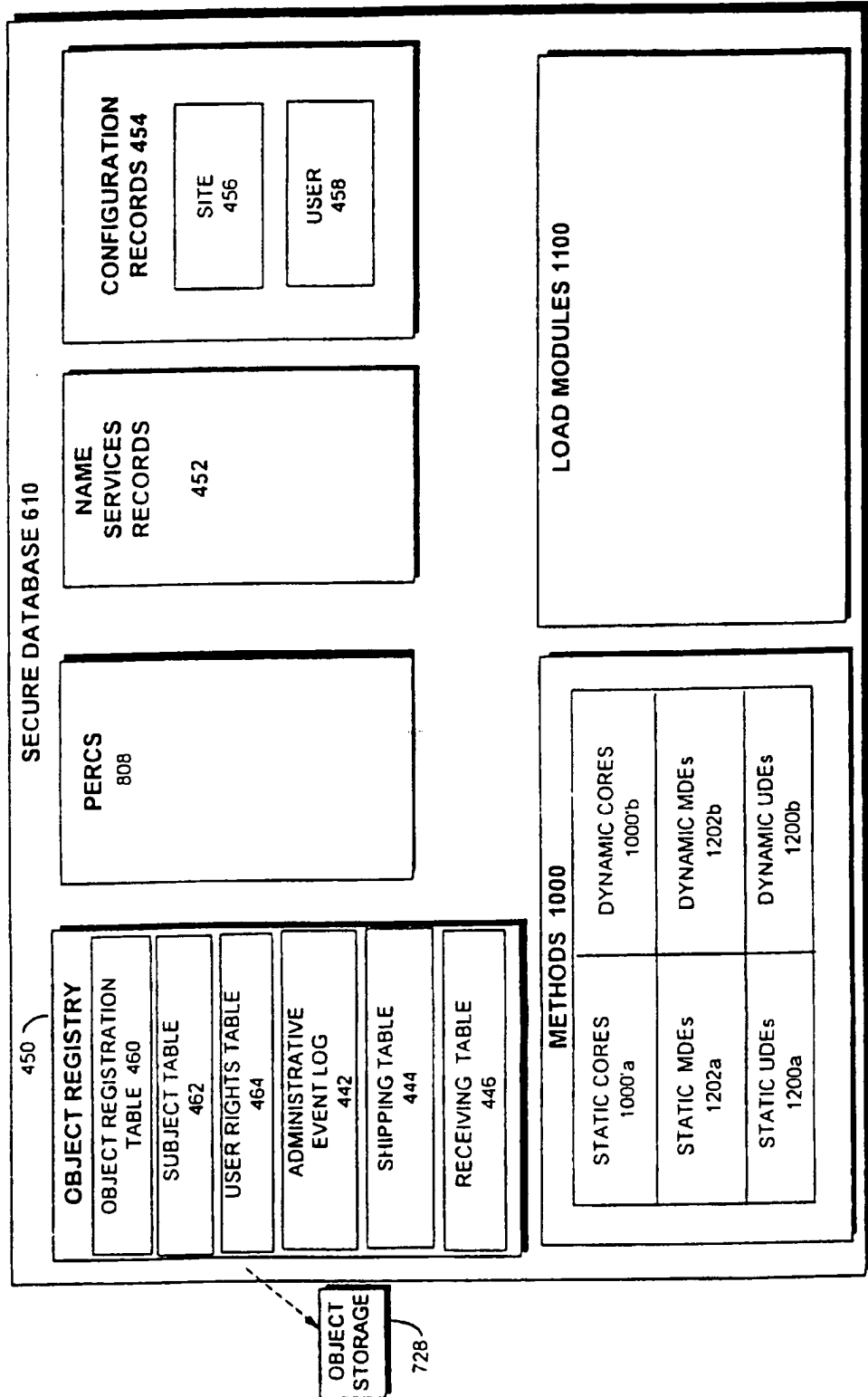
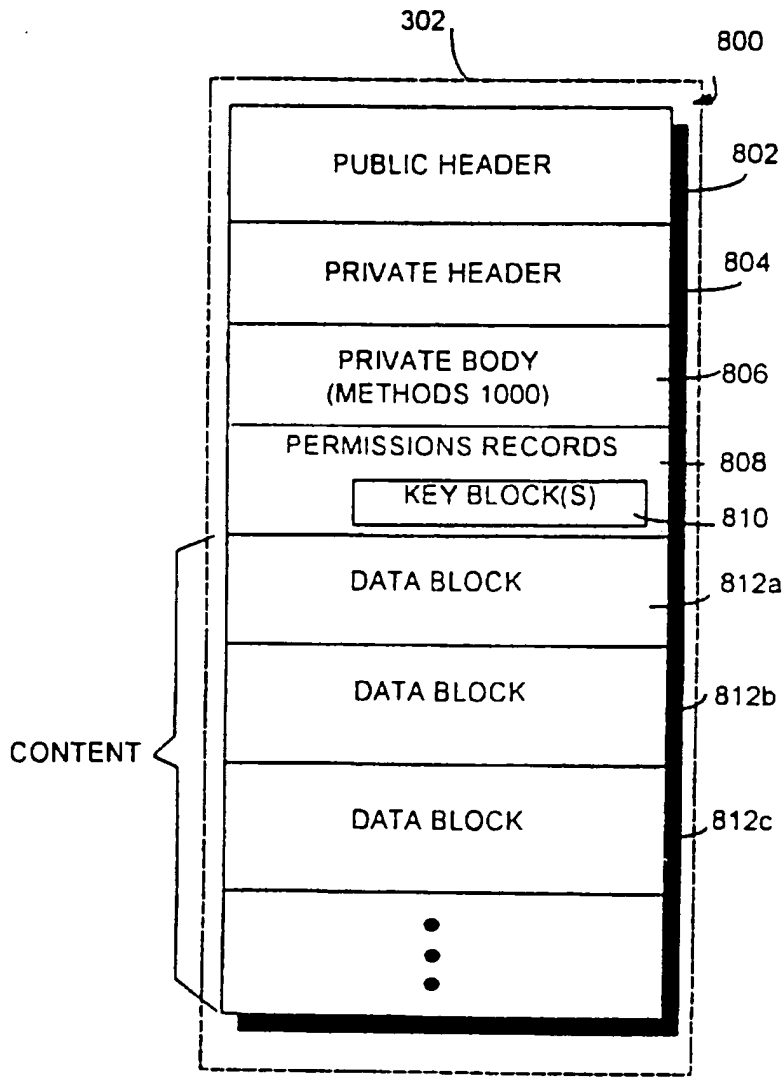


FIG. 16



SUBSTITUTE SHEET (RULE 26)

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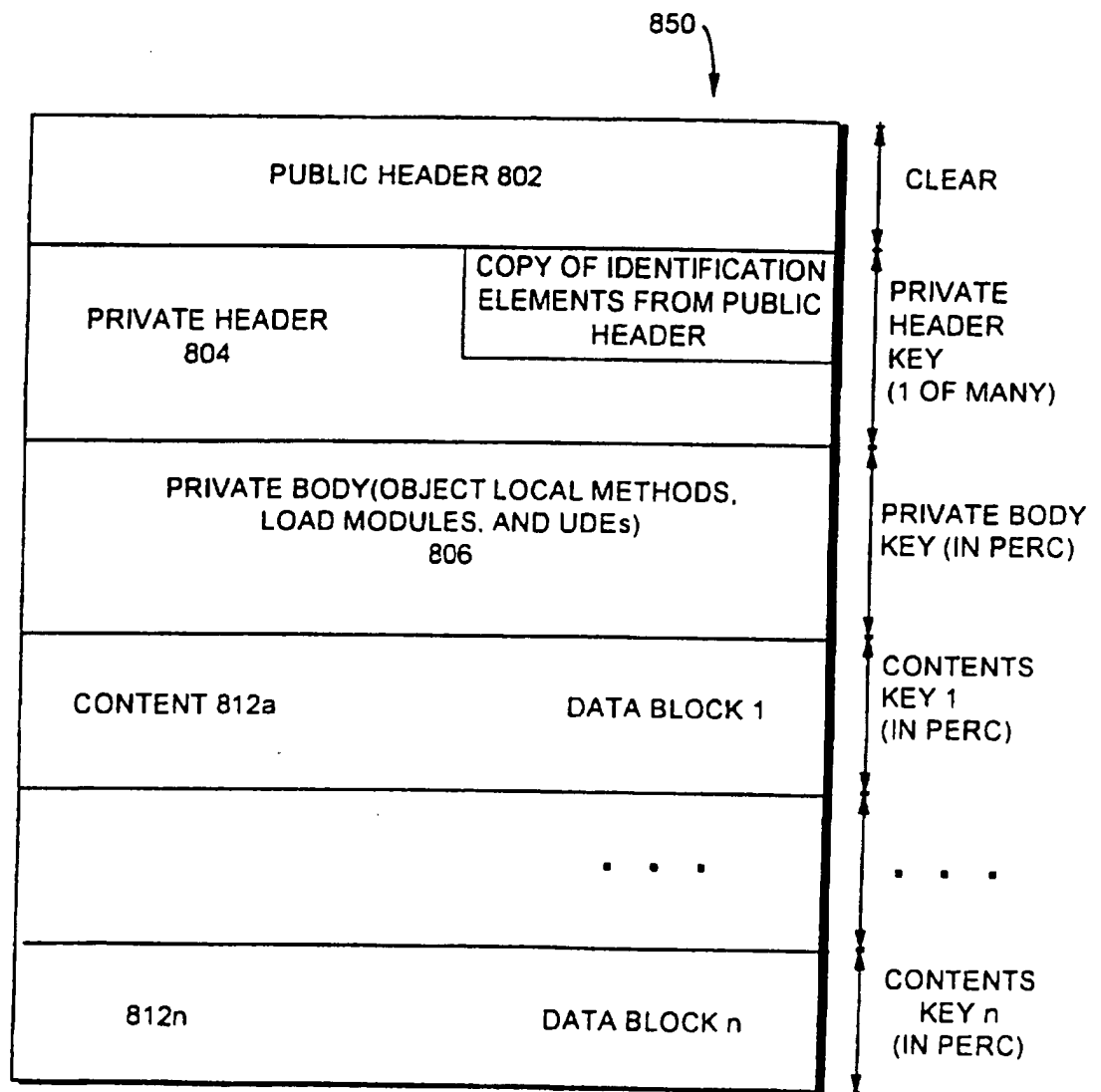


LOGICAL OBJECT

FIG. 17

SUBSTITUTE SHEET (RULE 26)

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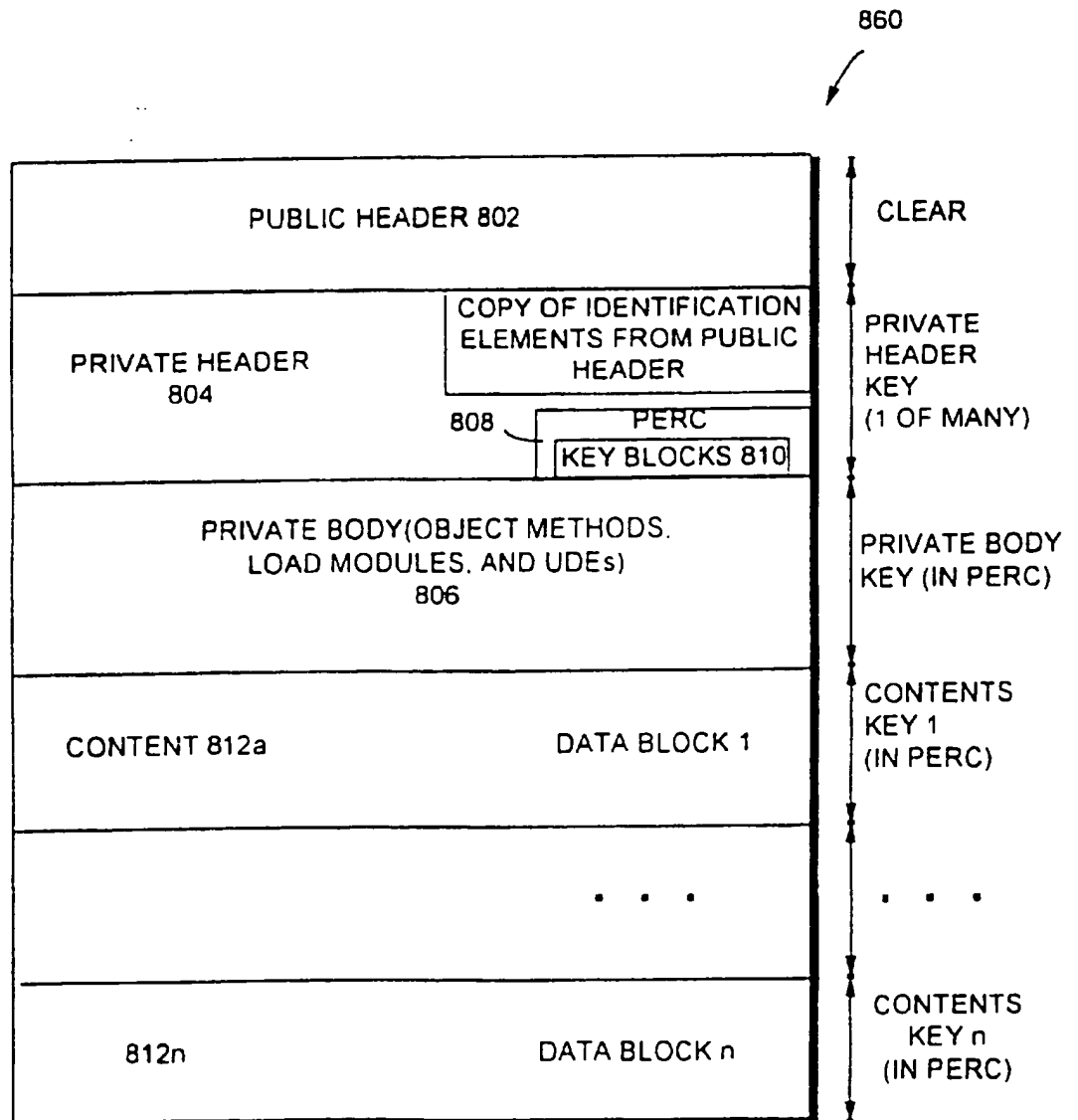


STATIONARY OBJECT

FIG. 18

SUBSTITUTE SHEET (RULE 26)

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TRAVELING OBJECT

FIG. 19

SUBSTITUTE SHEET (RULE 26)

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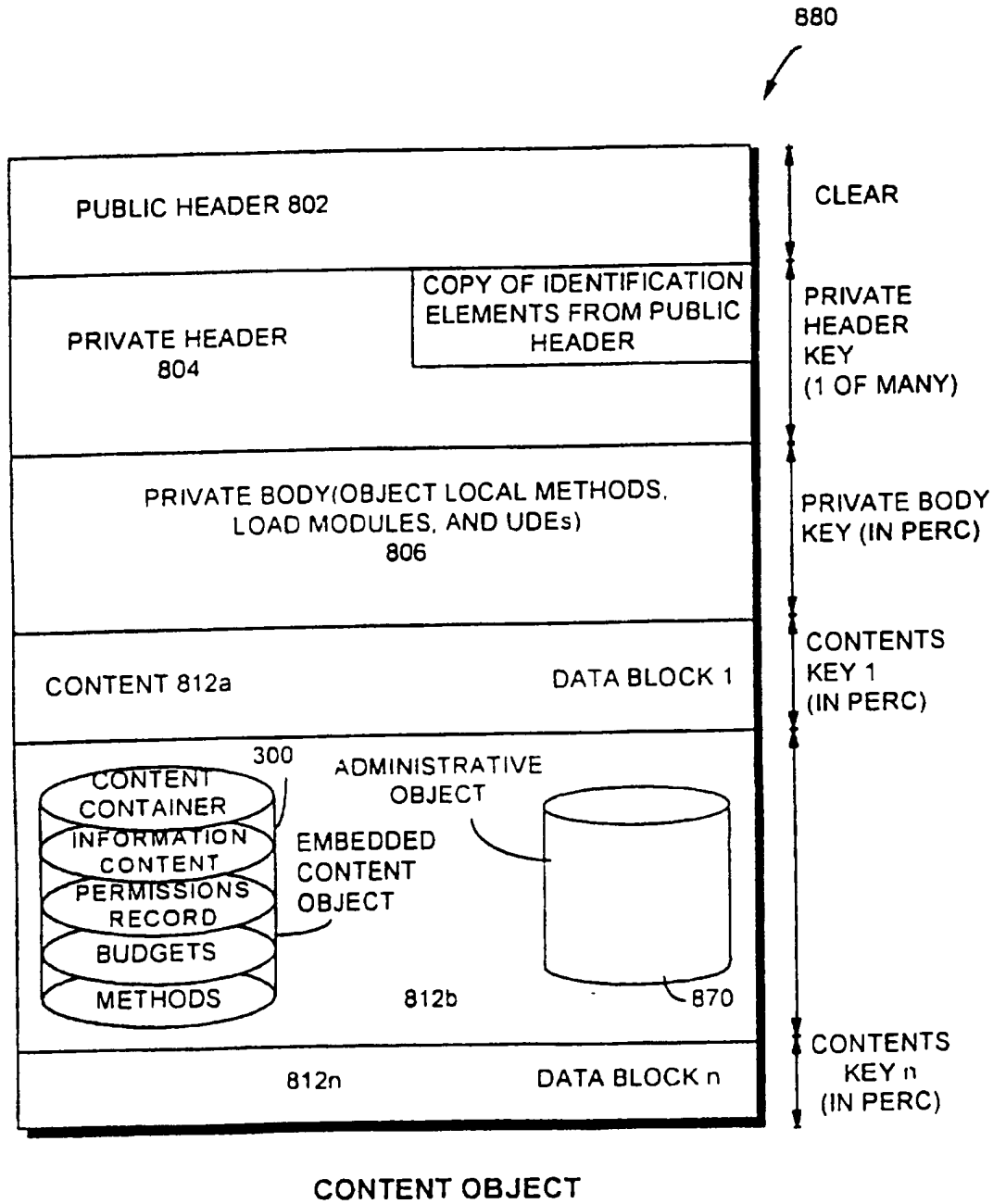
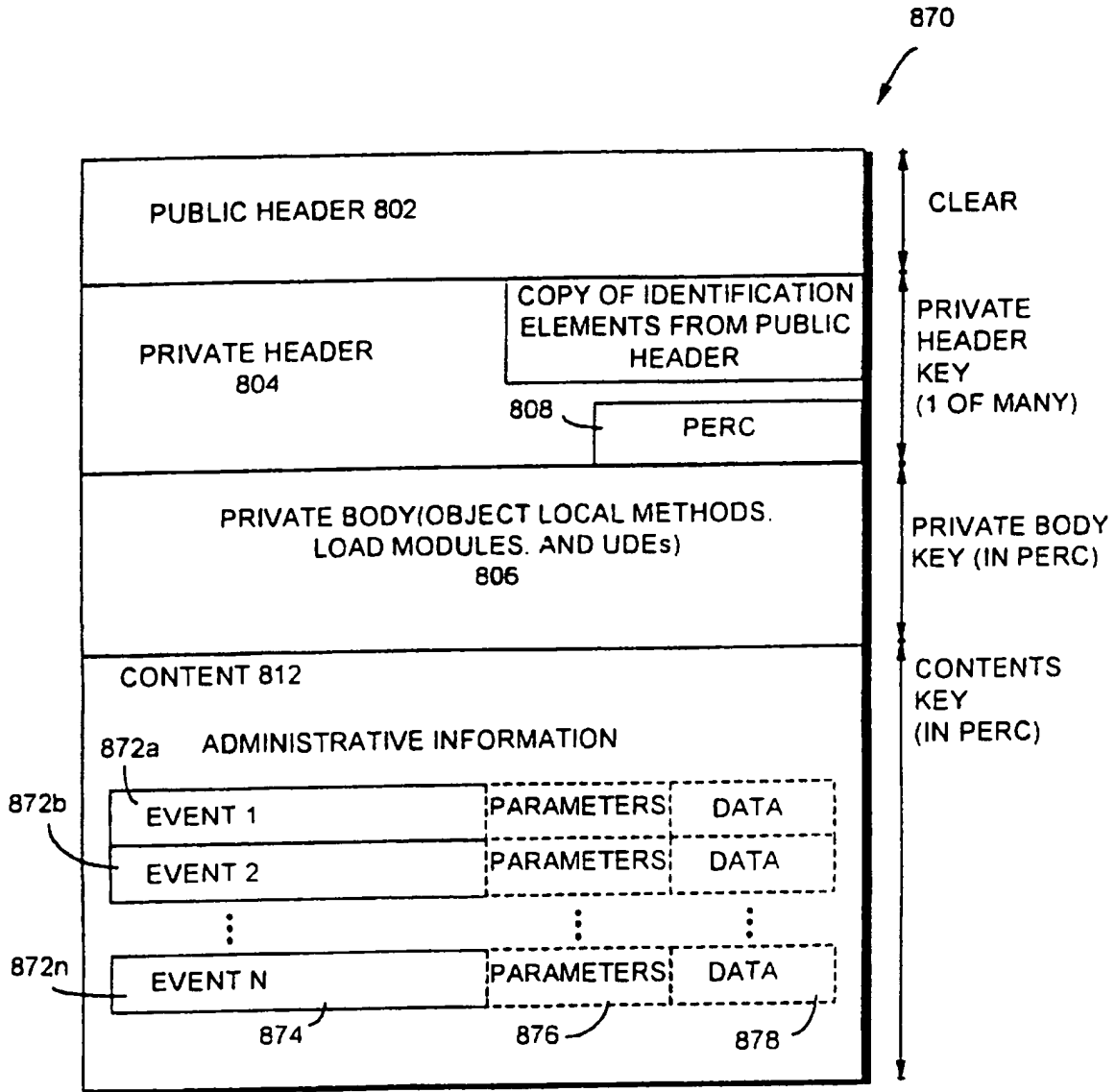


FIG. 20

SUBSTITUTE SHEET (RULE 26)

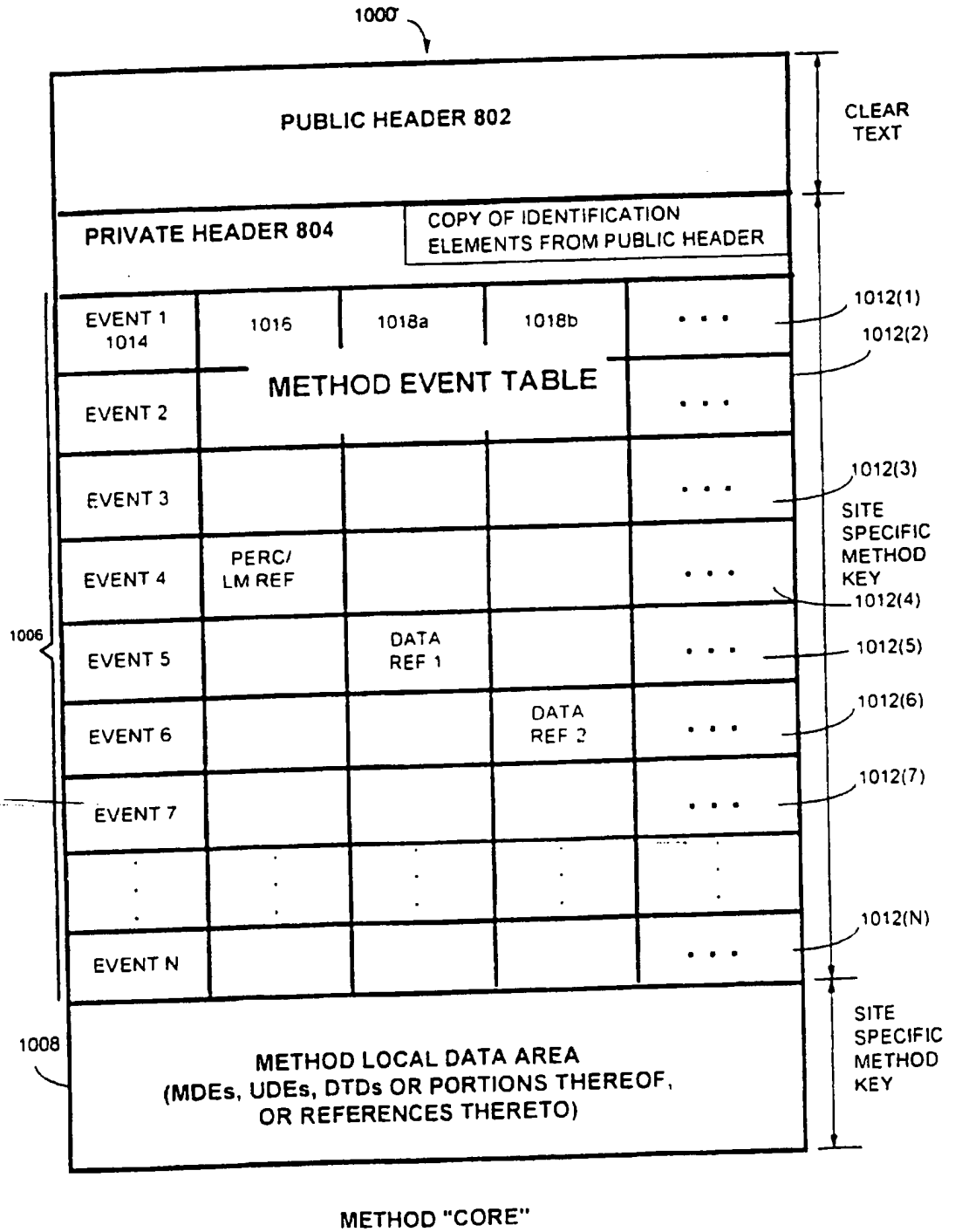


ADMINISTRATIVE OBJECT

FIG. 21

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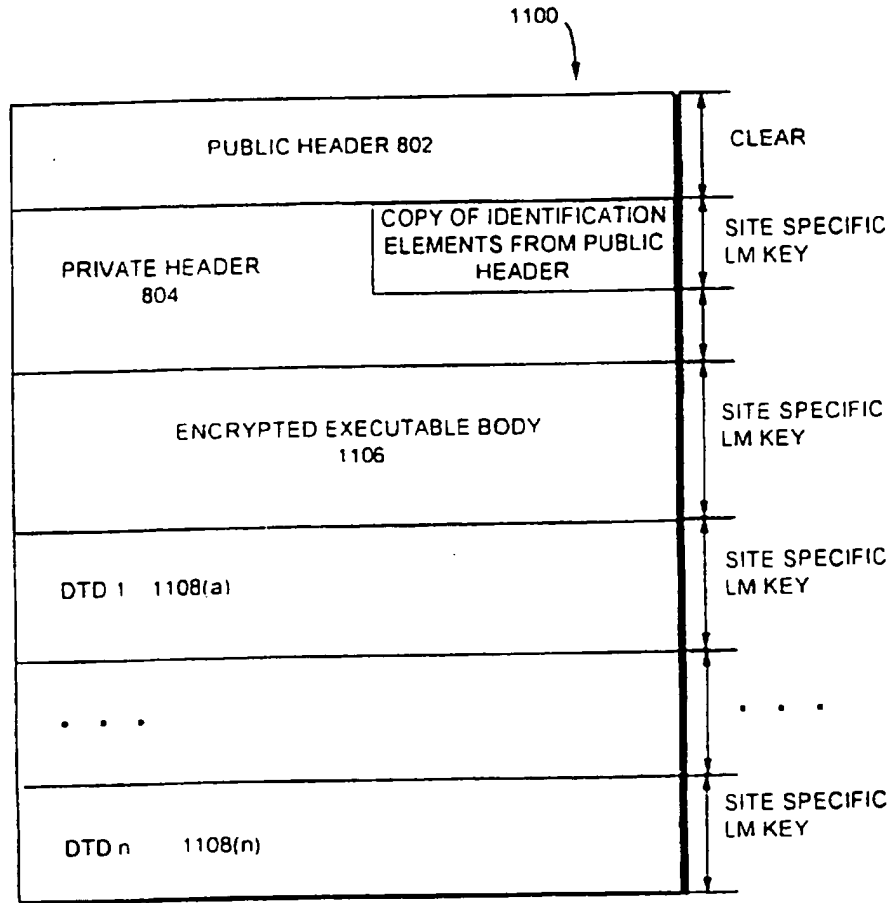
FIG. 22



SUBSTITUTE SHEET (RULE 26)

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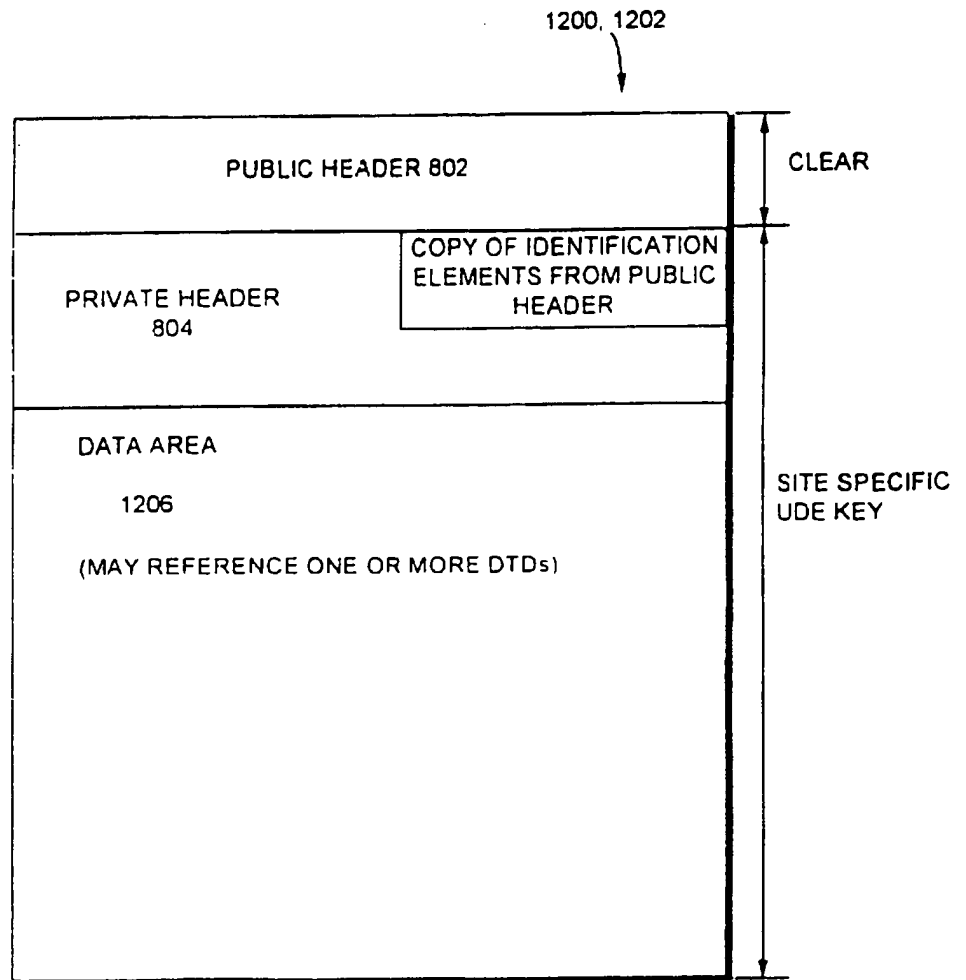
FIG. 23



LOAD MODULE

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FIG. 24



UDE (MDE)

SUBSTITUTE SHEET (RULE 26)

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FIG. 25A

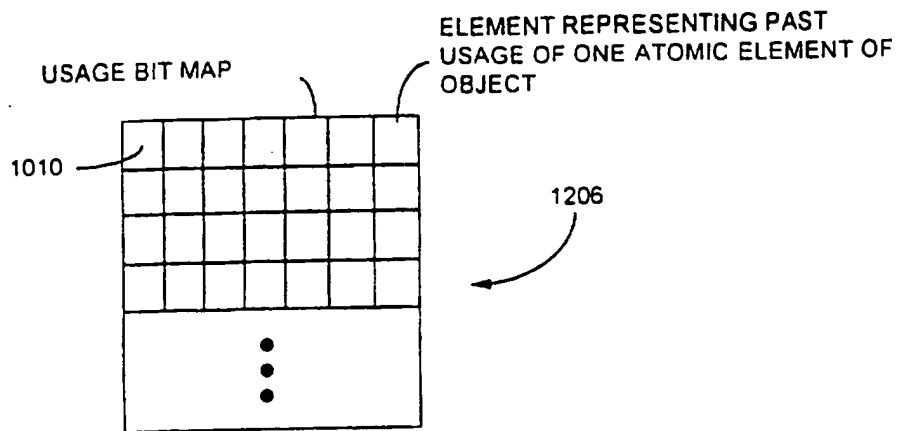
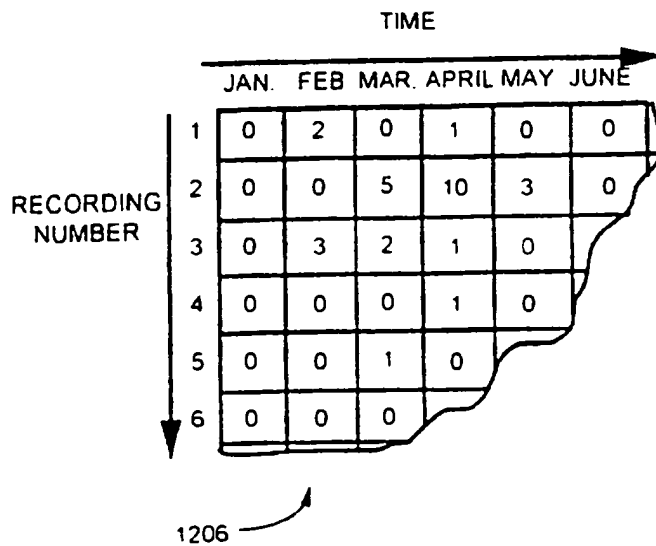


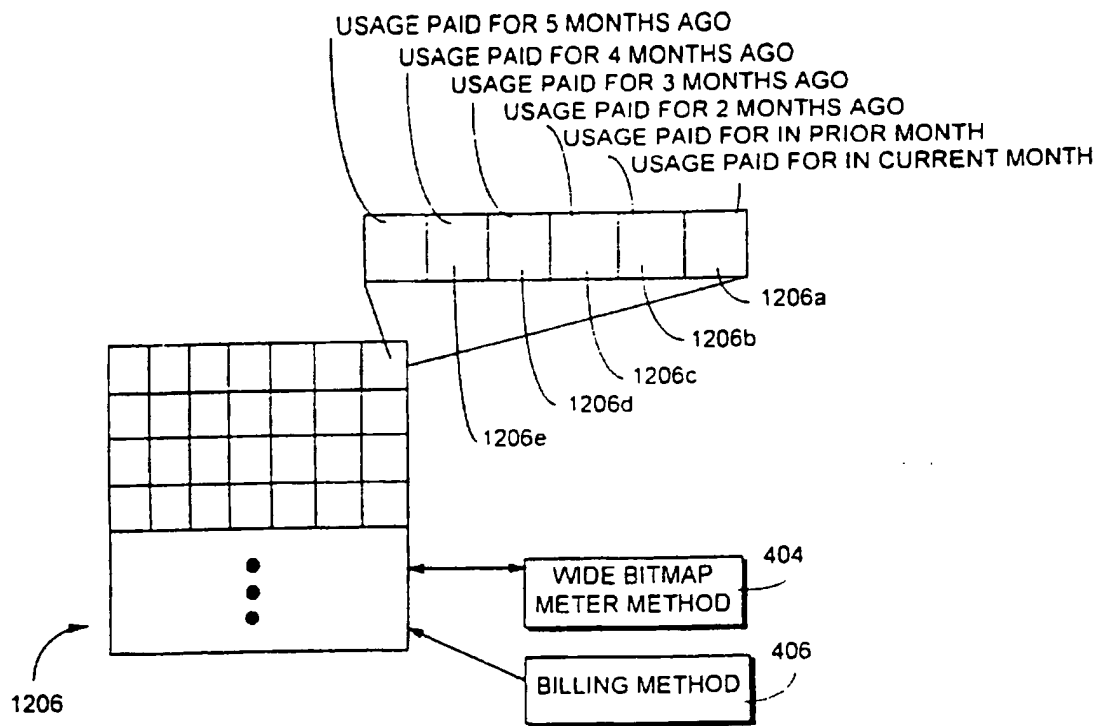
FIG. 25B



SUBSTITUTE SHEET (RULE 26)

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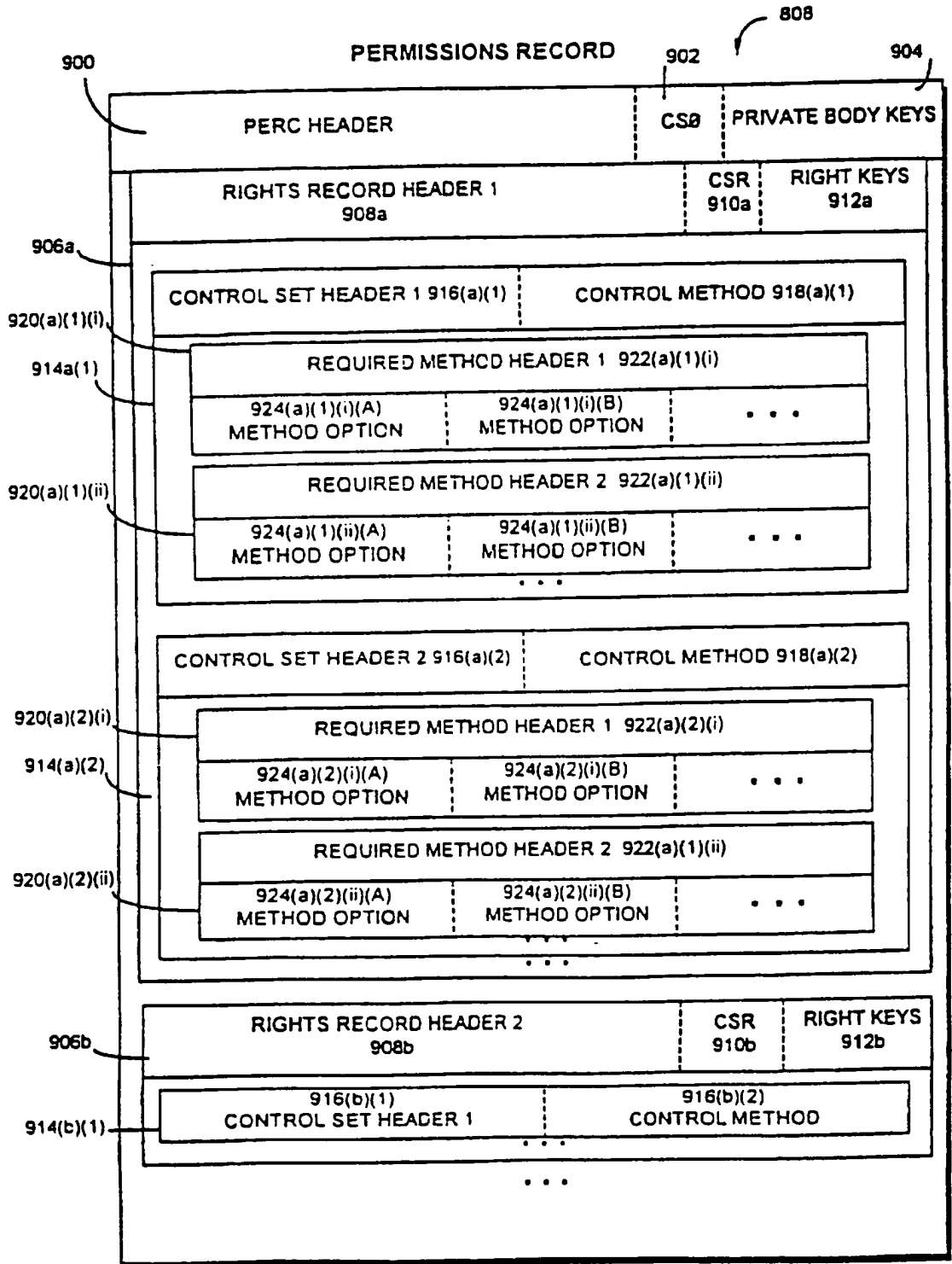
FIG. 25C



SUBSTITUTE SHEET (RULE 26)

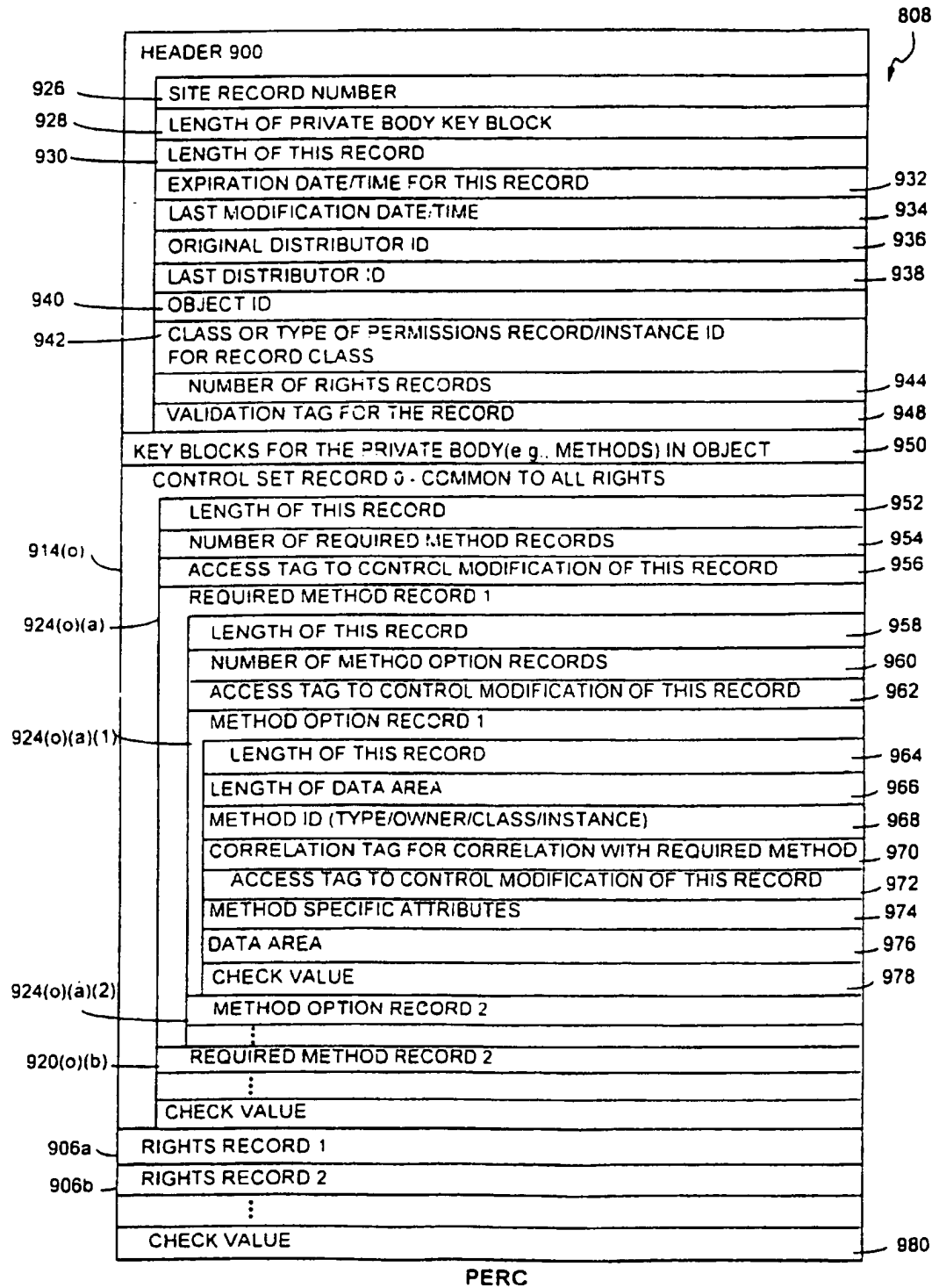
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FIG. 26



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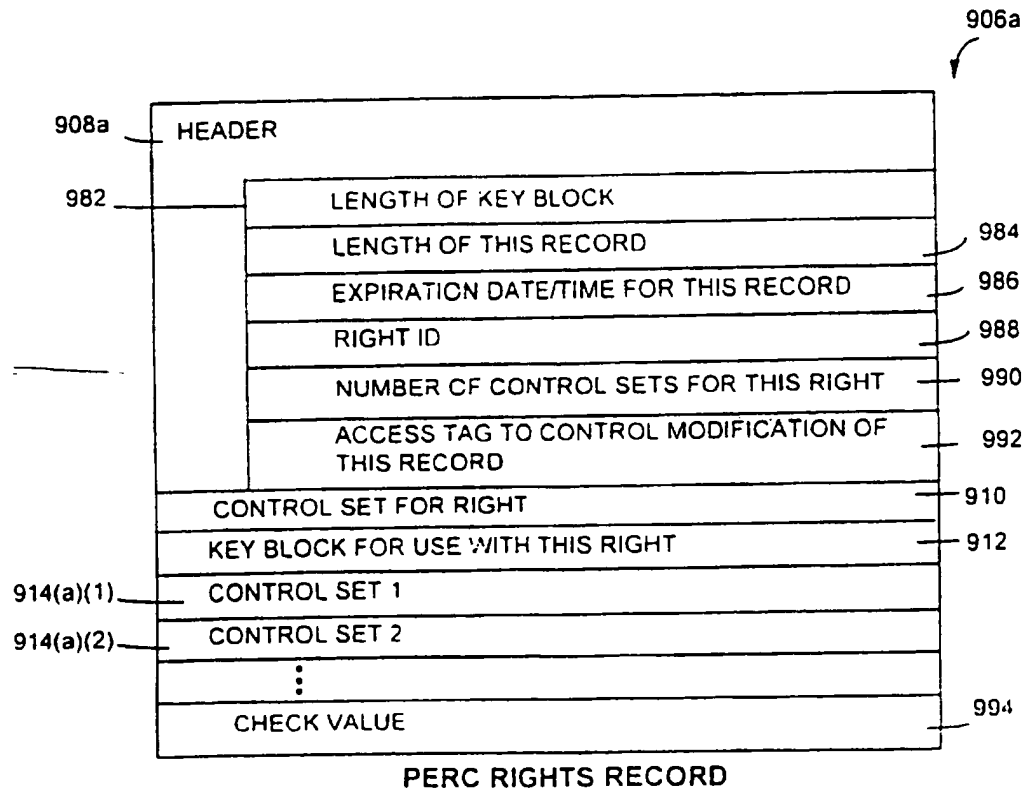
FIG. 26A



SUBSTITUTE SHEET (RULE 26)

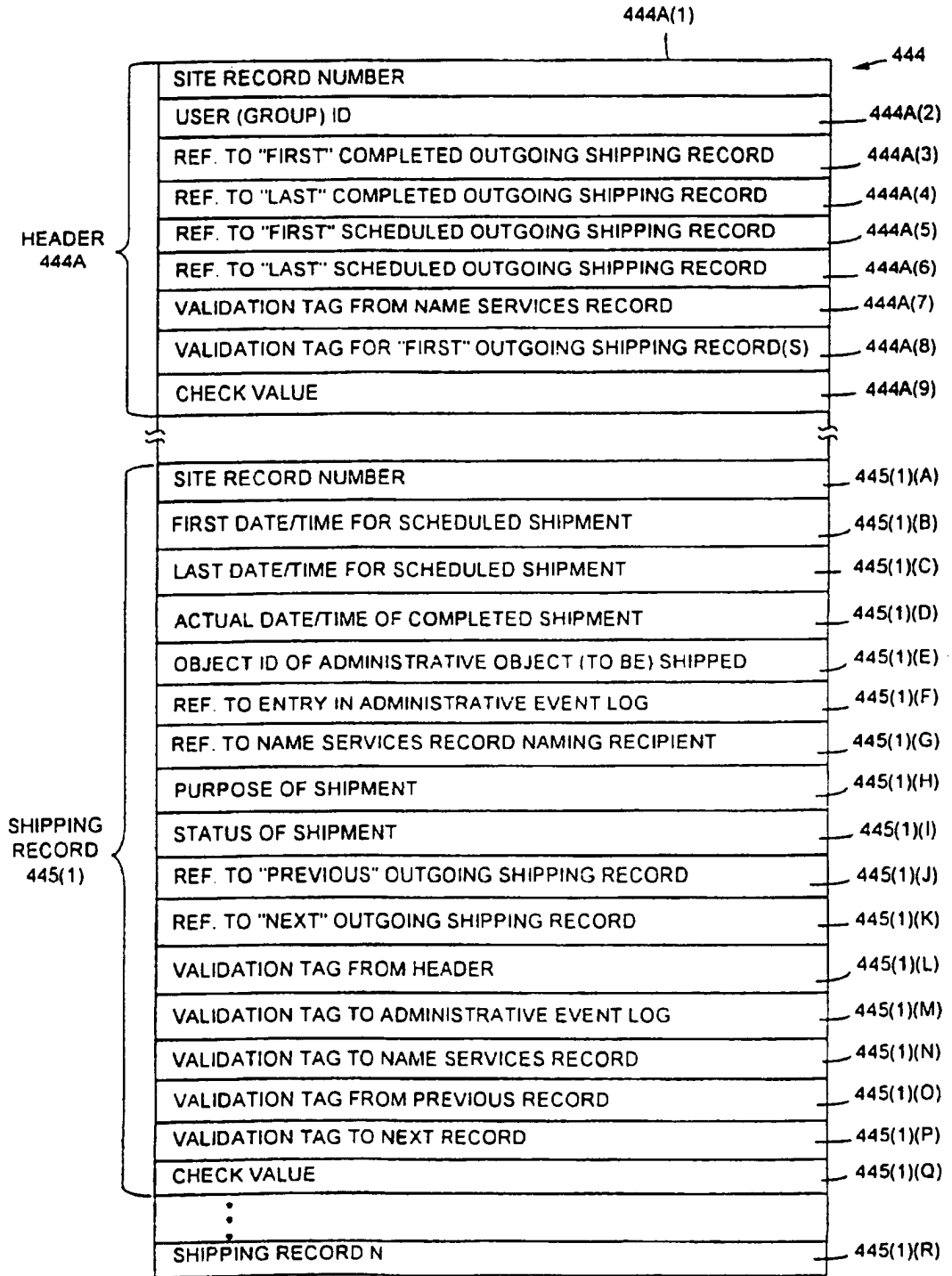
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FIG. 26B



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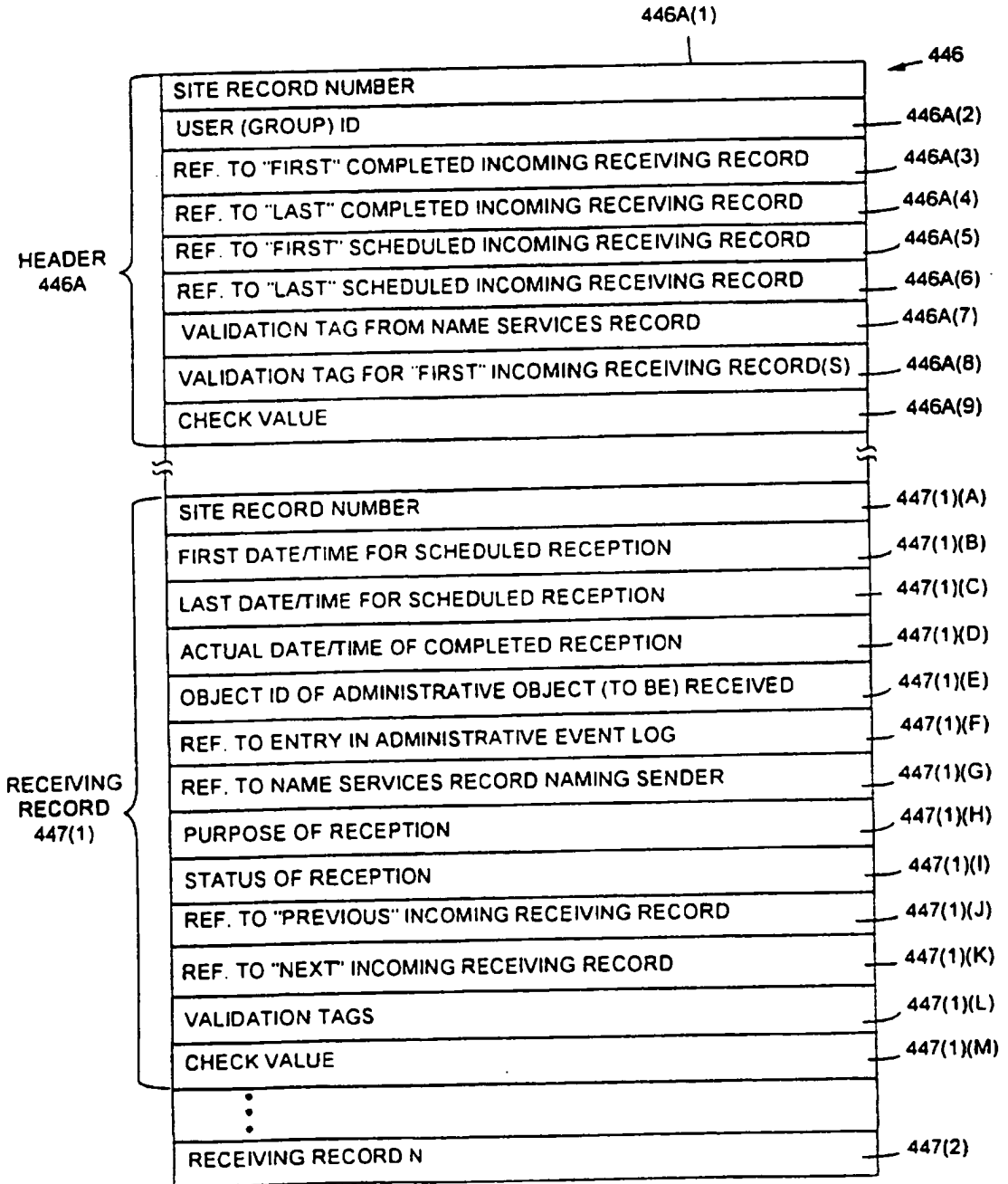
FIG. 27
SHIPPING TABLE



SUBSTITUTE SHEET (RULE 26)

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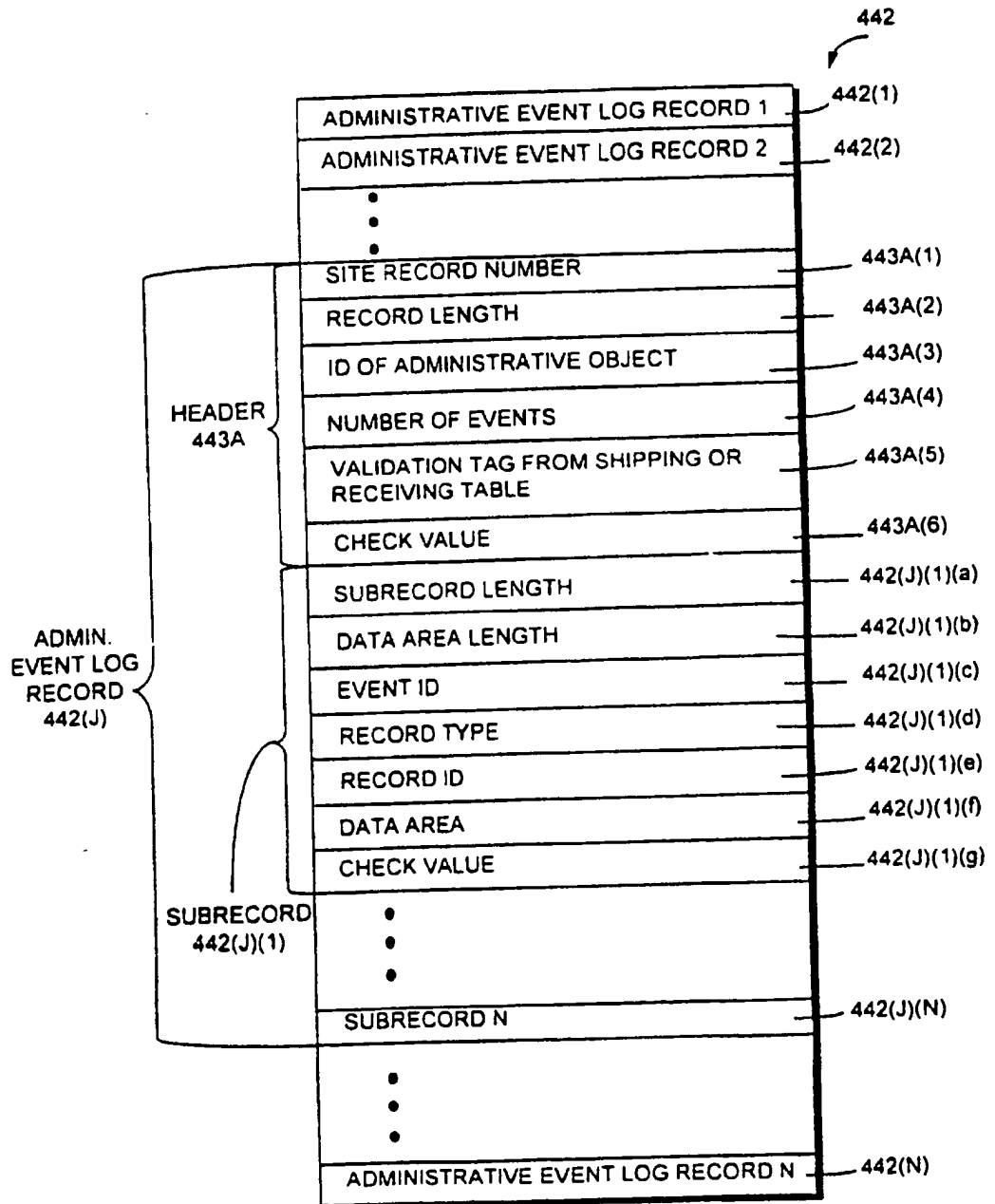
FIG. 28
RECEIVING TABLE



SUBSTITUTE SHEET (RULE 26)

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FIG. 29
ADMINISTRATIVE EVENT LOG



SUBSTITUTE SHEET (RULE 26)

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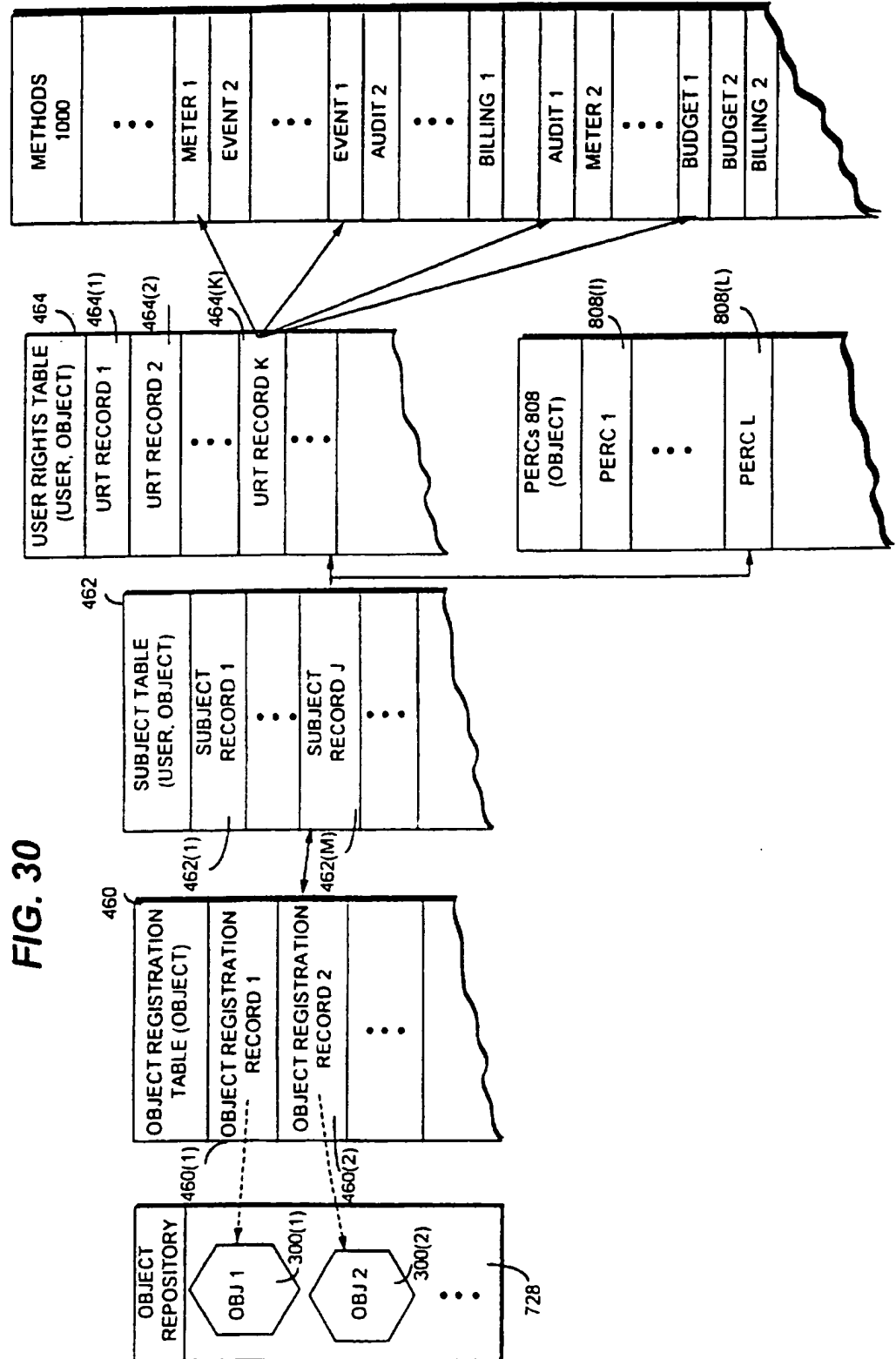


FIG. 30

SUBSTITUTE SHEET (RULE 26)

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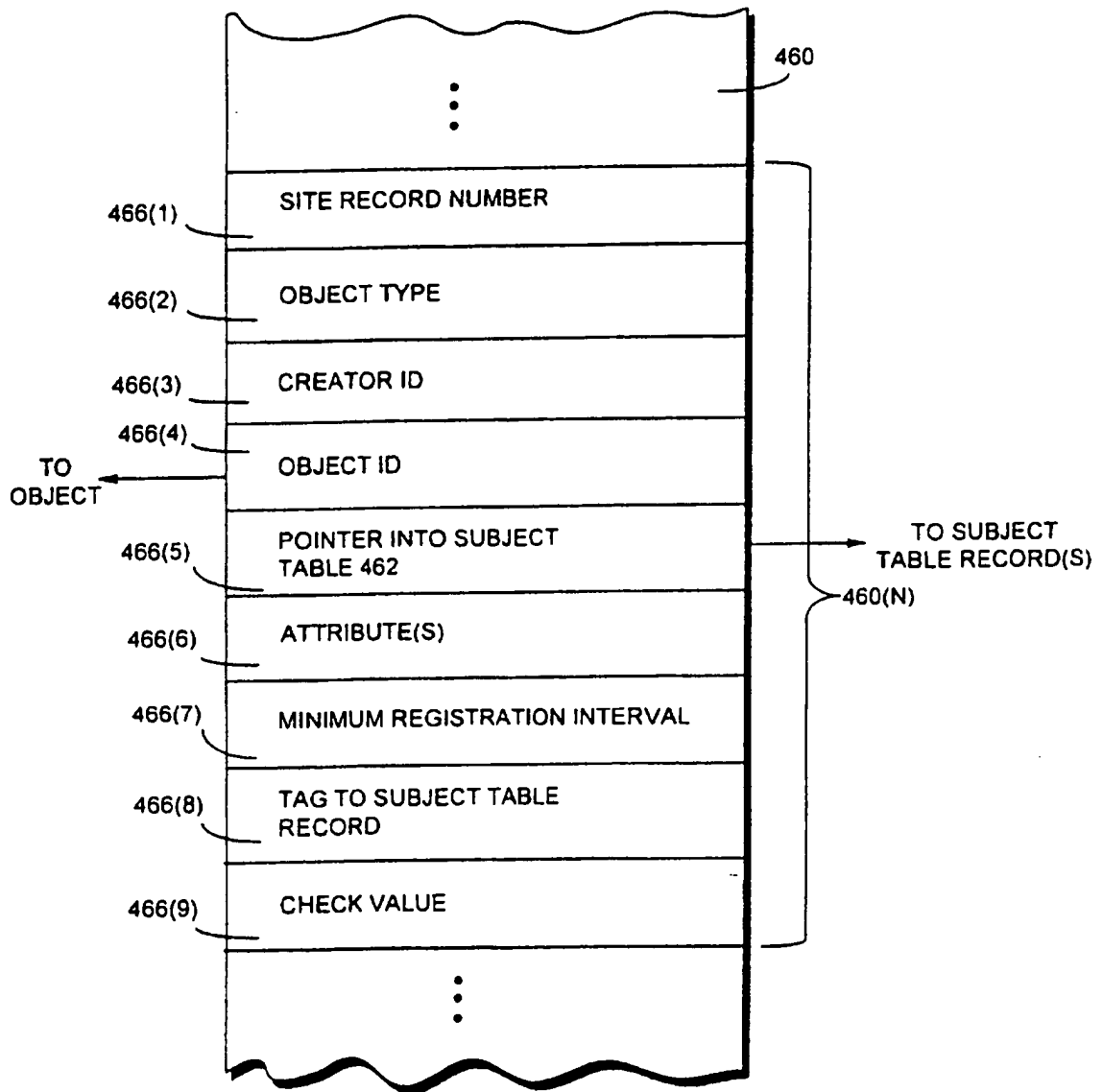


FIG. 31
OBJECT REGISTRATION TABLE
SUBSTITUTE SHEET (RULE 26)

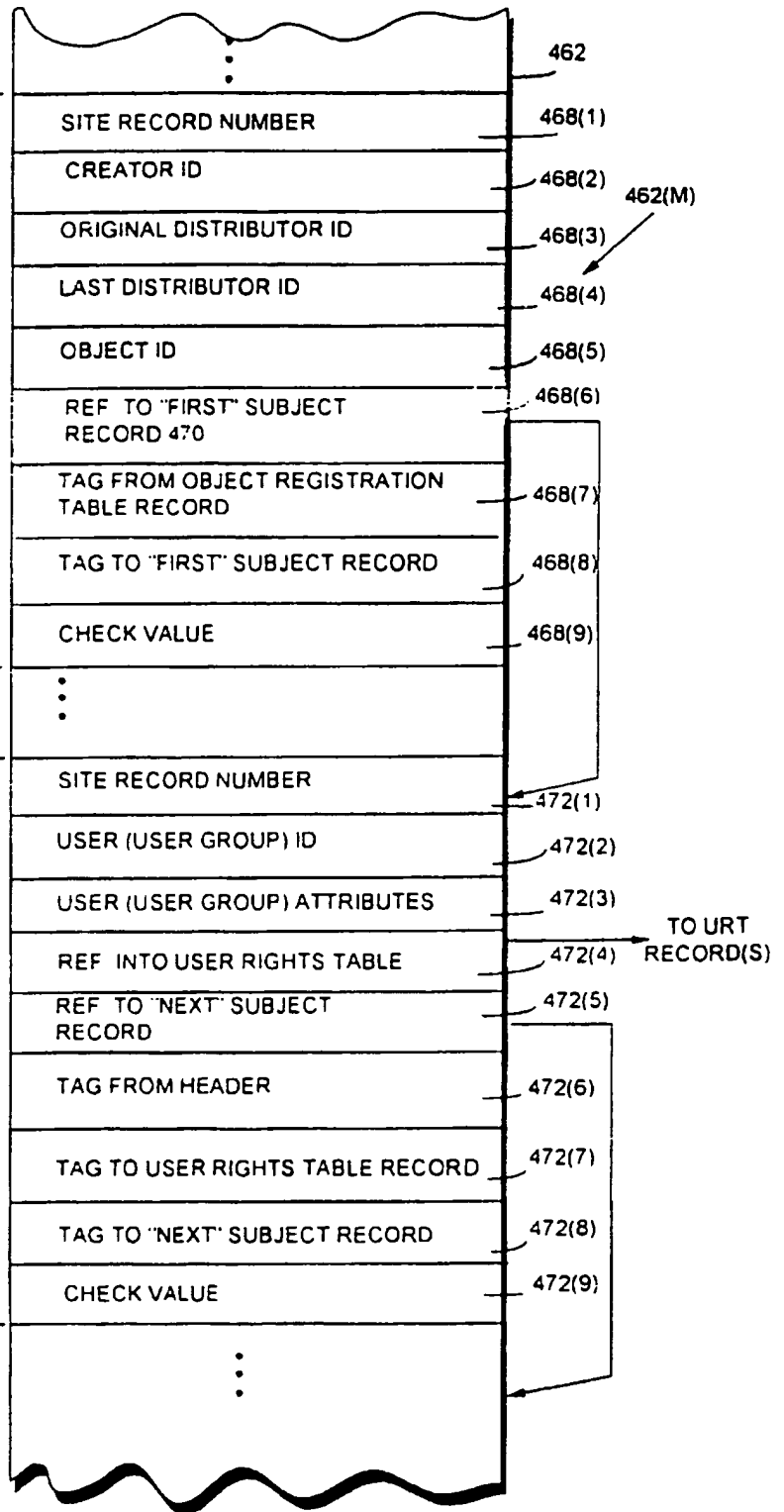
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FIG. 32

SUBJECT
TABLE

"HEADER"
468

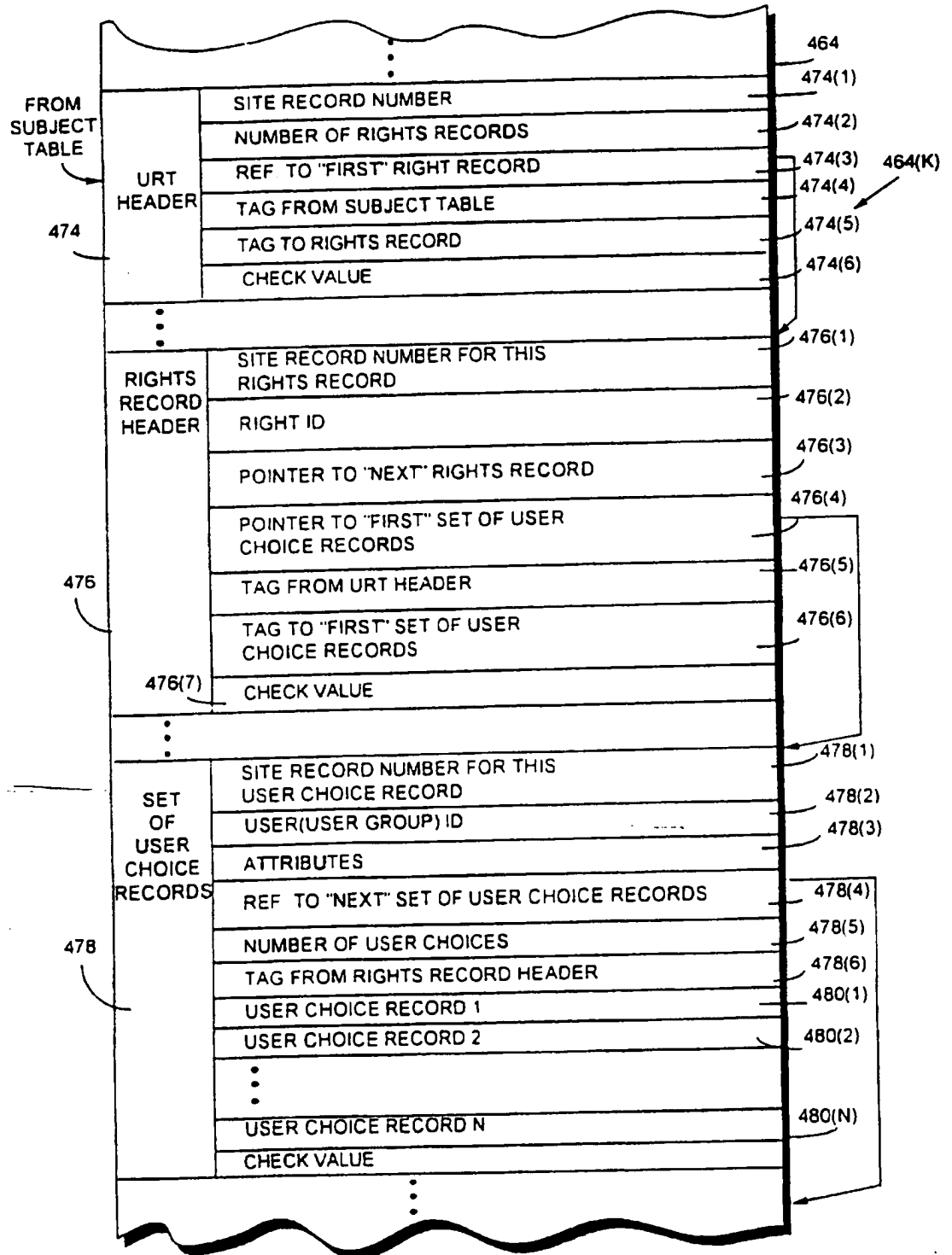
SUBJECT
RECORD
470(1)



SUBSTITUTE SHEET (RULE 26)

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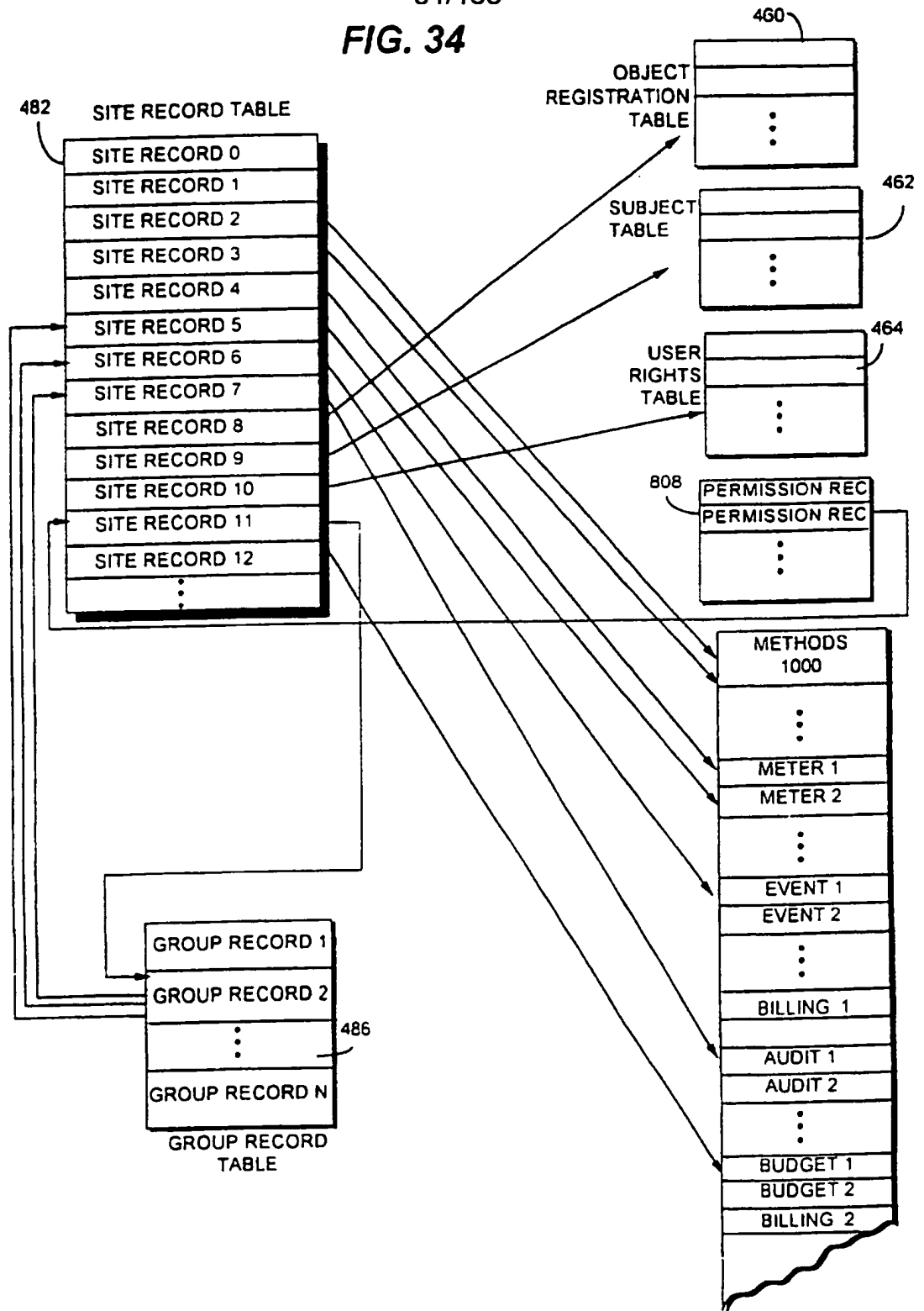
FIG. 33 USER RIGHTS TABLE



SUBSTITUTE SHEET (RULE 26)

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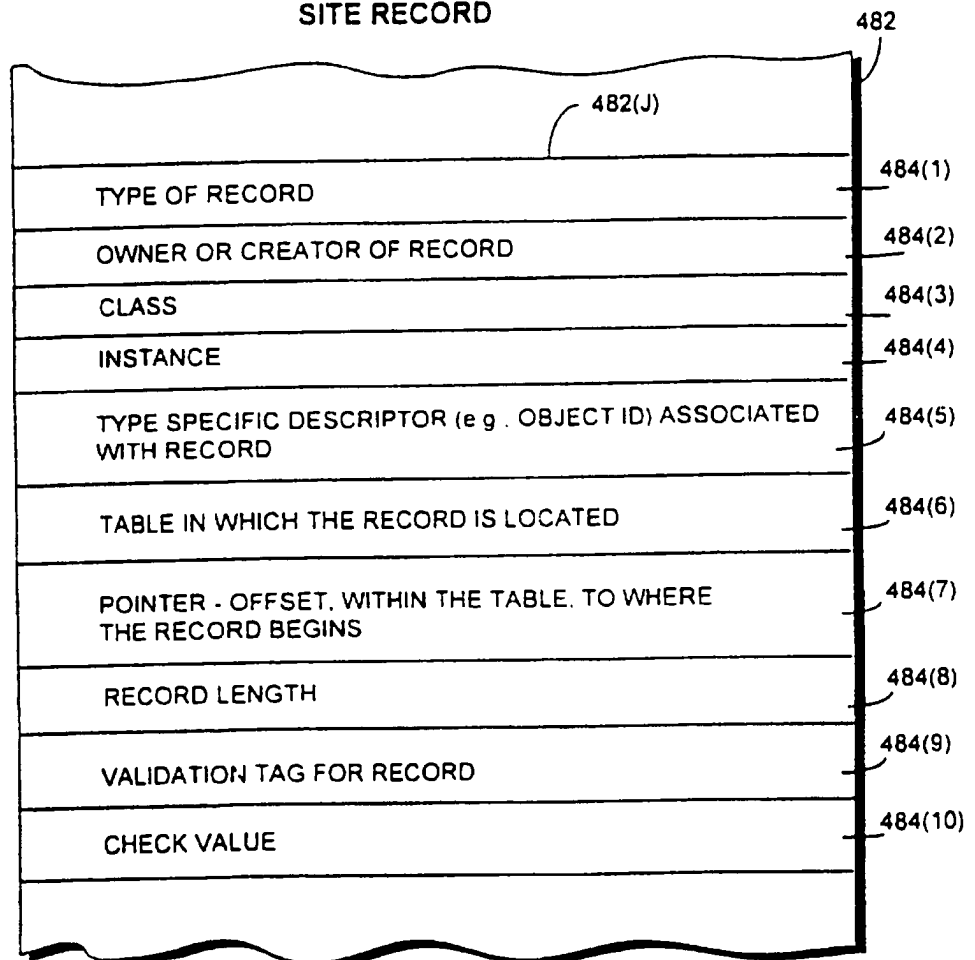
FIG. 34



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FIG. 34A

SITE RECORD

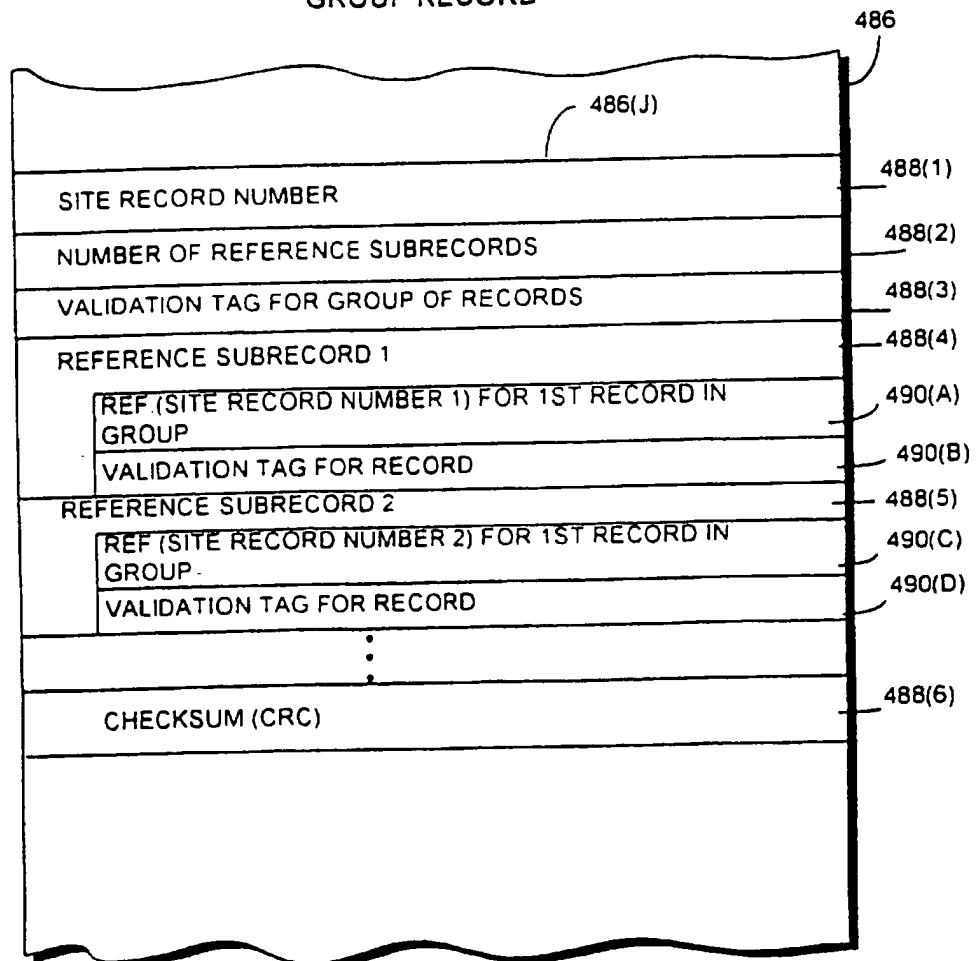


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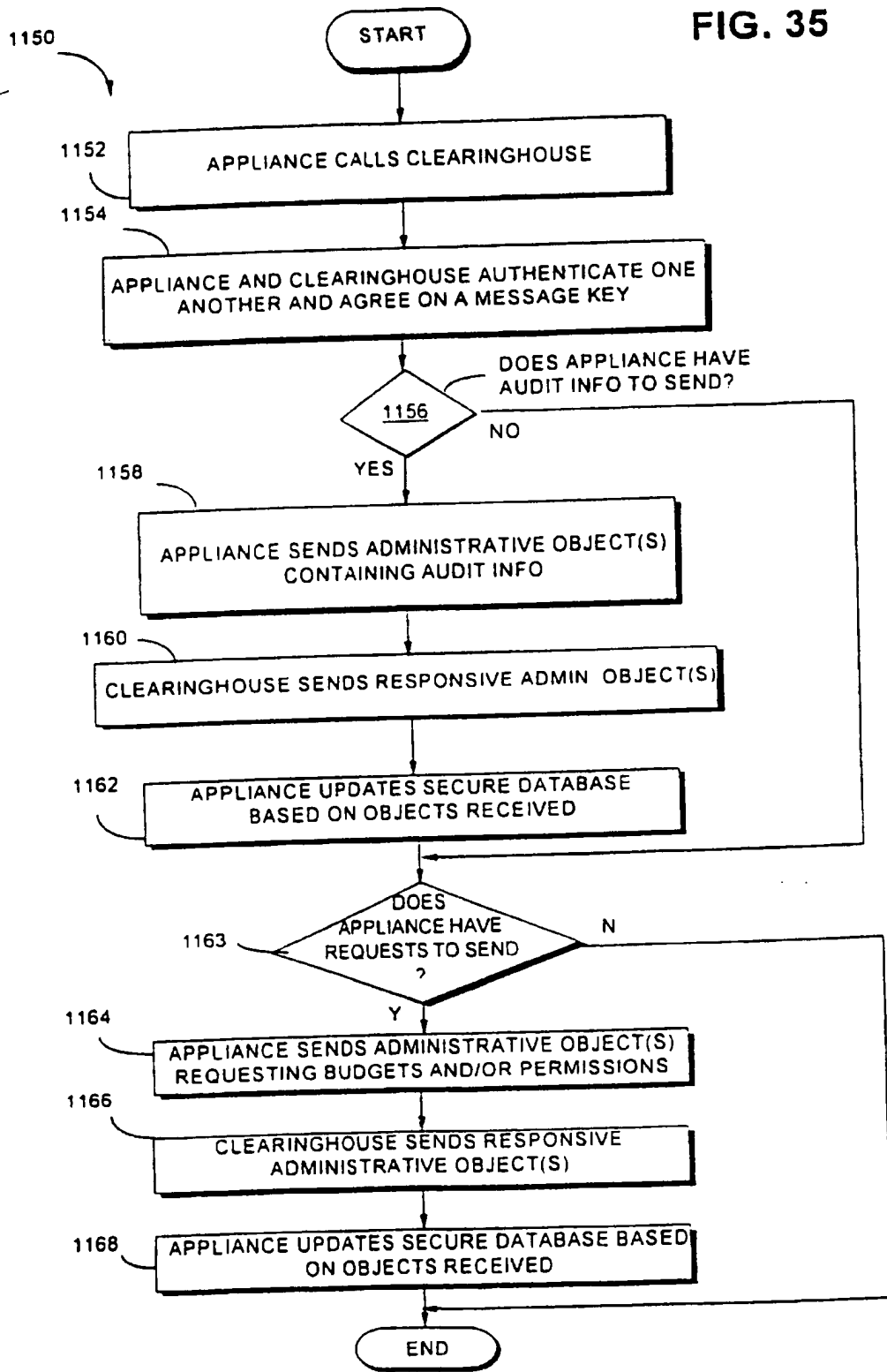
FIG. 34B

GROUP RECORD



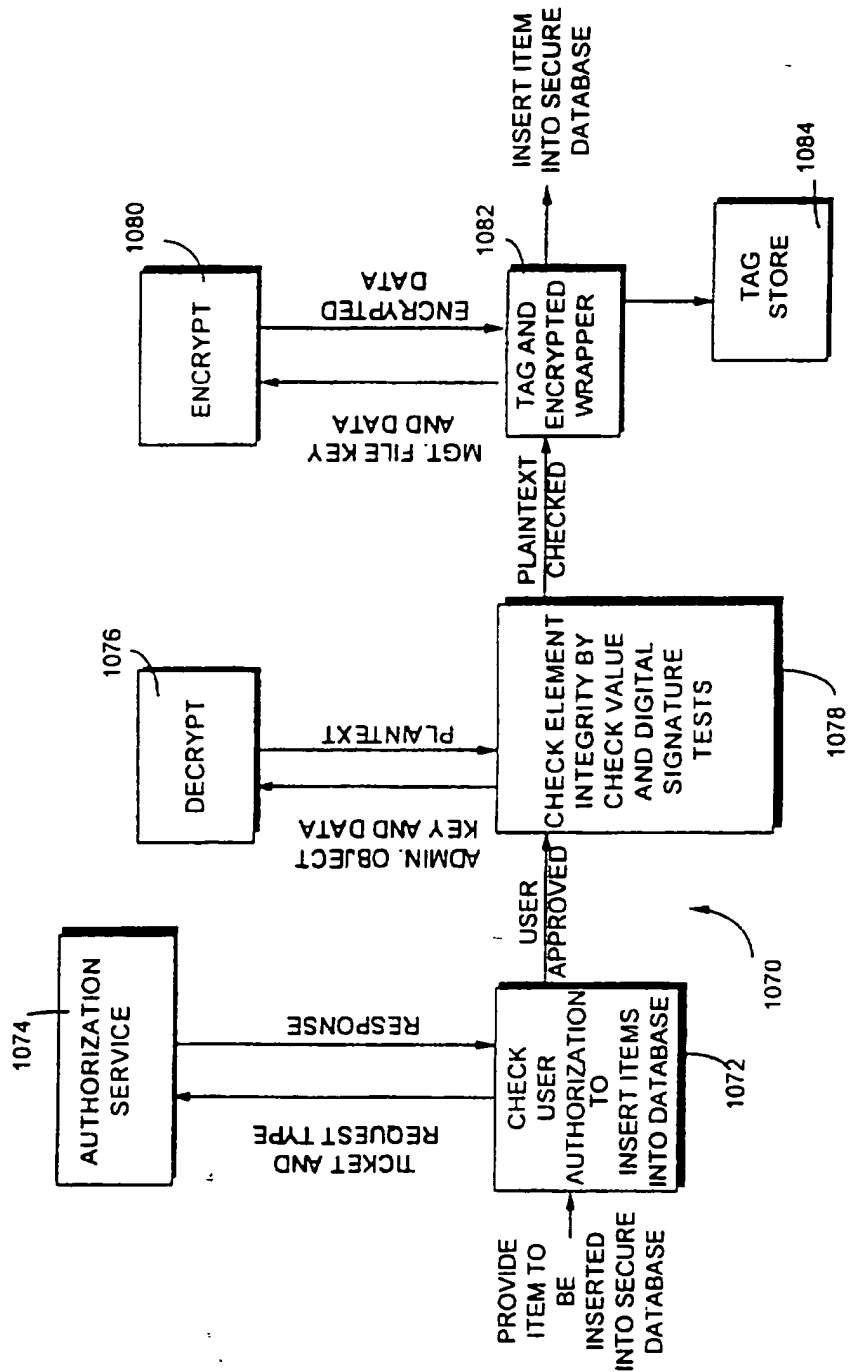
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FIG. 35



SUBSTITUTE SHEET (RULE 26)

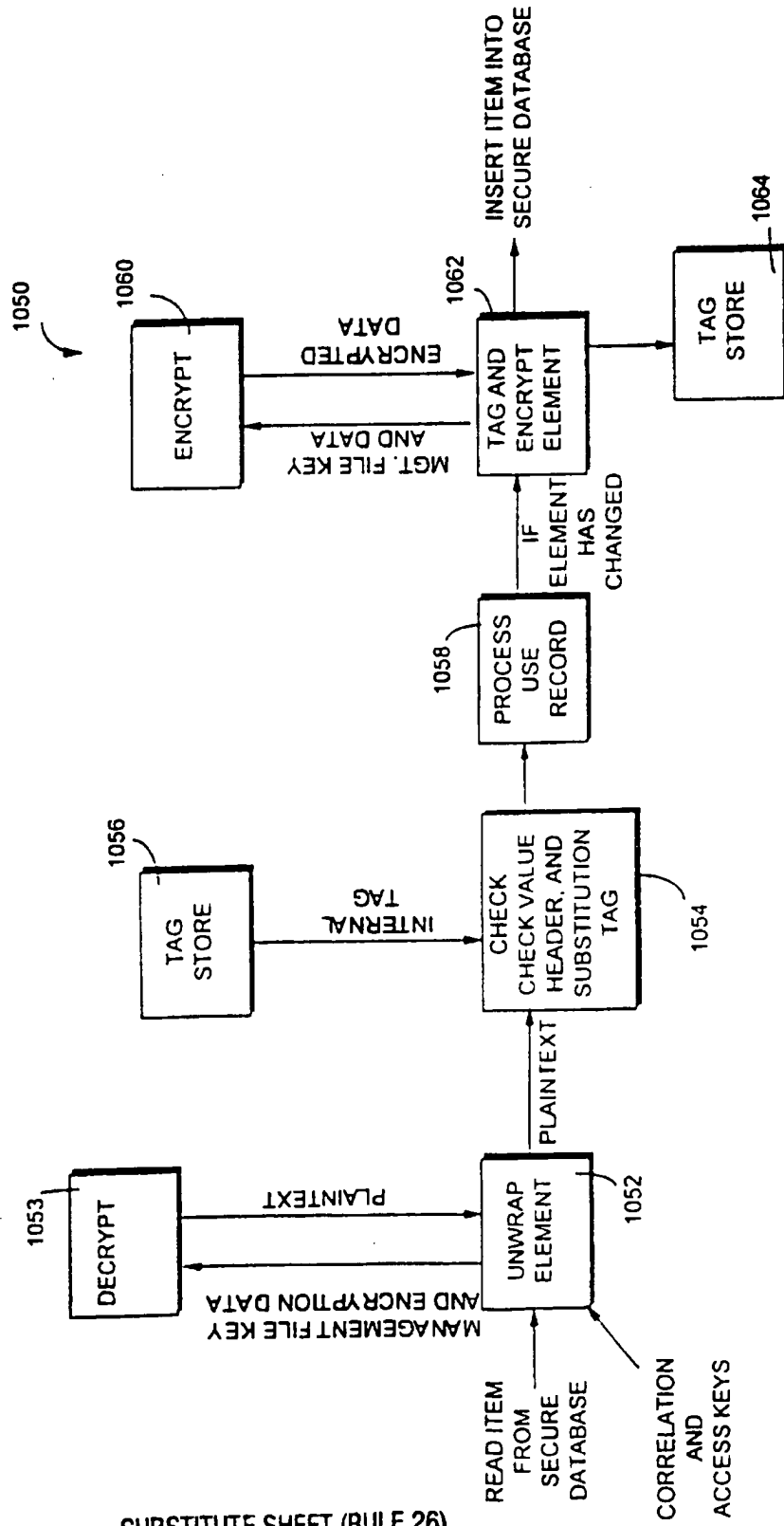
FIG. 36



SUBSTITUTE SHEET (RULE 26)

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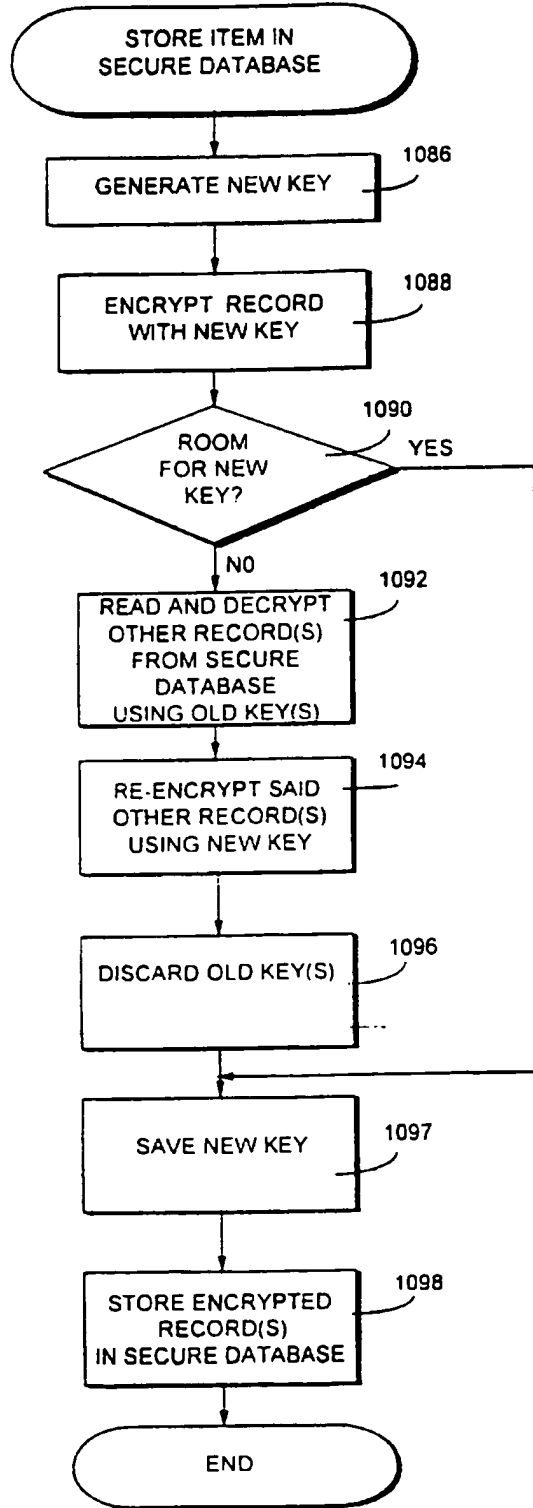
FIG. 37



SUBSTITUTE SHEET (RULE 26)

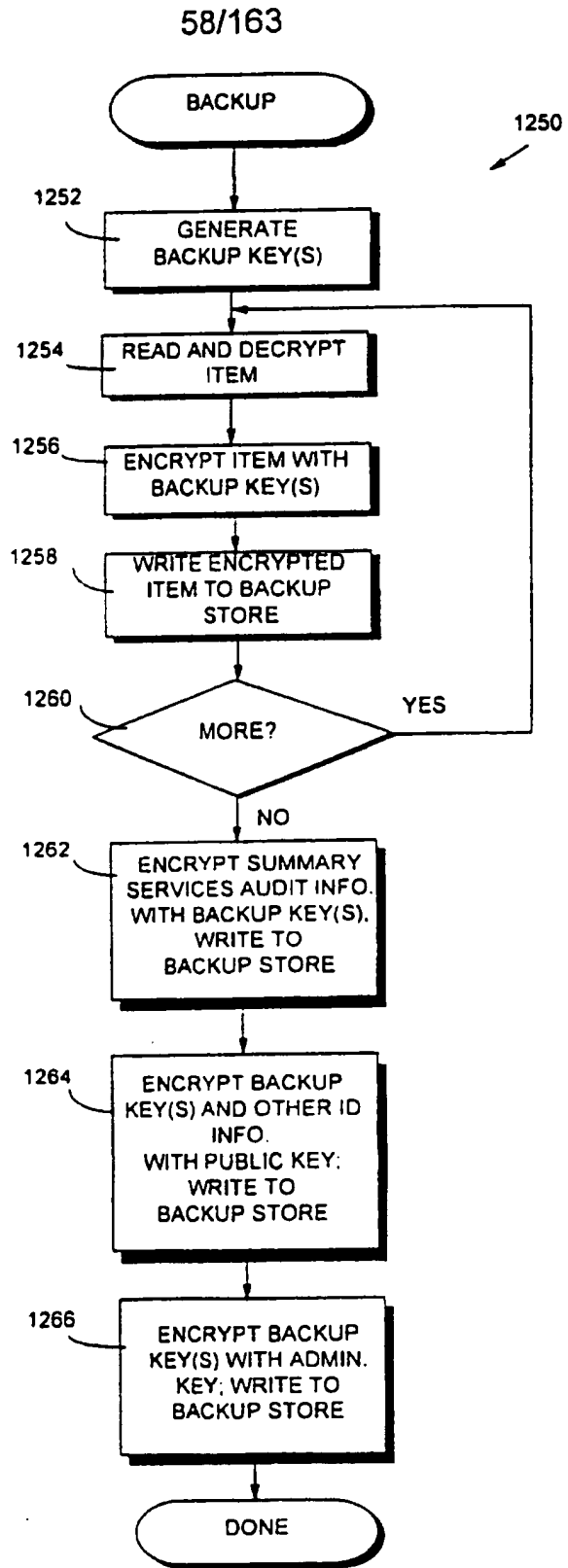
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FIG. 38



SUBSTITUTE SHEET (RULE 26)

FIG. 39
BACKUP

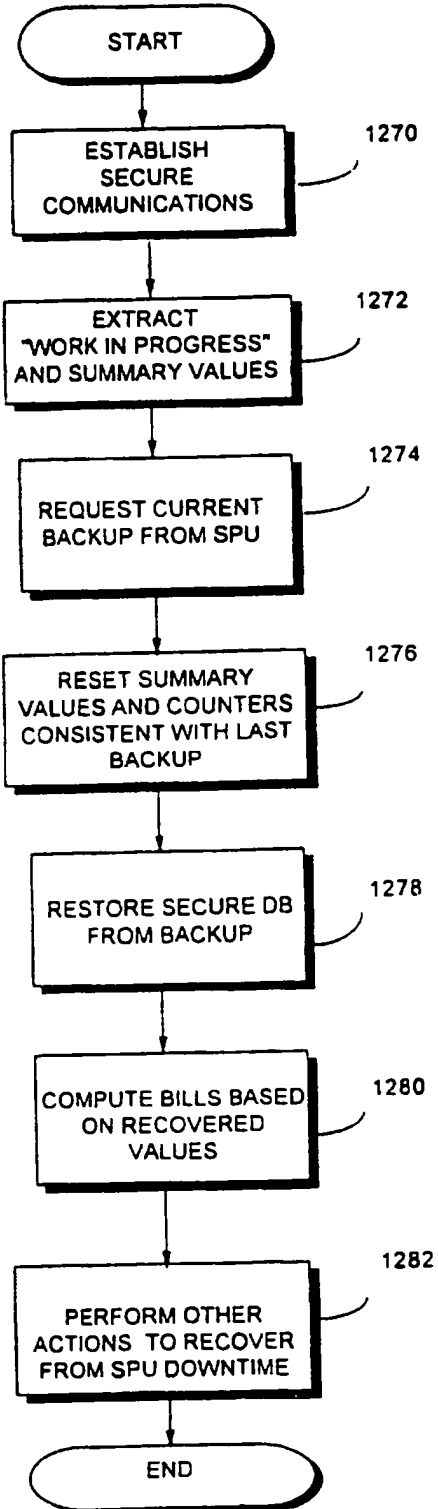


SUBSTITUTE SHEET (RULE 26)

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FIG. 40
RECOVER SECURE DATABASE

1268
↘



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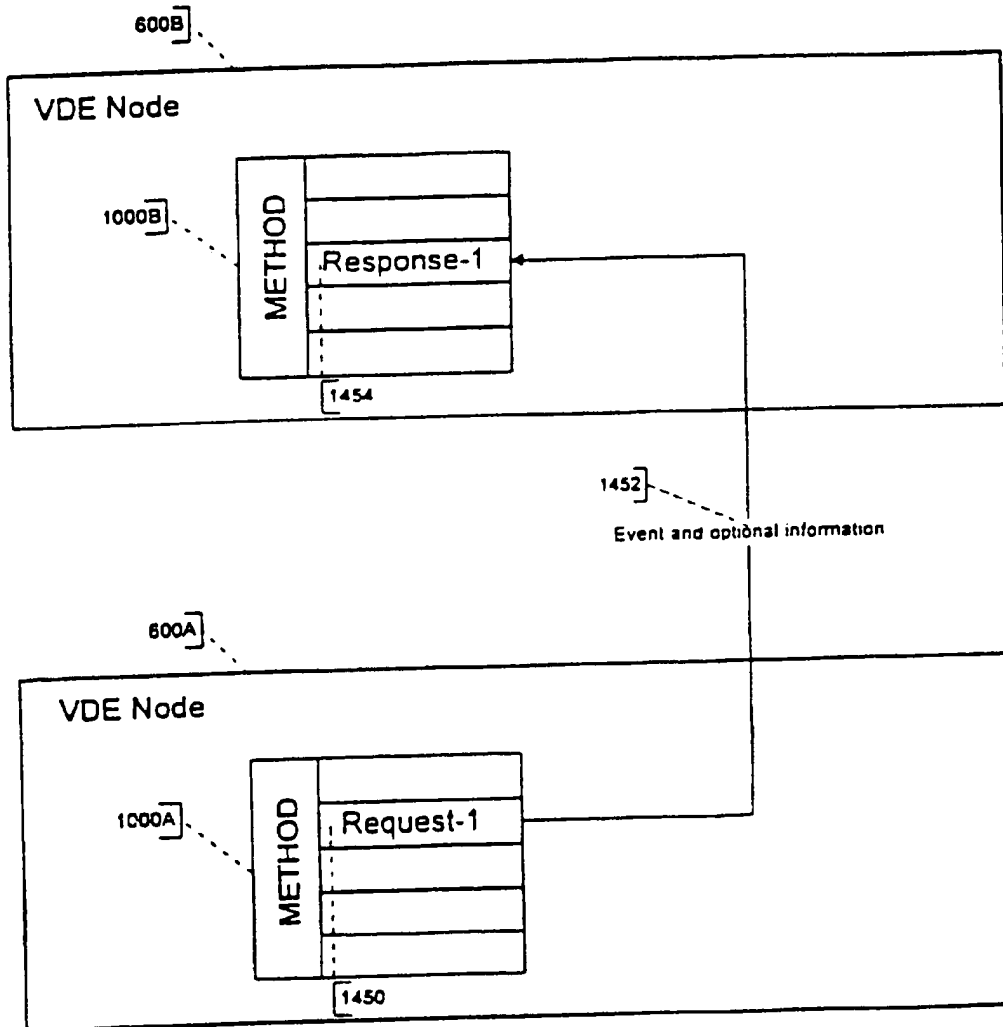


Figure 41a

SUBSTITUTE SHEET (RULE 26)

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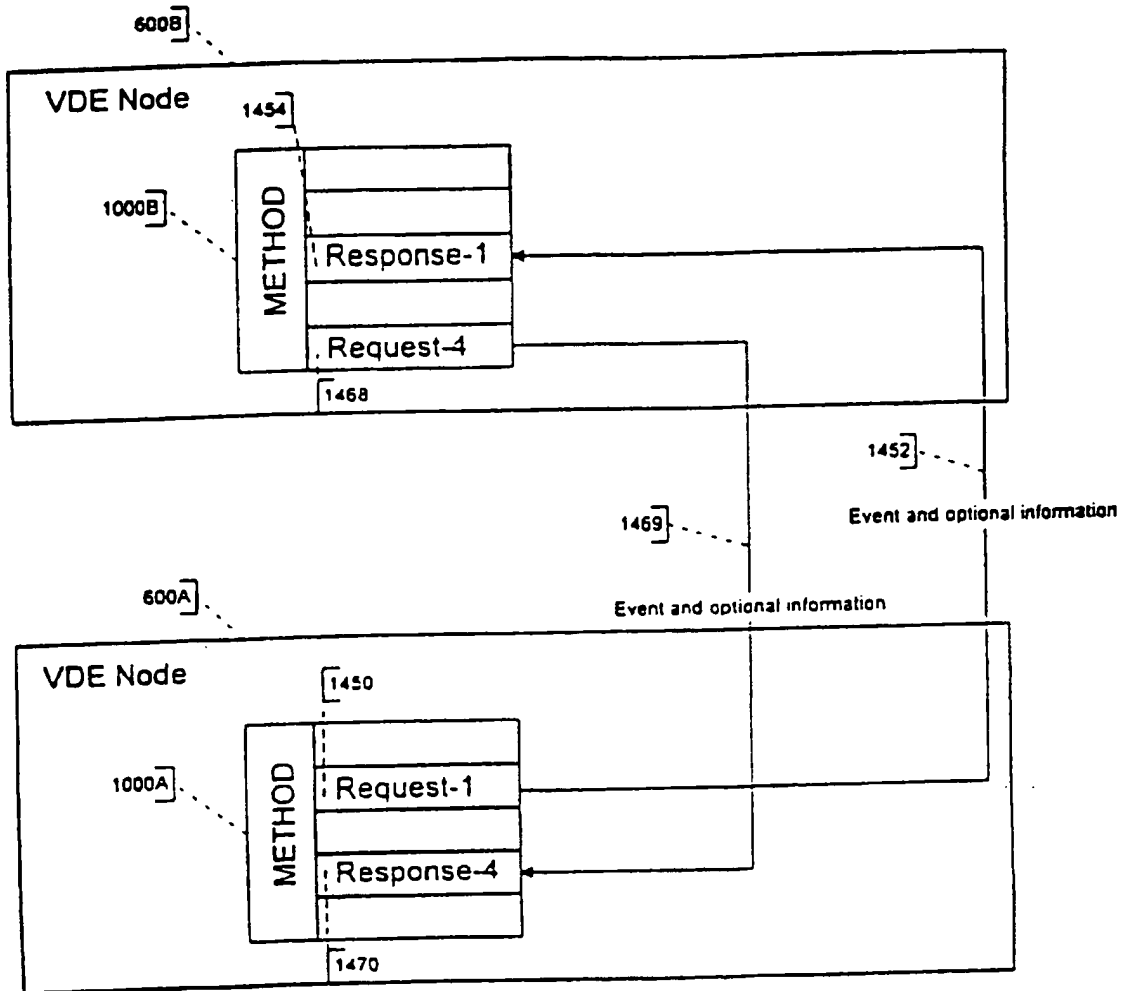


Figure 41b

SUBSTITUTE SHEET (RULE 26)

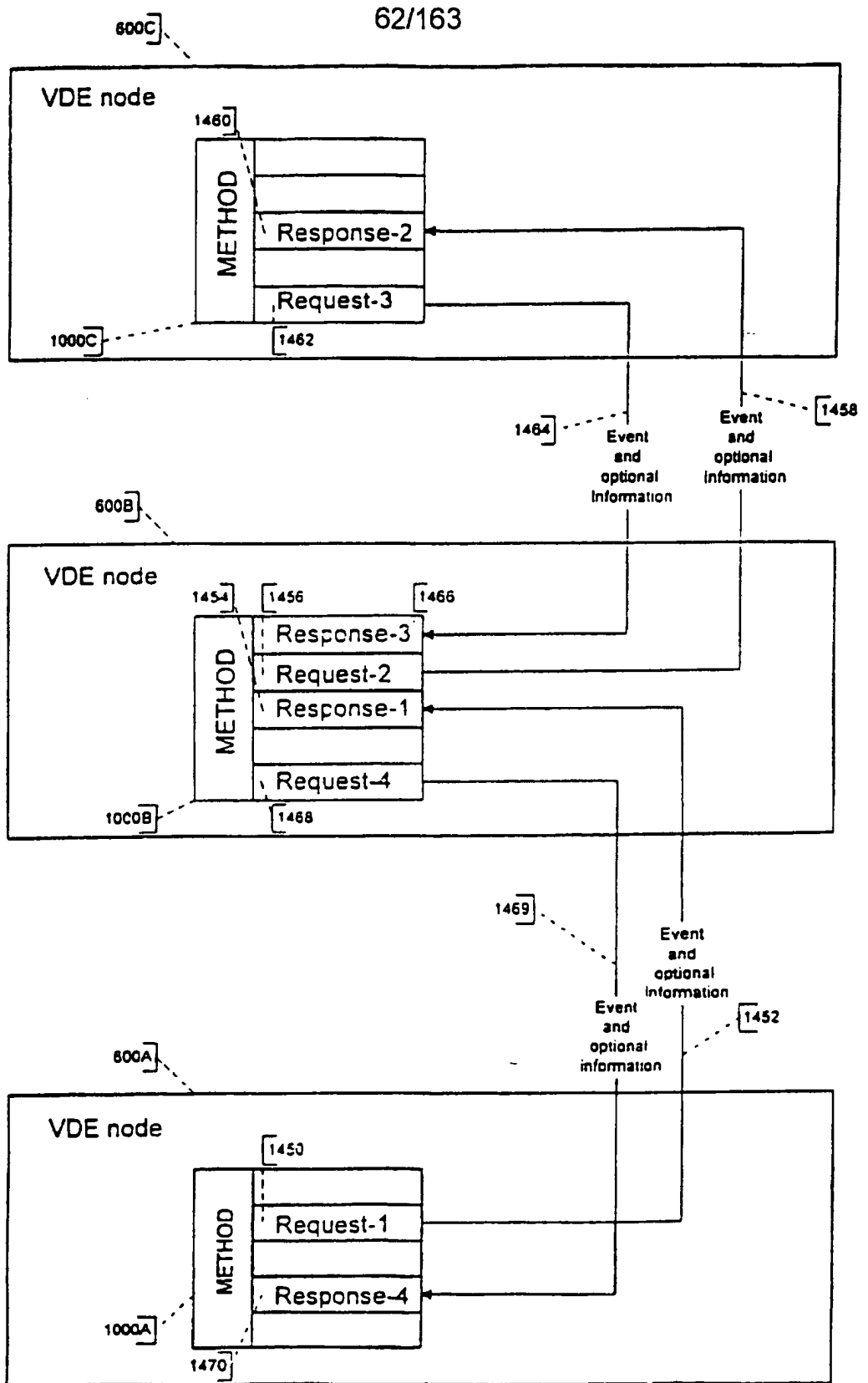


Figure 41c

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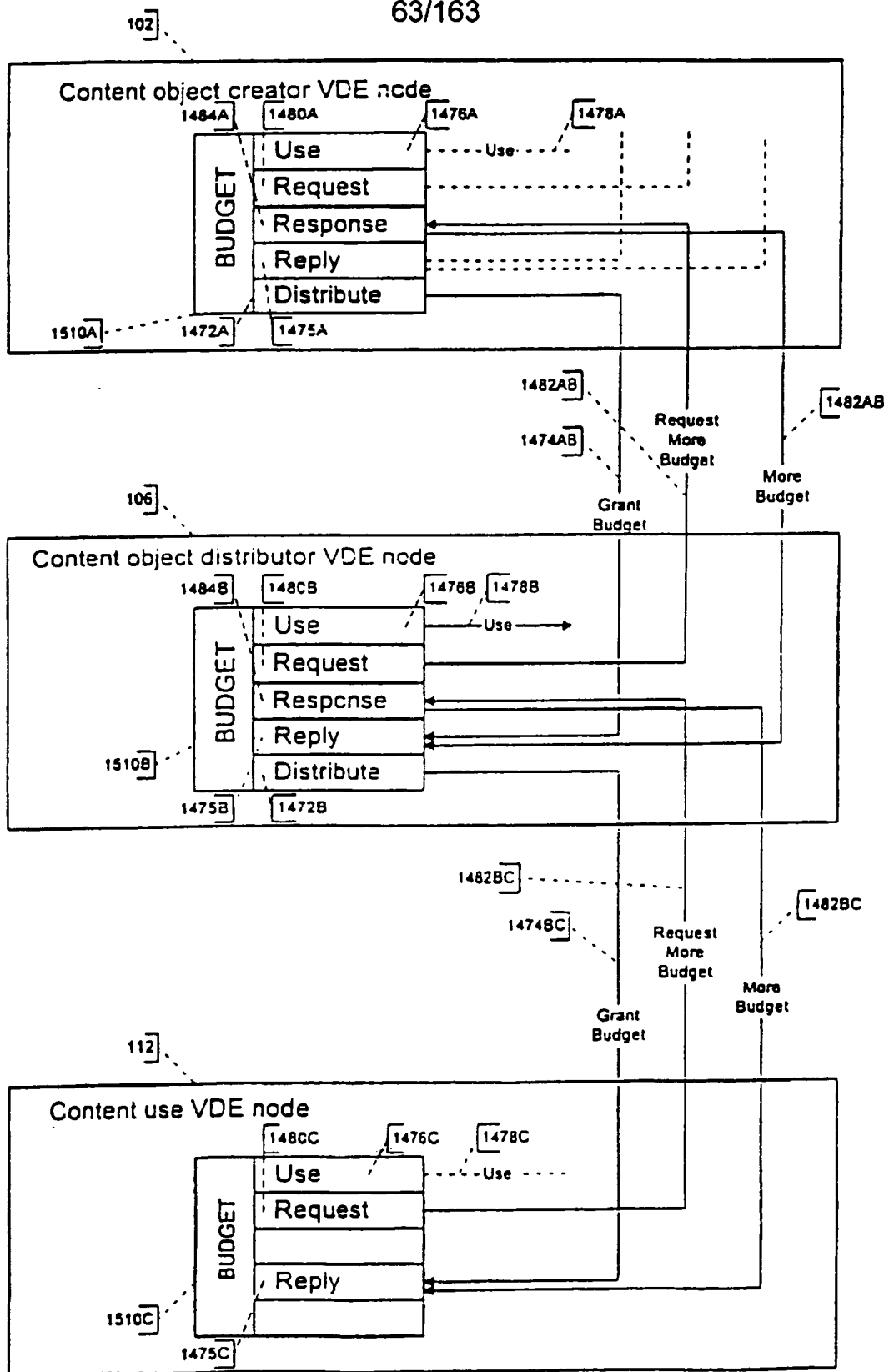


Figure 41d

SUBSTITUTE SHEET (RULE 26)

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BUDGET Method Use Process Flow

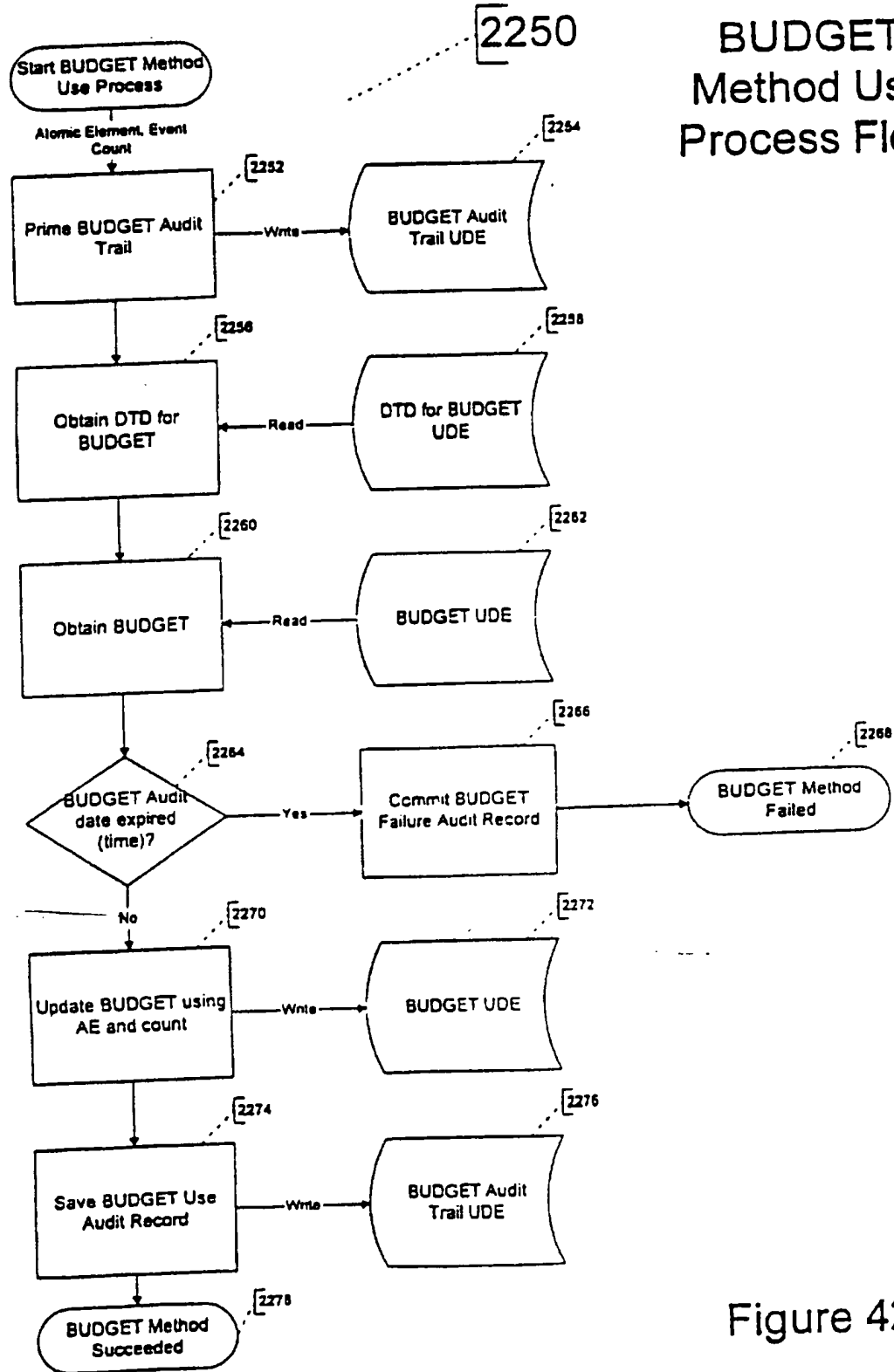


Figure 42a

SUBSTITUTE SHEET (RULE 26)

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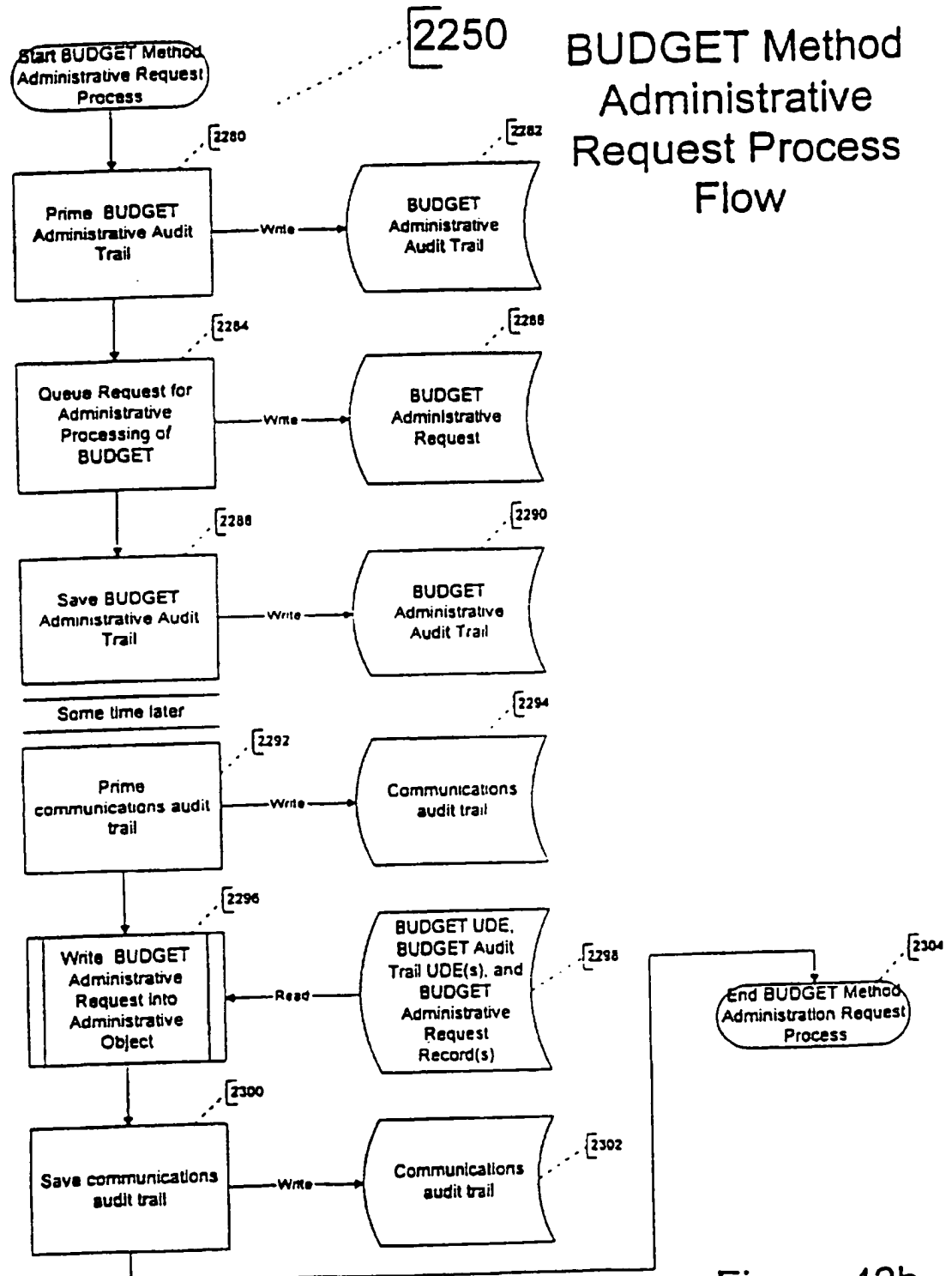


Figure 42b

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BUDGET Method Administrative Response Process Flow

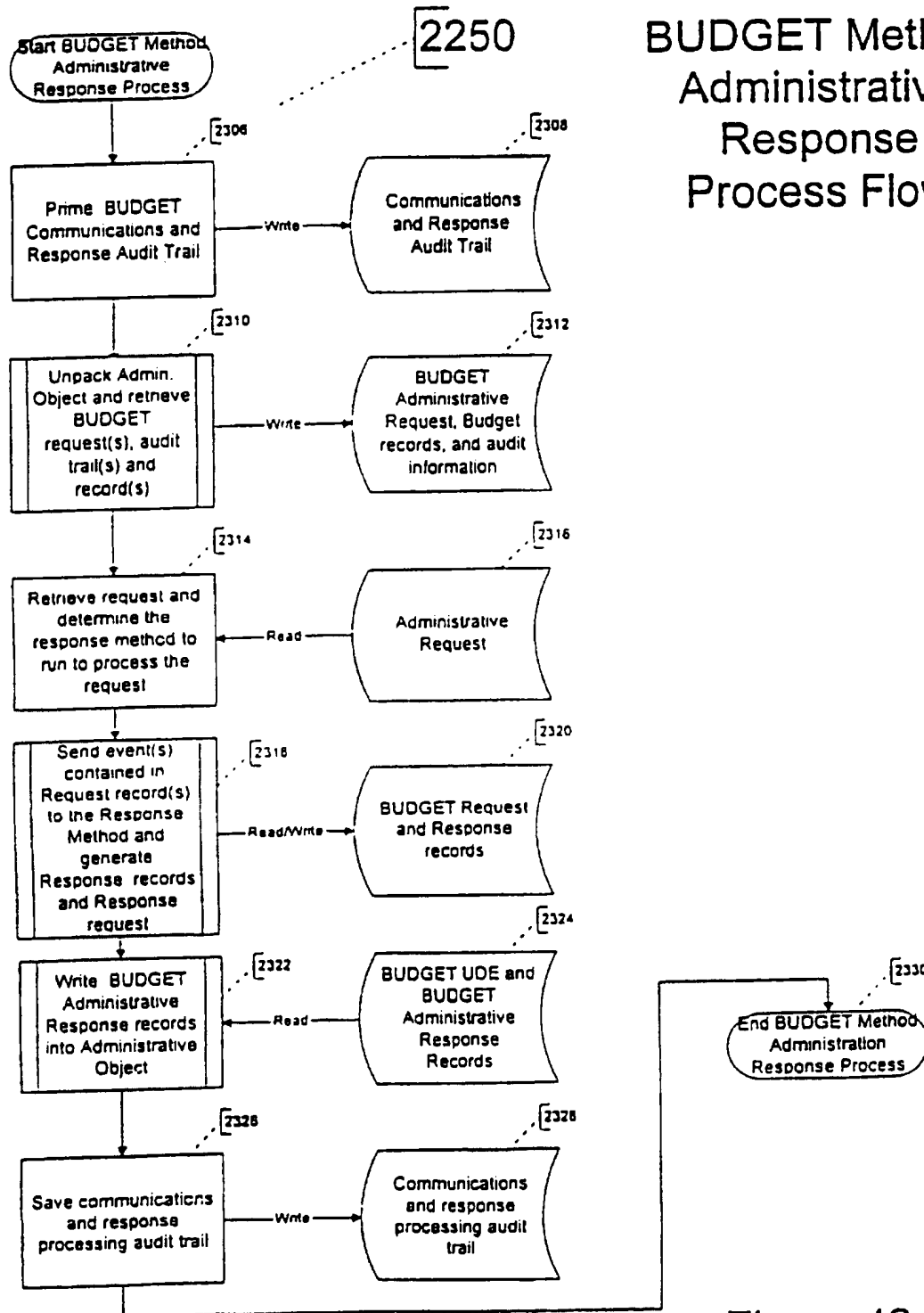


Figure 42c

SUBSTITUTE SHEET (RULE 26)

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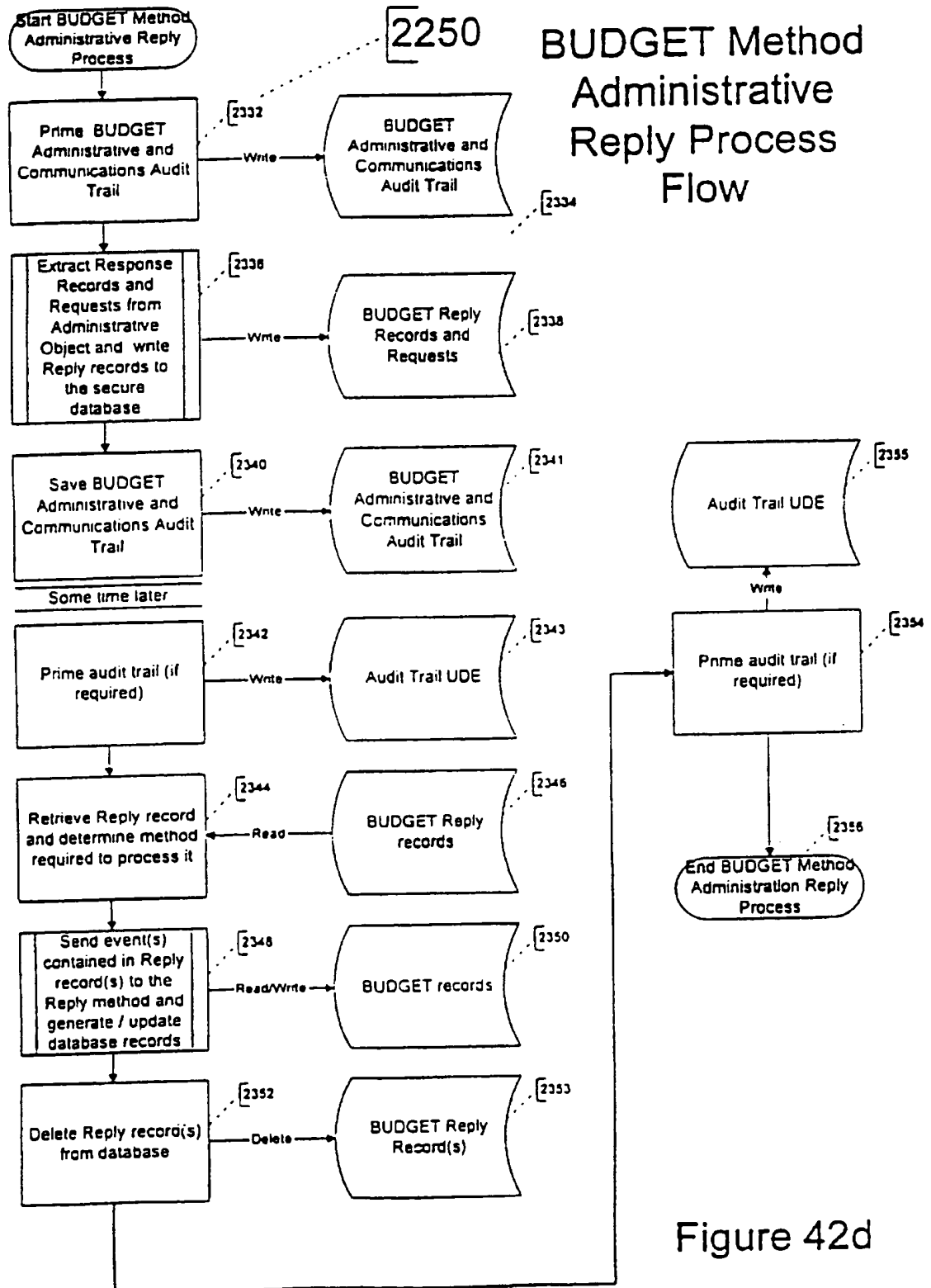
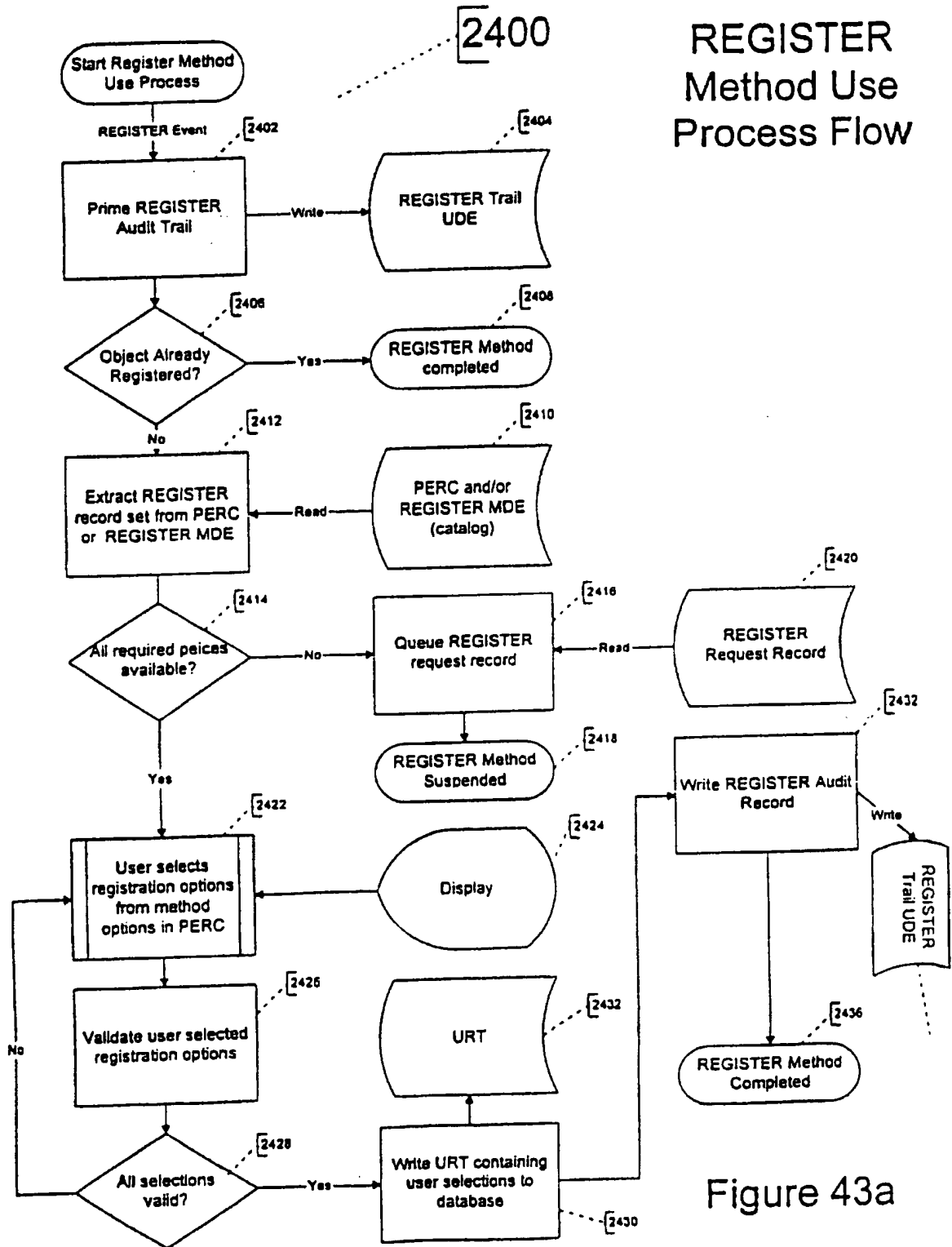


Figure 42d

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REGISTER Method Use Process Flow

Figure 43a

SUBSTITUTE SHEET (RULE 26)

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REGISTER Method Administrative Request Process Flow

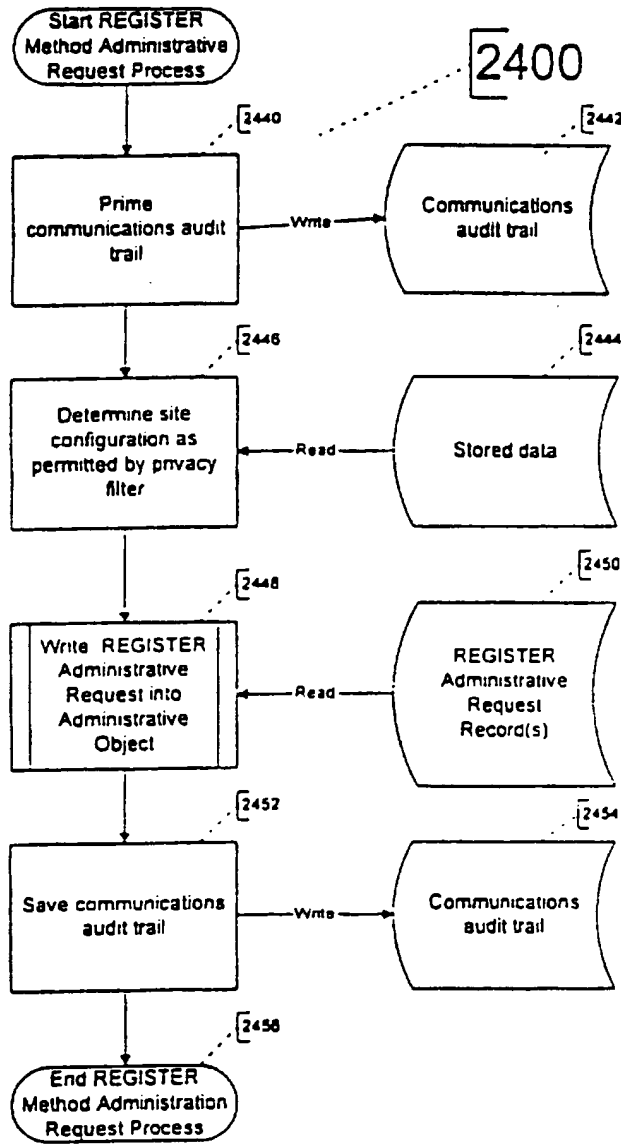


Figure 43b

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REGISTER Method Administrative Response Process Flow

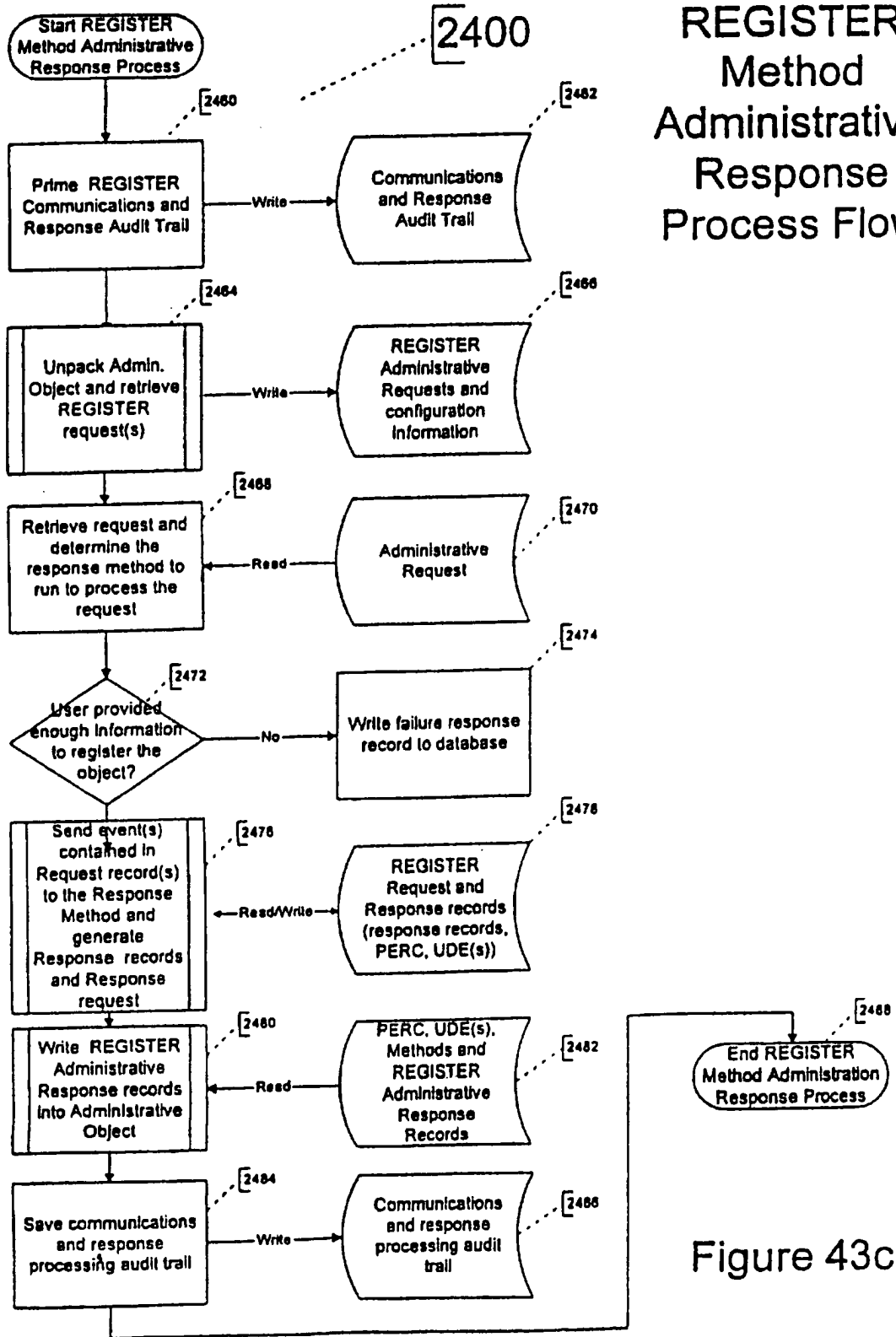


Figure 43c

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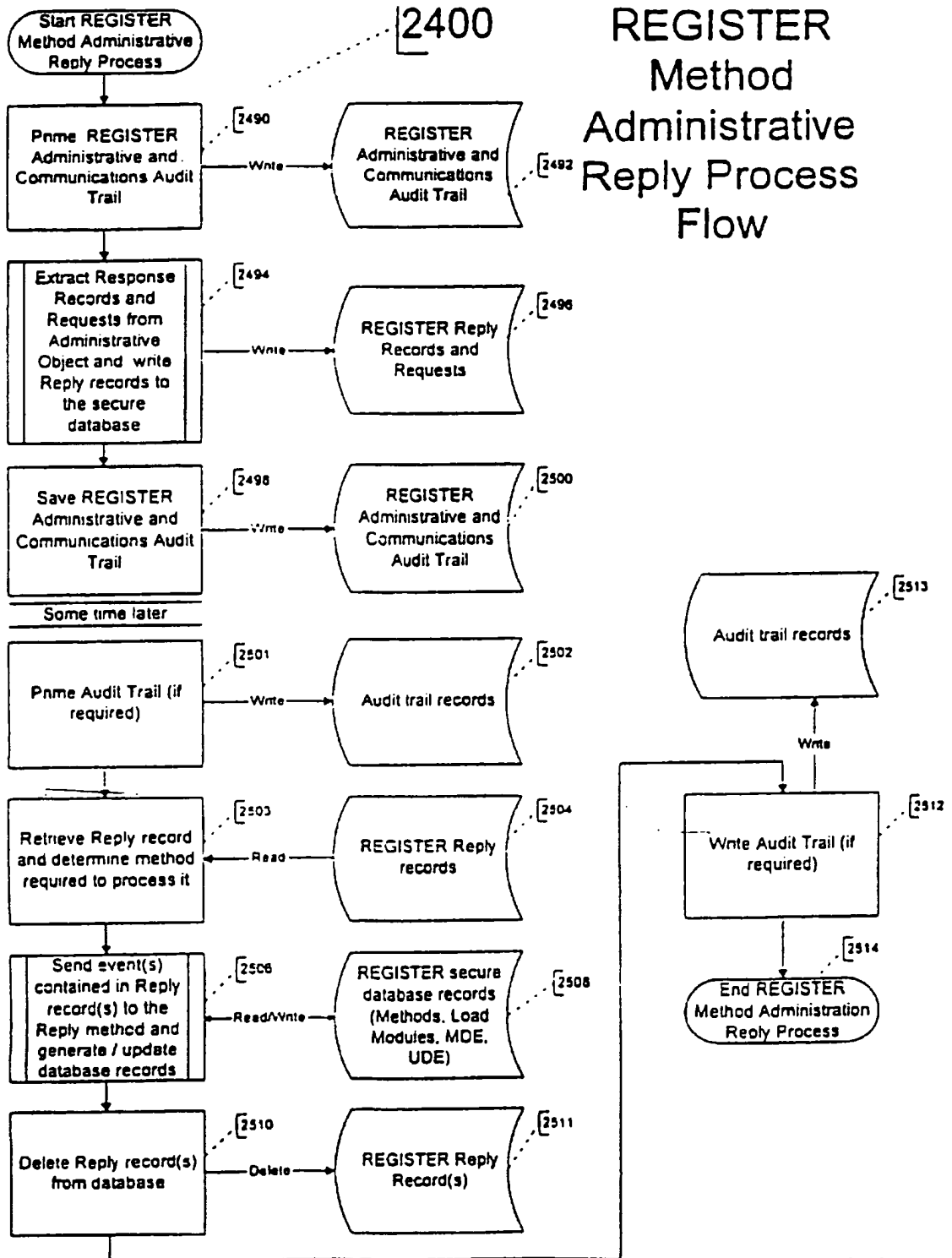


Figure 43d

SUBSTITUTE SHEET (RULE 26)

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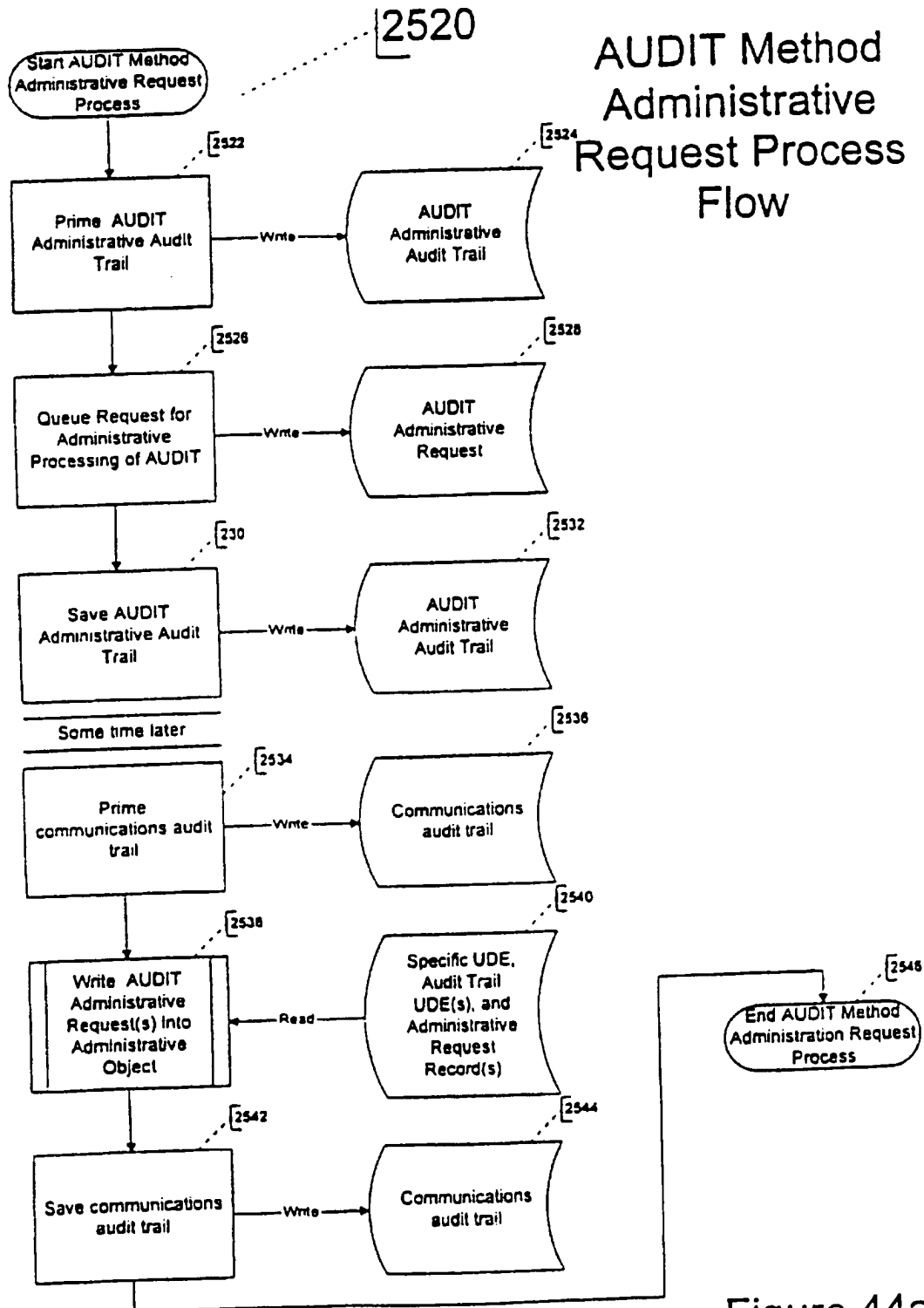


Figure 44a

SUBSTITUTE SHEET (RULE 26)

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AUDIT Method Administrative Response Process Flow

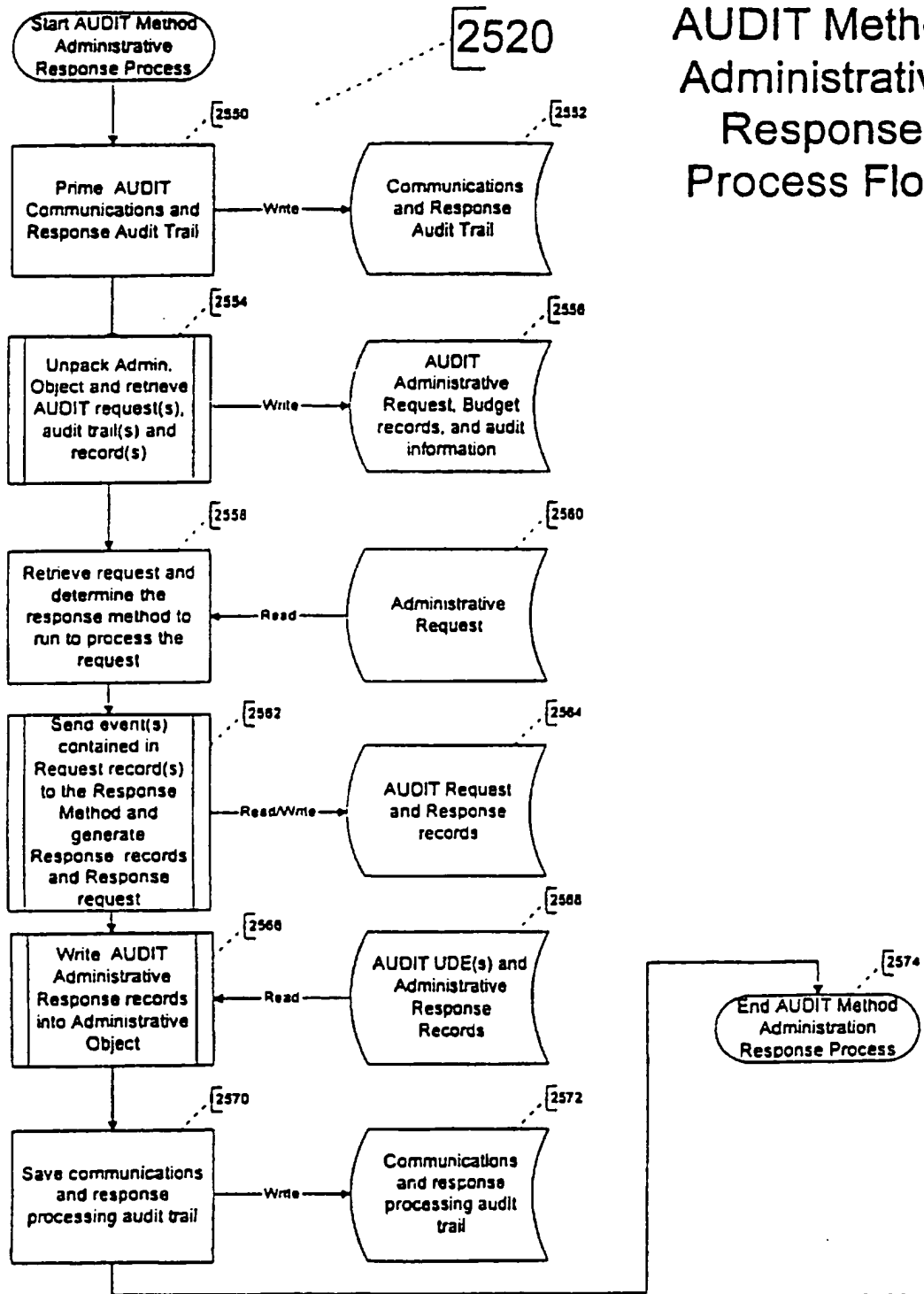


Figure 44b

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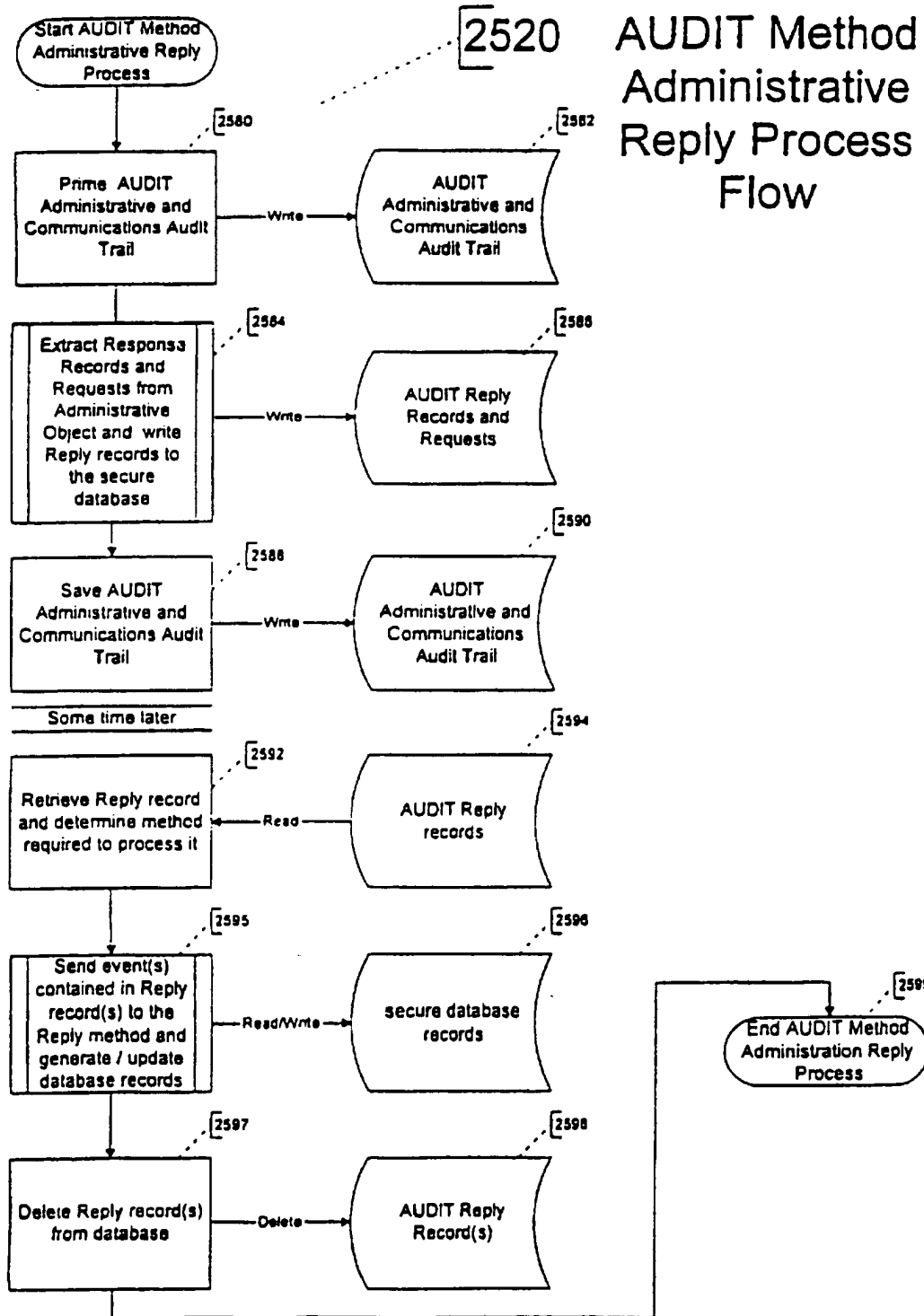
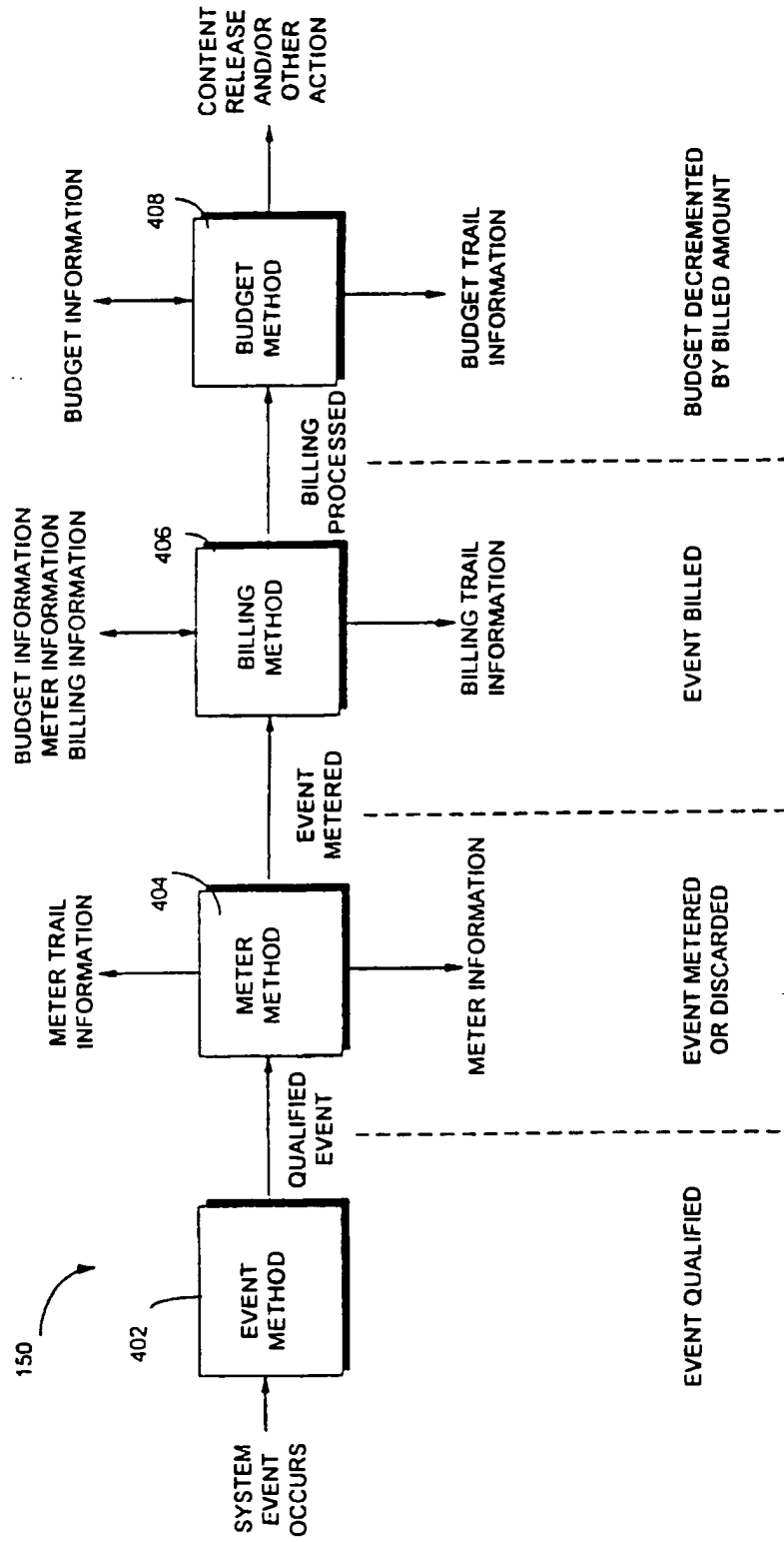


Figure 44c

SUBSTITUTE SHEET (RULE 26)

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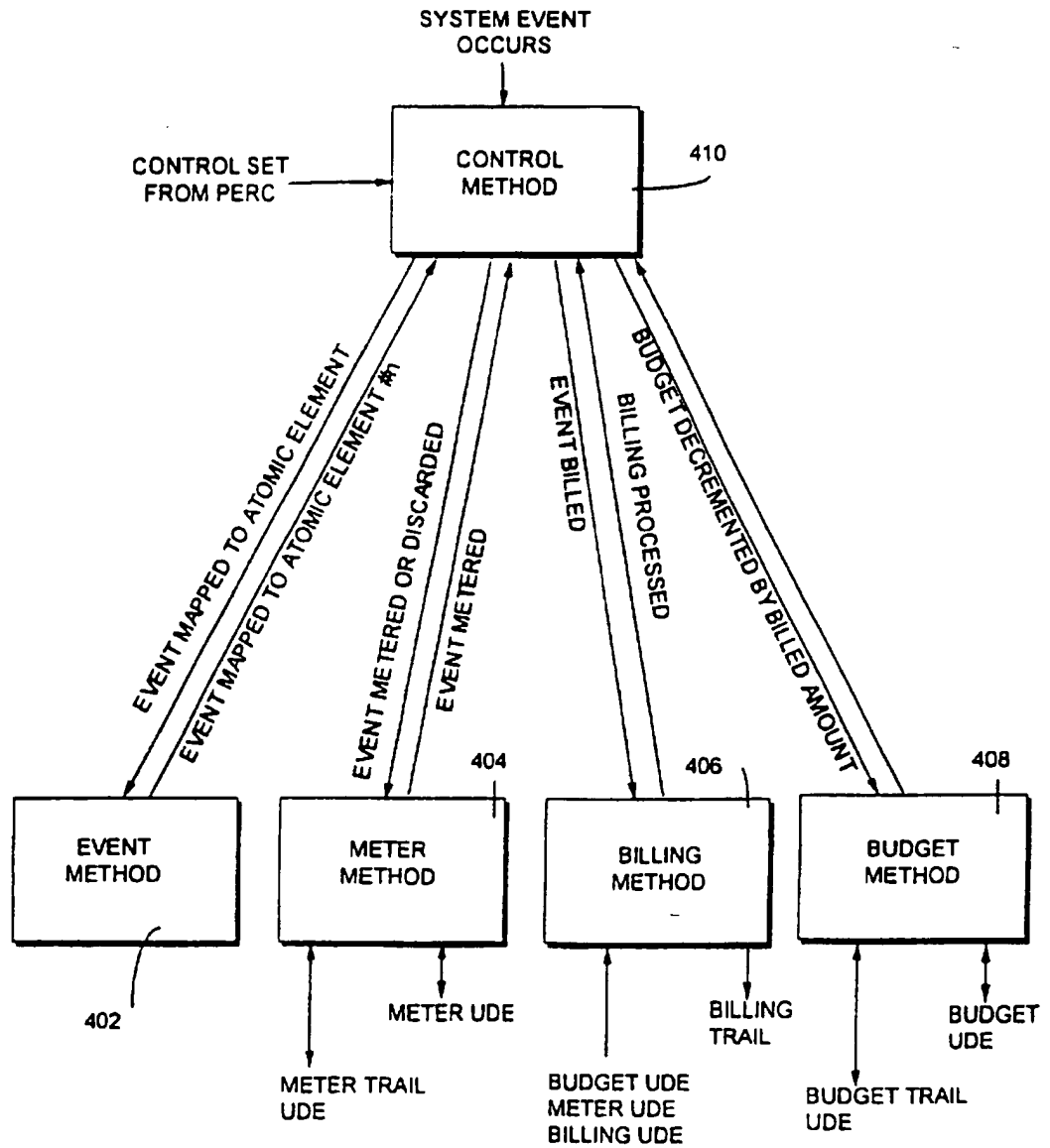
FIG. 45



SUBSTITUTE SHEET (RULE 26)

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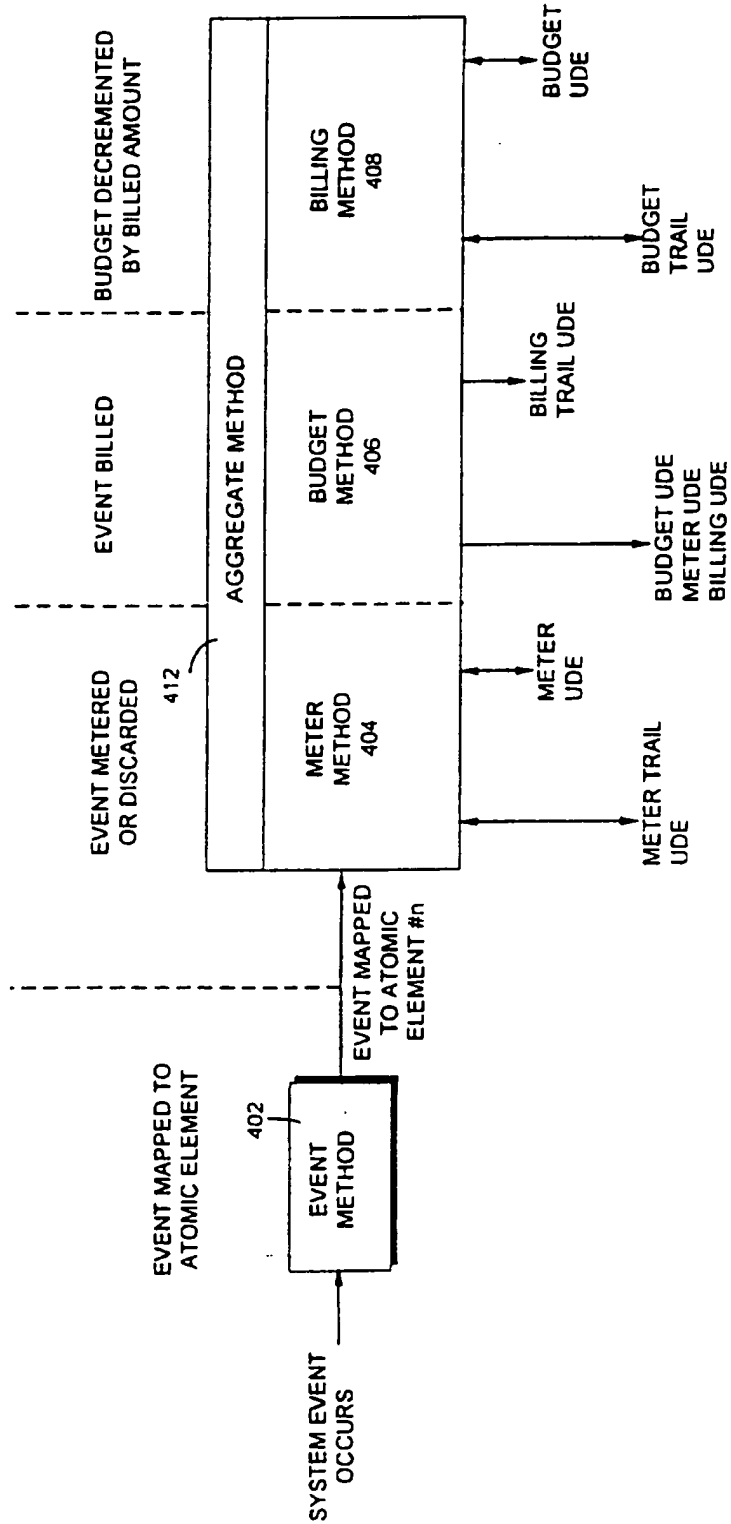
FIG. 46



SUBSTITUTE SHEET (RULE 26)

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FIG. 47



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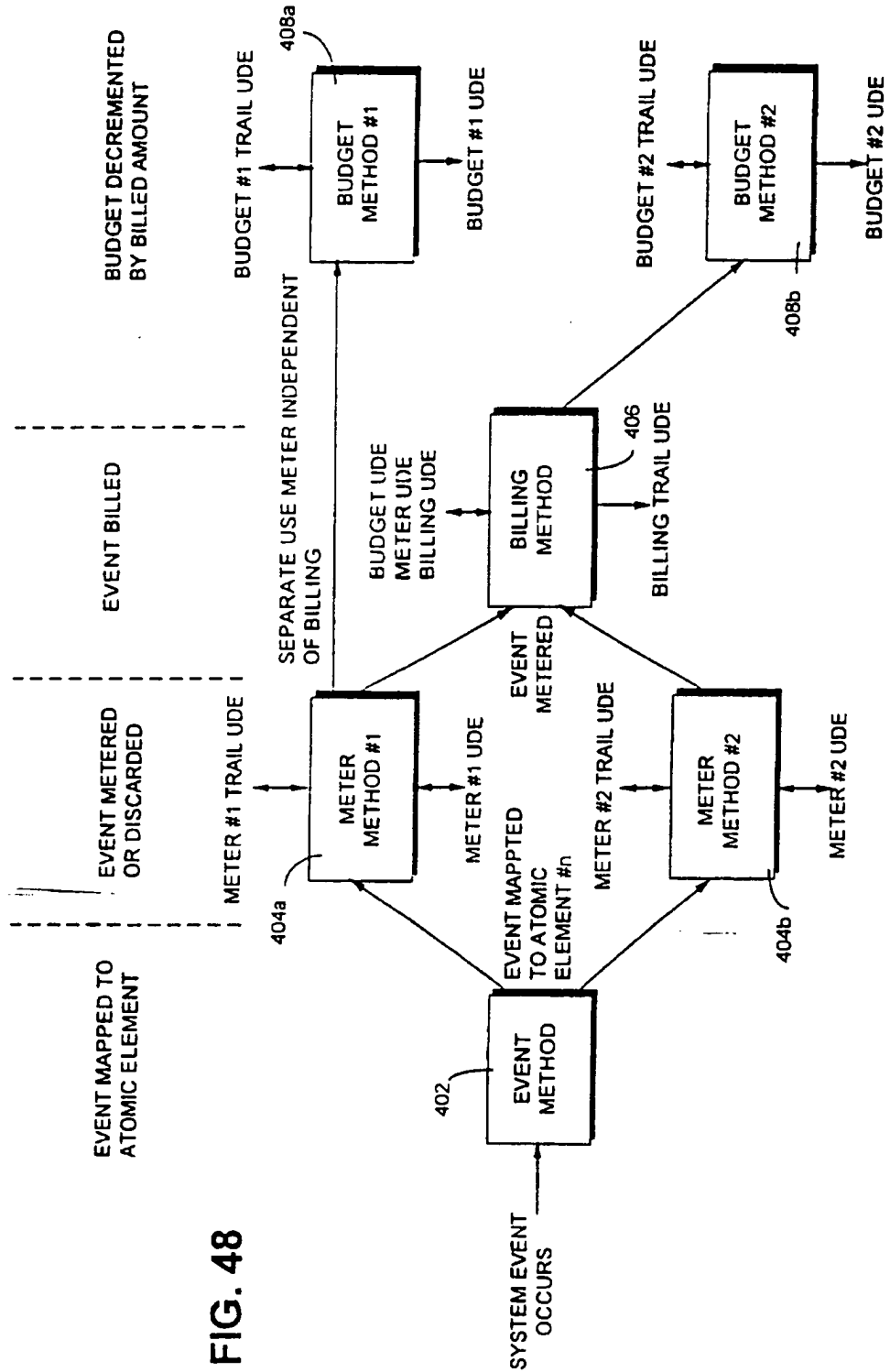


FIG. 48

SUBSTITUTE SHEET (RULE 26)

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OPEN Method Use Process Flow

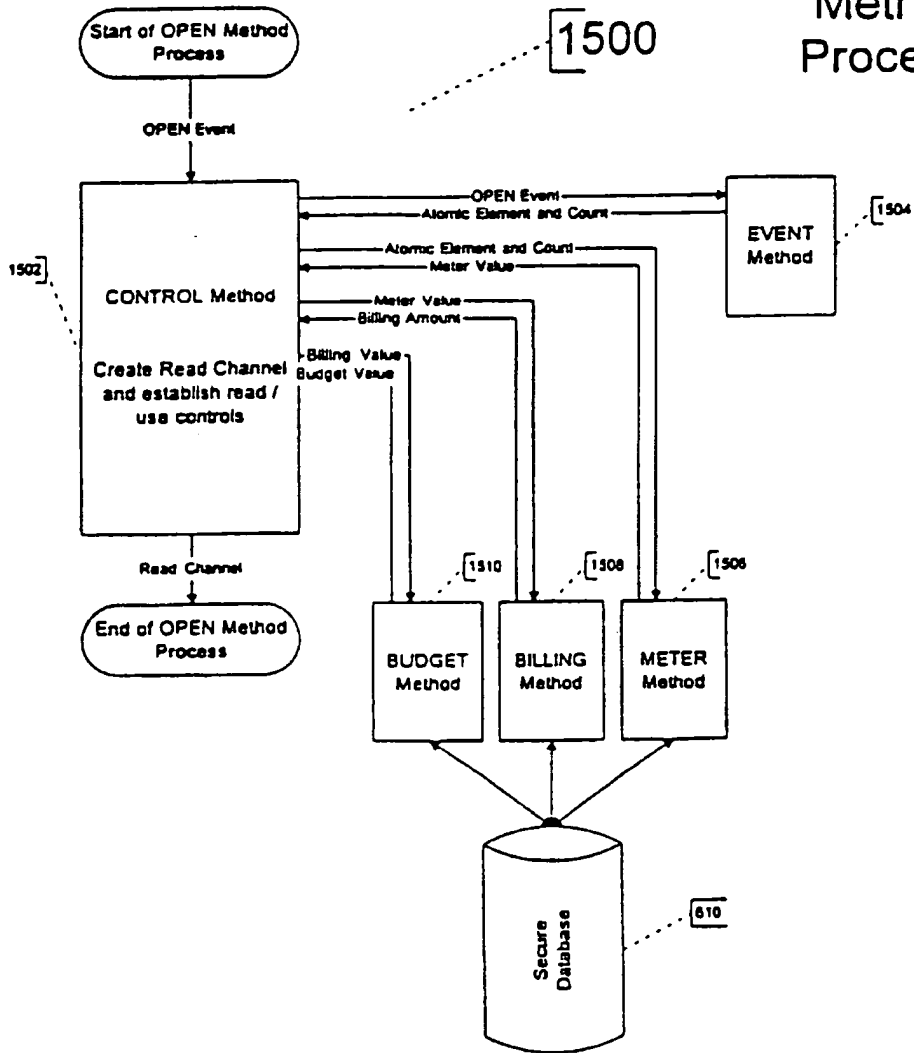


Figure 49

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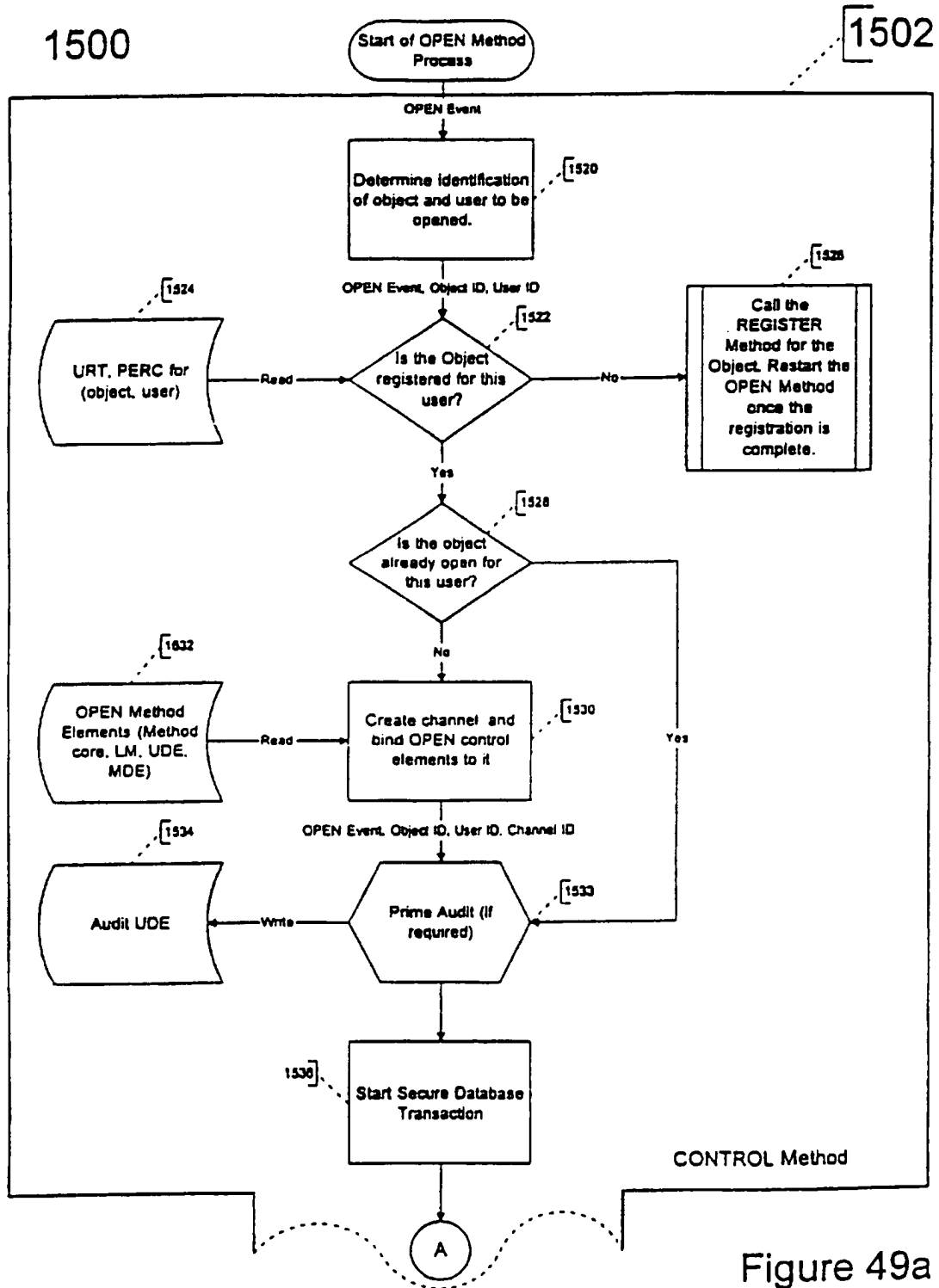


Figure 49a

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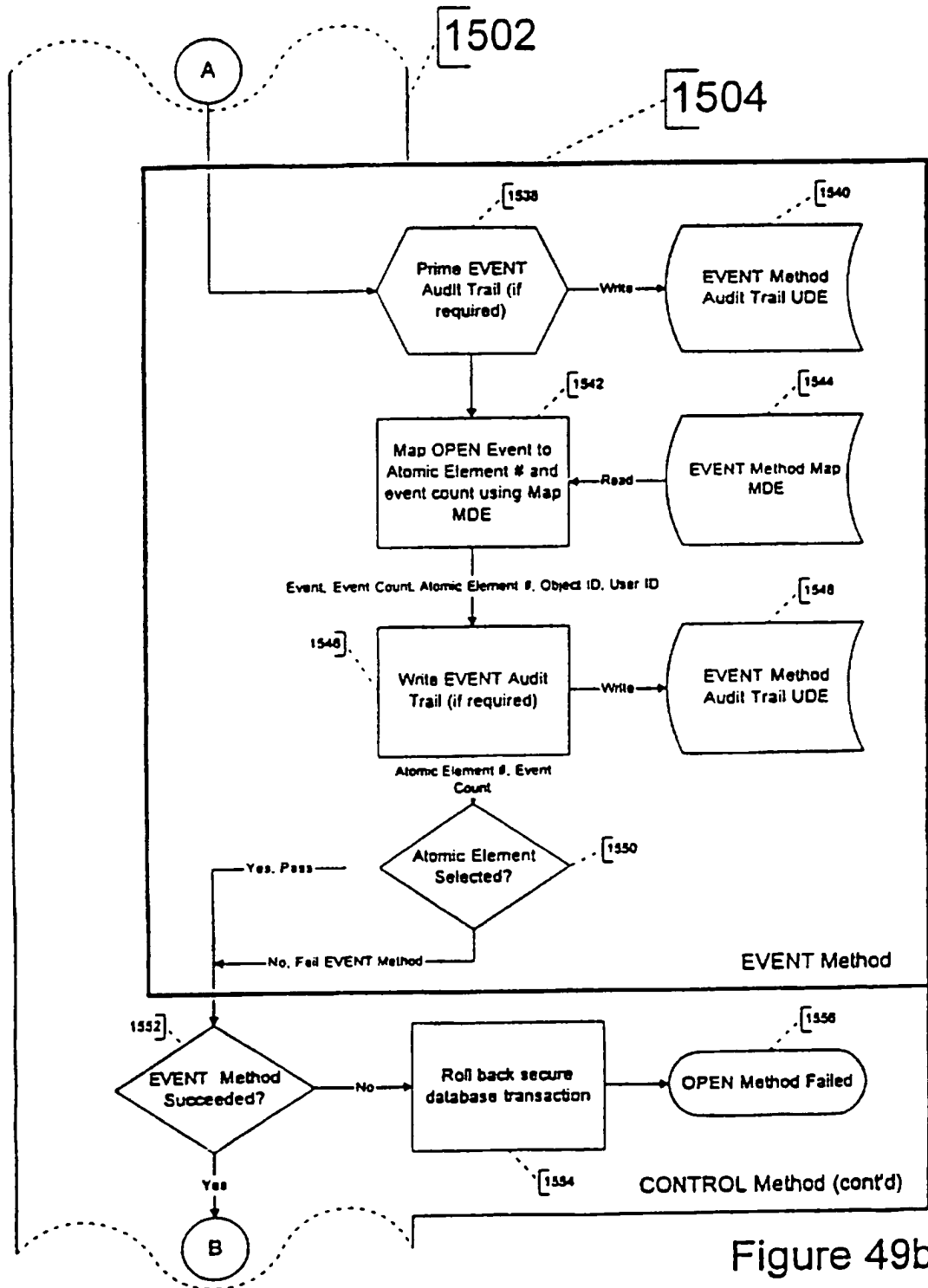


Figure 49b

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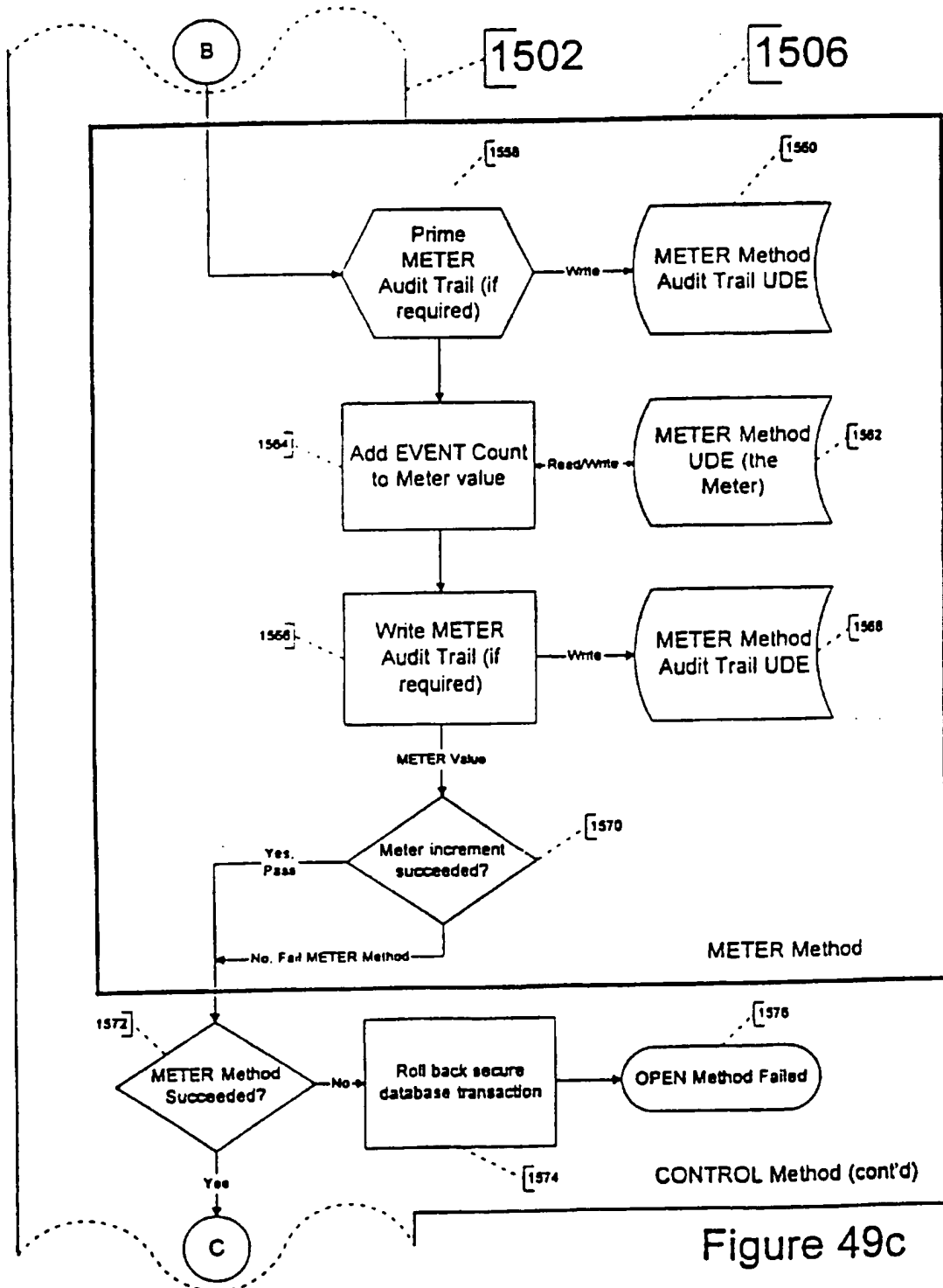


Figure 49c

SUBSTITUTE SHEET (RULE 26)

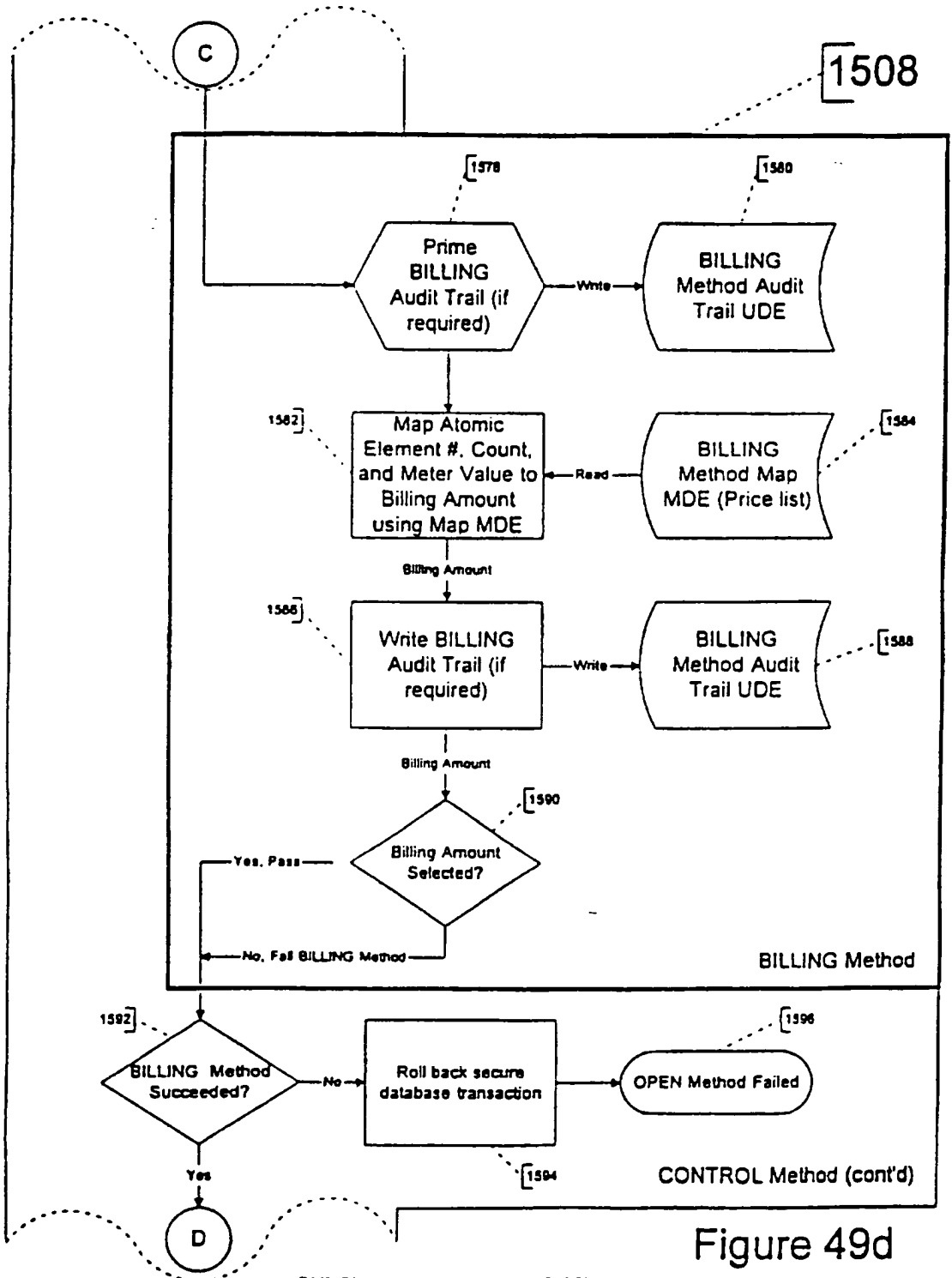


Figure 49d

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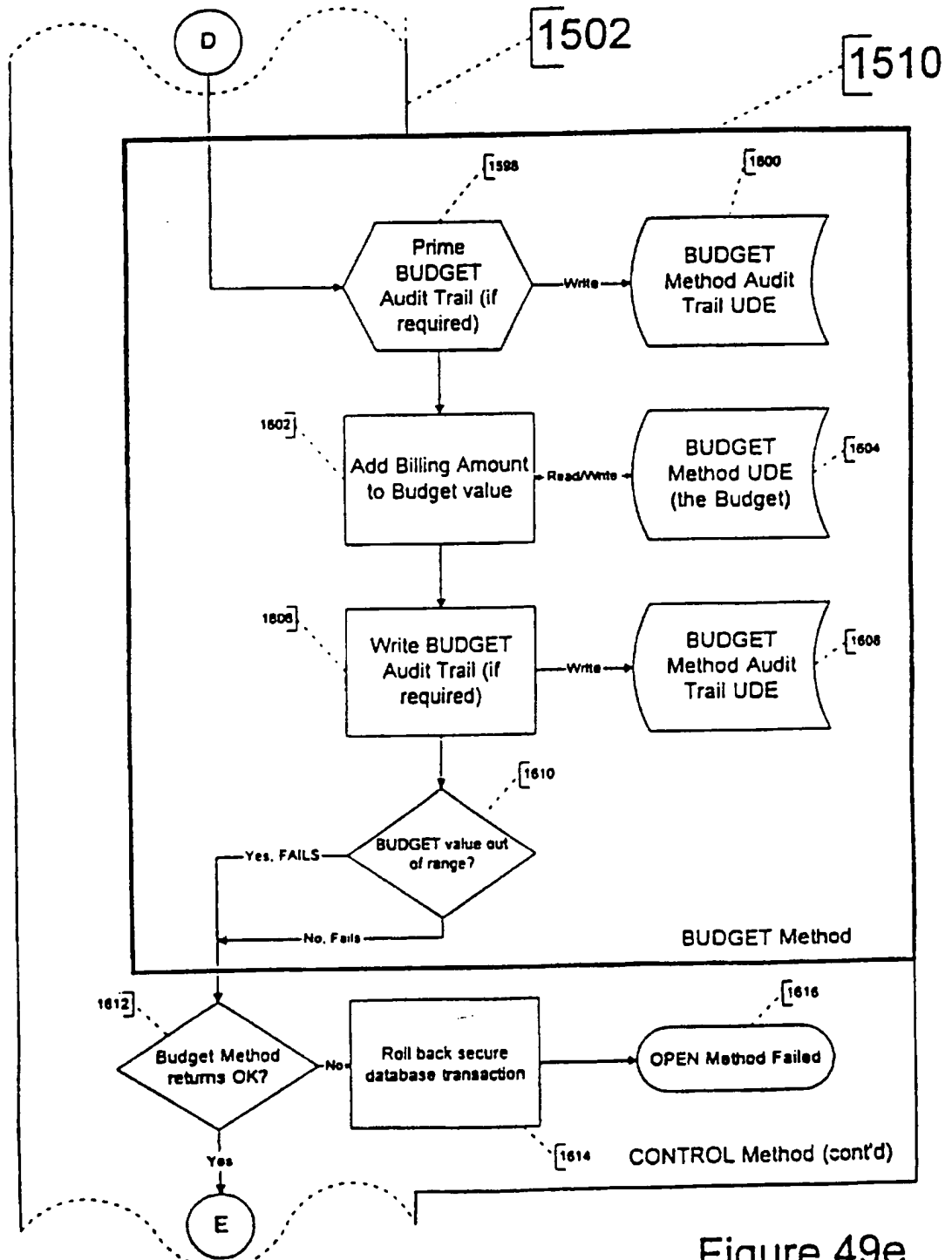


Figure 49e

SUBSTITUTE SHEET (RULE 26)

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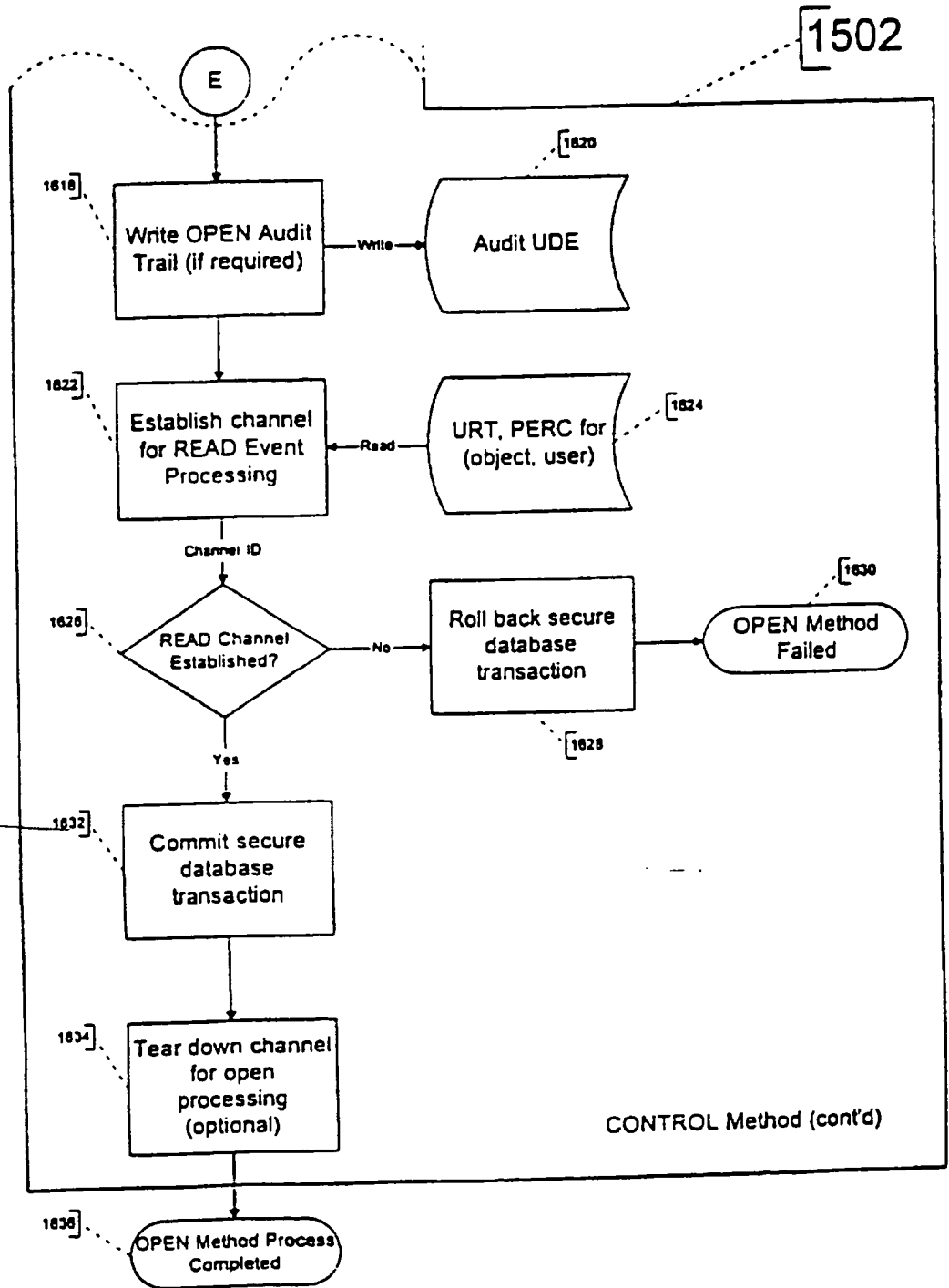


Figure 49f

SUBSTITUTE SHEET (RULE 26)

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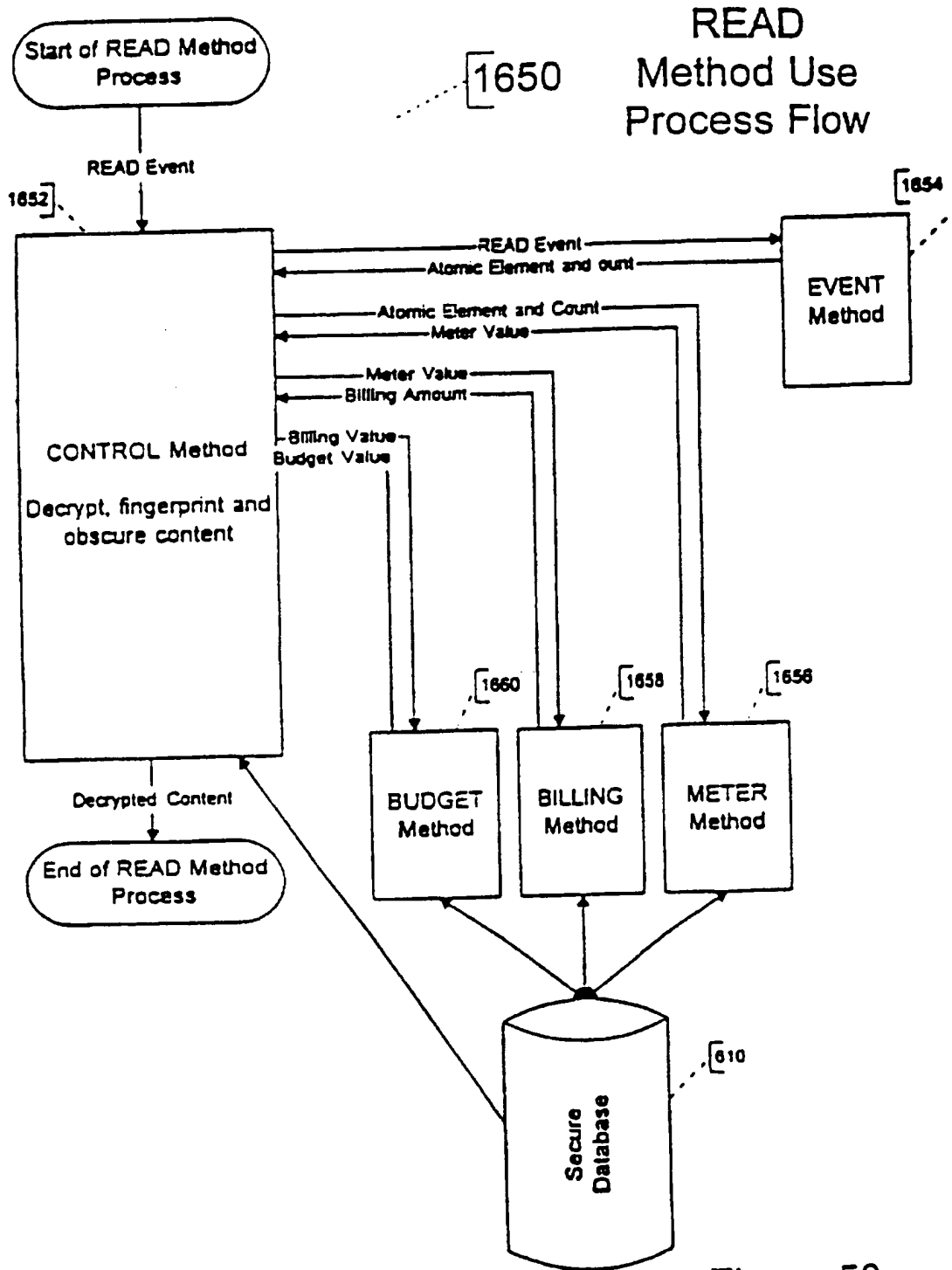


Figure 50

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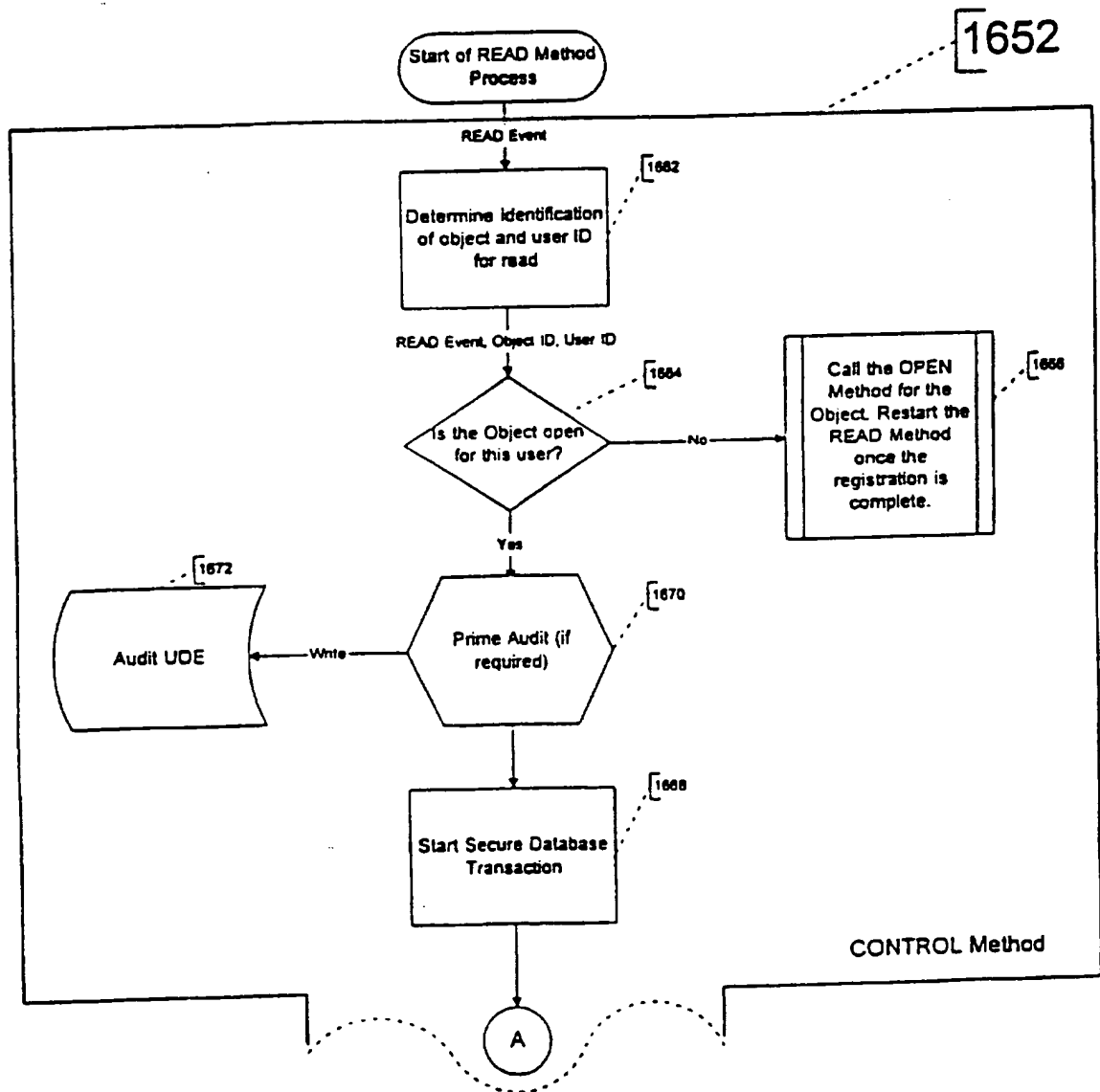


Figure 50a

SUBSTITUTE SHEET (RULE 26)

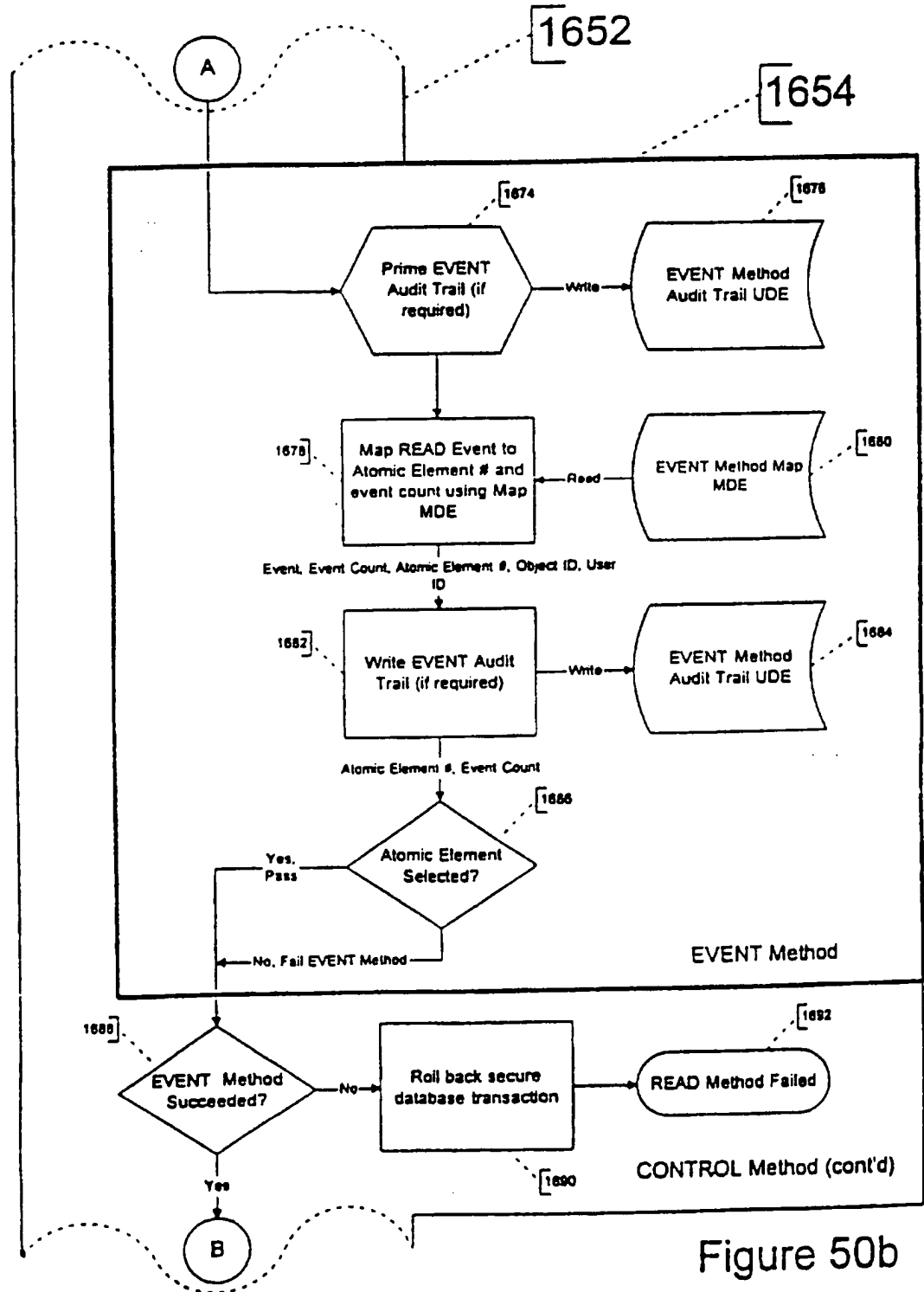


Figure 50b

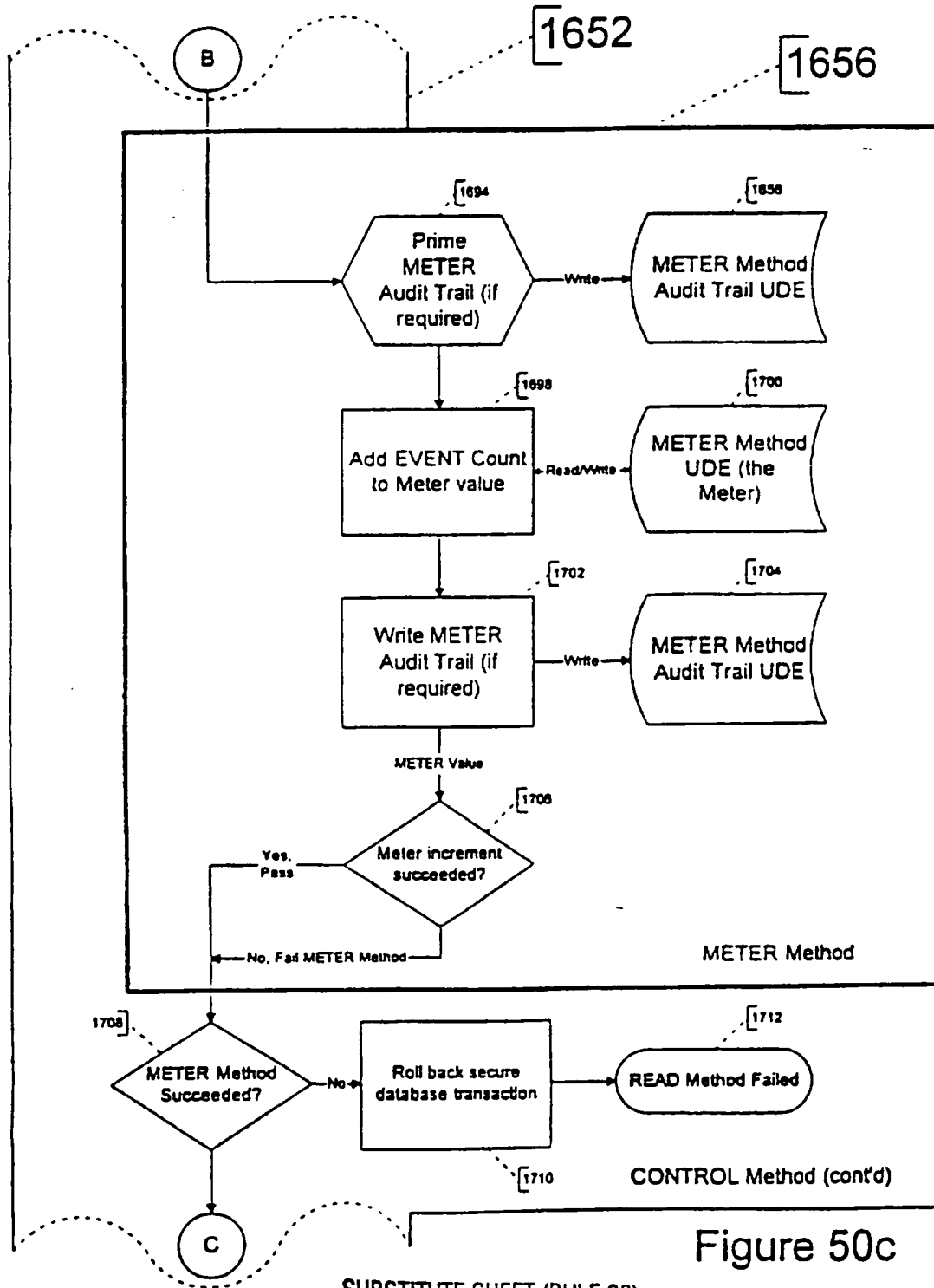


Figure 50c

SUBSTITUTE SHEET (RULE 26)

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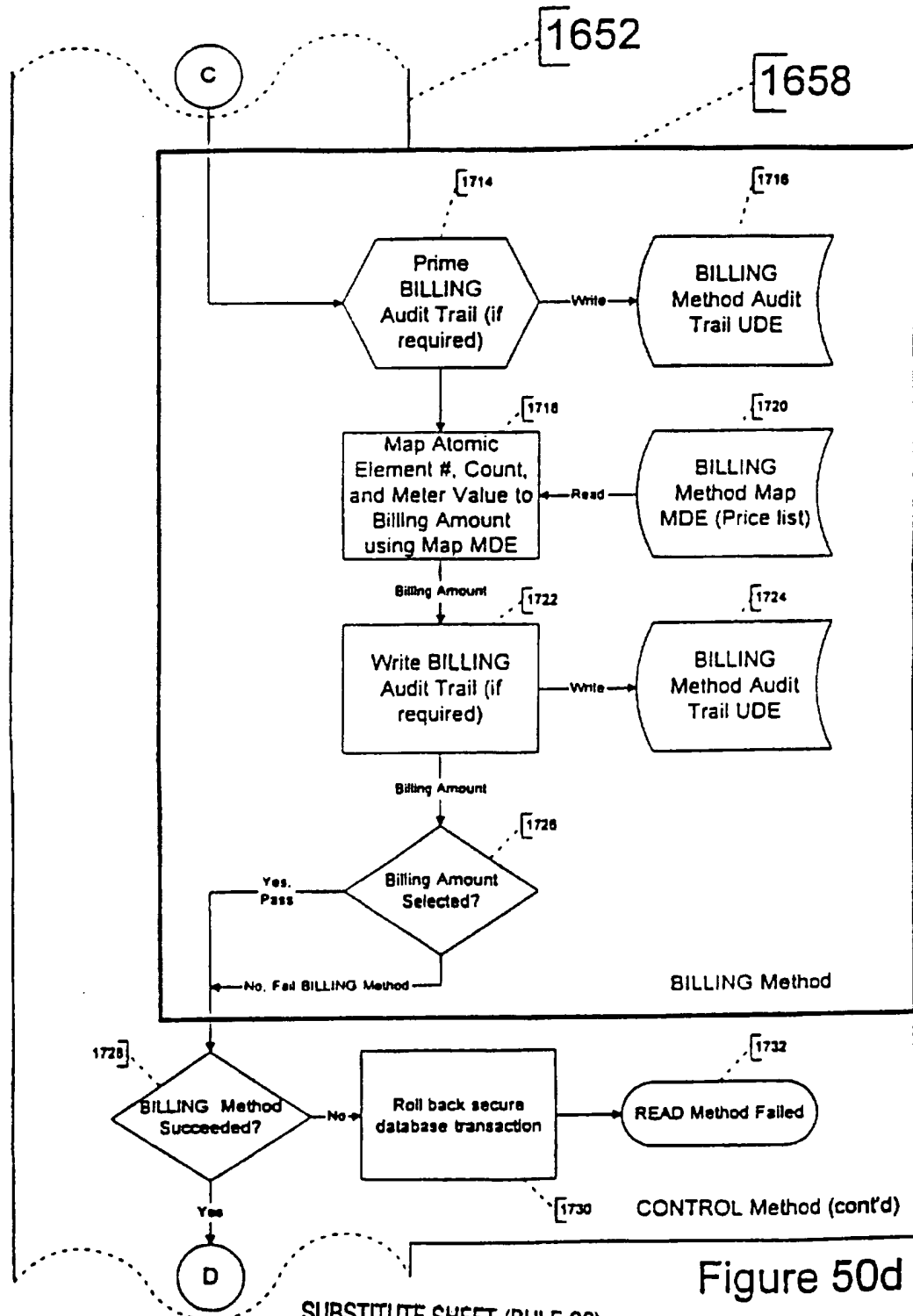


Figure 50d

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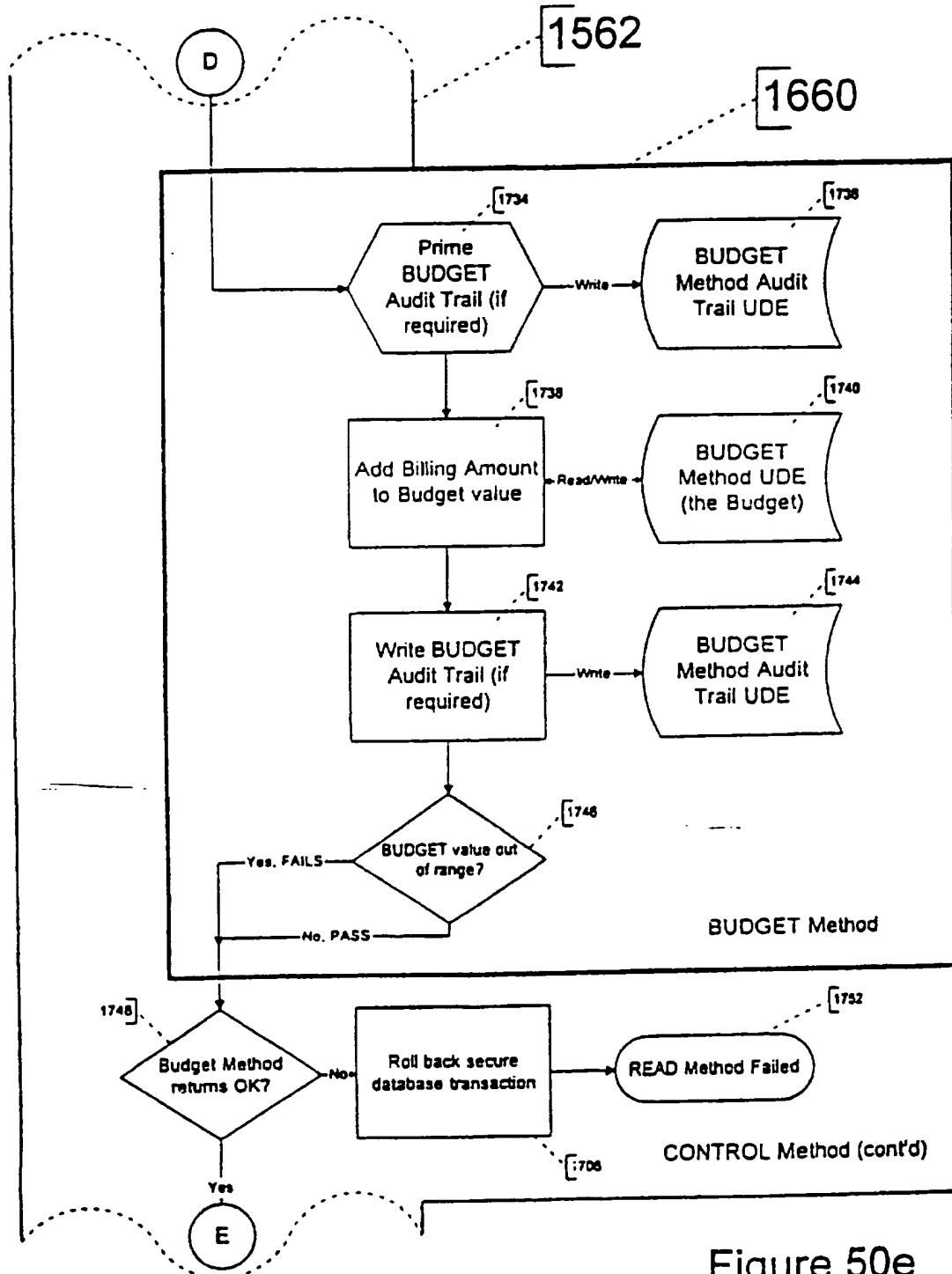
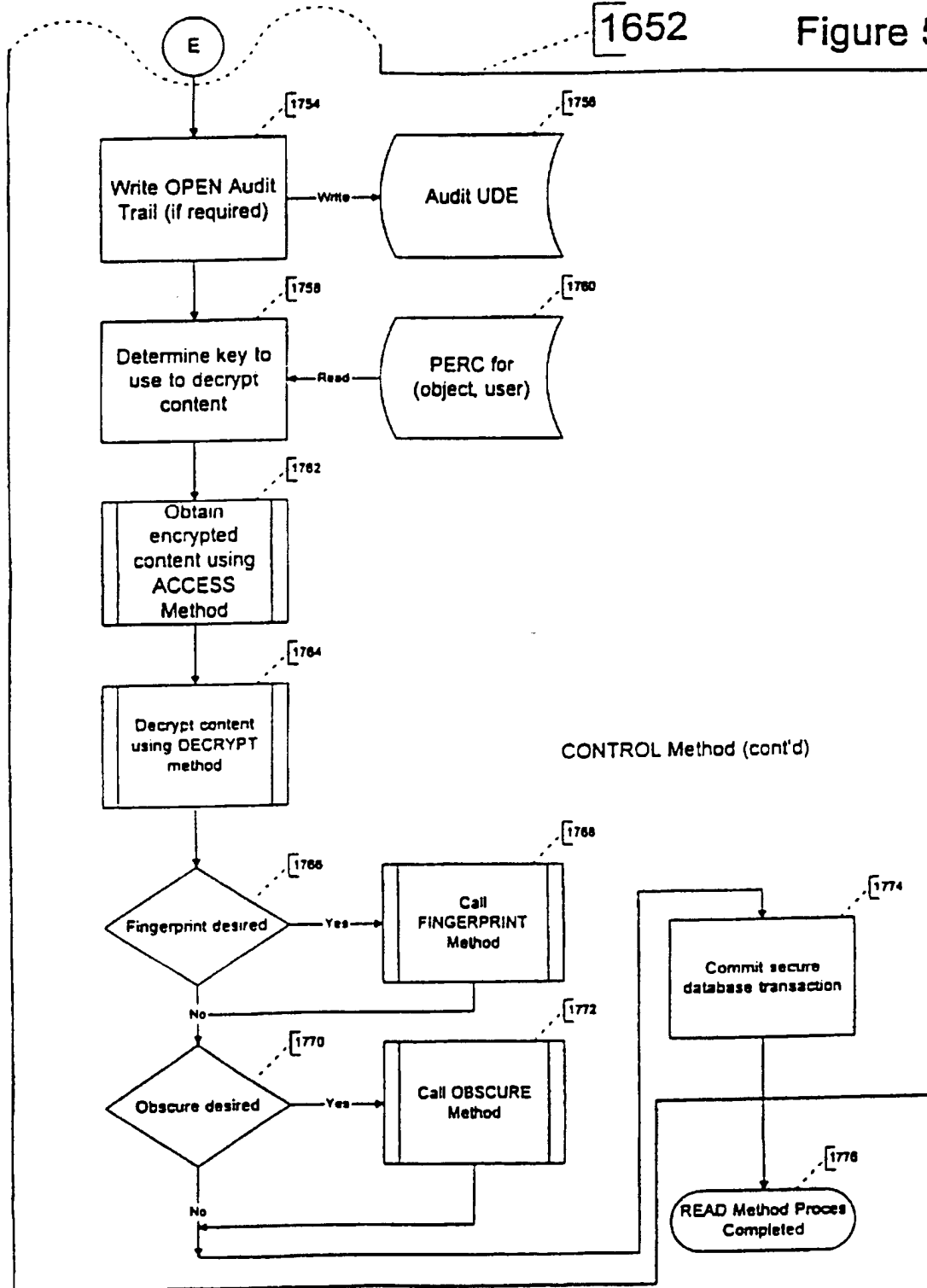


Figure 50e

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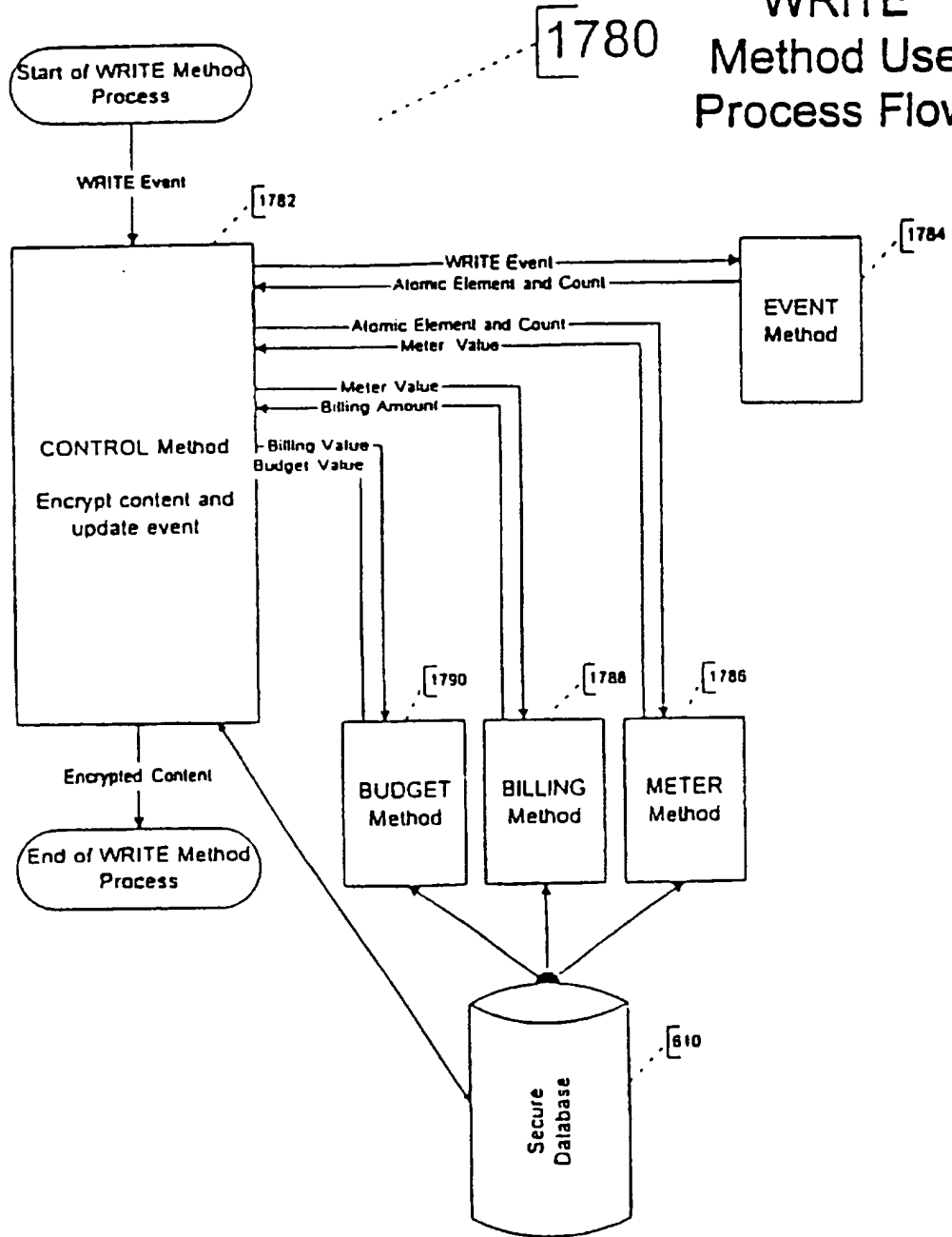
Figure 50f



SUBSTITUTE SHEET (RULE 26)

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WRITE Method Use Process Flow



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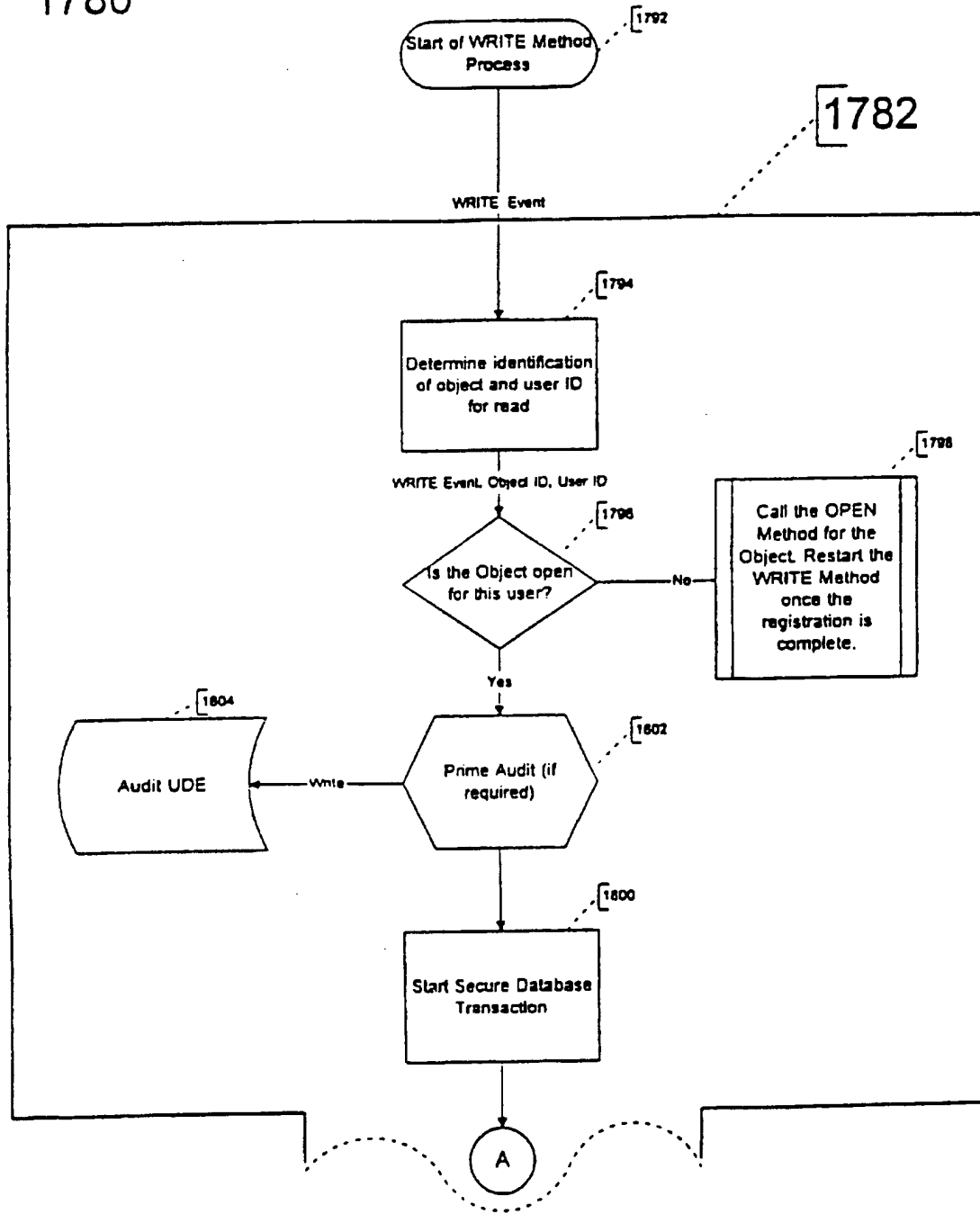


Figure 51a

SUBSTITUTE SHEET (RULE 26)

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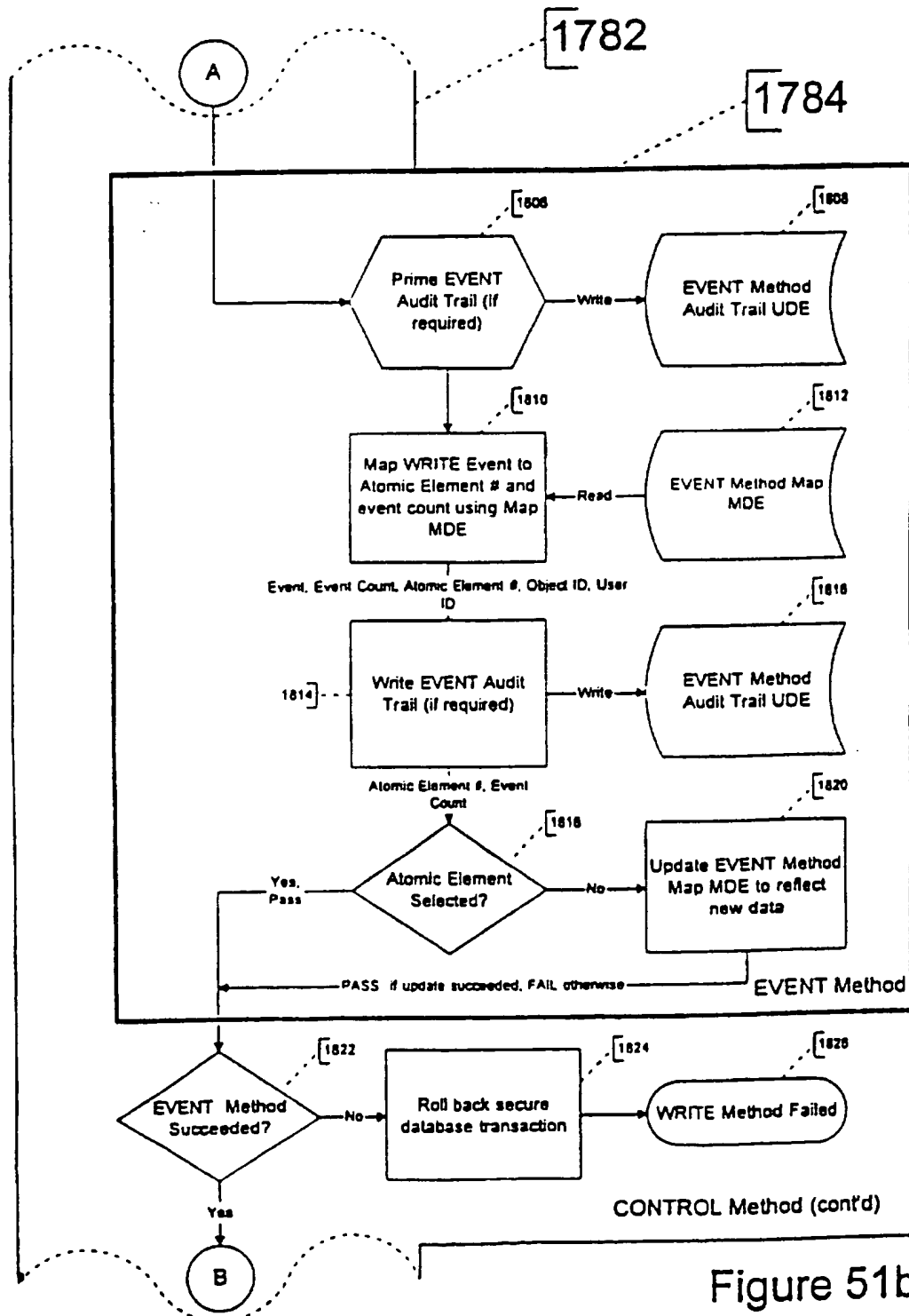


Figure 51b

SUBSTITUTE SHEET (RULE 26)

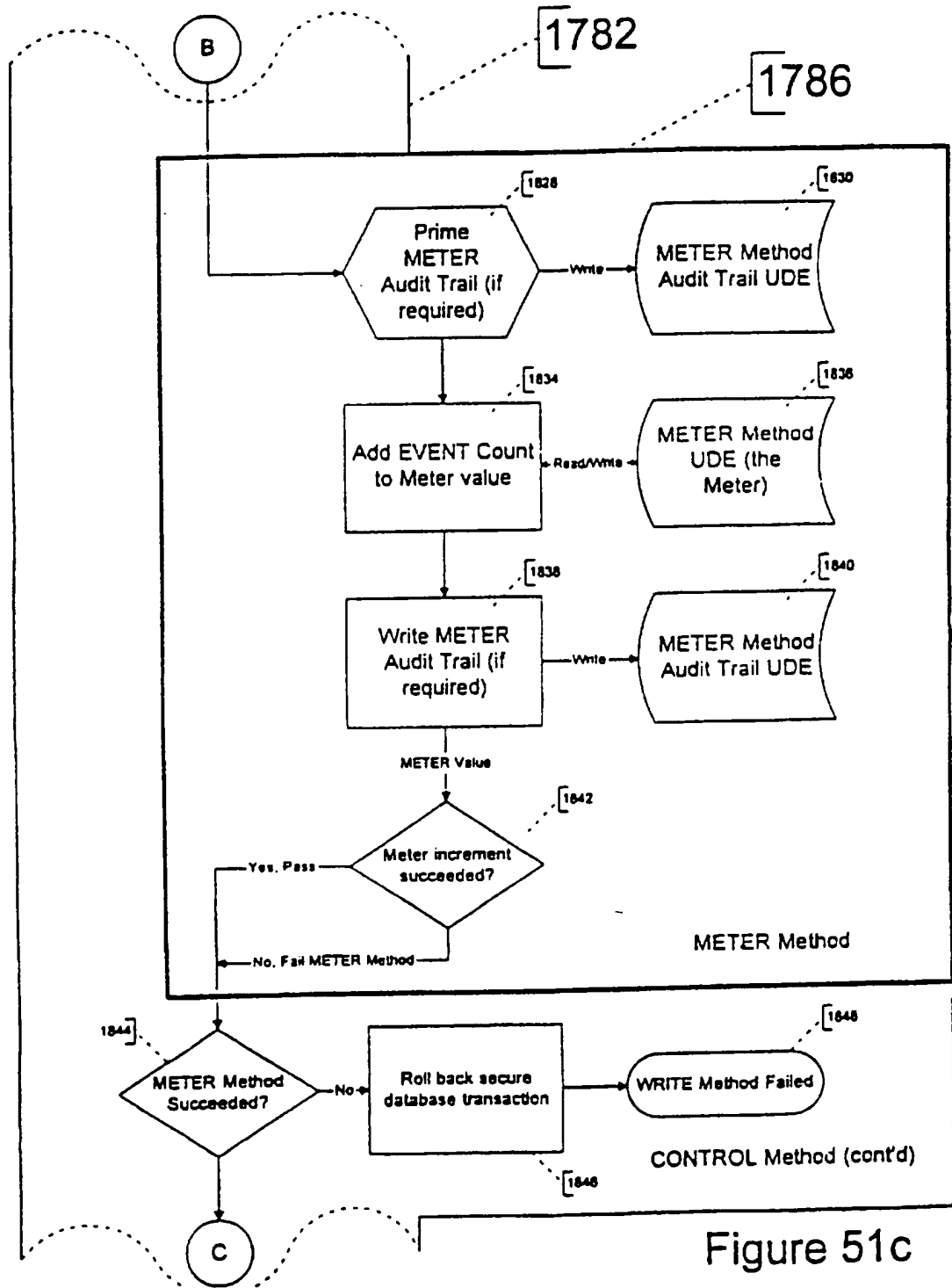


Figure 51c

SUBSTITUTE SHEET (RULE 26)

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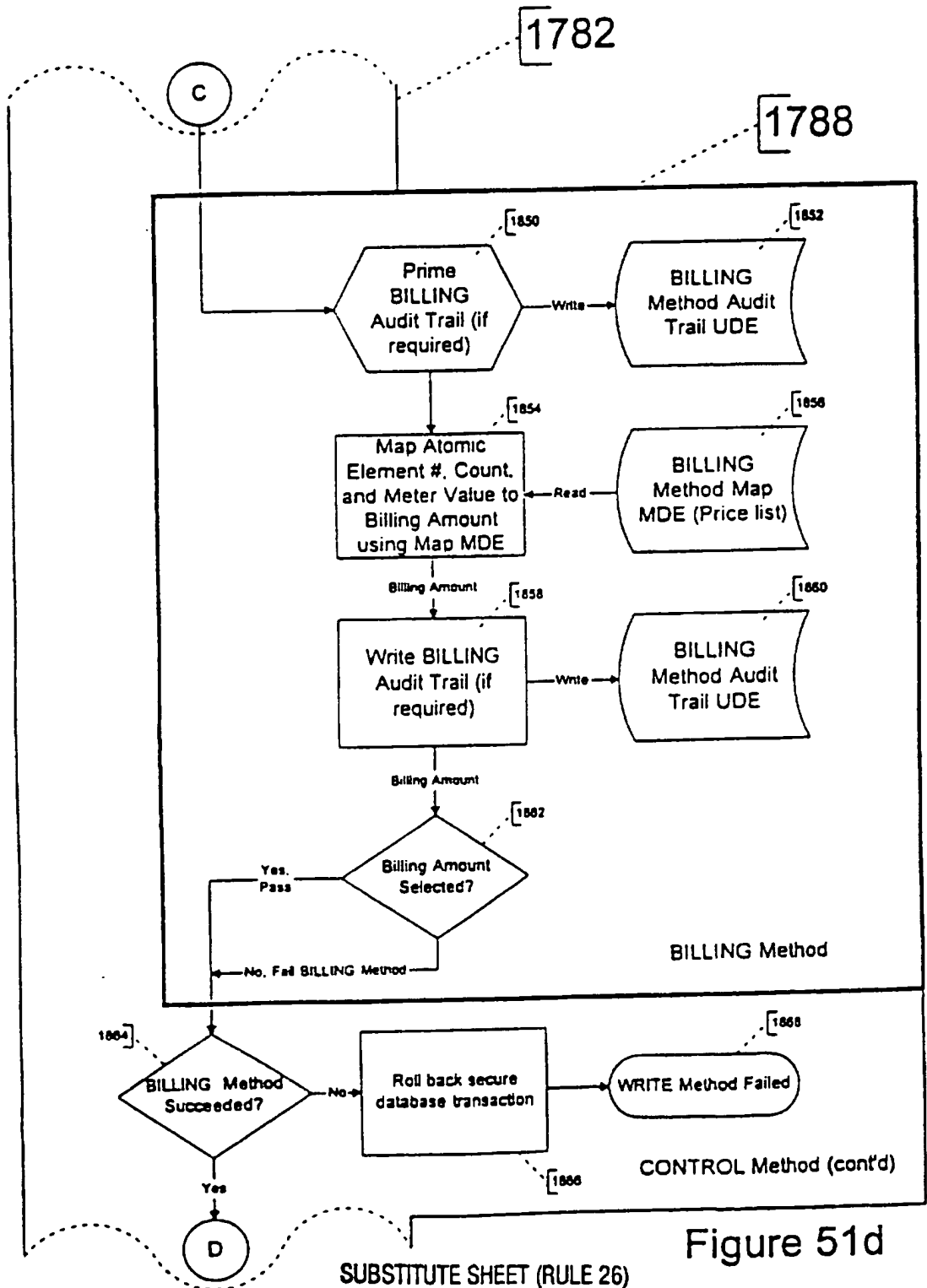


Figure 51d

SUBSTITUTE SHEET (RULE 26)

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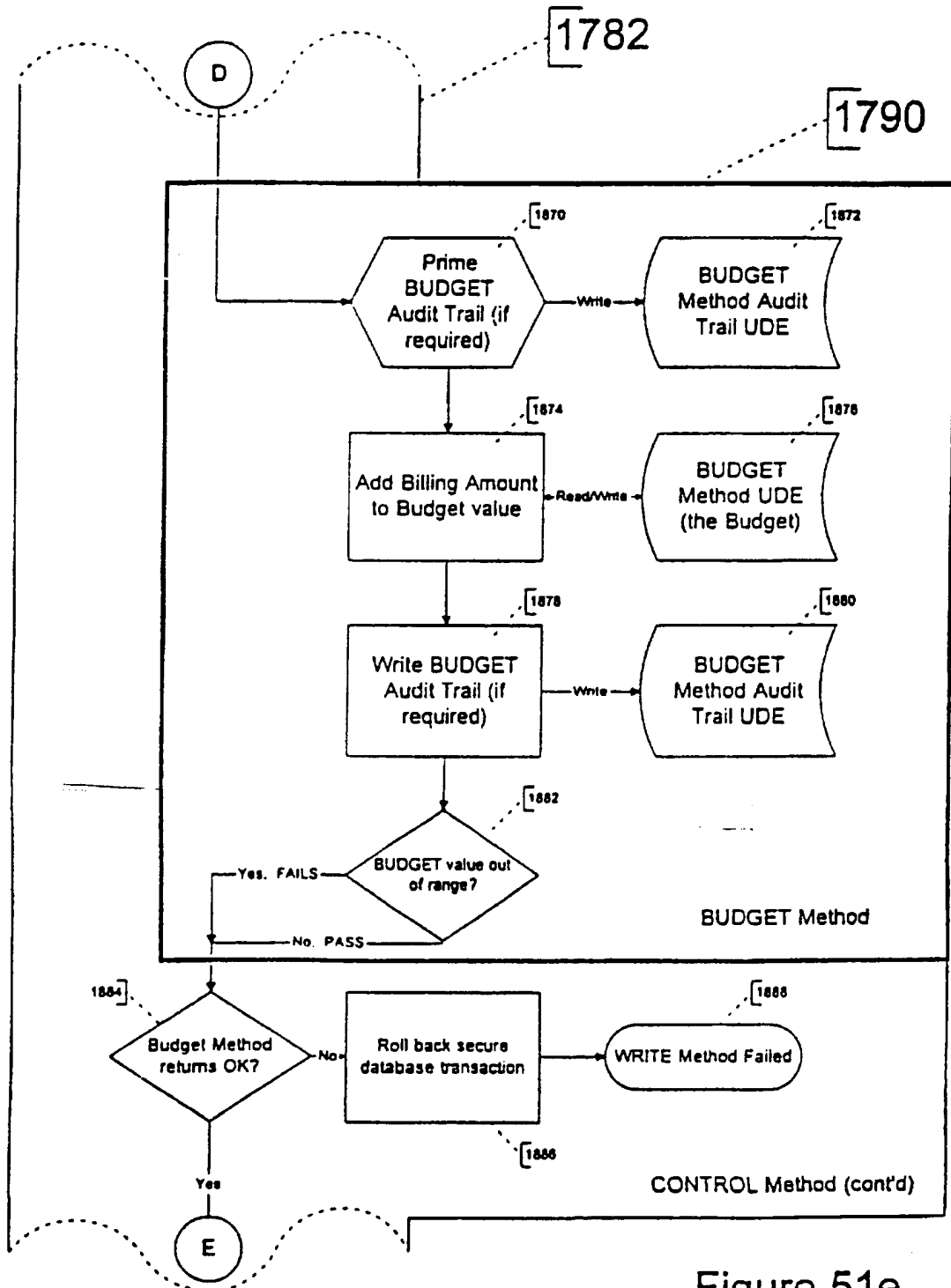


Figure 51e

SUBSTITUTE SHEET (RULE 26)

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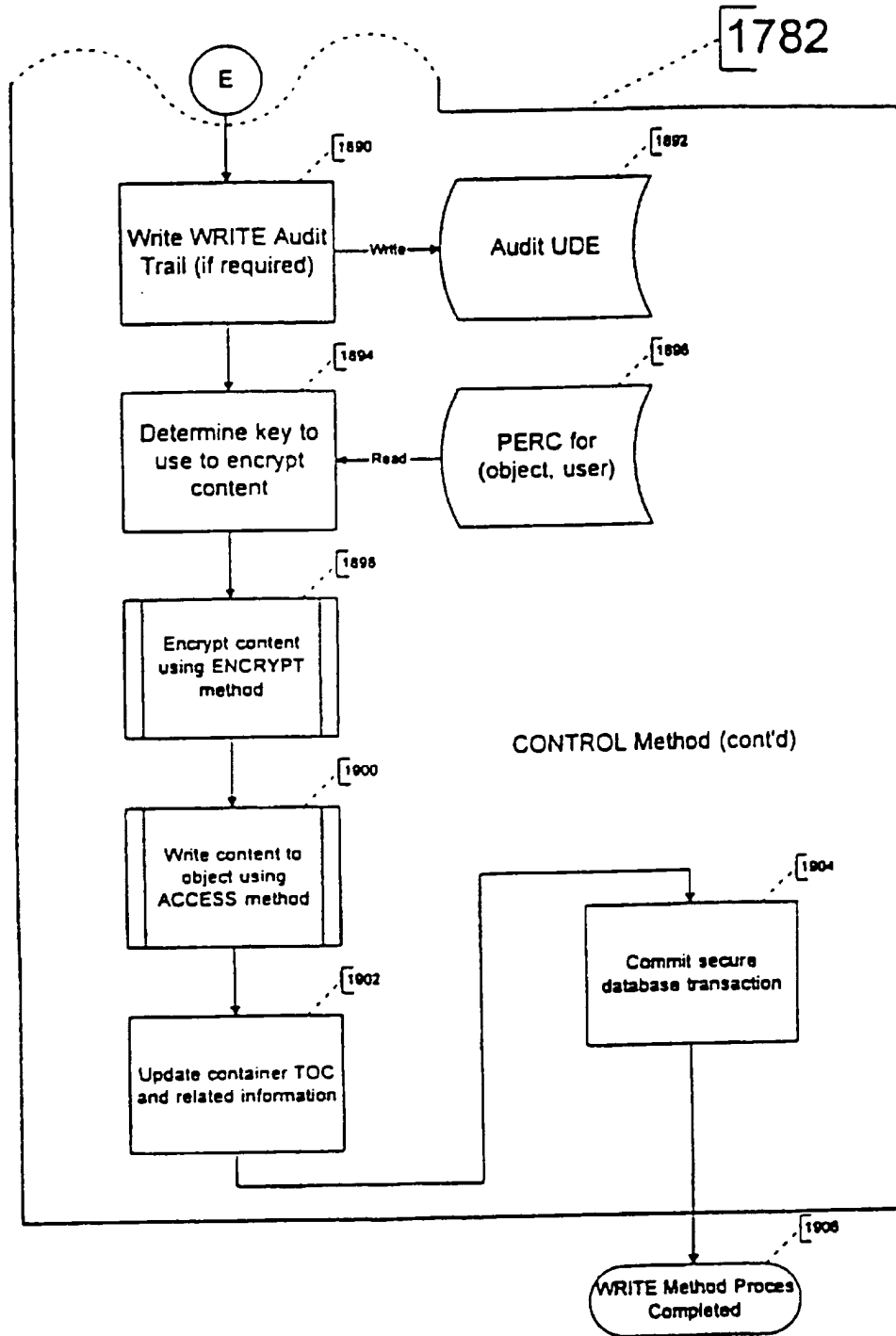
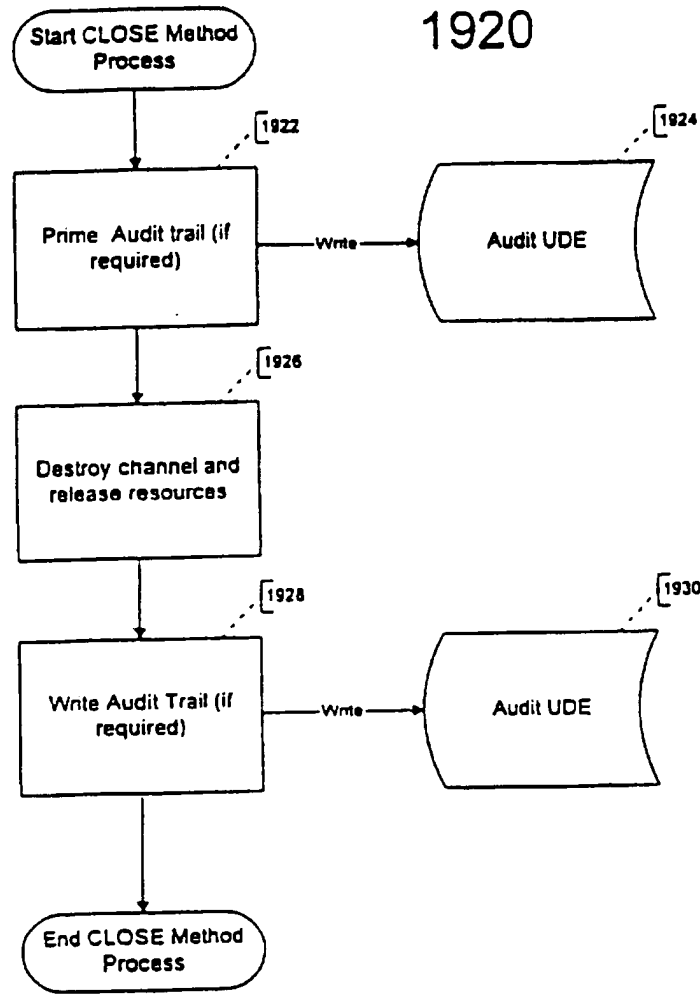


Figure 51f

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CLOSE Method Process Flow

Figure 52

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EVENT Method Process Flows

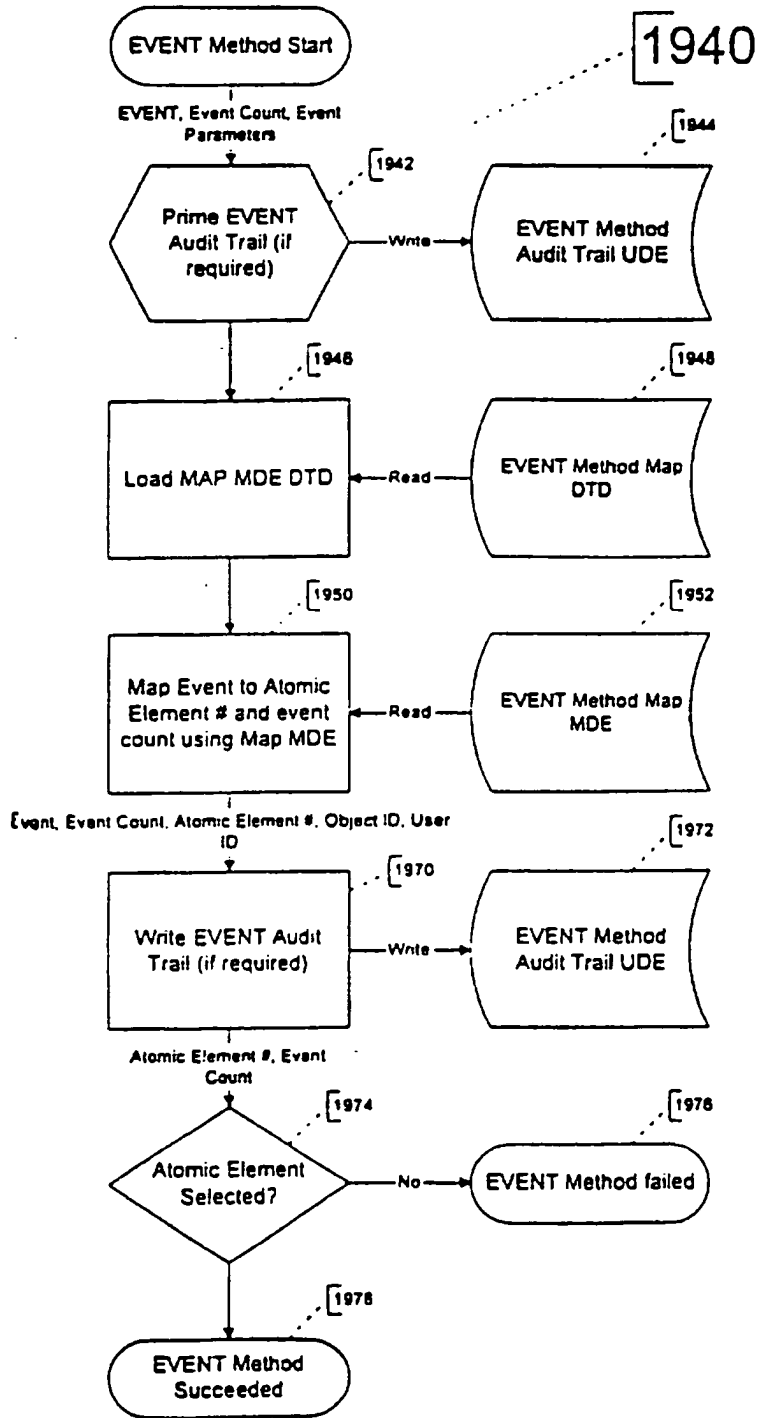


Figure 53a

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Sample EVENT Method Mapping Process

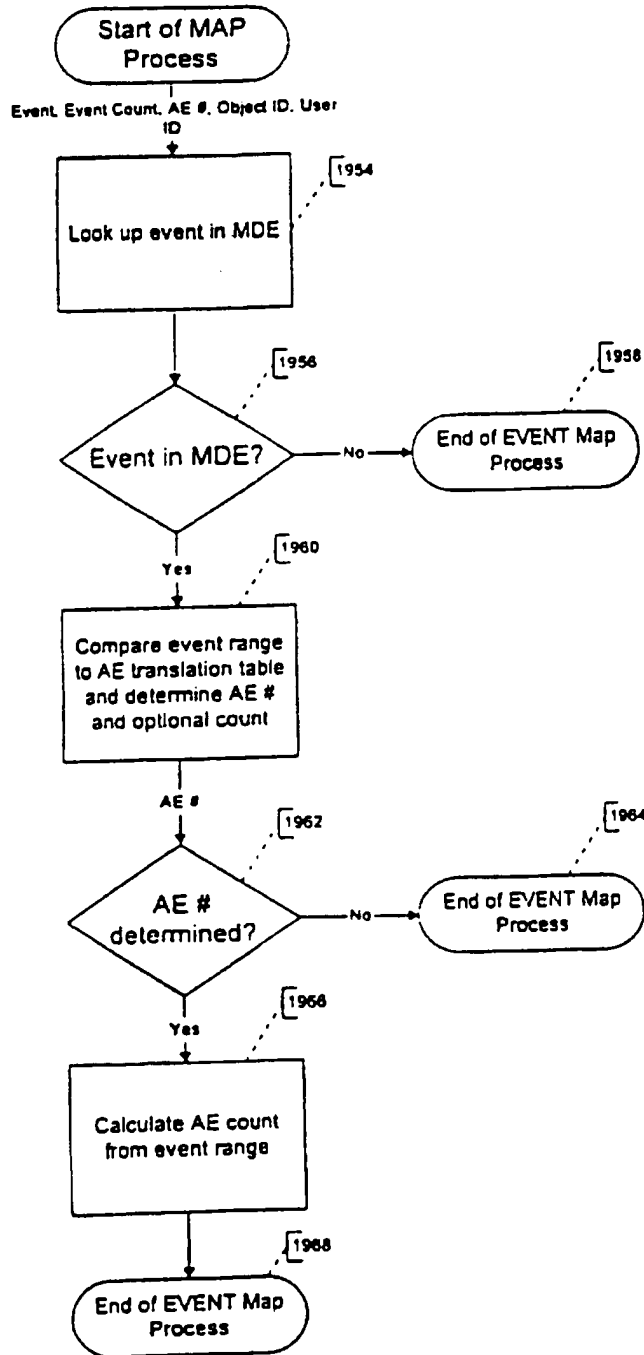
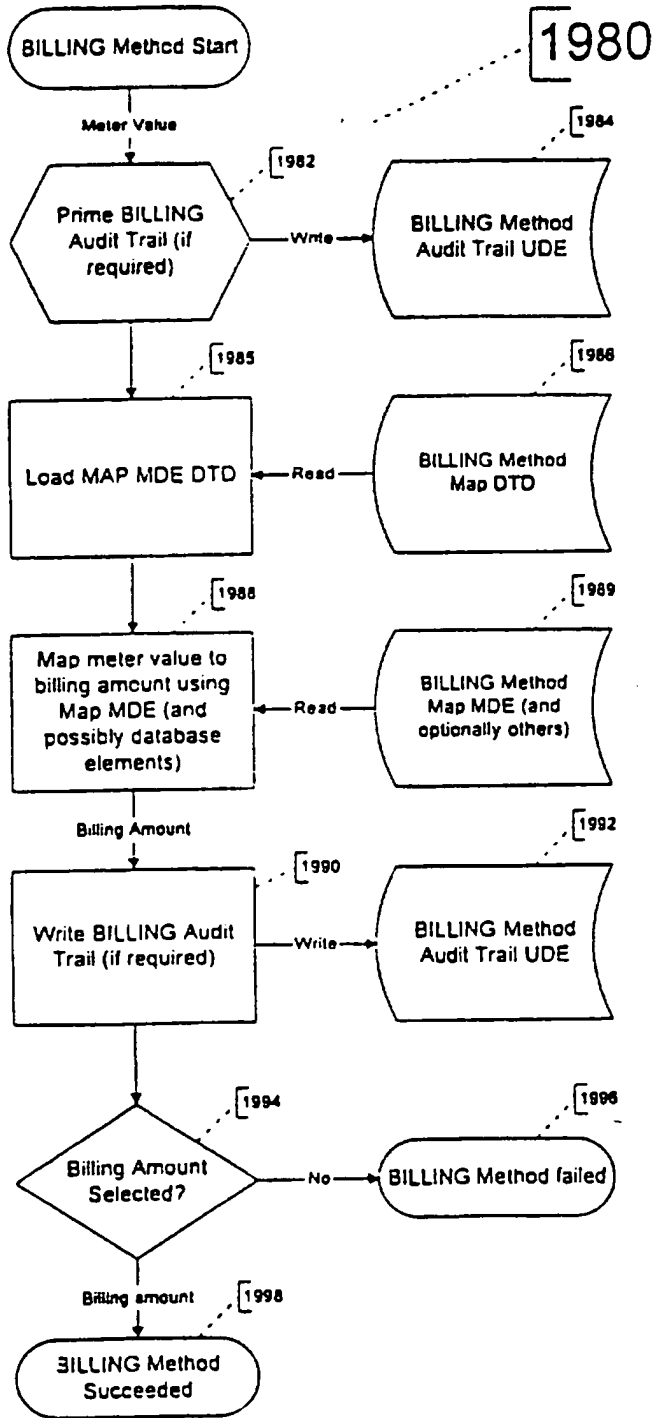


Figure 53b

BILLING Method Process Flows



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ACCESS Method Process Flow

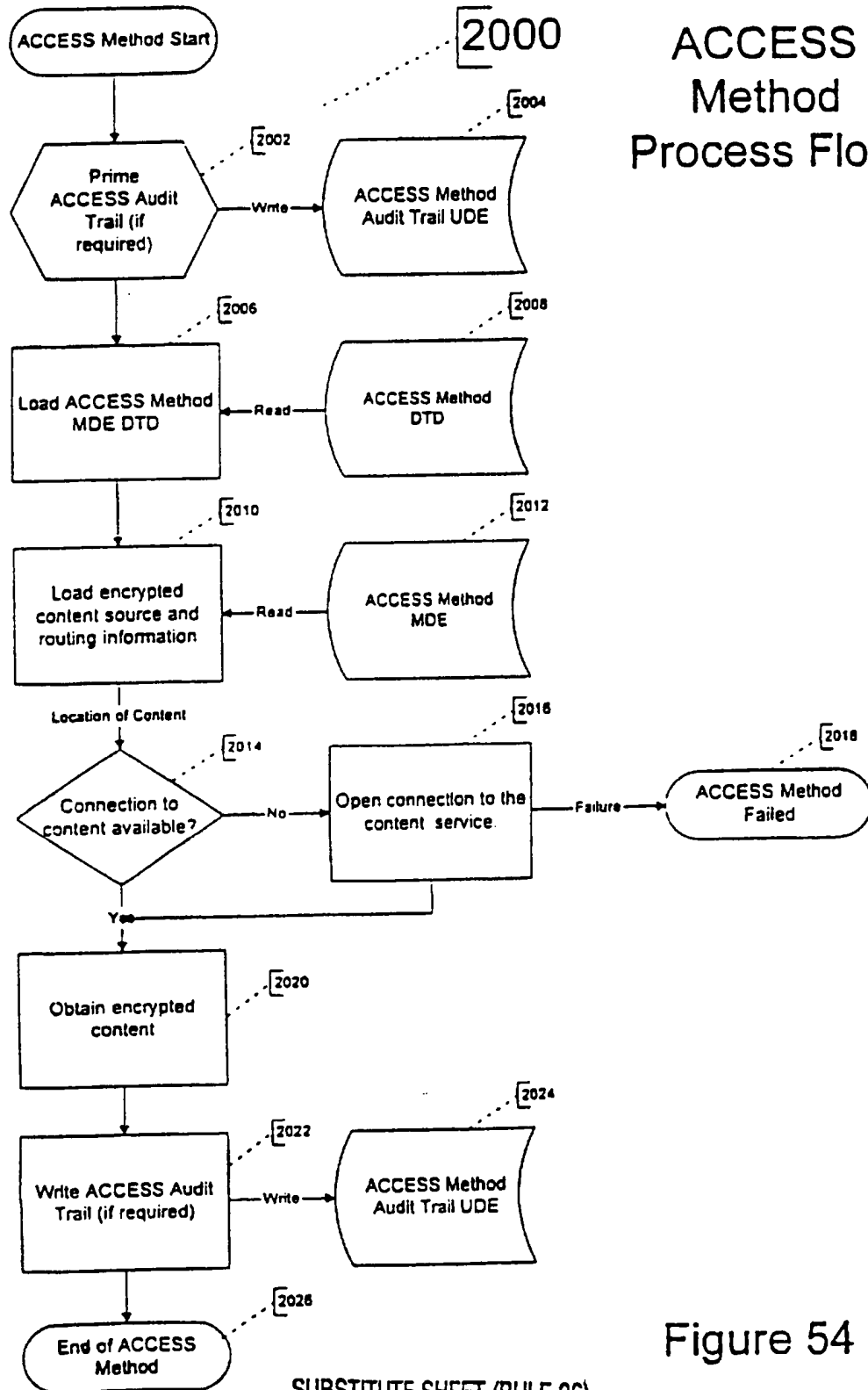
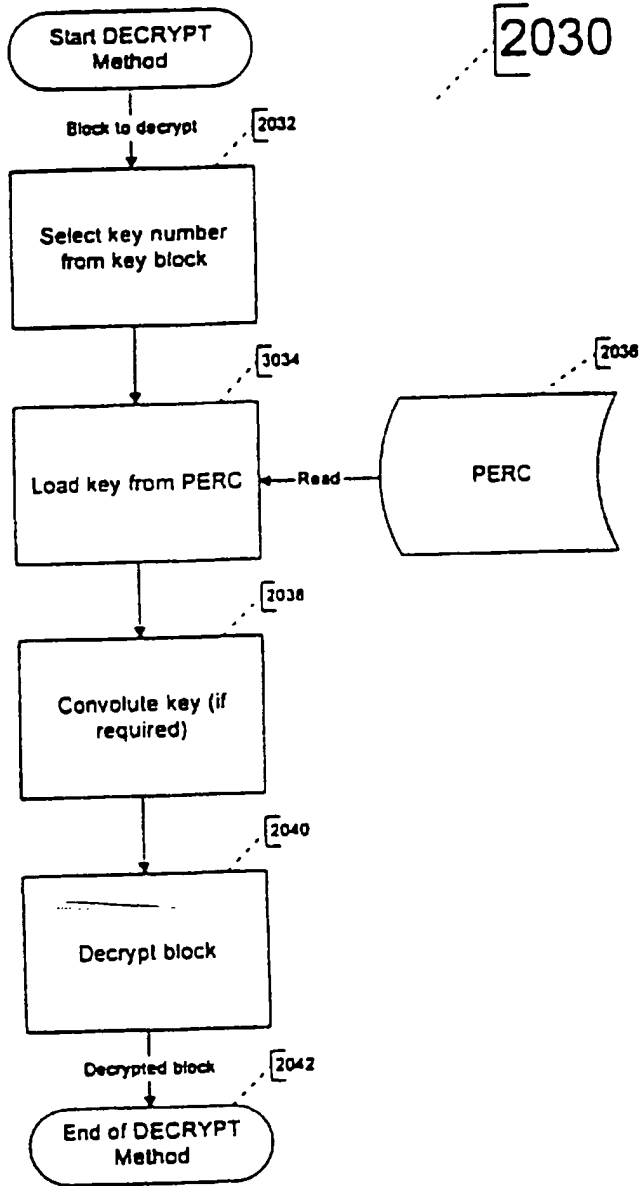


Figure 54

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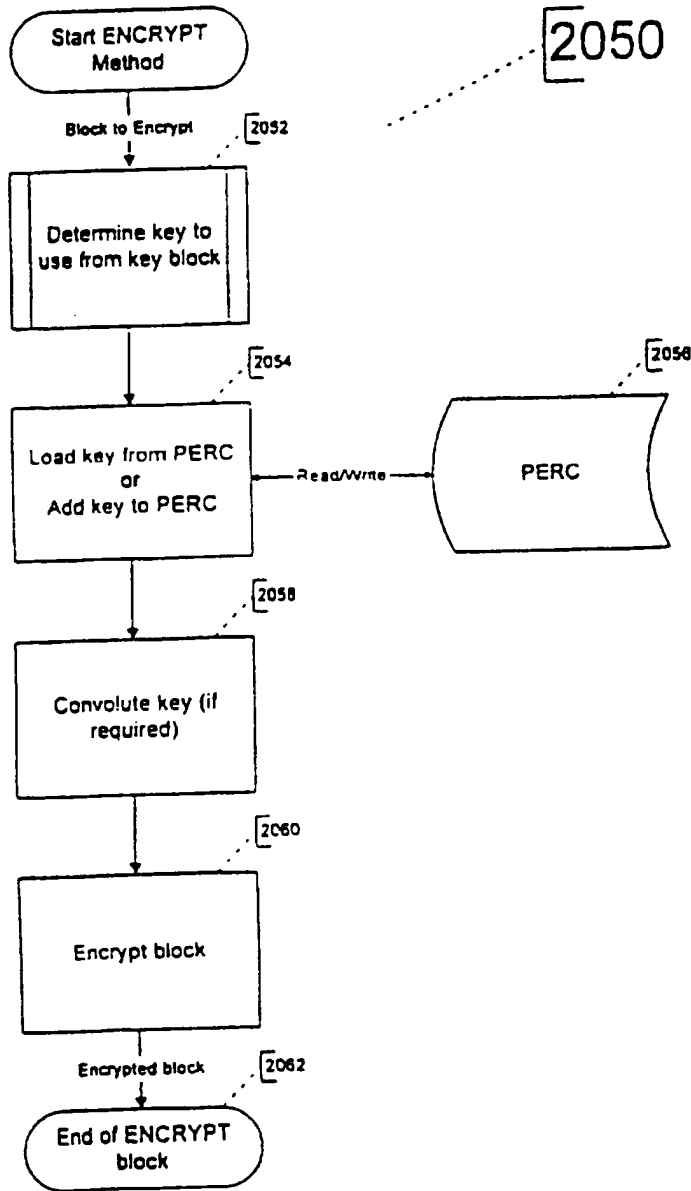
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DECRYPT Method Process Flow



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ENCRYPT Method Process Flow



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CONTENT Method Process Flow

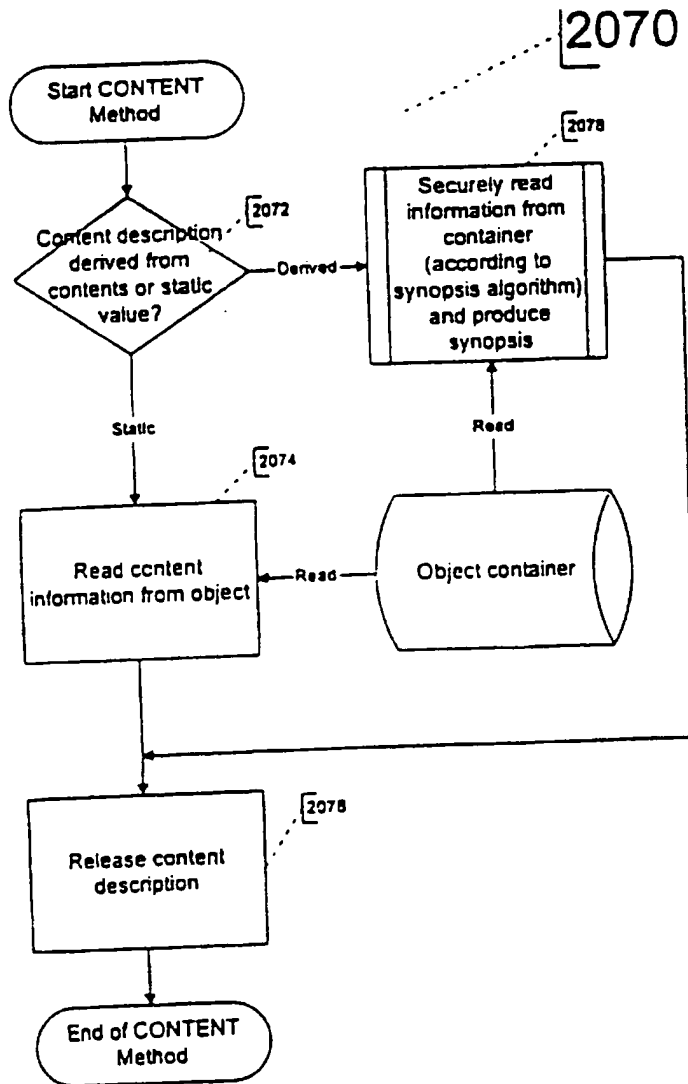
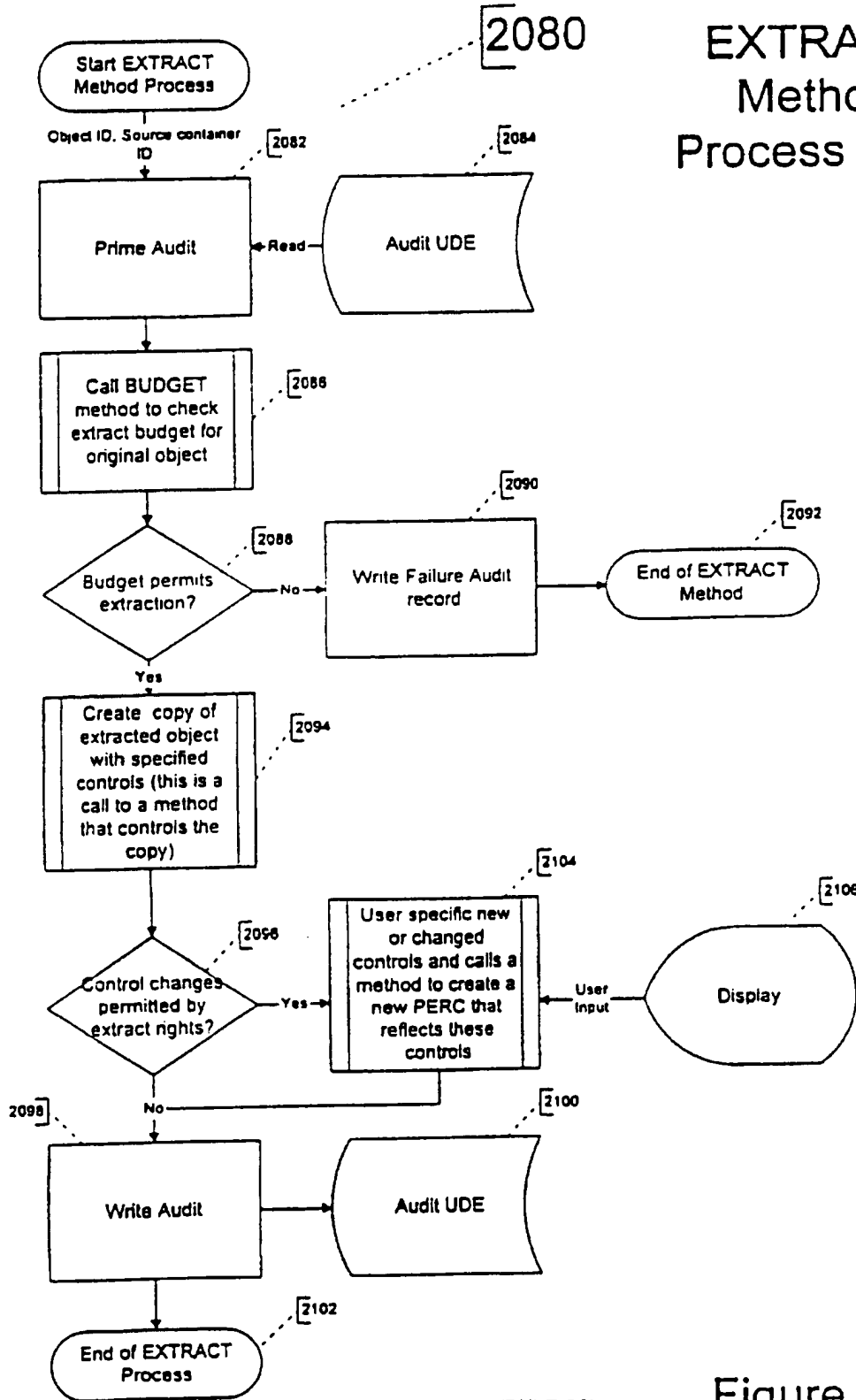


Figure 56

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EXTRACT Method Process Flow



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Figure 57a

EMBED Method Process Flow

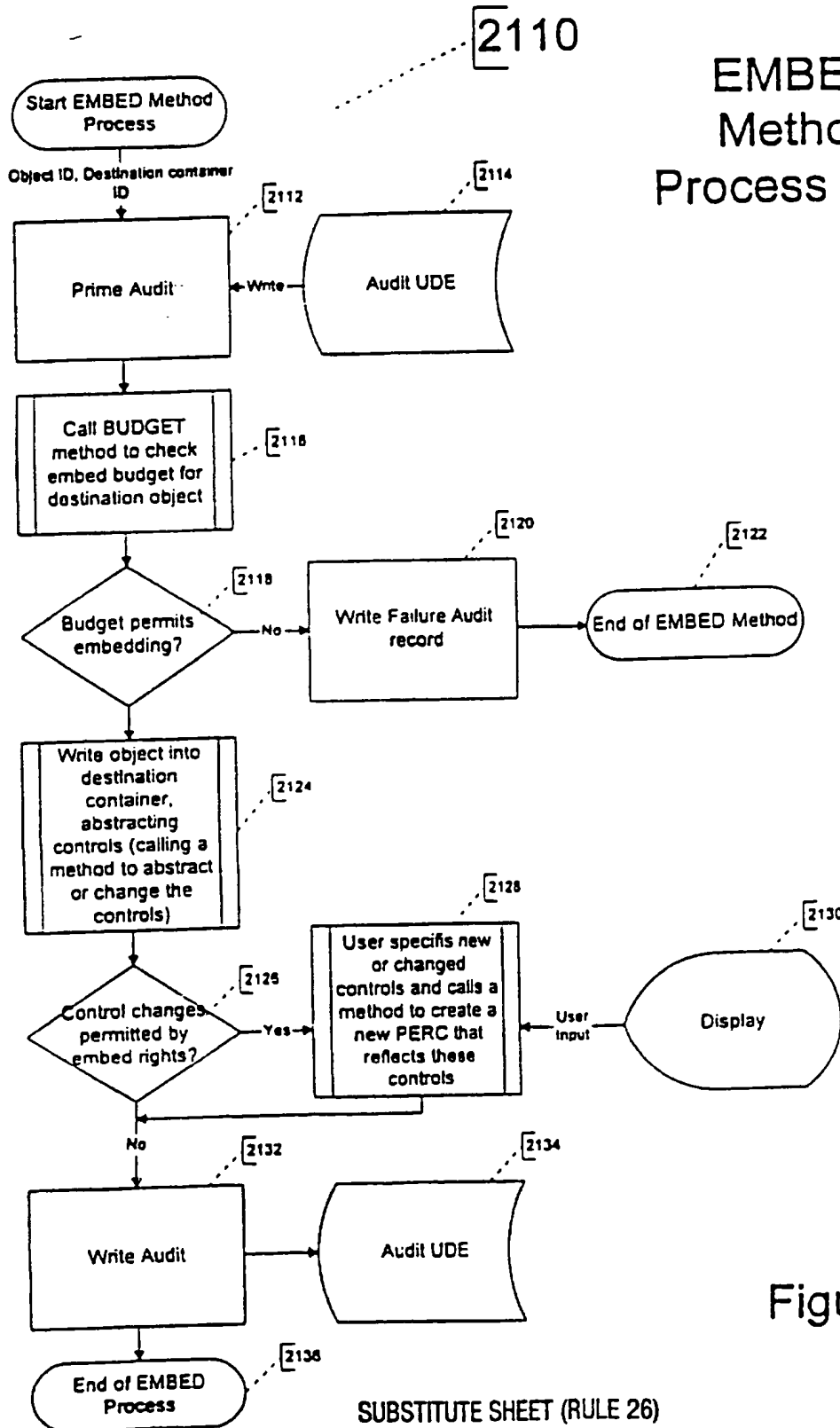
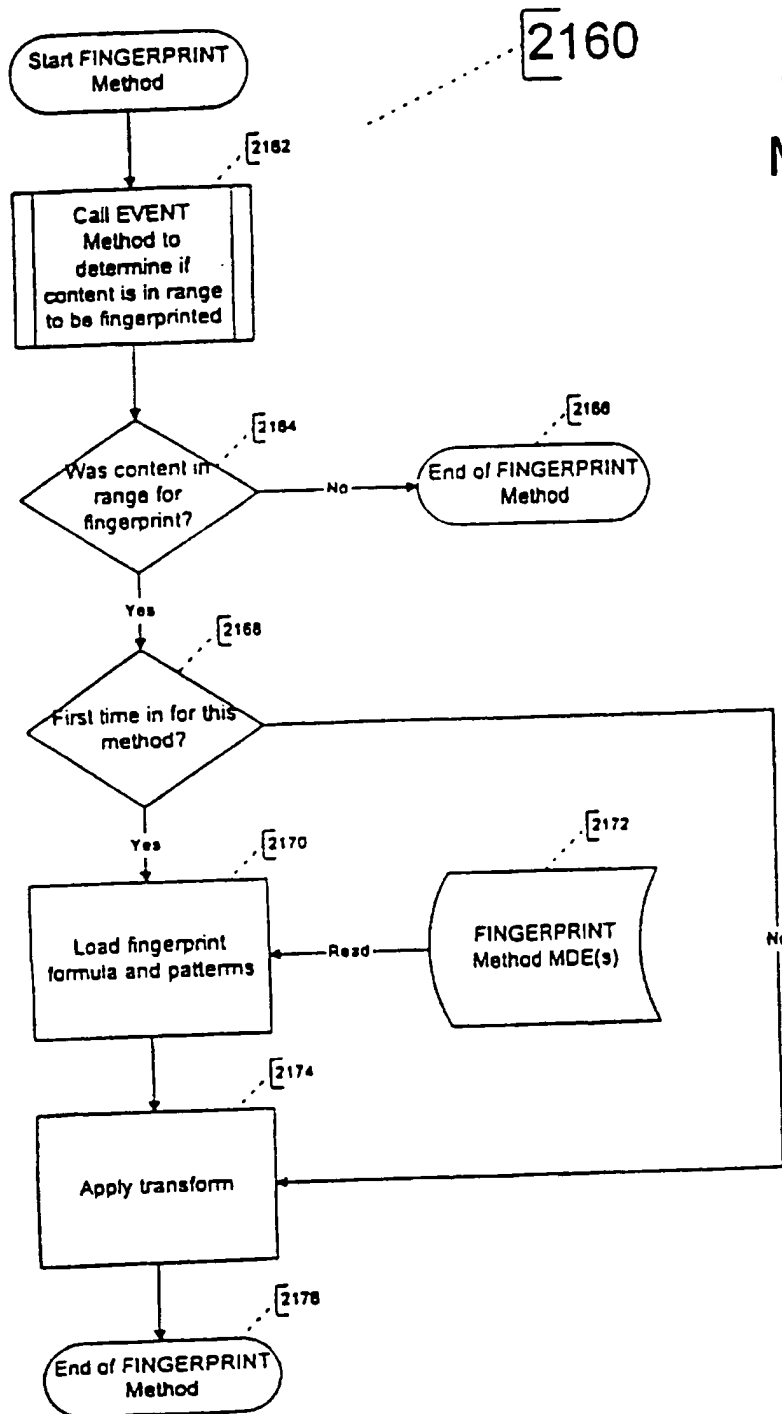


Figure 57b

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FINGERPRINT Method Process Flow

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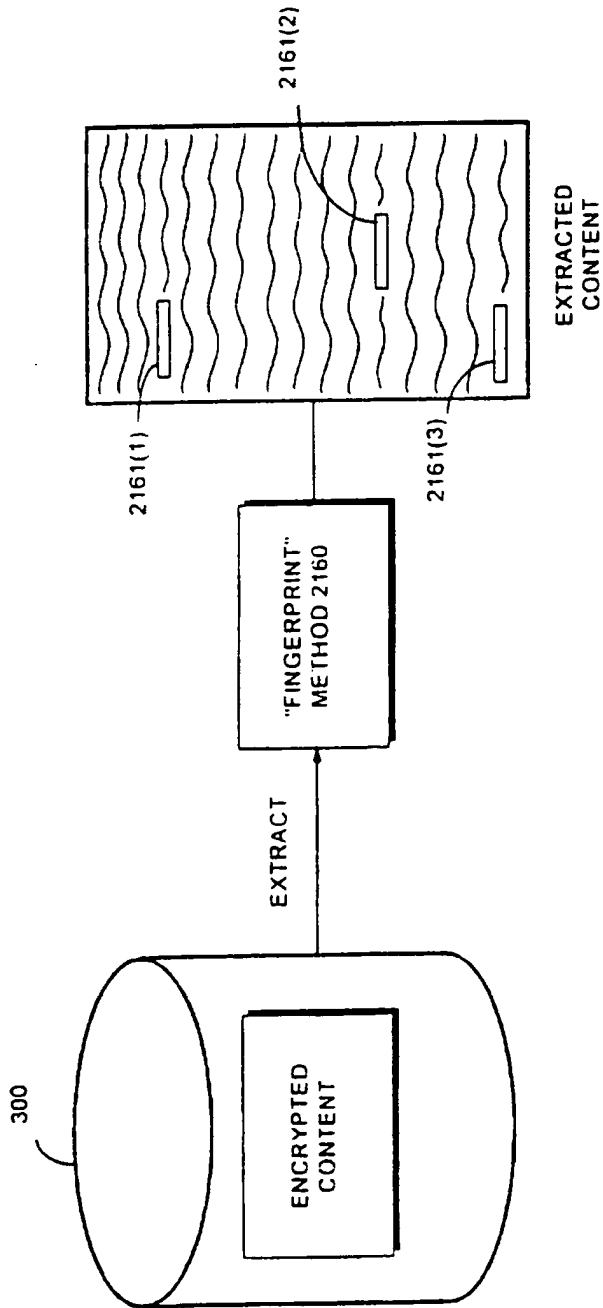


FIG. 58C

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DESTROY Method Process Flow

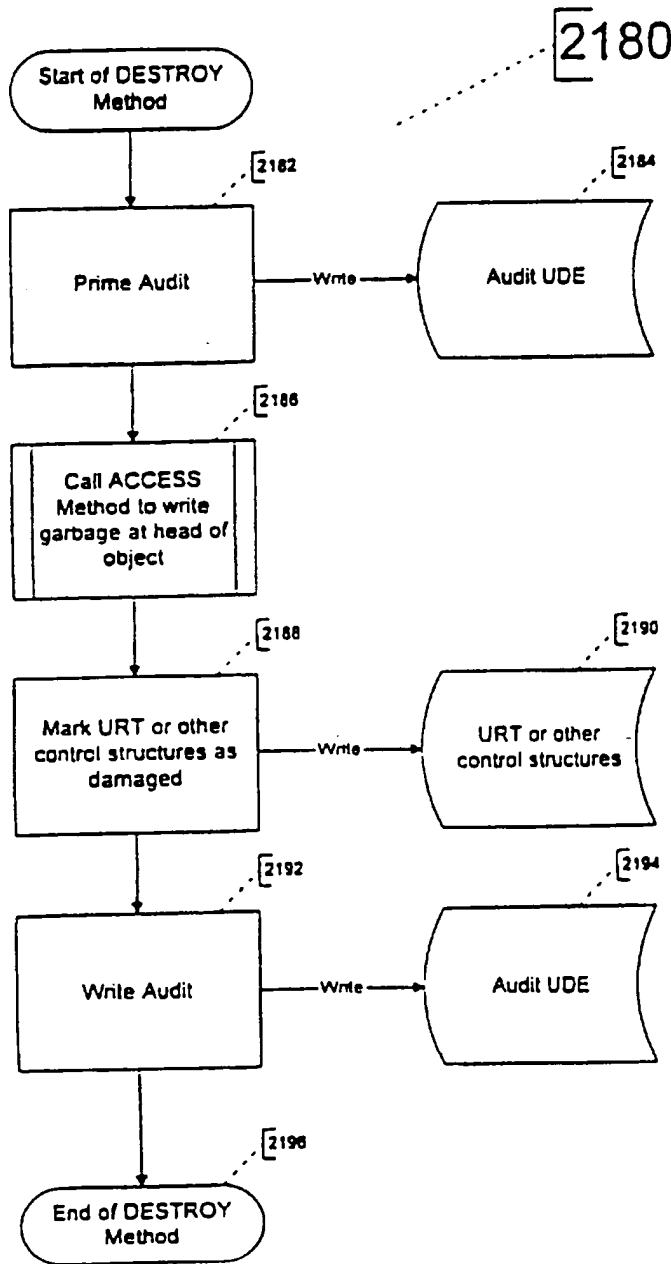
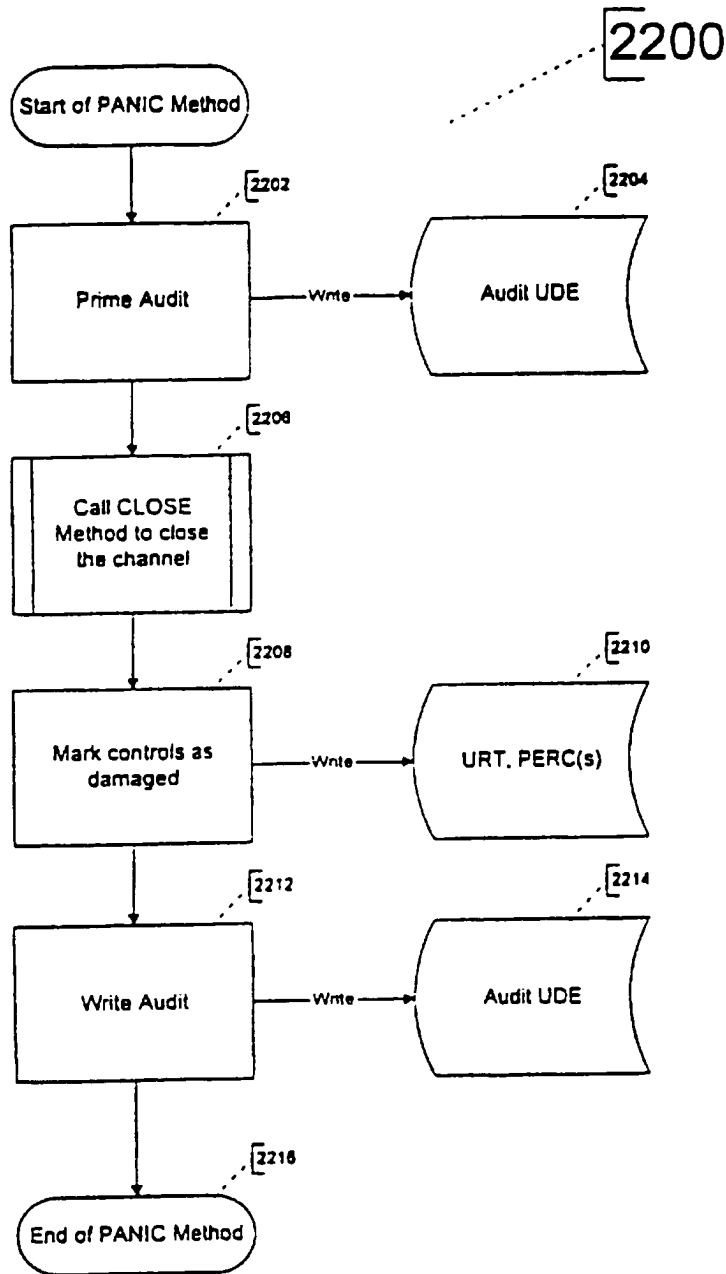


Figure 59

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PANIC Method Process Flow



METER Method Use Process Flow

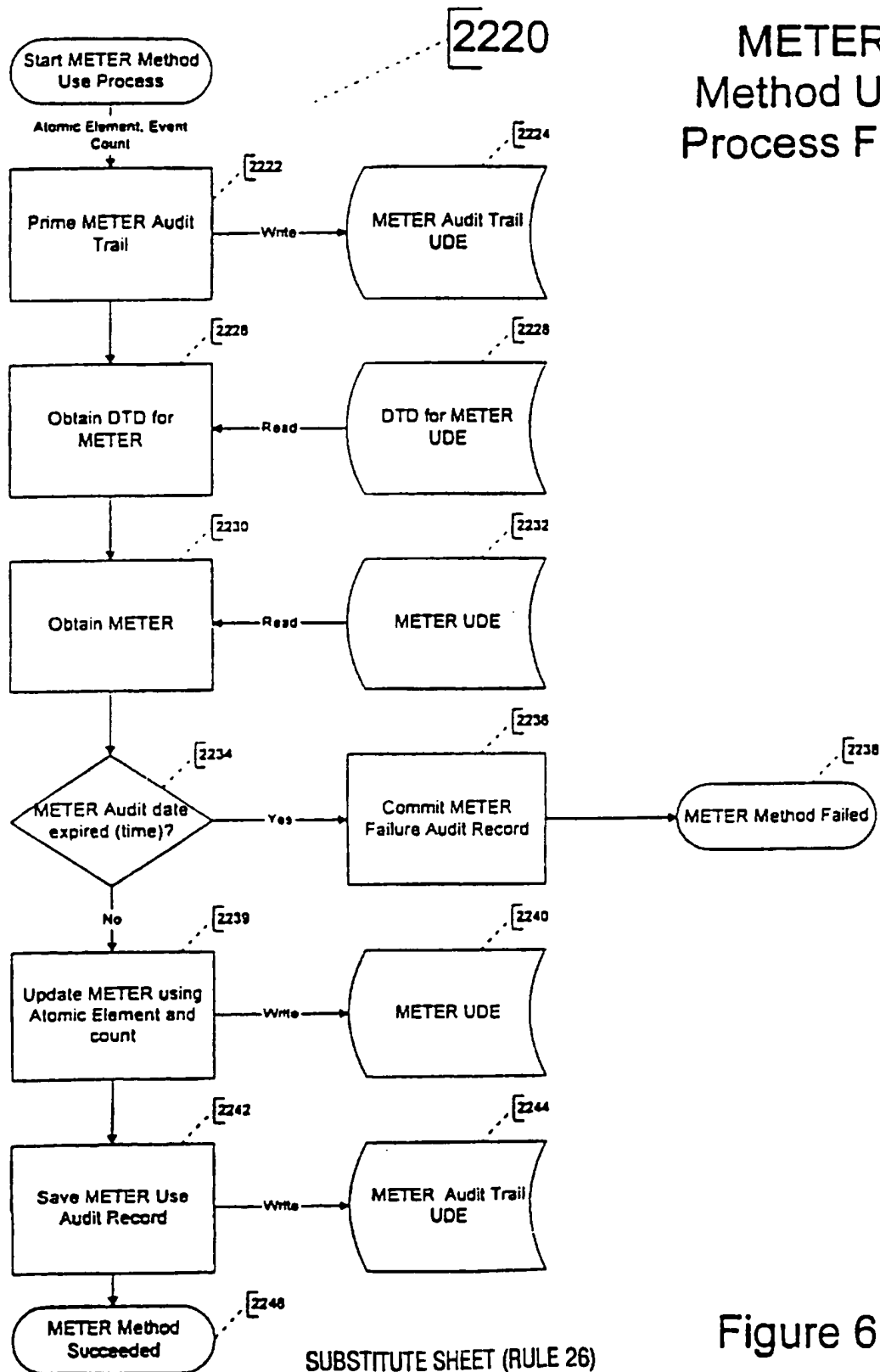
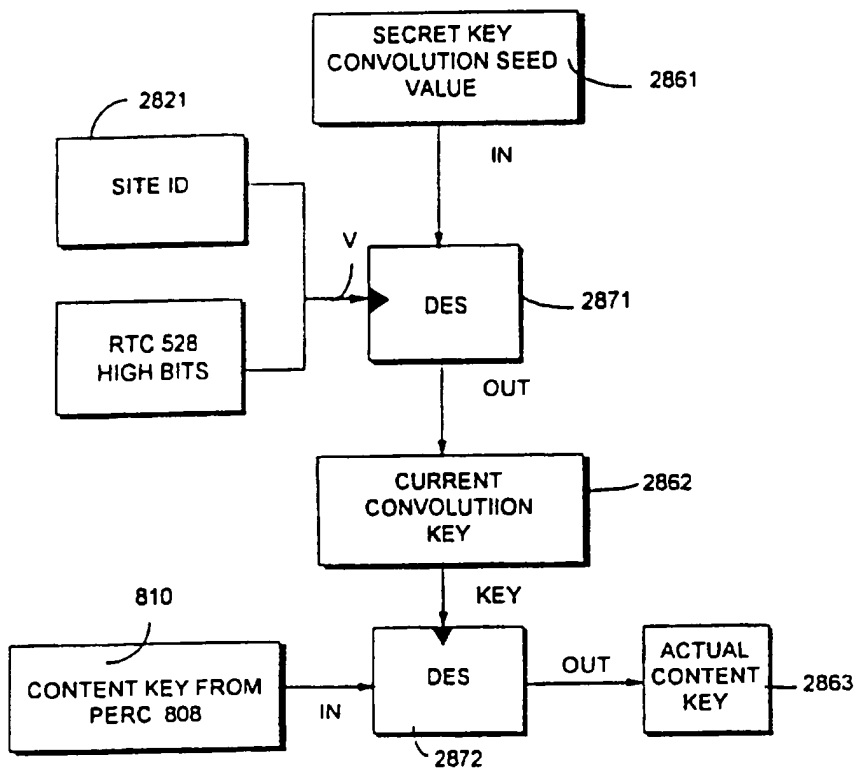


Figure 61

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FIG. 62
KEY CONVOLUTION PROCESS



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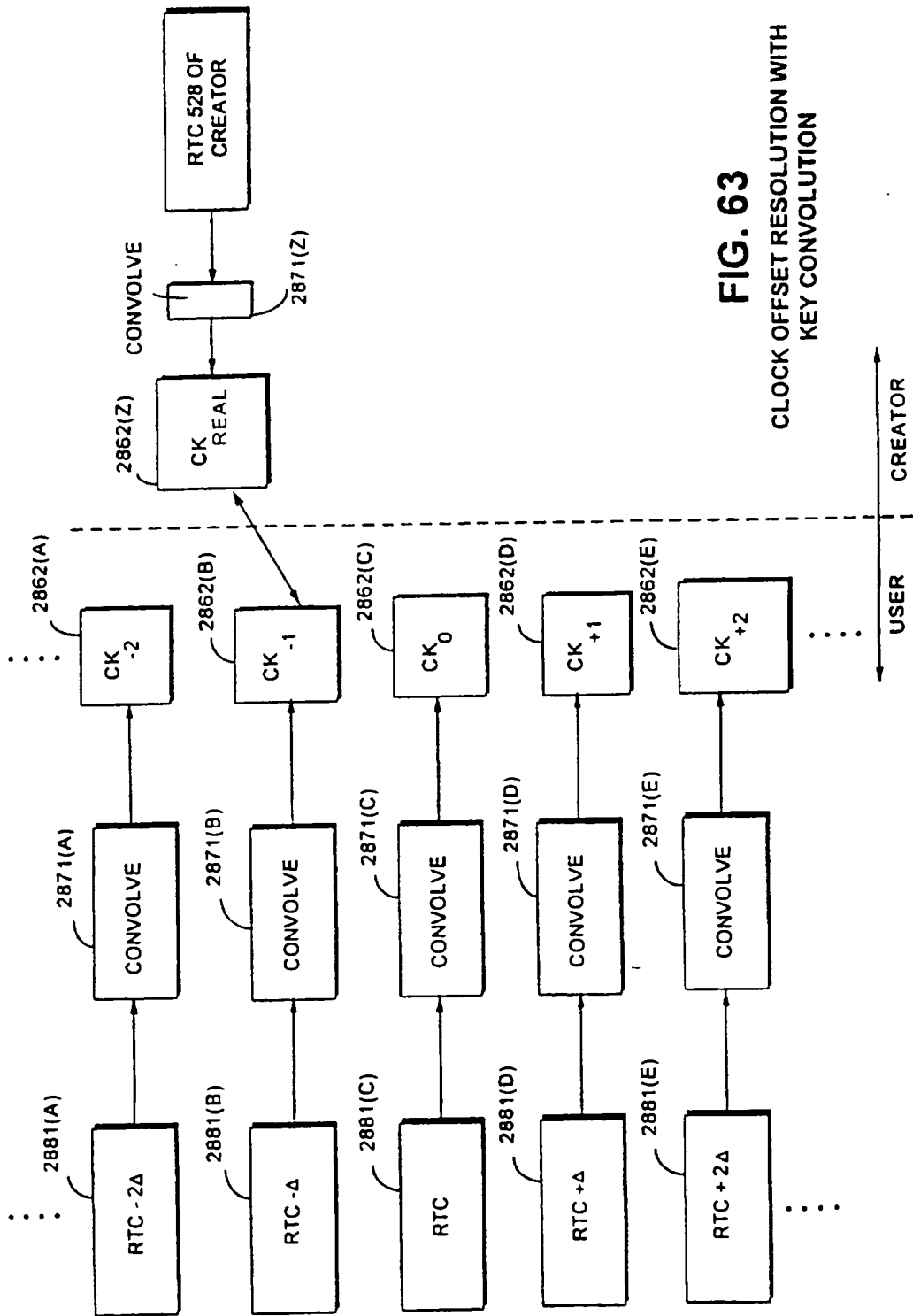


FIG. 63

CLOCK OFFSET RESOLUTION WITH
KEY CONVOLUTION

FIG. 64 SPU KEY INITIALIZATION/INSTALLATION

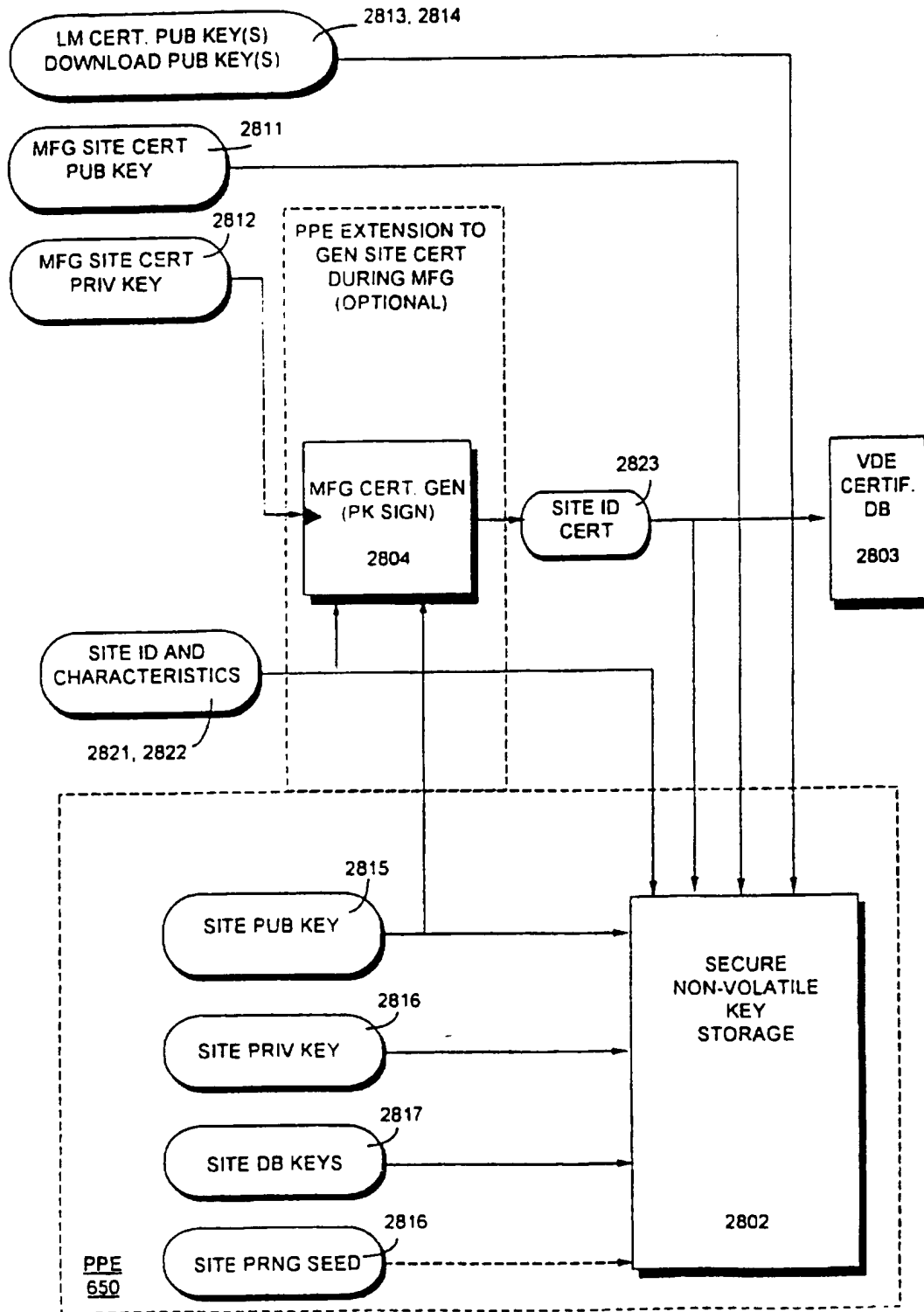
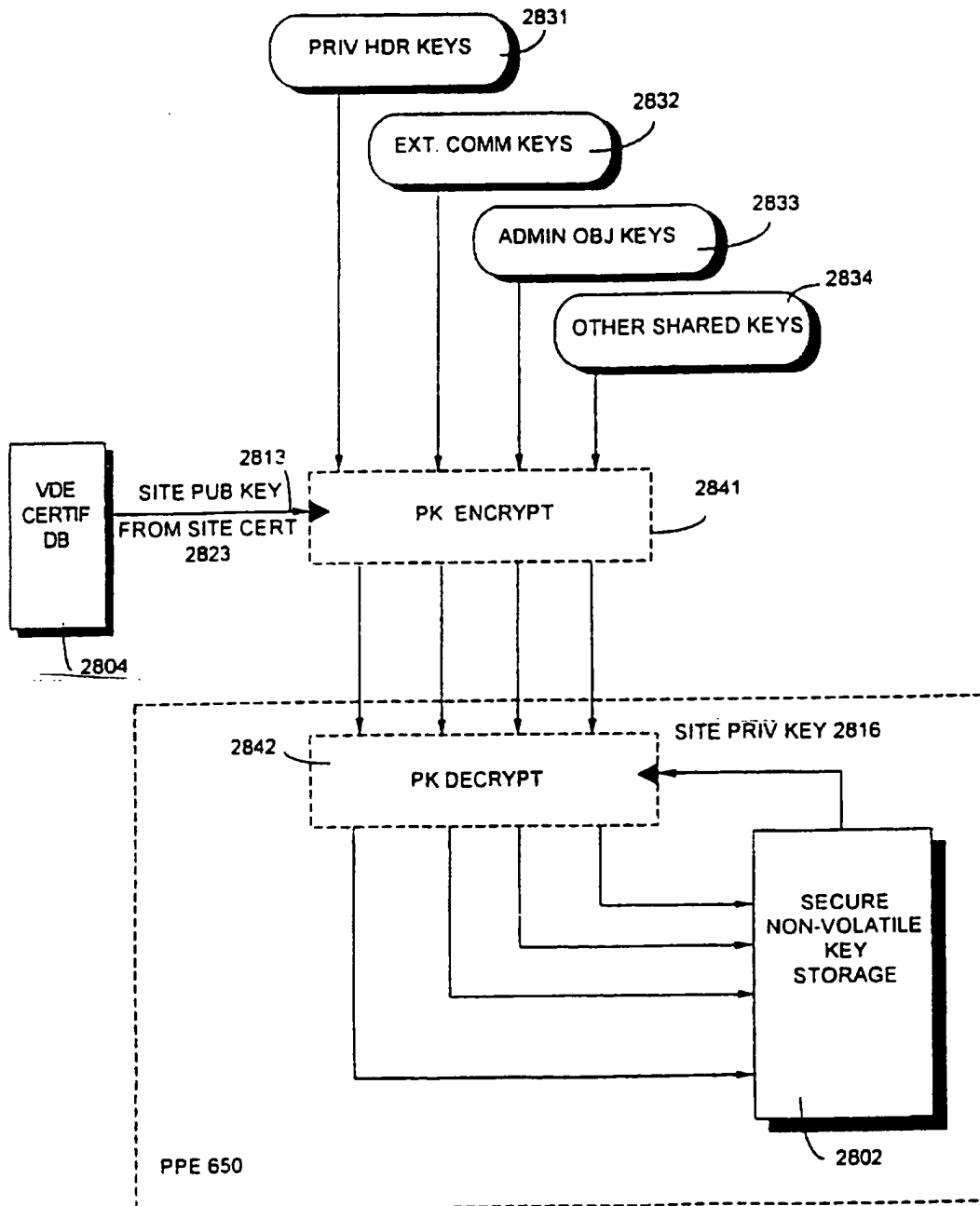


FIG. 65 KEY INSTALLATION & UPDATE



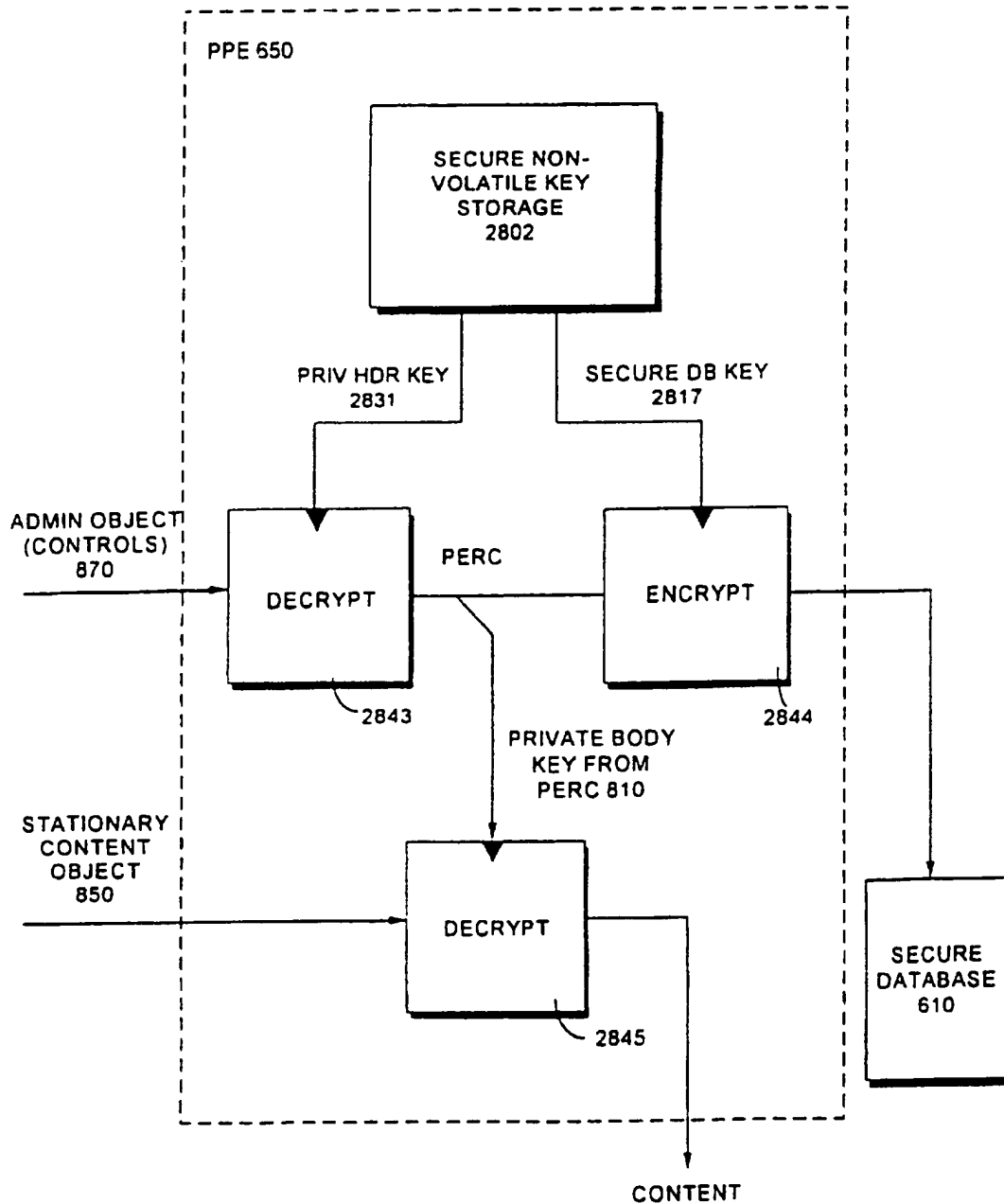


FIG. 66 STATIONARY OBJECT DECRYPTION

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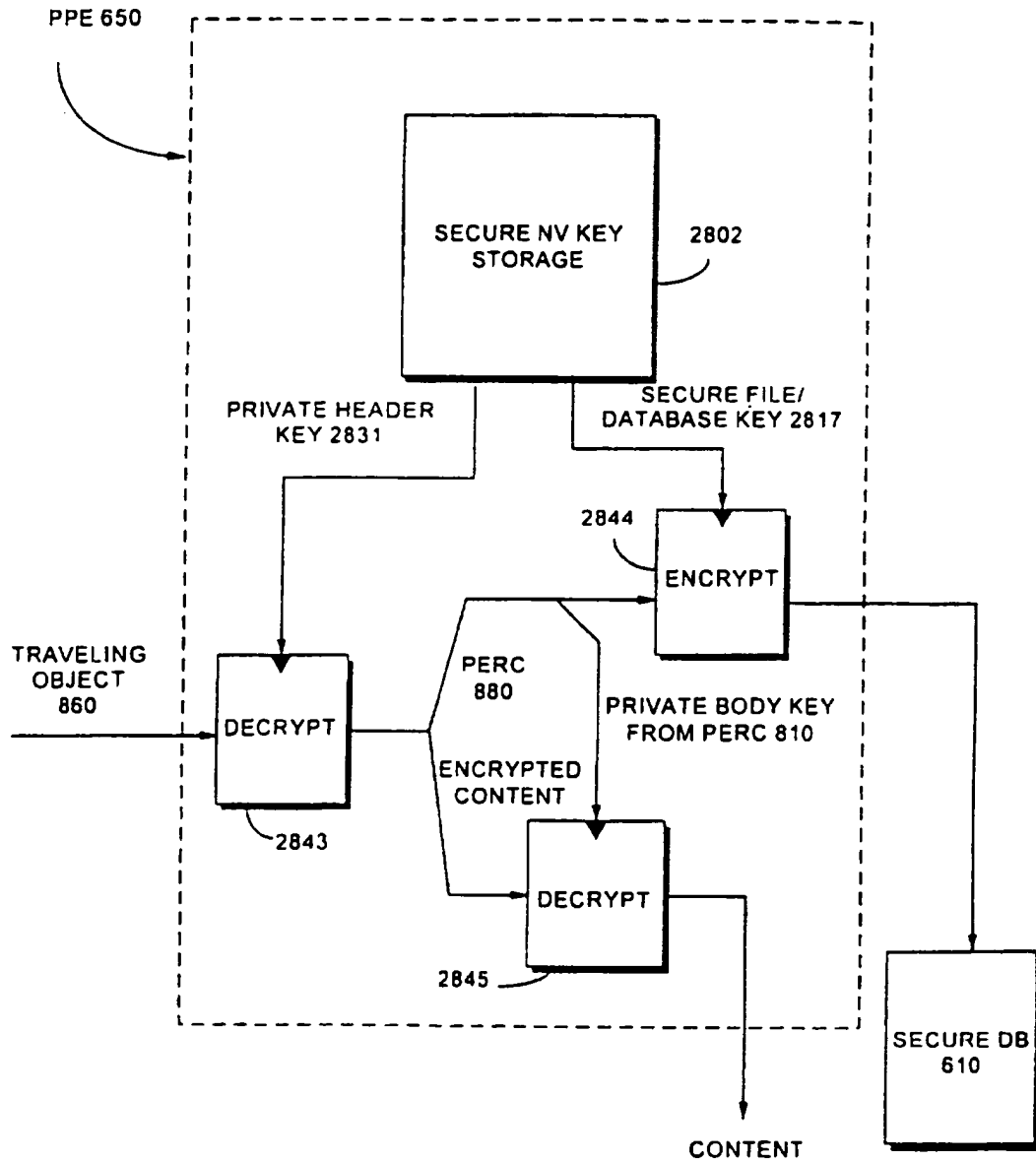


FIG. 67 TRAVELING OBJECT DECRYPTION

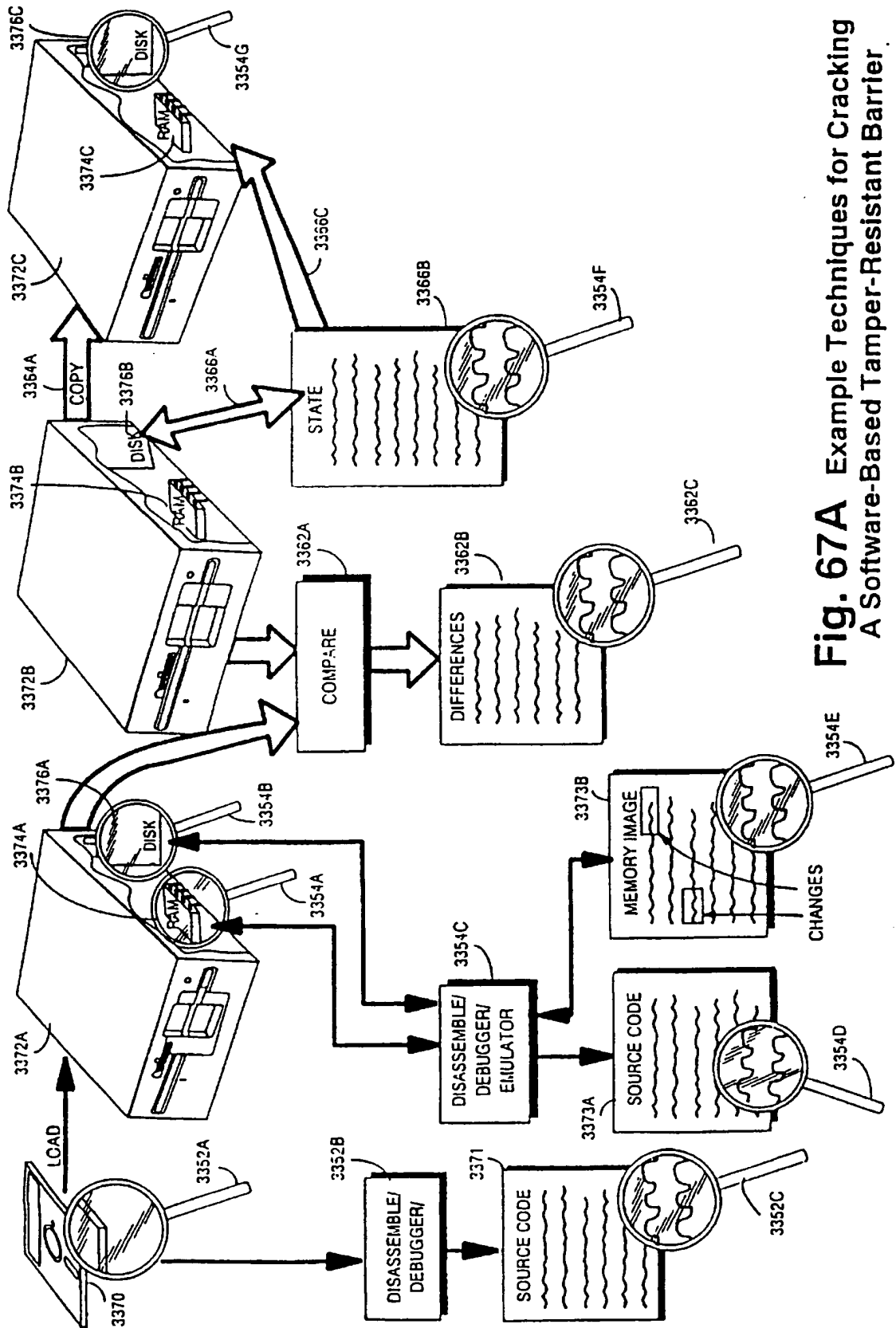
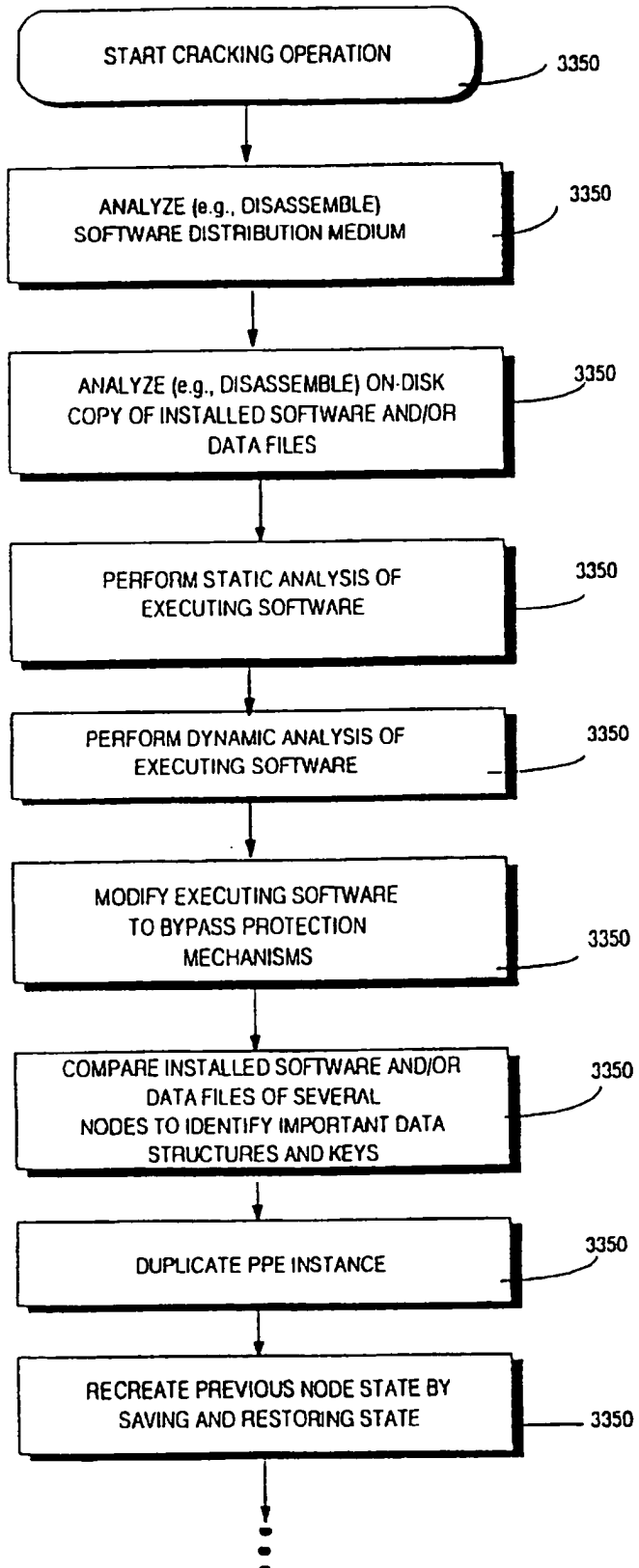


Fig. 67A Example Techniques for Cracking A Software-Based Tamper-Resistant Barrier

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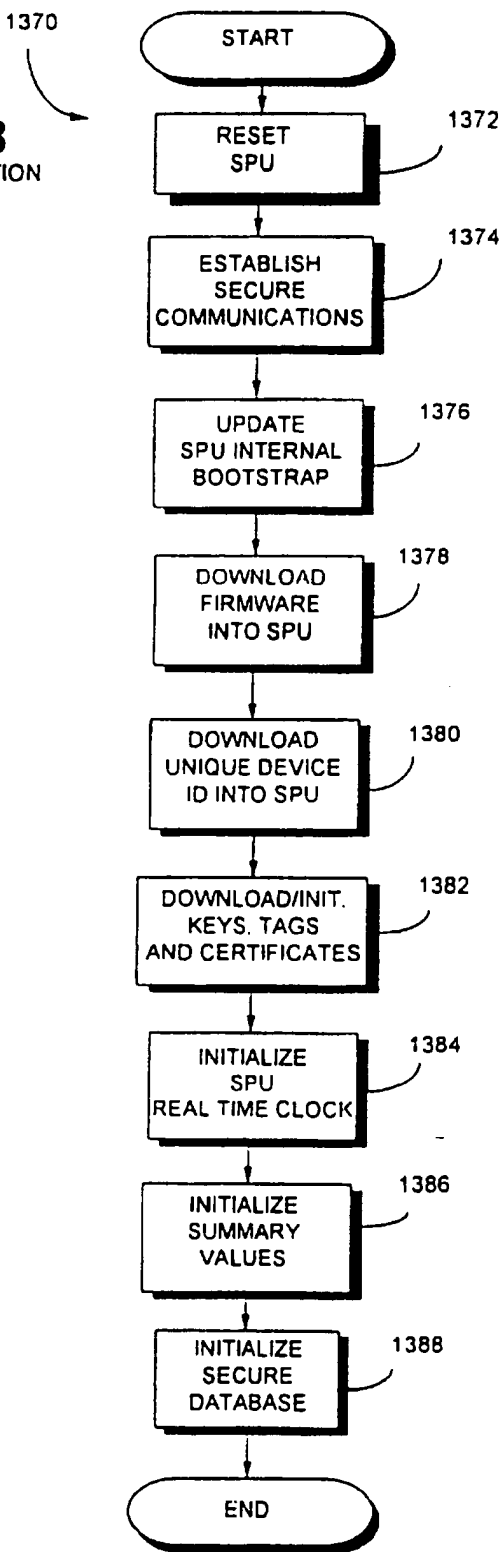
Fig. 67B
Example Cracking Operation



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FIG. 68
SPU INITIALIZATION



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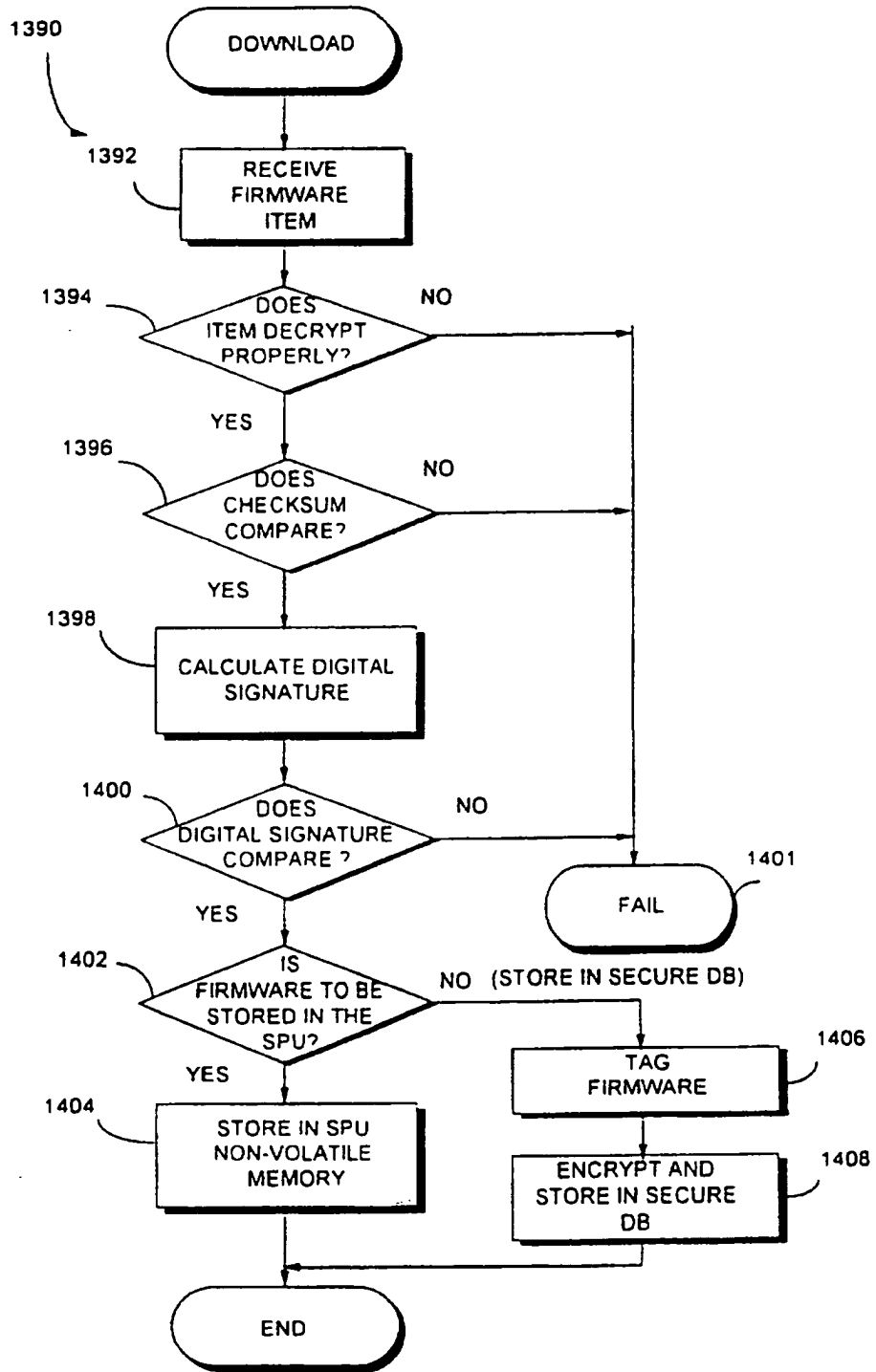
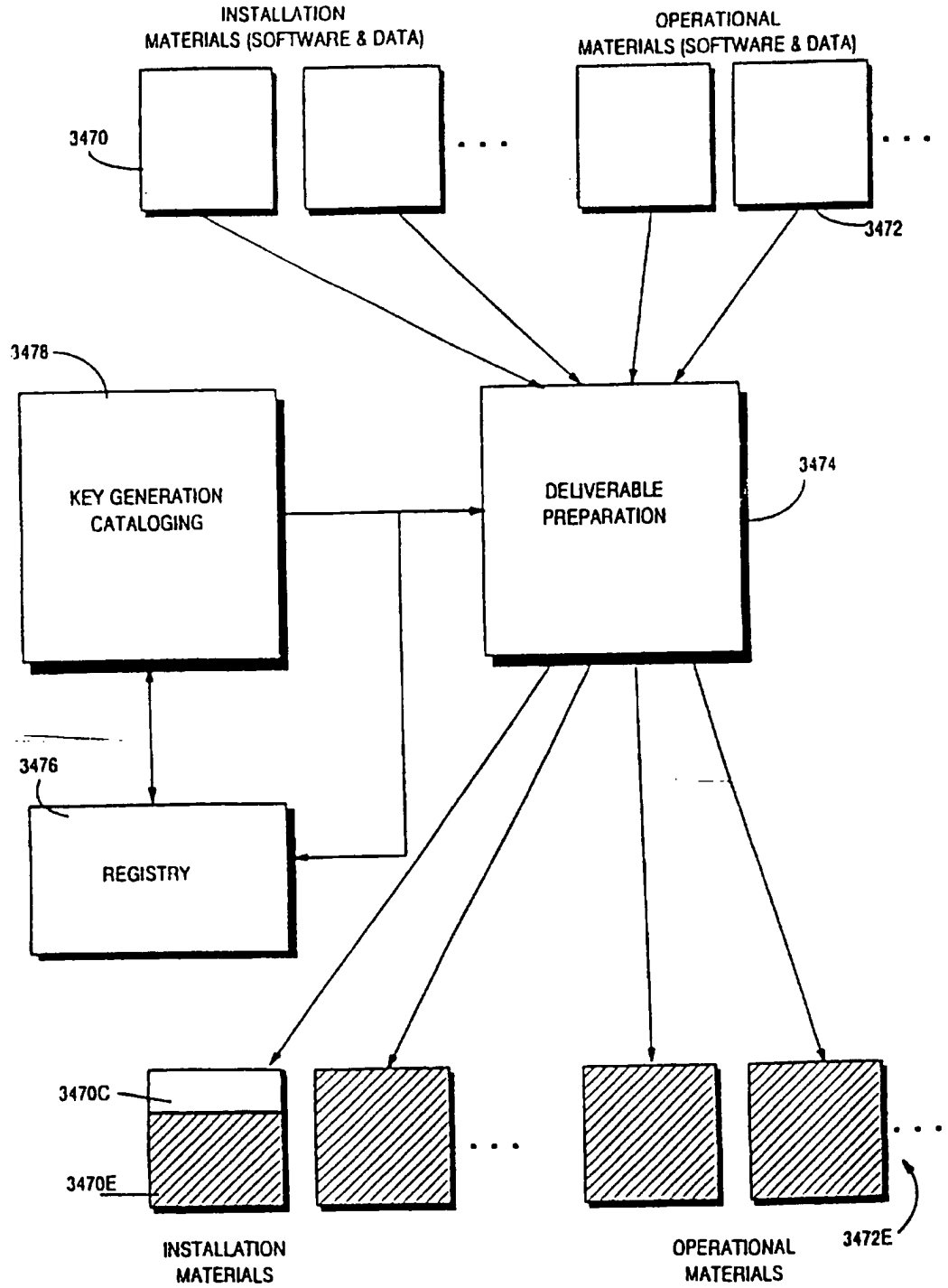


FIG. 69

SPU FIRMWARE
DOWNLOAD

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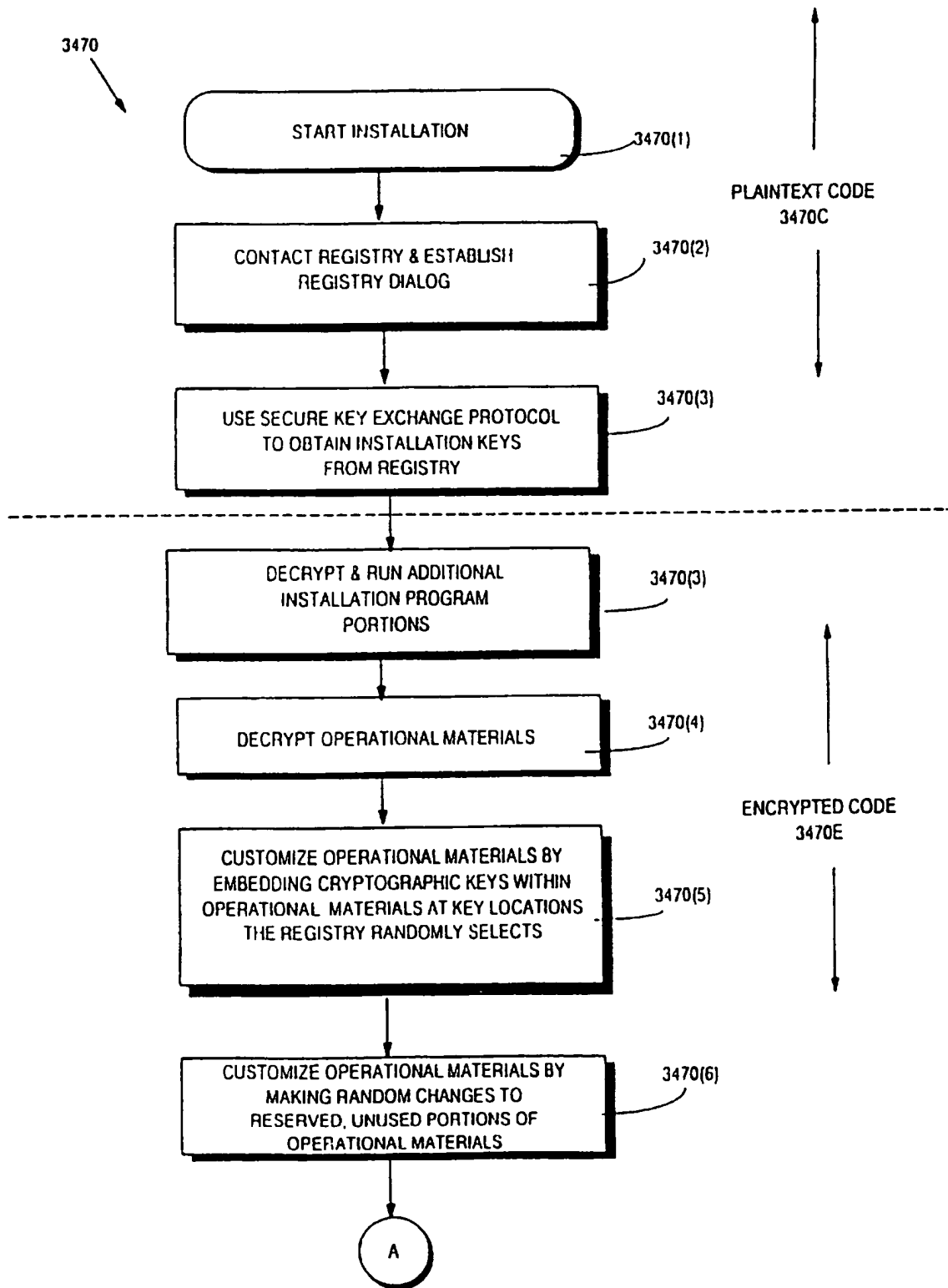
Fig. 69A Software Distributed In Encrypted Form



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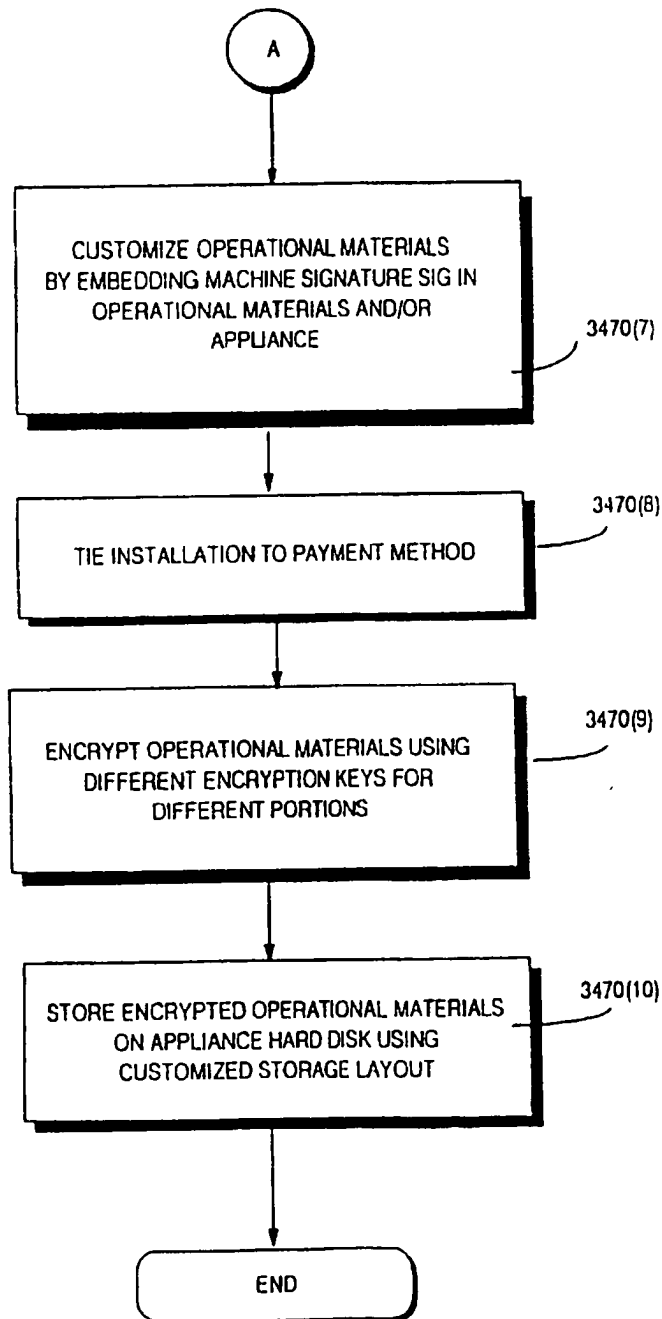
Fig. 69B Example Installation Routine



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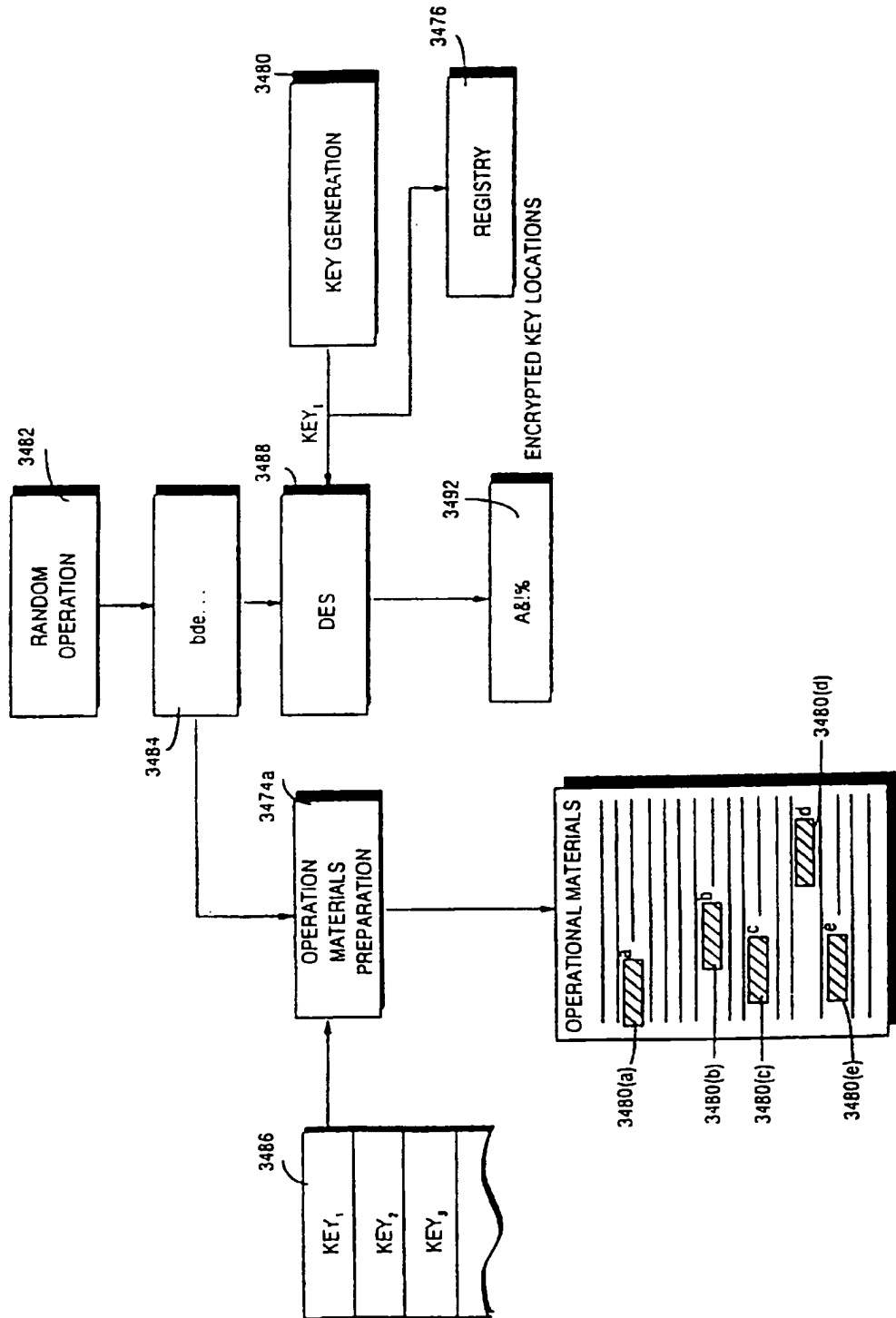
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Fig. 69C Example Installation Routine



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Fig. 69D Embedding Keys At Different Locations With Operational Materials



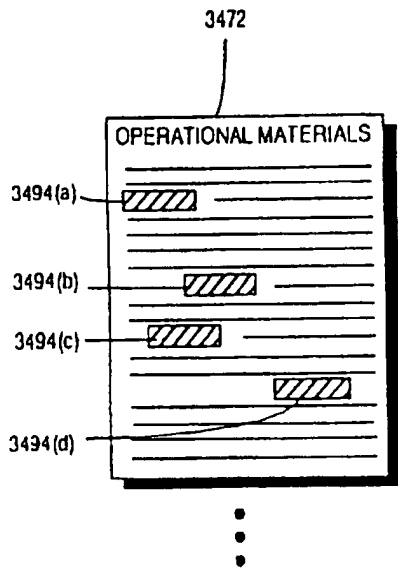


Fig. 69E
Example Locations For Random
Modifications and Fingerprints

Fig. 69F
Example Customized Static
Storage Layout

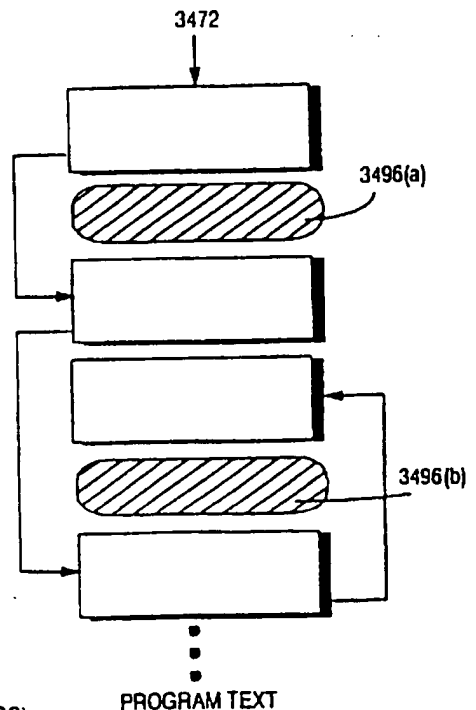
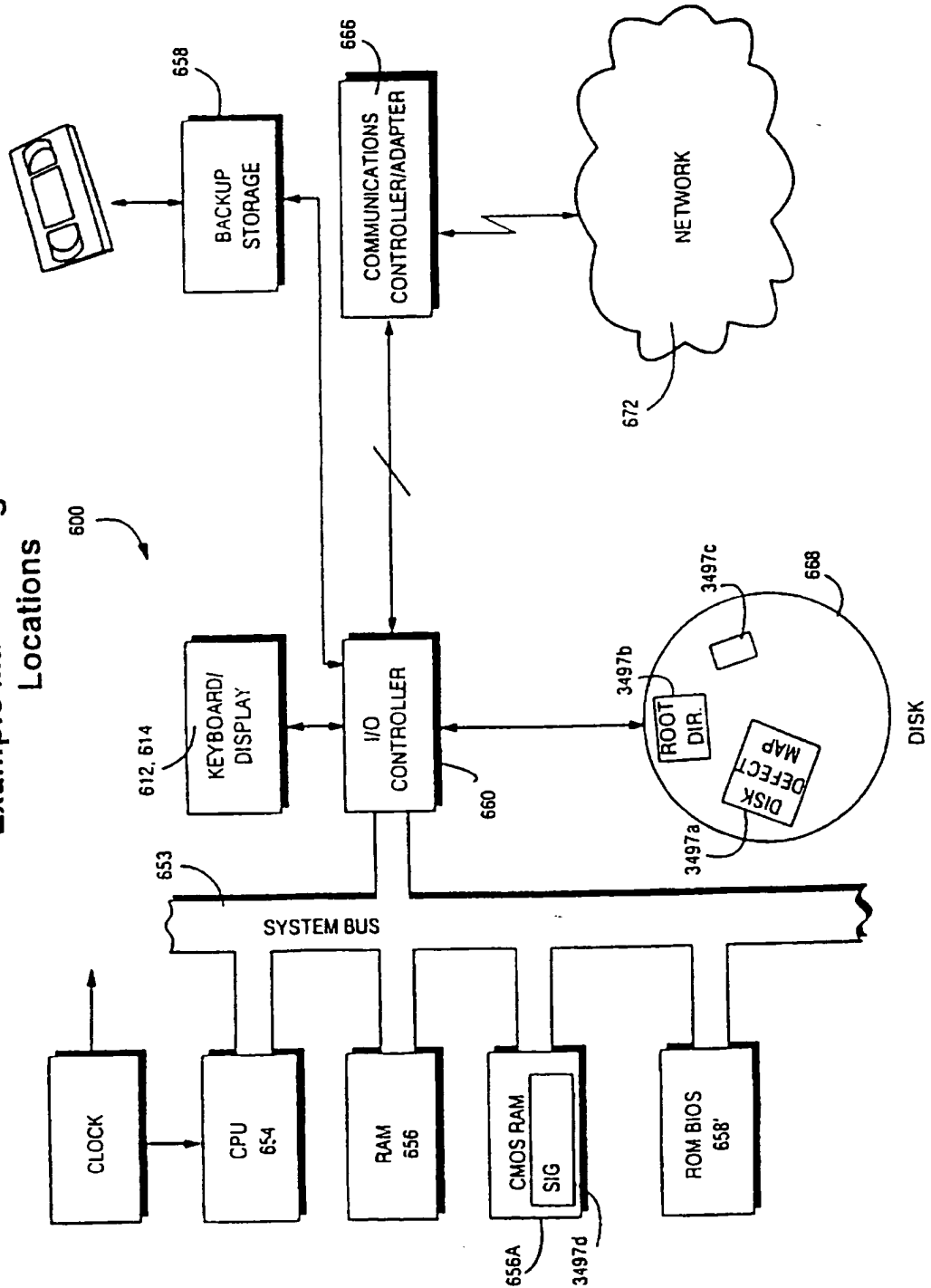


Fig. 69G
Example Machine Signature
Locations



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Fig. 69H
Sequence Dependent and Independent Processes

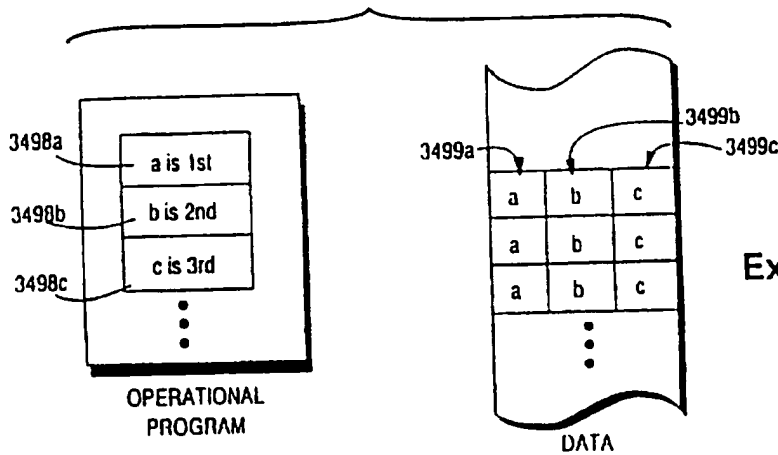
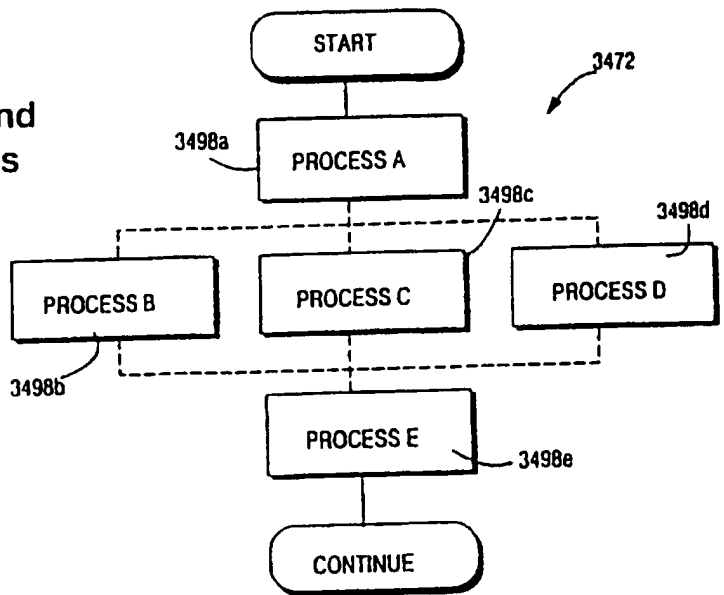


Fig. 69I
Example First Order

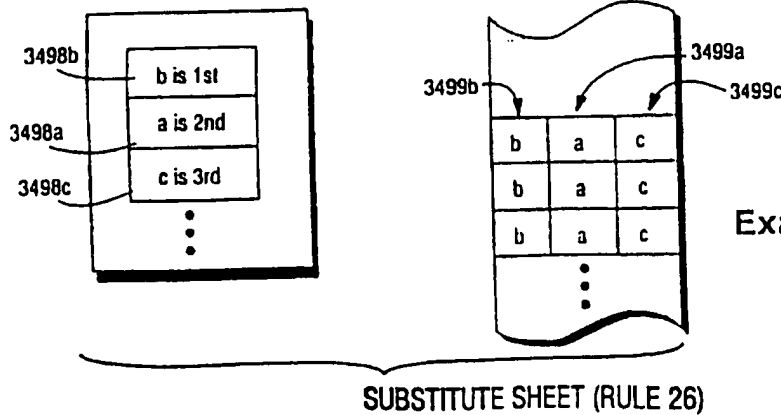
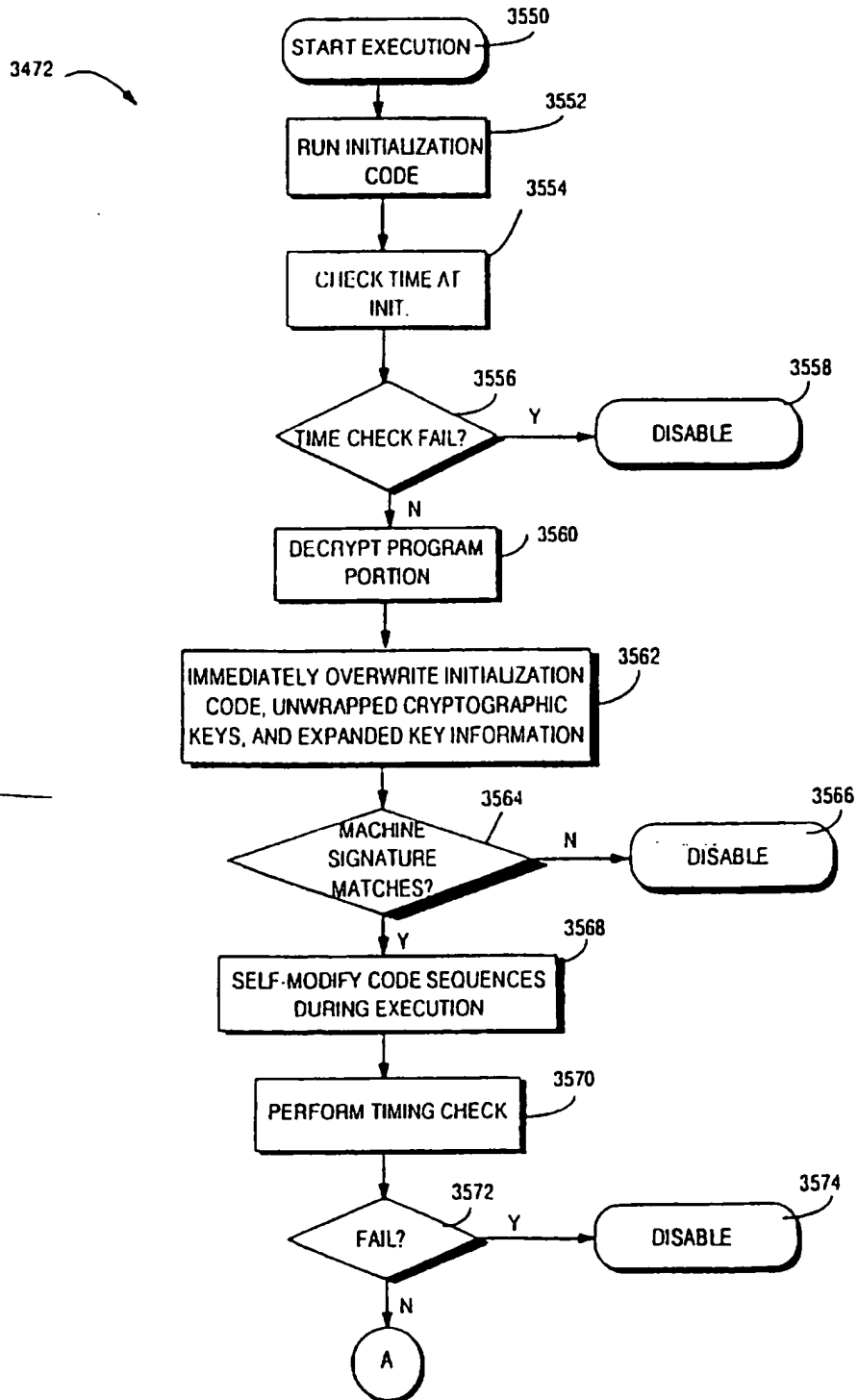


Fig. 69J
Example Second Order

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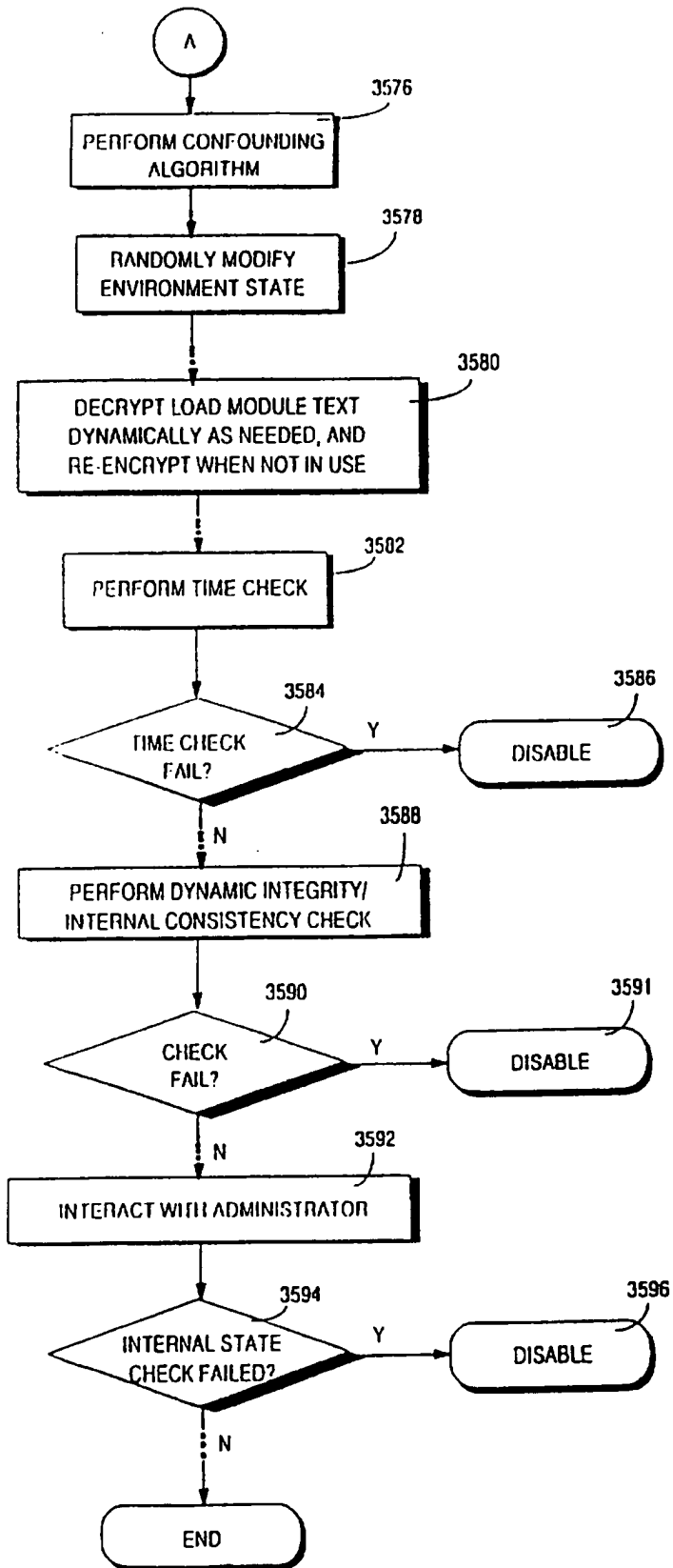
Fig. 69K Example Dynamic Protection Mechanisms



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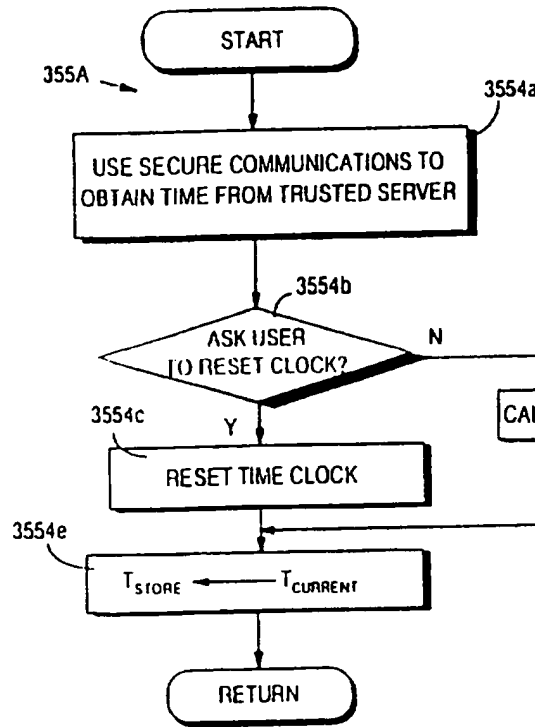
Fig. 69L
Example Dynamic
Protection
Mechanisms



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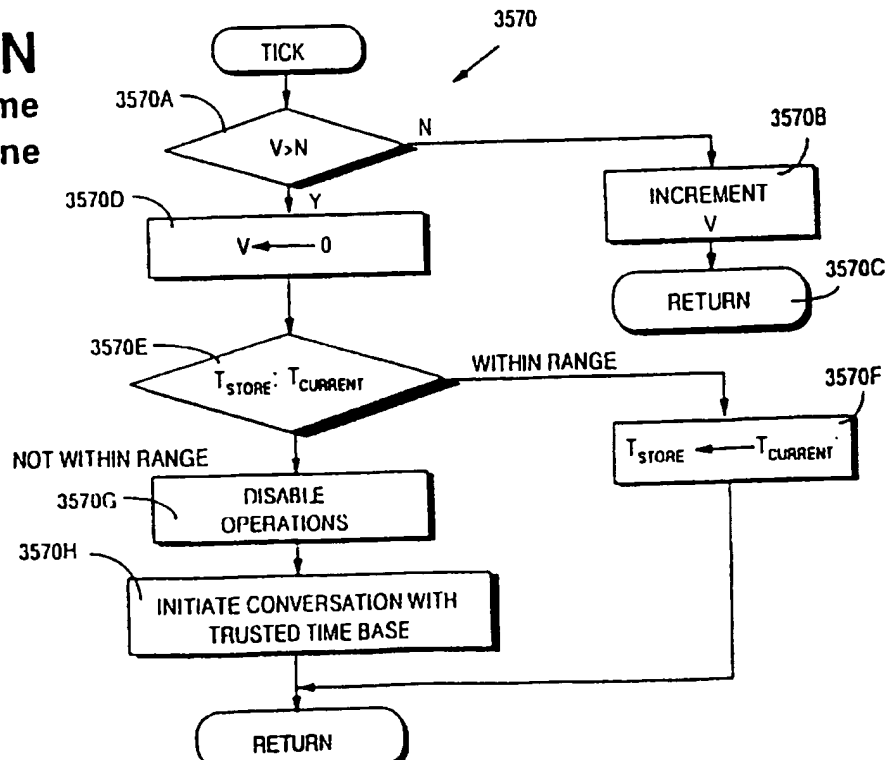
Fig. 69M
Example Time
Check At
Initialization
Routine



DRAFT BUDGET
AMT DRAFTED
ΔT
T _{STORE}

Fig. 69O

Fig. 69N
Example Time
Check Routine



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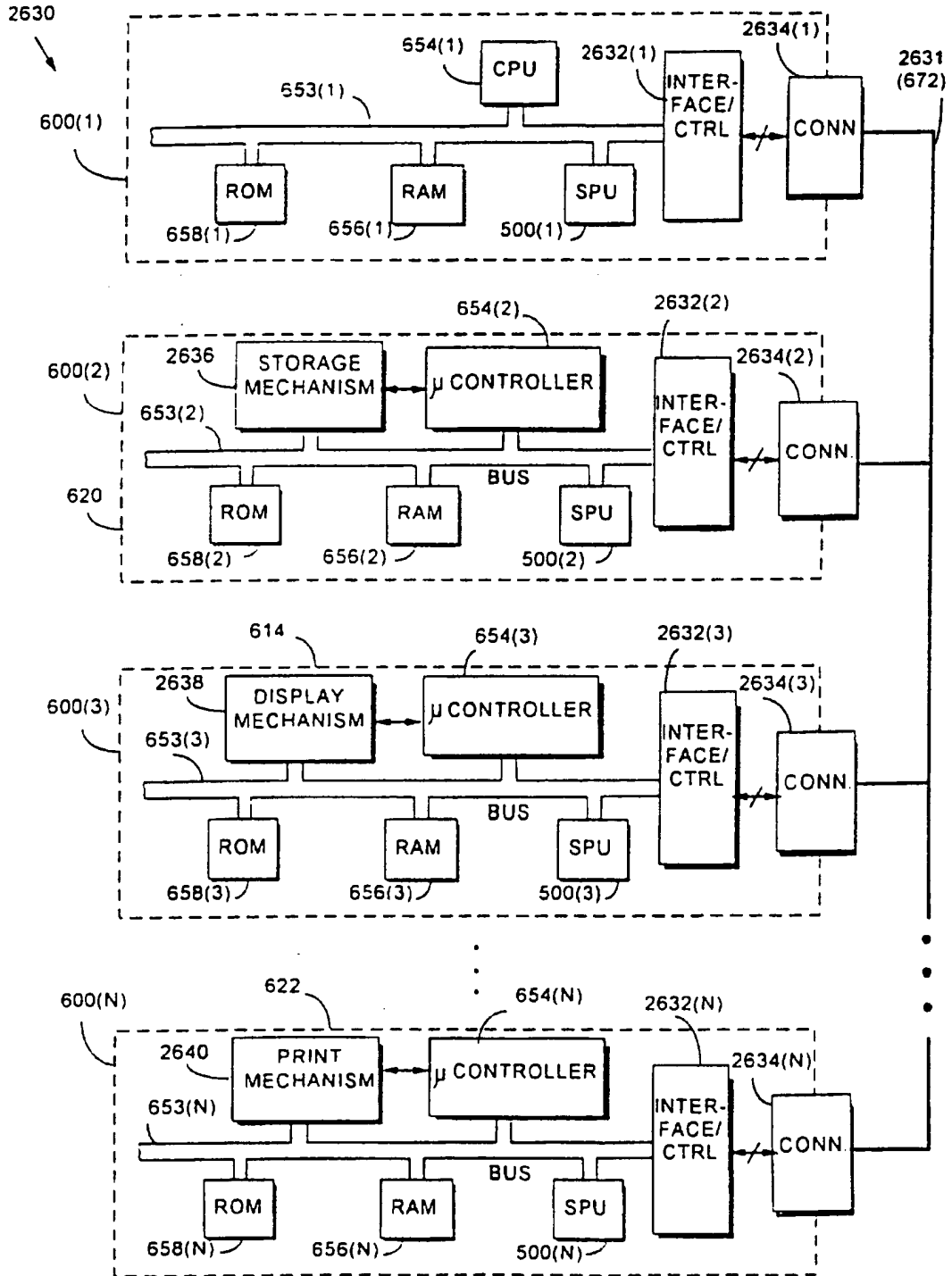
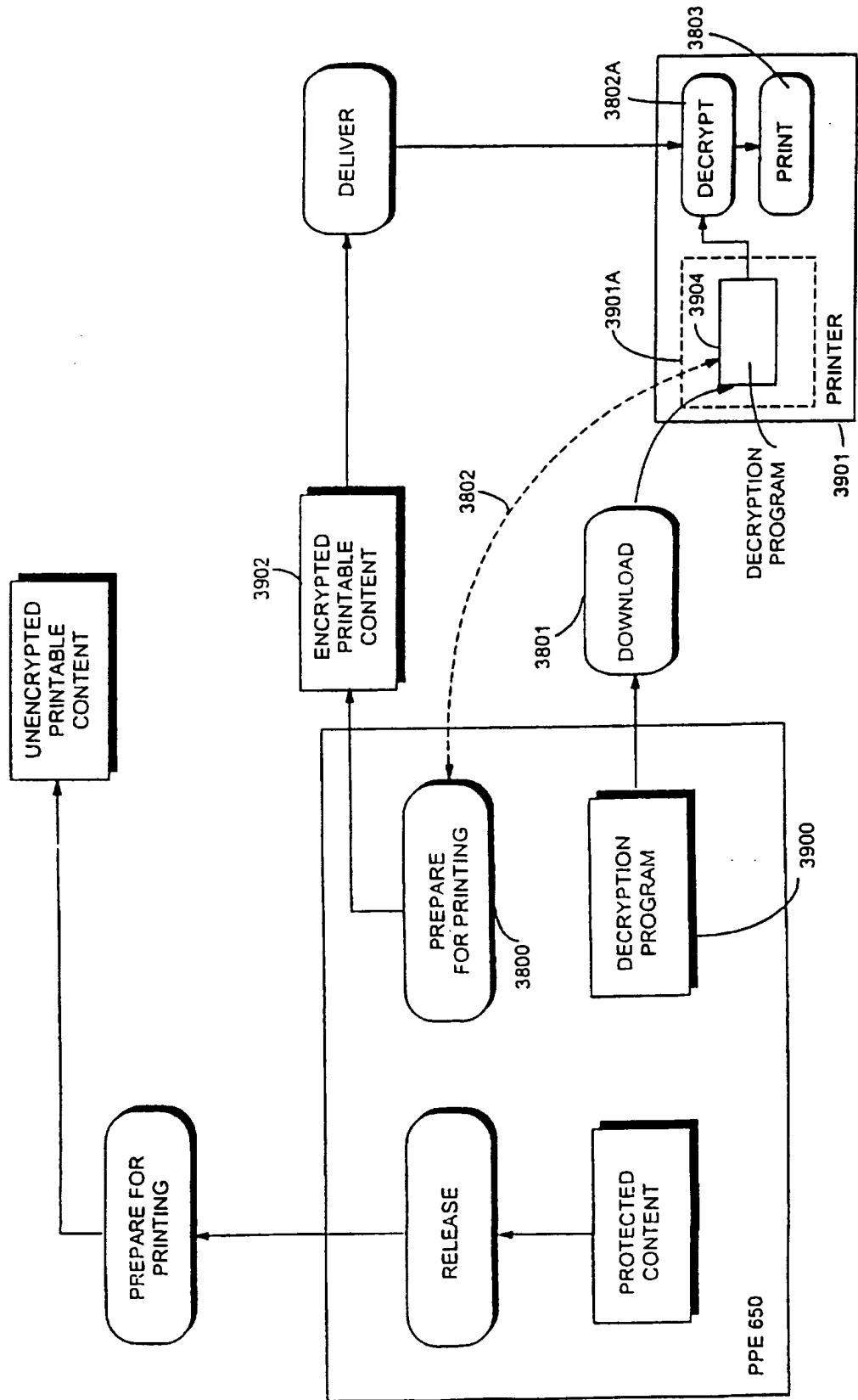


FIG. 70

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FIG. 70A



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FIG. 70B

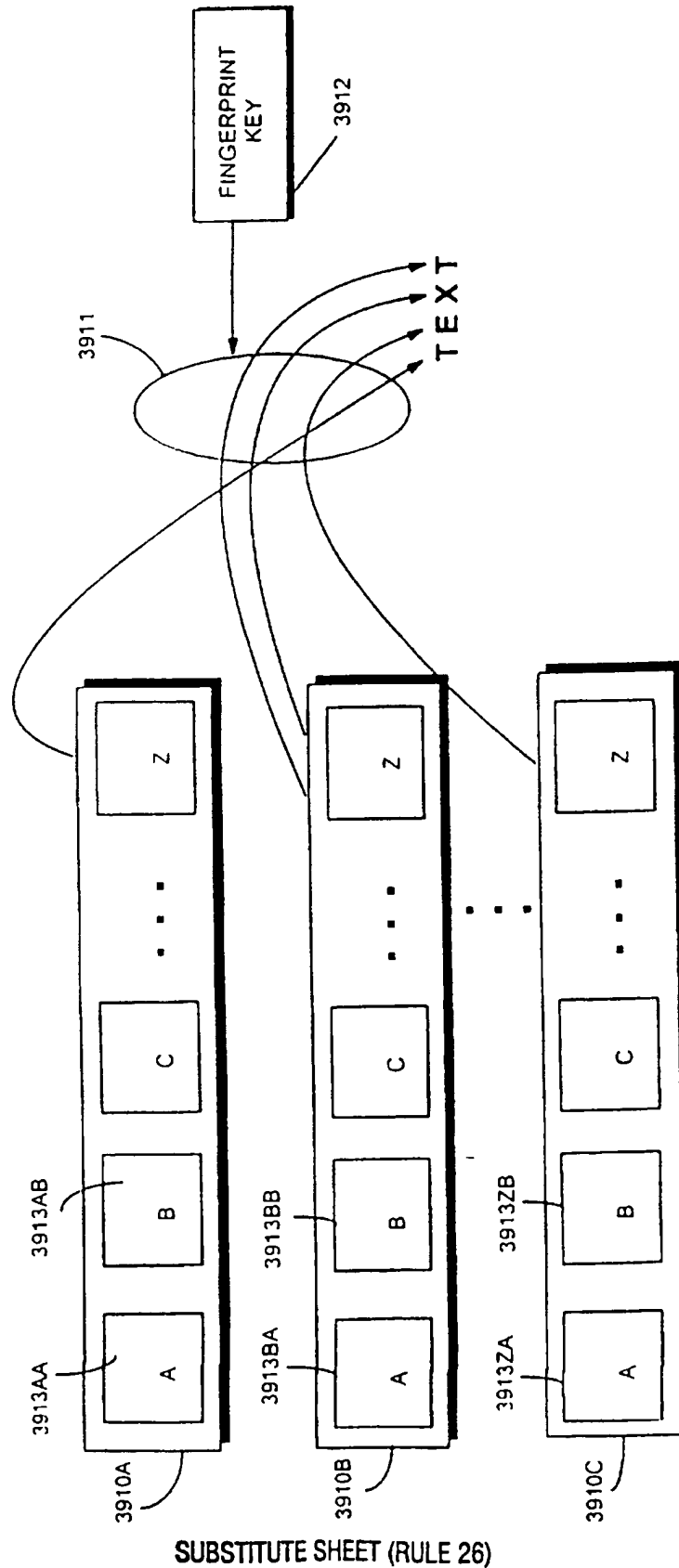
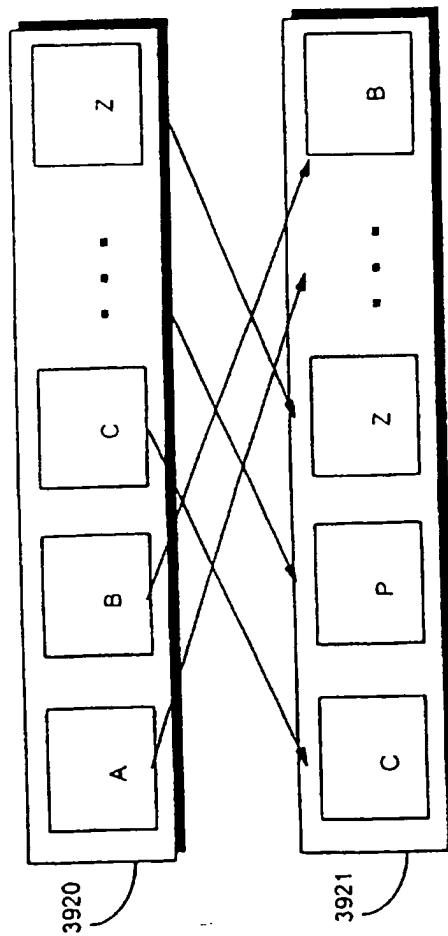
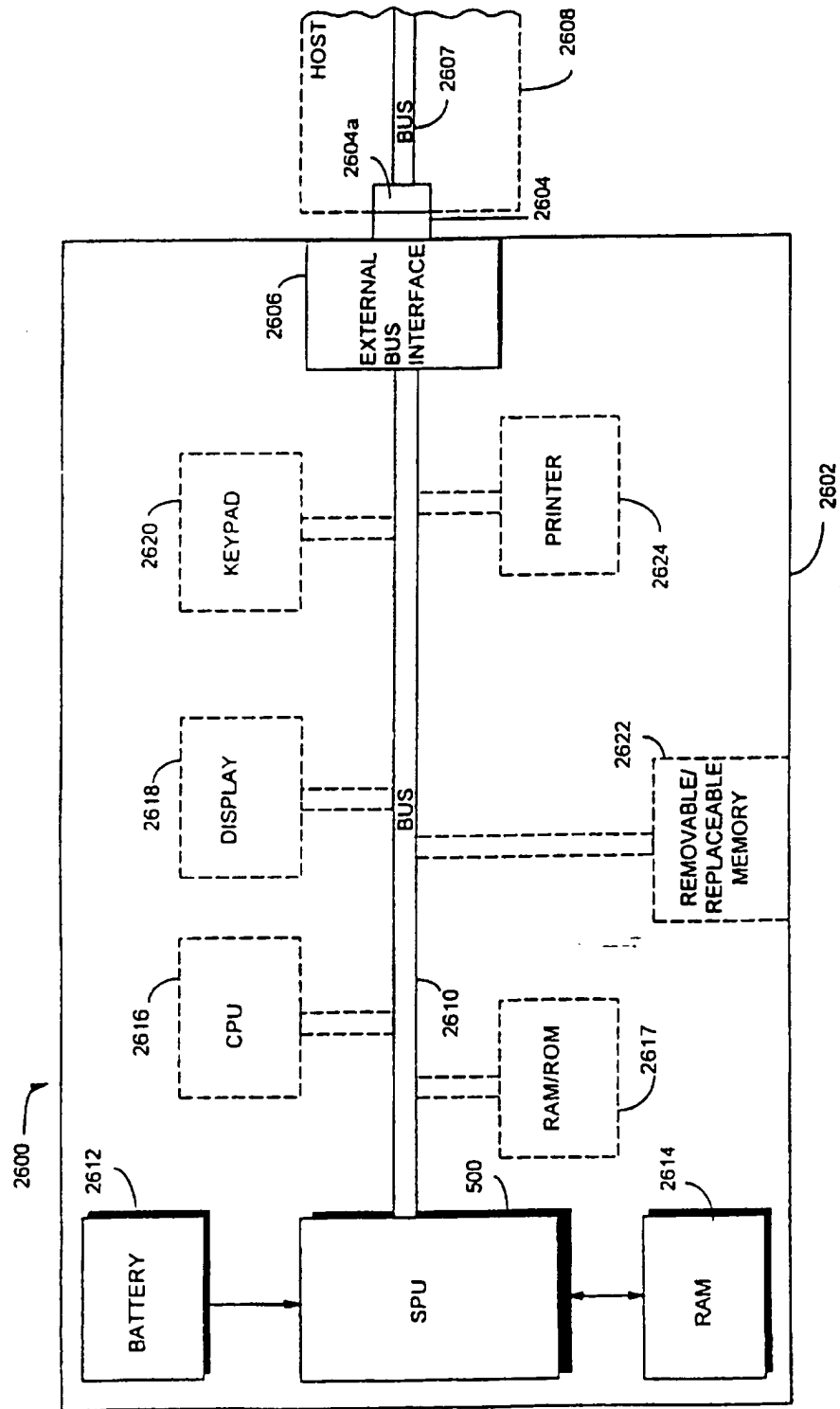


FIG. 70C



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FIG. 71
PORTABLE APPLIANCE



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LOG IN USER INTERFACE 182

USER NAME:	<input type="text" value="SHEAR. V."/>	<input type="button" value="LOGIN"/>
PASSWORD:	<input type="password" value="*****"/>	<input type="button" value="CANCEL"/>
<input type="checkbox"/> LOGIN AT STARTUP		<input type="button" value="HELP"/>

FIG. 72A

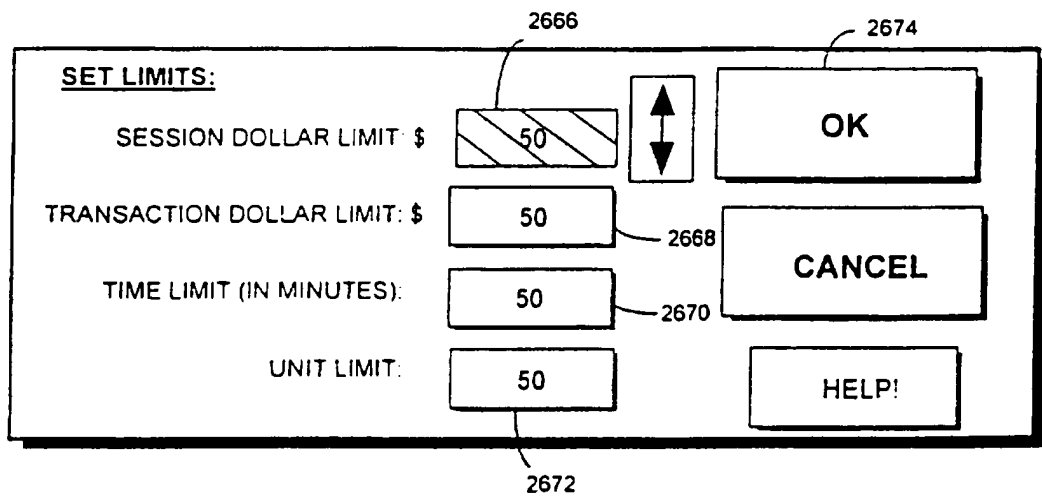
FIG. 72B

2660

	YOU HAVE REQUESTED THESE PROPERTIES:		<input type="button" value="CANCEL"/>
	<u>LOONEY TUNES NEWS!</u>		<input type="button" value="SUSPEND"/>
<input type="button" value="PROPERTY INFO"/>	2662 <input type="button" value="APPROVE"/>		
Your Cost: \$7.50		2664 <input type="button" value="MORE OPTIONS"/> 	


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FIG. 72C



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FIG. 72D



YOU HAVE REQUESTED THESE PROPERTIES:

LOONEY TUNE NEWS!

YOUR COST : \$7.50

CANCEL

SUSPEND

APPROVE

More Options

Show Thumbnail

PROPERTY:	SIZE:	PUBLISHER:	AMOUNT:	UNITS:	COST/UNIT:	TYPE:	USE?	LINKS:	HIST:
CHUCK JONES BIOGRA...	256KB	WARNER NEW MEDIA	64	KBYTE	\$1.25	PREVIEW	<input checked="" type="checkbox"/>		<input type="checkbox"/>
▼ BUGS BUNNY.JPE...	1MB	WARNER NEW MEDIA	1	RECORD	\$5.00	DISPLAY	<input checked="" type="checkbox"/>		<input type="checkbox"/>
BUGS BUNNY.JPEG...	1MB	WARNER NEW MEDIA	10	RECORD	\$3.50	DISPLAY	<input type="checkbox"/>		<input type="checkbox"/>
BUGS BUNNY.JPEG...	1MB	WARNER NEW MEDIA	25	RECORD	\$2.50	DISPLAY	<input type="checkbox"/>		<input type="checkbox"/>
FRIZ FRELENG BIOGRA...	256KB	WARNER NEW MEDIA	120	SECTOR	\$5.00	PRINT	<input type="checkbox"/>		<input type="checkbox"/>
TEX AVERY BIOGRAP ...	256KB	WARNER NEW MEDIA	50	PERCENT	\$2.50	COPY	<input type="checkbox"/>		<input type="checkbox"/>
▶ DUCKI RABBITI DU...	64MB	WARNER NEW MEDIA	7.0	MINUTE	\$7.50	COPY-PRO	<input type="checkbox"/>		<input type="checkbox"/>
MEL BLANC BIOGRAPH ...	256KB	WARNER NEW MEDIA	1	SPECIAL	\$25.25	INSTALL	<input type="checkbox"/>		<input type="checkbox"/>
LOONEY TUNES DATAB ...	600MB	WARNER NEW MEDIA	1	OBJECT	\$2000.00	ALL	<input type="checkbox"/>		<input type="checkbox"/>

PROPERTY INFO

SET LIMITS...

SHOW BUDGETS

ACQUIRE BUDGET...

HISTORY...

TRANSFER...

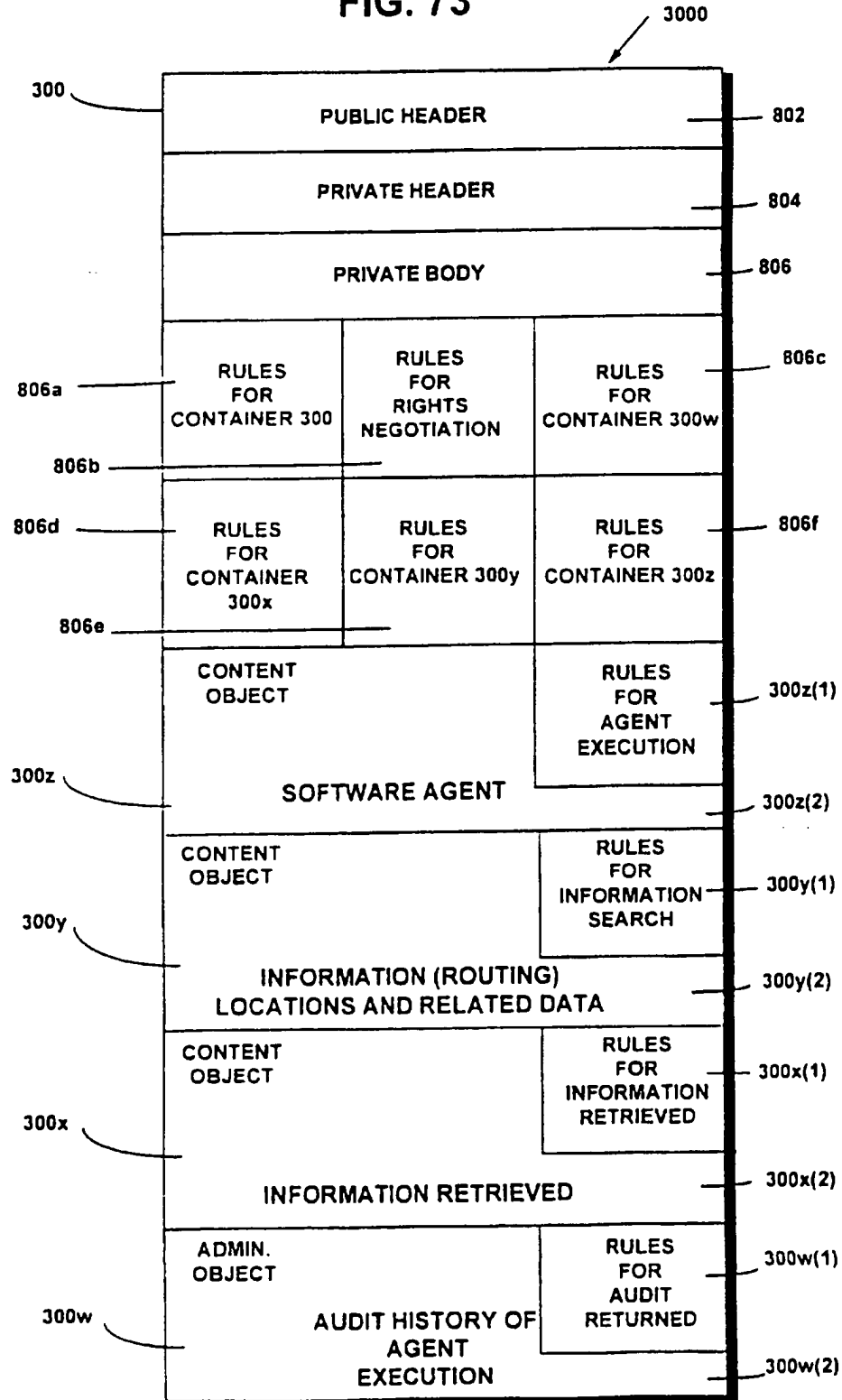
PREFERENCES...

FEEDBACK...

HELP!

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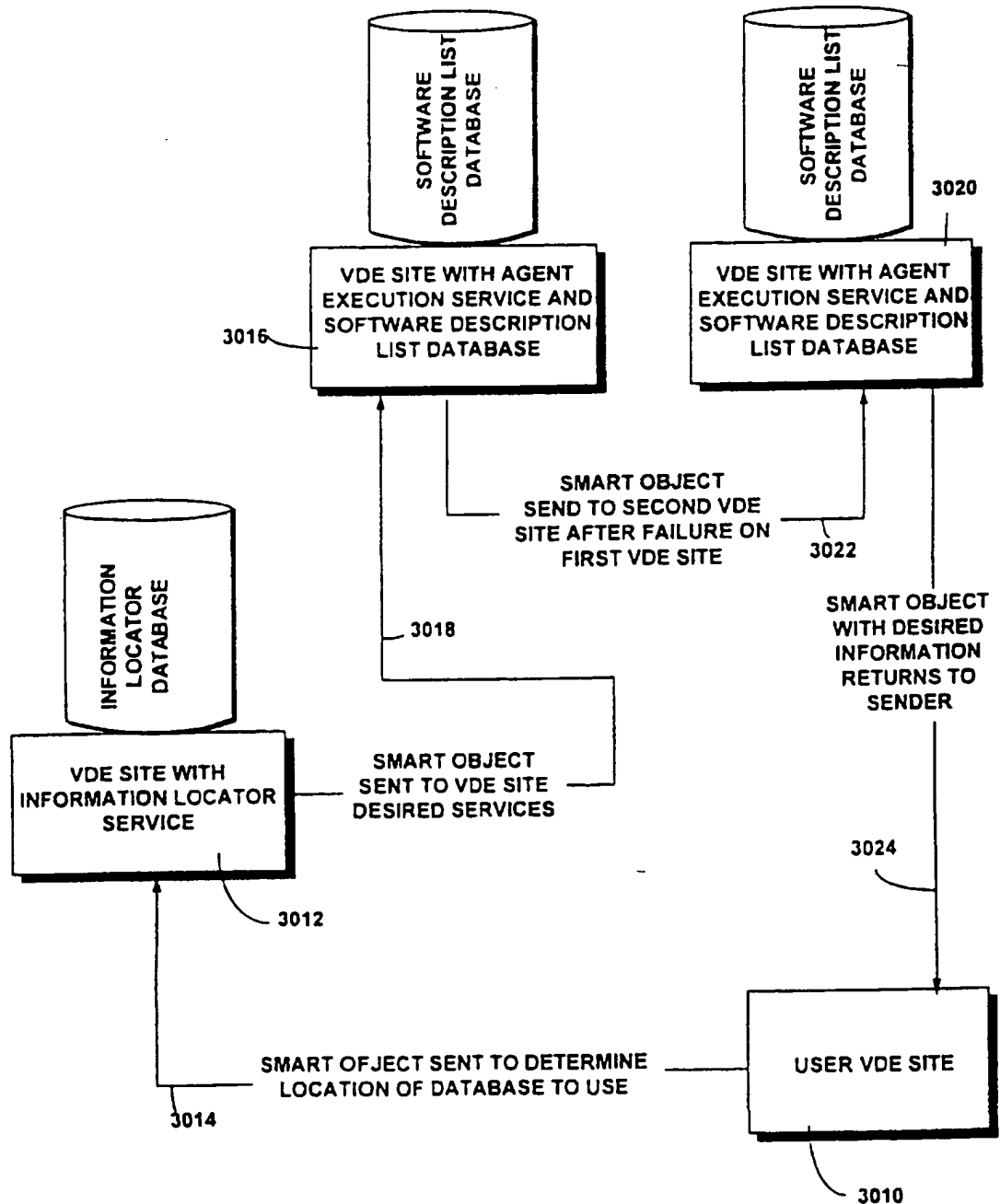
FIG. 73



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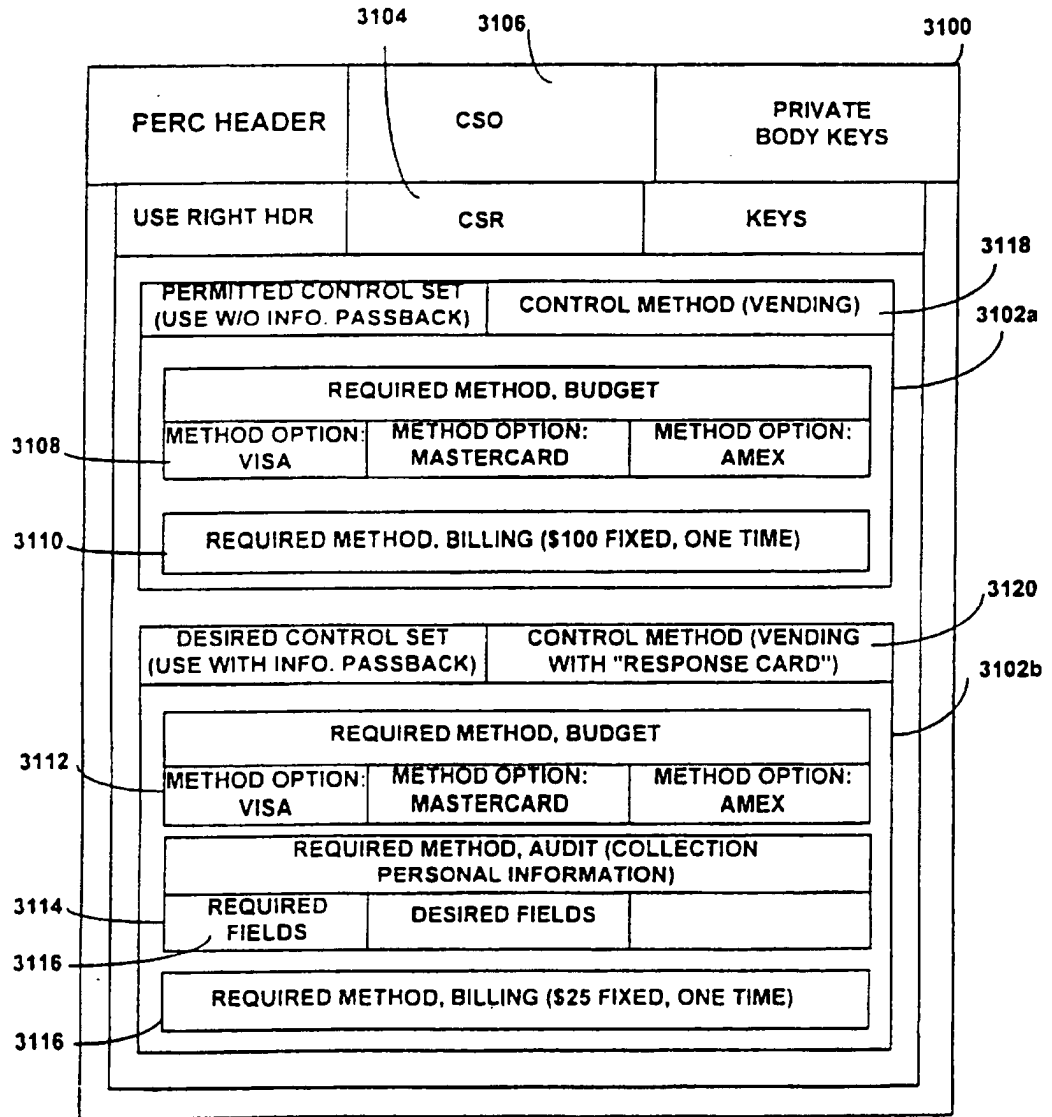
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FIG. 74



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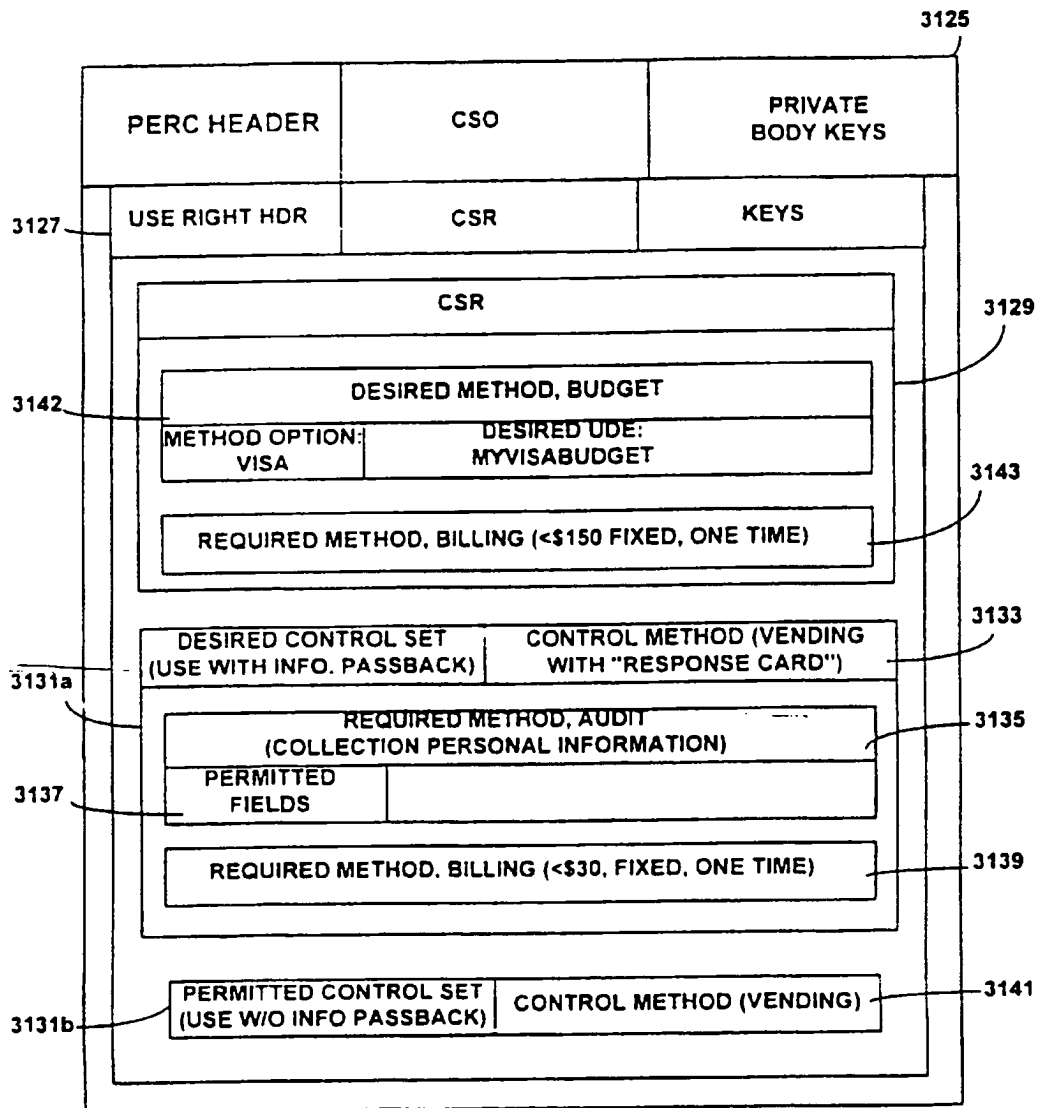
FIG. 75A



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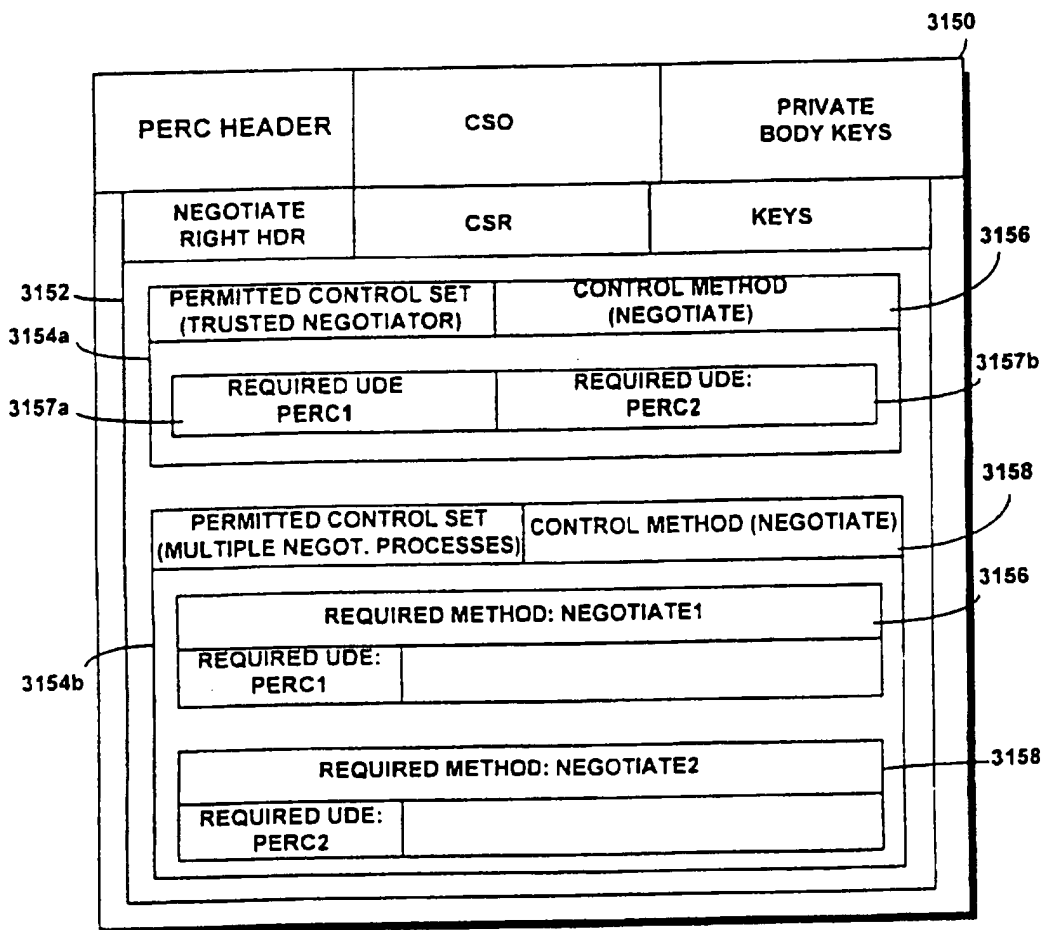
FIG. 75B



SUBSTITUTE SHEET (RULE 26)

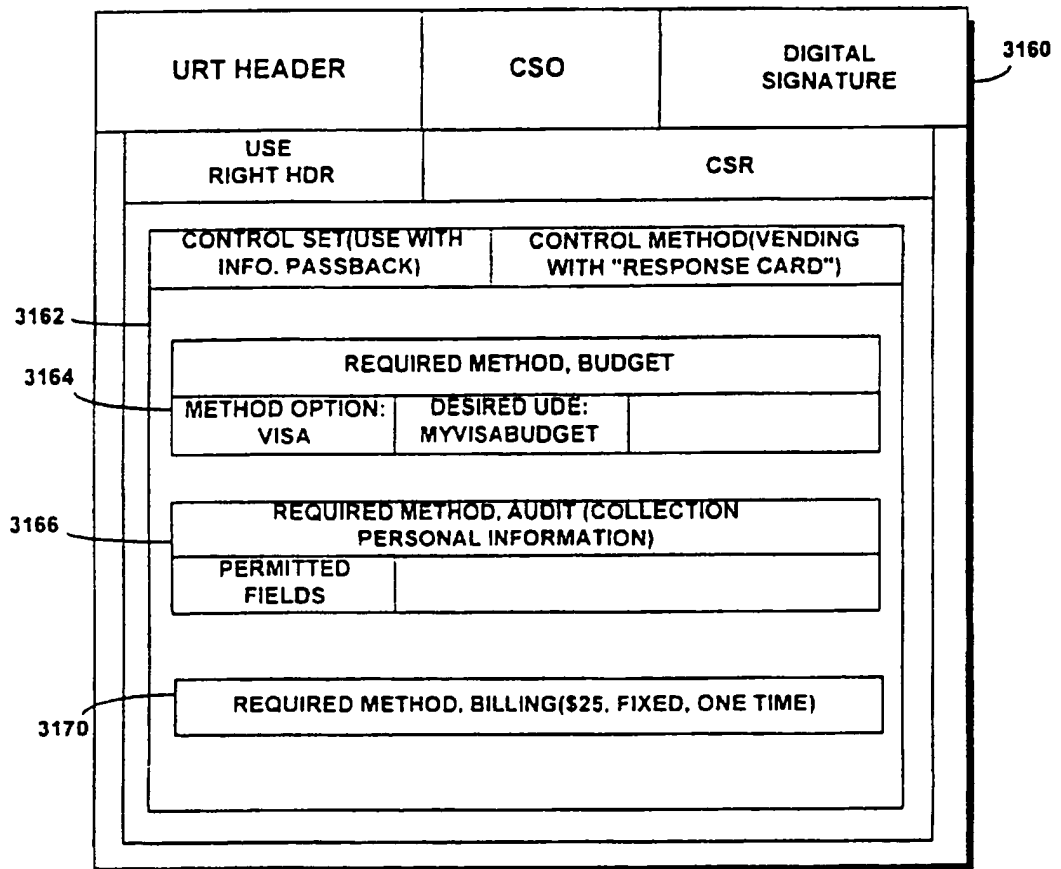
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FIG. 75C

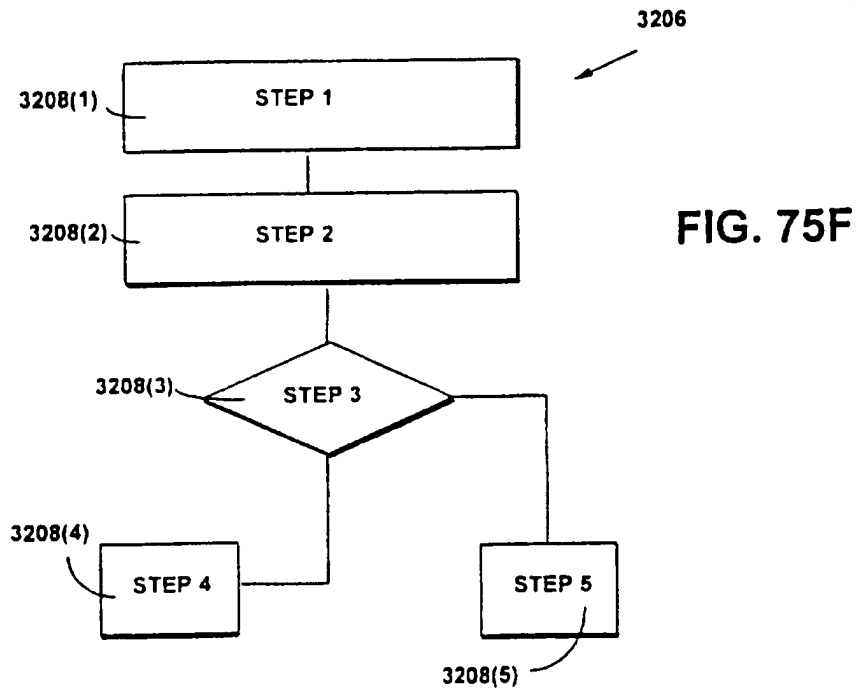
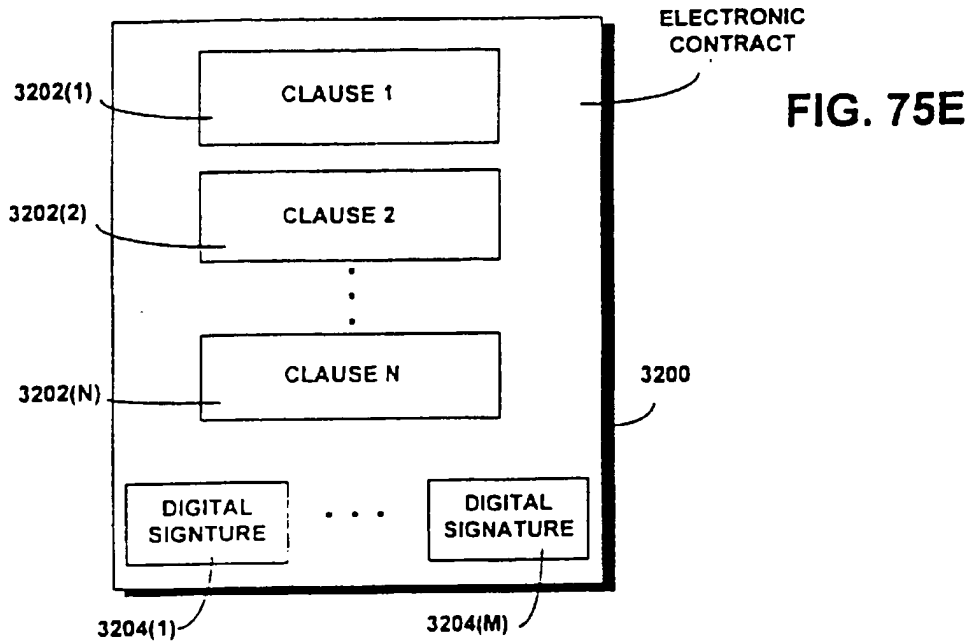


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FIG. 75D



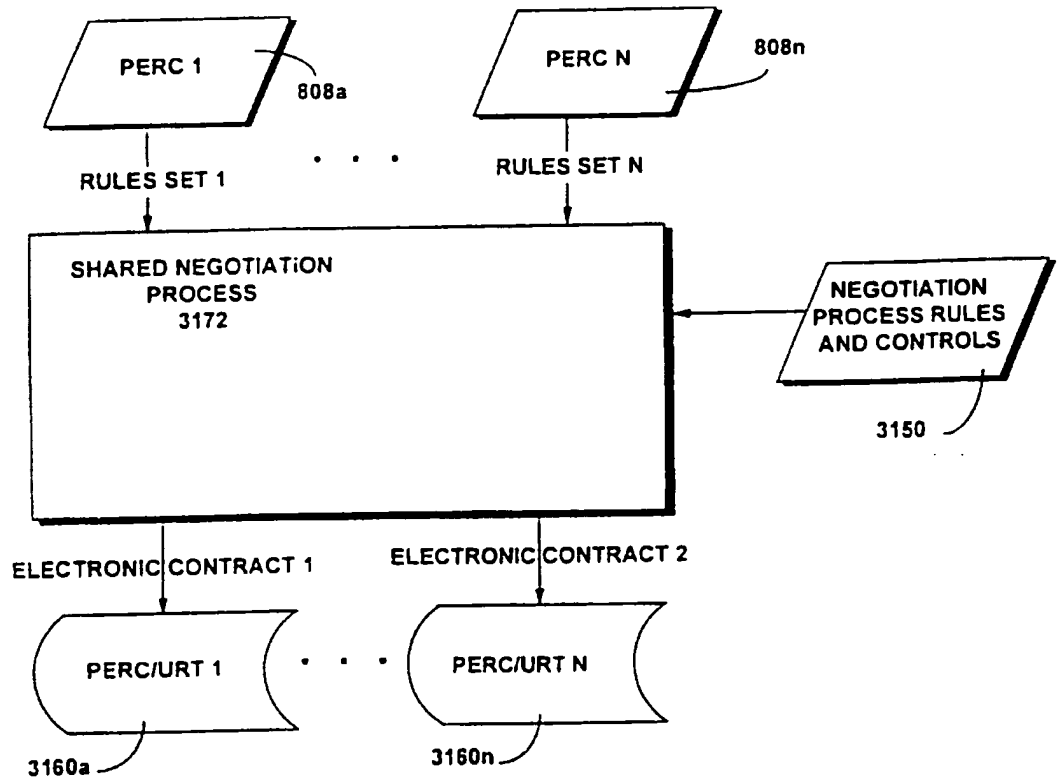
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SUBSTITUTE SHEET (RULE 26)

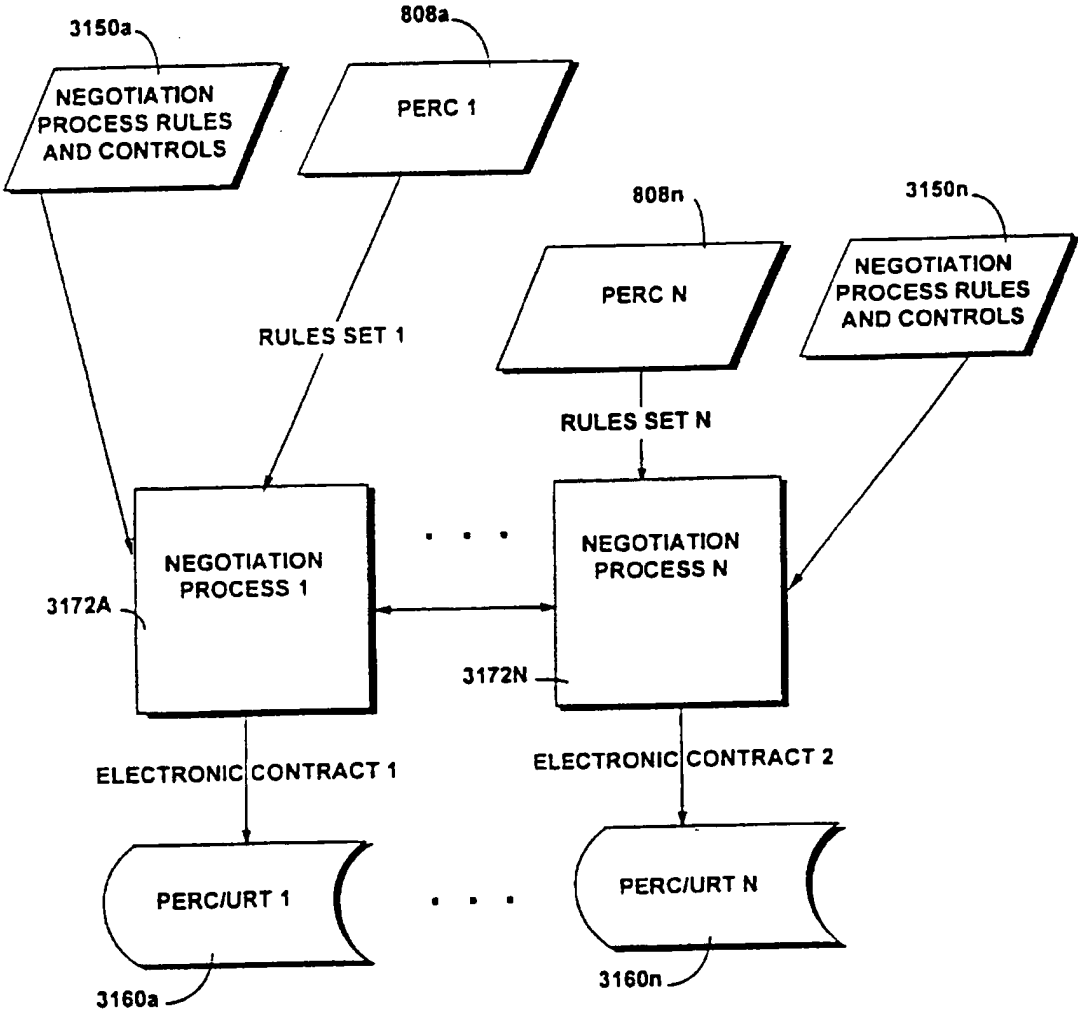
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FIG. 76A



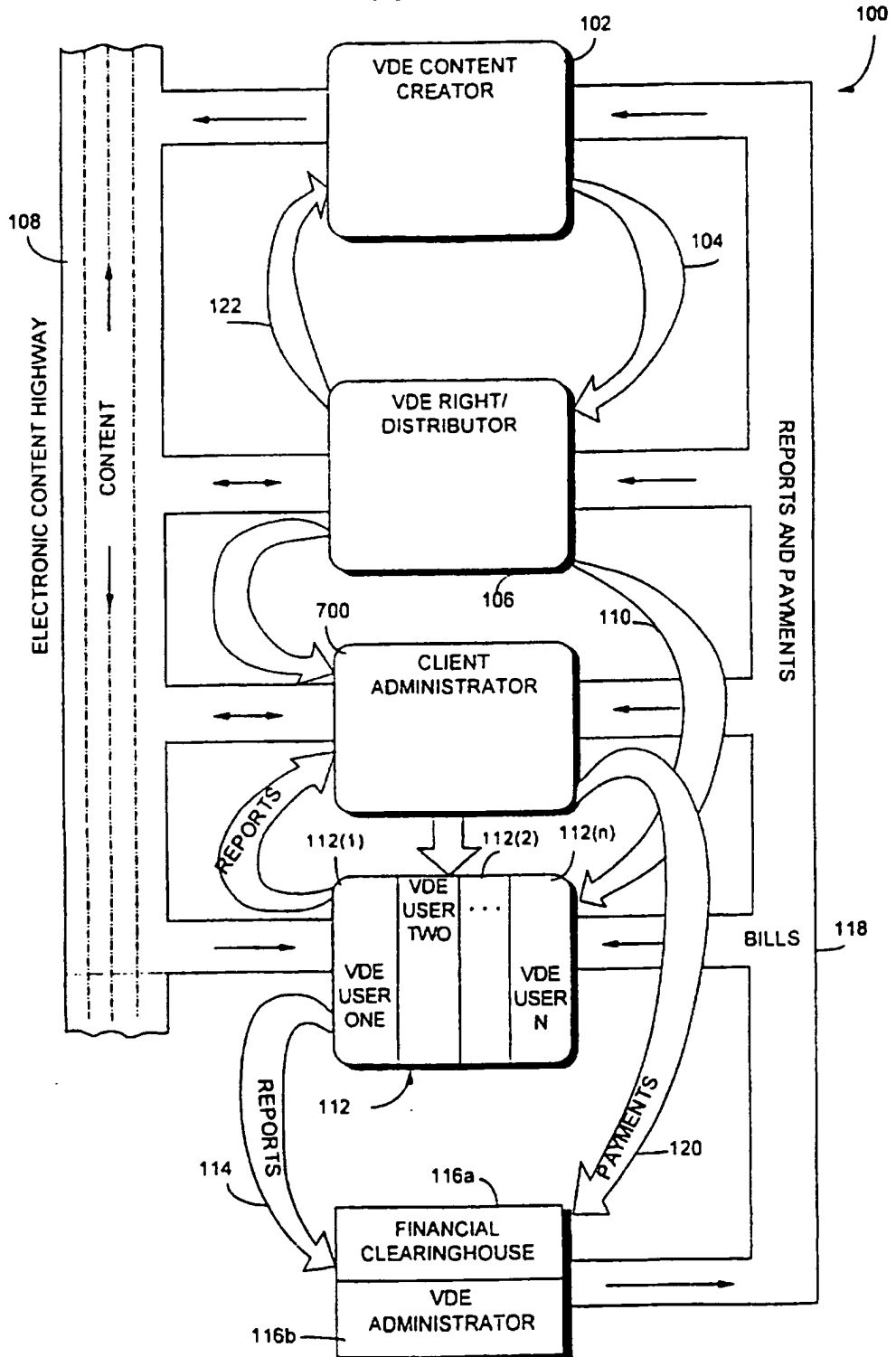
SUBSTITUTE SHEET (RULE 26)

FIG. 76B



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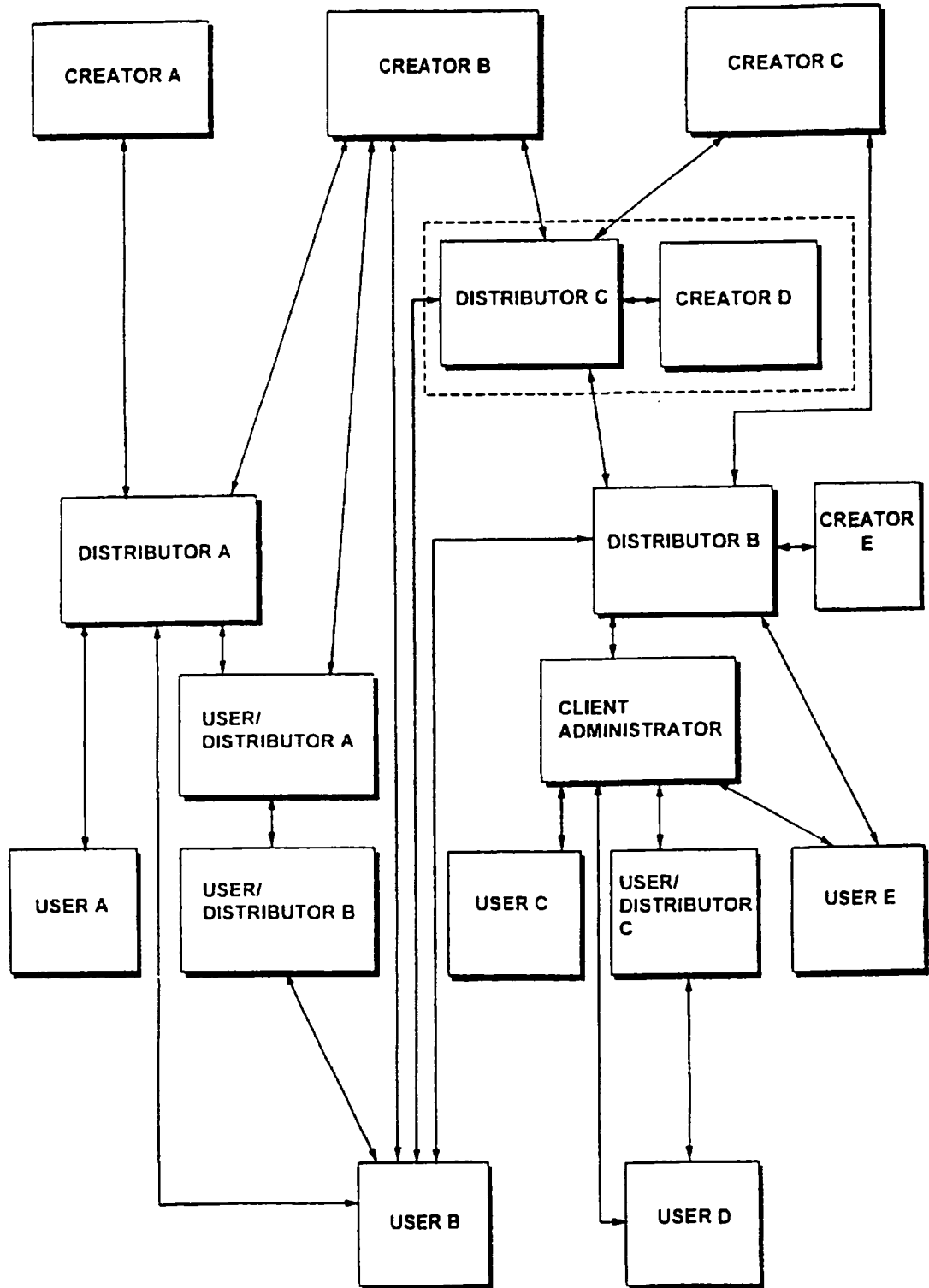
FIG. 77



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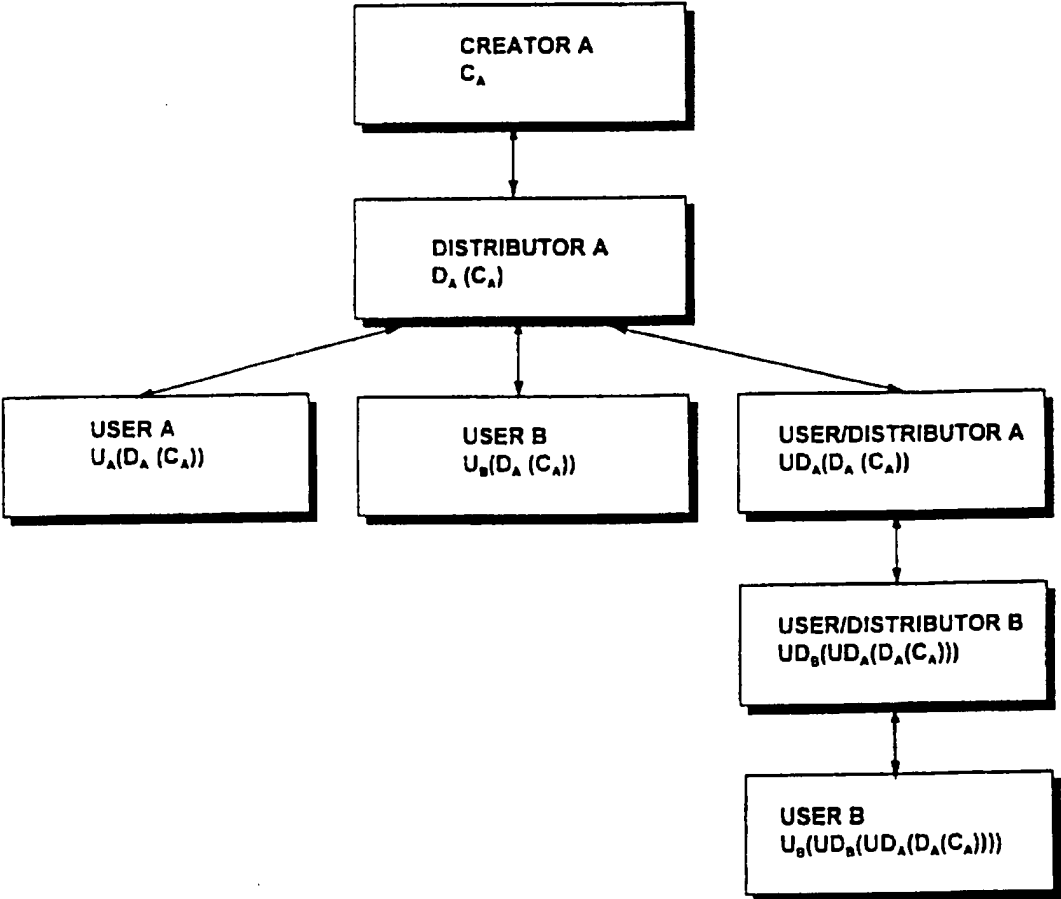
FIG. 79



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FIG. 80



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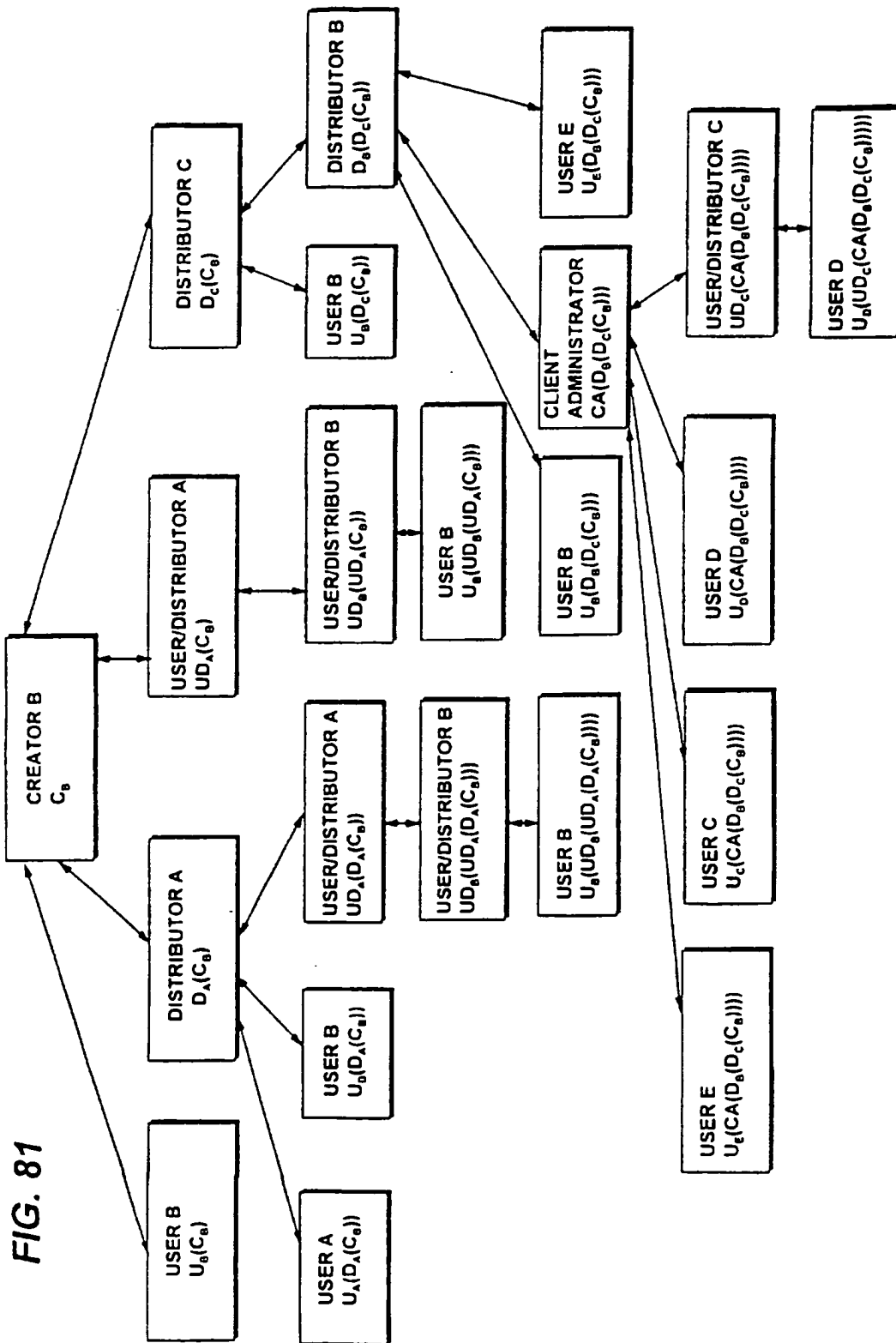


FIG. 81

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FIG. 83

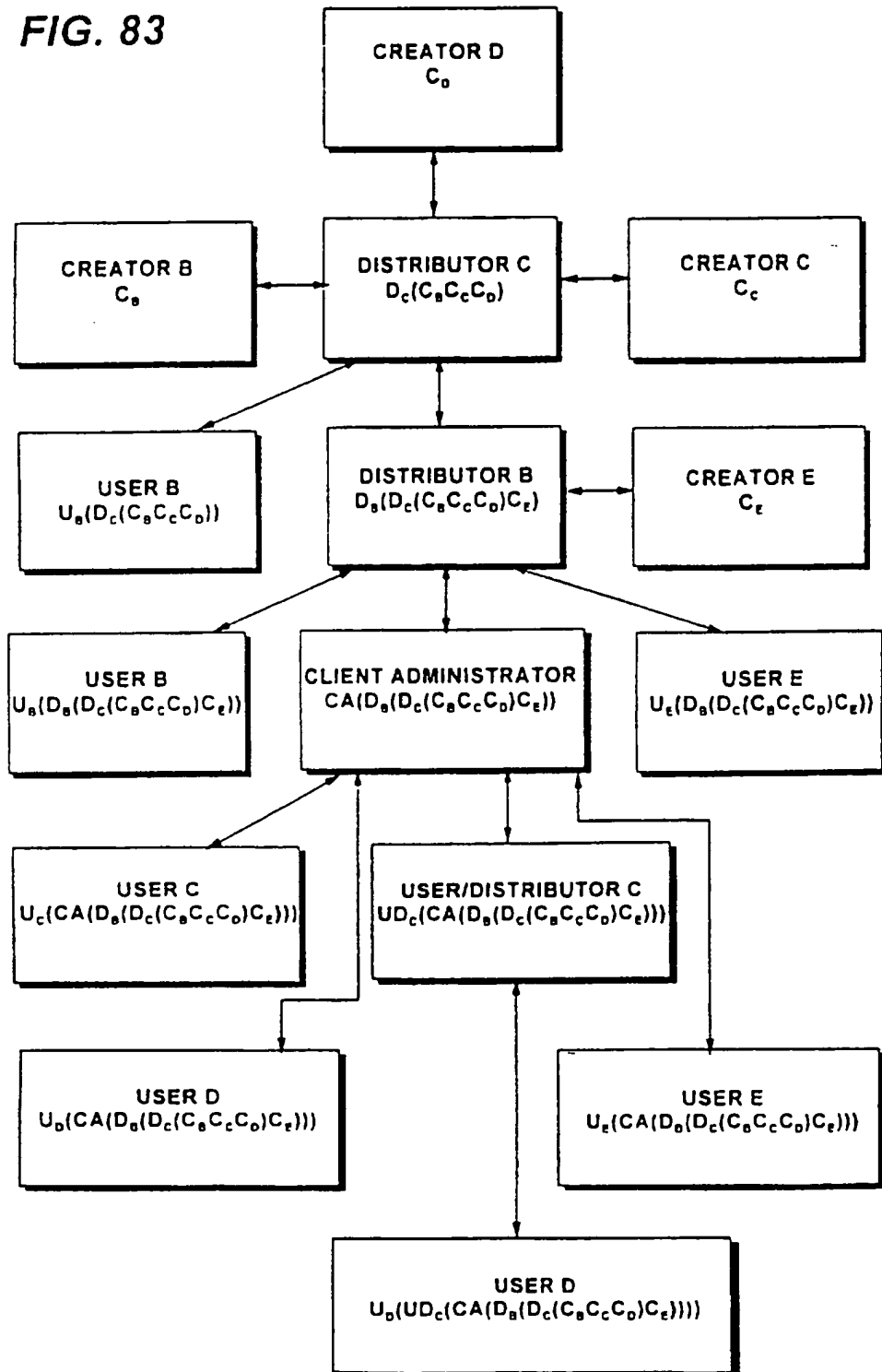
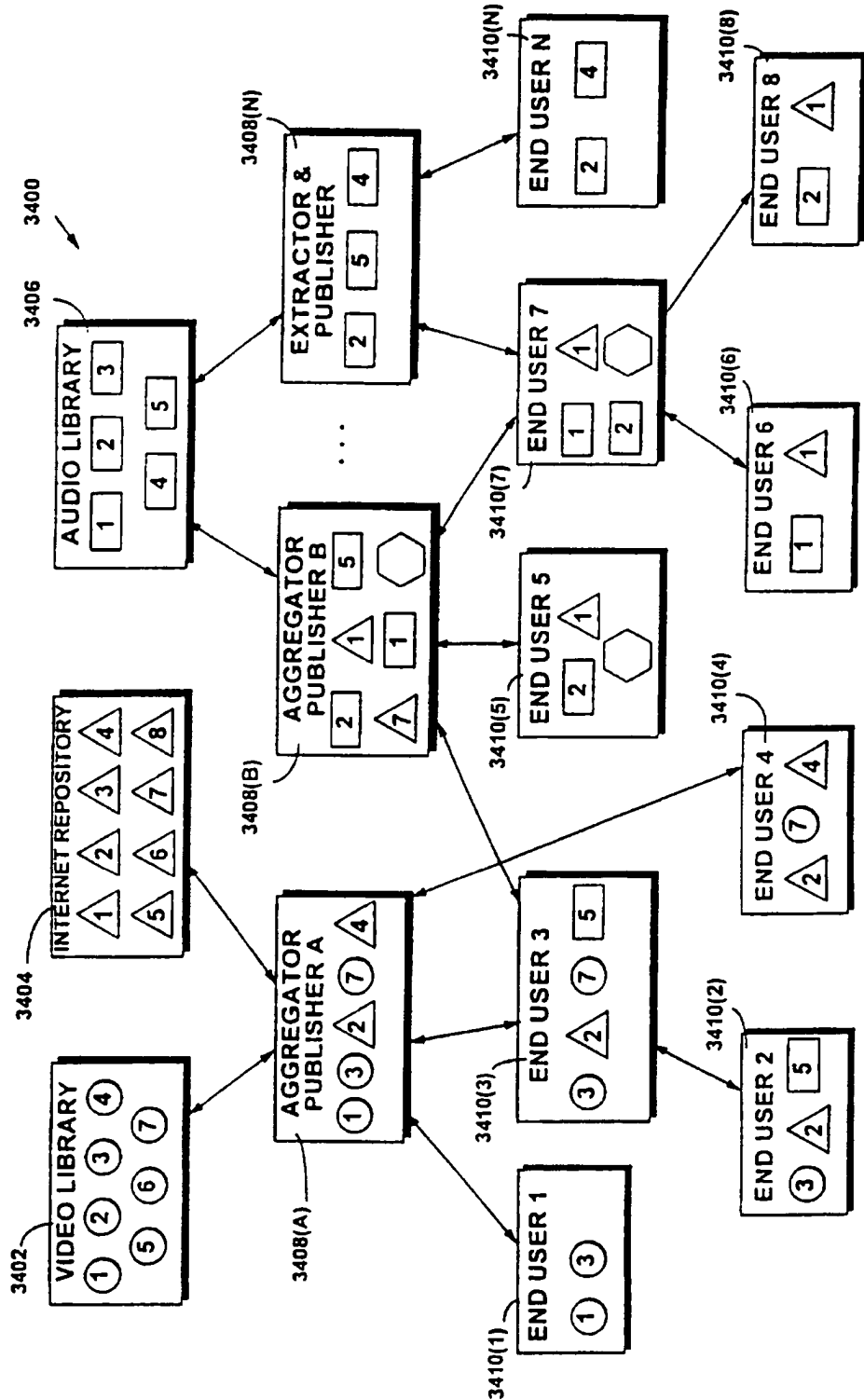
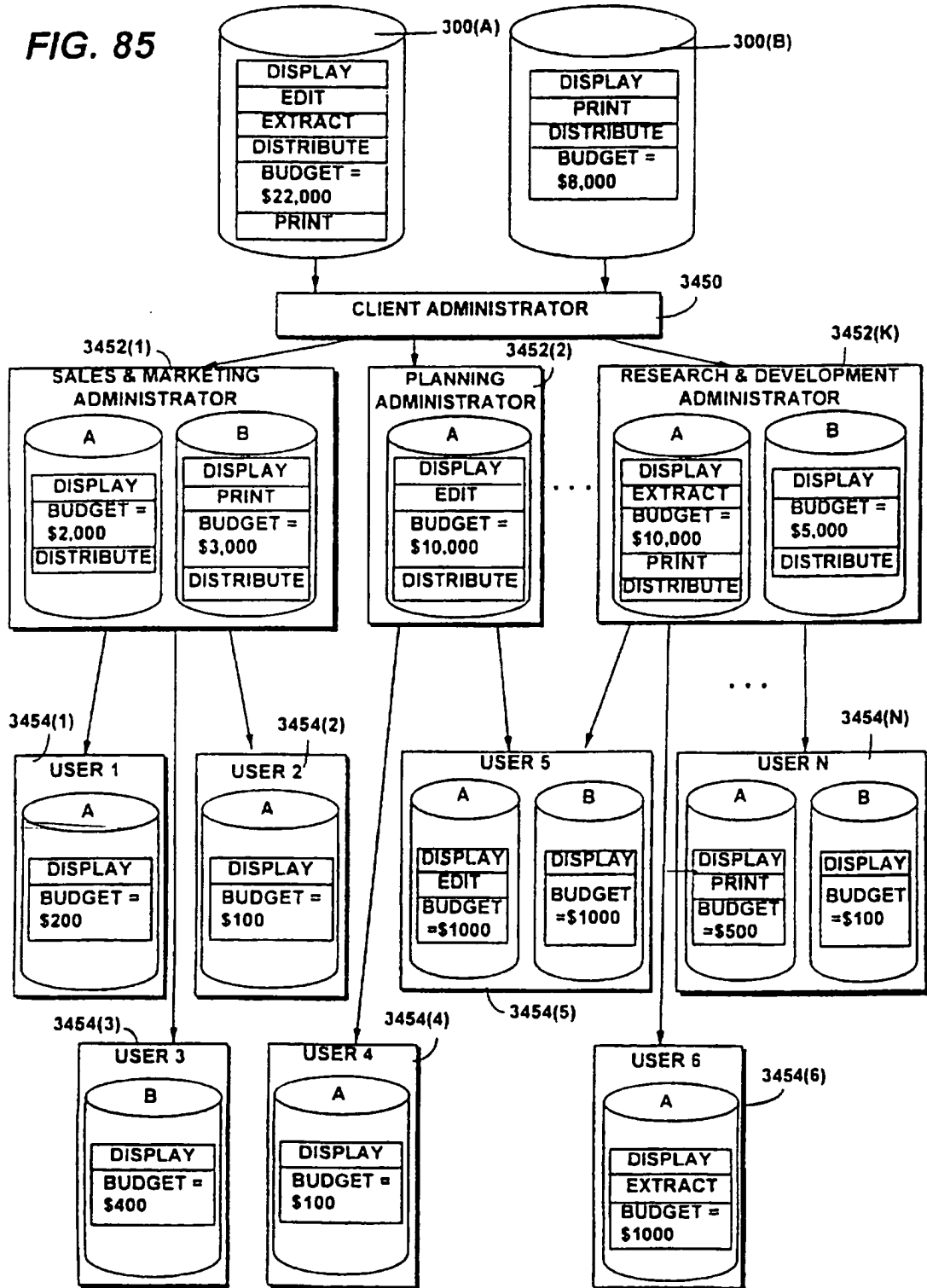


FIG. 84



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FIG. 85



SUBSTITUTE SHEET (RULÉ 26)

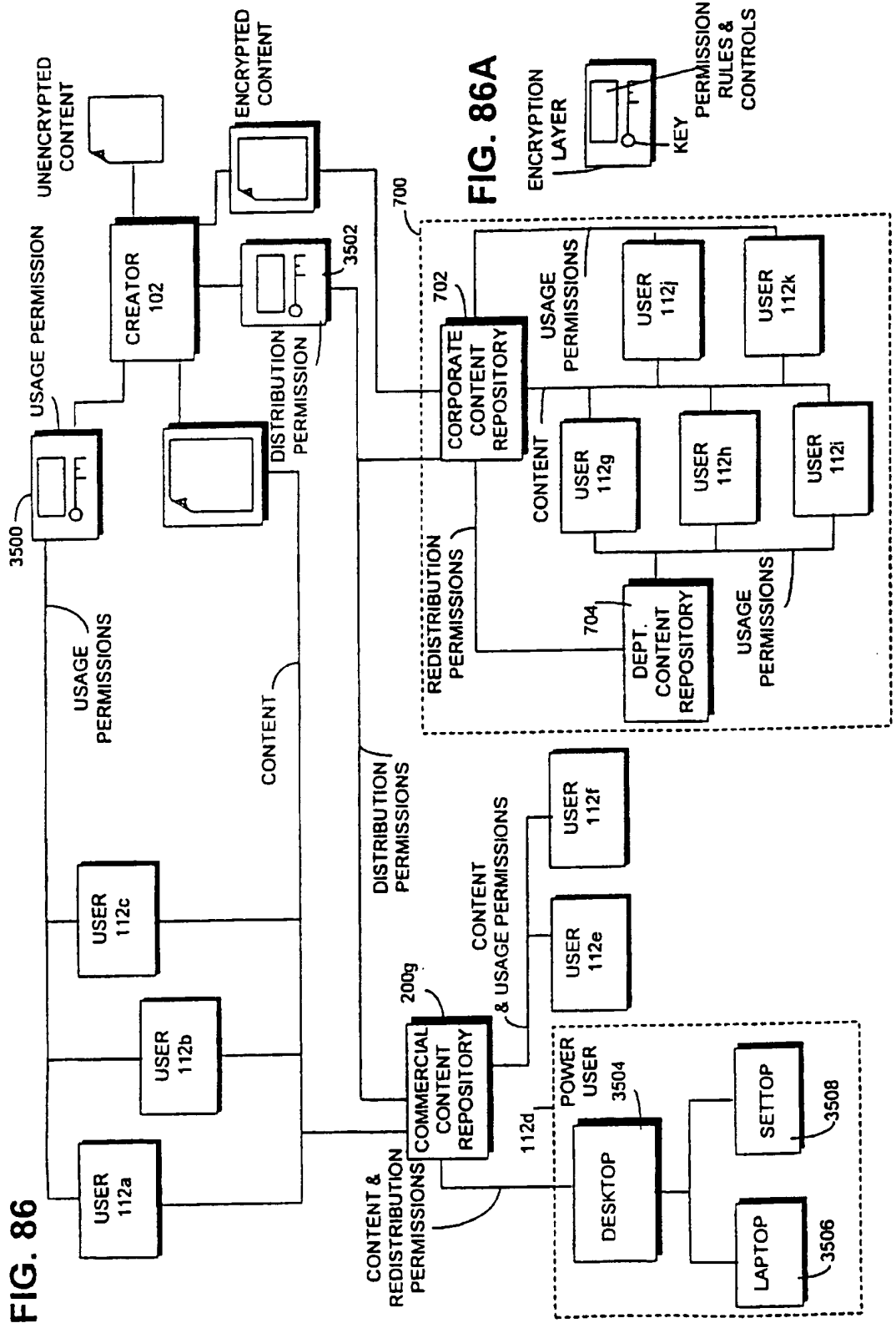


FIG. 86

FIG. 86A

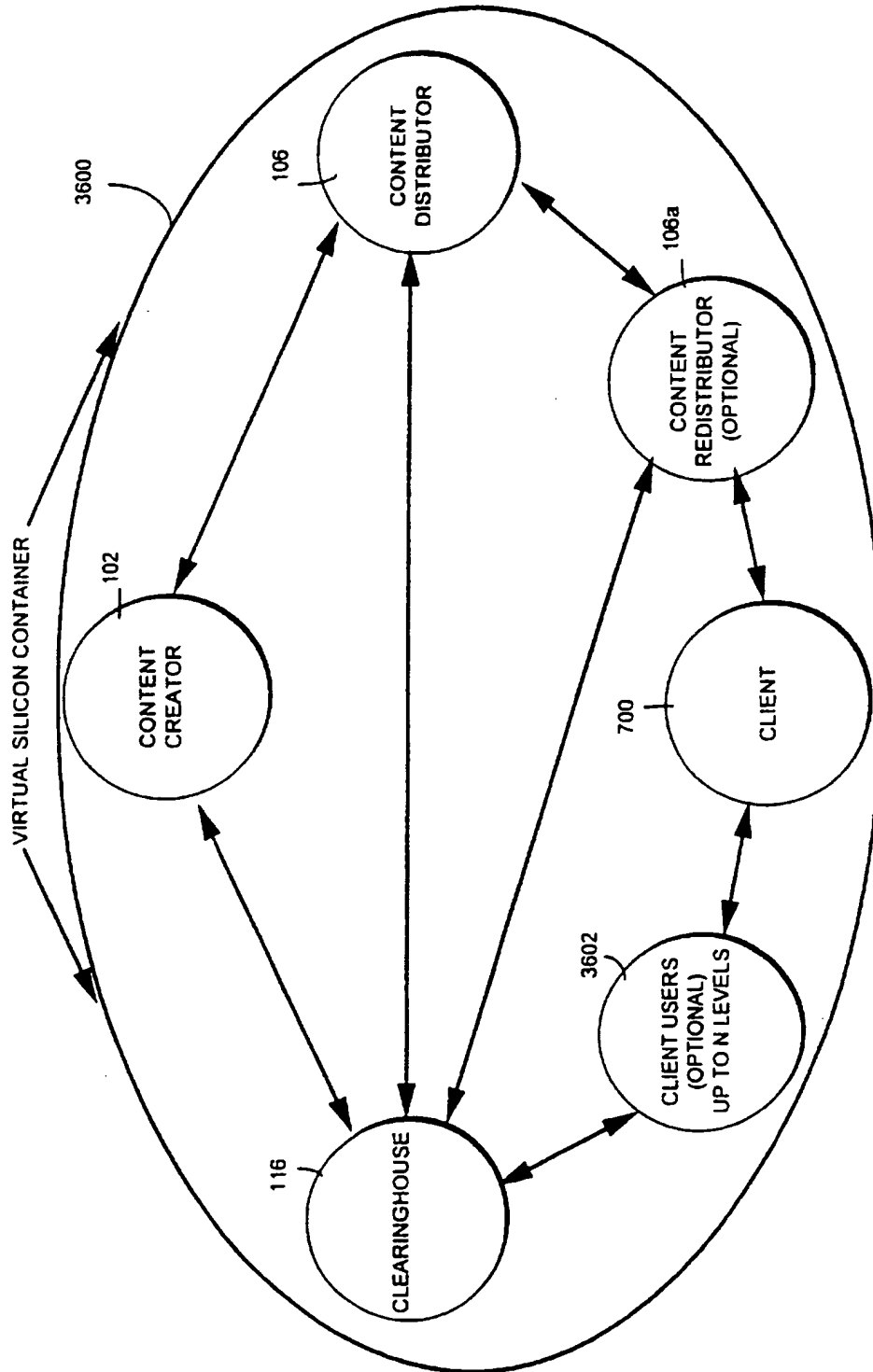


FIG. 87

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/15243

A. CLASSIFICATION OF SUBJECT MATTER IPC 6 G06F1/00		
According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Minimum documentation searched (classification system followed by classification symbols) IPC 6 G06F		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CHOUDHURY A K ET AL: "COPYRIGHT PROTECTION FOR ELECTRONIC PUBLISHING OVER COMPUTER NETWORKS" IEEE NETWORK: THE MAGAZINE OF COMPUTER COMMUNICATIONS, vol. 9, no. 3 May 1995, pages 12-20, XP000505280 see the whole document	18
Y	WO 90 02382 A (INDATA CORP) 8 March 1990 see abstract; figures 2,12,13,15 see page 18, paragraph 3 - page 21, paragraph 2 see page 23, last paragraph - page 24, paragraph 1	1-10
A	--- -/--	11-17
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.		
<input checked="" type="checkbox"/> Patent family members are listed in annex.		
* Special categories of cited documents :		
"A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. "&" document member of the same patent family	
Date of the actual completion of the international search <p style="text-align: center; font-size: large;">17 December 1997</p>	Date of mailing of the international search report <p style="text-align: center; font-size: large;">29/12/1997</p>	
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer <p style="text-align: center; font-size: large;">Powell, D</p>	

INTERNATIONAL SEARCH REPORT

International Application No.
PCT/US 97/15243

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 0 715 246 A (XEROX CORP) 5 June 1996 see the whole document	1-10
A	-----	11-17
A	US 5 224 163 A (GASSER MORRIE ET AL) 29 June 1993 see the whole document	11-16
A	----- WO 94 01821 A (SECURE COMPUTING CORP) 20 January 1994 see the whole document	17
A	----- WO 94 03859 A (INT STANDARD ELECTRIC CORP) 17 February 1994 see the whole document -----	17

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int. J. Application No
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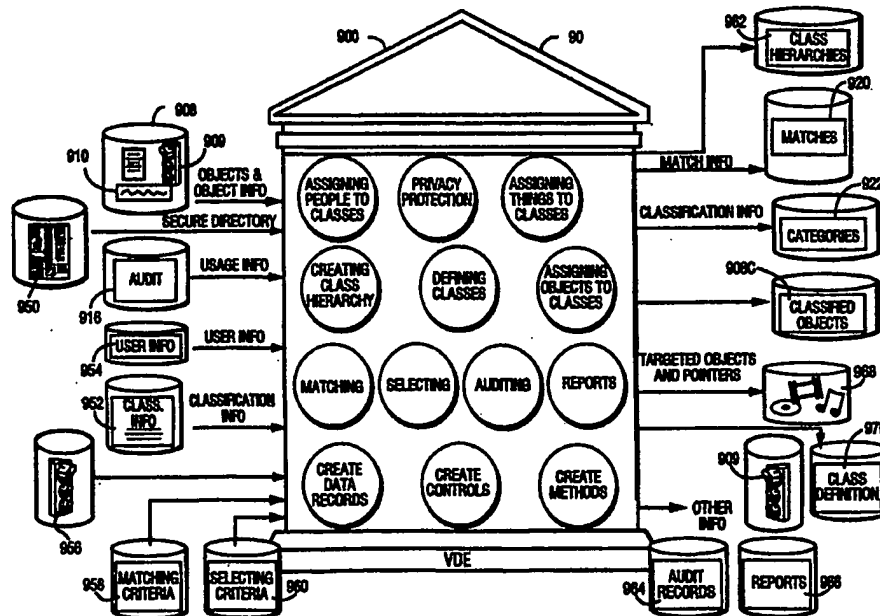
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<p>(21) International Application Number: PCT/US98/23648 (22) International Filing Date: 6 November 1998 (06.11.98) (30) Priority Data: 08/965,185 6 November 1997 (06.11.97) US (71) Applicant: INTERTRUST TECHNOLOGIES CORP. [US/US]; 460 Oakmead Parkway, Sunnyvale, CA 94086 (US). (72) Inventors: SHEAR, Victor, H.; 5203 Battery Lane, Bethesda, MD 20705 (US). VAN WIE, David, M.; Apartment 216, 965 East E1 Camino Real, Sunnyvale, CA 94087 (US). WEBER, Robert, P.; 215 Waverley Street #4, Menlo Park, CA 94025 (US). (74) Agent: FARIS, Robert, W.; Nixon & Vanderhye P.C., 8th floor, 1100 N. Glebe Road, Arlington, VA 22201 (US).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>Without international search report and to be republished upon receipt of that report.</i></p>

(54) Title: SYSTEMS AND METHODS FOR MATCHING, SELECTING, NARROWCASTING, AND/OR CLASSIFYING BASED ON RIGHTS MANAGEMENT AND/OR OTHER INFORMATION

(57) Abstract

Rights management information is used at least in part in a matching, narrowcasting, classifying and/or selecting process. A matching and classification utility system comprising a kind of Commerce Utility System is used to perform the matching, narrowcasting, classifying and/or selecting. The matching and classification utility system may match, narrowcast, classify and/or select people and/or things, non-limiting examples of which include software objects. The Matching and Classification Utility system may use any pre-existing classification schemes, including at least some rights management information and/or other qualitative and/or parameter data indicating and/or defining classes, classification systems, class hierarchies, category schemes, class assignments, category assignments, and/or class membership. The Matching and Classification Utility may also use at least some rights management information together with any artificial intelligence, expert system, statistical, computational, manual, or any other means to define new classes, class hierarchies, classification systems, category schemes, and/or assign persons, things, and/or groups of persons and/or things to at least one class.



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**SYSTEMS AND METHODS FOR MATCHING,
SELECTING, NARROWCASTING, AND/OR
CLASSIFYING BASED ON RIGHTS
5 MANAGEMENT AND/OR OTHER
INFORMATION**

FIELDS OF THE INVENTIONS

The inventions relate to electronic rights and transaction management. More particularly, the inventions relate to automated
10 systems, methods and techniques for efficiently matching, selecting, narrowcasting, categorizing and/or classifying in a distributed electronic rights and/or other event and/or transaction management environment. For example, the inventions provide electronic computer based systems, methods and techniques for matching,
15 classifying, narrowcasting, and/or selecting digital information describing people and/or other things. This matching, classifying, narrowcasting, and/or selecting can be based, at least in part, on elements of rights management information and/or one or more other categories of information -- wherein such information is used for
20 efficient, trusted event management assuring the execution of one or more controls related to, including, for example, consequences of processing such digital information describing people and/or other things. The present inventions also provide systems and methods for efficiently determining class hierarchies, classification schemes,
25 categories, and/or category schemes and/or the assignment of objects, persons and/or things to said class hierarchies, classification schemes,

categories, and/or category schemes using at least some rights management information.

BACKGROUND AND SUMMARY OF THE INVENTIONS

5 The modern world gives us a tremendous variety and range of options and choices. Cable and satellite television delivers hundreds of different television channels each carrying a different program. The radio dial is crowded with different radio stations offering all kinds of music, news, talk, and anything else one may care to listen
10 to. The corner convenience store carries newspapers from around the country, and a well stocked newsstand allows you to choose between hundreds of magazines and publications about nearly every subject you can think of. Merchandise from all corners of the world is readily available at the shopping mall or by mail order. You can pay by
15 check, in cash, or using any number of different kinds of credit cards and ATM cards.

 This tremendous variety is good, but it also presents problems. Sometimes, it is hard or inefficient for us to find what we want and need because there are too many things to evaluate and choose from,
20 and they are often located in too many places. We can waste a lot of time searching for the things we need or want at the right price, with the rights features, and at a particular time.

 Sometimes, we never find things that satisfy what we feel we need or want. This happens when we don't know what to look for,

how to look for it, or don't have the necessary assistance or tools to search successfully. For example, we may not know the best way of looking for something. Sometimes, we know what we are looking for but can't express or articulate it in ways that help us look. And
5 sometimes, we don't even know what we are looking for. You may know you need something, know its missing, but never really know how to communicate to others what you are looking for. For example, someone who speaks only English may never find resources using Japanese or Spanish. In general, we often don't have the time
10 or resources to look for all the things that would give us the most benefit or make us the most satisfied.

It's Hard To Find Mass Media Things You Want Or Need.

Figure 1A shows, as one example, how frustrating it can be to
15 find anything to watch on the hundreds of television channels that may be available. The man in Figure 1A spends a lot of time "channel surfing," trying to find something he is interested in watching. He may be moderately interested in golf, but may not like the particular golf tournament or golf players being broadcast at 7
20 o'clock on a particular channel. After flipping through other channels, he might think an action movie looks interesting only to find out after watching it for a while that he isn't really interested in it after all. A documentary on horses also seems interesting at first, but he finds it boring after watching it awhile because it doesn't give him
25 the kind of information he is interested in. The whole process can be

frustrating and he may feel he wasted a lot of time. Figure 1B shows the man getting so frustrated at the wasted time and energy that he thinks that maybe watching television is just not worth it . What the man really needs is a powerful yet efficient way to find those things
5 that most satisfy his desires -- that is, match his needs and/or his interests.

Our Mail Overloads Us With Things We Don't Want or Need

The same thing can happen with information sent to us in the
10 mail. It can be fun to receive some kinds of mail, such as personal letters, or magazines and catalogs on topics of personal interest. Certain other mail, such as bills, may not be fun but are usually important. Unfortunately, our mailboxes are typically overflowing with yet another kind of mail commonly referred to as "junk mail."
15 The person in Figure 2 finds his mailbox stuffed to the overflowing point with mail he never asked for and has absolutely no interest in. Most of this junk mail ends up unread and in the trash. However, it can take a long time to sort through all this mail to be sure you are only throwing out only the junk mail and not the good mail you are
20 interested in or need. For example, it's sometimes hard to distinguish credit card bills from offers for new credit cards you don't need or want. Wouldn't it be useful if your mail could be automatically "cleaned" of the mail you had no interest in and you received only the mail you wanted or needed?

Sorting through things to identify things you might want, then selecting what you actually want, can be a frustrating and time consuming experience. For example, it wastes the time of the person who receives the junk mail, and it also wastes the time, money and
5 effort of the people who spend their money to send mail to people hoping that they will buy their products.

As frustrating as finding and selecting may be to consumers, they often create even greater problems for businesses and people who want to locate or provide information, goods and services. It is
10 often said, that in the world of business, "Information is Power" and "efficiency is the key to success." To find or sell the most relevant or useful information and to provide the ability to most efficiently allow business to operate at its best, we need easy-to-use tools that can help us navigate, locate, and select what matches our interests. In the
15 modern world, it is often difficult to find out what different people like, and to supply people with the opportunity to select the best or most satisfying choices.

Past attempts outside the computer world to match up people with information, goods and/or services have had limited success.
20 For example, attempts to "target" mass mailings may increase the chance that they will go to people who are interested in them, but the entire process is still very wasteful and inefficient. It is considered a good success rate to match the interests of only a few percent of the recipients of "junk" mail. Telemarketing campaigns that use the

telephone to reach potential consumers can be very expensive, very annoying to consumers who are not interested in the products being marketed, and very costly and inefficient. A much more ideal situation for all concerned is enabling businesses to send information
5 only to individual consumers likely to find the information interesting, desirable, convincing, and/or otherwise useful. That way, businesses save time and money and consumers aren't unproductively hassled by information, phone calls, junk mail, junk e-mail and the like. However, right now it is extremely difficult to accomplish this
10 goal, and so businesses continue to annoy consumers while wasting their own time, money, and effort.

Because of the Vast Amount of Information Available, Even Systems that Provide a High Degree of Organization May Be Difficult to Use or Access

15 You can find yourself wasting a lot of time finding things -- even in places where finding things is supposed to be easy. For example, a library is a place where you can find all sorts of useful information but can also waste a lot of time trying to find what you are looking for. Modern libraries can be huge, containing tens or
20 even hundreds of thousands or millions of different books, magazines, newspapers, video tapes, audio tapes, disks, and other publications. Most libraries have an electronic or manual card catalog that classifies and indexes all of those books and other materials. This classification system is useful, but it often has significant
25 limitations.

For example, normally a card catalog will classify materials based only on a few characteristics (for example, general subject, author and title). The boy in Figure 3 is looking for information on American League baseball teams during World War II for a high school report. The card catalog led to the general subject of baseball and other sports, but, looking at the catalog, he can't identify any books that seem to provide the specific information he wants to see, so he must rely on books classified as "histories of sports" or "histories of baseball." He can spend lots of time looking through the books on the shelves, going back to the card catalog, and going back to the shelves before he finds a reference that's reasonably helpful. He may need to go ask an expert (the librarian) who is familiar with the books the library has on sports and may know where to look for the information. Even then, the boy may need to flip through many different books and magazines, and look in many different places within the library before he finds the information he is looking for.

Finding Products You Want or Need Can Be Very Difficult and Time Consuming

The same kind of frustrating experience can happen when you shop for a particular kind of item. While some people enjoy shopping, and have fun seeing what is in various stores, many people dislike spending time shopping, searching for the best or most affordable item. And sometimes even people who like to shop don't have the time to shop for a specific item.

For example, the man in Figure 4 goes into a shopping mall looking for a tie to fit very tall people. He didn't wear a tie to work that day, but, at the last minute, an important meeting was scheduled for later that day and he needs to dress up. The shopping mall has a large variety of stores, each selling a range of merchandise. But the man may only have a short time to look. For example, he may be on his lunch break, and needs to get back to work soon. He can't spend a lot of time shopping. He may therefore need to rely on tools to help him identify where he wants to buy the tie. Perhaps he uses a mall directory that classifies the different stores in terms of what kinds of merchandise they sell (for example, clothing, books, housewares, etc.). Perhaps he asks at the malls help desk staffed by "experts" who know what is available in the shopping mall. But even these resources may not tell him where to buy Italian silk ties that are discounted and cost \$20. So he does the best he can with the available resources.

These Problems Are Worse in the Digital World

The electronic or digital world offers a rapidly growing, vast array of electronically published products and services. For example, computer superstores have a dizzying array of different software products. Furthermore, music is now published primarily in digital form on optical disks, and video will soon be published that way too. And, of particular interest related to certain of the inventions described by this document, the Internet now has millions of home pages with an overwhelmingly variety and quantity of digital

information, and, these millions of home pages, in turn, point or "link" to millions of other web pages as well.

Today, for example, you can use the Internet to:

- 5 • read electronic newspapers, books and magazines and see them on your computer screen;
- get music in electronic form and play it using your computer;
- send and receive electronic mail all over the world;
- 10 • download reports and other information compiled by governments, companies, industries, universities, and individuals;
- watch videos and animations;
- play games with "cyber-friends" located around the world;
- 15 • chat with individuals and groups who share at least some interests in common;
- participate in "virtual reality" worlds, games, and/or experiences;
- (offer to) buy, and/or (offer to) sell nearly anything;
- 20 and
- conduct electronic transactions and commerce.

Today on the Internet and you can also find nearly anything and everything you can possibly imagine, although finding exactly what you really want may be time consuming and frustrating. This is

because the Internet and World Wide Web provide perhaps the best example of an environment that is particularly hard to navigate. There are an overwhelming number of choices -- too many to easily relate to or understand -- and many of which are terribly hard to find, even using the various Web searching "engines." The Internet is particularly exciting because it has the potential to provide to nearly everyone access to nearly every kind of information. Information can also come from an almost limitless variety of sources. But today, so many choices can be more a curse than a blessing if you don't have meaningful, easy ways to eliminate all but a relatively few choices. And the situation will only become much worse as more Web sites appear, and as digital information is distributed in "objects" or "containers" providing enhanced security and privacy but possibly more difficult access and identifiability.

As time passes, more and more valuable and desirable information will be available in digital containers. However, unless tools are developed to solve the problem, there will be no efficient or satisfying means to sort through the potentially trillions of digital containers available on tens of millions of Web pages, to find containers satisfying a search or fulfilling an information need. Furthermore, existing information searching mechanisms typically provide no way to readily perform a search that matches against underlying commercial requirements of providers and users.

It Will Be Difficult to Find Rights Management Scenarios Matching Your Requirements

If, for example, you have an auto repair newsletter and you want to create an article containing information on auto repair of Ford
5 Bronco vehicles, you may wish to look for detailed, three dimensional, step-by-step "blow-up" mechanical images of Ford Bronco internal components. Perhaps these are available from hundreds of sources (including from private individuals using new, sophisticated rendering graphics programs, as well as from
10 engineering graphics firms). Given the nature of your newsletter, you have decided that your use of such images should cost you no more than one penny to redistribute per copy in quantities of several thousand -- this low cost being particularly important since you will have numerous other costs per issue for acquiring rights to other
15 useful digital information products which you reuse and, for example, enhance in preparing a particular issue. You therefore wish to search and match against rights management rules associated with such products -- non-limiting examples of which include:

- cost ceilings,
- 20 • redistribution rights (e.g., limits on the quantity that may be redistributed),
- modification rights,
- class related usage rights,
- category related usage rights,

- sovereignty based licensing and taxation fees,
- import and export regulations, and
- reporting and/or privacy rights (you don't want to report back to the product provider the actual identity of your end users and/or customers.

5

If you can't match against your commercial requirements, you may be forced to waste enormous amounts of time sifting through all of the available products matching Ford Bronco internal components - - or you may settle for a product that is far less than the best available (settling on the first adequate product that you review).

10

Computers Don't Necessarily Make It Easier to Find Things

Anyone who has ever used the Internet or the World Wide Web knows that networks, computers and electronics, when used together, do not necessarily make the overall task of finding information easier. In fact, computers can make the process seem much worse. Most Internet users will probably agree that trying to find things you are interested on the Internet can be a huge time drain. And the results can be very unsatisfactory. The rapid growth rate of information available on the Web is continually making this process of finding desired information even harder. You can spend many hours looking for information on a subject that interests you. In most cases, you will eventually find some information of value -- but even using today's advanced computer search tools and on-line directories, it can

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take hours or days. With the advent of the technology advances developed by InterTrust Technologies Corp. and others, publishers will find it far more appealing to make their valuable digital information assets available on-line and to allow extractions and
5 modifications of copyrighted materials that will vastly expand the total number of information objects. This will enormously worsen the problem, as the availability of valuable information products greatly expands.

It Is Usually Hard to Find Things On the Internet

10 There are many reasons why it is difficult to find what you want on the Internet. One key reason is that, unlike a public library, for example, there is no universal system to classify or organize electronic information to provide information for matching with what's important to the person who is searching. Unlike a library, it
15 is difficult on the Internet to efficiently browse over many items since the number of possible choices may be much larger than the number of books on a library shelves and since electronic classification systems typically do not provide much in the way of physical cues. For example, when browsing library shelves, the size of a book, the
20 number of pictures in the book, or pictures on magazine covers may also help you find what you are interested in. Such physical cue information may be key to identifying desired selections from library resources. Unfortunately, most digital experiences typically do not provide such cues without actually loading and viewing the work in
25 digital form.

Thus, another reason why the electronic or digital world can make it even harder to find information than ever before has to do with the physical format of the information. The digital information may provide few or no outward cues or other physical characteristics that could help you to even find out what it is – let alone determine whether or not you are interested in it, unless such cues are provided through special purpose informational (for example, graphical) displays. On the Internet, everyone can be an electronic publisher, and everyone can organize their offerings differently -- using visual cues of their own distinctive design (e.g., location on a web page, organization by their own system for guiding choices). As one example, one publisher might use a special purpose graphical representation such as the video kiosk to support an electronic video store. Other publishers may use different graphical representations altogether.

Historically, there has been no particular need for consistent selection standards in conventional, non-electronic store based businesses. Indeed, it is often the unique display and choice selection support for customers' decision processes that make the difference between a successful store and a failure. But in the electronic world--where your choice is not among a few stores but rather is a choice among potentially thousands or even millions of possibly useful web sites and truly vast numbers of digital containers -- the lack of a consistent system for describing commercially significant variables that in the "real" world may normally be provided by the

display context and/or customized information guidance resource (catalog book, location of goods by size, etc.) seriously undermines the ability of digital information consumers to identify their most desirable choices.

5 Adding to this absence of conventional cues, the enormity of available choices made available in cyberspace means that the digital information revolution, in order to be practical, must provide profoundly more powerful tools to filter potentially desirable opportunities from the over abundance of choices. In sum, the
10 absence of the ability to efficiently filter from a dimensionally growing array of choices, can completely undermine the value of having such a great array of choices.

 In the "real" world, commercial choices are based on going to the right "store" and using the overall arrays of available information
15 to identify one's selection. However, as information in digital and electronic form becomes more and more important, the problem of relating to the vast stores of information will become a nightmare. For example, picture yourself in a store where each shopping aisle is miles long, and each item on the shelf is packaged in the same size
20 and color container. In an actual store, the product manufacturers put their products into brightly colored and distinctively shaped packages to make sure the consumer can readily find and select their product. These visual cues distinguish, for example, between a house brand

and a specific name brand, between low fat and regular foods, and between family size and small size containers.

On the Internet, a digital "store" is likely to be many stores with vast resources integrating products from many parties. If you were
5 limited to conventional classification and matching mechanisms, you would be unable to sift through all the material to identify the commercially acceptable, i.e., an item representing the right information, at the right price, providing license rights that match your interests. Certainly, if each digital package looks the same, you
10 are at a loss in making reasonable decisions. You can't tell one from another just by looking at it.

While information written on the "outside" of a digital package may be useful, you simply don't have the time to read all the packages, and anyway, each packager may use different words to
15 describe the same thing and the descriptions may be difficult to understand. Some people may write a lot of information on the outside of their package, and others may write little or nothing on the outside of the package. If there is no universal system agreed upon by everyone for defining what information should be written on the
20 outside of the package and how it should be formatted, using such a store would be painfully difficult even if you could limit the number of choices you were evaluating.

**There is a Need For Efficient and Effective Selection
Based, at Least in Part, on Rights Management
Information**

5 Unlike a real store where all breakfast cereals are shelved
together and all soft drinks are in the same aisle, there may be no
single, universal way to display the organization of all of the
information in a "digital store" since, by its nature, digital information
frequently has many implications and associated rules. For example,
there now exist highly developed rights management systems such as
10 described in U.S. Patent application Serial No. 08/388,107 of Ginter
et al., filed 13 February 1995, for "Systems And Methods For Secure
Transaction Management And Electronic Rights Protection (hereafter
"Ginter et al") – the entire disclosure (including the drawings) of
which is expressly incorporated into this application as if expressly
15 set forth herein. Many rules associated with any given piece of digital
information may, combinatorially, given rise to many, very different,
commercial contexts that will influence the use decisions of different
potential users in many different ways (e.g., cost, auditing, re-use,
redistribution, regulatory requirements, etc.).

20 No readily available systems developed for the digital
information arena provide similarly satisfying means that describe the
many commercial rules and parameters found in individual custom
catalogs, merchandise displays, product specifications, and license
agreements. Further, no readily available mechanisms allow

"surfing" across vast choice opportunities where electronic matching can single out those few preferred items.

As one example, picking an appropriate image may involve any or all of the following:

- 5 • price,
- republishing (redistribution) rights,
- rights to extract portions,
- certified usable in certain sovereignties (e.g.,
 pornographic content not allowed in Saudi Arabia),
- 10 • size,
- format, etc.,
- use and reuse administrative requirements (e.g., which
 clearinghouses are acceptable to rightsholders, what is
 the requirement for reporting usage information – is the
15 name of your customer required, or only the use class(es)
 or none -- is advertising embedded), and
- other features.

No previously readily available technology allows one to efficiently make selections based on such criteria.

- 20 By their nature, and using the present inventions in combination with, amongst other things, "Ginter et al", the packages in a digital store may be "virtual" in nature -- that is, they may be all

mixed up to create many, differing products that can be displayed to a prospective customer organized in many different ways. This display may be a "narrowcasting" to a customer based upon his matching priorities, available digital information resources (e.g., repository, property, etc.) and associated, available classification information. In the absence of an effective classification and matching system designed to handle such information, digital information of a particular kind might be just about anywhere in the store, and very difficult to find since the organization of the stores digital information resources have not been "dynamically" shaped to the matching interests of the potential customer.

These Inventions Solve These Problems

The present inventions can help to solve these problems. It can give you or help you to find the things you like, need or want. For example, it can deliver to you, (including narrowcasting to you), or help you to find:

- things that match your interests;
- things that match your lifestyle;
- things that match your habits;
- things that match your personality;
- things you can afford and/or accept your preferred payment method;
- things that help you in your work;
- things that help you in your play;

- things that help you to help others;
- things that other people who are similar to you have found helpful,
- things that fulfill the commercial objective or
- 5 requirements of your business activities; and
- things that will make you happy and fulfilled.

The present inventions can expand your horizons by helping you to find interesting or important things, things that you enjoy, things that optimize your business efficiency, and things that help you

10 make the best digital products or services you can -- even if you didn't know precisely what or how to look for what you may need. It can also help you by allowing things you didn't know existed or know enough to look for -- but that you may be interested in, want or need -- to find you.

15 **The Present Inventions Can Use "Metaclasses" to Take Multiple Classifications Into Account**

In some areas, multiple classifications may already exist and thus it is important for a consumer to be able to find what he or she is looking for while taking into account not only that there may be

20 multiple classifications, but also that some classifications may be more authoritative than others. For example, Consumer Reports may be more authoritative on certain topics than more casual reviews published, for example, in the local weekly newspapers.

As another example, consider a book that rates restaurants according several factors, including, for example, quality, price, type of food, atmosphere, and location. In some locations there may be many guides, but they may review different sets of restaurants. One
5 guide may rate a particular restaurant highly while one or more others may consider it average or even poor. Guides or other sources of ratings, opinions, evaluations, recommendations, and/or value may not be equally authoritative, accurate, and/or useful in differing circumstances. One consumer may consider a guide written by a
10 particular renowned expert to be more authoritative, accurate, and/or useful than a guide reflecting consumer polls or ballots. However, another consumer may prefer the latter because the second consumer may perceive the tastes of those contributing opinions to be closer to his or her own tastes than those of the experts.

15 In accordance with the present inventions, a person may be able to find a restaurant that meets specified criteria – for example, the highest quality, moderately priced Cantonese and/or Hunan Chinese food located in Boston or Atlanta – while weighting the results of the search in favor of reviews from travel books rather than from the local
20 newspapers. As this example indicates, the searching may be according to class of authoritative source (and/or classes sources considered authoritative by the consumer) instead of weighting individual reviewers or sources. Thus in accordance with the present inventions, search may be performed at least in part based on classes
25 of classes, or "metaclasses."

The Present Inventions Can Make Choices Easier

One simple way to look at some examples of the present inventions is as a highly sensitive electronic "matchmaker" that matches people or organizations with their best choices, or even
5 selects choices automatically. The present inventions can match people and/or organizations with things and/or services, things with other things and/or services, and/or even people with other people. For example, the matching can be based on profiles that are a composite of preference profiles of one or more specific users, one or
10 more user groups, and/or organizations -- where the contribution of any given specific profile to the composite profile may be weighted according to the specific match circumstances such as the type and/or purpose of a given match activity.

Figure 5 shows a simplified example of an electronic
15 matchmaker that can match up two people with like interests. Sarah loves hiking, country and western music, gardening, movies and jogging. Mark loves movies, hiking, fast cars, country and western music, and baseball. The electronic matchmaker can look at the interests, personalities and/or other characteristics of these two people
20 and determine that they are compatible and should be together -- while maintaining, if desired, the confidentiality of personal information. That is, unlike conventional matchmaking services, the present inventions can keep personal information hidden from the service provider and all other parties and perform matching within a

protected processing environment through the use of encryption and protected processing environment-based matching analysis.

For example, certain matching of facts that are maintained for authenticity may be first performed to narrow the search universe.

5 Then, certain other matching of facts that are maintained for secrecy can be performed. For example, matching might be based on shared concerns such as where two parties who have a given disability (such as cancer or HIV infection) that is certified by an authority such as a physician who is certified to perform such certification; or the same
10 income level and/or bank account (as certified by an employer and/or financial authority such as a bank). Some or all of such secret information may or may not be released to matched parties, as they may have authorized and/or as may have been required by law when a match is achieved (which itself may be automatically managed within
15 a protected processing environment through the use of controls contributed by a governmental authority).

Figure 5A shows an electronic matchmaker that matches an electronic publisher with mystery stories for his quarterly electronic mystery anthology, where the matching is based on price,
20 redistribution rights, editing rights, attribution requirements (attributing authorship to the author), third party rating of the writers quality, length of story, and/or the topical focus of the story (for example). Here, rule managed business requirements of publisher and writers are matched allowing for great efficiency in matching,

coordination of interests, and automation of electronic business processes and value chain activities.

The convenience of the "electronic matchmaker" provided in accordance with the present inventions extends to commerce in physical goods as well -- as illustrated in Figure 5b. In this non-limiting example, the electronic matchmaker is communicating to the consumer via the Internet and World Wide Web. The matchmaker has found the lowest quoted price for a Jeep sports utility model given, in this one example, a multitude of factors including:

- 10 • model,
- color,
- options package,
- availability, and
- discounts resulting from the consumer's membership in
- 15 certain classes (such as membership in the American Association of Retired Persons, membership in the American Automobile Association, and being a graduate of Stanford University).

Membership in these associations and alumni status may be conveyed or indicated by possession of a special electronic document called a "digital certificate," "membership card," and/or other digital credential that warrants or attests to some fact or facts.

Thus, the electronic matchmaker provided in accordance with these inventions can also match people with things. Figure 6 shows two people, Harry and Tim. Harry loves sports most of all, but also wants to know a little about what is going on in the business world.

5 The business world is most important to Tim, but he likes to keep up with the baseball scores. The electronic matchmaker in accordance with these inventions can learn about what Harry and Tim each like, and can provide information to a publisher so the publisher can narrowcast a newspaper or other publication customized for each of

10 them. A newspaper company can narrowcast to Harry lots of sports information in his newspaper, and it can narrowcast to Tim mostly business information in his newspaper. In another example, Harry's newspaper may be uniquely created for him, differing from all other customized newspapers that emphasize sports over business

15 information. But information that Harry and Tim respectively want to maintain as authentic or secret can be managed as such.

The electronic matchmaker can also match things with other things. Figure 7 shows how the electronic matchmaker can help a student put together a school project about big cats. The electronic

20 matchmaker can help the student locate and select articles and other material about various kinds of big cats. The electronic matchmaker can, for example, determine that different articles about tigers, lions and cheetahs are all about big cats – but that articles about elephants and giraffes are not about big cats. If there is a charge for certain

25 items, the electronic matchmaker can find only those items that the

student can afford, and can make sure the student has the right to print pictures of the big cats. The electronic matchmaker can help the student to collect this information together so the student can make a colorful poster about big cats.

5 The electronic matchmaker can match up all sorts of different kinds of things. Figure 8 shows the electronic matchmaker looking at three different objects. The matchmaker can determine that even though objects A and C are not identical, they are sufficiently similar that they should be grouped together for a certain purpose. The
10 electronic matchmaker can determine that for this purpose, object B is too different and should not be grouped with objects A and C. For a different purpose, the electronic matchmaker may determine that objects A, B and C ought to be grouped together.

15 **The Present Inventions Can Make Use of Rights
Management Information**

 How does the electronic matchmaker find out the information it needs to match or classify people and things? In accordance with a feature provided by these inventions, the electronic matchmaker gets information about people and things by using automated,
20 computerized processes. Those processes can use a special kind of information sometimes known as rights management information. Rights management information may include electronic rules and/or their consequences. The electronic matchmaker can also use information other than rights management information.

An example of rights management information includes certain records about what a computer does and how it does it. In one simple example, records may give permission to read a particular news article if that the customer is willing to pay a nickel to purchase the article and that the nickel may be paid using a budget provided by a credit card company or with electronic cash. A customer might, for example, seek only news articles from providers that take electronic cash and/or process information with a certain information clearinghouse as described in U.S. Patent application Serial No. 08/699,712 to Shear et al., filed 12 August 1996, for "Trusted Infrastructure Support Systems, Methods And Techniques For Secure Electronic Commerce Electronic Transactions And Rights Management" (hereafter "Shear et al") – the entire disclosure (including the drawings) of which is expressly incorporated into this application as if expressly set forth herein.

The Present Inventions Can Maintain Privacy

Figure 9 shows one way in which the electronic matchmaker can get information about a person. In this example, the electronic matchmaker asks Jill to fill out a computer questionnaire about what she likes. The questionnaire can also ask Jill what information she wishes to be maintained as authentic, and what information (e.g., encrypted by the system) may be used for secure matching only within a protected processing environment and can not be released to another party, or only to certain specified parties. The questionnaire

answering process may be directly managed by a protected processing environment to ensure integrity and secrecy, as appropriate.

For example, the questionnaire may ask Jill whether she likes baseball and whether she is interested in volcanoes. The electronic matchmaker can also ask Jill if it is okay to look at records her computer maintains about what she has used her computer for in the past. These computer records (which the computer can maintain securely so that no one can get to them without Jill's permission) can keep a history of everything Jill has looked at using her computer over the past month and/or other time period – this process being managed, for example, through the use of a system such as described in the "Ginter et al."

Looking at Figure 10, Jill may have used her computer last week to look at information about baseball, volcanoes and Jeeps. With Jill's permission, the electronic matchmaker can employ a protected processing environment 154 (schematically shown here as a tamper-resistant "chip" within the computer – but it can be hardware-based, software-based, or a combination of hardware and software) to look at the computer's history records and use them to help match Jill up with other kinds of things she is or may be interested in. For example, the electronic matchmaker can let an electronic publisher or other provider or information gatherer (e.g., market survey conductor, etc.) know that Jill is interested in team sports, geology and sports utility vehicles with or without more revealing detail -- as managed

by Jill's choices and/or rights management rules and controls
executing in her computer's protected processing environment 154.
The provider can send information to Jill – either automatically or at
Jill's request – about other, related things that Jill may be interested
5 in.

Figure 11 shows an example of how rights management and
other information Jill's computer maintains about her past usage can
be useful in matching Jill up with things she may need or want. The
computer history records can, for example, show that Jill looked at
10 hockey information for three hours and football information for five
hours during the past week. They can indicate that Jill uses a
Discover credit card to pay for things, usually spends less than \$10 per
item, averages \$40 per month in such expenses, and almost never
buys new programs for her computer.

15 The electronic matchmaker can, with and subject to Jill's
permission, look at and analyze this information. As one example,
the electronic matchmaker can analyze relevant rules and controls
provided by third parties who have rights in such information --
where such rules are controlled, for example, by Jill's computer's
20 protected processing environment 154. It can also look at and
analyze Jill's response to computer questionnaires indicating that she
likes baseball and football. The electronic matchmaker can, based on
all of this information, automatically select and obtain videos and/or
other publications for Jill about team sports and that cost less than

\$10 and that accept payment using a Discover card, so that Jill can preview and select those in which she may have a particular interest and desire to acquire.

Figure 12 shows that the electronic matchmaker can take into
5 account computer history records for lots of different people. The
electronic matchmaker can work with other rights management
related computer systems such as "usage clearinghouses" (non-
limiting examples of which are described in each of "Ginter et al" and
"Shear et al") to efficiently collect rights management related
10 information. The ability to collect history records from many
different people can be very useful. For example, this can allow the
electronic matchmaker to distinguish between things that are very
popular and things that are not so popular.

The present inventions provide great increases in efficiency and
15 convenience. It can save you a lot of time and effort. It can allow
computers to do a lot of the work so you don't have to. It can allow
you to compete with larger businesses -- and allow large business to
function more efficiently -- by allowing the location of resources
particularly appropriate for certain business activities. You can
20 delegate certain complex tasks to a computer, freeing you to be more
productive and satisfied with electronic activities. These automated
processes can be "smart" without being intrusive. For example, they
can learn about your behavior, preferences, changing interests, and
even your personality, and can then predict your future interests based

on your past behavior and interest expressions. These processes can ensure confidentiality and privacy – so that no one can find out detailed information about you without your consent. Across the full range of personal and business activities, the present inventions allow
5 a degree of basic efficiency, including automation and optimization of previously very time consuming activities, so that interests and possible resources are truly best matched.

The present inventions handle many kinds of important issues and addresses the widest range of information and rights and
10 automation possibilities. For example, the present inventions are capable of handling (but are not limited to):

- consumer information;
- computer information;
- business information;
- 15 • entertainment information;
- other content information;
- information about physical products;
- all other kinds of information.

It can reflect and employ all kinds of rights to optimize
20 matching processes, including:

- content rights;
- privacy rights;
- governmental and societal rights;
- provider rights;

- distributor rights;
- consumer rights;
- workflow rights;
- other value chain participant rights;
- 5 • work flow rights;
- business and personal rights and processes of all kinds.

It can employ all kinds of parameter information, including:

- budget,
- 10 • pricing
- redistribution
- location (of party, item, etc.)
- privacy
- identity authenticity and/or specificity
- 15 • any other parameter information.

Pricing (for example the price of a specific item) can be used in matching based upon price per unit and/ or total price for a volume purchase, price for renting, right to redistribute, cost for redistributing items, etc.

- 20 Privacy can be used for establishing matching contingent upon usage reporting requirements for viewing, printing, extracting, dedistributing, listening, payment, and/or requiring the reporting of

other information such as personal demographics such as credit worthiness, stored value information, age, sex, marital status, race, religion, and/or usage based generated profiling information based materially upon, for example, a users history of usage of electronic
5 content and/or commercial transactions, etc.

Identity can be used for matching based upon, for example, such as the presence of one or more specific, class, and/or classes of certificates, including, for example, specific participant and/or group of participant, including value chain certificates as described in
10 “Shear et al”.

With the inventions described herein, commercial requirement attributes embodied in rules (controls and control parameter data) are employed in classification structures that are referenced by search mechanisms, either, for example, directly through reading rule
15 information maintained in readable (not encrypted) but authentic (protected for integrity) form, through reading rule information maintained securely, through processes employing a protected processing environment 154 of a VDE node, and/or through the creation of one or more indexes and/or like purpose structures, that,
20 directly, and/or through processes employing a protected processing environment 154, automatically compile commercial and other relevant (e.g., societal regulatory information such as a given jurisdiction’s copyright, content access and/or taxation regulations) for classification/matching purposes.

The present inventions can employ computer and communication capabilities to identify information, including:

- topical classification such as described by conventional library classification systems,
- 5 • commercial characterizations -- including commercial parameter data such as pricing, size, quality, specific redistribution rights, etc.,
- creator (e.g., a publisher or manufacturer), distributor, societal, user, and other participant interests information,
- 10 • information generated by automated profiling of any and all of such parties or collections of parties,
- matching (including electronically negotiating a match) between the interests of any of such parties,
- where appropriate, the use of statistical procedures, expert systems, and artificial intelligence tools for
15 profiling creation and/or analysis, matching, and/or negotiation.

The present inventions thus provide for optimal user, provider, and societal use of electronic cyberspace resources (for example,
20 digital information objects available across the Internet, sent by direct broadcast satellite, transmitted over a cable TV system, and/or distributed on optical disk).

Of particular importance is the notion of classes of content, classes of users, and classes of providers. For example, the present inventions can make use of any/all of the following:

- 5 • topical identification, for example, such as
 information represented in typical library subject
 and/or author and/or catalog and/or keyword search
 and retrieval information systems;
- 10 • any commercial requirements, associated with the use
 of electronic information (and/or to products,
 including non-electronic products, and/or to any
15 service), including information embodied in
 encrypted rules (controls and/or parameter data)
 governing rights in electronic value chain and
 electronic interaction contexts, and further including
 information guaranteed for integrity;
- 20 • any information descriptive of an available resource
 (which may include any information, product, and/or
 service, whether available in electronic and/or
 physical forms) such as: the quality of a digital
25 product as evaluated and ranked and/or otherwise
 specified by one or more third parties and/or
 independent third parties (e.g., Consumer Reports, a
 trusted friend, and/or a professional advisor), the size
 of a product, length in time in business of a service or
 in the market of a product, a product's or service's

market share, and/or subject governmentally and/or other societally imposed rules and/or integrity guaranteed descriptions, including any associated regulatory requirements, such as societal

5 requirements granting and/or reporting access to information, for example, information on how to create a nuclear bomb to a confidential government auditing agency (this allowing free access to information while protecting societal rights);

10 • any information descriptive of a user and/or department and/or organization and/or class of users and/or departments and/or organizations (including, for example, such descriptive information encrypted and/or guaranteed for integrity) wherein such

15 information may include, for example, name, physical and/or network and/or cyber-wide logical network location, organizational and/or departmental memberships, demographic information, credit and/or trustworthiness information, and profile preference

20 and usage history information, including any generated profile information reflecting underlying preferences, and/or classes based on said descriptive information and/or profiles.

Some Of The Advantageous Features And Characteristics Provided By The Present Inventions

The classification, matching, narrowcasting, analysis, profiling, negotiation, and selection capabilities of the present inventions

5 include the following capabilities (listed items are not mutually exclusive of each other but exemplary samples):

- 10 • Enables highly efficient provision of classes of information, entertainment, and/or services to classes of individuals and/or entities that have (and/or may obtain) the right(s) to such information and are likely to find identified information interesting, useful, and/or entertaining.
- 15 • The present inventions also provide systems and methods for efficiently determining class hierarchies, classification schemes, categories, and/or category schemes and/or the assignment of objects, persons and/or things to said class hierarchies, classification schemes, categories, and/or category schemes using at least some rights management information.
- 20 • Helps systems, groups, and/or individuals classify, locate, and/or obtain specific information and/or classes of information made available through so-called "publish and subscribe" systems and methods using, among other things, subject-based addressing and/or messaging-based protocol layers.
- 25

- Provides fundamentally important commercial and societal rules based filtering to identify desired electronic information and/or electronic information containers through the use of classification structures, profiling technology, and matching mechanisms that harness the vast information opportunities in cyberspace by matching the information needs of users against commercial and/or societal rules related to the use of available information resources, including, for example, commercial and/or societal consequences of digital information use imposed as provider requirements and specified through the use of, and enforced by the use of, a trusted rights management system such as described in “Ginter et al”.
- Enables content creators and/or distributors to efficiently "stock the shelves" of retail electronic content outlets and similar merchandisers (both electronic and hard goods) with products and/or services most likely to be purchased and/or used by the customers of such merchandisers. This includes both identifying and "stocking" the most desirable products and/or other user desired resources and optimally presenting such products and/or other

resources in a manner optimized for specific users and/or user classes.

- 5 • Matching may be based on history of matching, that is, matching derived at least in part from previous matching, one non-exhaustive example of which includes learned matching for increasing efficiency.
- 10 • Enables matching for value chains where the matching is against a plurality of co-participating value chain parties requirements and/or profiles against match opportunities, and/or matching by matches comprised of match input and/or aggregation of match rule sets of providers used to "dock" with one or more user needs, interests, requirements match sets.
- 15 • Helps match persons and/or things using fuzzy matching, artificial intelligence (e.g., expert systems), and other methods that that match using plural match sets from providers and/or receivers.
- 20 • Makes search easier by using smart agents that match at least in part using at least one class.
- 25 • Helps bring buyers and sellers together through cross matching, where both parties offer to provide and/or receive content and/or physical goods for consideration, including barter matching and negotiated barter and other kinds of matching.

- Helps potential customers find those members (e.g., objects such as digital information containers) of any one or more classes of content most useful, entertaining, and/or interesting to them.
- 5 • Facilitates organizations securely and efficiently acquiring and distributing for internal use certain classes of content available from external providers and/or more securely and/or efficiently managing classes of their own content, including being able to
10 authorize certain classes of employees to use specified classes of internal and/or external content.
- Efficiently supporting matching between users and digital information where participants in a chain of handling and control have specified rules and usage
15 consequences for such digital information that may depend on class membership, for example, on class(es) of content and/or class(es) of value chain participants and/or classes of electronic events, wherein such participants include, for example, users
20 and/or participants contributing rules and consequences.
- Enables first individuals and/or organizations to locate efficiently other individuals, organizations, products, and/or services who have certain characteristics that
25 corresponds to such first individuals' and/or

organizations' interests, including interests generated by profiling information locally gathered through local event auditing at a VDE installation.

- 5 • Facilitates businesses informing a customer about things of special interest to her or him, such as classes of goods, services, and/or content, including directing such information to a customer at least in part based on profiling information locally gathered at a VDE installation through local event auditing at a VDE
10 installation.
- Allows trading companies to match suppliers of certain classes of goods and/or services with those who desire to purchase and/or use those classes of goods and/or services, wherein such matches may
15 include fulling a commercial business interaction and may further include one or more sequences of matches and/or nested matches (a sequence and/or grouping of matches within a given organization or group, wherein such matches may be required to
20 occur in a certain order and/or participate along with other matches in a group of matches before a given match is fulfilled).
- Enhances equity portfolio management by making
25 easier for traders to identify those equities having certain desired characteristics, such as belonging to

the class of equities that will have the greatest positive effect on the value of the trader's portfolio given certain classes of information and assumptions. Such matches may take into account information

5 external to the fulfilment of a given trade, for example, one or more certain other market or specific variable thresholds must be met before an equity is traded, such as a certain rise in the an index stock value of, and/or revenue of, certain one or more

10 network hardware suppliers before a certain quantity of equity is purchased at a certain price for stock of a certain network hardware supplier raw network component manufacturer, and wherein, for example, such determinations can be performed highly

15 efficiently at a user VDE installation as the point of control, where such node receives such trusted information in, for example, VDE containers, as is necessary for a control decision to occur to purchase such equity of such network hardware supplier raw

20 component manufacturer.

- Makes easier automated foreign currency exchange by enabling currency traders to identify members of the class of possible trades and/or conversions that are likely to produce the best returns and/or minimize

25 losses.

- 5 • Helps consumers and organizations manage their affairs more efficiently and effectively and helps providers of services by automatically matching users with services that meet certain specified criteria, such as, for example, U. S. and Swiss banks offering the highest interest rates on certain time based classes of bank deposit instruments.
- 10 • Enables distributors of software and other content to identify one or more classes of users who are most likely to be interested in purchasing or otherwise using certain classes of software.
- 15 • Enables rightsholders to employ rules and/or usage consequences dependent on membership in one or more classes where class membership may be indicated by possession of a special digital document called a "certificate."
- 20 • Enables rightsholders to employ rules and/or usage consequences at least partially dependent on roles and responsibilities within an organization, where those roles and responsibilities may be indicated by possession of a digital certificate, digital membership card, and/or other digital credential.
- 25 • Facilitates more efficient automation of manufacturing and other workflow processes by, for example, matching certain manufacturing steps and/or

processes with performance parameter data associated with available classes of equipment capable of performing those steps and/or processes.

- 5 • Makes easier the administration and enforcement of government and/or societal rights by, for example, providing matching means for automatically applying certain classes of tax rules to appropriate classes of sales and other transactions.
- 10 • Enables altering the presentation of information and/or other content depending on the matching between preferences of the user and one or more classes of content being presented.
- 15 • Enables processing or altering (narrowcasting) of an event (e.g., the presentation of information and/or other content), for example, dynamically adjusting the content of an event, in response to a matching among the preferences and/or reactions of a user and/or user group, one or more classes of content being processed through one or more events, one or more classes of 20 one or more users participating in and/or otherwise employing the one or more events, and/or event controls (i.e., rules and/or parameter data).
- 25 • Allows the rules and usage consequences and the presentation of information to vary according to the difficulty of the information, including, for example,

adjusting the difficulty of an electronic game so that it is neither too frustratingly difficult nor too easy to use.

- 5 • Enables a user to efficiently locate content in one or more particular classes, where class is defined at least in part by weighted topical classification, where, for example, a document or other object is classified in one or more categories where at least one category reflects the absolute or relative attention given to that class in the object being classified.
10
- Facilitates users' creation of a new document from parts of two or more documents, where at least one of such parts is identified and/or retrieved based upon matching the part's membership in one or more
15 classes identified by trusted, commercial controls employed through the use of a rights management system.
- Enables users to search for, locate, and use only those parts of a document that belong to one or more
20 specified classes, including those parts having certain commercial controls, for example, reflecting acceptable usage restrictions and/or pricing.
- Enhances search and retrieval by creating new classes of content descriptors that incorporate various

disparate standards for content description and/or location.

- Allows consumers to easily locate services having certain specified characteristics, for example, gambling services offering the most favorable odds and/or specified rules for a particular game or games.
- Helps consumers obtain certain classes of tickets to certain classes of events.

The above capabilities, and others described in this application, are often ideally managed by distributed commerce nodes of a distributed, rights management environment embedded in or otherwise connected to the operating system clients of a distributed computing environment such as described in "Ginter et al" and further described in "Shear et al", and employing, for example, rules, integrity management, container, negotiation, clearinghouse services, and trusted processing capabilities described in "Ginter et al" and "Shear et al".

The Present Inventions Make Use Of Many Kinds Of Information And/Or Data

As discussed above, these inventions provide, among other things, matching, classification, narrowcasting, and/or selection based on rights management and other information. In particular preferred examples, these matching, classification, narrowcasting, and/or

selection processes and/or techniques may be based at least in part on rights management information. The rights management information may be an input to the process, it may be an output from the process, and/or the process can be controlled at least in part by rights management information. Information in addition to, or other than, rights management information may also be an input, an output, and/or a basis for controlling, the process and/or techniques.

Rights management information may be directly or indirectly inputted to the matching, classification and/or selection process. For example, rights management controls, rules and/or their consequences may be an input. Examples of such controls and/or rules include object registration related control set data, user related control set data and/or computer related control set data. In addition or alternatively, information provided based on control sets or rules and their consequences may be inputted. The following are examples of such information that may be provided based, for example, on rules and consequences:

- information exhaust;
- user questionnaires,
- audit trail related information;
- aggregated usage data;
- information measuring or otherwise related to user behavior;
- information measuring or otherwise related to user preferences;

- information measuring or otherwise related to user personality;
- information measuring or otherwise related to group behavior;
- 5 • information measuring or otherwise related to group preferences;
- information measuring or otherwise related to group culture
- 10 • information measuring or otherwise related to organizational behavior;
- information measuring or otherwise related to organizational preferences;
- information measuring or otherwise related to organizational culture;
- 15 • information measuring or otherwise related to institutional behavior;
- information measuring or otherwise related to institutional preferences;
- information measuring or otherwise related to institutional culture;
- 20 • information measuring or otherwise related to governmental behavior;
- information measuring or otherwise related to governmental preferences;

- information measuring or otherwise related to governmental culture;
- information measuring or otherwise related to societal behavior;
- 5 • information measuring or otherwise related to societal preferences;
- information measuring or otherwise related to societal culture;
- object history related information;
- 10 • other types of information;
- any combinations of information including, some, all or none of the information set forth above.

The processes, techniques and/or systems provided in accordance with these inventions may output rights management
15 related information such as, for example:

- one or more control sets;
- various rules and/or consequences;
- information used by control sets;
- certificates;
- 20 • other rights management information.

In accordance with various preferred embodiments provided by these inventions, information other than rights management information may also be used, at least in part, as an input, output and/or to control the matching, classification, narrowcasting, and/or

selection processes, systems and/or techniques. Examples of such information include:

- content object information;
 - full text
 - 5 • portions of objects
 - portions of sub-objects
 - abstracts
 - metadata
 - other content object related information
- 10 • user information
 - census information
 - purchasing habits
 - credit and financial transaction related information
 - 15 • governmental records
 - responses to questionnaires
 - survey results
 - other user information
- 20 • computer related information
 - identification information
 - configuration information
 - other computer related information
- combinations of information.

Matching/Classifying/Selection

Systems, methods and techniques provided in accordance with these inventions can classify a variety of types of things including, for example:

- 5 • people
- computers
- content
- events
- transactions
- 10 • objects of all types
- combinations of things;
- combinations of people and things.

The matching, classifying and/or selecting processes provided in accordance with these inventions are very flexible and useful. For
15 example, they may be used to associate people with information, information with other information, people with other people, appliances with people, appliances with information, and appliances with other appliances. The present inventions in their preferred
20 examples can associate any kind of information, object or thing with any other kind of information, object or thing.

Different Associations Between Classes and Rights

The processes, systems and/or techniques provided in accordance with these inventions can provide and/or take into account many different kinds of associations between classes and rights. For

example, they can look at what rights are available to a user, computer, data structure or any other object. They can also look to rights selected by an object (for example, the subset of rights a user has chosen or otherwise identified). Alternatively or in addition, they
5 can look to rights that have been exercised by a user or in conjunction with an object or other thing, and they can look to the consequences of exercising such a right(s).

**Embodiments in Accordance With the Present
Inventions Can Be Used to Define Classes Based on Uni-
10 Dimensional and/or Multi-Dimensional Attributes and/or
Characteristics**

Example processes, systems and/or techniques provided in accordance with these inventions can be used to define classes based on uni-dimensional and/or multi-dimensional attributes and/or
15 characteristics. Any one or more attributes can be used. The attributes and/or characteristics can be flexibly defined. They may define groups or classes containing elements sharing certain attributes in common. There can, for example, be a spectrum of classification that takes into account gray areas as to whether a particular person or
20 thing possesses a certain one or a number of particular attributes and/or characteristics. Or classification may have a higher degree of certainty or definition. For example, a process can test to determine whether particular people or things are inside or outside of particular classes or groups based on one or a number of attributes or
25 characteristics (for example, whether you live in Denver, are under the age of 25 and are single). In accordance with additional specific

features provided by these inventions, there may be a minimum number of different classes set up to "cover" a particular situation – with every person or thing either being within or outside of a given, disjoint class or group.

5 Preferred Examples In Accordance With The Present Inventions Are Extensible to Accommodate Changing Conditions

The systems, methods and/or techniques provided by these inventions are extensible to accommodate changing conditions. For
10 example, they can be made to readily adapt to changes in rules, consequences, topics, areas and/or subjects pertaining to groups such as, for example categories, and any other variable. Furthermore, partially and/or entirely new variables may be introduced to one or more existing sets of variables -- for example, to extend or otherwise
15 modify a model to account for additional variables, to apply a new strategy, to adapt to new network and/or installation circumstances, to adapt to new user factors, to change analysis and/or other processing characteristics, and so on.

20 Preferred Examples In Accordance With The Present Inventions Are Compatible With Pre-Existing or Any New Classification Techniques or Arrangements

The example systems, methods and/or techniques provided by these inventions can be made fully compatible with any classification and/or categorization means, method, process, system, technique,
25 algorithm, program, and/or procedure, presently known or unknown,

for determining class and/or category structures, definitions, and/or hierarchies, and/or the assignment of at least one object, person, thing, and/or member to at least one class and/or category, that without limitation may be:

- 5 • implemented by computer and/or other means; and/or
- based upon discrete and/or continuous mathematics; and/or
- using nominal, ordinal, interval, ratio and/or any other measurement scale and/or measurement mode; and/or
- 10 • including parameter data; and/or
- entail linear and/or non-linear estimation methods; and/or
- any other methods.

For example, classification can be performed using any or all of
15 the following example classification techniques:

- Statistical techniques that identify one or more clusters of cases sharing similar profiles and/or features, including any of the family of cluster analysis methods, for example, those described in
20 Hartigan (Hartigan, J. A., Clustering Algorithms, New York: Wiley, 1975);
- Methods for numerical taxonomy, for example, as described, for example, by Sneath and Sokal (Sneath, Peter H.A. and Robert R. Sokal, Numerical

Taxonomy: The Principals and Practice of Numerical Classification, San Francisco: W.H. Freeman, 1973);

- 5 • Any of the methods for cluster analysis, factor analysis, components analysis, and other similar data reduction/classification methods, for example, those implemented in popular statistical and data analysis systems known to those skilled in the arts, for example, SAS and/or SPSS;
- 10 • Pattern classification techniques, including components analysis and neural approaches, for example, those described by, for example, Schurmann (Schurmann, Jurgen, Pattern Classification: A Unified View of Statistical and Neural Approaches, New York: John Wiley & Sons, 1966);
- 15 • Statistical techniques that identify one or more underlying dimensions of qualities, traits, features, characteristics, etc., and assign parameter data indicating the extent to which a given case has, possesses, and/or may be characterized by the
- 20 underlying dimension, factor, class, etc. and/or result in the definition of at least one class and/or the assignment of at least one case to at least one class, for example, as described by Harman (Harman, Harry H., Modern Factor Analysis, 3rd ed. rev., Chicago: University of Chicago Press), and/or as implemented
- 25

by SAS and/or SPSS and/or other statistical analysis programs.

- 5 • Statistical methods that employ fuzzy logic and/or fuzzy measurement and/or whose assignment to at least one class entails probabilities different from 1 or zero.
- 10 • Bayesian statistical classification techniques that use estimates of prior probabilities in determining class definitions and/or the assignment of at least one case to at least one class;
- 15 • Any statistical and/or graphical classification and/or data reduction method that uses rotation of reference axes, regardless of whether orthogonal or oblique rotations are used, for example, as described in Harman, and as implemented in SAS and/or SPSS and/or other statistical programs;
- 20 • Statistical methods for two and three way multidimensional scaling, for example, the methods described by Kruskal and Wish (Krusgal Joseph B. and Myron Wish, Multidimensional Scaling, Beverly Hills, CA: Sage Publications, 1978), and/or by Shepard, et al. (Shepard, Roger N., A. Kimball Romney, and Sara Beth Nerlove, Multidimensional Scaling: Theory and Applications in the Behavioral Sciences, New York: Seminar Press, 1972);
- 25

- Knowledge based approaches to classification, for example, as described by, for example, Stefik (Stefik, Mark, "Introduction to Knowledge Systems," San Francisco: Morgan Kauffman, 1995); and
- 5 • any other classification techniques or arrangements pre-existing or yet to be developed.

10 **Preferred Examples In Accordance With The Present Inventions Are Fully Compatible With A Wide Array of Technologies Including the Distributed Commerce Utility System and the Virtual Distribution Environment**

Systems, methods and/or techniques provided in accordance with these inventions build upon and can work with the arrangements disclosed in "Ginter et al"; "Shear et al"; and other technology related
15 to transaction and/or rights management, security, privacy and/or electronic commerce.

For example, the present inventions can make particular use of the security, efficiency, privacy, and other features and advantages provided by the Virtual Distribution Environment described in
20 "Ginter et al".

As another example, a matching and classification arrangement can be constructed as a distributed commerce utility system as described in "Shear et al". The present inventions can work with other distributed commerce utility systems, and can enhance or be a
25 part of other commerce utility systems.

By way of non-exhaustive, more specific examples, the present inventions can be used in combination with (and/or make use of) any or all of the following broad array of electronic commerce technologies that enable secure, distributed, peer-to-peer electronic

- 5 rights, event, and/or transaction management capabilities:
- a "VDE" ("virtual distribution environment") providing, for example, a family of technologies by which applications can be created, modified, and/or reused;
 - 10 • a standardized control and container environment which facilitates interoperability of electronic appliances and efficient creation of electronic commerce applications and models;
 - a programmable, secure electronic transaction management foundation having reusable and extensible
15 executable components;
 - seamless integration into host operating environments of electronic appliances or direct employment of such technologies in electronic commerce applications;
 - cyberspace digital content rights and transaction
20 management control systems that may operate in whole or in part over Internets, Intranets, optical media and/or over other digital communications media;
 - support of an electronic "world" within which most forms of electronic transaction such as content usage,

distribution, auditing, reporting, and payment activities can be managed;

- 5 • Transaction Operating Systems (operating systems that have integrated secure, distributed, and programmable transaction and/or event management capabilities);
- Rights Operating Systems (operating systems that have integrated, distributed, and programmable rights management capabilities);
- secure content container management;
- 10 • clearinghouse functions related to content usage;
- overall electronic commerce architectures that provide electronic commerce automation through the use of secure, distributed digital events management;
- the general enablement of traditional commerce behavior
15 in the digital commerce world;
- enhanced inherent, distributed efficiencies of conventional commerce practices with powerful, reliable electronic security, and with the programmability and electronic automation efficiencies made possible by
20 modern computing;
- trusted operation of a freely configurable, highly efficient, general purpose digital marketplace in which

parties "come together" to establish commercial relationships;

- 5 • support of "real" commerce in an electronic form (that is, the progressive creation of commercial relationships that form, over time, a network of interrelated agreements representing a value chain business model);
- 10 • enabling content control information to develop through the interaction of (and/or negotiation between) securely created and independently submitted sets of content and/or appliance control information;
- interconnection of appliances providing a foundation for much greater electronic interaction and the evolution of electronic commerce;
- 15 • a variety of capabilities for implementing an electronic commerce environment;
- a neutral, general purpose platform for commerce;
- an architecture that avoids reflecting specific distribution biases, administrative and control perspectives, and content types;
- 20 • a broad-spectrum, fundamentally configurable and portable, electronic transaction control, distributing, usage, auditing, reporting, and payment operating environment;

- systems and methods that uniquely enable electronic commerce participants to protect their interests during the sequence of activities comprising an electronic commerce model;
- 5 • ability of commerce participants to assure protection by specifying rules and controls that monitor and enforce their interests during the processing of remote commerce events;
- permitting commerce participants to efficiently
10 participate in, and manage, the distributed electronic activities of a digital value chain;
- allowing commerce model participants to, for example, securely and cooperatively govern and automate the distributed electronic activities comprising their
15 collective electronic business models;
- allowing commerce model participants to securely contribute electronic rules and controls that represent their "electronic" interests;
- rules and controls that extend a "Virtual Presence™"
20 through which the commerce participants govern remote value chain activities according to their respective, mutually agreed to rights;

- a Virtual Presence taking the form of participant specified electronic conditions (rules and controls) that must be satisfied before an electronic event may occur;
- 5 • rules and controls that enforce the party's rights during "downstream" electronic commerce activities;
- control information delivered by, and/or otherwise available for use with, the VDE content containers constituting one or more "proposed" electronic agreements which manage the use and/or consequences of the use of such content and which can enact the terms and conditions of agreements involving multiple parties and their various rights and obligations;
- 10 • rules and controls from multiple parties forming aggregate control sets ("Cooperative Virtual Presence™") that ensure that electronic commerce activities will be consistent with the agreements amongst value chain participants;
- 15 • control sets defining the conditions which govern interaction with protected digital content (disseminated digital content, appliance control information, etc.);
- 20 • conditions used to control not only digital information use itself, but also the consequences of such use to protect the individual interests of commerce participants

- and form cooperative, efficient, and flexible electronic commerce business models;
- true, efficient electronic cooperative governance of value chain activities;
 - 5 • empowering each commerce model participant to securely deliver, and persistently maintain control over, the rules and controls they contributed specifying constraints on, and consequences of, electronic conduct;
 - 10 • extending Cooperative Virtual Presence over time and involving the execution of controls, and the use of content, at physically dispersed locations, such as Internet user sites;
 - 15 • a chain of handling and control in which dispersed locations are bound together through the use of secure communication techniques and unique, secure digital container technology;
 - ability to preserve the rights of parties through a series of transactions which may occur at different times and different locations;
 - 20 • extending the ability of electronic content providers to control the use of proprietary information;
 - allowing content providers to limit use to authorized activities and amounts;

- 5 • allowing participants (e.g., actors, directors, script and other writers, musicians, studios, publishers, distributors, retailers, advertisers, credit card services, content end-users, and others) involved in a business model to have the ability to embody their range of agreements and requirements, including use limitations, into an "extended" agreement comprising an overall electronic business model;
- 10 • representing such an extended agreement by electronic content control information which can automatically enforce agreed upon rights and obligations;
- a competitive, general purpose electronic commerce architecture supporting the distributed, secure "unmanned" electronic interaction;
- 15 • distributing such capabilities across networks and involving the sequence (or web) of distributed activities underlying electronic value chains;
- cooperative electronic governance of distributed electronic commerce processes that optimizes electronic commerce value propositions;
- 20 • the capability of electronically, remotely representing the interests of commerce participants to support efficient, flexible, commerce model automation;

- 5 • enabling rules and controls that are independently contributed by multiple parties to securely merge together and form the collective rules and controls sets that reflect the electronic commerce agreements between parties;
- using rules and controls sets to collectively, automatically, govern remote electronic conduct;
- securely managing the integration of control information provided by two or more parties;
- 10 • constructing electronic agreements between VDE participants that represents a "negotiation" between the control requirements of two or more parties and enacts the terms and conditions of a resulting agreement;
- ensuring and/or enforcing the rights of each party to an
15 electronic agreement regarding a wide range of electronic activities related to electronic information and/or appliance usage;
- the ability to broadly support electronic commerce by securely managing independently delivered VDE
20 component objects containing control information (normally in the form of method, data, or load module VDE objects);
- using independently delivered control information to negotiate with senior and other pre-existing content

control information to securely form derived control information;

- 5 • ensuring that all requirements specified by derived control information are satisfied before VDE controlled content is accessed or otherwise used;
- ensuring that all load modules and any mediating data which are listed by the derived control information as required are available and perform their required function;
- 10 • use of independently delivered control components to allow electronic commerce participants to freely stipulate their business requirements and trade offs;
- allowing electronic commerce, through the various control requirements stipulated by VDE participants, to
15 evolve into forms of business which are the most efficient, competitive and useful -- much as with traditional, non-electronic commerce;
- providing commerce participants with the ability to
20 freely fashion the chains of handling and control pathways that protect data and processes and the freedom to shape the models within which their Virtual Presence operates -- allowing commerce participants to optimally formulate their electronic commerce value propositions;

- VDEs configured to support the various underlying agreements between parties that define important electronic commerce pathways of handling for electronic content, content and/or appliance control information, content and/or appliance usage information and payment and/or credit;
- allowing content creators and other providers to specify the pathways that, partially or fully, must be used to disseminate commercially distributed property content, content control information, payment administrative content, and/or associated usage reporting information;
- empowering commerce participants, subject to the rules and controls previously set in a value chain, to freely fashion control models implementing their Virtual Presence by using GUI templates or rights programming languages employing commerce/rights management components;
- component based control methods that allow the present inventions to efficiently operate as a highly configurable content control system;
- content control models that can be iteratively and asynchronously shaped, modified, and otherwise updated to accommodate the needs of VDE participants;

- iterative and/or concurrent multiple participant processes through the submission and use of secure, control information components (e.g., executable code such as load modules and/or methods, and/or associated data);
- 5 • control information for Virtual Presence employed in protected processing environment nodes located at user sites to ensure that digital events are governed in accordance with the collective rights of commerce model participants;
- 10 • digital events that launch or require other digital events;
- digital events that may include, for example, content use consequences such as collection of audit information, secure communication of such information, payment for content use, or satisfaction of any other electronically stated condition;
- 15 • events that occur within either the secure setting of a local node, or more widely within the secure environment of a distributed system of nodes;
- the association of Virtual Presence rules and controls
- 20 with protected information enclosed within one or more electronic content containers to achieve a high order of configurability for Virtual Presence chains of handling and control;

- distribution using VDE that may package both the electronic content and control information into the same VDE container, and/or may involve the delivery to an end-user site of different pieces of the same VDE managed property from plural separate remote locations and/or in plural separate VDE content containers and/or employing plural different delivery means;
- content control information that is partially or fully delivered separately from its associated content to a user VDE installation in one or more VDE administrative objects;
- delivery of portions of said control information from one or more sources;
- making control information available for use by access from a user's VDE installation secure sub-system to one or more remote VDE secure sub-systems and/or VDE compatible, certified secure remote locations;
- use of delivery means that may include electronic data storage means such as optical disks for delivering one portion of said information and broadcasting and/or telecommunicating means for other portions of said information;

- allowing a content provider to deliver different business rules to a large corporate customer, compared with rules delivered to "retail" customers;
- 5 • supporting separation of content and Virtual Presence controls to allow a provider to associate different control sets with the same content – and not requiring the provider to create one set of content controls that apply to all types of customers;
- 10 • allowing content provider modification over time of rules and controls to reflect sales, new pricing, special discounts, etc. – while limiting this right by rules and controls provided by other parties having more senior rights;
- 15 • employing secure object container technology to efficiently implement Virtual Presence chains of handling and control;
- use of software container technology to significantly facilitate the organized dissemination of digital content, including the specialized form of digital content
20 constituting rights control information;
- employing object software technology and using object technology to form containers for delivery of at least in part encrypted or otherwise secured information;

- using containers that contain electronic content products or other electronic information and some or all of their associated permissions (control) information;
- 5 • distributing container objects along pathways involving content providers and/or content users;
- securely moving containers between nodes of a VDE arrangement, which nodes operate VDE foundation software and execute control methods to enact electronic information usage control and/or administration models;
- 10 • employing delivered containers both for distributing VDE control instructions (information) and/or to encapsulate and electronically distribute content which has been at least partially secured;
- supporting the essential needs of electronic commerce value propositions by uniting fundamental
- 15 configurability with secure Virtual Presence;
- virtual presence across virtual networks in accordance with the underlying agreement amongst commerce model participants to allow each participant to enjoy secure,
- 20 reliable electronic automation of commerce models;
- allowing each rights holder's Virtual Presence at a remote site to possess the sole authority to administer or delegate the participant's electronic rights;

- capabilities that contribute to establishing an environment of trusted cooperative governance;
- practical enhancements relating to the establishment of secure event management and the maintenance of secure audit, encryption, budget, and other relevant information;
- control structures for an overall, distributed, secure rights/event administration environment;
- processes for interaction between independently delivered rules and controls, including electronic negotiation;
- creating distributed rights operating systems;
- integrating control processes into host operating environments;
- secure semiconductors to support protected processing environments;
- a secure, programmable, digital event management component architecture in which components are fully assembleable and reusable;
- differing assemblages of components formed to reflect an exhaustive array of commerce model functional capabilities, overall model implementations, and ad hoc event management scenarios;

- support for the full range of digital content types, delivery modes, and reporting and other administrative activities;
- traveling objects;
- 5 • smart agents;
- "atomic" load module operation to support "sparse space," cost-effective, secure processing semiconductors;
- smart card and other traveling client nodes;
- creating rights management software container
- 10 technologies, including extraction, embedding, and other secure container content management processes;
- Chain of Handling and Control generation of secure objects (containers) and associated control information;
- audit reconciliation and usage pattern evaluation
- 15 processes;
- specialized cryptographic implementations;
- use of a specialized electronic rights and commerce language, unique applications for fingerprinting and/or watermarking technologies, secure control structures, the
- 20 formulation of new types of metering technologies, reciprocal event management (employing dispersed user sites) for automating web-like commerce models, and many other designs and capabilities;

- mechanisms to persistently maintain trusted content usage and reporting control information through both a sufficiently secure chain of handling of content and content control information and through various forms of usage of electronic information;
5
- rights management technology supporting persistent, distributed controls;
- means enabling continuing Virtual Presence through Chains of Handling and Control;
- 10 • persistency of control as a unique and fundamentally important attribute underlying Virtual Presence and Chain of Handling and Control for enabling true commerce behavior in cyberspace including ad hoc relationships and activities, distributed processes, and
15 reliable enforcement of agreements between parties;
- Persistent Virtual Presence controls that continue to be enforced -- to the extent required by the controls themselves -- as protected digital content is, for example, used and reused, copied and further distributed, extracted
20 and embedded, audited and reported;
- persistency responsive to rules and controls associated with electronic events, that causes new secure content containers to be created automatically by systems and methods supplying the procession of secure transport

- vehicles required by Chain of Handling and Control for conveying disseminated content, associated rules and controls, and audit information and payment;
- 5 • container creation to carry extracted content, payment tokens, control information, audit information, and the like;
 - securely generated containers carrying with them rules and controls stipulated by rules and controls associated with one or more triggered electronic events;
 - 10 • capabilities for persistency and independent secure delivery and merging of rules and controls that provide technical means for ensuring that dynamic user behavior can be encouraged, rather than discouraged;
 - 15 • dynamic user behavior encouraged as a critical link in building ad hoc relationships and cost-effectively distributing content, while simultaneously ensuring that rights holders are protected and retain control over their business models;
 - 20 • enabling ad hoc behavior that frees users from constraints on their conduct resulting from inflexible, first generation technologies;
 - support for enterprising behavior that is characteristic of traditional commerce resulting in more efficient and more satisfying electronic commerce experiences;

- general purpose character electronic commerce technologies provided by a combination of important capabilities including component, object oriented, programmable control language; secure specialized container technology; independent delivery of secure control information mechanisms; Chain of Handling and Control persistency of control mechanisms; event driven operating system functions; and the advanced security architecture – allowing multiple simultaneous models to evolve, and practically and efficiently operate;
- general purpose rights and event management architecture that is intrinsically reusable for many simultaneous models -- providing enormous competitive economic advantages over technologies that are essentially single model by design;
- commerce architecture client nodes that are basic pieces of reusable cyberspace infrastructure;
- generalized configurability resulting, in part, from decomposition of generalized requirements for supporting electronic commerce and data security into a broad range of constituent "atomic" and higher level components (such as load modules, data elements, and methods) that may be variously aggregated together to form control methods for commercial electronic agreements and data security arrangements;

- a secure operating environment employing VDE foundation elements along with securely deliverable VDE components that enable electronic commerce models and relationships to develop;
- 5 • the unfolding of distribution models in which content providers, over time, can expressly agree to, or allow, subsequent content providers and/or users to participate in shaping the controls for, and consequences of, use of electronic content and/or appliances;
- 10 • a very broad range of the functional attributes important for supporting simple to very complex electronic commerce and data security activities;
- electronic information and/or appliance usage control (including distribution), security, usage auditing,
15 reporting, other administration, and payment arrangements;
- capabilities that rationalize the support of electronic commerce and electronic transaction management stemming from the reusability of control structures and
20 user interfaces for a wide variety of transaction management related activities;
- content usage control, data security, information auditing, and electronic financial activities that can be

supported with tools that are reusable, convenient, consistent, and familiar;

- 5 • a general purpose Rights Operating System employing a reusable kernel and rights language components that provides the capabilities and integration needed for the advanced commerce operating systems of the future;
- 10 • a general purpose, reusable electronic commerce capabilities that all participants can rely on will become as important as any other capability of operating systems;
- 15 • such a rights operating system providing rights and auditing operating system functions and other operating system functions -- the rights and auditing operating system functions securely handling tasks that relate to virtual distribution environment;
- 20 • secure processing units and/or protected processing environments that provide and/or support many of the security functions of the rights and auditing operating system functions;
- an overall operating system designed from the beginning to include the rights and auditing operating system functions plus the other operating system functions -- or incorporation of the rights and auditing operating system

- functions as an add-on to a preexisting operating system providing the other operating system functions;
- operating system integration and the distributed operating systems; and
 - 5 • a rational approach - a transaction/distribution control standard - allowing all participants in VDE the same foundation set of hardware control and security, authoring, administration, and management tools, for widely varying types of information, business market
- 10 model and/or personal objectives;

Any or all of these features may be used in combination with the inventions disclosed herein.

Brief Description of the Drawings

15 These and other features and advantages will be better and completely understood by referring to the following detailed description of presently preferred example embodiments in accordance with the drawings, of which:

20 Figures 1A-4 show "prior art" examples of how it is hard to find things you need or want;

Figures 5-12 are simplified examples of what example systems, methods and techniques in accordance with these inventions can do;

Figures 13, 14 and 14A show an example matching and classification utility system architecture;

Figures 15-15G show examples of how a matching and classification utility system can interact with other commerce utility
5 systems;

Figures 16A-16C show examples of distributed matching and classification utility system organizations;

Figure 17 shows example matching and classification utility system functionality definitions;

10 Figures 18-46(B) show example steps that may be performed by the example matching and classification utility system; and

Figures 47-70 show some example matching and classification utility system applications.

15 **Detailed Description Of Presently Preferred Example Embodiments**

Figures 5-12 and the discussion above provide an introduction to the following detailed description of presently preferred embodiments in accordance with these inventions. The "electronic matchmaker" shown in Figures 5-12 is implemented in these more
20 detailed embodiments by a matching and classification utility system 900.

Example Matching And Classification Utility

Figure 13 shows an example matching and classification utility system 900 as including:

- an object classifier 902;
- 5 • a user (people) classifier 904; and
- a matching engine 906.

Object classifier 902 classifies things. User classifier 904 classes people. Matching engine 906 matches things with other things, things with people, and/or people with other people.

10 In more detail, object classifier 902 receives information about objects and uses that information to classify those objects into groups based on the qualities or characteristics of the objects. For example, the object classifier 902 may classify objects of the type described in in "Ginter et al". Such objects may comprise information and/or
15 associated rules for using the information. For example, object classifier 902 may receive as inputs:

- rights management information 909 such as rules and/or associated consequences;
- things 908 controlled or affected by such rights
20 management information including, for example content objects or other information subject to such rules;
- items 910 such as metadata, abstracts or the like that describe the things 908; and/or

- other information of any type.

Object classifier 902 classifies and/or selects things based at least in part on these inputs.

In this example, user classifier 904 is a type of object classifier
5 that is specially adapted to classify people. User classifier 904 can
classify people based, for example, on:

- audit trails 912 indicating how people have used their computers and other electronic appliances;
- profiles 914 developed by asking users questions
10 about their preferences;
- controls 909' that are associated, at least in part, with the user or things the user uses;
- object descriptors 910' that describe objects used by the user; and/or
15 • other information about and/or relating to the user.

User classifier 904 classifies and/or selects people based at least in part on these inputs.

Matching engine 906 receives, as inputs, the classifications and/or selections made by the object classifier 902 and/or the user
20 classifier 904. Matching engine 906 matches things with things, things with people and/or people with people (or any combination of these) based on these selection and/or classification inputs.

Example More Detailed Architecture

Figure 14 shows a more detailed architectural diagram of matching and classification utility 900. In this example, matching and classification utility 900 receives a variety of inputs including, for example, some or all of the following:

- objects 908 and/or information about objects including controls 909 and/or object descriptors 910;
- content 950;
- audit trail information 916;
- user information such as profiles 914;
- class information 952;
- user information 954;
- other rights management information 956;
- matching criteria 958;
- selection criteria 960; and/or
- other information.

Matching and classification utility 900 in this example can provide a variety of different outputs including, for example, some or all of the following:

- matching information 920;
- class hierarchies 962;
- category definitions 922 and class definitions 970;
- classified objects 908C;
- audit records 964 indicating the results of classification, matching, and or selecting processes;

- reports 966 indicating the results of classification, matching, and/or selecting processes;
- targeted objects and/or pointers 968;
- controls 909;
- 5 • other rights management information; and
- other classification, matching and/or selection related information.

**A Preferred Embodiment Matching and
Classification Utility 900 is a VDE-Aware Commerce
10 Utility System**

In the preferred embodiment, matching and classification utility 900 is constructed as a commerce utility system 90 as described in "Shear et al", and may comprise one or more processes securely distributed over one or more secure electronic appliances within a
15 "Virtual Distribution Environment" as described in "Ginter et al". Furthermore, the present inventions can be used in combination with and/or make use of a wide array of distributed electronic administrative and support services that may be referred to as the "Distributed Commerce Utility." Such a Distributed Commerce
20 Utility may be, among other things, an integrated, modular array of administrative and support services for electronic commerce and electronic rights and transaction management. The Distributed Commerce Utility provides, among other advantages, comprehensive, integrated administrative and support services for secure electronic
25 commerce and other forms of electronic interaction. These

administrative and support services can be used to supply a secure foundation for conducting financial management, rights management, certificate authority, rules clearing, usage clearing, secure directory services, and other transaction related capabilities functioning over a vast electronic network such as the Internet and/or over organization internal Intranets, or even in-home networks of electronic appliances. Such electronic interactions supported by the Distributed Commerce Utility may, for example, entail the broadest range of appliances and distribution media, non-limiting examples of which include networks and other communications channels, consumer appliances, computers, convergent devices such as WebTV, and optical media such as CD-ROM and DVD in all their current and future forms.

These administrative and support services can, for example, be adapted to the specific needs of electronic commerce value chains in any number of vertical markets, including a wide variety of entertainment applications. Electronic commerce participants can, for example, use these administrative and support services to support their interests, and/or they can shape and reuse these services in response to competitive business realities. Non-exhaustive examples of electronic commerce participants include individual creators, film and music studios, distributors, program aggregators, broadcasters, and cable and satellite operators.

The Distributed Commerce Utility can, for example, make optimally efficient use of commerce administration resources, and

can, in at least some embodiments, scale in a practical fashion to optimally accommodate the demands of electronic commerce growth. The Distributed Commerce Utility may, for example, comprise a number of Commerce Utility Systems. These Commerce Utility

5 Systems can provide a web of infrastructure support available to, and reusable by, the entire electronic community and/or many or all of its participants. Different support functions can, for example, be collected together in hierarchical and/or in networked relationships to suit various business models and/or other objectives. Modular support

10 functions can, for example, be combined in different arrays to form different Commerce Utility Systems for different design implementations and purposes. These Commerce Utility Systems can, for example, be distributed across a large number of electronic appliances with varying degrees of distribution.

15 Such a "Distributed Commerce Utility" provides numerous additional capabilities and benefits that can be used in conjunction with the particular embodiments shown in the drawings of this application, non-exhaustive examples of which include:

· Enables practical and efficient electronic commerce and rights

20 management.

· Provides services that securely administer and support electronic interactions and consequences.

- Provides infrastructure for electronic commerce and other forms of human electronic interaction and relationships.
 - Optimally applies the efficiencies of modern distributed computing and networking.
- 5 · Provides electronic automation and distributed processing.
- Supports electronic commerce and communications infrastructure that is modular, programmable, distributed and optimally computerized.
- 10 · Provides a comprehensive array of capabilities that can be combined to support services that perform various administrative and support roles.
- Maximizes benefits from electronic automation and distributed processing to produce optimal allocation and use of resources across a system or network.
- 15 · Is efficient, flexible, cost effective, configurable, reusable, modifiable, and generalizable.
- Can economically reflect users' business and privacy requirements.
 - Can optimally distribute processes -- allowing commerce
- 20 models to be flexible, scaled to demand and to match user requirements.

- Can efficiently handle a full range of activities and service volumes.
 - Can be fashioned and operated for each business model, as a mixture of distributed and centralized processes.
- 5 · Provides a blend of local, centralized and networked capabilities that can be uniquely shaped and reshaped to meet changing conditions.
- Supports general purpose resources and is reusable for many different models; in place infrastructure can be reused by different
- 10 value chains having different requirements.
- Can support any number of commerce and communications models.
 - Efficiently applies local, centralized and networked resources to match each value chain's requirements.
- 15 · Sharing of common resources spreads out costs and maximizes efficiency.
- Supports mixed, distributed, peer-to-peer and centralized networked capabilities.
 - Can operate locally, remotely and/or centrally.
- 20 · Can operate synchronously, asynchronously, or support both modes of operation.

· Adapts easily and flexibly to the rapidly changing sea of commercial opportunities, relationships and constraints of "Cyberspace."

Any or all of these features may be used in combination with
5 the inventions disclosed herein.

In more detail, as shown in Figure 14A, matching and classification utility 900 may include one or more rights operating system layers 90-1; one or more commerce utility support service layers 90-4; one or more service application connect layers 90-3; and
10 one or more service functions 90-B. One or more protected processing environments 154 may be used to support secure functions 90-D. Matching and classification utility 900 may be controlled, at least in part, by rights management information such as for example:

- VDE-compatible controls 909;
- 15 • rules and/or their consequences; and/or
- other rights management information.

Matching and Classification Utility Can Interact With Other Commerce Utility Systems

Figure 15 shows that matching and classification utility 900
20 can interact and interrelate with other commerce utility systems described in "Shear et al" including for example:

- financial clearinghouses 200,
- usage clearinghouses 300,
- rights and permissions clearinghouses 400,

- certifying authorities 500,
- secure directory services 600,
- transaction authorities 700,
- VDE administrators 800, and/or
- 5 • other commerce utility systems 90.

Figures 15A-15G show example detailed interactions between matching and classification utility 900 and these various other commerce utility systems 90.

Figure 15A shows interactions between matching and
10 classification utility 900 and a financial clearinghouse 200. For example, matching and classification utility 900 may send the financial clearinghouse 200:

- requests for information,
- class information such as classes and/or class
15 assignments,
- bills and charges, and/or
- other information.

Financial clearinghouse 200 may send matching and
classification utility 900:

- 20 • money,
- audit records,
- payment data,
- user data, and/or
- other information.

Figure 15B shows example interactions between matching and classification utility 900 and usage clearinghouse 300. Matching and classification utility 900 may send the usage clearinghouse 300:

- requests for information,
- 5 • class information such as classes and/o class assignments,
- audit information, and/or
- other information.

Matching and classification utility 900 may receive from usage
10 clearinghouse 300:

- requests for class information,
- usage and/or rights management information,
- audit records, and/or
- other information.

15 Figure 15C shows example interaction between matching and classification utility 900 and rights and permissions clearinghouse 400. In this example, rights and permissions clearinghouse 400 sends matching and classification authority 900:

- controls sets and/or object information;
- 20 • requests for class information;
- clearinghouse usage data; and/or
- other information.

In this example, matching and classification utility 900 sends the rights and permissions clearinghouse 400:

- rights management information such as control sets,
 - requests for information,
 - class related information such as classes and/or class assignments, and/or
- 5
- other information.

Figure 15D shows example interaction between matching and classification utility 900 and certifying authority 500. In this example, certifying authority 500 sends matching and classification utility 900:

- 10
- revocation lists,
 - certificates,
 - certifying authority usage information,
 - requests for classification information, and/or
 - other information.

15 In this example, the matching and classification utility 900 sends the certifying authority 500:

- revocation list checks,
 - requests for certificates,
 - requests for usage information,
- 20
- classification related information such as classes and/or class assignments, and/or
 - other information.

Figure 15E shows an example interaction between the matching and classification utility 900 and a secure directory services 600. In

this example, the matching and classification utility 900 sends the secure directory services 600:

- directory lookup information,
- class related information such as classes and/or class assignments,
- requests for information, and/or
- other information.

In this example, the secure directory services 600 sends the matching and classification utility 900:

- directory services usage information,
- directory information,
- requests for classification information, and/or
- other information.

Figure 15F shows an example interaction between the matching and classification utility 900 and a transaction authority 700. In this example, the matching and classification utility 900 sends the transaction authority 700:

- class related information such as classes and/or class assignments,
- requests for transaction usage information,
- requests for control sets, and/or
- other information.

In this example, the transaction authority 700 sends the matching and classification utility 900:

- transaction usage information,
- transaction control sets,
- requests for classification information, and/or
- other information.

5 Figure 15G shows an example interaction between the matching and classification utility 900 and a VDE administrator 800. In this example, the matching and classification utility 900 sends the VDE administrator 800:

- requests for administration,
- 10 • class related information such as classes and/or class assignments,
- requests for node and/or web information, and/or
- other information.

 In this example, the VDE administrator 600 sends the matching
15 and classification utility 900:

- requests for classification information,
- administrative information,
- node and/or user data, and/or
- other information.

20 **Matching and Classification Utility System Can Be In a Hierarchy of Commerce Utility Systems**

 Figure 16A shows an example of an administrative and support service hierarchy including matching and classification utility system(s) 900. In this example, a number of centralized overall

matching and classification utility systems 900 and/or other
Commerce Utility Systems 90 delegate some or all of their work
responsibilities to other Commerce Utility Systems 90. In the
particular example shown, Commerce Utility Systems 154 may
5 provide services to one or more members of one or more classes, for
example, to members of the class "manufacturing companies in the
Pacific rim." Organizations, such as companies, non-profit groups or
the like may have their own Commerce Utility Systems 156. Certain
electronic commerce or other activities (the entertainment industry,
10 for example) might have their own vertically-specialized Commerce
Utility Systems 158. Certain geographical, territorial or jurisdictional
groups (e.g., Commerce Utility Systems services provided with a
particular nation or state within nation, one example of which might
be all purchasers of particular products within the state of Wisconsin)
15 may have their own territorial/jurisdictional specialized Commerce
Utility Systems 160. Commerce Utility Systems 154, 156, 158, 160
lower in the hierarchy may, in turn, further delegate authorities or
responsibilities to particular consumers, organizations or other
entities.

20 In one example arrangement, the Commerce Utility Systems 90
to which authority has been delegated may perform substantially all
of the actual support work, but may keep the delegating Commerce
Utility Systems 90 informed through reporting or other means. In
another arrangement, the delegating Commerce Utility Systems 90
25 have no involvement whatsoever with day to day activities of the

Commerce Utility Systems to whom they have delegated work. In still another example arrangement, the more specialized Commerce Utility Systems do some of the work and the more overarching Commerce Utility Systems do other parts of the work. The particular
5 division of work and authority used in a particular scenario may largely depend on factors such as efficiency, trustedness, resource availability, the kinds of transactions being managed, and a variety of other factors. Delegation of clearing authority may be partial (e.g., delegate usage aggregation but not financial or rights management
10 responsibilities), and may be consistent with peer-to-peer processing (e.g., by placing some functions within consumers' electronic appliances while keeping some other functions centralized).

**Matching and Classification Utilities Can Provide
Services to Classes of Nodes, Users, Content Services
15 and/or Transaction Services**

Figure 16B shows an example of how Matching and Classification Utilities 900 can provide services to classes of nodes, users, content services and/or transaction services. In this example, matching and classification utility systems 900(1), ... 900(N) provide
20 horizontally specialized matching and/or classification services for different purposes. For example, matching and classification utility 900(1) serves VDE administrative type functions by classifying VDE deployment related information and associated objects. Matching and classification utility 900(2) specializes in higher education
25 classification tasks. Matching and classification utility 900(3)

specializes in business information related tasks, and matching and classification authority 900(N) specializes in trading transactions. Any of these specialties can be combined together, so that a single utility system 900 can perform multiple functions or portions of

5 functions.

Multi-Function Commerce Utility Systems Can be Organized Hierarchically or Peer-to-Peer

Figure 16C shows a still different, more complex Matching and Classification Commerce Utility System 900 environment including

10 elements of both a hierarchical chain of command and a high degree of cooperation in the horizontal direction between different multi-function matching and classification utility systems 900. In this example, there are five different levels of responsibility with a master or overarching matching and classification utility system 900(1) on

15 level 1 having the most authority and with additional matching and classification utility systems on levels 2, 3, 4, and 5 having successively less power, authority, control, scope and/or responsibility. Figure 16C also shows that different matching and classification utility systems 900 on the same level may have different

20 functions, scopes and/or areas of responsibility. For example:

- a Matching and classification utility system 900(2)(1) may be a "type A" Matching and classification utility system,
- Matching and classification utility system 900(2)(2) might be a "type B" Matching and classification utility system, and

- Matching and classification utility system 900(2)(3) might be a "type C" Matching and classification utility system.

On the next level down, Matching and classification utility systems might be type A Matching and classification utility system (such as, 900(3)(1) and 900(3)(2)), they might be type B Matching and classification utility systems (such as, 900(3)(4)), they might be type C Matching and classification utility systems (such as, 900(3)(5), 900(3)(6)), or they might be hybrids -- such as, Matching and classification utility system 900(3)(3) which is a hybrid having type A and type B functions. Figure 16C also shows that additional clearinghouses on levels 4 and 5 might have sub-types as well as types.

A matching and classification utility 900 might break out along content classes (e.g., movies; scientific, technical and medical; and software). Subtype A might include first run movies, oldies, and art films; subtype B might handle journals and textbooks; and type C might be responsible for games, office, educational content. Peer-to-peer communications between clearinghouses could involve differing classes of consumers, differing jurisdictional classes, differing payment methods classes, and/or any other class distinction.

Matching and Classification Utility System Can Be Constructed From Object-Oriented Service Functions

Figure 14A shows Matching and Classification Utility 900 can be constructed from service functions. Figure 17 shows in more

detail how a matching and classification utility system 900 can be constructed based on service functions such as for example:

- automatic class generation,
- automatic matching,
- 5 automatic class assignment,
- class based searching,
- class based directory,
- audit by class,
- market research,
- 10 rights management language processing,
- other service functions.

Example Detailed Steps Carried Out By Matching and Classification Utility System 900

- 15 The next section of the specification describes some example steps performed by the matching and classification utility 900.

Example Steps to Categorize Objects and/or Users and/or Appliances

- Figure 18 shows example steps to categorize objects, and
20 Figure 19 shows example steps to categorize users 95 and/or

appliances 100. The overall categorization steps in these examples are -- at this level -- similar to one another. The processes begin by getting input data (Figure 18, block 1840, Figure 19, block 1840'). Next, a classification and/or categorization method is selected (Figures 18, block 1842; Figure 19, block 1842'). The process then assembles a data matrix and applies the selected classification method to the data matrix (Figure 18, blocks 1844, 1846; Figure 19, blocks 1844', 1846'). In addition or alternatively, other data reduction methods may be used (Figure 18, block 1848; Figure 19, block 1848'). Next, the process assigns objects and/or users and/or appliances to the categories developed by the classification method that has been applied (Figure 18, block 1849; Figure 19, block 1849'). Finally, the process stores the results in electronic and/or non-electronic storage in the "write output data" step (Figure 18, block 1850; Figure 19, block 1850').

The "get input data" step 1840, 1840' may involve obtaining attribute and/or parameter data from various sources including, for example:

- electronic appliance related attribute data;
- user demographic data;
- user psychographic data;
- available rights management rules and/or consequences (e.g., permissions records);

- exercised rights management rules and/or consequences (e.g., permissions records);
- rights management and/or other audit and/or usage records;
- any third party source of any information, including rights management, usage, audit, statistical, personal, organizational, political, economic, social, religious, business, government, medical, research, academic, literary, military, and/or information and/or data in any format known or unknown concerning any and all other topics that may contribute to the definition of at least one class and/or the assignment of at least one object to a class.

Detailed example steps for harvesting this data are detailed below in connection with Figures 24-46B. This resulting attribute data may be accumulated and aggregated together to form a composite record used as the input to the classification process.

Figure 20 shows an example composite record 1852. This composite classification record may contain attributes derived from any or all of a variety of rights management and/or other data "harvesting" processes. For example, composite record 1852 may include demographic and/or psychographic data obtained by querying the user 95. It may contain usage data obtained by monitoring audit information produced by various usage transactions. It may contain information reflecting user choices concerning rights management

information, the rights management information available to particular users and/or objects, and rights management processes actually performed with respect to particular users and/or particular objects. The information may be analyzed first to provide statistical and/or other summary information, or individual, more granular information may be provided. The composite record 1852 may also contain attributes of particular electronic appliance 100 installations. The particular example composite record 1852 shown in Figure 20 is one non-limiting example composite attribute record containing attributes obtained through a number of different "harvesting" processes. The composite record 1852 may be organized in a way to allow easy and efficient selection of desired attributes in the course of a database lookup, for example, and to allow easy and efficient selection and/or coding as input to any aspect of a classification and/or the assignment of one or more objects to at least one or more classes.

The Figure 21 example cluster analysis process is one example of steps that may be performed as part of the "apply classification method(s)" block 1846, 1846' of Figures 18, 19. (A classification method, or any other method described in these processes, may be utilized as part of a "knowbot", "agent", "traveling agent", and/or "smart agent", a non-limiting example of which is described in "Ginter et al", for example, Figure 73.) In this particular example, the process selects variables and cases (blocks 1860, 1862, Figure 21), and then assembles an appropriate data matrix (block 1864). A

conventional cluster analysis is then applied (block 1866, Figure 21). The clusters may be interpreted to determine what they mean (Figure 21, block 1868), or they may be compared with previous results and if sufficiently similar, they may be assumed to reflect the same classes as the earlier classification procedure thus minimizing the need for additional interpretation of the clustering results. Step 1868 may be performed automatically or manually, or a combination of automatic and manual processing may be used. Finally, individual cases may be assigned to individual clusters to complete the classification process (Figure 21, block 1870).

Figures 22, 23 show two examples of classification outputs produced by the Figure 21 process. In the Figure 22 example, information from several individuals has been used to create two example categories that reflect differing use profiles. More classes may have been defined than those example classes shown here. Users assigned to the same class have many more features, behavior, and/or other attributes in common than each of them does with members assigned to other classes.

In example Figure 22, members of class 1 tend to spend more per content item purchased, travel abroad more frequently, are more interested in national and international news, business and travel information, and generally do not participate in "pay per view" events and/or content consumption. Members of class 1 also tend to add new rights and/or modify existing rights management controls for

content, for instance, to add a markup and redistribute the content in one example, may be less likely to express a religious preference and/or affiliation, and tend to use the Internet as an area for "surfing" and exploration.

5 Members of class 2 tend to pay less for content purchased, seldom travel abroad, tend to be interested in sports, religious content and events, and are more often consumers of movies than are members of class 1. Members of class 2 are more likely to "pay per view" than are members of class 1, and are much less likely to add
10 new controls to content and/or modify rights acquired. Members of class 2 are more likely to express a religious preference and among those that do, Protestant denominations are more frequently mentioned. Members of class 2 may use the Internet, but tend to do so as part of their work role and responsibilities rather than as
15 entertainment, hobbies, and other leisure-time pursuits.

 Some methods of classification produce parameter data rather than assignment of objects to more discrete (or fuzzy or other kinds of) classes. Instead, this parameter data may indicate the extent to which an object possesses one or more traits, attributes, or class
20 characteristics. For instance, a person may have been assigned to class 1 (call it "the cosmopolitan class") or class 2 (call it "the parochial class") as shown in Figure 22; however, using other procedures the same example persons may be assigned parameter data

reflecting the extent or degree to which they are "cosmopolitan" or "parochial" or some of each.

In the example process that generates the information shown in Figure 23A, data for several individuals has been arranged in a case (row) by variable (column) matrix and using means known to those skilled in the arts, subjected to principal components analysis with subsequent Varimax axis rotation. Components with eigenvalues >1.0 were retained for subsequent rotation and use. After rotation, each case was assigned a score on each retained (and rotated) component. Each score indicates the extent to which the case has the characteristic represented by the component.

The hypothetical data in Figure 23A shows how strongly each variable (the column of the input matrix) is correlated with the underlying characteristic or component. For example, "region of the US" and "Family income" are highly correlated while "owns a sports utility vehicle" is not.

Using results such as these plus the input data matrix, a score is assigned to each case indicating the extent to which they possess the trait, attribute, characteristic indicated by each factor or component. The hypothetical data in Figure 23B shows how strongly each case -- a person or thing -- is a member of the class, and/or possesses the underlying variable represented by each component. A higher score shows that example case 1 has more of the underlying component 1 than does example case 3, whose score is close to zero. Components

(factors) may be bipolar with a zero point and cases whose scores may be positive, negative or zero. Hypothetical example case 5 has a negative score on this component.

This component score information may be used by the
5 matching and classification utility 900 to define certain other classes, such as "the class consisting of the top 5% of those who are cosmopolitan," that is, the 5% with the highest scores on example component 1. The original scores and/or derivative class assignments may be included on attribute records with attribute and/or class
10 information harvested from other sources and/or through other processes.

DATA HARVESTING

Example Steps For Collecting Appliance Related Data

Figure 24 shows example steps performed by the matching and
15 classification utility 900 to collect appliance attribute data. In this example, an electronic appliance 100 may have certain information associated with it. For example, a VDE administrator 800 may initialize appliance 100 with certain information upon appliance installation. In this example, the matching and classification utility
20 900 can collect this appliance attribute data and use it as part of a matching and/or classification and/or selection process. As shown in Figure 24, the matching and classification utility 900 may initially specify desired appliance attribute fields or other information characteristics the utility is going to collect (Figure 24, block 1502).

The information to be collected depends upon the purpose and use to which the matching and classification utility 900 is to put the information to. The matching and classification utility 900 may use a data dictionary or other mechanism for specifying the desired types of appliance information it is going to collect.

The matching and classification utility 900 next determines whether it already possesses the desired information for this particular appliance 100 (Figure 24, block 1504). For example, the information may have been previously gathered as part of a prior process. If the information is already available, the matching and classification utility 900 sends one or more events to a "create appliance attribute record" method to process the previously gathered data (Figure 24, block 1506). (In all these processes, if the appropriate method is has been sent previously to a VDE installation, only the associated administrative events necessary to activate the method need to be sent in the VDE container.) Alternatively, if the desired data is not already available ("no" exit to decision block 1504, Figure 24), the matching and classification utility 900 performs the other steps shown in Figure 24 to collect the appliance attribute data.

These collecting steps shown in Figure 24 may include sending a VDE container 152 with a "create appliance attribute record" method, and one or more associated administrative events to activate the method, to the VDE administrator 800 (Figure 24, block 1508). The next step (Figure 24, block 1510) may be performed by the VDE

administrator 800 processing the administrative event(s) using the "create appliance attribute record" method to determine whether the administrator already has the desired information for the particular electronic appliance 100. If the operation is successful ("yes" exit to
5 decision block 1512, Figure 24), the VDE administrator 800 may send, to the matching and classification utility 900, a VDE container 152 containing one or more administrative events and the appliance attribute record (Figure 24, block 1514). If the operation is not successful ("no" exit to decision block 1512, Figure 24), the "create
10 appliance attribute record" method operating at VDE administrator 800 may, in this example, collect the data directly from the electronic appliance 100 by sending a VDE container to the appliance, the container containing a "create appliance attribute record" method and one or more associated administrative events (Figure 24, block 1516).
15 The appliance 100 may itself process the administrative event(s) using the "create appliance attribute record" method (Figure 24, block 1518) to produce the required appliance attribute record. Appliance 100 may then send a VDE container 152 containing the appropriate administrative event(s) and the appliance attribute record
20 to the matching and classification utility 900 (Figure 24, block 1520).

In another example, blocks 1508-1514 may be bypassed entirely, and the matching and classification utility 900 may (assuming appropriate authorizations are in place) perform block 1516 to send a container 152 with one or more administrative events

and the "create appliance attribute record" method directly to the electronic appliance 100.

Figures 25(A) and 25(B) together show example steps performed by the "create appliance attribute data" method shown in Figure 24, blocks 1506, 1510 and 1518. As disclosed in "Ginter et al", the actual processing steps are performed by one or more load modules associated with the method. This example method (which, as explained above, may be performed by the matching and classification utility 900, the VDE administrator 800, the electronic appliance 100, any other electronic appliance, or a combination of any or all of these) first locates the site configuration record(s) corresponding to the electronic appliance for which appliance attribute data is to be collected (Figure 24A, block 1522). This site configuration record(s) may, for example, be stored in the electronic appliance secure database. The method next locates the permissions record for the site configuration record(s) (Figure 24A, block 1523). The SPE next determines, based upon the permission record(s), whether the method has permission to access and/or use the site configuration record(s) (Figure 25A, block 1524). If the method does not have the appropriate permission ("no" exit to decision block 1524, Figure 25A), the protected processing environment 154 reports the failure and reason for the failure, and the method writes an associated audit record (Figure 25A, block 1525, 1526) and goes on to process a user configuration record(s). On the other hand, if the method does have permission to use the site configuration record(s) ("yes" exit to

decision block 1524, Figure 25A), the method copies the required fields from the site configuration record(s) to create an appliance attribute record, and may then write an appropriate audit record (Figure 25A, block 1527).

5 After completing processing of site configuration records, the method then locates the user configuration record(s) corresponding to the electronic appliance for which appliance attribute data is to be collected (Figure 25B, block 1528). This user configuration record(s) may, for example, be stored in the electronic appliance secure
10 database. The protected processing environment 154 next locates the permissions record for the user configuration record(s) (Figure 25B, block 1529). The protected processing environment 154 determines next, based upon the permission record(s), whether it has permission to access and/or use the user configuration record(s) (Figure 25B,
15 block 1530). If the method does not have the appropriate permission ("no" exit to decision block 1530, Figure 25B), the protected processing environment 154 reports the failure and reason for the failure, and the method writes an associated audit record (Figure 25B, block 1531, 1532) and exits the process. On the other hand, if the
20 method does have permission to use the user configuration record(s) ("yes" exit to decision block 1530, Figure 25B), the method copies the required fields from the user configuration record(s) to create an appliance attribute record, and may then write an appropriate audit record (Figure 25B, block 1533). The method may then, if desired,
25 create a new permissions record corresponding to the appliance

attribute record (Figure 25B, block 1534). If a new permissions record is desired, the method may include appropriate "shared secrets," expiration interval(s), and/or other data in an associated MDE to, for example, provide a basis for controlling access, use, and
5 modification of the permissions record.

Figures 26A-26C show examples of appliance attribute records created by Figure 25B, block 1532. Figure 26A shows an example appliance attribute record that may include, for example, an appliance identification field 1536(1) and any number of attribute fields
10 1538(1)...1538(n). Figure 26B shows a more specific appliance attribute record example including an appliance ID field 1536(1), an operating system field 1538(A), a country field 1538(B), a state field 1538(C), a VDE administrator organization field 1538(D), a VDE version field 1538(E), and a VDE maintenance level field 1538(F).
15 Figure 26C shows that different encodings may be used for any/all of the various attribute fields 1538.

Example Steps for Collecting Demographic Data

Figures 27A, 27B show example steps for collecting demographic data. In this example, the matching and classification
20 utility 900 initially specifies demographic data fields it is interested in (Figure 27A, block 1540). The matching and classification utility 900 next determines whether the required data is already available to it (e.g., based on previous inquiries responded to by the user 95) (block 1542, Figure 27A). If the required data is already available ("yes"

exit to decision block 1542, Figure 27A), the matching and classification utility 900 may send one or more events to a "create demographic attribute record" method to process the data (block 1544, Figure 27A).

5 On the other hand, if the required data is not available to the matching and classification utility ("no" exit to decision block 1542, Figure 27A), the matching and classification utility may send a container 152 to another commerce utility system 90, the container including one or more administrative events associated with a
10 "demographic data query" method and a "create demographic attribute record" method (Figure 27A, block 1546). The other commerce utility system 90 may then process the one or more events using the "demographic data query" method, and write an associated audit record (Figure 27A, block 1548). It may determine whether the
15 required demographic data is available (Figure 27A, block 1550). If the information is available ("yes" exit to decision block 1550, Figure 27A), the commerce utility system 90 may process one or more events using a "create demographic attribute record" method in order to analyze the available demographic data, and write a corresponding
20 UDE audit record (Figure 27A, block 1552). The other commerce utility system 90 may then send appropriate one or more administrative events and the demographic data attribute record within a container 152 to the matching and classification utility 900 (Figure 27A, block 1554)).

If the required demographic data is not available ("no" exit to decision block 1550, Figure 27A), the commerce utility system 90 may send an administrative event to the matching and classification utility system 900 within a container 152 informing the matching and classification utility that the required data is not available (Figure 27B, block 1556). The matching and classification utility 900 may then send a "demographic data query" method and a "create demographic attribute record" method within a container 152 (along with appropriate administrative events to activate such methods) directly to the user 95 about which demographic information is to be collected (Figure 27B, block 1558). The user's electronic appliance 100 may, in response, process the one or more events using the "demographic data query" method, which may write an associated audit record (Figure 27B, block 1560). If the required data is not collected ("no" exit to decision block 1562, Figure 27B, the user's appliance 100 may send a "failure" message associated with the appropriate administrative event to the matching and classification utility 900, and write an associated audit record (Figure 27B, block 1564, 1566). If the required demographic data is successfully collected ("yes" exit to decision block 1562, Figure 27B), the user's electronic appliance may process one or more events using the "create demographic record" method supplied by step 1558, which may write an associated audit record (Figure 27B, block 1568). The electronic appliance may then send appropriate administrative events and the

demographic attribute record to the matching and classification utility within one or more containers 152 (Figure 27B, block 1570).

Figure 28 shows an example questionnaire "pop-up" screen that may be displayed by the user's appliance 100 as a result of processing
5 events using the "demographic data query" method of block 1548, Figure 27A, and/or block 1560, Figure 27B. In this example, information is collected directly from a user 95 by displaying a questionnaire on a display device that is part of the user's appliance 100. The questionnaire may ask for various demographic information
10 such as:

- name
- address
- city
- state
- 15 • zip code
- gender
- date of birth
- education level
- marital status
- 20 • number of children

- age of first child
- gender of first child
- other information

The user is requested to provide the information by filling in the
5 various fields within the questionnaire. The questionnaire may assure
the user that all information the user provides will be treated as
confidential, by, for example, disclosing the rules that will be
associated with access to and use of the information.

Steps similar to those shown in Figure 25A, 25B may be
10 performed to create a demographic attribute record based on the
results of a demographic data query. Figure 29A-29C show examples
of different user demographic attribute information records resulting
from this process. Figure 29A shows an example demographic
attribute record 1572 including a user ID field 1574 and any number
15 of attribute fields 1576(1), ... 1576(n). Figure 29B shows a more
specific example of a demographic attribute record including, for
example, a user ID number 1574, a gender attribute field 1576(A), an
age field 1576(B), a highest educational level field 1576(C), a
citizenship field 1576(D), a country of residence field 1576(E), a
20 district field 1576(F), a city field 1576(G), and a street address field
1576(H). Figure 29C shows a different detailed encoding example
for demographic attribute record 1572-1.

Example Steps for Collecting Psychographic Data

Figure 20 shows example steps that may be performed to collect user psychographic data. In this particular example, the matching and classification utility 900 initially specifies desired psychographic data it requires in order to perform a particular classification/matching process (Figure 30, block 1580). The matching and classification utility 900 determines if the required data is already available to it (Figure 30, block 1582). If the required data is already available ("yes" exit to decision block 1582, Figure 30), the matching and classification utility 900 sends one or more events to a "create psychographic attribute record" method in order to analyze the available data and provide appropriate psychographic attributes (Figure 30, block 1584). If, on the other hand, the required data is not available to the matching and classification utility 900 ("no" exit to decision block 1582, Figure 30), appropriate steps are performed to collect the required data. In this example, the matching and classification utility 900 may send a "psychographic data query" method and a "create psychographic attribute record" method within one or more containers 152 (along with appropriate administrative events to activate such methods), to appropriate repositories that may contain the required data (Figure 30, block 1586). If the required data is available from the repositories ("yes" exit to decision block 1588, Figure 30), then an electronic appliance at the repository (in this example) processes one or more events using the "create psychographic attribute record" method supplied by block 1586 in

order to generate an appropriate attribute record(s) containing the attribute information the matching and classification utility 900 is interested in (Figure 30, block 1590). This information, and associated one or more events, may be sent to the matching and classification utility 900 within one or more containers 152 (Figure 30, block 1592).

If the required data is not available from the repository ("no" exit to decision block 1588, Figure 30), then the repository may send a "failure" message associated with one or more administrative events to the matching and classification utility 900 within a container 152 (Figure 30, block 1594). The matching and classification utility 900 may, in response, send one or more administrative events, a "collect psychographic data" and "create psychographic attribute record" method directly to the user's electronic appliance 100 within one or more containers 152 (Figure 30, block 1596). The user's electronic appliance 100 may, in turn, process the events using the "collect psychographic data" and "create psychographic attribute record" methods (Figure 30, block 1598, 1600), and send the resulting attribute data record(s) to the matching and classification utility (Figure 30, block 1592).

Figure 31 shows an example psychographic questionnaire "pop-up" screen that may be displayed to the user 95 upon performance of Figure 30, block 1598. This questionnaire may

collect various psychographic information from the user, including for example:

- mood information
- emotion information
- 5 • habit information
- behavioral information
- cognitive information
- medical information
- physical information
- 10 • patient information
- counseling information
- aptitude information
- testing information
- other information
- 15 • combinations of types of information.

The questionnaire may inform the user that all information collected will be treated as "confidential," and may also, if desired, indicate that the user will be compensated for providing the information.

Figures 32A-32C show some example user psychographic attribute information records 1602 that may be created by Figure 30, block 1584, 1590 and/or 1600. Figure 32A shows that a psychographic attribute record 1602 may include a user ID field 1604 and any number of attribute fields 1606(1), ... 1606(n). Figure 32B shows a more detailed user psychographic attribute record 1602 example including a user ID field 1604, a field 1606a indicating whether the user is introverted or extroverted, a field 1606b indicating whether the user is a sensing or intuitive person, a field 1606c indicating whether the user is primarily a thinking person or a feeling person, a field 1606(d) indicating whether the user is primarily a judging person or a perceiving person, and a field 1606(e) indicating an overall psychographic / behavioral profile such as, for example, the iVALS standard provided by SRI. Figure 32C shows a different kind of encoding (in this case, binary) for the various attributes 1606.

Example Method for Determining Attributes Based on Available Rules and Consequences

Figure 33 shows an example method for determining attributes based on available rules and consequences. The matching and classification utility 900 may first send one or more administrative events and a "send permission records" method request to an electronic appliance 100 within one or more containers 152 (Figure 33, block 1610). In response, the appliance may process the events using the method, which may write an associated audit record (Figure 33, block 1612). If this step is performed successfully ("yes" exit to

Figure 33, decision block 1614), the appliance sends appropriate administrative events and the requested permission records to the matching and classification utility 900 within one or more containers 152, and the method writes an associated audit record indicating it has performed this transaction (Figure 33, block 1616). The matching and classification utility may process events using a corresponding "create attribute record from permission records" method to obtain attributes from these provided permission records (Figure 33, block 1618). If the step of block 1612 failed (as indicated by the "no" exit to decision block 1614, Figure 33), the method may send a "failure" message to the matching and classification utility 900, and write an associated audit record (Figure 33, block 1620).

Figure 34 shows a variation on the Figure 33 example in which the appliance 100 rather than the matching and classification utility 900 creates the rules attribute record based on a "create rules attribute record from permissions records" method supplied by the matching and classification utility, and then sends the rules attribute record to the matching and classification utility (see Figure 34, blocks 1622, 1624).

20 Example Method to Construct Attribute Records from Permissions Records

Figures 35A, 35B show example steps for constructing attribute records from permissions records. The steps shown in Figure 35A, 35B may, for example, be performed as part of the method shown in block 1618 of Figure 33.

In this example method 1618, the matching and classification utility 900 may first check relevant permissions to ensure that it has the authority to perform the desired transactions (Figure 35A, block 1630). For example, the matching and classification utility 900 may
5 examine a permissions record about the permissions records it has collected, this permissions record it is examining indicating what entities have authority to perform operations with respect to the permissions record to be analyzed. Presuming the matching and classification utility 900 has the appropriate permission, it opens a
10 permissions to be analyzed (Figure 35A, block 1632), and performs a sequence of steps 1634-1650 to extract relevant information from the permissions record. For example, information from the permissions record header can be copied into the attribute record (Figure 35A, block 1634), and then the method may locate the rights record header
15 (block 1636, Figure 35A). Information from the rights record header may be copied into the attribute record (block 1638, Figure 35A), along with the identifier for the corresponding right(s) (blocks 1640, 1642, Figure 35A). The process may then recursively locate and harvest data from each method header contained within the rights
20 record (blocks 1644, 1646, 1648, Figure 35B). The process may recursively repeat steps 1638-1648 for each rights record within the permissions record (as tested for by decision block 1650, Figure 35B). Finally, the entire process of steps 1632-1652 may be performed recursively for multiple permissions records to harvest the

appropriate rules and consequences information from each of a number of permissions records (see decision block 1652, Figure 35B).

Figure 36 shows example steps to perform the "check permissions" operation shown in Figure 35A, block 1630. In this example, the process locates the permissions record from which information is desired to be harvested (Figure 36, block 1660), and then determines whether there is a permissions record for that permissions record (Figure 36, decision block 1662). If there is no permissions record that controls that permissions record (and assuming that authorization or additional permission is required to access the permissions record from which information is to be harvested) (Figure 36, "no" exit to decision block 1662), the process reports failure, writes an audit record, and ends (Figure 36, blocks 1664, 1666, 1668). On the other hand, if there is a permissions record that controls access to the permissions record from which information is to be harvested ("yes" exit to decision block 1662, Figure 36), the process determines whether that permissions record for the permissions record enables usage by the matching and classification utility 900 (Figure 36, decision block 1670). If the matching and classification utility 900 does not have permission ("no" exit to decision block 1670, Figure 36), the process reports failure, writes an audit record to that effect, and ends (blocks 1672, 1674, 1676, Figure 36)). On the other hand, if the matching and classification utility 900 is granted permission ("yes" exit to decision block 1670, Figure 36), the process accesses and uses the permissions record for the

permissions record from which information is to be harvested (Figure 36, block 1678).

Figures 37A-37C show examples of attribute records containing information harvested from permissions records. Attribute record 1680-1 shown in Figure 37A includes a user identification field 1682, an object identification field 1684, and any number of attribute fields 1686(1), ..., 1686(n). The attribute record 1680-2 shown in Figure 37B includes, as a more detailed example, a user ID number field 1682, an object ID field 1684, a right ID field 1686a, a method identifier field 1686b, another right ID field 1686c, and corresponding method type fields 1686(d), a further right ID field 1686e and two corresponding method attribute fields 1686f, 1686g, a further right ID field 1686h and corresponding method attribute fields 1686i, 1686j.

Figure 37C shows a different example in coding for the Figure 37B example attribute record.

Example Steps for Assembling Rules and Consequences

Figure 38 shows example steps for assembling rules and consequences. In this example, the matching and classification utility 900 may send one or more administrative events and a "get user rights table" method within a container 152 to an electronic appliance (Figure 38, block 1690). The electronic appliance 100 processes the one or more events using the "get URT" method, which may writes an

associated audit record (Figure 38, block 1692). The method then determines whether the associated URT records are available (Figure 38, decision block 1694). If the records are not available ("no" exit to decision block 1694, Figure 38), the method sends a failure notice to the matching and classification utility 900, and writes an associated audit record (block 1696, Figure 38). If, on the other hand, the URT records are available ("yes" exit to decision block 1694, Figure 38), the method packages the URT records and associated one or more administrative events into a container 152, and sends the container to the matching and classification utility 900 (Figure 38, block 1698). The matching and classification utility 900 may then process the administrative events using a "create attribute record from URT" method in order to extract or harvest the information from the URT(s) (Figure 38, block 1700).

Figure 39 shows another example sequence of steps for assembling rules and consequences. In this example, the matching and classification utility 900 sends one or more administrative events and a "create attribute record from URT" method to the electronic appliance 100 that stores or has access to the user rights table information (Figure 39, block 1702). The appliance then processes the events using the method sent to it, and the method writes associated audit information as it processes (Figure 39, block 1704). If the URT records are available and the step completes successfully ("yes" exit to decision block 1706, Figure 39), the method sends the resulting URT attribute record(s) and one or more administrative

events to the matching and classification utility within a container 152, and writes corresponding audit information to an audit trail (Figure 39, block 1710). On the other hand, if an error condition arises either because the URT records are not available or because the method for some other reason cannot complete successfully, the method sends a failure notice within a container 152, and writes an associated audit record ("no" exit to decision block 1706, Figure 39, block 1708).

Figures 40A, 40B show example steps performed by blocks 1700, 1704 to "create attribute record from user rights table." The method begins by checking associated permissions for the user rights table records (Figure 40A, block 1720). Assuming that appropriate user and/or group permission is available, the method next locates the user rights table (Figure 40A, block 1722), and then begins recursively analyzing the user rights table information to harvest desired attribute information from it (Figure 40A, blocks 1724 and following). In this particular example, the method locates the user rights table record (block 1724, Figure 40A, and then locates the first rights record header within the first user choice record within the URT record (blocks 1726, 1728, Figure 40A). The method copies rights record header information to the attribute record (block 1730), and then locates the right identifier and copies that to the attribute record (blocks 1732, 1734). The method then recursively locates each method header within the user rights table right record, and copies corresponding attribute information to the attribute record

(blocks 1736, 1738, 1740, Figure 40B). Steps 1728-1740 are performed recursively for each rights record within the user choice record (see Figure 40B), decision block 1742), and the above steps are performed recursively for each user choice record within the user rights table (see decision block 1744, Figure 40B). Additionally, steps 1724-1744 are performed recursively for each user rights table record within the user rights table (see Figure 40B, decision block 1746). As a last example step, the method creates a permissions record that controls access and use of the attribute record it has created (Figure 40B, block 1748).

Figure 41 shows example steps performed by the check permissions block 1720 shown in Figure 40A. For example, the sequence of steps may begin by locating a corresponding permissions record (Figure 41, block 1750) and then determining whether there is a permission record corresponding to the corresponding user rights table entry (Figure 41, decision block 1752). If there is no such entry ("no" exit to decision block 1752), the method may report failure, write an audit record, and end (blocks 1754, 1756, 1758, Figure 41). If there is a corresponding permissions record ("yes" exit to decision block 1752, Figure 41), then the permissions record may be examined whether it enables usage for the matching and classification utility 900 (decision block 1760, Figure 41). If the permissions record does not enable usage by the matching and classification utility 900 ("no" exit to decision block 1760, Figure 41), the method may report a failure, write an audit record, and end (blocks 1762, 1764, 1766,

Figure 41). On the other hand, if the matching and classification utility 900 does have the required permissions to enable usage ("yes" exit to decision block 1760, Figure 41), the method may access the permissions record (if any) for the user rights table for use in
5 controlling access to the user rights table itself (block 1768, Figure 41).

Figures 42A-42C show example rights attributes records 1770 that may be obtained from the processes above. The Figure 42A example rights attribute record 1770-1 includes a user or group ID
10 field 1772, an object ID field 1774, and any number of attribute fields 1776(1), ... , 1776(n). The more detailed example rights attribute record 1770-2 shown in Figure 42B includes a user ID number field 1772, an object ID field 1774, a right ID field 1776a and
15 corresponding method attribute field 1776b, another right ID field 1776c and corresponding method attribute field 1776d, a right ID field 1776e and corresponding method attribute fields 1776f, 1776g, and another right ID field 1776h and corresponding method attribute field 1776i.

Figure 42C shows how the rights attribute record 1770 can be
20 encoded numerically as opposed to using characters, as one example.

Example Steps for Assembling Usage Audit Records

Figure 43 shows example steps for assembling usage audit records for purposes of matching and/or classification. In this example, the matching and classification utility 900 may send one or

more administrative events and a "get audit records" method to a VDE appliance 100 within a container 152 (Figure 43, block 1780). The appliance 100 may process the one or more events using the "get audit records" method, which may write an associated audit record (block 1782, Figure 43). If the audit records are not available ("no" exit to decision block 1784, Figure 43), the method may send a failure notice within a container to the matching and classification utility 900, and may then write an associated audit record (Figure 43, block 1786). On the other hand, if the audit records are available ("yes" exit to decision block 1784), the method may send one or more administrative events and the audit records within a container 152 to the matching and classification utility 900, and write an associated audit record (block 1788, Figure 43). The matching and classification utility 900 may then process the one or more administrative events using a "create attribute record from audit record" method in order to extract or harvest the information from the audit record it will use to perform matching and/or classification (block 1790, Figure 43).

Figure 44 shows another sequence of example steps that may be used to assemble usage audit records for purposes of matching and/or classification. In the Figure 44 example, the matching and classification utility 900 sends one or more administrative events and a "create attribute record from audit record" method to an electronic appliance 100 within one or more containers 152 (Figure 44, block 1792). The appliance 100 may then process the one or more administrative events using the "create attribute record from audit

record" method, which may write an associated audit record (block 1794, Figure 44). The method may determine, in this process, whether audit records are available (Figure 44, decision block 1796). If no audit records are available ("no" exit to decision block 1796),
5 the method may send a failure notice to the matching and classification utility 900 (Figure 44, block 1798). On the other hand, if audit records are available, the method may create the corresponding usage attribute records and associated administrative event(s), package them into a container 152, send the container to the
10 matching and classification utility 900, and write corresponding audit records (Figure 44, block 1799).

Figures 45A, 45B show example steps for performing the method (shown in Figure 44, block 1794, for example) of creating attribute record(s) from audit records. In this example, the method
15 first locates the audit records in a secure database or other storage facility (Figure 45(A), block 1800). The method next selects an appropriate UDE audit record to analyze (Figure 45(A), block 1802), and determines whether a permission record is available that applies to this particular audit record (Figure 45(A), decision block 1804). If
20 a permissions record is required and is not available, the process reports failure, writes an associated audit record, and ends (Figure 45 blocks 1806, 1808, 1810). If, on the other hand, a required permissions record is available ("yes" exit to decision block 1804, Figure 45), the process determines whether the permissions record
25 grants the device or process permission to use the audit record(s) for

this particular purpose (decision block 1812, Figure 45). If such permission is not available ("no" exit to decision block 1812, Figure 45A), the process reports failure, writes an associated audit record, and terminates (Figure 45A, blocks 1814, 1816, 1818).

5 If any applicable permissions record is available and grants permission to the matching and classification utility 900 ("yes" exit to decision block 1812), the process determines multiple audit records need to be analyzed together as an overall event (Figure 45A, decision block 1820). For example, an "atomic transaction" in which
10 multiple steps are performed to achieve an overall result may have multiple audit records (e.g., from multiple appliances 100) that may need to be analyzed together in order to make sense out of the overall transaction. As another example, an object may have subparts (e.g., sub-objects) on which operations can be performed – but it may be
15 important for matching and/or classification purposes to analyze the results of such multiple operations together in order to determine appropriate attribute(s) for matching and/or classification. If it is necessary to aggregate multiple audit records together for analysis (decision blocks 1820, 1822, Figure 45A), then the process proceeds
20 to analyze those audit records together and create corresponding summary transaction information (Figure 45A, block 1824).

The process next determines whether it needs to produce aggregated audit statistics in order to perform the associated matching and/or classification operation (Figures 45A, 45B, decision block

1826). For example, multiple operations may be performed on a certain object. It may be important to know statistics about such operations (e.g., the number of times the object was opened on a certain day, the number of users who opened the object in a certain
5 time period, etc.). If such aggregated statistics are required ("yes" exit to decision block 1826, Figure 45B), the process proceeds to create such aggregated statistics (block 1828, Figure 45B).

The process next copies selected audit record information to an audit attribute record (Figure 45B, block 1830). The process then
10 determines whether it needs to process more audit records (decision block 1832, Figure 45B). If more audit records are required to be processed ("yes" exit to decision block 1832, Figure 45B), control returns to Figure 45A, block 1802 to select the next audit record. Otherwise ("no" exit to decision block 1832, Figure 45B), the process
15 creates a permissions record associated with the newly created attribute record(s) (Figure 45B, block 1834), and completes.

Figures 46A, 46B show example usage attributes/statistic records that the Figure 45A-B process may create. The Figure 46A attribute record 1830-1 may include, for example, a user ID 1832, an
20 object ID 1834, and any number of attribute fields 1836(1), ... , 1836(n). The more detailed Figure 46B example attribute record 1830-2 includes a user ID number 1832, an object ID 1834, a right ID 1836a and associated method characteristic 1836b, another right ID 1836c and associated method 1836d and associated statistic 1836e, a

further right ID 1836f and associated method attribute 1836g, another right ID 1836h and associated methods 1836i, 1836j, and associated additional attributes 1836k-1836o. The characteristics shown in fields 1836k-1836o could, for example, be derived from an aggregate
5 of any number of individual audit records recording individual transactions associated with the object identified in field 1834.

EXAMPLES

The following are some non-limiting examples of how Matching and Classification Utility 900 may be useful in certain
10 applications.

Example: Matching and Classification Utility 900 Can Support Narrowcasting or "Push" Distribution Models Based On Classes

15 Interactions with content, transactions, and other events on the World Wide Web are mainly driven today by following chains of hypertext links, using various search engines, and/or indexes, to say nothing of just plain luck and persistence, to find interesting and/or useful content and/or services. Time consuming and generally
20 inefficient, these search activities share in common the feature that each consumer must intentionally "pull" desired content from a Web site to their computer after successfully identifying specific content or services of interest at that time. The present inventions also support "pull" models—a topic to be addressed shortly. However, the present

inventions also support narrowcasting or "push" models of content distribution as well.

In one example, the matching and classification utility 900 can facilitate much more automated and therefore more efficient and effective content creation, access and/or distribution services that "push" information and/or services to users. Example Figure 47 shows an example "information push" model 2000 in which an arbitrary number of users 2001(1)-2001(n) each have a VDE node (e.g., a protected processing environment 154) installed on their appliances. These example appliances may be of any kind, including computers, so-called Web television or Web-TV, DVD appliances with some form of backchannel, a settop box with a "back channel", and so on.

Perhaps with the permission of the user or other authority, such as an administrator within an organization, the VDE node collects various usage information or "info exhaust" according to the rules and usage consequences provided by one or more value chain participants. At times specified by default and/or by the associated rules and consequences, audit records are sent, in this example, in VDE containers 2006(1)-2006(n) to a usage clearinghouse 300, which in turn, may send all or a portion of these audit records in a VDE container 2008 to the matching and classification utility 900. The audit records may contain rights management information, including, but not limited to the amount of usage, the amount paid, if any, the

payment method used, if any, VDE control sets, and/or data that identify various attributes of the node, user, and/or known and/or used object(s). The audit records may also contain information about objects known to the VDE node (objects with PERC records - see
5 Figures 35A, 35B and associated discussions) and/or objects that have been used (objects with URT entries - see Figures 40A-40B and associated discussions) on the node.

The matching and classification utility 900 may also receive from one or more providers 2010 content objects 2003 themselves,
10 for example, information in text format and/or metadata 2005 associated with content objects. Using at least one classification method, the matching and classification utility 900 may create at least one object class hierarchy, object class, object classification scheme, object category and/or object category scheme using at least some
15 rights management information and assign at least one object to at least one category and/or class.

The matching and classification utility 900 takes the usage information and other rights management information received from the VDE nodes and/or other information sources and may create at
20 least one category and may assign at least one node and/or user to a category and/or class. In Figure 47, the matching and classification utility 900 sends a VDE container 2002 to content provider 2010 with information showing the classes of content used by one or more nodes and/or users along with a request that the provider 2010 send similar

content back to one or more users 2001. At least one content provider
2010 then sends at least one VDE container 2004 to user A with
content and/or information about available content that may be of
interest to user A given the history of content usage as reflected in
5 VDE audit records and/or other rights management information. In
this "push" example, classes of content or information about available
content may be pushed automatically from (a class of) content
providers to one or more members of class of users and/or nodes.
Consequently, users do not have to search as intensely, if at all, for
10 content of interest to them.

In this example, user A receives content that may be most like
content the user has already used, perhaps like content used most
frequently in the recent past. The present inventions also support the
matching and classification utility 900 and/or content provider
15 sending content that is in a class or classes more distant from topics
of prior and current interest to a particular user and/or group of users.
Certain classification methods familiar to those skilled in the arts may
provide quantitative indicators of distance that, in turn, may be used
as at least one criterion for selection.

20 In another example, matching content to users and/or nodes
may be based in part on class assignments that are in turn based in
part on information concerning user preferences solicited by the
matching and classification utility 900 or other value chain
participant, such as a market research firm, advertising agency,

provider, distributor, VDE administrator 800, or other Commerce Utility System.

Although the matching and classification utility 900 and/or content provider may send "more of the same," in another example 5 the present inventions support providers at least occasionally sending content more distantly related to the user's apparent interests to determine if the user's circle of interest might be a little larger than that indicated by past usage and other, related rights management information alone.

10 In another example, providers may from time to time send content unrelated to the user's apparent interests that may nevertheless reflect the interests of persons and/or groups sharing at least one attribute with the user. For instance, the matching and classification utility 900 may, by sending a VDE container with 15 appropriate user and content class information, suggest to a provider that user A receive content similar to content used by another member or members in the same group or class as user A. In one example, the matching and classification utility 900 may suggest sending business information related to a particular vertical market segment because 20 others in the same class as user A have paid attention to that market.

In support of various content narrowcasting or "push" models, the matching and classification utility 900 may provide content class related information to a "subject switch" or "subject mapper," which in turn, matches participants desiring information in one or more

specified classes with one or more sources of content in the requested class or classes.

The non-limiting subject switching example 2050, Figure 47A, shows a number of customers 2053(1)-2053(n) each with an
5 appliance 2052(1) -2052(n) such as a personal computer. Other arrangements may include appliances such as a WebTV interface and/or an intelligent "settop box" connected to an interface device that uses one or more (digital) TVs for display. Still other
10 arrangements may include an NC computer without a local hard disk logically connected to at least one server, a personal digital assistant with a network connection, and/or any other appliances with suitable processing, storage, and communications capabilities.

Referring again to Figure 47A, each customer appliance 2052 may have a VDE secure node installation 2054 incorporating a
15 protected processing environment 154, as described in "Ginter et al", and messaging services software 2058 that manages communications with other appliances. (In an alternative example, some appliances may lack secure nodes or sufficiently secure nodes, and receive appropriate one or more protected processing environment 154 based
20 services from one or more servers and/or peers.) These appliances may be located in the same physical and/or logical environment, such as on the same local area network, and/or may be distributed across wide area networks such as multi-location corporate Intranets and/or the Internet itself. Among other tasks, messaging services 2058

"listens" for messages destined for that particular appliance or for broadcast messages intended for at least one appliance in the set of appliances that receive the broadcast. In certain instances no appliance may actually be "listening." In other examples, the

5 messaging services 2058 may incorporate delivery assurance capabilities that assure delivery through use of explicit or implicit acknowledgments of receipt combined with the ability to retransmit information that has not been acknowledged. Messaging services

10 2058 may be designed such that an operator may select from one or more delivery assurance levels, for example "no receipt acknowledgment," "retry n times, then notify operator if not received," "retry until a certain date/time, then notify operator if not received," "retry n times and/or until a certain date/time, no operator notification necessary," et cetera.

15 Messaging services 2058 may use the secure node 2054 to package one or more messages in a VDE secure container that may also include one or more sets of rules and usage consequences that may be associated with one or more messages in the container as described in "Ginter et al". In this example, messaging services 2058

20 then sends the secure container to one or more destinations using, for instance, TCP/IP and/or some other network protocol(s). Also, messaging services 2058 may broadcast a VDE container to one or more other customers 2053.

In this example, a customer 2053 uses application 2060 to persistently request or "subscribe" to one or more particular classes of content. For example, a highly detailed class might include "business information concerning the US market share of PC vendors,
5 information in text format, costing less than a dollar per item, and for which the subscriber receives the right to excerpt at least one whole paragraph, provided that the excerpted amount constitutes less than 25% of the entire item based on word count." This same and/or another application may also be used to interact with instances of
10 content in the desired class, for example, by displaying information on a computer screen and/or another output device in accordance with the rules and usage consequences associated with that item. If a user no longer has an interest in one or more classes, they may also use the same (or similar) application 2060 to "unsubscribe" from a particular
15 subject, or specify further narrowing or broadening criteria to adjust the flow of content from one or more classes.

Items in the desired class or classes may be available from more than one content source 2074(1)-2074(n). To enhance the efficiency of locating content of interest to the subscriber or other
20 participant, the matching and classification 900 may have created such a class definition and assigned one or more content items to that class. In one example, the matching and classification 900 may have sent one or more methods, and administrative events necessary to invoke the method(s), in a VDE secure container to one or more
25 content sources 2074 where the classification methods are executed.

Such methods may, for example, assign content items to one or more classes. One or more object and/or item identifiers may have been transmitted to the matching and classification utility 900 along with class assignments for each item. If the matching and classification utility 900 has not previously created the desired class and assigned items to it, in response to a request from the subject switch 2051, the matching and classification utility 900 may do so using any appropriate combination of one or more such classification methods and procedures. The matching and classification utility 900 may create at least one object class hierarchy, object class, object classification scheme, object category and/or object category scheme using at least some rights management information and assign at least one object, item, and/or subscriber to at least one category and/or class.

Subsequent to receipt of the request and/or "subscribe" message from the customer 2053, the subject switch 2051 may query the matching and classification 900 for content sources 2074 that have items in the desired class or classes. The matching and classification utility 900 may respond with information indicating known sources of information in the desired class(es), if any. The subject switch 2051 may then send a VDE container to the appropriate content source(s) 2074 indicating that certain customers 2053 are interested in items in the desired class and that the content source 2074 should send items in this class to this customer 2053

and/or groups of customers, and/or include such content in broadcasts which may be received by such subscribers.

The content sources 2074 may have already received class definitions and class assignment information from the matching and classification utility 900 and/or may have received from the matching and classification utility 900 or another party to the transaction one or more classification methods and associated events to invoke one or more of these methods to perform classification and/or class assignment processes.

10 In one arrangement, the content source 2074 may send the desired items directly to the subscribing customers 2053 by using the messaging services 2058 and subject switch 2051 to publish each item as it becomes available for distribution. In another example, the content source 2074 may broadcast the information such that

15 subscribers' messaging services 2058 will have the opportunity to access the such items from a broadcast. The content source 2074 may call on messaging services 2058 to use the VDE secure node to package the item in a VDE container along with associated rules and usage consequences and then send that container such that one or

20 more listening messaging services 2058 on other appliances 2052(1)-2052(n) will receive it. Based on subject information contained in the message header and/or in unencrypted (but optionally protected for integrity) areas of the VDE container, the listening messaging services 2058 may identify the message as belonging to a subject

class it is listening for, then use the VDE node to open the container and view or otherwise use the item in accordance with that item's associated rules and usage consequences.

In another arrangement, the subject switch 2051 may be located
5 on each customer appliance 2052(1)-2052(n). Using messaging services 2058, each subject switch 2051 may communicate with the matching and classification utility 900 to locate sources of content matching the subscribed classes. In this example, the subject switch 2051 on the local appliance then uses the messaging services 2058 to
10 communicate with one or more content sources 2074 indicating classes of content to which it wishes to subscribe. Using the messaging services 2058, one or more content sources 2074 may directly send and/or broadcast items in the desired classes to subscribing customers 2053 in VDE secure containers along with
15 associated rules and consequences. In another arrangement, the content source 2074 may send one set of rules and usage consequences that apply to members of one or more item classes, thus potentially improving the efficiency of distribution and of rights management. In another example, the rules and content items may be
20 sent in separate VDE containers. In this example, the messaging services 2058 and subject switch 2051 listen for messages that are addressed to those customers who subscribe to a particular content item class and makes those items available to customers using an application 2060.

In another arrangement, messaging services 2058 and/or subject switch 2051 may be installed and run on network routers, network switches, one non-limiting example being ATM switches, and other packet and/or cell switches.

5 Example: Digital Broadcasting Based On Matching And Classification

“Shear et al” discloses a Digital Broadcasting Network (“DBN”) that may function as a cooperative of Web sites and, for example, service providers, with a central and perhaps regional and
10 logical (e.g., market based) headquarters groups, or it may function as a for profit, shareholder corporation in a business model reminiscent of television broadcast companies (e.g., NBC), or it may function as a cooperative or virtual corporation that has some mix or combination of mixes of the above attributes and employ distributed peer to peer,
15 hierarchical, and centralized administrative business relationships and activities.

In one example, plural corporations may join together to provide the advantages of size and coordination with individual participants providing some degree of specialty expertise and the
20 body of entities coordinating together in some fashion in a “higher” level cooperative or corporation.

Figure 48 shows one non-limiting example 2100 of a DBN that includes one or more DBN Web servers 2104(1)-2104(n) and one or more Web users each with VDE nodes. Users are attracted to a

specific DBN server (or servers) because it provides access to specialized content and/or services 2108. Based at least in part on rights management information 2110 collected from DBN servers, for example, controls associated with the most frequently requested
5 information, the matching and classification utility 900 creates categories of content (and/or services) and assigns DBN servers to one or more classes according to their specialization(s). The matching and classification utility 900 may may create at least one class hierarchy, class, classification scheme, category and/or category
10 scheme using at least some rights management information and assign at least DBN server and/or at least some information to at least one category and/or class.

For example, one DBN server may specialize in consumer sports information while another may specialize in legal information.
15 DBN servers may specialize in plural content (and/or service) areas. This class and class assignment information is provided to DBN servers, to content (and/or service) providers, or both.

The matching and classification utility 900 in one example sends VDE containers 2112 to content sources 2102 indicating
20 specific classes of content that should be sent to one or more DBN servers 2104. Using this information, content providers 2102(1)-2102(n) then send content in these categories in VDE containers 2106 that match the categories of most frequently hit and/or consumed content on a DBN server 2104(1)-2104(n). (In another example,

other information may be used as the basis of classification, matching, and selection.) For instance, the matching and classification utility 900 sends a VDE container 2112(2) to content source 2102(1) with instructions to send content in categories 1,11, and 15 to DBN server 1 (2104(1)). This content may, in turn, be sent to one or more consumers in VDE containers 2108(1), 2108(3).

In one aspect, this example process is analogous to hard goods manufacturers and distributors keeping Wal-Mart shelves stocked with those items in greatest demand based on point of sales and inventory data. One difference, of course, is that in this example, the DBN server is stocked with intangibles in the same or similar class as the intangibles sold rather than providing replacements for hard goods that have been sold off the shelf. In another example, a DBN server may send its classification data to content providers along with a request that they send more of the same. The request may be sent independently of the class information.

In another example, the matching and classification utility 900 may receive content and/or rights management information from providers and go on to create classes of content and/or content providers in which the classes may be partly defined using rights management data. Content on one class may, among other things, be distinguished from content in another class by price, payment methods, usage opportunities (e.g., available for printing, available for viewing pay-per-use), usage consequences, and/or specific

permissions. The matching and classification utility 900 may subsequently send a communication, perhaps in a VDE container, to providers indicating that they send content in one or more specified classes to at least one DBN server.

5 Non-limiting example Figure 48 shows that the DBN 2100 may consist of video 2202 and/or audio 2203 content providers who send certain categories of video and/or audio content 2206 to DBN servers 2204(1)-2204(n) based on the categories of content each server may specialize in, which, in turn, may be determined at least in part on
10 frequency of usage and/or other rights management information sent in VDE containers 2213 to the matching and classification utility 900, or to a usage clearinghouse 300 and then to a matching and classification utility 900. (In another example, other information may be used as the basis of classification, matching, and selection.) The
15 matching and classification utility 900 sends VDE containers 2212 to content sources indicating that they should send content in specific categories 2206 to specific DBN servers 2204. In turn, each DBN server 2204(1)-2204(n) delivers video 2208 and/or audio 2209 in VDE containers to parties interested in such content. In another
20 example, a VDE container may hold both video and audio and/or any other content type.

**Example: Matching and Classification Utility 900
Can Also Support "Pull" Distribution Models Based
On Classes**

Notwithstanding the noted trend toward "push" content
5 delivery models, the present inventions also enhance the efficiency,
focus, specificity, and convenience of content "pull" models. In one
example 2300 (Figure 49), the matching and classification utility 900
sends in VDE containers 2306(1)-2306(n) at least one administrative
event and/or associated method that performs classification and/or
10 class assignments to a VDE-aware appliance. The administrative
events and method(s) are processed under the control of the VDE
node. In one example, the results of processing the classification
method may indicate at least one class of content and/or services of
interest to a user and/or node. The classification method may also
15 create at least one class hierarchy, class, classification scheme,
category and/or category scheme using at least some rights
management information and assign at least one service and/or at
least some content to at least one category and/or class.

Subsequently, a VDE container 2308 may be sent to a provider
20 2302 with information indicating at least one class of content,
services, transactions, rules and/or usage consequences, such as the
ability to modify, excerpt and/or reformat, and/or events and a request
that that the provider send content and/or pointers to services that
meets the stated criteria and/or descriptive information about such
25 content, services, transactions, and/or events to the requesting user

and/or node. The request may, for example, be initiated explicitly by the user and/or node or may be initiated by the node according to one or more administrative events and associated methods and/or control sets. In turn, the content provider 2302 sends a VDE container 2304
5 to the requesting user 2306(1) with content that matches the desired selection criteria and/or profile.

The user may elect to use, consume, purchase, and/or rent one or more content objects (or use one or more services). As this one example shows, the user pulls in content and/or interacts with services
10 by matching at least one class indicating user preferences with at least one class of content objects and/or services and/or transaction types.

Example: The Enterprise Distributed Matching And Classification Utility

Businesses and other organizations may be concerned with
15 privacy and confidentiality regarding information and/or services used within the company. This concern may be manifest regardless of whether the information and/or services originated inside and/or outside the organization. Thus some organizations may have strong incentives to take advantage of the present inventions by operating a
20 distributed matching and classification utility 900 to provide matching and classification services within the enterprise while at the same time maintaining a higher degree of confidentiality and privacy by selecting and/or limiting the nature, range, and detail of information sent outside the organization.

Figure 50 shows an example 2400 of an entity 2406 that has one or more VDE enabled appliances and users 2420(1)-2420(5) on a corporate Intranet 2418. These appliances may be, for example, computers, workstations, mainframes, or more specialized devices, such as supercomputers and/or graphics workstations for animation and special effects. The company may also operate internally one or more Commerce Utility Systems, perhaps including a financial clearinghouse 200, a usage clearinghouse 300, and a matching and classification utility 900. The company may also operate at least one content server 2414. These commerce utility systems and servers are also connected to the company Intranet 2418. The company 2406 also maintains one or more connects to the Internet 2402. (In another example the company may maintain connections to at least one private network operated by themselves and/or another party in addition to, or instead of one or more connections to the public Internet.) The content server(s) may provide access to internal, proprietary company information and/or to external, often commercial information. The internal content server may act as a gateway to external providers 2404(A)-2404(C) and/or may host commercial content locally on a content server 2408.

In one example, VDE audit records and/or other rights management information are sent in VDE containers 2412 from one or more VDE nodes 2420 to the enterprise usage clearinghouse 300 which may forward at least some of this usage information in VDE containers 2410 to the enterprise matching and classification utility

900. The enterprise matching and classification utility 900 may also collect from internal information sources 2414 information in addition to audit and rights management information, such as information in a human resources, accounting, and/or budgeting database containing data about company employees. These data may indicate, in one example, titles and responsibilities within the company, budgets allocated for external information and/or services, authority to spend, and budget remaining. The budget and financial information may have come in part from the financial clearinghouse

5

10 200. The matching and classification utility 900 may also create at least one class hierarchy, class, classification scheme, category and/or category scheme using at least some rights management information and assign at least service and/or at least some content to at least one category and/or class.

15 In one example, using at least some VDE rights management data, for example, whether certain information can be viewed by anyone, by any employee, or only by employees in certain job classes, such as "manager," the enterprise matching and classification utility 900 creates one or more categories and assigns one or more

20 employees and/or VDE nodes to one or more topic categories. These categories may, for example, indicate content and/or service topics, subjects, and/or content areas of potential interest to each employee and/or groups of employees sharing at least one attribute in common, for example, similar interests and/or responsibilities.

In turn, the enterprise matching and classification utility 900 sends to at least one external content and/or service provider 2404 on Internet 2402 one or more VDE containers 2424 with information that indicates categories of interest. The content providers 2404 may themselves be specialized; in one example, a content provider may specialize in general business and financial news while another may specialize in scientific, medical, and/or technical information. In another example, a single content and/or service provider may provide an extremely broad range of content and/or services.

10 The external provider may send at least one VDE container 2422(1) with content and/or rules and consequences and/or metadata about content and/or services to a content server internal to the enterprise. In another example, such VDE container(s) 2422(2) may be sent directly to an employee and/or one or more groups of employees. The information sent by the external provider is tailored to, or in some way responsive to the content and/or service categories requested by the enterprise matching and classification utility 900.

20 In another example, the enterprise matching and classification utility 900 itself may be a distributed commerce utility implemented on more than one computer and/or other appliance within the enterprise. These several matching and classification utility 900s may serve different geographic areas and/or may themselves specialize in particular content and/or service areas.

In another example, the enterprise matching and classification utility 900 send class and/or class assignment information to a matching and classification utility 900 in another organization that, in turn, may be part of a common value chain.

5 **Example: Chain of Handling and Control Entails Class-based Rules and Usage Consequences**

VDE-based value chain management or "chain of handling and control" disclosed in "Ginter et al" enables, amongst other things, plural parties to independently contribute rules and usage
10 consequences under the authority and/or control of more senior or prior participants in the value or distribution chain. Class-based rules may play a role in the efficiency and effectiveness of creating, operating, and/or extending value chain processes.

Figure 51A shows an example 2500 of a publisher ABC 2502
15 using a VDE packaging application 2510 to put into a VDE secure container 2512 sets of rules and usage consequences that may vary according to class. In this non-limiting example, the class is "content type." The publisher may have rights in a wide variety of content and content types. Consequently, the publisher may create rules for text
20 objects that may differ from rules for audio objects.

The publisher 2502 sends the class-based rules and usage consequences to a first creator 2504 who also has installed VDE on her or his appliance 2516 and who has also been given one or more certificates and/or other digital credentials by the publisher (and/or

trusted third party) indicating that he is indeed a creator authorized by the publisher 2502. The publisher has included rules that allow only authorized value chain participants to package content using publisher provided rules and/or to modify, enhance, extent, and/or change some
5 or all of the publisher's rules.

The first creator 2504 then uses a VDE packaging application 2510 to package an image he has created in a VDE container 2514 according to the rules provided by the publisher and with the addition of the creator's own rules. In one example, the first creator
10 contributes rules that implement a one-time 50 cent charge to the consumer for opening and viewing the creator's image. The creator may also contribute rules reflecting his wish to receive audit records with information concerning the consumer and/or context in which the image was used. These creator rules and usage consequences are
15 contributed generally independently of the rules and usage consequences contributed by the publisher. Note that the VDE container 2514 now holds at least the publisher's 2502 rules for each object class, the first creator's image and his associated rules and usage consequences.

20 A second creator 2506 receives the VDE container from the first creator and using a VDE packaging application 2516 adds a text file to the container 2520 along with her rules and usage consequences. As before, she also has a certificate and/or other digital credential(s) identifying her as authorized by publisher ABC to

add and/or modify content and rules and usage consequences. As in the case of the first creator 2504, she adds her text and rules and usage consequences generally independently of controls contributed by prior participants. She may, in one example, prevent printing of
5 the text and charge \$1.00 the first time a consumer opens and views the text.

The VDE container 2508 now holds text and rules and usage consequences contributed by creator 2 (2506), an image and rules and usage consequences contributed by creator 1 (2504), and the class
10 based rules (and perhaps other rules as well) contributed by example publisher ABC 2502.

Creator 2 (2506) sends the VDE container 2508 to publisher ABC 2502 who then sends the container 2522 directly and/or indirectly to consumers. When the consumer uses the content, the
15 rules and usage consequences of all three value chain participants (and of other possible participants as well, distributors and repackagers, for example) are applied.

Example 2600, Figure 51B shows that the publisher 2602 may have sent a VDE container 2612 with various rules and usage
20 consequences to a matching and classification authority 900 who may classify the rules and send the rules and their class assignments to a rights and permissions clearinghouse 400. The matching and classification utility 900 may also create at least one class hierarchy, class, classification scheme, category and/or category scheme using at

least some rights management information and assign at least one rule to at least one category and/or class.

An authorized first creator 2604 may send a VDE container 2617 to the rights and permissions clearinghouse 400 asking for rules in the class "rules for authorized creators, for image objects, from publisher ABC." The rights and permissions clearinghouse 400 returns a VDE container 2614 with rules in the requested class. The first creator 2604 uses a packaging application 2616 to package his image using these rules plus rules and usage consequences reflecting his rights and wishes and sends the VDE container 2614 to the second creator 2606.

The second creator 2606 also sends a VDE container 2619 to the rights and permissions clearinghouse 400 asking for rules and consequences in the class "rules for authorized creators, for text objects, from publisher ABC." The rights and permissions clearinghouse 400 returns a VDE container 2621 with rules and consequences in the desired class. The second creator 2606 uses a packaging application 2618 that determines that she is a creator authorized by publisher ABC 2602 and goes ahead and adds her text object and her rules and consequences to the VDE container 2608, which is then sent to the publisher ABC 2602 for further augmentation, vending, and/or distribution to other value chain participants.

Example: Secure Directory Services May Provide Class And Class Assignment Information

Whole industries have arisen to target communications to individuals, organizations, groups, and/or other classes sharing at least one common attribute, and/or to provide directories from which others can locate individuals, organizations, groups, and/or other classes. Examples of these industries include direct marketing, advertising, yellow and white pages directories, directories of directories, and various electronic and paper membership lists and professional directories.

In addition to identifying information such as names, e-mail addresses, physical mailing addresses, phone numbers, fax numbers, and/or similar attributes, the secure directory services 600 may also provide information about class membership(s) for individuals, devices, services, groups, and/or organizations. The non-limiting example 2700 shown in Figure 52 includes a secure directory service 600 that has received class and class assignment information for one or more individuals 2716(1)-2716(n). The class assignment information is shown in the bottom four rows of the directory record 2718(1) for one individual.

In this example, a content provider 2702 sends a VDE container 2704 to a secure directory services 600 asking whether the service can provide a list of individuals in class "AF." The requested class could be any class defined by one or more attributes and may be based on usage profiles that include rights management information,

non-exhaustive examples of which include price, payment methods accepted, permitted operations, meters, and privacy controls.

The secure directory services 600 returns to the content provider in a VDE container 2706 an indication that there are
5 presently 57 individuals known to that service in class "AF." In turn, the content provider 2702 sends a VDE container 2708 with at least one piece of content and/or rules and usage consequences back to the secure directory services 600 along with instructions requesting that the secure directory services 600 forward the content and/or control
10 sets to each of the 57 members of class "AF" who might be interested in this piece of content. The secure directory services 600, in turn, forwards the content and/or controls (in VDE containers 2714(1)-2714(n)) to members of class "AF," who may elect to interact with the content in accordance with their associated rules and consequences.

15 In another example, the secure directory service 600 may send identifying information 2710 directly to the content provider 2702 who may then send content 2712 in one or more classes directly to one or more members 2716(1)-2716(n) of the class. The secure directory services 600 may, for example, include permissions for the
20 class information that have expiration dates and/or limits on the number of times the information can be used.

**Example: Matching And Classification Utility 900
Supports Class-Based Micro-Merchandising And
Micro-Segmented Sales Processes**

The present inventions may be used in support of services as
5 well as content distribution based business. Example 2800 (Figure
53) shows a travel company 2801 sending a VDE container 2810 to a
matching and classification utility 900 requesting information on
those individuals who may be interested in certain combinations of
leisure-time activities. These classes might have been defined at least
10 in part on the basis of usage and other rights management information
2816, for example, the kind of leisure-time information recently
looked at, for how long, and/or its cost, and/or the kind of Web sites
recently frequented, sent from consumer VDE nodes 2802(1)-2802(n)
to the matching and classification utility 900, and/or to a usage
15 clearinghouse 300 who, in turn, sends at least some of the usage
information (or a summary form of such information) to the matching
and classification authority 900. Classes may also be defined using
information gathered directly from the consumer 2818, perhaps under
the control of VDE. The matching and classification utility 900 may
20 also create at least one class hierarchy, class, classification scheme,
category and/or category scheme using at least some rights
management information and assign at least one consumer, service,
and/or at least some information to at least one category and/or class.

Example Figure 53 shows that a consumer 2802(1) has recently
25 indicated a preference and/or interest in skiing, music, and flying to

Colorado. Another consumer 2802(n) has indicated a preference for and/or interest in surfing Hawaii. These preferences may be determined at least in part on the basis of rights management information. In response queries sent in one or more VDE containers

5 2810 from the travel company asking for interest and preference information, the matching and classification utility 900 returns one or more VDE containers 2812 with identifying and class information. The travel company may send information about already existing vacation packages and/or packages specially created to meet the

10 specific interests of one or more individuals, for example, information about skiing in Colorado, and rock concerts 2604 to consumer 2802(1) and information 2614 about surfing Hawaii to consumer 2802(n). The recipients may send VDE containers 2806 to the travel company 2801 indicating agreement to buy the package offered or

15 may request additional information or may negotiate terms and conditions such as price, departure date, insurance, and the like. These negotiations may be conducted using the inventions described in "Ginter et al", Figures 75A-76B using VDE negotiations.

Both services and/or hard goods may be offered to particular

20 persons, nodes, groups, and/or entities based on the class membership of the potential purchaser and the class membership of the goods and/or services to be purchased. Thus in another example, the travel company could have included the purchase and/or rental of the skis or of the surf board.

**Example: Matching And Classification Utility 900
Supports Trading in Hard Goods**

Business to business trading in goods and/or services may be substantially facilitated through services provided by the matching and classification utility 900. Information on certain classes of goods and services may be delivered to certain people, groups, or entities based on the class membership of the recipient. In one example, these various class memberships may be determined using control set and audit information regarding trading preferences and/or transaction patterns. In another example class membership may be determined by actions and/or information provided by at least one value chain participant.

Example 2900 (Figure 54) shows a buyer A 2904 sending a VDE container 2908 to a trading company 2902 with a request asking if trading company will sell company A one or more desired items. Trading company 2902 may then send a VDE container 2910 to a matching and classification utility 900 with a query asking who can supply the desired items under terms and conditions that are also included in the container. Since these terms and conditions may be the subject of negotiations, they may be in a format conducive to VDE-based negotiations as described in "Ginter et al" Figures 75A-76B.

The matching and classification utility 900 may send inquiries 2910 to one or more suppliers 2906(A)-2906(N) and/or may have already received information and/or associated control sets from

suppliers in VDE containers 2912. Based on the request from trading company 2902 and supplier 2906 information obtained 2912, the matching and classification authority 900 returns a VDE container 2916 indicating that in this one example, suppliers A 2906(A) and Z 5 2906 (N) can provide goods in the class(es) defined by trading company's 2902 request(s) 2910. In turn, trading company 2902 sends at least one VDE container 2918 to buyer A 2904 indicating that they will sell buyer A the previously requested items under the enclosed terms and conditions. In another example, there may be 10 some VDE-based (see "Ginter et al", Figures 75A-76B) negotiations between the various parties in this value chain, including between trading company 2902 and buyer A 2904.

In another example, buyer A 2904 may consult the matching and classification authority 900 directly and may then purchase 15 directly from one or more suppliers 2906.

Example: Matching And Classification Utility 900 Supports Securities Trading/Brokering

In addition to hard goods, the matching and classification authority 900 may also support securities trading. Example 3000, 20 Figure 55, shows the matching and classification authority 900 sending to a VDE-aware appliance with one or more stock trading related applications 3004 a VDE container 3010 with an administrative event and method (as described in "Ginter et al") for classifying equities related information, including, as non-limiting 25 examples, current and historical price, volume, and index

information, financial performance data for publicly held companies, forecasts, risk management information, options and futures, and the like. The classification method may also utilize rights and permissions, including access control information, permitted
5 operations, and/or expiration times and/or dates for rights management information. The classification method may also create at least one class hierarchy, class, classification scheme, category and/or category scheme using at least some rights management information and assign at least one element to at least one category
10 and/or class.

In turn, using the VDE aware appliance 3004, the stock trader 3006 sends a smart object 3012 to at least one information source 3002 asking for information in at least one class identified by the classification method. In one example, the class may be information
15 concerning "publicly traded companies with annual revenue greater than \$500M in the healthcare sector in which the CEO has been in place less than 5 and greater than 1 year and with access restricted to customers (rather than available to anyone) with access and use expiring in 90 days." The information provider(s) 3002 returns a
20 VDE container 3014 with information meeting and/or more closely meeting the stated class criteria. Based upon this and other information, the trader 3006 may go ahead and enter an order for at least one trade in at least one stock 3008. In another example, the trader may create or obtain methods that trade automatically in certain
25 classes of securities.

**Example: Matching And Classification Utility 900
Supports Trading in Currency and Debt Instruments**

Among the classes of great value to traders are the classes of items whose trading maximize profits and/or minimize losses.

- 5 Example 3100, Figure 56, shows a trader in currency and/or debt instruments 3102 sending a VDE container with market and other financial and economic information and VDE control set information 3108 to a matching and classification authority 900 with a query 3114 asking the matching and classification authority 900 to identify the
- 10 class of currency trades and/or debt instrument trades that maximizes profit and/or minimizes losses. The matching and classification authority 900 applies one or more methods to the data and returns at least one class definition 3112, the assignment of possible trades to that class 3110, and relevant control set information, such as controls
- 15 indicating who may see the information, and those that prevent unauthorized modification of the information. The matching and classification authority 900 may also return methods for executing the trade. The matching and classification utility 900 may also create at least one class hierarchy, class, classification scheme, category and/or
- 20 category scheme using at least some rights management information and assign at least some trading information to at least one category and/or class.

- The example trader 3102 examines the recommendation and sends VDE containers 3118 (A, B) with trade methods and control
- 25 sets to a foreign exchange market 3104 and/or to a debt instrument

market 3106 where the trades are consummated. The markets send back VDE containers 3116(A, B) with audit information indicating the results of the trading order. In another example, the matching and classification authority 900 may be instructed to send trading orders
5 directly to the market(s) for execution. In another example the trader may send a VDE container to at least one source of relevant information asking that source to send certain information to the matching and classification authority 900. In another example, having established the desired trade(s) using the matching and
10 classification authority 900, the trader may place the trade by phone and/or computer and/or other communications device without using VDE.

**Example: Matching And Classification Utility 900 Supports Consumers Locating Services That Are
15 Members Of A Specified Class**

The services of the matching and classification authority 900 may also benefit consumers by locating certain classes of services. Example 3200, Figure 57, shows a consumer sending a VDE container 3206 to a matching and classification authority 900 asking,
20 "which banks are in class A?," where class A are "those banks that offer the highest savings interest, no ATM fees, online/Web banking using VDE, insured accounts, free checking with balances larger than \$2,500, "image" statements (where check images rather than the actual checks are returned), and complete privacy protection (except

where legally required to disclose) for VDE based banking transactions.

The example matching and classification authority 900 sends a query in a VDE container 3208 to one (or more) information sources 5 3202 and receives one or more VDE containers 3210 with the requested information. The matching and classification authority 900 then determines which bank or banks meet the stated criteria of the consumer 3204 and then sends a VDE container 3212 with the answer to the consumer, in this example, banks A, B, and C. The consumer 10 3204 may then go ahead and execute a financial transaction, for example, transferring funds from one bank to a bank identified by the matching and classification utility 900 as offering higher interest rates, while being assured of maximal privacy for this (and perhaps other) transactions.

15 In another example, after determining which banks are in the desired class, the matching and classification authority 900 may send a VDE container to one or more banks saying that the consumer wishes to know about their services and requesting the bank to contact the consumer directly. The bank may send controls ensuring 20 the privacy of future interactions with the customer. For example, controls that apply to audit records such that only the bank and the consumer will have permission to access these records.

**Example: Matching And Classification Authority 900
Supports Class-Based Software Distribution**

VDE and the inventions disclosed in "Ginter et al" at last
provide a way of ensuring that the efforts expended on creating
5 software will be rewarded since the software can now be persistently
protected, usage information can be collected, and payment ensured.
These inventions also support micropayments and microtransactions,
thus creating a world in which the price of software objects—any
kind of objects actually—may become very small. Pay per use,
10 rental, rent to own, and other pay as you go pricing models together
with VDE may create a new explosion of creativity in software design
and creation, since use prices will be low and providers can be
assured of receiving payment.

The present inventions provide opportunities for software
15 providers to more efficiently market their wares. Example 3300,
Figure 58, shows a number of users with VDE installed on their
appliances 3304(A-F). These people are using software (and other
content). VDE meters usage of various objects and sends audit
records in VDE containers 3306 (A-F) to a usage clearinghouse 300,
20 which then sends audit records 3308 to the matching and
classification authority 900. A software distributor 3302 sends a
VDE container 3310 to the matching and classification authority 900
with a query asking who is in the class, "buys Java applets, with pay
per use pricing, and for which the cost per use is between \$.0001 and
25 \$.001?"

The matching and classification authority 900 returns a VDE container 3312 with a list of names and (network) addresses of those matching, or most nearly matching the desired characteristic(s). The software distributor 3302 then sends at least one VDE container 3314
5 with at least one software object, and/or a pointer to a software object, in this case a Java applet, and perhaps other relevant information, such as VDE control sets and/or various metadata describing some aspect of the object, for example, what it does, what it costs, etc. The user may then elect to use the object or not. In another example,
10 instead of individuals or VDE nodes, the users might be groups of nodes, users, organizations, parts of an organization, and others that can be identified as belonging to at least one class. In this case, the software may be offered to some or all members of class, group and/or organization.

15 **Example: Matching & Classification Utilities Provide Services To Authenticated Classes of Nodes, Users, Content Services and/or Transaction Services**

Among the ways in VDE nodes, users, content services, and/or transaction services can be authenticated is through the use of
20 certificates and/or other digital credentials issued by an appropriate trusted third party, a certifying authority 500, for instance, that warrants and/or attests to some fact or facts, which may include membership in one or more classes, including the identity class. Figure 59 shows a non-limiting example 3400 in which a number of
25 matching and classification authority 900(1-N)s, each of which may

provide its services to different classes, where class membership is authenticated using certificates and/or other digital credentials. In other examples, additional authentication mechanisms may be used in combination with, or instead of certificates, such as information
5 known only to the user, VDE node, and/or appliance, including passwords, cryptographic keys, information stored in hardware, and/or software.

In example 3400, Figure 59, commerce participants including, the matching and classification authority 900, may make rules and
10 consequences conditional on class definitions and/or the assignment of members to a class. Class membership may be authenticated by a certificate and/or other digital credential issued by one or more commerce participants in addition to, and/or instead of a trusted third party such as a certifying authority 500. For example, a certificate
15 and/or other digital credential may attest to user identity, that is, that a user is the user he or she claims to be. Nodes, devices, networks, servers, clients, and services, are other non-limiting examples of other commerce elements that may be authenticated with certificates and/or other digital credentials. Any commerce participant may issue a
20 certificate, but other participants are not required to accept a given certificate as an authenticator.

Figure 59 shows multiple matching and classification authorities 900(1)-900(N), each of which may provide services to members of a particular class, in these non-limiting examples, to

nodes in a particular deployment (matching and classification authority 900(1)), in a particular vertical segment and/or institution of society, such as Higher Education (matching and classification authority 900(2)), one or more value chains, such as business information content providers (matching and classification authority 900(3)), and/or a particular transaction and/or service arena, such as hard goods trading (matching and classification authority 900(n)). Other commerce utility systems, a certifying authority 500 shown in Figure 59, for instance, may also provide services to a class. In each of these instances, the services of the matching and classification authority 900 may depend upon finding certain authenticating certificate(s) and/or other digital credentials on the appropriate VDE nodes.

For example, matching and classification utility 900(1) provides services to nodes 3410(1-n) in the deployment 3402 administered by VDE administrator 800. Each node may have a certificate 3412 issued by certifying authority 500(1) that provides services to this deployment.

In another example, certifying authority 500(2) provides certificates and/or other digital credentials to participants in a higher education value chain 3404 consisting of an arbitrary number of colleges and universities 3416(1)-3416(n), providers 3418(1) and students 3418(n), and a matching and classification utility 900(2) that provides classification, matching, and selection services to higher

education 3404. In one example, the matching and classification utility 900(2) only provides services to value chain participants who have a certificate 3420 issued by certifying authority 500(2).

Matching and classification utility 900(3) services can be
5 provided only to members of one or more classes based on certificates issued by a certifying authority 500(3). In one example, the class is participants in a business information value chain 3406, comprising an arbitrary number of content providers 3424(1)-3424(n), an arbitrary number of users and/or consumers of business information
10 3422(1)-3422(n), and a certifying authority 500(3) that issues certificates and/or other digital credentials to members of the value chain 3406.

In addition to membership in certain deployment, institutional, and/or content usage classes, the matching and classification authority
15 900(4) may provide services to members of a certain transactional value chain, in one example, traditional transactions 3408. In this example, a certifying authority 500(4) issues certificates 3432 to one or more companies 3428(1)-3428(n) and one or more trading companies 3430(1)-3430(n). In another example, other participants
20 may receive certificates and/or other digital credentials, including banks and financial institutions, government authorities, for example, tax and/or customs authorities, consumers, suppliers, and/or transportation companies. The matching and classification utility 900(4) provides services only to those entities and/or individuals in

possession of the appropriate certificate 3432 indicating that the holder of the certificate is an authenticated participant in one or another trading value chains.

In other examples, a commerce utility system may provide
5 services to more than one class where class membership is indicated by at least one certificate and/or other digital credential issued by a certifying authority 500 and/or value chain participant. In one example, matching and classification authority 900 might provide services to the class "Higher Education" and to the class "K-12
10 Education."

Possession of a certificate and/or other digital credential may be among the information used to classify a node, user, appliance, device, entity, and/or other commerce participant, and rules and consequences can be made conditional on membership in one or more
15 authenticated classes and/or on the degree of confidence the rule provider has in the trustedness of the certificate and/or other digital credential issuer. In one example, a discount to higher education may be larger if the root for chain of trust for a given certificate is a well-known, highly respected and trusted third party, such as an
20 authoritative accrediting organization, and smaller if the root belongs to the MIS department of a small college. In this example, the provider is willing to grant a higher discount when there is higher certainty that the recipient is in fact a member of a specific class or classes.

Example: Matching And Classification Authority 900 Supports Control Sets Based In Part On Employee Classes, Content Classes, And/Or Certificates And/or Other Digital Credentials

5 Chain of handling and control enables, amongst other things, multiple organizations to work together in secure, trusted, efficient, cooperative commerce processes. One way in which the present inventions extend these ideas is through control sets with rules and usage consequences that may be based in part on classes and the
10 assignment of persons, entities, devices, content, services, or other process elements to classes of one kind or another by the matching and classification authority 900.

One example technique to classify employees is at least in part according to their roles and responsibilities within an organization.
15 The matching and classification utility 900 supports classification, matching, creation and/or modification of VDE control set(s) based at least in part the class assignment of individual and/or groups of employees. In part by virtue of their employee classification, at least one employee may receive certain rights management information,
20 for example, permission to access certain classes of information or permission to perform one or more permitted operations, transactions and/or events.

Example 3500, Figures 60A-60C shows a nurse 3504(1), physician 3504(2) , and billing clerk 3504(3) all work directly for an
25 example hospital. The present inventions are in no way limited to

hospitals, but apply to any organization, group, entity, and/or institution with at least some defined roles and responsibilities and/or other class definitions that apply to employees, members, and/or others associated, affiliated, and/or employed by the organization, group, entity and/or institution. Rights management information may be part of the claim definition, for example, permissions to view, modify, excerpt, and so on.

Control sets may provide permissions conditional on employee class, for example, certain classes of employees may modify certain information and/or classes of information in a database while others may not. Class membership may be indicated by digital credentials, non-limiting examples of which include digital certificates and digital membership cards. Controls may be conditional on other information as well, for example, some computers and/or display devices may not show certain classes of data or updates to certain data elements may not be performed from certain computers or display devices.

Another example role is a representative 3504(4) of an insurance company 3508, who may have access to certain classes of hospital information by virtue of her or his class membership(s), some of which may derive from her or his role in the insurance company 3508 and/or from the insurance company's relationship with the hospital and/or with some of the hospital's patients and/or staff. The present inventions are not limited in application to an insurance company, but may be applied to any individual, group, organization,

entity, and/or institution with whom the example hospital and/or other entity has some form of relationship.

An example insurance company 3508 have received a certificate in a VDE container 3534 issued by certifying authority 500(1) attesting to the identity of the insurance company. In another example, this certificate and/or one or more additional certificates may attest to the fact that the insurance company has the appropriate charter, licenses, and other grants of authority to be in the health insurance business. The certifying authority 500(1) may also send a certificate in a VDE container 3532 attesting to hospital's identity. In another example, this certificate and/or one or more additional certificates may attest to the fact that the hospital has the appropriate charter, licenses, and other grants of authority to provide hospital and related services.

The insurance company 3508 may have sent one or more control sets to the hospital in a VDE container 3542. These controls may be based in part on one or more certificates 3530 and/or on the classification output of an example matching and classification utility 900(2) operating within and/or on behalf of the insurance company 3508. The controls in container 3542 may indicate which individuals are actually employees of the insurance company, employee membership in one or more classes, permissions associated with that individual and/or class, and/or permissions associated with specific devices, communications channels (devices, ports, etc.), and/or

processes. In this one example, the hospital matching and classification utility 900(1) may create controls using the same and/or additional classes and controls received from the insurance company 3508.

5 The insurance company 3508 may also provide one or more certificates to the hospital attesting to the fact that one or more information sources within the insurance company are to be taken by the hospital as trusted sources. Lastly, in this regard, the insurance company may issue one or more certificates on behalf of each
10 employee attesting that each is in fact an employee of the company and may have certain authorizations.

 In example 3500, Figures 60A-60C, a matching and classification utility 900(1) has identified various classes of hospital employees using information from at least one hospital information
15 system 3502 and/or VDE node. The matching and classification utility 900(1) may also make use of certificates issued by a certifying authority 500(1) outside (a trusted third party) and/or a certifying authority 500(2) inside the hospital. Using data dictionaries 3522, patient records 3520, various employee information 3524, automated
20 procedures, and/or other means, the matching and classification utility 900(1) creates classes 3526 of patient record information and associates one or more control sets 3528 with each class of information and/or with a patient record as a whole. These control sets may specify who has permission to use and/or modify the record

and/or an element(s) of the record that has been assigned to one or more classes on which the control set(s) may in part depend. In one example, the class based controls 3528 may be combined with other hospital and/or other party controls, controls from the insurance
5 company 3508, to create new controls 3510(1)-3510(n) associated with patient records 3512(1)-3512(n).

The example nurse 3504(1) and physician 3504(2), for example, may be able to view, modify, print, and/or copy patient's name, address, and other similar descriptive information, next of kin,
10 insurance, and medical information in accordance with controls 3510(1) and 3510(2), respectively . In another example, some members of the class "nurse" and/or the class "physician" may have different permissions by virtue of membership in one or more additional classes. A physician who is in the class "hospital
15 administration" may have different permissions, for example, to billing records.

A billing clerk 3504(3) in the hospital may not have permission in control set 3510(3) to view medical information and/or next of kin, and in this example may be restricted to name and other patient
20 descriptive information, insurance information, and billing information from the patient record. A representative 3504(n) of the insurance company may have permission by virtue of control set 3510(n) to view, but no permission to modify, print, or copy patient record 3512(n). In each of these examples, the VDE control sets are

at least partially conditional on the presence and/or absence of certain certificates indicating membership in one or more classes.

The present inventions may be applied to any information, person, group, device, network, service, database that pertains to any
5 commerce activity whatsoever, and regardless of whether the parties to the commerce activity are individuals, groups, entities, organizations, institutions, nations, and/or societies.

**Example: Matching And Classification Authority 900 Supports Classes And Matching Based In Part On
10 Workflow And Work Process Automation**

Not only do the present inventions enhance commerce processes that principally entail information, but the present inventions enhance workflow and work process automation as well. Example 3600, Figure 61, shows PCs 3608(a-c) functioning as station
15 controllers connected to various manufacturing devices 3610 (a-c). These station controllers that exchange data and instructions with the equipment they control and/or manage. The station controllers are VDE-enabled. In another example, the manufacturing equipment may also have VDE nodes installed.

20 An example work in progress (WIP) and/or manufacturing control application 3606 keeps track of the overall manufacturing processes and exchanges information with other applications not shown, such as materials management, materials ordering, order

databases, logistics, inventory, accounts payable, accounts receivable, general ledger, human resources, time cards, and the like.

An example employee 3602 of the company sends a query 3612 in a VDE container 3604 to an enterprise matching and classification utility 900 within the company asking, "which VDE-controlled equipment will be available 3rd shift today, for 2 hours, capable of performing operations xyz with a nominal error rate of less than .0001 per cent?" The enterprise matching and classification utility 900 may request data 3616 from the WIP/manufacturing process control application 3606 and/or may already have access to the required data, indicating equipment availability, security level, capabilities, and statistical error rates. The WIP/manufacturing process control application 3606 may return a VDE container 3618 with the requested information. Based upon the query and available information, the matching and classification utility 900 responds by sending a VDE container 3620 to the employee 3602 with the answer, "equipment B and equipment C." In turn, the employee 3602 sends another VDE container 3622 to the WIP/manufacturing process control application 3606 with VDE a control set(s) indicating B and C should be scheduled for 2 hours on 3rd shift to do xyz operations. As part of this particular chain of handling and control, the WIP/manufacturing process control application 3606 sends VDE container 3624 to the VDE-enabled station controllers for equipment B or C with control sets that schedule work and specify the manufacturing processes and/or "recipes" for those specific

equipment 3610(b) or 3610(c). In turn, the respective station
controllers carry out their instructions and report progress and
completion in VDE containers 3626 sent back to the
WIP/manufacturing process control application 3606, which may in
5 one example, provide results to other applications and/or to the
employee who originally requested the work to be scheduled and
performed.

**Example: Matching And Classification Authority 900
Supports Classes And Matching Based In Part On
10 Government/Societal Commerce Administration**

Among the rightsholders in commerce processes of all kinds
are societies and governments. Governments may foster rules
indicating that certain classes of individuals may have not have access
to certain classes of content. Some classes of information may be
15 treated as members of classes that define permissions, such as
"confidential," "secret," "top secret," and so on. Other non-limiting
example governmental rights may address permissions for import,
use, and/or export of certain classes of hard goods, services, currency
and financial instruments, and content. Travelers entering the United
20 States, for example, are usually asked about currency (and currency
equivalents) being brought into the country by the traveler. Children,
for example, may be prohibited as a matter of law by governments
from viewing content in the class "sexually explicit."

Another example of government rights is that different tax rules
25 may be applied to different classes of electronic commerce

transactions using VDE. Example 3700, Figure 62A-62B, shows a certifying authority 500 operated by and/or on behalf of a government issuing a certificate and/or other digital credential indicating jurisdiction, namely, country. The certificate is sent in a VDE
5 container 3710(a) to a VDE administrator 800. The government certifying authority 500 also sends certificates in VDE containers 3710(b)-3710(n) to the government matching and classification authority 900 attesting to the "country," in one example, the United States, and another certificate 3716 attesting to the fact that the
10 matching and classification authority 900 is indeed an authorized service of the United States government.

In one example, the government matching and classification authority 900 has created tax class definitions 3712 and tax control sets 3714 that apply those definitions in various classes of
15 circumstances, including the presence of certain control-related information, such as an appropriate country certificate from an authorized issuer of such jurisdictional certificates. The tax class definitions 3712, tax control sets 3714, and government authority certificates 3716' are sent in at least one VDE container to a rights and
20 permissions clearinghouse 400, who, in one example, redistributes the tax class definitions 3712(1), tax class control sets 3714(1), and/or government authorization certificate 3716(1) to content providers 3702, service providers 3704, and other value chain participants. The certifying authority 500 also sends country certificates to one or more
25 VDE administrators 800 who, in turn, send country certificates 3710'

to VDE nodes 3706(A)-3706(n) in their deployment. When content provider 3702 distributes content of any kind, the appropriate tax control sets 3714(A) are also included in the VDE container. A tax control set is applied whenever content is used in accordance with a tax class and provided that the appropriate jurisdictional certificate 5 3710' is present on the VDE node 3706(a). For instance, a VDE node may have a tax control set to be applied to sales of a class of content, specifically, to the class of "software." Whenever a software vend occurs, the appropriate tax is applied according to these rules.

10 In another example, the various country and government authority certificates may be sent directly from the certifying authority 500 to one or more VDE nodes 3706. The VDE controls that implement tax policy for one or more classes may also be sent directly to VDE nodes 3706 and/or to VDE administrators 800.

15 **Example: Classification May Be Used In
Automatically Selecting The Proper Display Context
Based On Classes Of Information**

Content objects may be displayed using one or another formats according to class membership of that object. In example 3800, 20 shown in Figure 63A, a matching and classification utility 900 provides content class information 3810 to information providers 3802. A consumer 3807(1) previously has sent a VDE container to a provider of sports information 3802(1) indicating interest in "class b" stories, and perhaps other classes as well. The sports information 25 provider 3802(1) sends back a VDE container 3808(1) with one or

more stories in "class b," perhaps "all stories about baseball, New York, Yankees, history, heroes with permission to print" an example of which is 3814(1), along with, in this example, one or more VDE control sets. The VDE container 3808(1) is received by a customer
5 3807(1) who then displays the content 3814(1) using one or another page formatting technologies based on macros, scripts, administrative events, methods, and/or other techniques. Also included in the VDE container is an image 3812(1) that was selected by the information provider as especially appropriate to the class of story being sent. In
10 this example, perhaps the image 3812(1) is a faint image of Joe DiMaggio. This image also meets the criteria of "permission to print."

Example 3800, Figure 63A, also shows another instance in which a different consumer 3807(n) previously has informed a nature
15 information provider 3802(n) of interest in class A stories. Here the information provider sends a VDE container 3808(n) that holds a class of stories different from the class of interest in the previous example. This VDE container 3808 holds a "class A" story, an example of which is 3814(n), that is displayed with a different image
20 3812(n), one that is appropriate to the story class, in this case, an image of a dog.

The class assigned to each story may be carried in the container as metadata for one or more story objects in another example. An example Web browser may request of the information provider an

image appropriate to that class, which if available, would be sent in another VDE container.

Class may affect display rules in other example ways as well. For instance, several team sports news stories may be displayed in a Web browser window in which a scene from a football or basketball game is faintly discernible in the background. Which image is displayed may be determined by the user's preferences given the classes of stories being presented on the page. The user, may have looked most at stories about the New England Patriots and a Patriots-
10 related image may be displayed as background even stories about teams in addition to (or even instead of) the Patriots were being displayed.

In (another) example 3850, shown in Figure 63B, a matching and classification utility 900 provides class information to a provider
15 3852(1). Previously, one user 3857(1) has indicated to the provider 3852(1) that she prefers information in topic class A more than information in topic class C and information that costs less than \$.50 per article while the other user 3857(n) has the opposite preferences and is not price sensitive. A matching and classification utility 900
20 may provide classification information, class assignments for objects, administrative events, and/or methods for these and related purposes. Regardless, the information provider 3852(1) sends the identical VDE container 3858 to each of the users 3857. However, their browser and page formatting software 3856 produces different pages in

accordance with each user's topic class preferences. In the example first case, the user 3857(1) sees three columns of topic A and one column of topic C while the second example user 3857(n) sees three columns of topic C and one column of topic A. As this example illustrates, the class preferences of users may affect the way in which the user interacts with content in various classes.

In another example, the matching and classification utility 900 may have sent one or more administrative events and/or methods 3859 to at least one user 3857 where the method performs the topic classification on documents and/or establishes topic classes and/or topic classes of greatest interest to the user.

Example: Information May Be Classified With Respect To Difficulty -- And This May Pre-Determine An Appropriate Interface

The class of content and/or the class of user may determine at least one display characteristic. One interesting example way of classifying content is with respect to its difficulty. One example measure of difficulty is reading level, which may reflect such aspects as vocabulary and/or complexity. It is well known that children (and adults) of the same approximate age read at different levels. In the example 3900, shown in Figure 64, a provider sends a VDE container 3902(1) with text at a 4th grade reading level and controls indicating that when used by a person reading at that level, the charge is 50 cents. However, if a person reads at less than the 4th grade level, the

charge is only 40 cents. "Reading level" may be indicated by a certificate and/or other digital credential.

A matching and classification utility 900 may send administrative events and/or classification methods 3910 to
5 information providers, one or more other value chain participants, or to the students appliances directly. These methods may, for example, classify documents according to the degree of difficulty and create or modify controls for the whole document and/or subparts of the document, controls that may indicate the different prices for users at
10 different reading levels. The matching and classification utility 900 may also send administrative events and methods to users that know how to make the document appear in the example browser at a lower reading level.

The example VDE container 3902(1) is sent from the provider
15 to a child 3906(1) in the 4th grade who is reading that at that level. When the child opens the container to view (or otherwise use) the text, she or he is charged 40 cents (which might be paid by a third party such as a school and/or parent. The child sees the text as written 3904(1)

20 Example 3900, Figure 64, also shows the exact same document being read by a student 3906(3) in the class of 2nd grade readers. Now the browser displays the document 3904(3) modified by methods that may make the syntax less complex and may substitute simpler words and/or phrases for harder ones. A similar example

document and controls in a VDE container 3902(n) involving a 12th 3906(2) and 9th grader 3906(n) is also shown.

In other examples, the prices may be higher when users are reading text below their capabilities, they may be offered discounts
5 for reading at a higher level, and/or they may be charged more for reading on different levels since modifying the text is a value added process, and providers of that value may wish to be compensated for their efforts.

10 **Example: Classification May Describe Degree Of Focus Of The Content Unit Or Portion On A Topic, Or Characteristics Related To Conventional Formatting, Such As File Type**

Sometimes the most interesting and/or useful content is at the intersection of various topics. Also, user often want content in a form
15 or format that will be most useful, and most practical, to them. In the example 4000, shown in Figure 65, a matching and classification utility 900 receives from user 4002 a VDE container 4004 holding a request for documents in the class, "on economics and politics, costing less than \$5.00, and in MS Word format." The matching and
20 classification utility 900 responds in this example by providing in a VDE container 4006 at least one Uniform Resource Locator (URL) that points to the location of the document(s) on the World Wide Web.

The user 4002 in this example sends a message in a VDE
25 container 4008 asking for the document identified in the URL. A

provider sends back a VDE container 4012 with the desired document 4010 that has been classified by the matching and classification utility 900. In this example, parameter data is provided in the form of scores indicating the relative emphasis on various topic classes, including

5 Economics (score=15), Politics (score=7), and Religion (score=2). Also indicated is the format of the content, which in this example is the desired MS Word. Also conveyed in the VDE container 4012 are a control set indicating, among other things, that the price is \$2.98 and no modifications are allowed.

10 In other examples, the classes might have been much more narrow, for example, "Clinton," "Greenspan", Federal Reserve Policy, Interest Rates. Also, the customer might have requested only those documents for which controls could be obtained that permitted modifications and/or excerpting and/or derivative works. In another

15 example, the matching and classification utility 900 may send one or more administrative events and/or classification and/or matching methods to the customer so that these methods could be applied by the customer. Alternatively, the customer may have send one or more methods as part of a smart object to one or more information

20 providers in search of information meeting the desired criteria.

**Example: The Atomic Aspects Can Support
Automated Extraction Of Portions Of A Content Unit
For Aggregation With Topically Consistent Portions
And/Or Units From Other Sources**

5 Not only may people desire specific information, but that
information may come from different parts of the same object or parts
of two or more objects. The matching and classification utility 900
can support the use of smart, classification based extraction and
aggregation methods. as shown in example 4100, Figure 66, where
10 two documents 4102(1,2) have been classified by the matching and
classification utility 900 into "chunks" or subobjects reflecting topic
classes and VDE controls have been provided for each chunk. The
"chunking", classification, and control set creation may be performed
and stored in a database and/or may be performed "on the fly" or as
15 needed.

To satisfy a request for information concerning travel to and in
the United Kingdom plus background information, an information
provider extracts parts of each document in the desired classes and
creates a new, recombinant document comprised of the subobjects
20 and packages the new document with appropriate controls in a VDE
container 4102(n). VDE controls for the subobjects may also be
carried along and may be modified by the provider and/or other
participants in a chain of handling and control.

The request for information may have been generated using any
25 query and/or search method, including semantic, Boolean, heuristic,

concept-based, and other approaches, and may have been generated explicitly and intentionally by a user and/or other value chain participant, or may have resulted more automatically from the analysis by a matching and classification utility 900 of usage, audit, and/or other rights management information and/or of "info exhaust," and/or of preference, demographic, and/or psychographic data and/or classes of data.

In another example, the matching and classification utility 900 may have sent administrative events and/or classification, search, and/or subobject combining methods 4106 to a provider and/or to a user for execution under the control of a local VDE node.

Example: Matching And Classification Utility 900 Supports Classification For Subsets Of Content Within A Content Unit (Nested Virtual Classifications)

Not only may the matching and classification utility 900 assist in locating whole objects, it may also assist in identifying and/or classifying any number of subobjects for a given whole. New control sets may be associated with each of these subobjects. These new control sets may differ from the control set that applies to the object as a whole. This capability allows matching and classification utility 900 and others value chain participants to locate desired classes of content that may be part of a larger object and possibly to retrieve, pay for, manage, use, or combine these parts in addition to, and/or instead of the whole object.

In example 4200, Figure 67, a VDE container 4202 created by the matching and classification utility 900 holds a text document that in this non-limiting example is the US "State of the Union Address." The matching and classification utility 900 has first classified the
5 entire document in the class "politics." The matching and classification utility 900 has also identified various subparts or subobjects and has classified each them into different classes or categories. In this example, the different classes represent different topic categories.

10 A user and/or other value chain participant may request only subobjects that have been categorized in one or more desired class(es). The desired subobjects may be packaged in a VDE container 4204 along with appropriate VDE controls for both the overall, new composite object and/or for each of the desired
15 subobjects. (The VDE controls can also be sent separately from the content subobjects.) These controls may pertain to the new whole object created from subparts selected on the basis of their membership in one or more specified class(es) and/or to the whole, new object comprised of these selected subobjects. In another
20 example, the subobjects may be drawn from different documents sharing the same overall topic, for example, from State of the Union addresses given in different years.

In one example, any value chain participant may send distribute one or more subparts of the original object.

In another example, the matching and classification utility 900 may send one or more administrative events and/or methods 4206 to value chain participants who may execute the methods to perform the operations to identify subobjects and/or to subset the whole object in
5 to parts based on class assignments.

Search engines can also use the subobject classifications to provide more precise results. For example, a search engine may have retrieved the State of the Union Address because the search criteria were "US politics speeches," but the whole or part of the object may
10 also have been retrieved searching for "US politics speeches welfare" or "speeches US president defense."

**Example: Matching And Classification Utility 900
Supports Classes Of Classes Based On Object
Identifier Standards And/Or Other Object Metadata**

15 Among the numerous advantages of the present inventions is the ability to create classes of classes based in part on rights management information. The feature may enhance search efficiency by enabling search engines to locate members of classes provided by any of numerous schemes for object naming and object metadata that
20 have been proposed. For example, the IETF Uniform Resource Locator (URL), the International Standard Book Number (ISBN), International Standard Serial Number (ISSN), MARC library catalog records, and the recent proposed "Dublin Core"(Weibel, Stuart, Jean Godby, Eric Miller, and Ron Daniel, "OCLC/NCSA Metadata
25 Workshop Report", URL <http://www.oclc.org:5047>

/oclc/research/conferences/metadata/ dublin_core_report.html) are non-limiting examples of prior classifications that can themselves be classified using the present inventions.

- Example 4300, Figure 68A-68B, shows several objects
- 5 4304(1)-4304(n) each of which may have associated with it various metadata 4302(1)-4302(n) that locates the object in one or more classes, non-limiting examples of which may include network address (URL), price, control set information, permission strings, subject category, title, and publisher.
- 10 In example step "1," object metadata 4302 is sent to a matching and classification utility 900 which (example step "2") may create new "classes of classes" 4306. These new classes 4306 are then made available on a Web page 4308 (example step "3") to interested parties who may then search for objects according to their membership in
- 15 one (or more) of these new classes of classes. In example step "4" an interested party 4320 sends a VDE container with a request to retrieve the Web page 4308 with the classes of metadata information. The Web server (in example step "5") returns a copy of the page 4312 to the interested user 4320, who (in example step "6") sends a VDE
- 20 container with a query to the matching and classification utility 900 asking, in this example, for objects in new class 3 that cost less than \$1.98, and that grant a "modify" permission. In example step "7," the matching and classification utility 900 returns a VDE container 4316 with list of objects that match the criteria. The matching and

classification utility 900 may, in turn, provide URLs or other location information for at least one member of the desired class(es) in the list in container 4316.

Example: Matching and Classification Utility 900

5 **Supports Electronic Gambling**

Electronic gambling may be among the services that will drive Internet growth in coming years. Such services raise many questions for both providers and for users or players of the service. For example, providers want to be able create attractive, compelling
10 entertainment experiences and in doing so, capture an important share of their intended markets. Users of these services will of course want to locate the most stimulating, entertaining, and perhaps most of all, rewarding gambling experiences.

Gambling providers may, in one example, differing classes of
15 games, rules, payoffs, odds, and/or interfaces. The present inventions can assist players in identifying the nature of various classes and locating specific instances of one or more classes. Within a particular class of games, for example, players may be particularly interested in the odds at the game of blackjack. In one example, a player may
20 prefer playing with a single digital deck of 52 cards and a particular number of (emulated) shuffles rather than with say four decks and more shuffles, the affect of the latter being to create a more random distribution. Smaller decks and fewer shuffles may make it easier to count cards and/or to otherwise increase the odds in favor of the
25 player, or at least in favor of the experienced, knowledgeable player.

In example 4400, shown in Figure 69, an arbitrary number of gamblers 4402(1)-4402(n) whose usage information flows in VDE containers 4404(1)-4404(n) to a usage clearinghouse 300. The usage clearinghouse 300 sends in VDE containers 4406 at least some of this
5 usage information to a matching and classification utility 900. In another example, the usage information may be sent directly from at least one user to the matching and classification utility 900. In this example, an arbitrary number of gambling providers 4406(1)-4406(n) may also send in VDE containers 4408(1)-4408(n) descriptive and/or
10 usage information to the matching and classification utility 900. Based on available information from relevant sources, the matching and classification utility 900 may create one or more classes and assign one or more providers, services, and/or users to a class. These class definitions may at least in part be based on privacy-related
15 control information.

In this one example, a gambler 4402(1) sends a VDE container 4410 with a query concerning best odds for blackjack to a matching and classification utility 900, who, in turn, sends back a VDE container 4412 with content indicating that gambling provider 2 gives
20 the best odds in blackjack, "best" here meaning those most favorable to the player. In another example, the gambler may then contact gambling provider 2 to play, and the play may consist of a series of communications in VDE containers between the gambling provider and the gambler.

**Example: Matching and classification utility 900
Supports Electronic Ticket Sales and Distribution**

The performing arts, exhibitions, theaters, and conferences are some non-limiting examples of events that may require tickets for admission. Electronic ticket agencies on the Internet and other electronic arenas provide a connection between the consumer and producers of the event. Consumers may want to know such information as the nature of the event, what classes of tickets exist for a given event and/or class of events, the price for different classes of tickets to an event, the availability of different classes of tickets to different classes of events, and similar information.

In the example 4500, shown in Figure 70, an arbitrary number of users 4504(1)-4504(n) whose usage information is sent in VDE containers 4508 to a usage clearinghouse 300 who, in turn, may send at least some of this usage information in at least one VDE container 4526 to a matching and classification utility 900. The usage information may reflect past ticket purchases, prices, seating preferences, preferred payment methods, preferred theaters and other venues, and other user preference and historical information.

Various ticket agencies 4506(1)-4506(n) may send information about specific events 4512 (1)-4512(n) and/or information about agency services 4514(1)-4514(n) to the matching and classification utility 900. In another example, an event promoter may send event information directly to the matching and classification utility 900.

In one example, a user wishes to find four seats for a particular concert or class of concerts and/or other events whose cost is not more than \$25.00. The user sends a VDE container with a request for information on who can supply the desired tickets to the desired
5 events at the requested price. In turn, the matching and classification utility 900 returns a VDE container indicating that tick agency 2 can provide the tickets.

In this example, user 2 sends a VDE container with a purchase request to ticket agency 2. The purchase request may specify not only
10 the specific event, desired pricing, and class of tickets, seat location, for example, but payment method as well, MasterCard for example. The ticket agency, in turn, may return a VDE container with confirmation of the ticket purchase at a given price, location, date, event, and/or using a particular payment method.

15 In another example, the tickets may be digital and may have associated with them one or more "seals", digital signatures, and/or certificates indicating the authenticity and/or integrity of the digital tickets.

* * * *

20 While the inventions have been described in connection with what is presently considered to be the most practical and preferred embodiments, the inventions are not to be limited to the disclosed embodiments but, on the contrary, is intended to cover various

modifications and equivalent arrangements included within the spirit and scope of the appended claims.

WE CLAIM:

- 1 1. A method including:
 - 2 (a) determining at least one class, class hierarchy, classification
 - 3 scheme, category or category scheme;
 - 4 (b) assigning cases, persons, and/or things to said determined
 - 5 class, class hierarchy, classification scheme, category or category
 - 6 scheme; and
 - 7 (c) selecting and/or matching cases, persons, and/or things
 - 8 based at least in part on said class, class hierarchy, classification
 - 9 scheme, category or category scheme and/or said assignment,
 - 10 wherein at least one of said steps (a)-(c) includes the step of
 - 11 using at least some rights management information.

- 1 2. A method as in claim 1 wherein said using step includes
- 2 using at least one control set.

- 1 3. A method as in claim 1 wherein said using step includes
- 2 using at least some information for controlling use of digital
- 3 information.

- 1 4. A method as in claim 1 wherein said using step includes
- 2 using at least some information for controlling at least one
- 3 transaction.

- 1 5. A method as in claim 1 wherein said using step includes
- 2 using at least some information for controlling at least one event.

1 6. A method as in claim 1 wherein said using step includes
2 using at least some information for controlling at least one
3 consequence of digital information use.

1 7. A method as in claim 1 wherein said using step includes
2 using at least some information for controlling at least one
3 consequence of at least one event.

1 8. A method as in claim 1 wherein said using step includes
2 the step of using at least some information for controlling at least one
3 consequence of at least one transaction.

1 9. A method as in claim 1 wherein said using step includes
2 using at least some information outputted by a rights management
3 process.

1 10. A method as in claim 1 further including the step of
2 outputting at least some rights management information.

1 11. A method as in claim 1 wherein at least one of steps (a)-
2 (c) includes using at least one secure container.

1 12. A method as in claim 1 wherein at least one of steps (a)-
2 (c) includes using at least one protected processing environment.

1 13. A method as in claim 1 further including the step of
2 using at least one of the techniques set forth at pages 60-82 of this
3 specification.

1 14. A method as in claim 1 wherein said using step includes
2 using at least one or more rules and/or their consequences.

1 15. A method as in claim 1 wherein at least one of steps (a)
2 and (b) includes at least one of the following steps:

3 (a) using at least one statistical technique identifying at least
4 one cluster of cases sharing similar profiles and/or features;

5 (b) using numerical taxonomy;

6 (c) using at least one of cluster analysis, factor analysis,
7 components analysis, and other similar data reduction/classification
8 technique;

9 (d) using at least one pattern classification technique, including
10 components analysis and neural approaches;

11 (e) using at least one statistical technique that identifies at least
12 one underlying dimension of qualities, traits, features, and/or
13 characteristics, and assigning parameter data indicating the extent to
14 which a given case has, possesses, and/or may be characterized by the
15 underlying dimension, factor, class, and/or result in the definition of
16 at least one class and/or the assignment of at least one case to at least
17 one class;

18 (f) using at least one statistical method employing fuzzy logic
19 and/or fuzzy measurement and/or whose assignment to at least one
20 class entails probabilities different from 1 or zero;

21 (g) using a Bayesian statistical classification techniques that uses
22 an estimate of prior probabilities in determining class definitions
23 and/or the assignment of at least one case to at least one class;

24 (h) using at least one statistical and/or graphical classification
25 and/or data reduction method that uses rotation of reference axes,
26 regardless of whether orthogonal or oblique rotations are used;
27 (i) using at least one statistical method for two and three way
28 multidimensional scaling; and
29 (j) using at least one knowledge based approach to
30 classification.

1 16. A system including:
2 an automatic class generator that generates at least one class,
3 class hierarchy, classification scheme, category or category scheme;
4 an automatic class assigner that assigns cases, persons and/or
5 things to said determined class, class hierarchy, classification scheme,
6 category or category scheme; and
7 at least one further component for automatically searching,
8 selecting and/or matching cases, persons, and/or things based at least
9 in part on said class, class hierarchy, classification scheme, category
10 or category scheme and/or said assignment,
11 wherein said system uses at least some rights management
12 information.

1 17. A system including:
2 first means for determining at least one class, class hierarchy,
3 classification scheme, category or category scheme;
4 second means for assigning cases, persons, and/or things to
5 said determined class, class hierarchy, classification scheme, category
6 or category scheme; and
7 third means for selecting and/or matching cases, persons,
8 and/or things based at least in part on said class, class hierarchy,
9 classification scheme, category or category scheme and/or said
10 assignment,
11 wherein at least one of said first, second and third means uses
12 at least some rights management information.

1 18. A Commerce Utility System providing a secure
2 execution space, the Commerce Utility System performing at least
3 one component based service function including at least one secure
4 component for execution within the secure execution space, the
5 Commerce Utility System including a communications facility
6 permitting communication of secure control information with at least
7 one electronic community participant,
8 wherein said component based service function uses at least
9 one class based at least in part on rights management information.

1 19. A Commerce Utility System as in claim 18 wherein the
2 component based service function assigns at least one member to at

3 least one class based at least in part on some rights management
4 information.

1 20. A Commerce Utility System as in claim 18 wherein the
2 component based service function matches persons and/or things
3 based at least in part on at least some rights management information.

1 21. A Commerce Utility System as in claim 18 wherein the
2 component based service function selects persons and/or things based
3 at least in part on at least some rights management information.

1 22. A Commerce Utility System as in claim 18 wherein the
2 component based service function narrowcasts information to
3 recipients based at least in part on at least some rights management
4 information.

1 23. A system or method including:
2 a computer network and
3 a control arrangement within the network that determines
4 and/or uses at least one of the following through use of rights
5 management information:

- 6 (a) class hierarchy,
7 (b) class structure,
8 (c) classification scheme,
9 (d) category, and
10 (e) category scheme.

1 24. A class-based system including at least one computer
2 that processes digital information, said system including at least one
3 element that uses at least some rights management information.

1 25. A method of operating a class-based system including at
2 least one computer that processes digital information, said method
3 including the step of using at least some rights management
4 information.

1 26. A system for assigning at least one thing or person to at
2 least one class including at least one computer that processes digital
3 information, said system including at least one element that uses at
4 least some rights management data in making said assignment.

1 27. A system for making and/or using at least one class-
2 based assignment including at least one computer that processes
3 digital information, said system including at least one element that
4 uses at least some rights management information.

1 28. A system for clearing at least one transaction including at
2 least one computer that processes digital information, said system
3 including at least one element that uses at least one class defined,
4 assigned, selected, and/or matched based at least in part on rights
5 management information.

1 29. A method for authorizing at least one computer and/or
2 computer user including the step of using at least one class defined,

3 assigned, selected, and/or matched based at least in part on rights
4 management information.

1 30. A method for authorizing at least one electronic
2 transaction including the step of using at least one class defined,
3 assigned, selected, and/or matched based at least in part on rights
4 management information.

1 31. A method for initiating and/or performing at least one at
2 least in part secure electronic transaction including the step of using
3 class related information defined, assigned, selected, and/or matched
4 based at least in part on rights management information.

1 32. An information processing method including the steps
2 of:
3 securely charging a fee; and
4 conditioning said charging step at least in part on at least one
5 class defined, assigned, selected, and/or matched based at least in part
6 on rights management information.

1 33. A method for securely exchanging digital information
2 including the step of at least in part defining, assigning, selecting,
3 and/or matching at least one class based at least in part on rights
4 management information.

1 34. A method for performing at least one rights operating
2 system based transaction including the step of defining, assigning,

3 selecting, and/or matching at least one class based at least in part on
4 rights management information.

1 35. A method for performing at least one protected
2 processing environment operation including the step of defining,
3 assigning, selecting, and/or matching at least one class based at least
4 in part on rights management information.

1 36. A method of pushing information including the steps of
2 classifying recipients and/or information to be sent to said recipients
3 based at least in part on rights management information, and selecting
4 said information to distribute to said recipients based at least in part
5 on said classifying.

1 37. A method of pushing information including the steps of
2 classifying recipients and/or information to be sent to said recipients
3 based at least in part on rights management information, and
4 matching at least a portion of said information with at least one class
5 of said recipients based at least in part on said classifying.

1 38. A method of pushing information as in claim 37 further
2 including the step of creating a classification scheme and/or hierarchy
3 using at least some rights information.

1 39. A method of pushing information as in claim 37 further
2 including the step of assigning at least some information and/or at
3 least one recipient to a class or category, said assignment based at
4 least in part on rights management information.

1 40. A subject switch for matching subscribers and/or
2 recipients desiring information in one or more classes with one or
3 more sources of information, wherein the subject switch matches at
4 least one subscriber and/or participant with at least one information
5 source on a mapping based at least in part on rights management
6 information.

1 41. A subject switch as in claim 40 wherein said information
2 source:

3 selects at least some information, said selection based on at
4 least one class, and wherein said assignment of said at least some
5 information to said at least one class is based at least in part on rights
6 management information; and

7 sends at least some said selected information to said subscriber
8 in accordance with said subscriber's subscribing to said class of
9 information.

1 42. A subject switch as in claim 40 wherein at least one of
2 said subject switch, said subscriber and/or participant and said
3 information source includes at least one computer providing a
4 protected processing environment.

1 43. A subject switch as in claim 40 wherein at least one
2 subscriber and/or participant uses rights management information at
3 least in part to persistently subscribe to at least some information
4 provided by at least one information source.

1 44. A subject switch as in claim 40 wherein the subject
2 switch includes means for using at least one class definition for said
3 mapping.

1 45. A subject switch as in claim 40 wherein the subject
2 switch includes means for responding to a subscriber and/or
3 participant request by providing information indicating information
4 sources in at least one specified or desired class.

1 46. A subject switch as in claim 40 further including a
2 messaging service for use by at least two of said subject switch, said
3 subscriber and/or participant and said information source and/or
4 participant to communicate electronically.

1 47. A subject switch as in claim 46 wherein said electronic
2 communications uses at least one secure container.

1 48. A subject switch as in claim 40 wherein at least one of
2 said subject switch, subscriber, or information source uses at least one
3 control set associated with at least some information received by at
4 least one subscriber.

1 49. A digital narrowcasting arrangement comprising:
2 a computer; and
3 at least one classifying element used to select content to
4 narrowcast to recipients based at least in part on rights management
5 information.

1 50. A digital narrowcasting arrangement as in claim 49
2 wherein the classifying element classifies at least one of (a) a
3 recipient, and (b) content, based at least in part on rights management
4 information.

1 51. A digital narrowcasting arrangement as in claim 49
2 wherein said classifying element defines at least one class using at
3 least some rights management information.

1 52. A digital narrowcasting arrangement as in claim 49
2 wherein the classifying element assigns at least some content to at
3 least one class, said assignment based on at least some rights
4 management information.

1 53. A digital narrowcasting arrangement as in claim 49
2 wherein the classifying element defines at least one class based at
3 least in part on content selections previously made by the recipients
4 and/or profiles generated based at least in part on recipient input.

1 54. A digital narrowcasting arrangement as in claim 49
2 wherein the classifying element sends a content request including
3 classification data and destination information to at least one
4 provider.

1 55. An information distribution system including: a
2 computer network; and a selection arrangement that selects
3 information for use by individual recipients using classes based at
4 least in part on rights management information.

1 56. An information distribution system as in claim 55
2 wherein the system further includes a classifying element that
3 determines at least one class of content and/or service of interest to at
4 least one recipient.

1 57. An information distribution system as in claim 56
2 wherein said classifying element defines at least one class using at
3 least some rights management information.

1 58. An information distribution system as in claim 56
2 wherein said classifying element assigns at least some content to at
3 least one class, said assignment based on at least some rights
4 management information.

1 59. An information distribution system as in claim 55
2 wherein the system includes means for allowing the user to choose to
3 receive the selected information.

1 60. An enterprise information system including a computer
2 system for classifying employees, said system including at least one
3 rights management component that distributes information to the
4 employees based at least in part on employee classification.

1 61. An enterprise information system as in claim 60 wherein
2 the computer matches the information to employees based at least in
3 part on the employee classification.

1 62. An enterprise information system as in claim 60 wherein
2 the employee classification is used to gather information for

3 employees without revealing substantial information concerning
4 individual employees.

1 63. A method for conducting a chain of handling and/or
2 control including the steps of allowing plural parties to contribute
3 rules and/or consequences, and performing at least one classification
4 based at least in part on said rules and/or consequences.

1 64. A method as in claim 63 wherein at least some of said
2 contributed rules and/or consequences are class based.

1 65. A method as in claim 63 wherein at least one of said
2 parties modifies at least one of said rules and/or consequences based
3 at least in part on class.

1 66. A method as in claim 63 including the step of generating
2 class assignments based at least in part on said rules and/or
3 consequences, and sending said class assignments to at least one
4 clearinghouse.

1 67. A method as in claim 63 including the step of classifying
2 said rules and/or consequences to provide at least one class, and
3 fulfilling at least one request by selecting based on said class.

1 68. A directory services system for classifying confidential
2 information, the system including:
3 a communications component that receives directory requests;
4 and
5 a response component that uses said classification to respond to

6 directory requests while preserving confidentiality of said
7 confidential information.

1 69. A directory services system as in claim 68 wherein said
2 response component uses at least one classification process to classify
3 items in a directory, and uses results of the classification process, at
4 least in part, to respond to directory requests.

1 70. A directory services system as in claim 68 wherein said
2 response component sends information to destinations revealed by the
3 results of the classification process without revealing at least some
4 information concerning said destinations to the information source.

1 71. A microsegmented merchandising technique including
2 the steps of performing classification based at least in part on usage
3 data and/or lifestyle profiles, and distributing offers for products
4 and/or services based at least in part on the classification.

1 72. A microsegmented merchandising technique as in claim
2 71 wherein the performing step includes defining at least one class
3 hierarchy based at least in part on rights management information.

1 73. A microsegmented merchandising technique as in claim
2 71 further including the step of combining plural offers for different
3 products and/or services based at least in part on said classification.

1 74. A trading network including:
2 a communications element for communicating digital signals;
3 and

4 means for matching value chain participants through a
5 classification based at least in part on rights management
6 information.

1 75. A trading network as in claim 74 further including means
2 for defining at least one class hierarchy based at least in part on rights
3 management information.

1 76. A trading network as in claim 74 further including means
2 for determining class membership based at least in part on action
3 and/or information provided by at least one value chain participant.

1 77. A trading network as in claim 74 wherein said matching
2 means includes means for at least in part performing at least one
3 electronic negotiation.

1 78. A securities trading method including the step of
2 performing a classification process at least in part using at least one
3 rights management element, and using the classification process to
4 select securities for trade.

1 79. A securities trading method as in claim 78 wherein said
2 classification process includes defining at least one class hierarchy
3 based at least in part on rights management information.

1 80. A currency/debt trading system including:
2 a currency or debt trading computer; and
3 an arrangement coupled to said computer that performs at least

4 one classification process based at least in part on rights management
5 information.

1 81. A currency/debt trading system as in claim 80 wherein
2 said arrangement includes means for defining at least one class
3 hierarchy based at least in part on rights management information.

1 82. A currency/debt trading system as in claim 80 wherein
2 the arrangement uses classification to maximize return or minimize
3 loss.

1 83. A financial institution selection system including a
2 computer that classifies financial institutions based at least in part on
3 rights management information.

1 84. A software distribution method including the steps of
2 generating class information based at least in part on rights
3 management information, and selecting software to be distributed
4 and/or recipients who are to receive distributed software based at least
5 in part on class information.

1 85. A software distribution method as in claim 84 wherein
2 said generating step includes defining a class hierarchy using at least
3 some rights management information.

1 86. A software distribution method as in claim 84 wherein
2 the selecting step includes selecting software to be distributed by
3 classifying the software based at least in part on rights management
4 information associated with the software.

1 87. A software distribution method as in claim 80 wherein
2 the selecting step includes selecting recipients to receive software
3 based at least in part on usage information provided by a rights
4 management process.

1 88. A classification technique including the step of
2 authenticating class membership based at least in part on digital
3 credentials and/or certificates.

1 89. A classification technique as in claim 88 wherein said
2 digital credentials are digital certificates.

1 90. A classification technique as in claim 88 wherein said
2 digital credentials are digital membership cards.

1 91. A classification technique as in claim 88 further
2 including the step of deciding class membership based at least in part
3 on rights management information.

1 92. A classification technique as in claim 88 further
2 including the step of classifying at least one of users, nodes, devices,
3 networks, servers, clients and services based at least in part on rights
4 management information.

1 93. A classification technique as in claim 88 further
2 including the step of conditioning at least one rights management
3 process at least in part on authenticated class membership.

1 94. A computer system including:
2 a first arrangement that generates class-based controls to
3 participants based at least in part on class and/or class-based
4 assignments; and
5 a second arrangement that allows participants to interact with
6 information and/or one another at least in part using said class-based
7 controls.

1 95. A computer system as in claim 94 further including
2 means for using said class-based controls to limit participants' access
3 to information and/or services based on participants' classes.

1 96. A health care computer system including an arrangement
2 for issuing health care workers, administrators and insurers class-
3 based digital credentials and/or certificates, wherein the digital
4 information sent to said health care workers and administrators
5 includes class-based controls that condition use and/or access to
6 information based at least in part on said class-based digital
7 credentials and/or certificates.

1 97. A health care computer system as in claim 96 further
2 including means for allowing said health care workers, administrators
3 and insurers sharing a common object subject to class-based controls
4 to have access to different portions of the object based at least in part
5 on said class-based controls.

1 98. A work process automation system including a matching
2 and/or classification computer that matches tasks to resources based
3 at least in part on assigning classifying the tasks and/or the resources
4 to at least one class.

1 99. A work process automation system as in claim 98
2 wherein said matching and/or classification computer includes means
3 for defining at least one class hierarchy based at least in part on rights
4 management information.

1 100. A work process automation system as in claim 98
2 wherein said matching and/or classification computer includes means
3 for matching based at least in part on rights management information.

1 101. An automatic governmental and/or societal rights
2 supporting system including a matching and/or classification
3 computing element that assigns and/or classifies entities to at least
4 one class based at least in part on rights management information.

1 102. An automatic governmental and/or societal rights
2 supporting system as in claim 101 wherein the matching and/or
3 classification computing element includes means for defining a class
4 hierarchy based at least in part on rights management information.

1 103. An automatic governmental and/or societal rights
2 supporting system as in claim 101 wherein the matching and/or
3 classification computing element includes means for classifying
4 entities based on at least one of the following:

5 tax status;
6 right to receive certain information;
7 right to engage in certain transactions; and
8 jurisdiction.

1 104. An automatic taxing authority computer including
2 means for issuing tax class control sets based at least in part on tax-
3 based class definitions, and means for using said tax control sets at
4 least in part to collect and/or enforce taxation.

1 105. A method for adaptively presenting information
2 differently to different participants, including associating said
3 participants with classes, and controlling presentation based at least in
4 part on class-based control sets included within the information.

1 106. A method as in claim 105 further including using said
2 class-based control sets to match participants with different portions
3 of said information.

1 107. A method as in claim 105 further including using said
2 class-based control sets to change the form in which information is
3 presented based at least in part on said classes.

1 108. A method as in claim 105 further including the step of
2 operating said class-based control sets based at least in part on
3 metadata associated with different portions of said information.

1 109. A method as in claim 105 further including selecting
2 said class-based control sets between different images for

3 presentation based at least in part on one or more classes associated
4 with a participant.

1 110. A method as in claim 105 further including using said
2 class-based control sets to emphasize certain portions of said
3 information over other portions in said presentation based at least in
4 part on one or more classes associated with a participant.

1 111. A method as in claim 105 further including using at
2 least one computer having a protected processing environment.

1 112. A method for adaptively presenting information
2 differently to different participants including:
3 classifying the different participants based on capability; and
4 using class-based control sets associated with said information
5 to change the difficulty of the presentation based at least in part on
6 said classification.

1 113. A method as in claim 112 wherein the different
2 recipients are classified based on grade level.

1 114. A method as in claim 112 including the step of
2 changing the vocabulary and/or syntactical complexity of the
3 presentation based at least in part on said classification.

1 115. A method as in claim 112 further including the step of
2 using said class-based control sets to ensure that in at least some
3 cases, recipients in different classes pay different levels of
4 compensation for said presentation.

1 116. A method for adaptively presenting information
2 differently to different participants including:
3 classifying different participants based on capability, and
4 using class-based control sets associated with said information
5 to change the language of the presentation based at least in part on
6 said classification.

1 117. An information searching mechanism including a
2 matching computer element that classifies information based at least
3 in part on rights management information, said computing element
4 including means responsive to user requests to search for information
5 based at least in part on said classification.

1 118. An information searching mechanism as in claim 117
2 wherein said matching computer element further includes means for
3 assigning information to classes based at least in part on rights
4 management information.

1 119. An information searching mechanism as in claim 117
2 wherein said matching computer element includes means for scoring
3 information based at least in part on user indicated parameters.

1 120. An information searching mechanism as in claim 117
2 wherein said matching computer element includes means for
3 responding to at least some user requests by providing Universal
4 Resource Locator designations of where information can be found.

1 121. An information handling method including the step of
2 using class-based controls to control support extraction and/or
3 aggregation of information.

1 122. An information handling method as in claim 121 further
2 including using a computing element to extract information from
3 plural objects based at least in part on class-based criteria.

1 123. An information handling method as in claim 121 further
2 including using a computing element to aggregate information based
3 at least in part on class-based criteria.

1 124. An information handling method as in claim 121 further
2 including using said class-based controls to represent nested or multi-
3 level classifications.

1 125. An information classification method including the step
2 of generating at least one class hierarchy from other plural
3 classification hierarchies based at least in part on rights management
4 information and/or class-based rights management information based
5 at least in part on classification metadata.

1 126. An information classification method as in claim 125
2 further including basing said other plural classification hierarchies at
3 least in part on object metadata.

1 127. An information classification method as in claim 125
2 further including specifying said classification object metadata

3 specified classifications based on at least one of location, name,
4 prices, permissions, ISSN, title, author, publisher and/or date.

1 128. An information classification method as in claim 125
2 further including generating said class-based rights management
3 information by classifying classes.

1 129. An electronic gambling system including a computer
2 that matches gamblers with plural gambling providers based at least
3 in part through classifying the gambling providers using rights
4 management information.

1 130. An electronic gambling system as in claim 129 wherein
2 the computer includes means for classifying the gamblers based at
3 least in part on rights management information.

1 131. An electronic gambling system as in claim 129 wherein
2 the computer includes at least one protected processing environment.

1 132. An electronic gambling system as in claim 129 wherein
2 the computer uses at least one control set to classify, select and/or
3 match at least one of said gambling providers, and/or gamblers.

1 133. An electronic ticketing system including a computer
2 that matches recipients with tickets to events through classifying said
3 recipients, said system including a computer that matches tickets
4 and/or said events based at least in part on rights management
5 information.

1 134. An electronic ticketing system as in claim 133 wherein
2 a recipient provides a request containing event and rights
3 management criteria, and the computer matches the recipient with a
4 provider based at least in part on said classifying process.

1 135. An electronic ticketing system as in claim 133 wherein
2 the rights management information includes method of payment
3 information.

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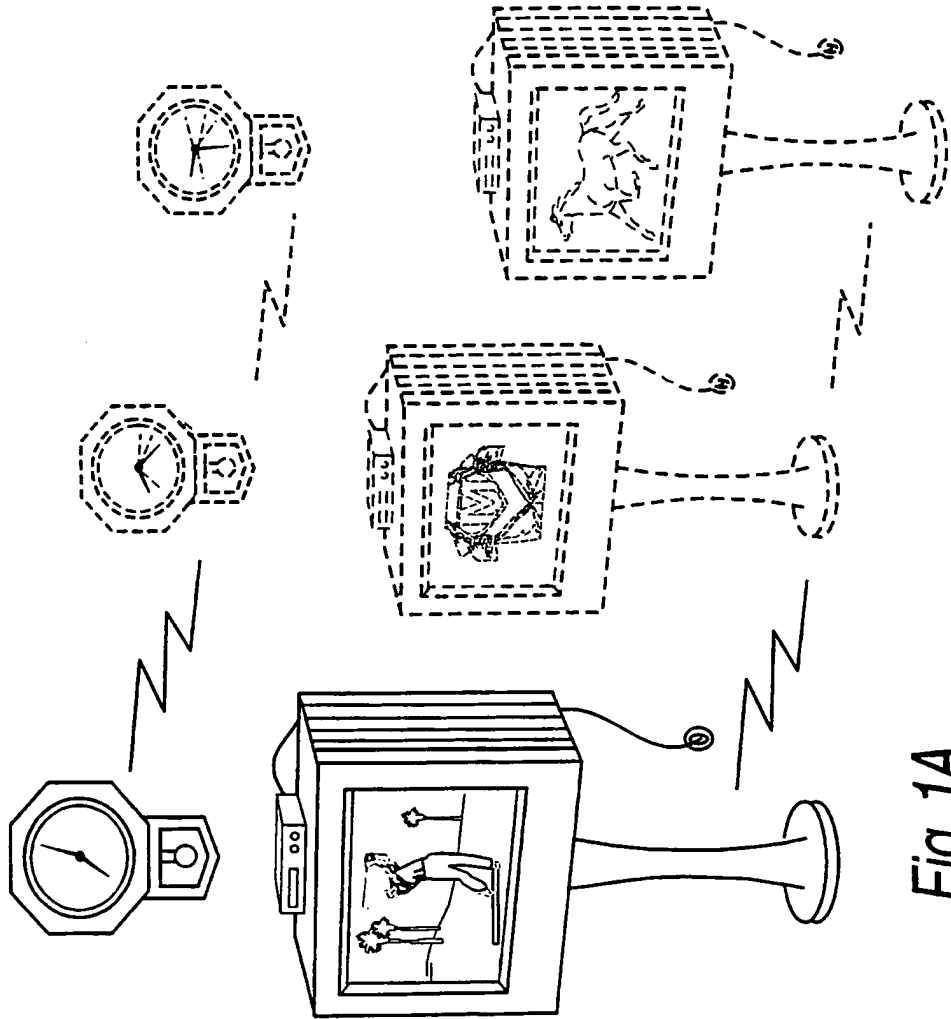


Fig. 1A
(Prior Art)

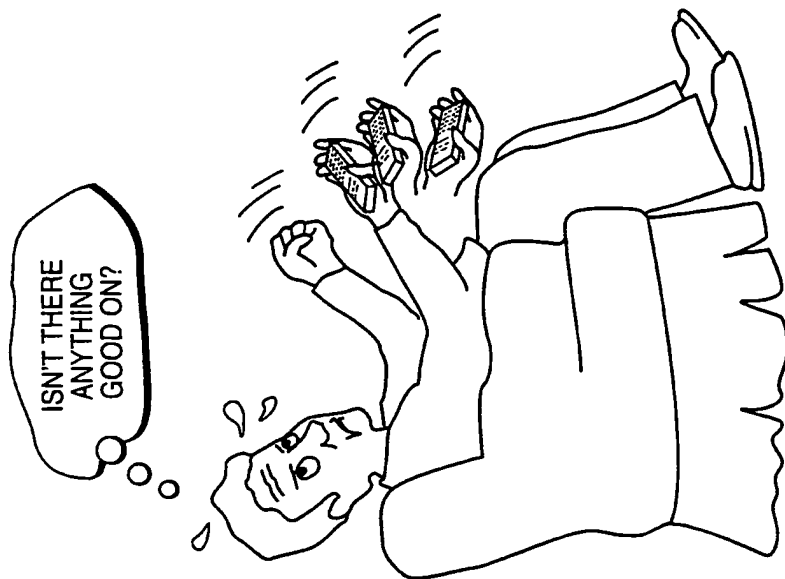




Fig. 1B
(Prior Art)

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Fig. 2
(Prior Art)

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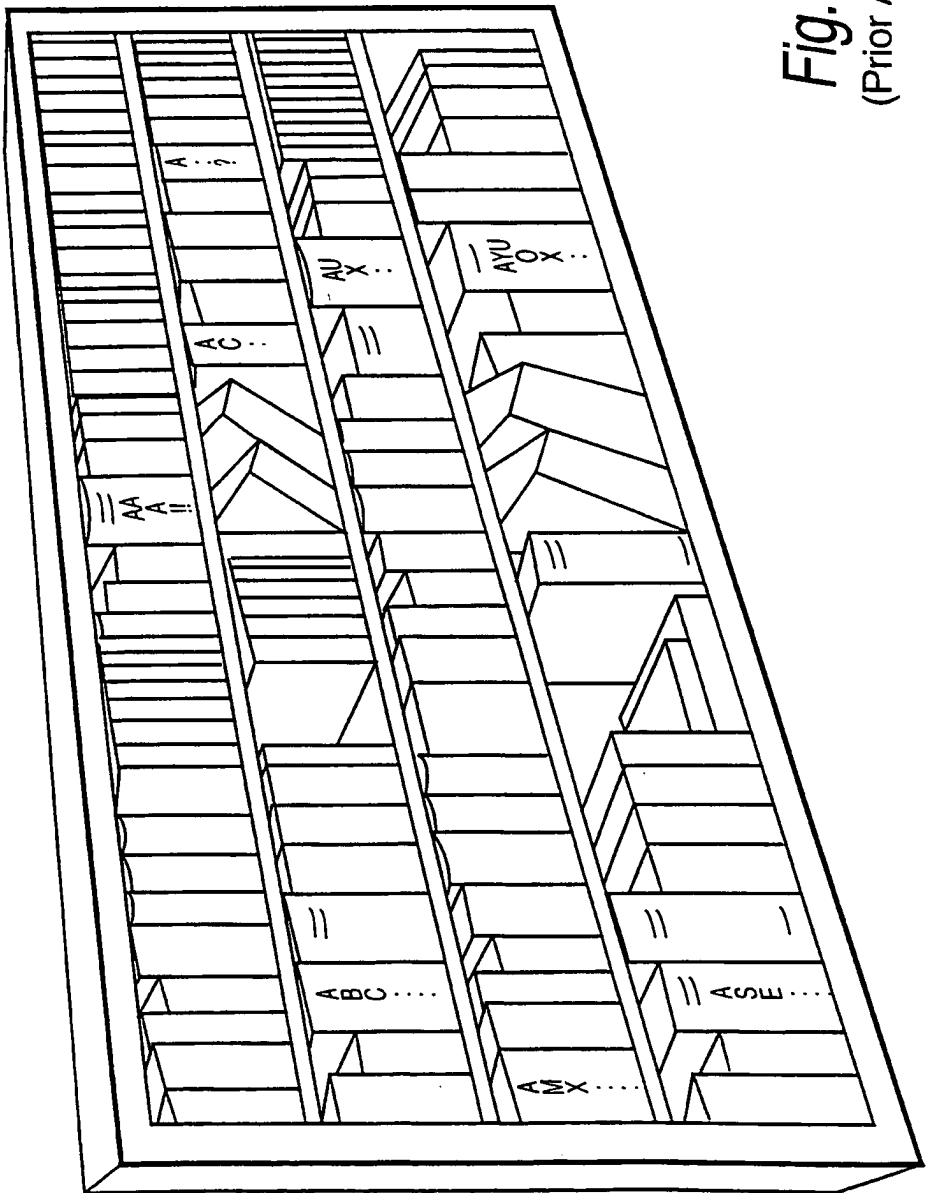
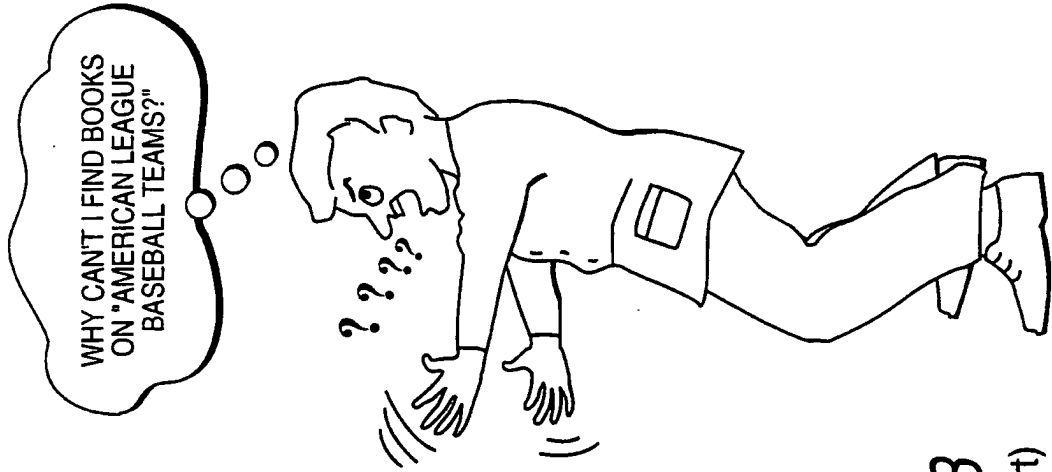


Fig. 3
(Prior Art)

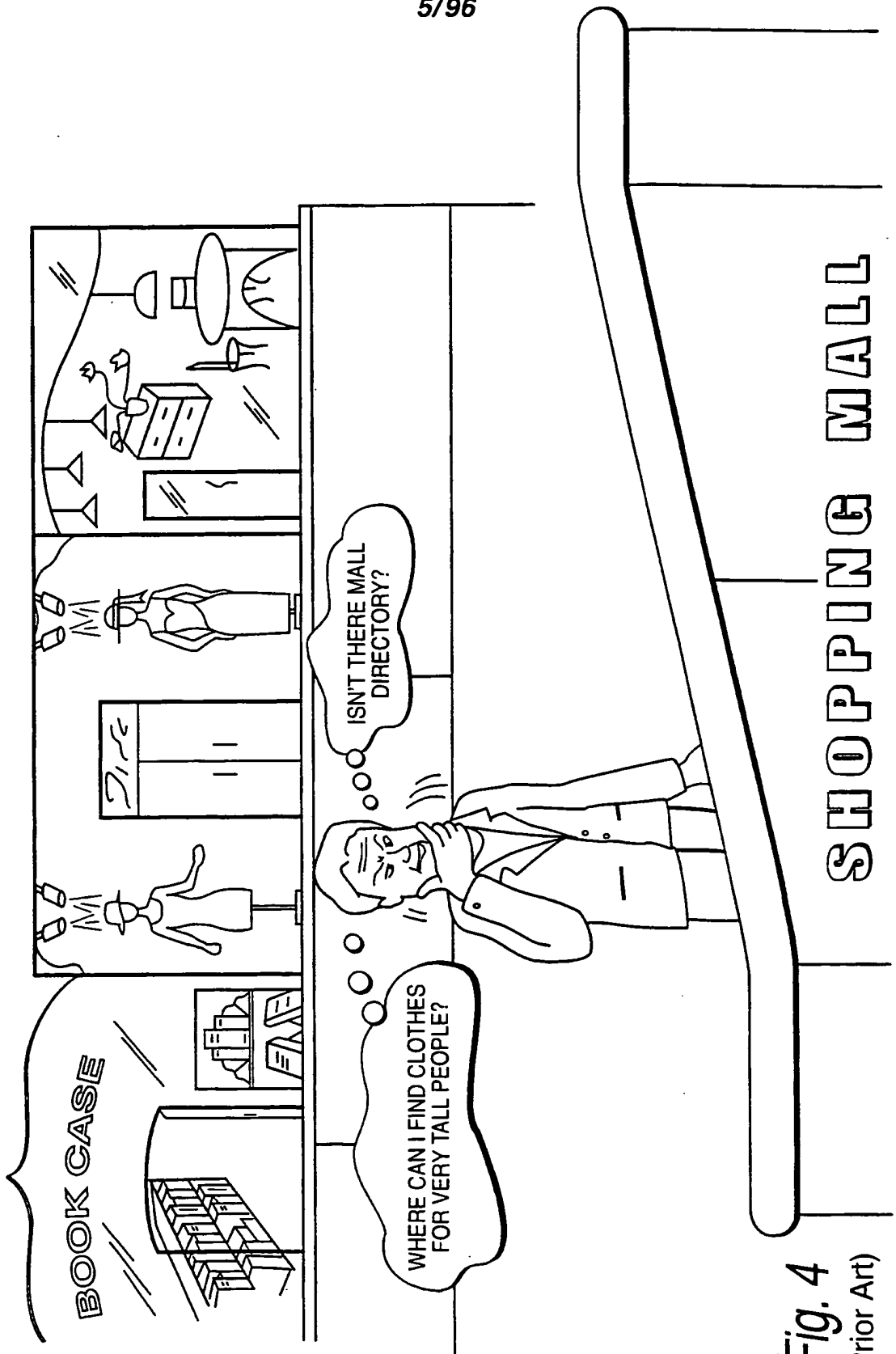


Fig. 4
(Prior Art)

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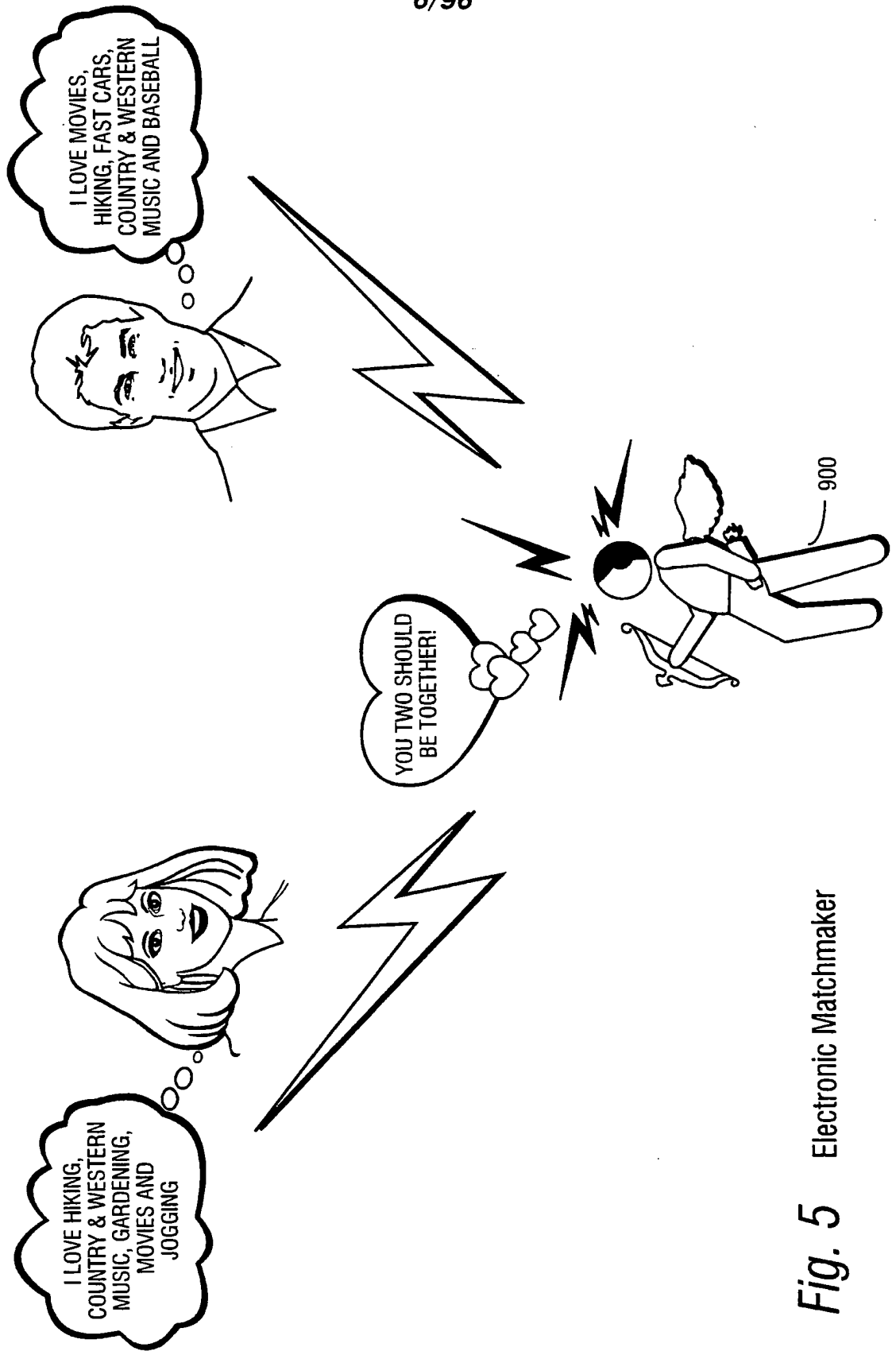
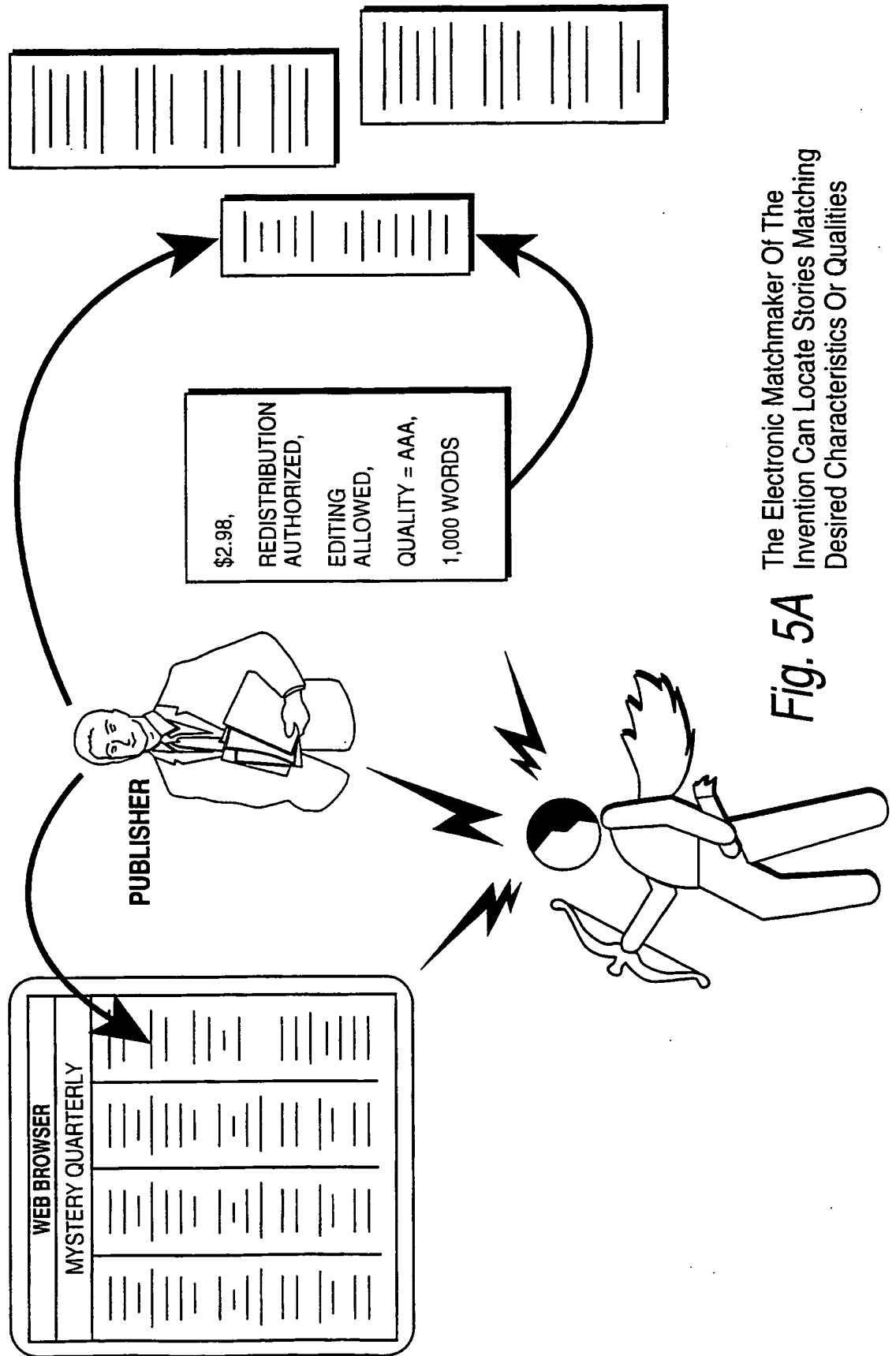


Fig. 5 Electronic Matchmaker



The Electronic Matchmaker Of The Invention Can Locate Stories Matching Desired Characteristics Or Qualities

Fig. 5A

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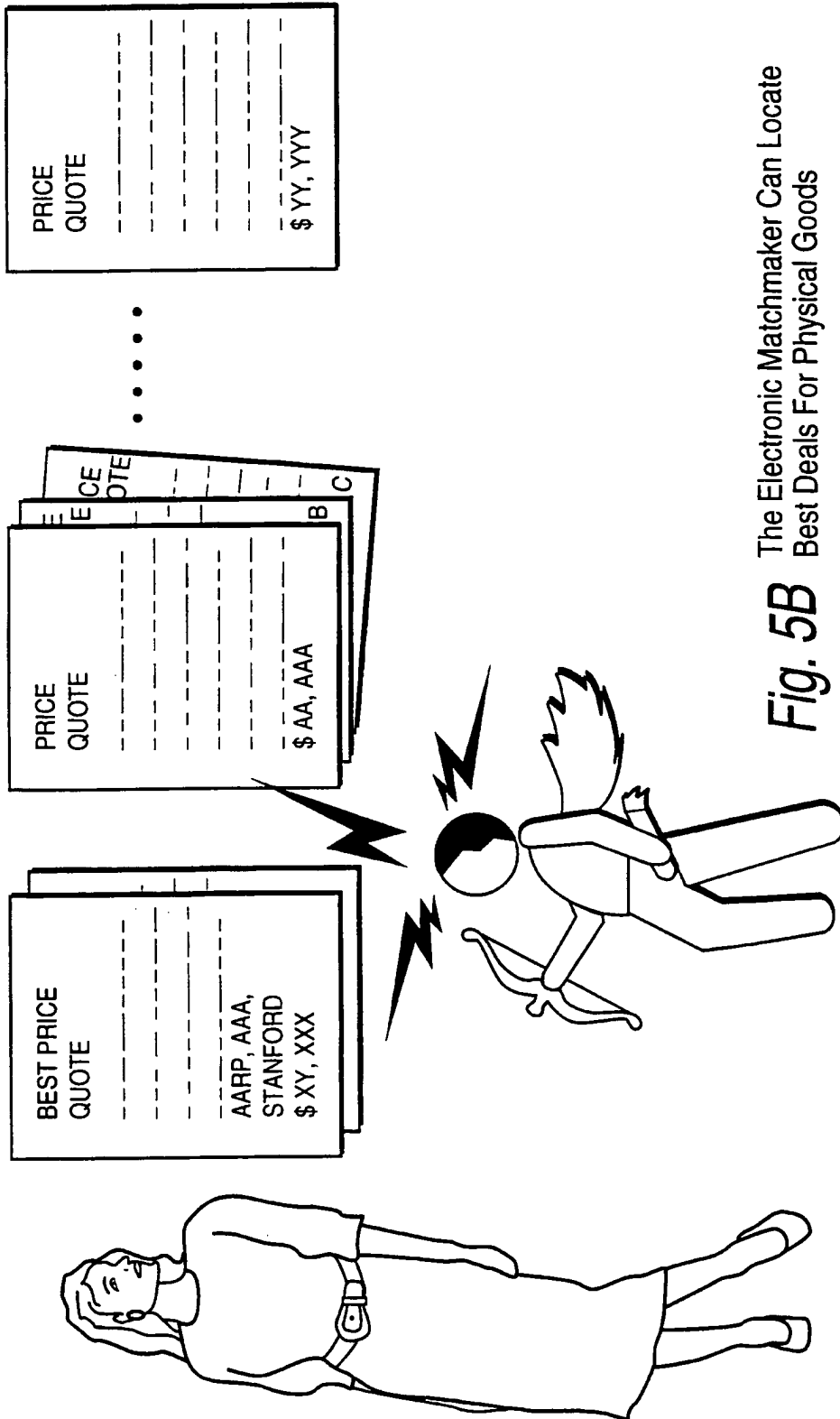


Fig. 5B The Electronic Matchmaker Can Locate Best Deals For Physical Goods

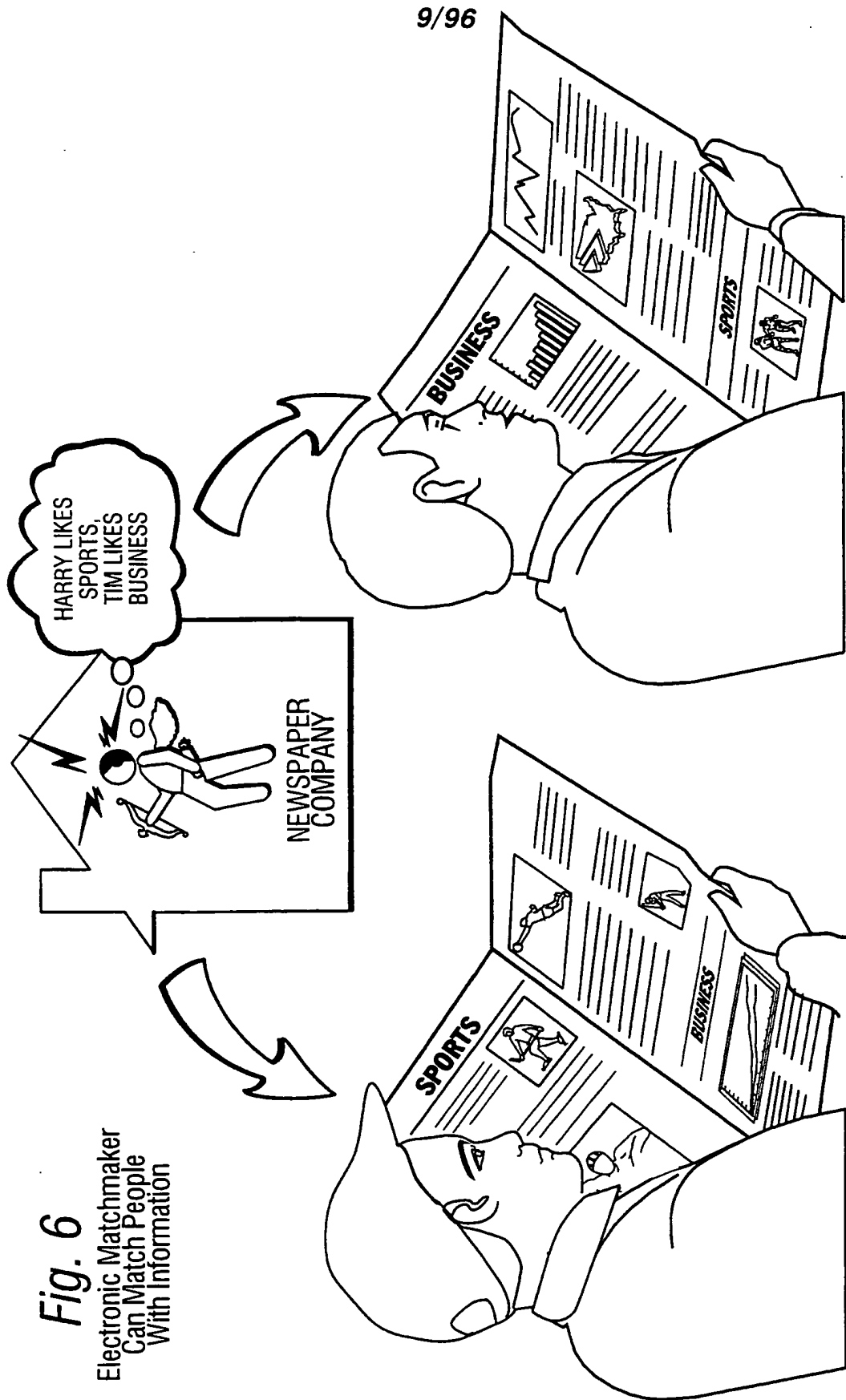


Fig. 6
Electronic Matchmaker
Can Match People
With Information

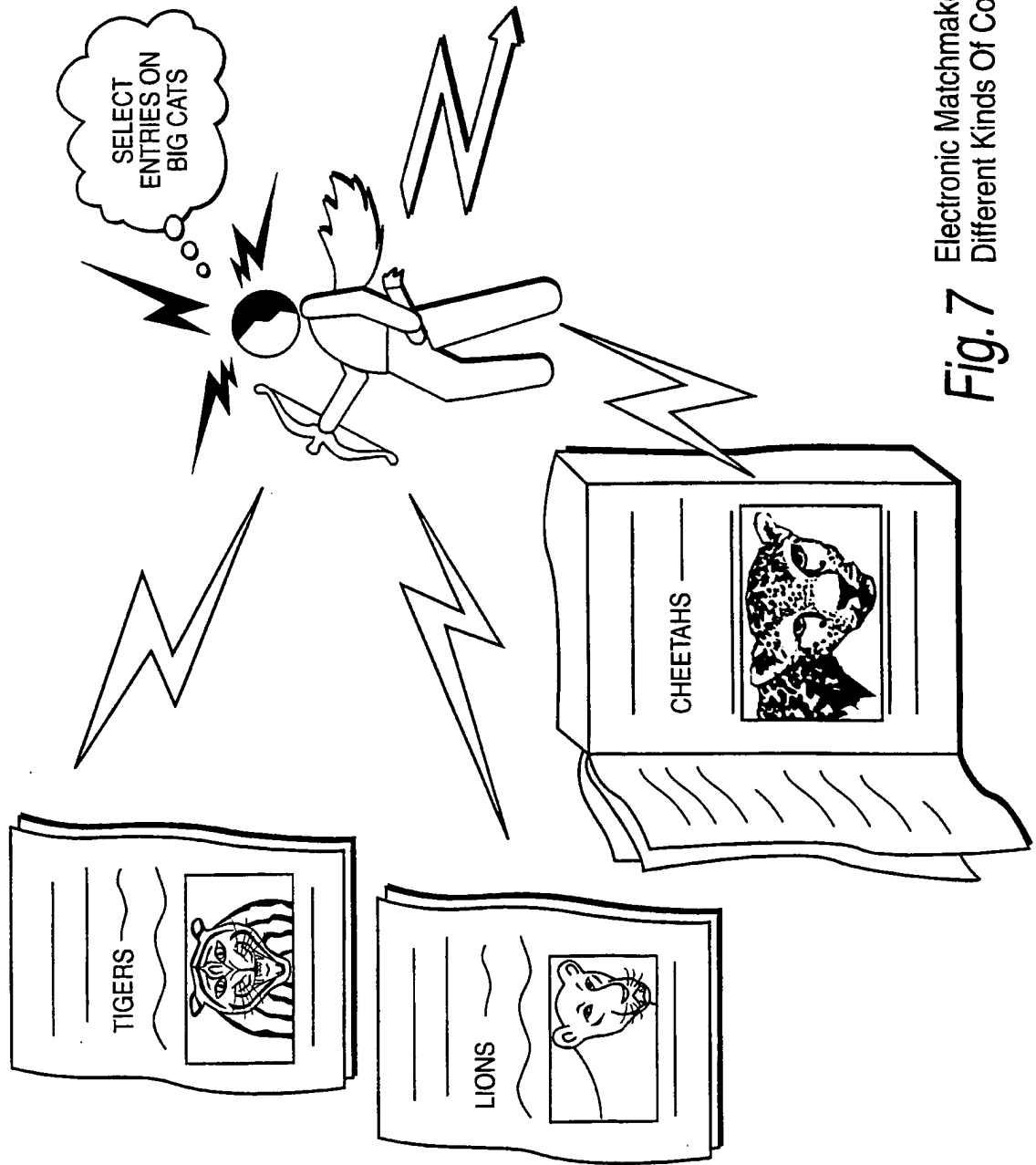
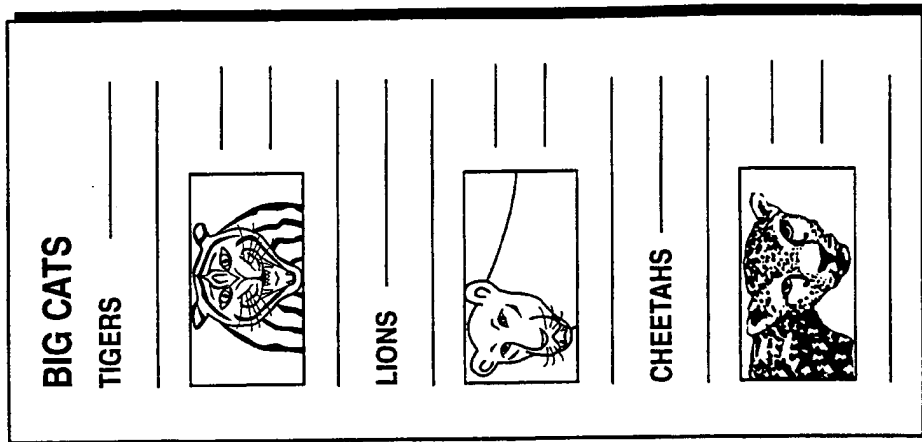


Fig. 7 Electronic Matchmaker Can Match Different Kinds Of Content

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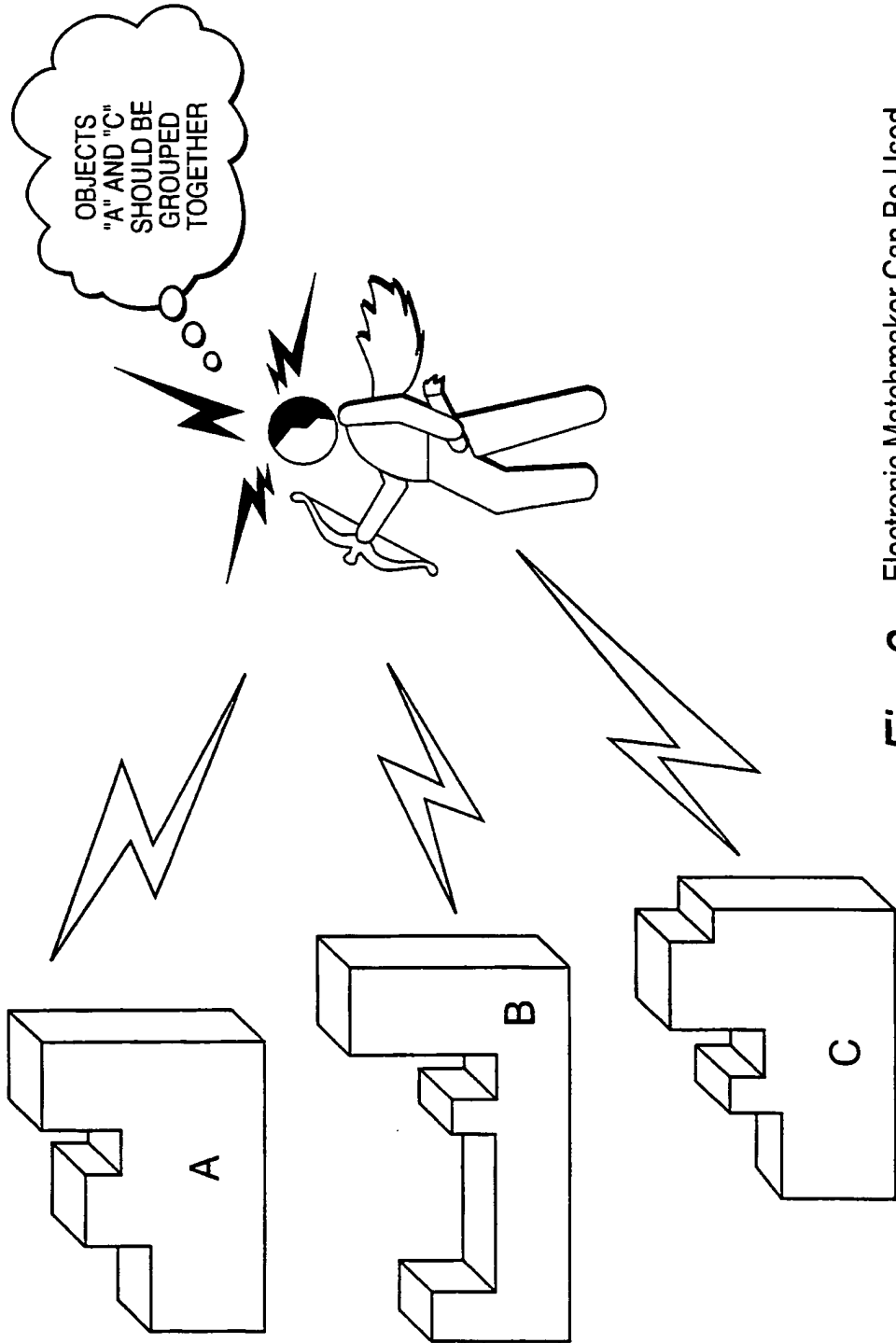


Fig. 8 Electronic Matchmaker Can Be Used For Matching Any Kinds of Things

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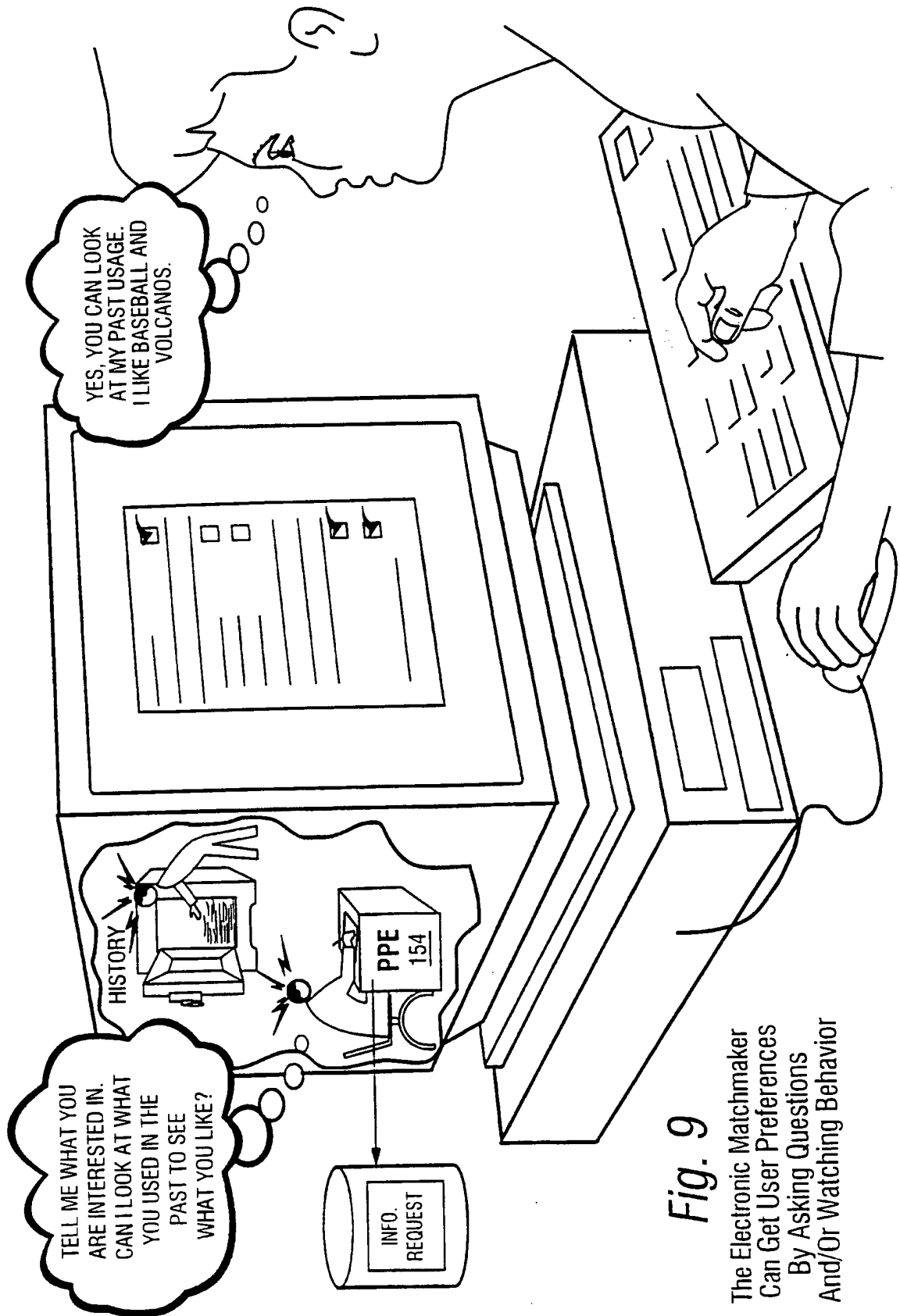


Fig. 9
 The Electronic Matchmaker
 Can Get User Preferences
 By Asking Questions
 And/Or Watching Behavior

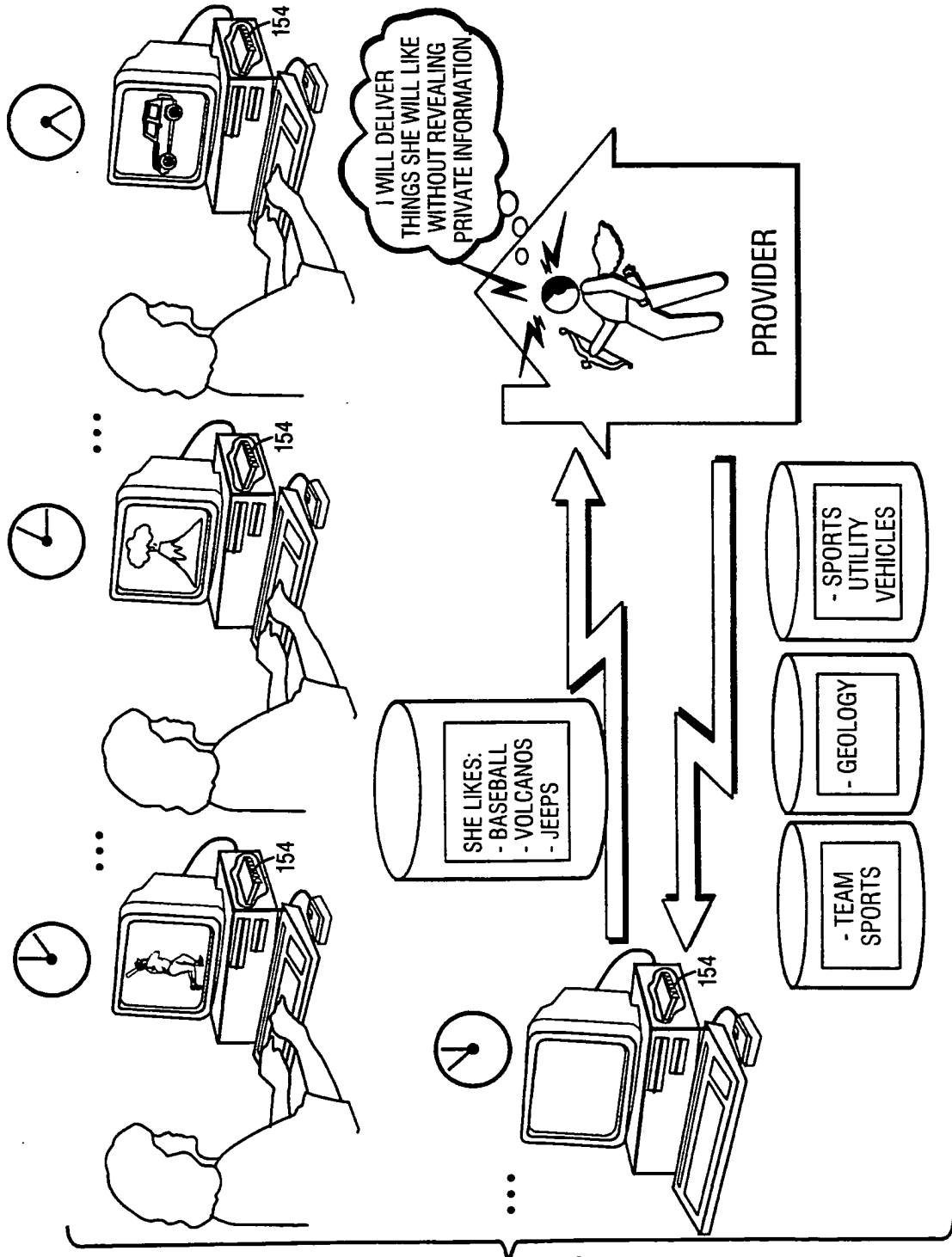
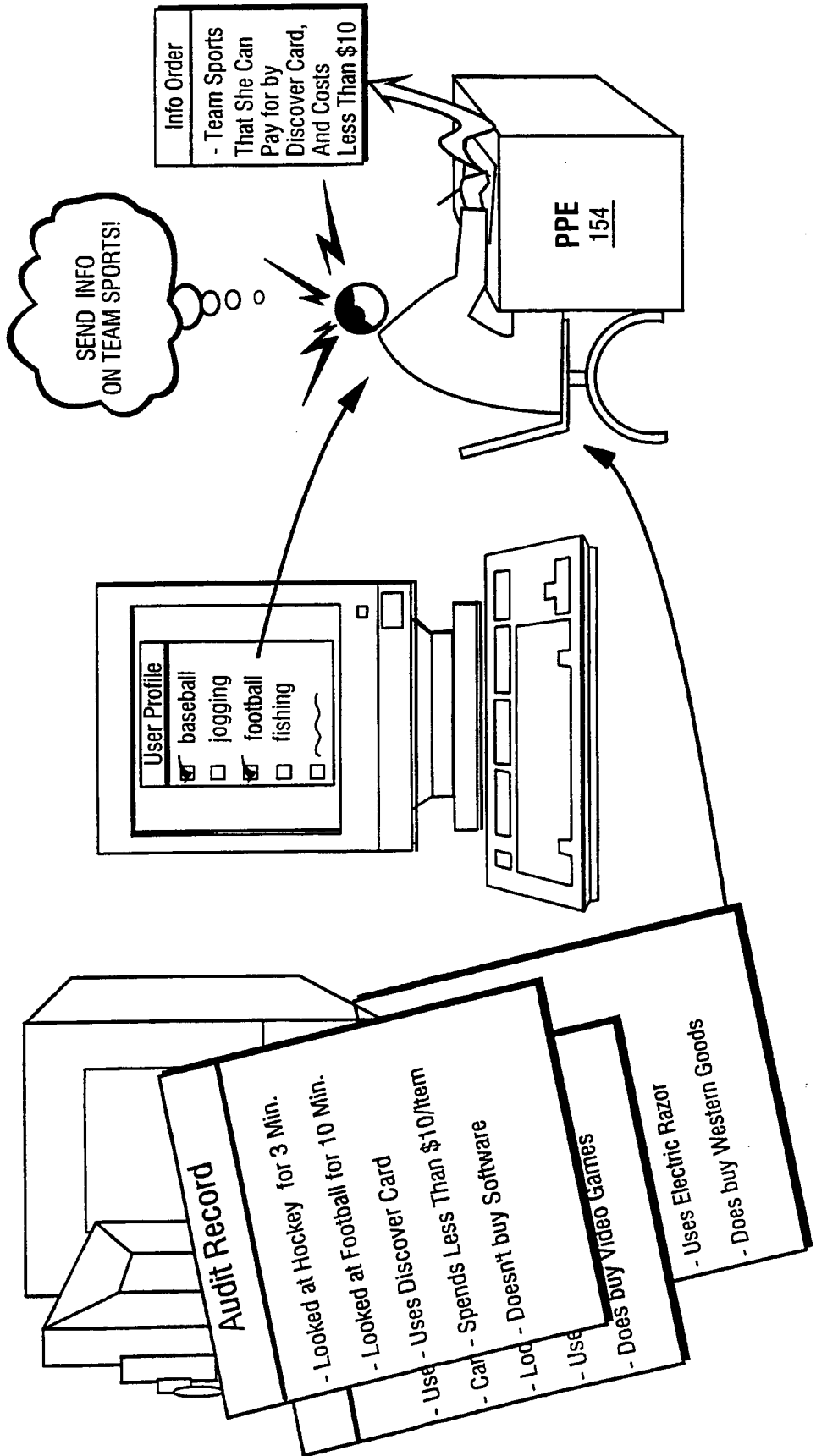


Fig. 10
Example Electronic
Matchmaking Process

Fig. 11 Example User Rights Management Information
By Electronic Matchmaker



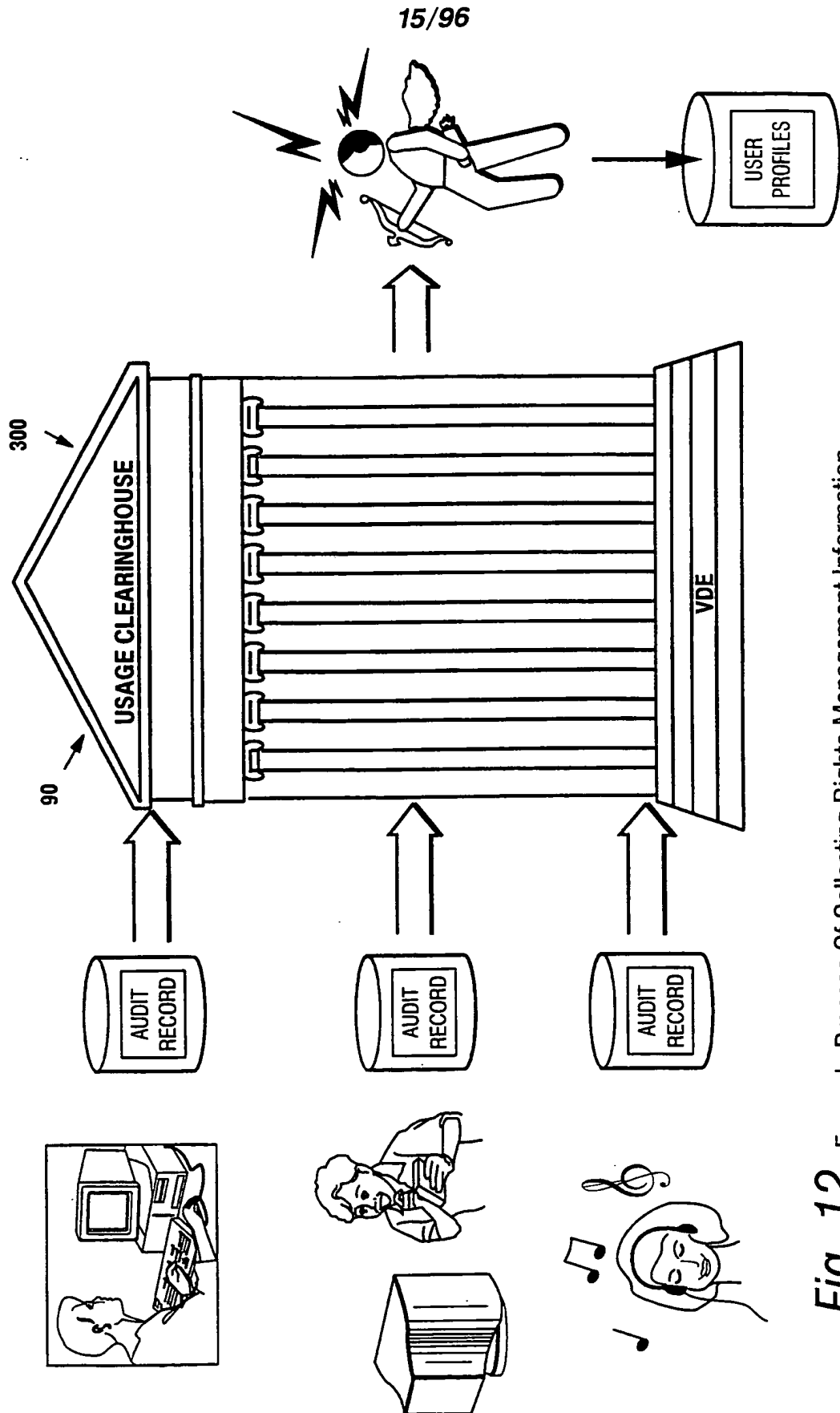
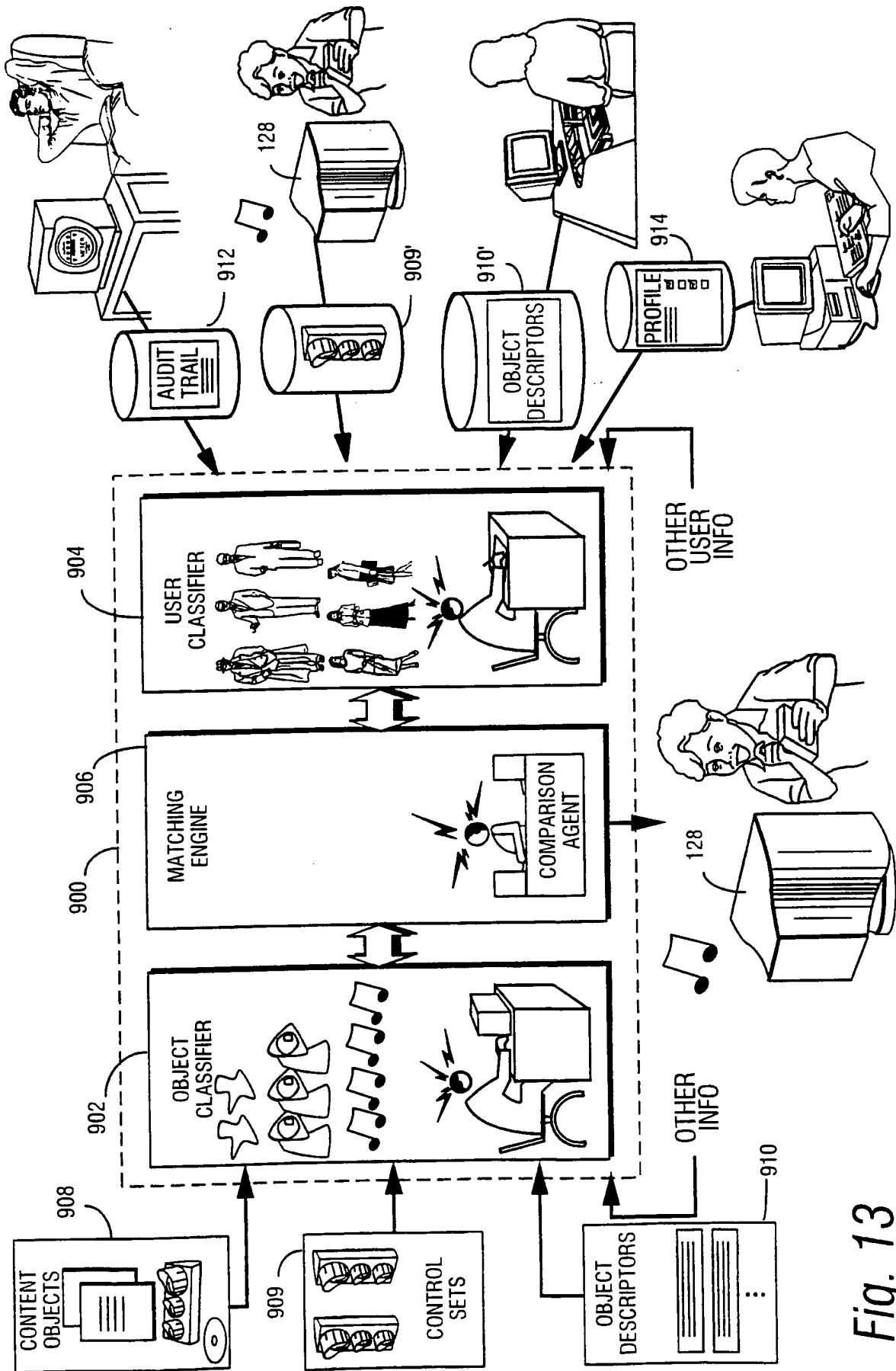


Fig. 12 Example Process Of Collecting Rights Management Information



SUBSTITUTE SHEET (RULE 26)

Fig. 13

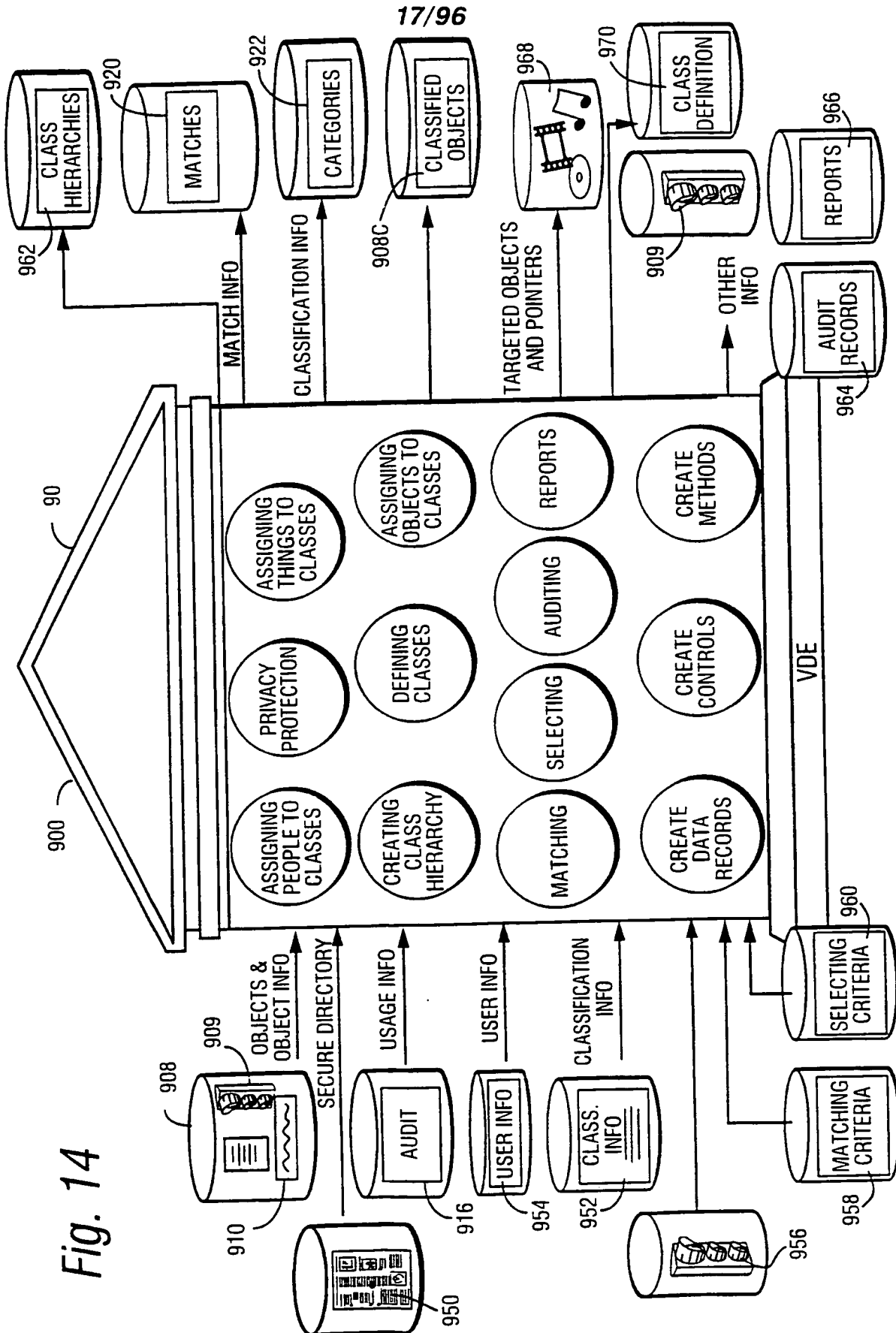
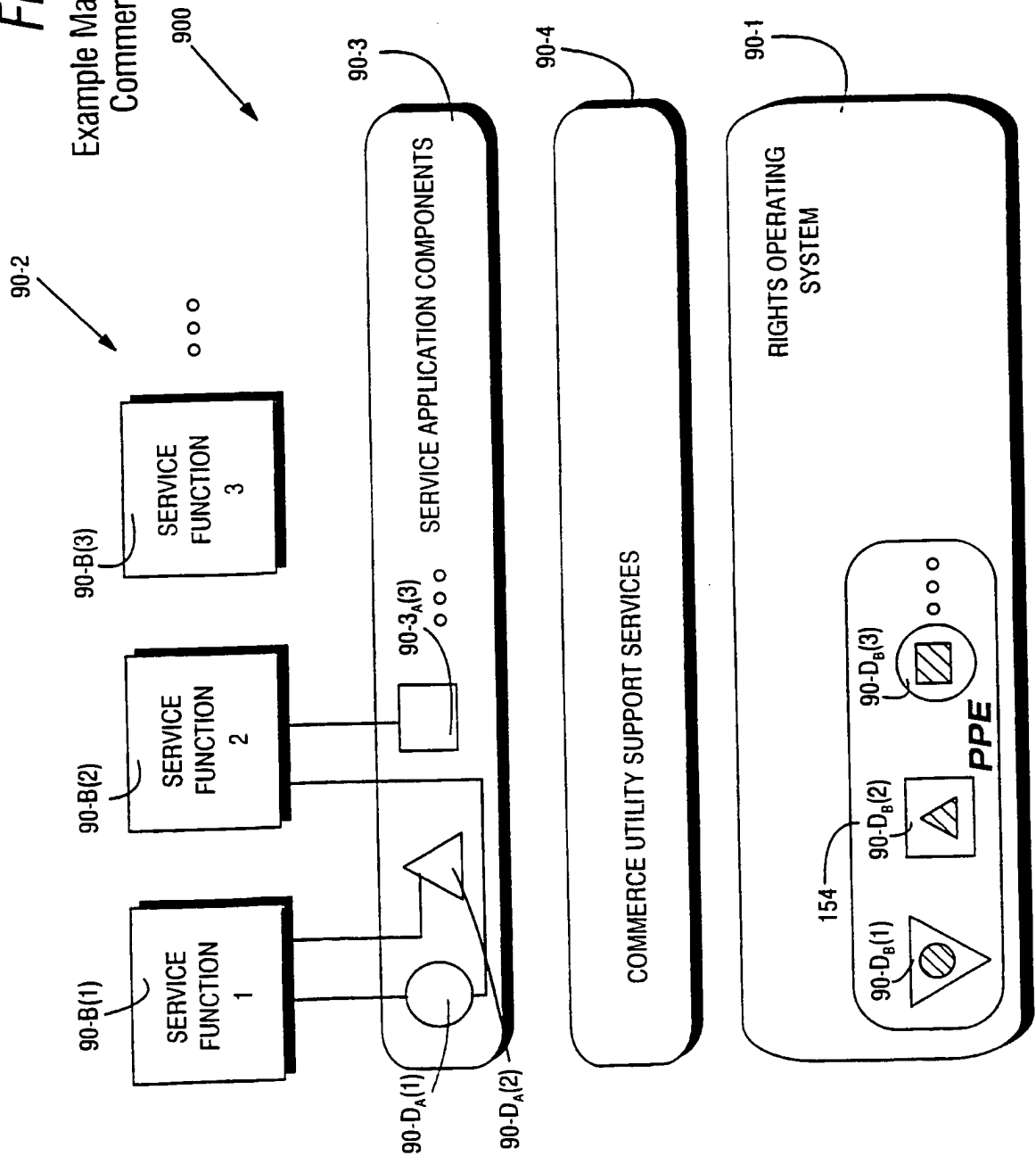


Fig. 14

Fig. 14(A)
Example Matching and Classification
Commerce Utility System 900



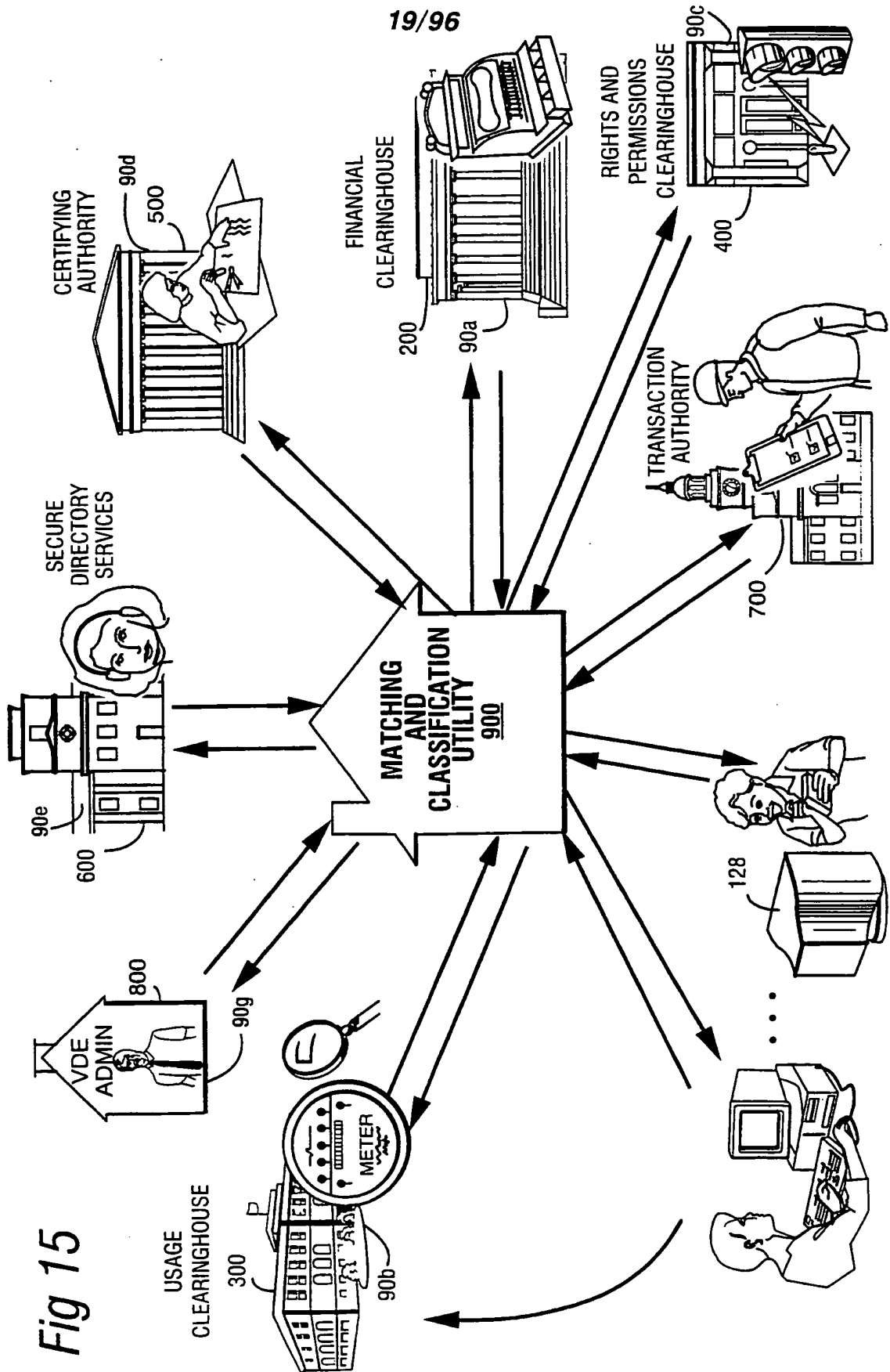


Fig 15

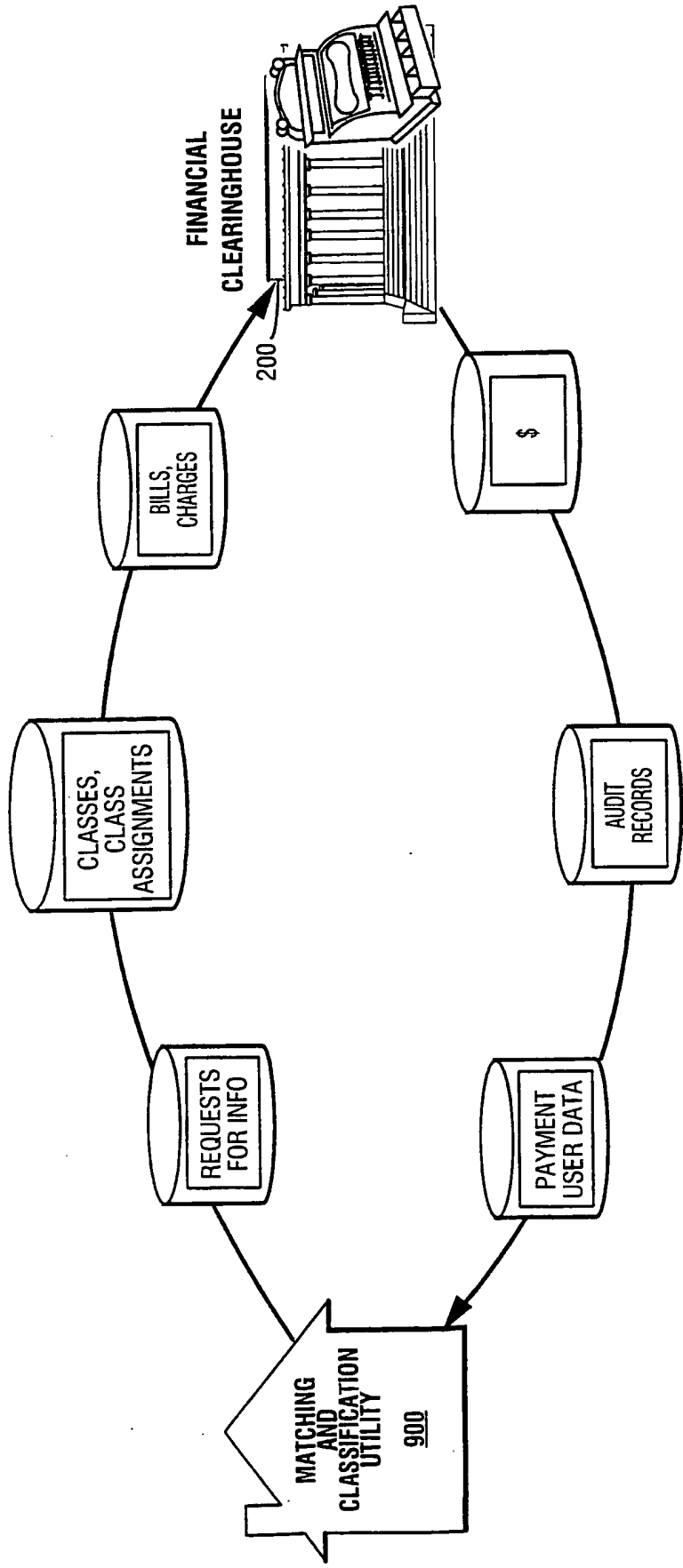


Fig. 15A

Fig. 15B

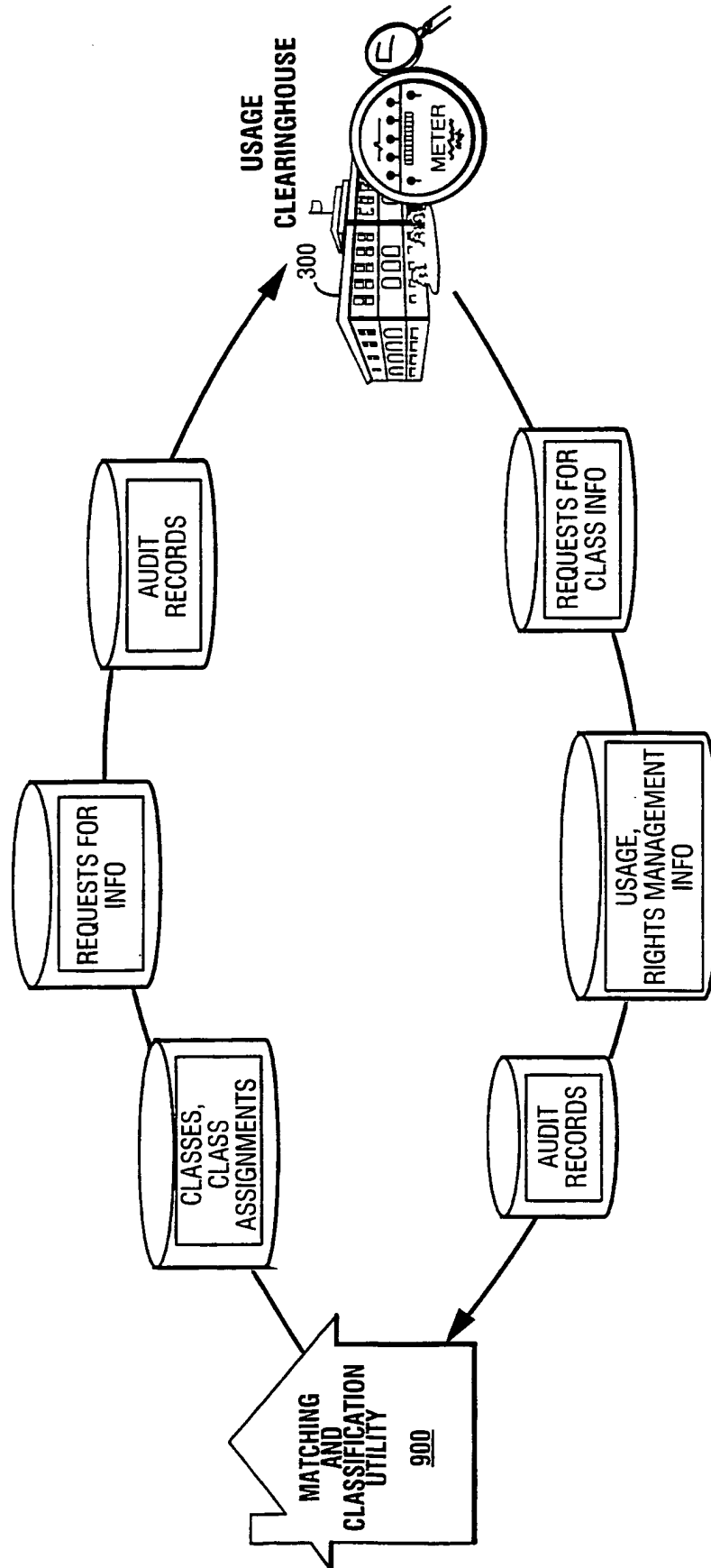


Fig. 15C

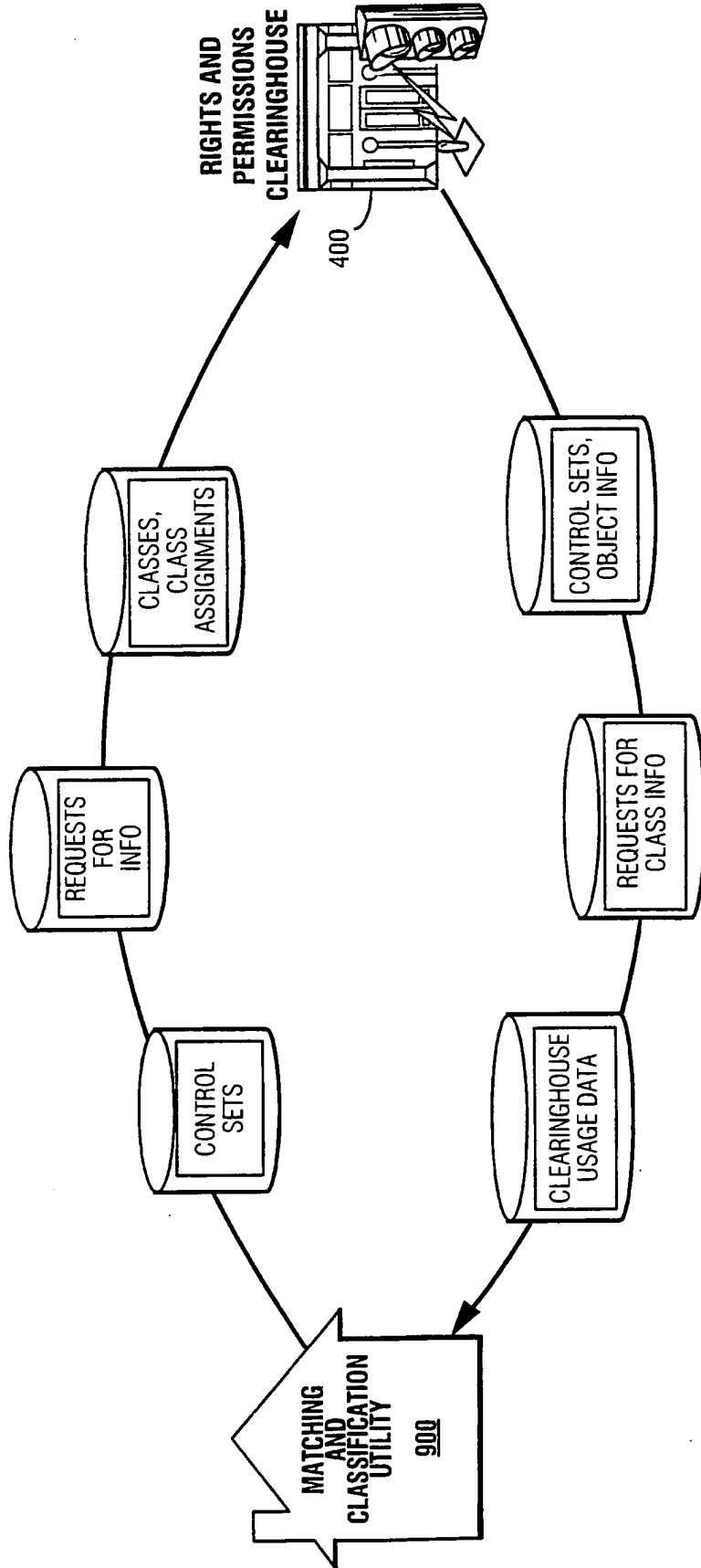
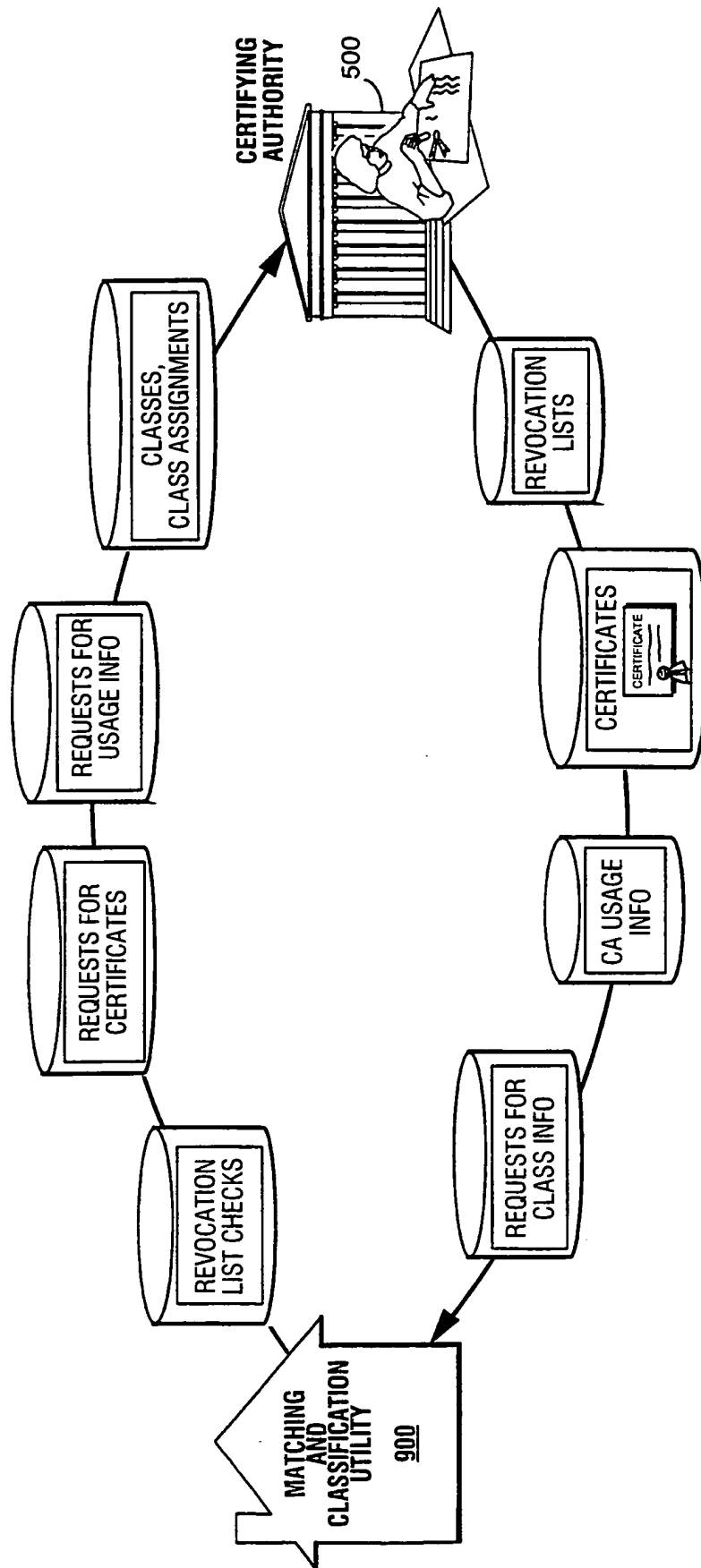


Fig. 15D



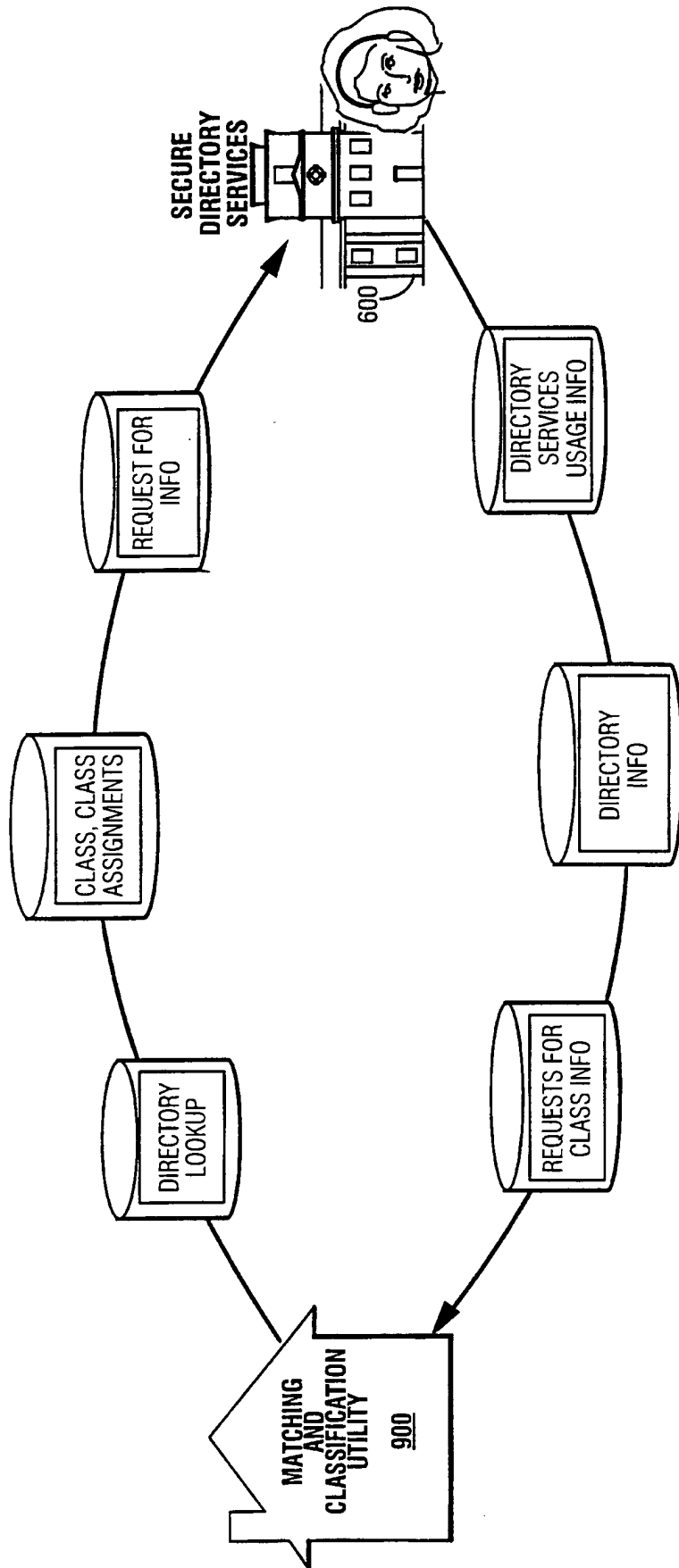


Fig. 15E

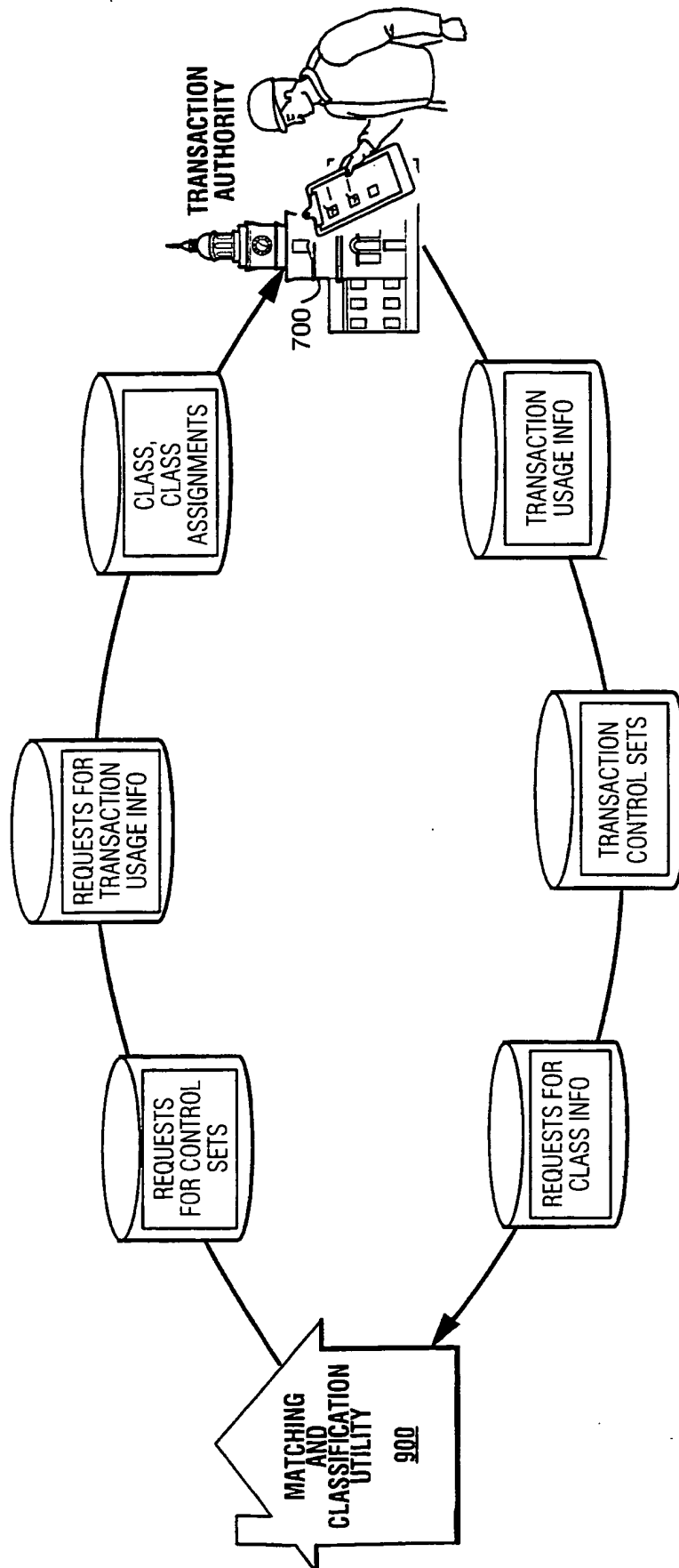


Fig. 15F

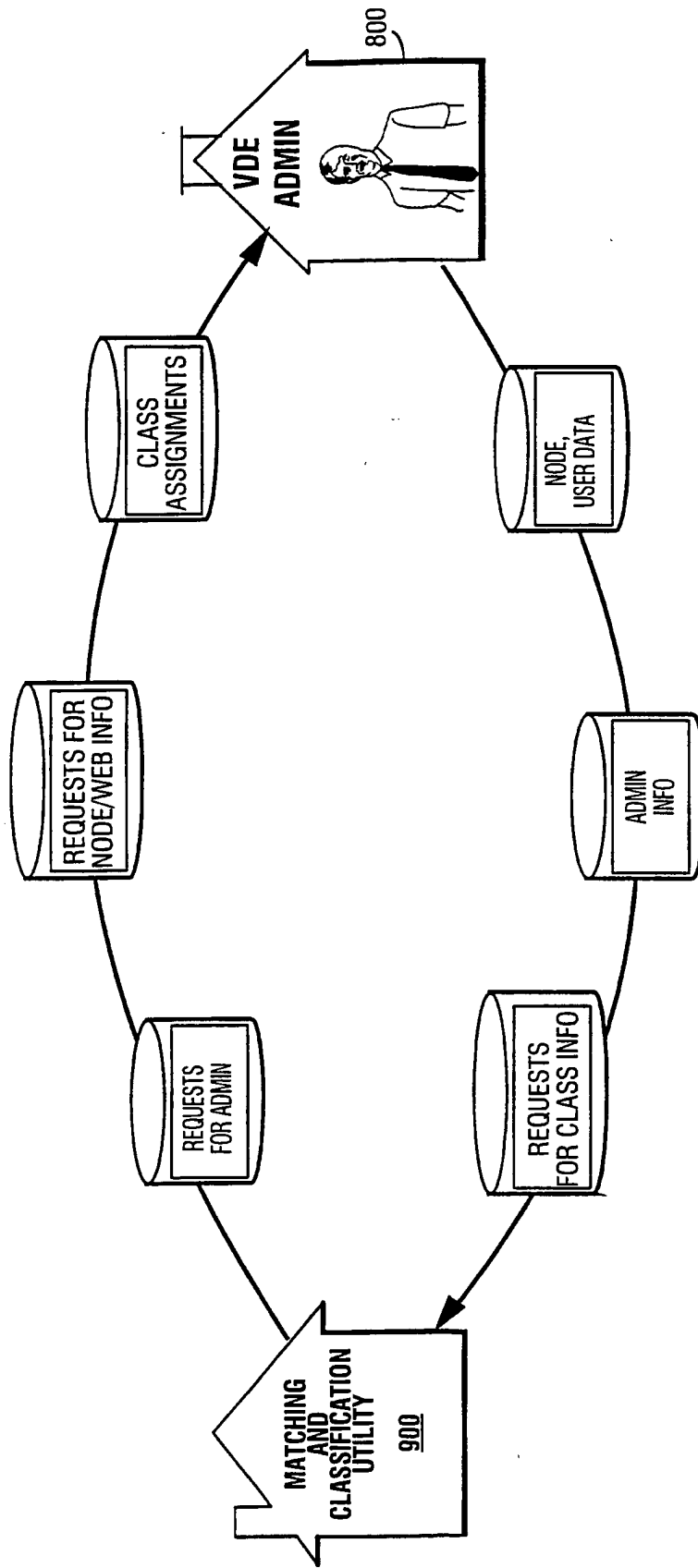
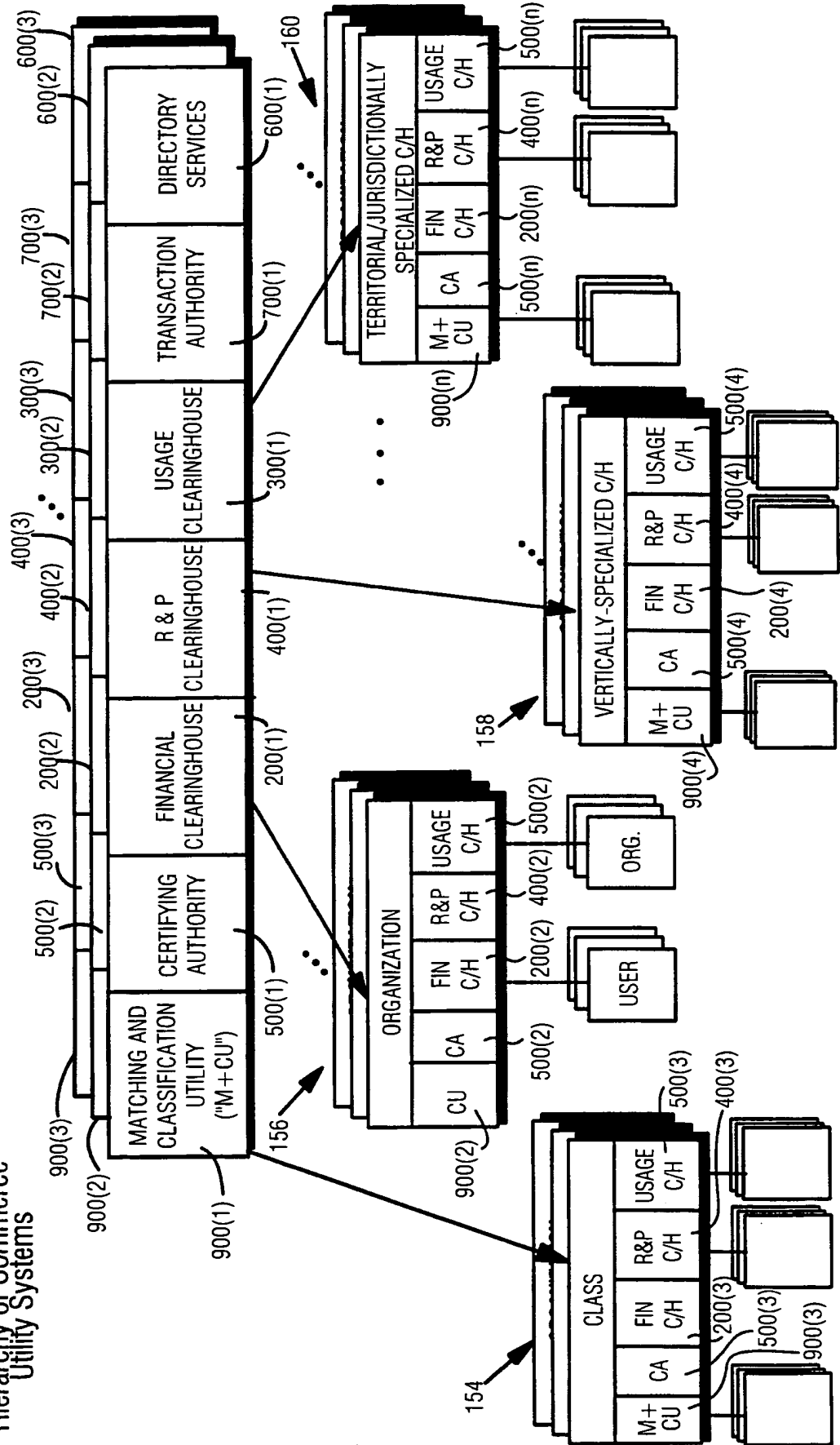


Fig. 15G

Fig. 16A
Hierarchy of Commerce
Utility Systems



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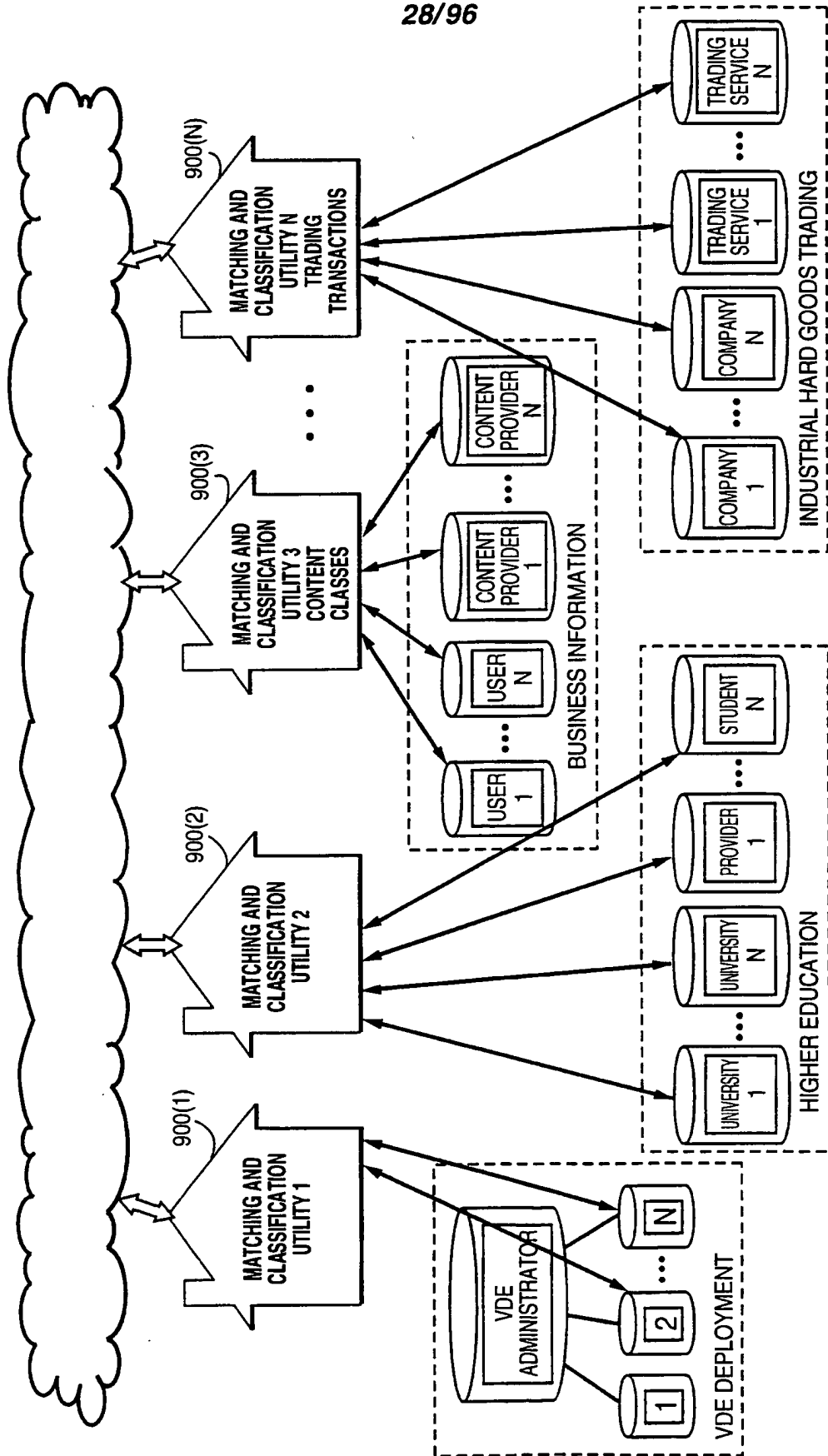
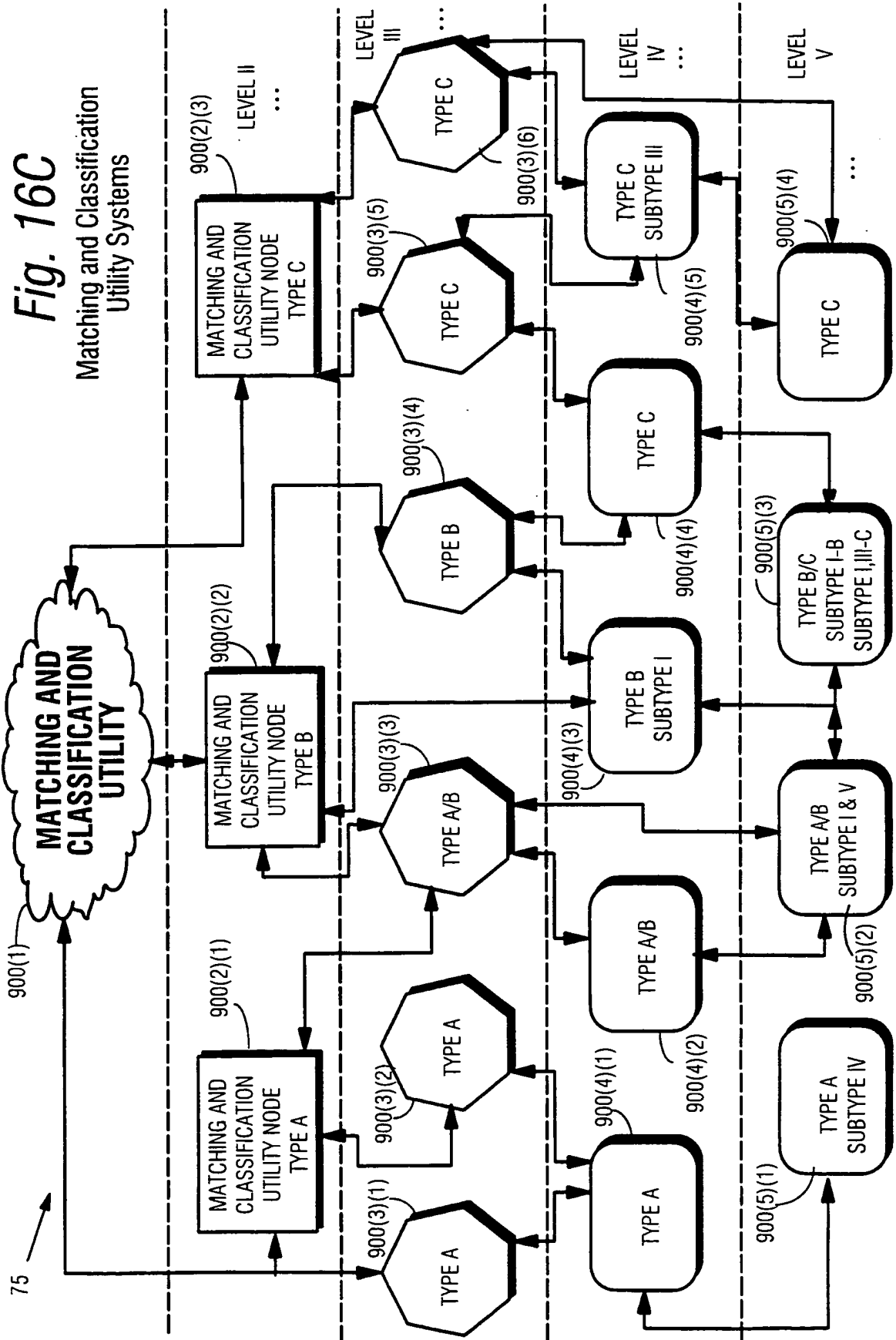


Fig.16B Matching & Classification Utilities Provide Services To Classes Of Nodes, Users, Content Services, Transaction Services.



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Fig. 17

FINANCIAL CLEARINGHOUSE	CLEARINGHOUSE	PERMISSIONS	CLEARINGHOUSE	CERTIFICATE AUTHORITY	SECURE DIRECTORY SERVICES	TANGIBLES PURCHASE & FULFILLMENT	INTANGIBLES PURCHASE & FULFILLMENT	CONTRACT NEGOTIATIONS & EXECUTION	EDI	SECURE DOCUMENT DELIVERY	BUSINESS PROCESS INTEGRATION	ARBITRATION & MEDIATION	ELECTRONIC ORDERS	BANKING & CURRENCY MANAGEMENT	CYBERSPACE TRADING ENVIRONMENTS	CLASSIFICATION UTILITY
AUDIT BY CLASS		MAINTAINING RECORDS		STATUS NOTIFICATION		EVENT DATABASE MANAGEMENT		CONTROL SET DATABASE MGMT		NOTARY		OBJECT REGISTRY		CERTIFICATE CREATION		...
OVERSEEING PROCESS	CONFIRMATIONS	ROUTING DATABASE	GENERATE CONTROL SETS	SEAL GENERATOR	DIGITAL TIME STAMP	PROCESS CONTROL LOGIC	EVENT FLOW GENERATION	FINGERPRINT /WATERMARK	CONTROL SET REGISTRY	...	...	...	...	...	...	...
MONITORING STATUS	UNCOMPLETED EVENTS RECORD	GENERATING REQUESTS	REPLICATION	ROUTING	OFFERS & COUNTER OFFERS	TEMPLATE REGISTRY	DIRECTOR DATABASE MANAGEMENT	...	...	...	...	...	...	...	...	...
COMPLETE PROCESS DEFINITION	REQUIREMENTS GENERATION	PROPAGATION	EVENT CONSEQUENCES	USAGE DATABASE MANAGEMENT	ARCHIVE	ADVERTISING DATABASE MANAGEMENT	...	...	...	...	...	...	...	...	...	...
PROCESS CONTROL	REPORT GENERATION	FUNDS TRANSFER	TAX CALCULATION & APPLICATION	PAYMENT AGGREGATION	ACCOUNT CREATION & IDENTIFIER ASSIGNMENT	IDENTITY AUTHENTICATION	MARKET RESEARCH	COMMERCE MGMT LANGUAGE PROCESSING	...	...	...	...	...	...	...	...
INTERFACE(S) TO SETTLEMENT SERVICES	CURRENCY CONVERSION	TAX CALCULATION & APPLICATION	PAYMENT AGGREGATION	IDENTITY AUTHENTICATION	MARKET RESEARCH	COMMERCE MGMT LANGUAGE PROCESSING	...	...	...	...	...	...	...	...	...	...
PAYMENT DISAGGREGATION	BUDGET PRE-AUTHORIZATION	ELECTRONIC CURRENCY CREATION	NEGOTIATION	RIGHTS MANAGEMENT LANGUAGE PROCESSING
...

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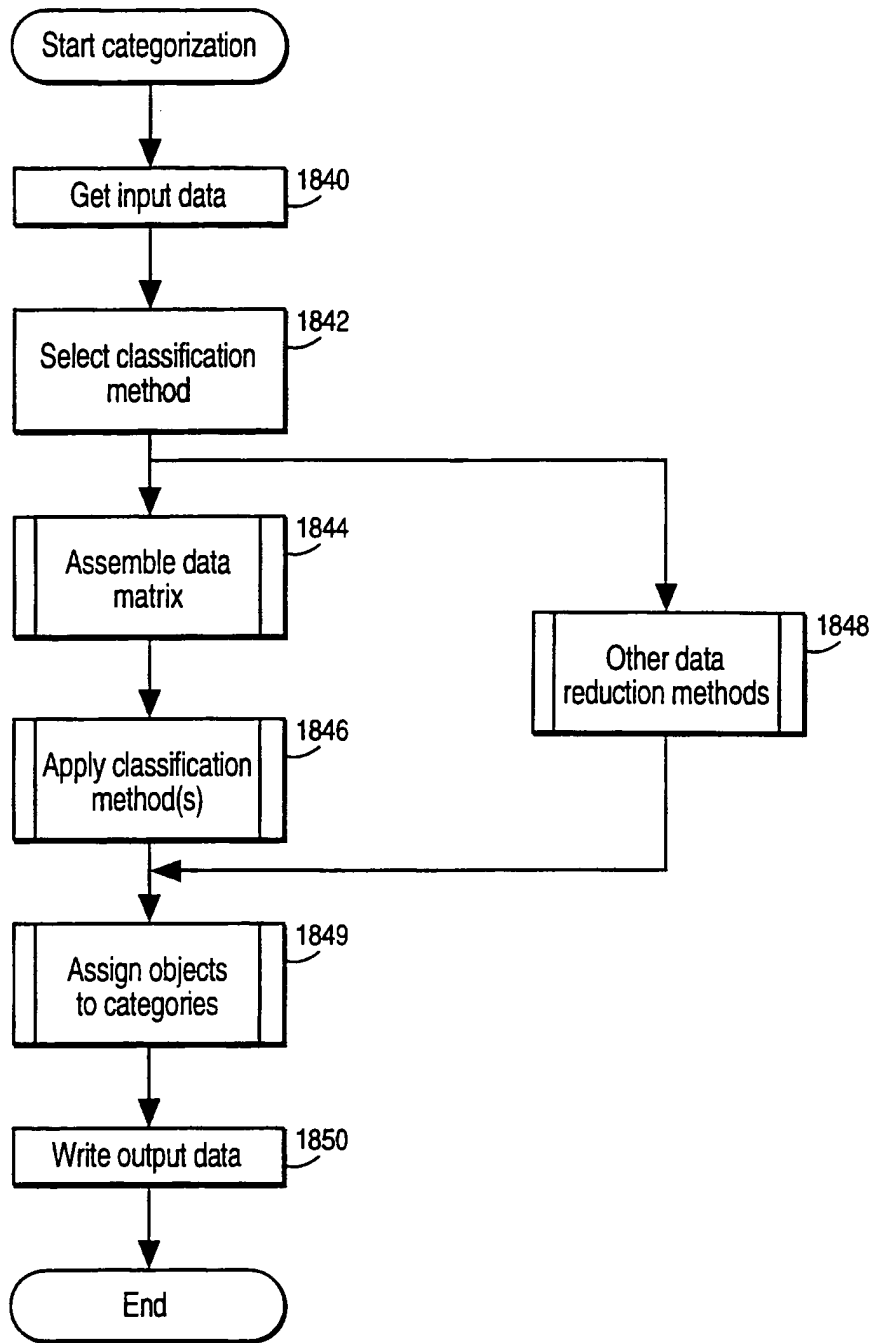


Fig. 18

Example Steps to Categorize Objects

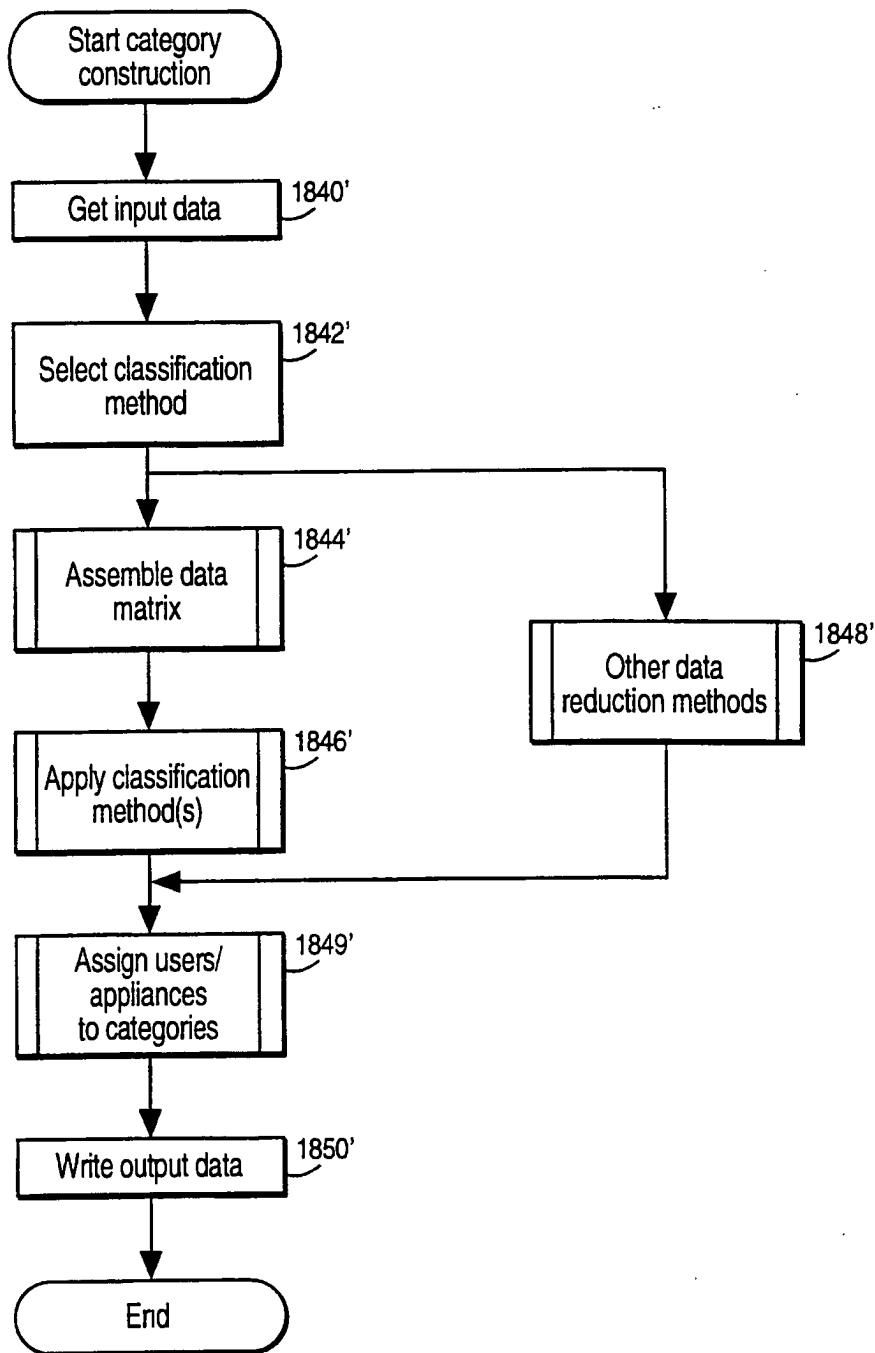


Fig. 19

Example Steps to Categorize Users/Appliances

Node ID	Operating system	Country	State	VDE Adm. Org.	VDE version	VDE maintenance level	User ID number	Gender	Age	Highest edu. level	Citizenship residence	Country of residence	City
128.1.4.132	WIN95	USA	CA	VDEADM	1.5	02	FF98C48A	Female	32	14	UK	UK	London

1852

User ID	Myers-Briggs Categories				SRI internet iVALS category
	Extroversion or introversion	Sensing or intuition	Thinking or feeling	Judging or perceiving	
FF98C48A	I	N	T	J	Worker

Fig. 20

Example Composite Record-Input To Classification Process

User ID number	Object ID	Right ID	Method	Right ID	Method	Right ID	Method
CF129CD5	1227-33-1298-2	Use	Open	Meter	Each time	Budget	Simple purchase
						Bill	\$1.00
							VISA

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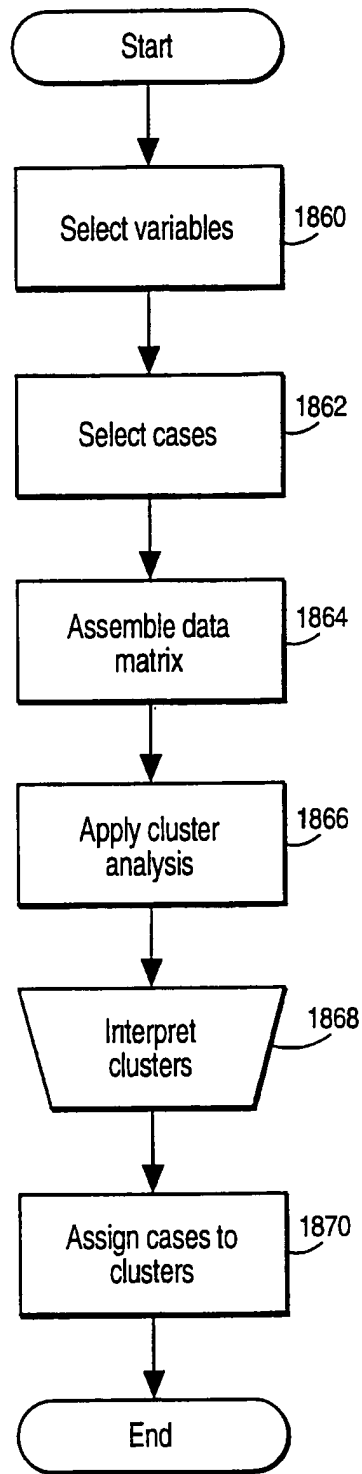


Fig. 21

Example Cluster Analysis Process

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Variables	Typical Class 1-Profile	Typical Class 2-Profile
City	Washington, DC	Knoxville, TN
Av. price of content purchased last 30 days	\$8.79	\$1.95
Number of trips abroad in last 2 years	3	0
Type of content most frequently purchased	National and international news	Sports
2nd most frequently purchased	Business information	Religious
Third most frequently purchased	Travel information	Movies
Pay per view	No	Yes
Add new controls to content	Yes	No
Stated religious affiliation	None	Methodist
SRI internet lifestyle category	Surfer	Worker
Modification rights purchased	20% of text items	5% of text items

Fig. 22 Example Classification Output Illustrating Different Classes Based Upon Differing Profiles

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Variables	Factor 1 Loadings	Factor 2 Loadings
Region of US	.82	.11
Family income	.90	-.09
Av. price of content purchased last 30 days	.72	.15
Number of trips abroad in last 2 years	.91	.09
Percent news, business	.79	-.12
Percent entertainment	-.69	.21
Add new controls to content	.88	.19
Religiosity	-.60	-.22
Participates in sports	-.21	.87
Watches team/individual sports on TV	-.11	.62
Owens a sports utility vehicle	.12	.72
Consumes beer/wine	-.18	.83
Male/female	.21	.92
Education beyond college	.45	-.45
Buys pay per view sports events	-.25	.77
Number of TVs in house	-.11	.66

Fig. 23 Example Classification Output Illustrating Principal Components Analysis On Parameter Data And Categories Data

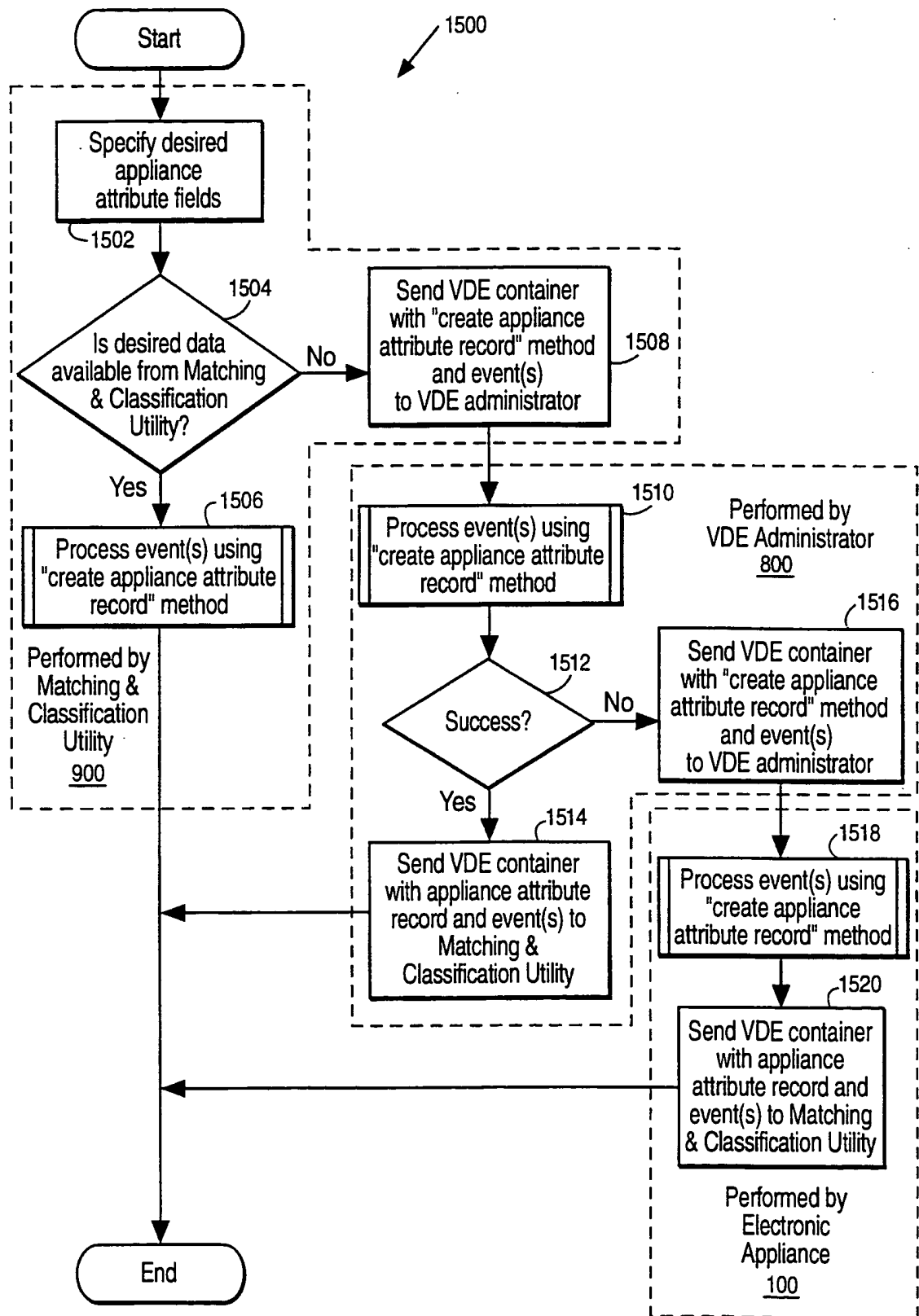


Fig. 24

Example Steps for Collecting Appliance Attribute Data

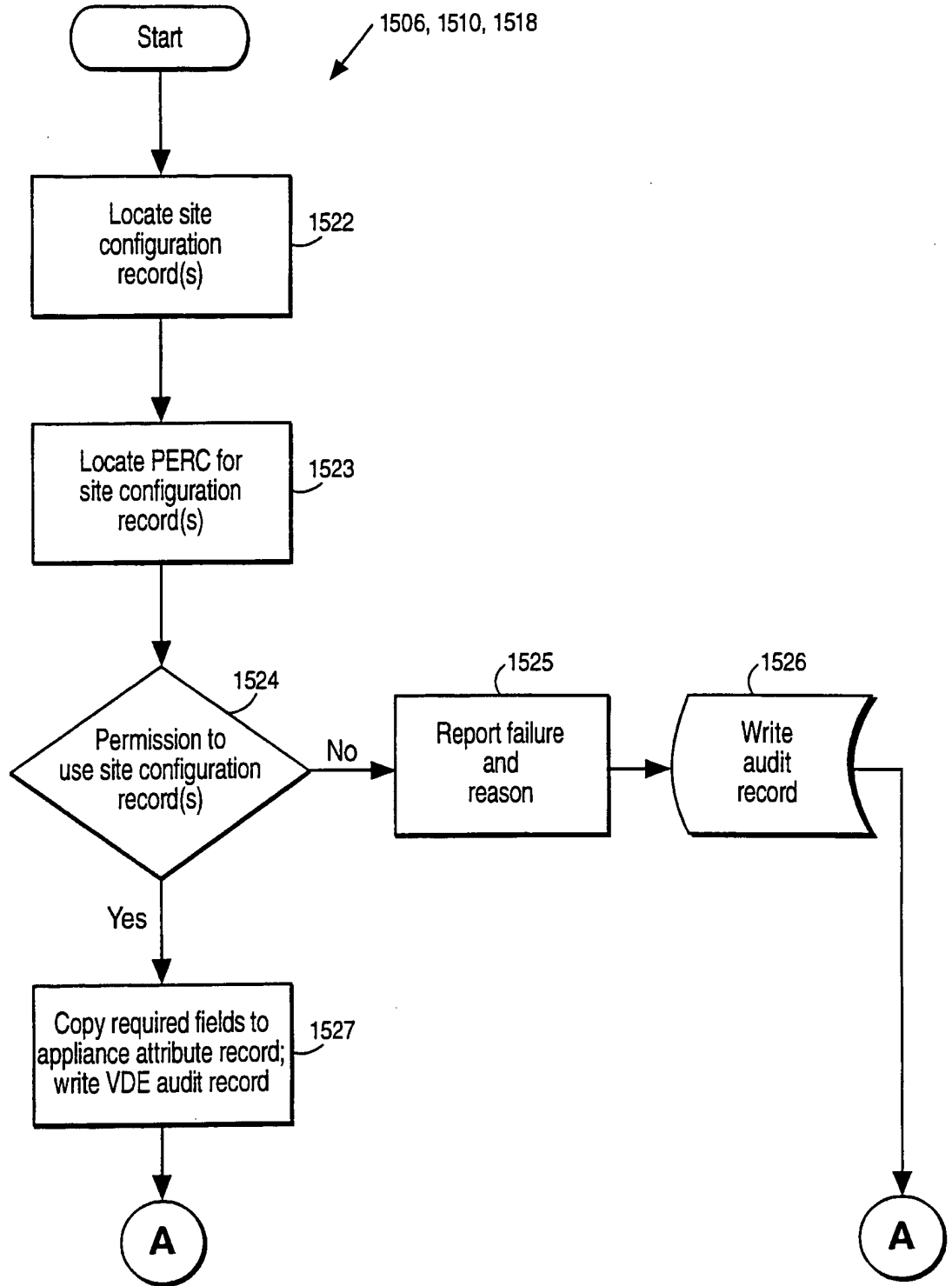
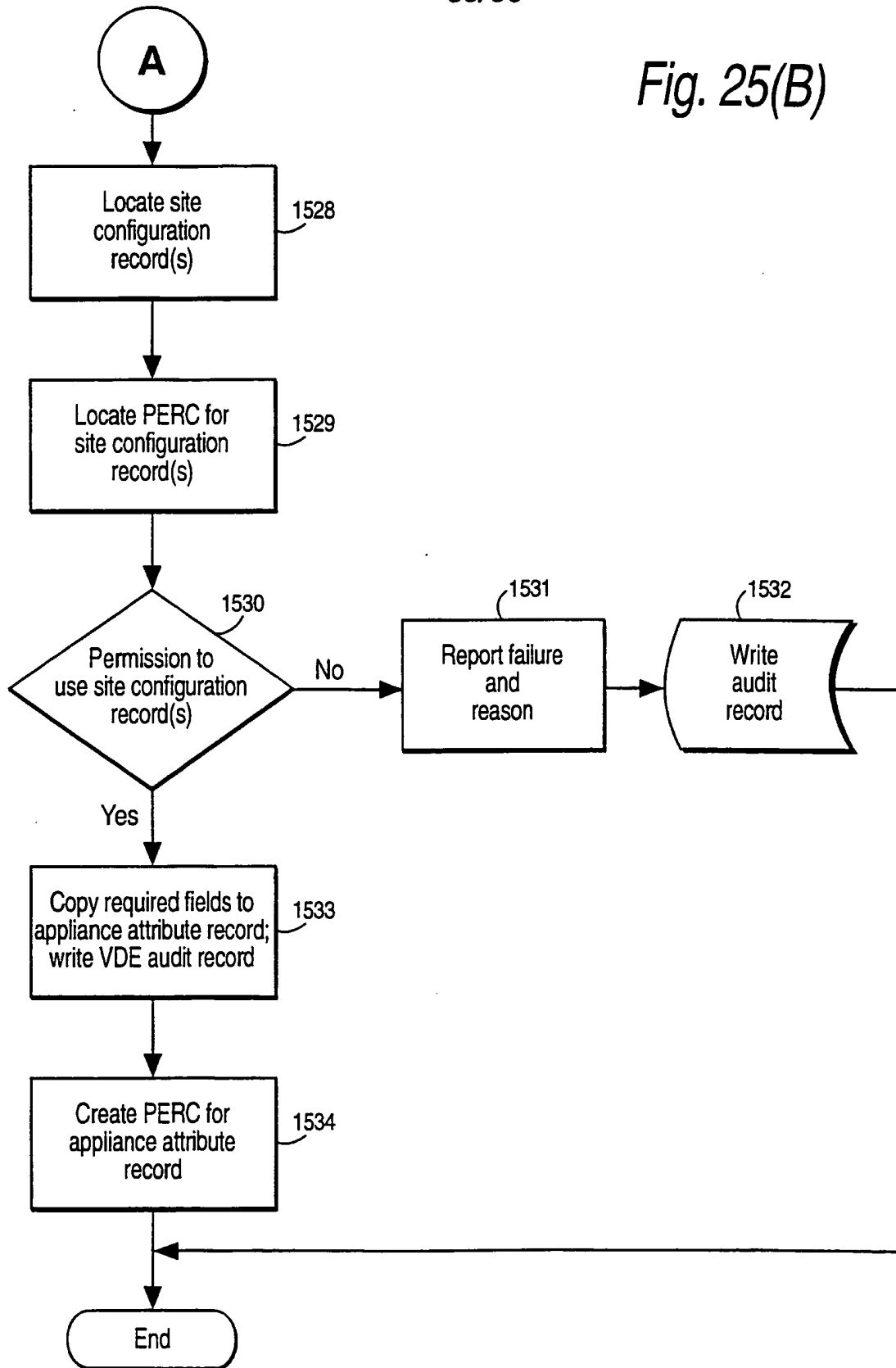


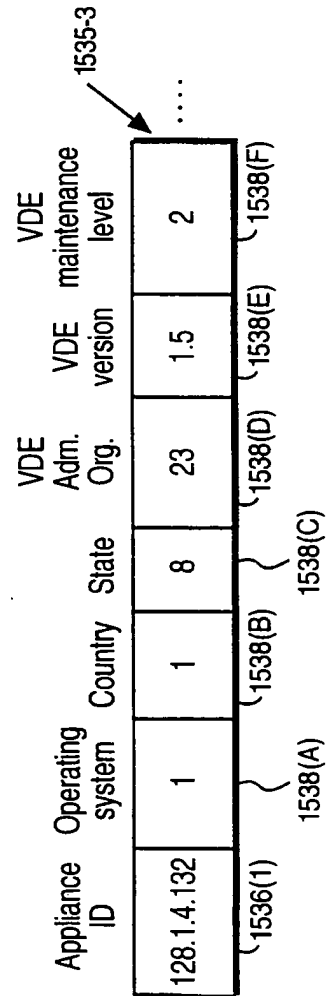
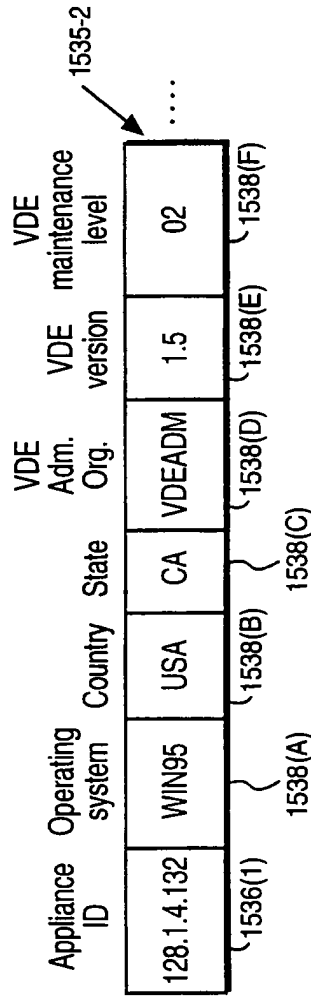
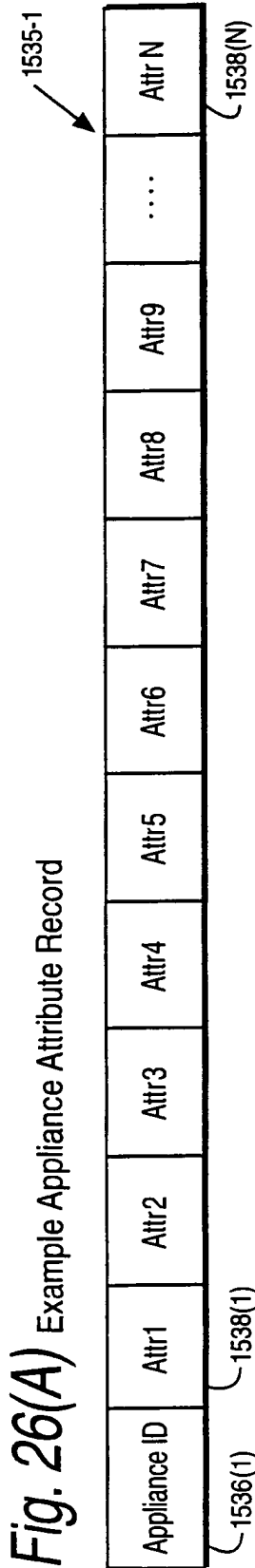
Fig. 25(A)

Example Create Appliance Attribute Data Method steps

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Fig. 25(B)





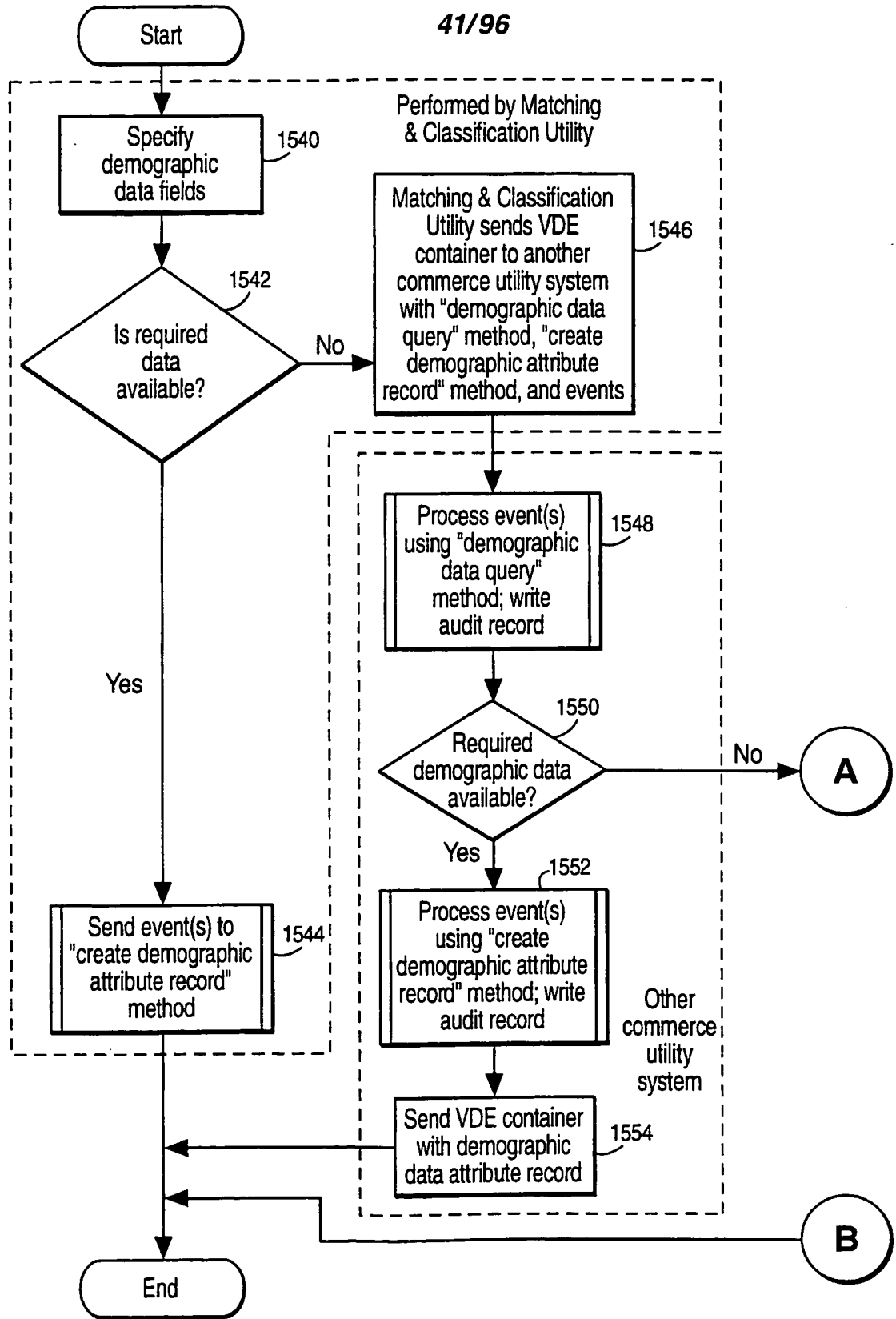


Fig. 27(A) Example Steps for Collecting Demographic Data

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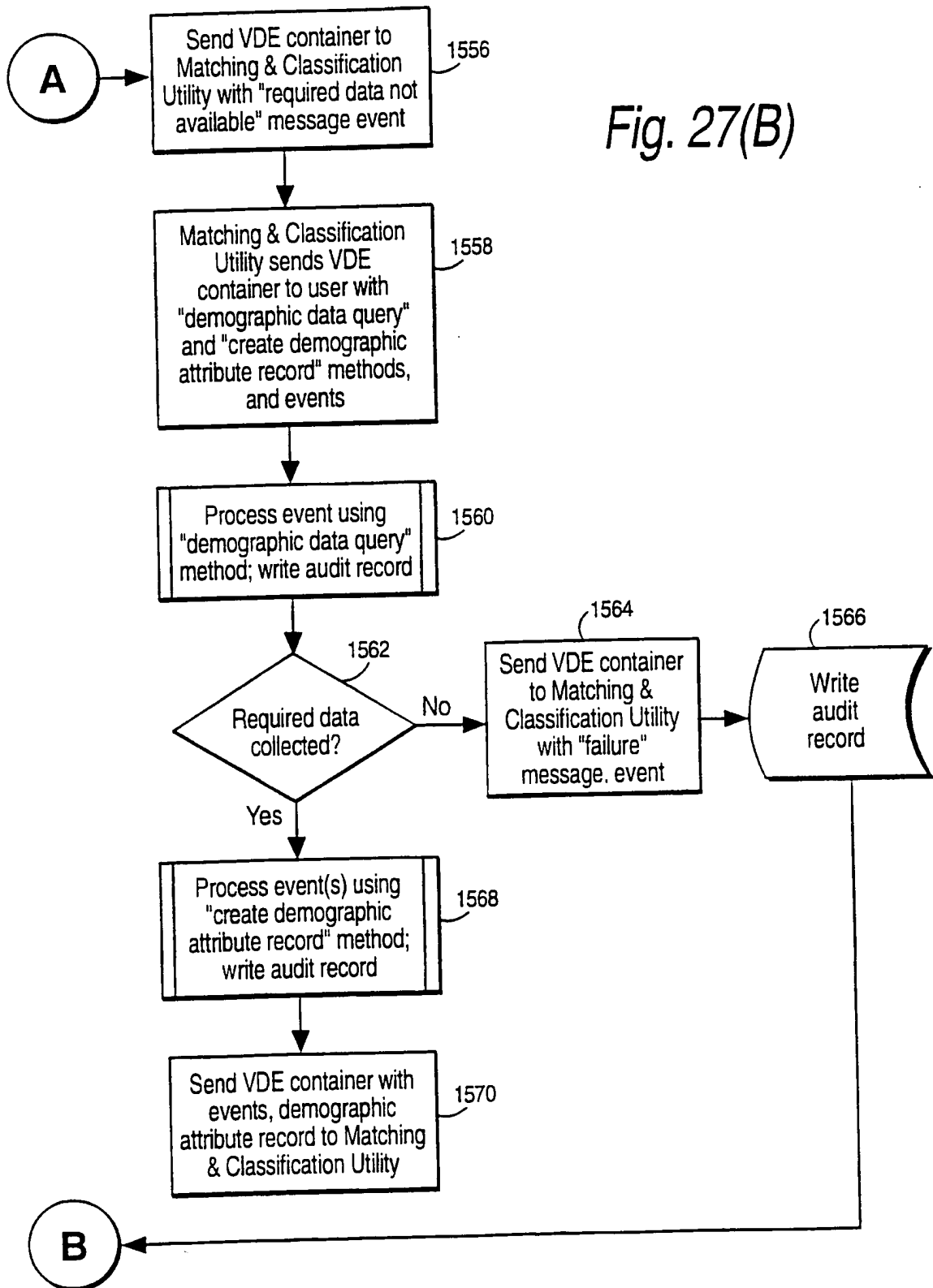


Fig. 27(B)

Demographic Information Questionnaire

Name: _____

Address: _____

Address: _____

City: _____ State: _____ Zip: _____ - _____

Gender (M/F) _____ Date of birth: _____ / _____ / _____

Education:

- Have not graduated high school
- High school graduate
- Some college
- College degree
- Some graduate school
- Advanced degree

All Information Will Be Treated As Confidential

Fig. 28 Example Demographic Questionnaire "Pop-Up" Screen

Fig. 29(A) Example User Demographic Attribute Information Record

User ID	Attr1	Attr2	Attr3	Attr4	Attr5	Attr6	Attr7	Attr8	Attr9	...	Attr N	
1574	1576(1)										1572	1576(N)

Fig. 29(B) Example Demographic Attribute Record

User ID number	Gender	Age	Highest edu. level	Citizenship	Country of residence	District	City	Street address
FF98C48A	Female	32	14	UK	UK	London	Westminster	32 Shepherd Market
1574	1576(A)	1576(B)	1576(C)	1576(D)	1576(E)	1576(F)	1576(G)	1576(H)
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Fig. 29(C) Example Demographic Attribute Record

User ID number	Gender	Age	Highest edu. level	Citizenship	Country of residence	District	City	Street address
FF98C48A	1	32	14	44	1	1	22	32 3243
1574	1576(A)	1576(B)	1576(C)	1576(D)	1576(E)	1576(F)	1576(G)	1576(H)

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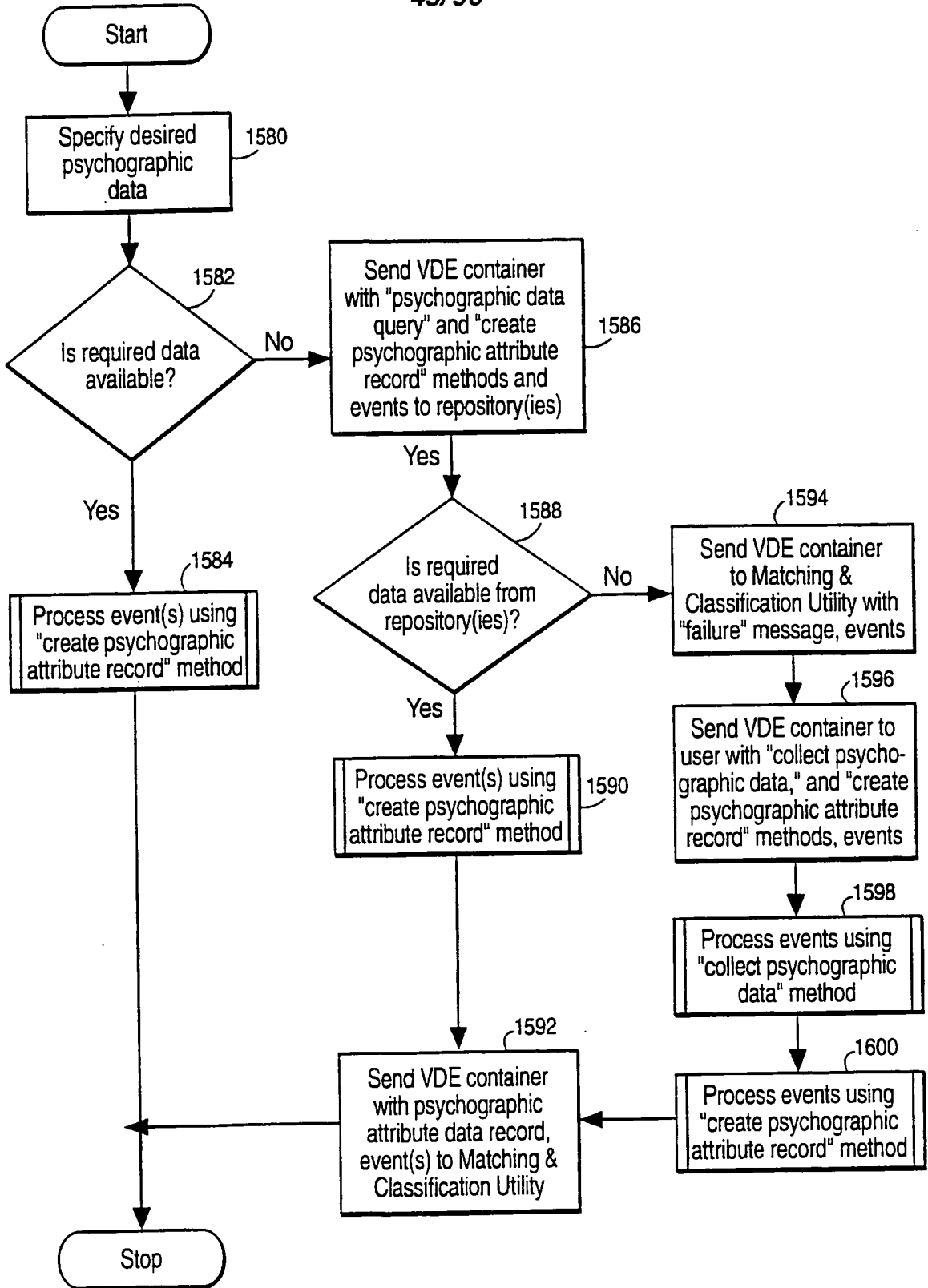


Fig. 30 Example Steps for Collecting Psychographic Data

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Today's Anonymous Questionnaire
Thanks for taking the time to answer these questions
We'll put \$2.00 in your VDE budget

1. Do you feel sad, blue, unhappy or "down in the dumps"?

- A. Never
- B. Rarely
- C. Sometimes
- D. Very Often
- E. Most of the time

2. Do you feel tired, having little energy, unable to concentrate?

- A. Never
- B. Rarely
- C. Sometimes
- D. Very Often
- E. Most of the time

3. Do you feel uneasy, restless or irritable?

- A. Never
- B. Rarely
- C. Sometimes
- D. Very Often
- E. Most of the time

4. Do you have trouble sleeping or eating (too little or too much)?

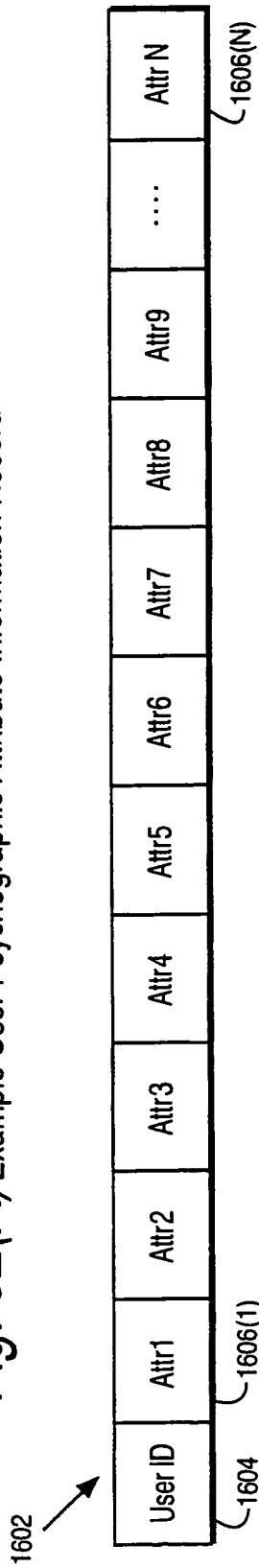
- A. Never
- B. Rarely
- C. Sometimes
- D. Very Often
- E. Most of the time

Click here for more questions

All Information Will Be Treated As Confidential

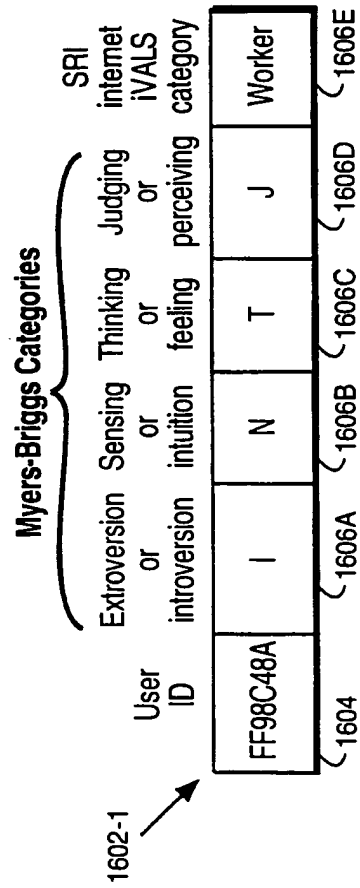
Fig. 31 Example Psychographic Questionnaire "Pop-Up" Screen

Fig. 32(A) Example User Psychographic Attribute Information Record



1602

Fig. 32(B) Example User Psychographic Attribute Record



1602-1

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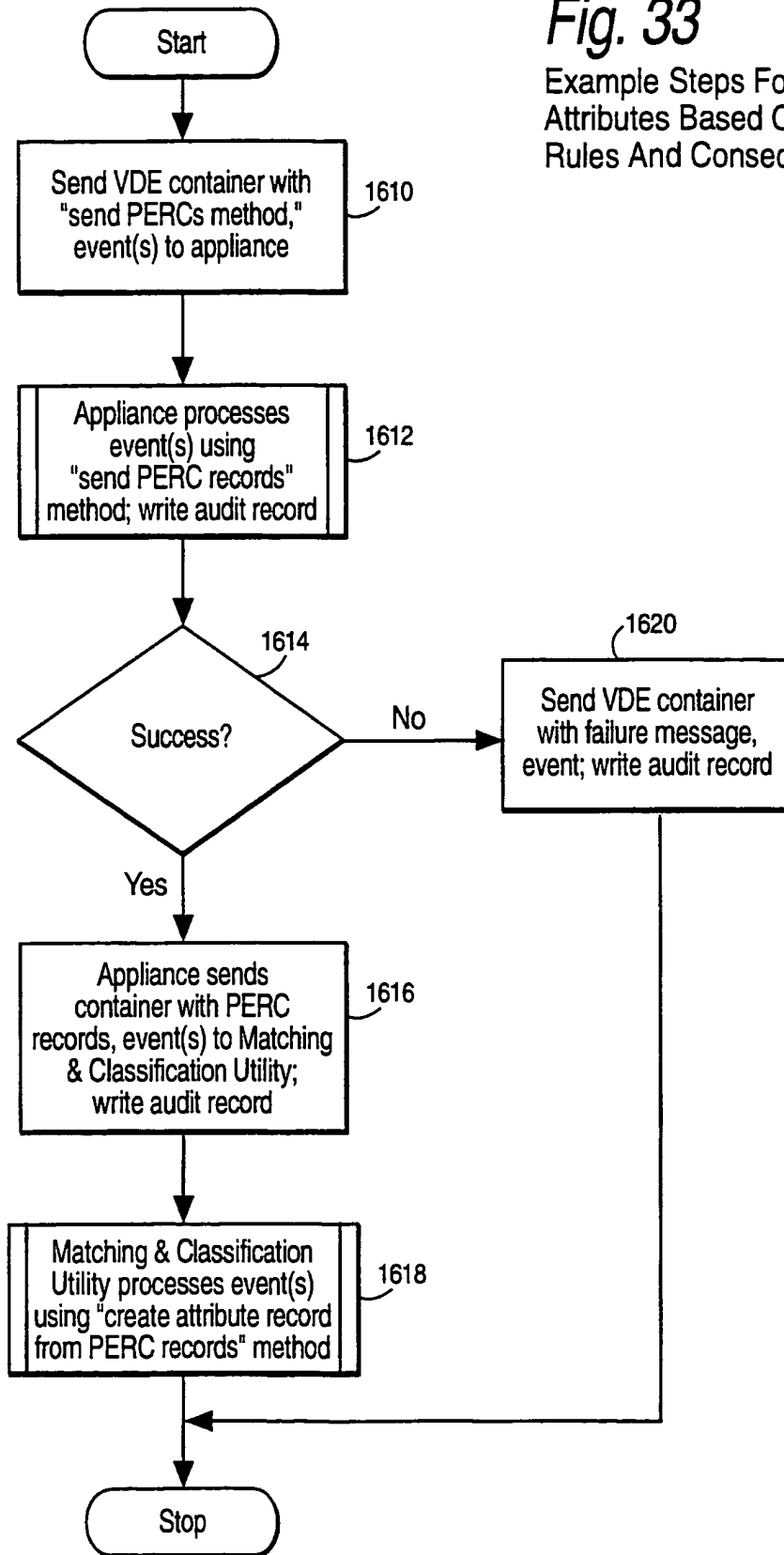
1602-2 User ID FF98C48A	Myers-Briggs Categories				SRI Internet IVALS Categories									
	Extroversion or introversion	Sensing or intuition	Thinking or feeling	Judging or perceiving	Wizard	Pioneer	Worker	Seeker	Surfer	Immigrant	Sociable	Socialite	Up- streamer	Main- streamer
	1	0	1	1	0	0	1	0	0	0	0	0	0	0
	1606A	1606B	1606C	1606D	1606E									

Fig. 32(C) Example Psychographic Attribute Record

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Fig. 33

Example Steps For Determining Attributes Based On Available Rules And Consequences



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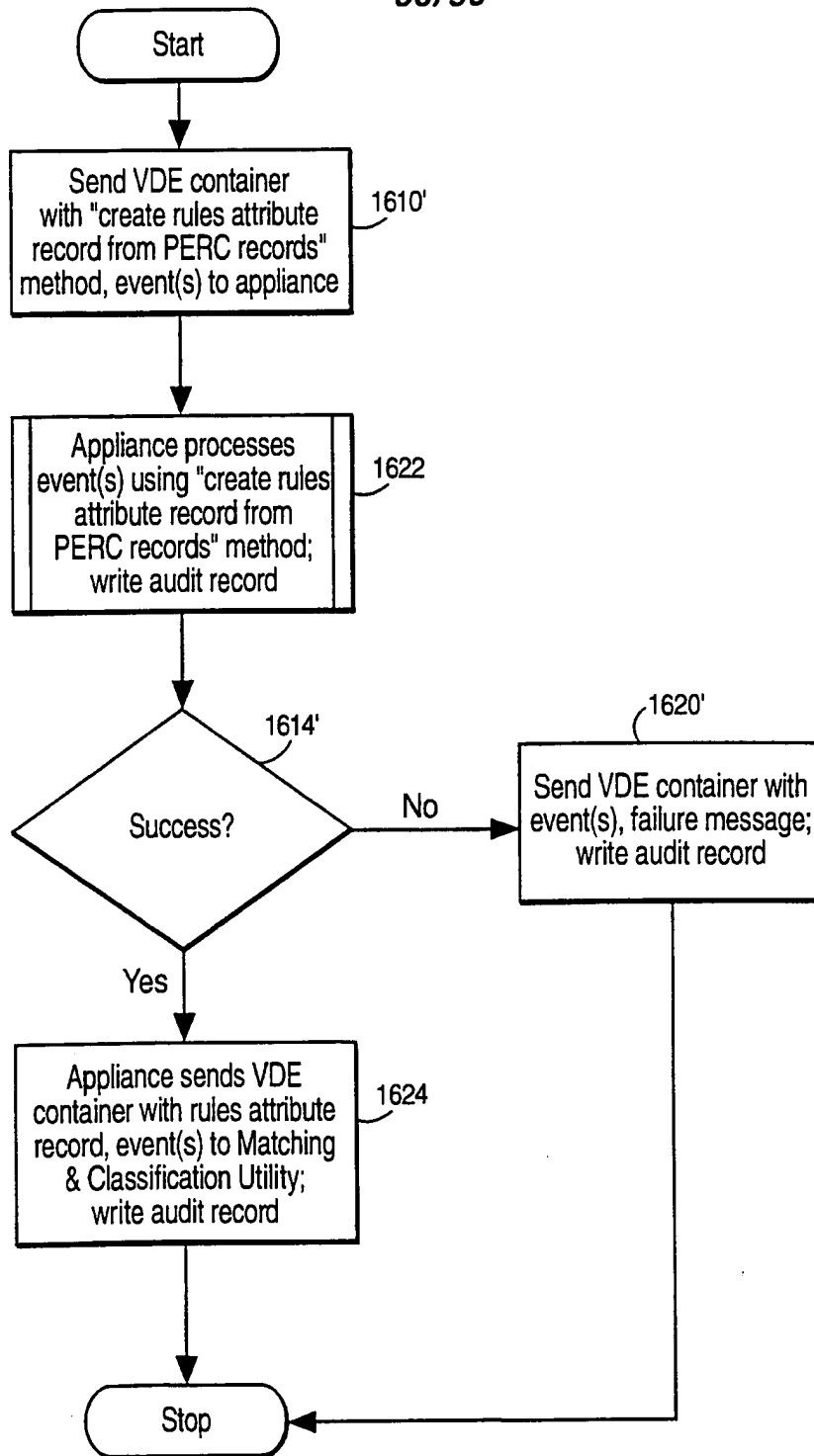


Fig. 34

Example Steps For Determining Attributes Based On Available Rules And Consequences

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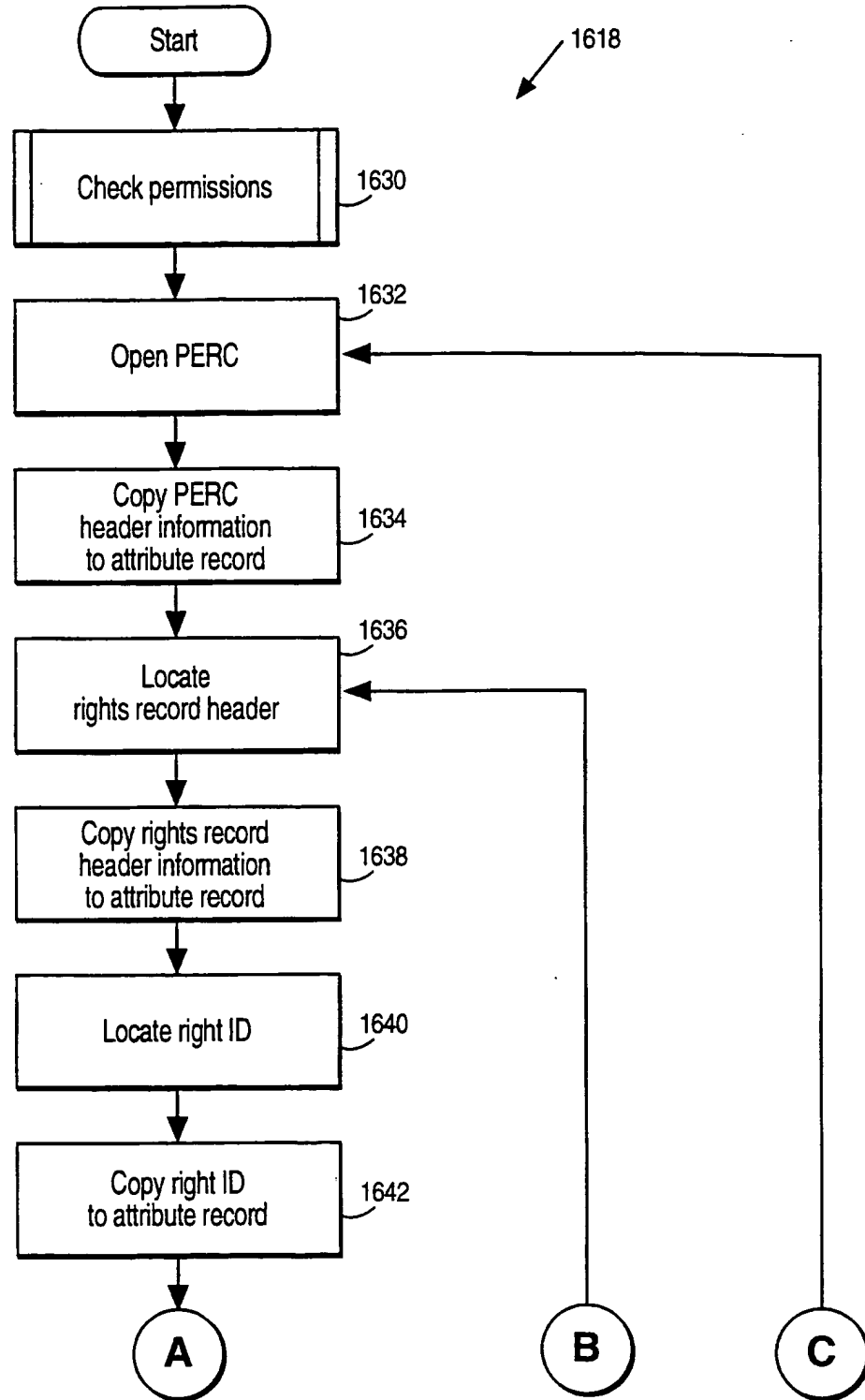


Fig. 35(A)

Construct Attribute Records From PERC Records Example Method

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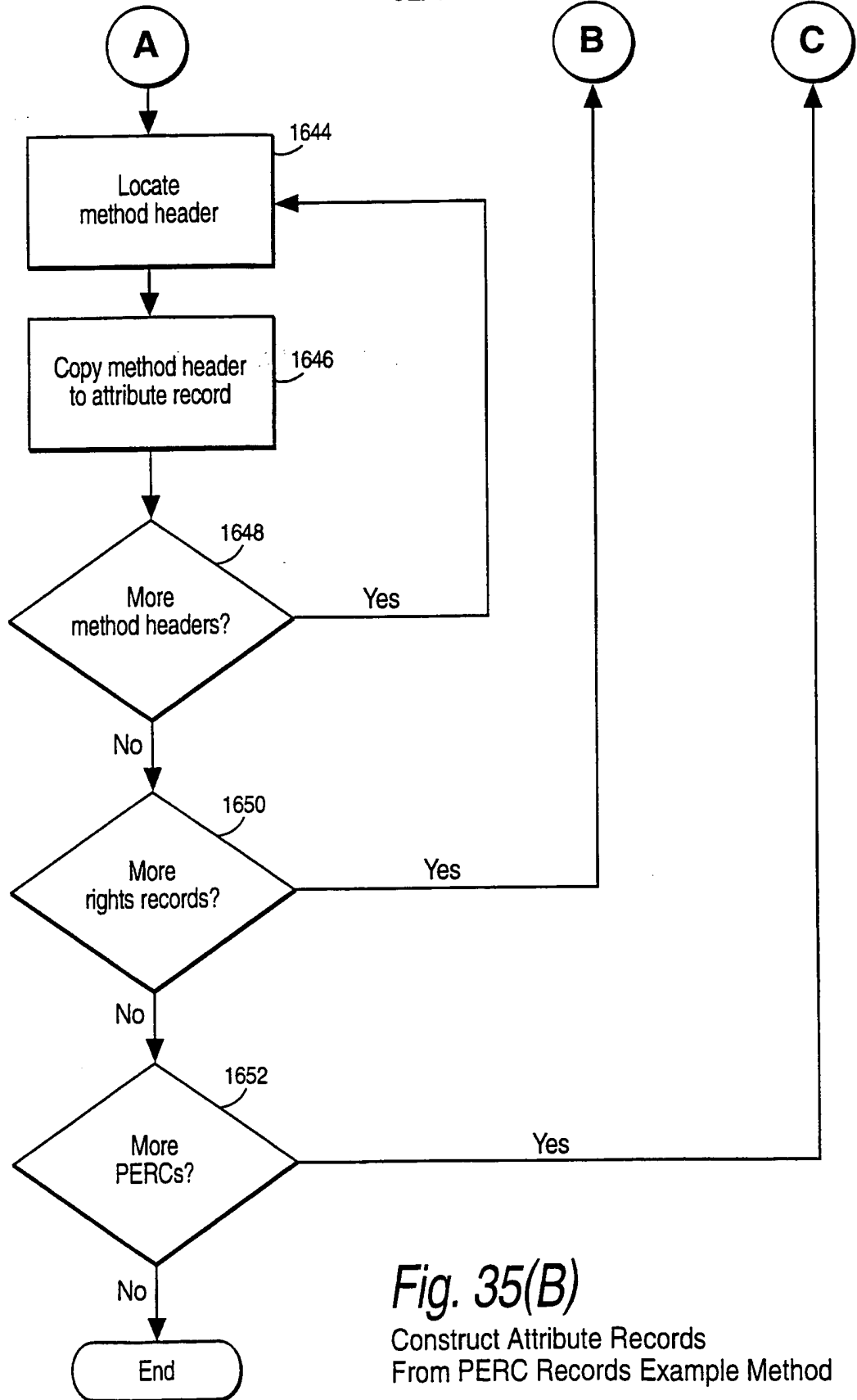


Fig. 35(B)

Construct Attribute Records
From PERC Records Example Method

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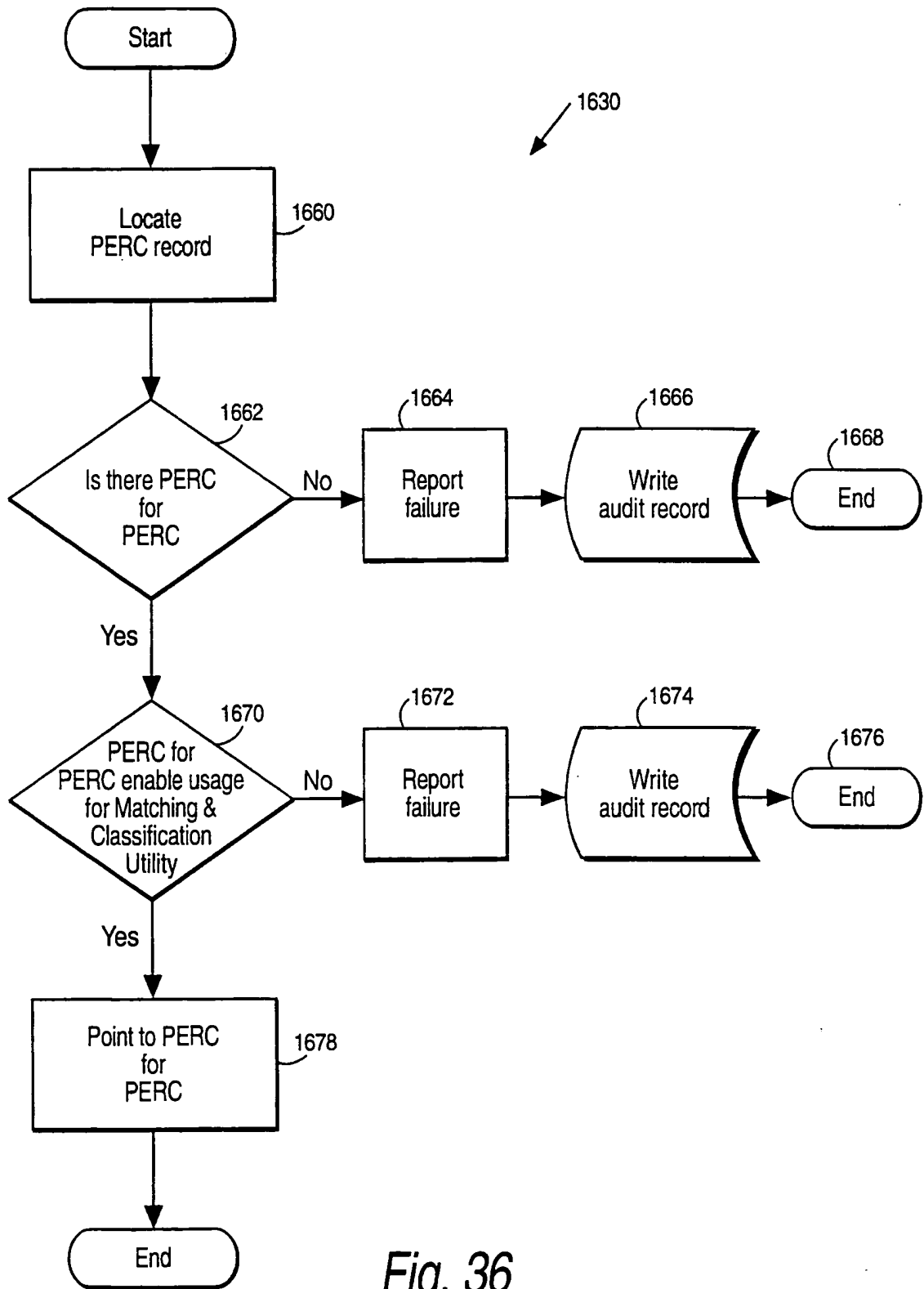


Fig. 36

Check Permissions Record Example Steps

Fig. 37(A) Example Rights Attribute Record From PERCs

1680-1	User ID	Object ID	Attr1	Attr2	Attr3	Attr4	Attr5	Attr6	Attr7	Attr8	Attr9	....	AttrN
	1682	1684	1686(1)										1686(N)

Fig. 37(B) Example Attribute Record

User ID number	Object ID	Right ID	Method	Right ID	Method	Right ID	Method	Right ID	Method	Right ID	Method	Right ID	Method	Right ID	Method	
1680-2	1682	1684	CF129CD5	1227-33-1298-2	Use	Open	Meter	Each time	Budget	One time purchase	\$1.00	Bill	VISA	AMEX	....
	1682	1684	1686A	1686B	1686C	1686D	1686E	1686F	1686G	1686H	1686I	1686J	1686K	1686L	1686M	1686N

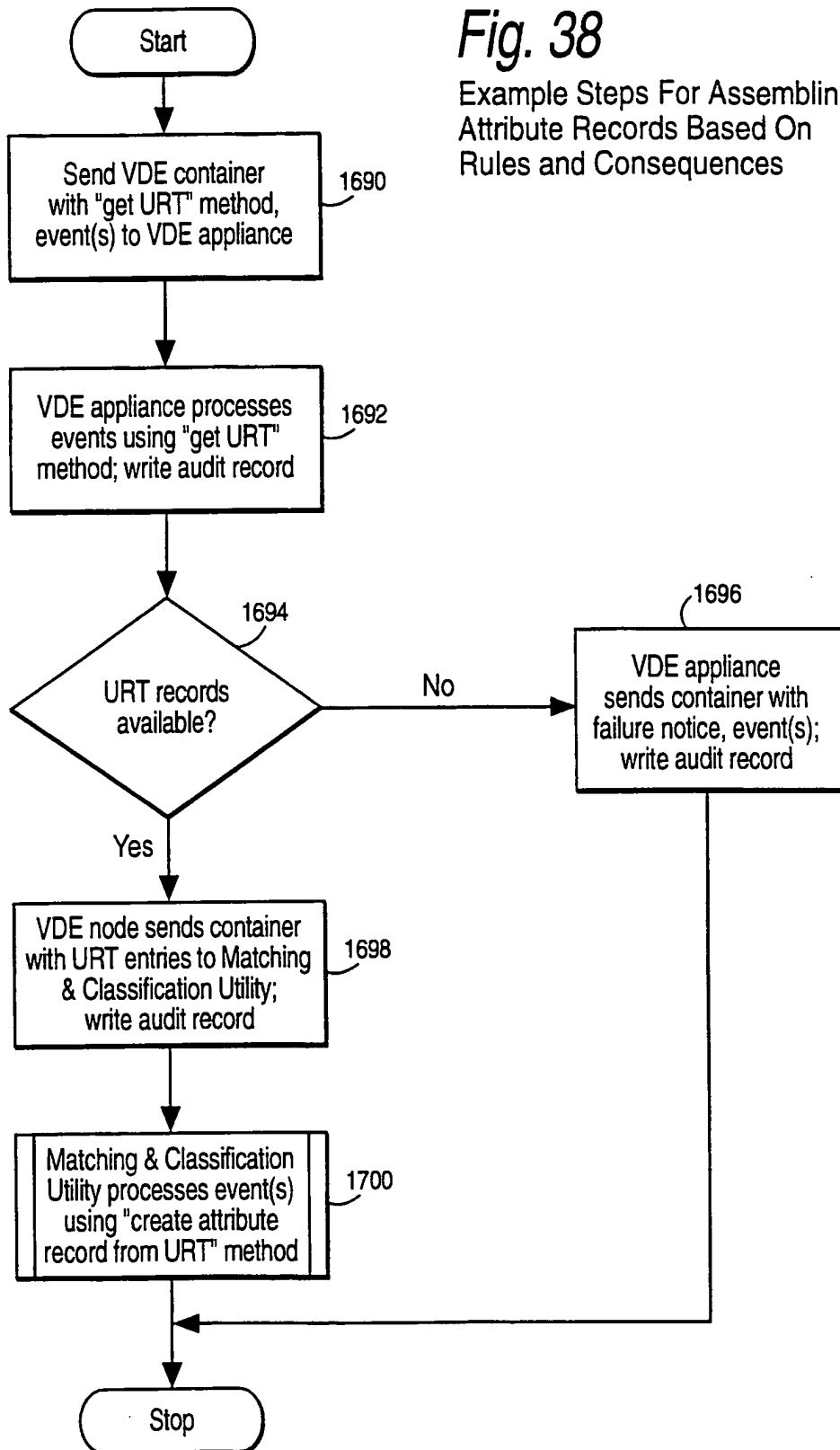
Fig. 37(C) Example Attribute Records From PERC Record

User ID number	Object ID	Right ID	Method	Right ID	Method	Right ID	Method	Right ID	Method	Right ID	Method	Right ID	Method	Right ID	Method	
1680-3	1682	1684	CF129CD5	1227-33-1298-2	27	239	15	546	81	423	1.00	02	666	601	....
	1682	1684	1686A	1686B	1686C	1686D	1686E	1686F	1686G	1686H	1686I	1686J	1686K	1686L	1686M	1686N

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Fig. 38

Example Steps For Assembling Attribute Records Based On Rules and Consequences



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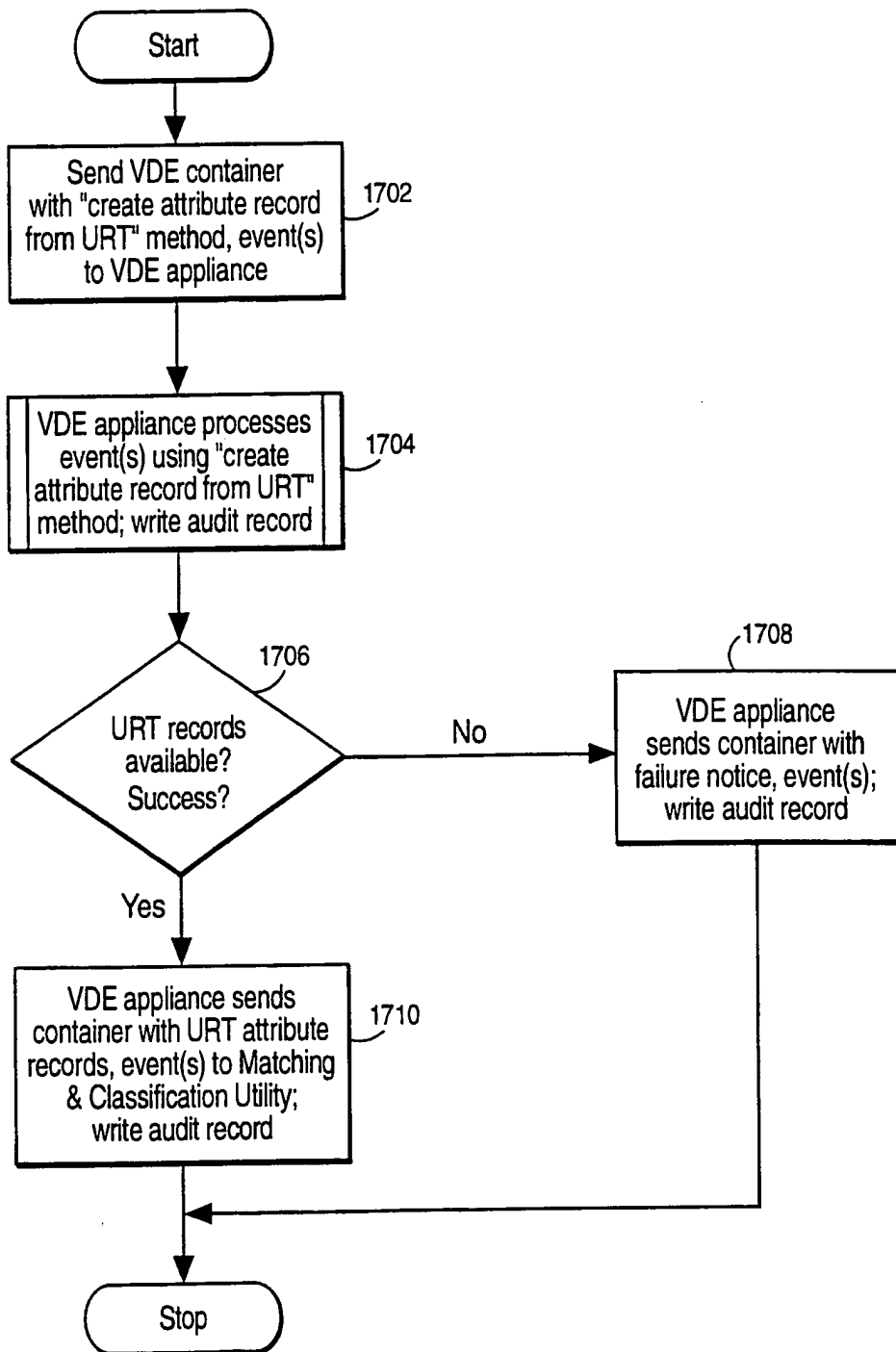


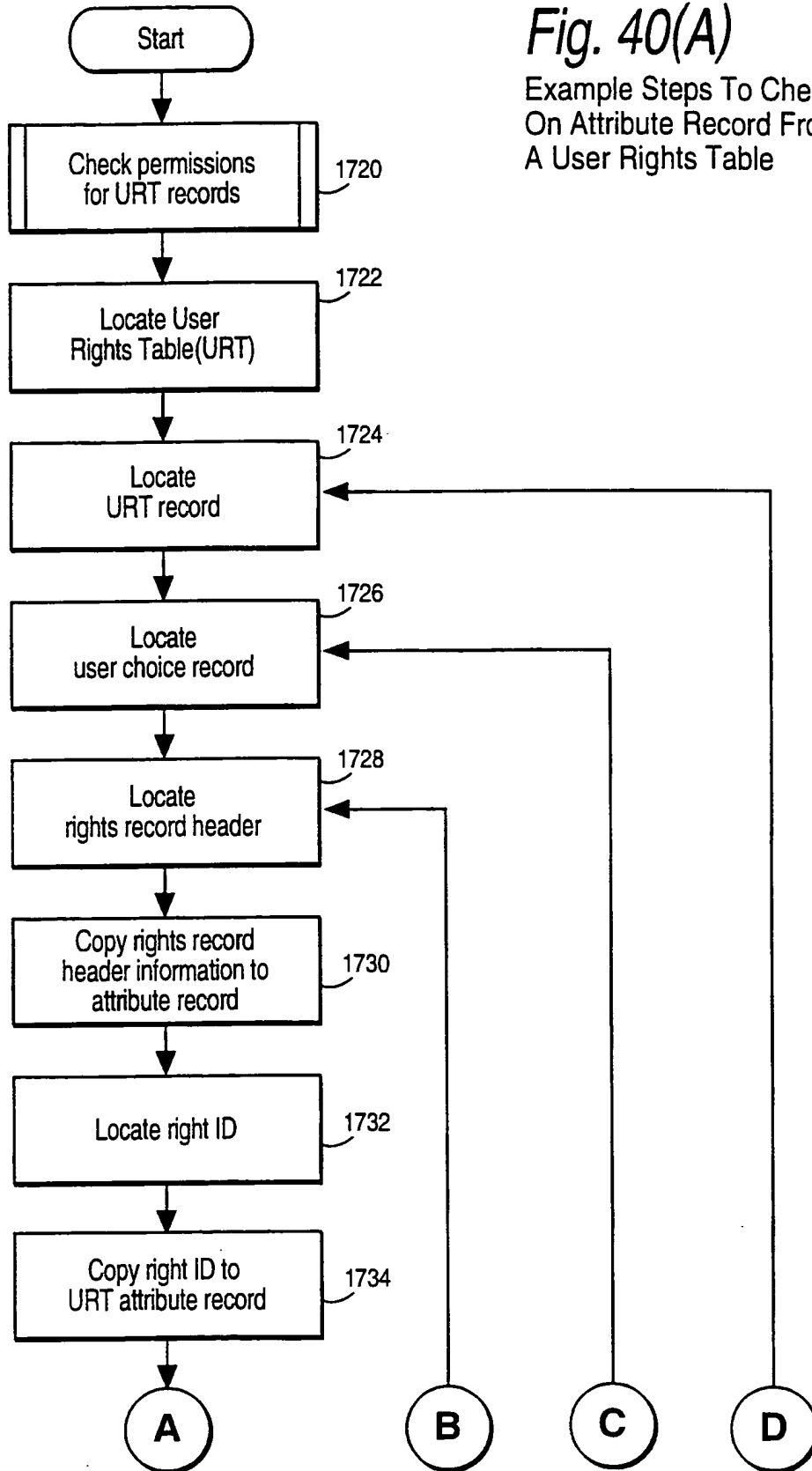
Fig. 39

Example Steps For Assembling Attribute Records Based On Rules and Consequences

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Fig. 40(A)

Example Steps To Check
On Attribute Record From
A User Rights Table



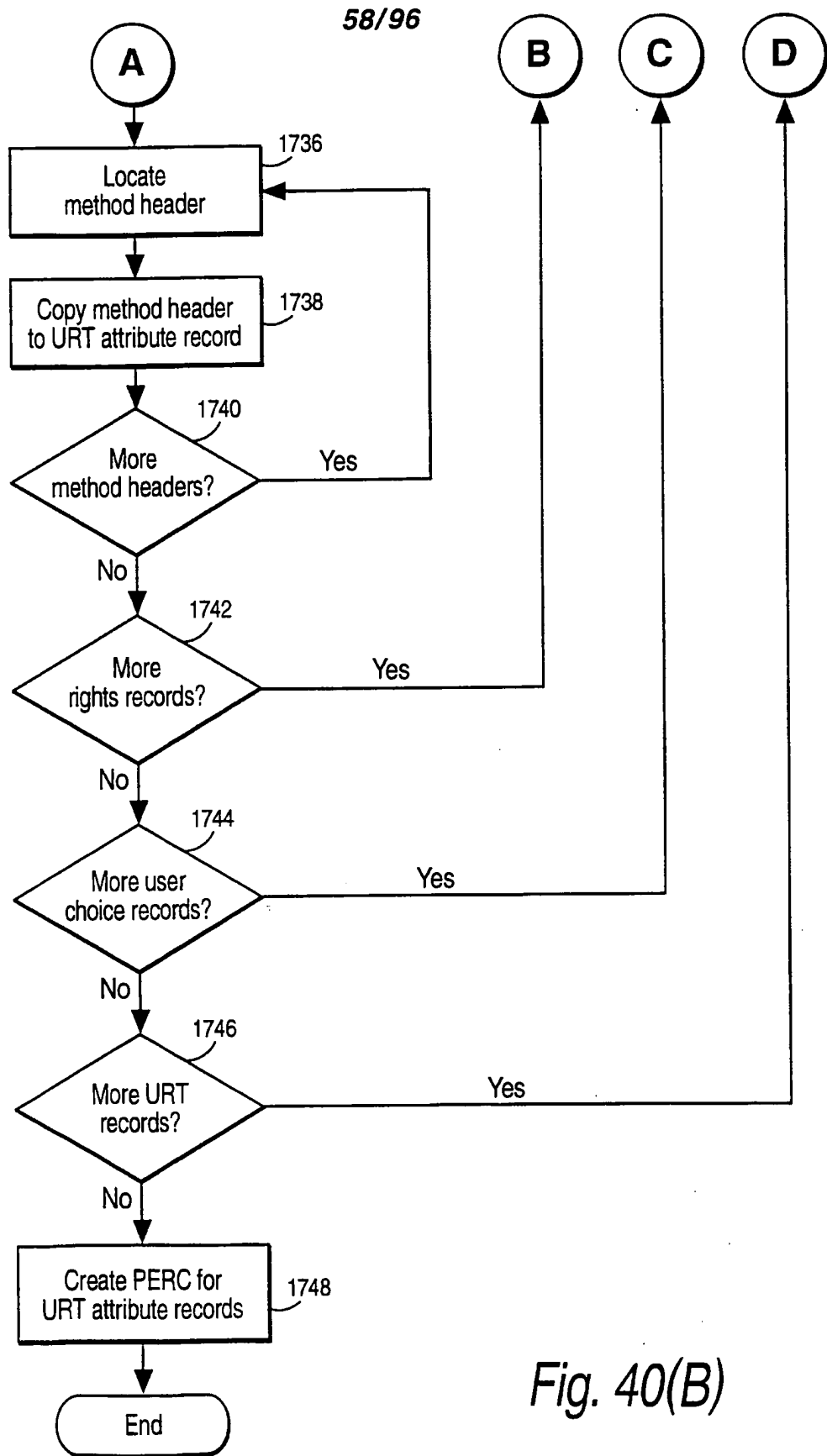
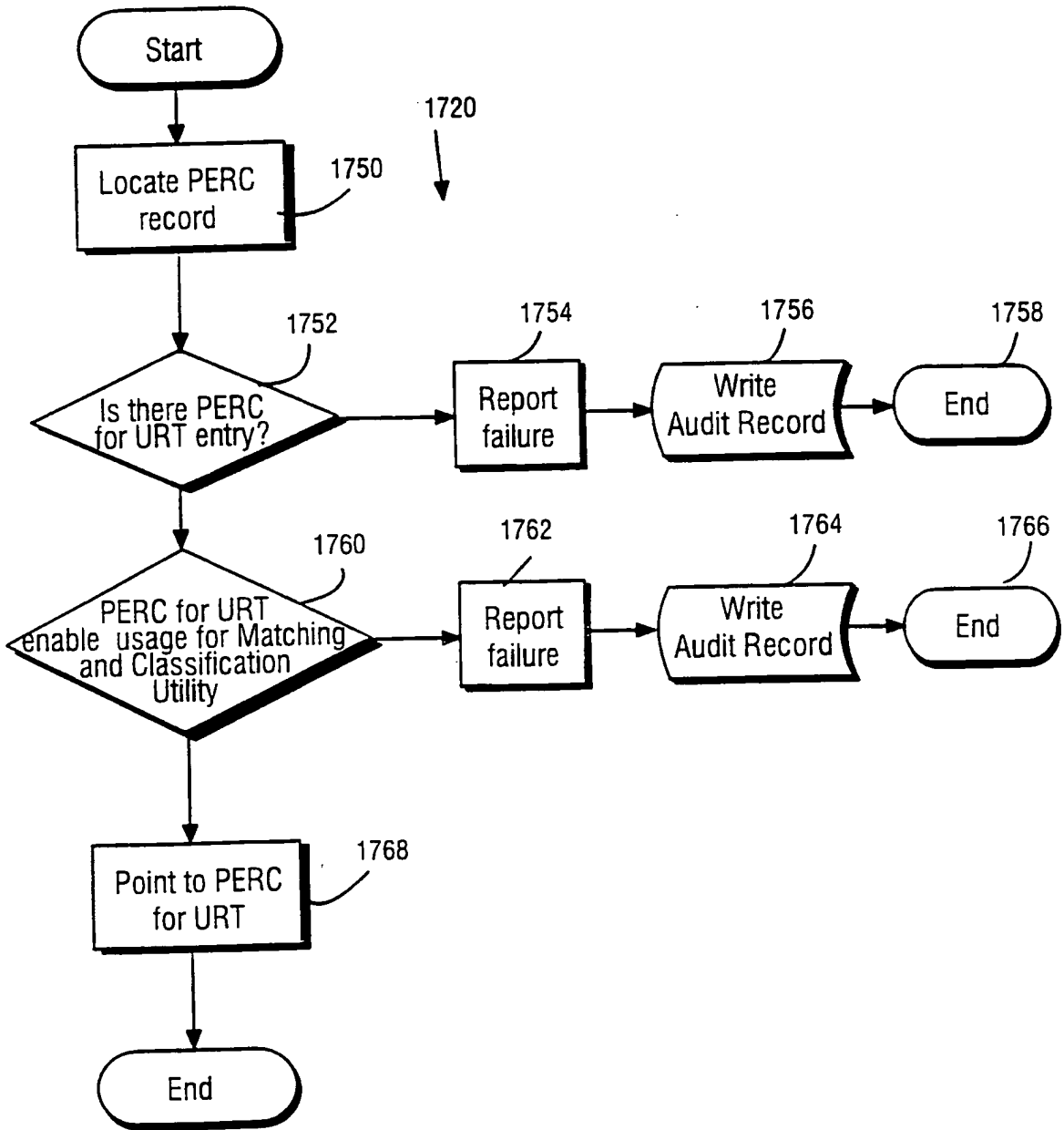
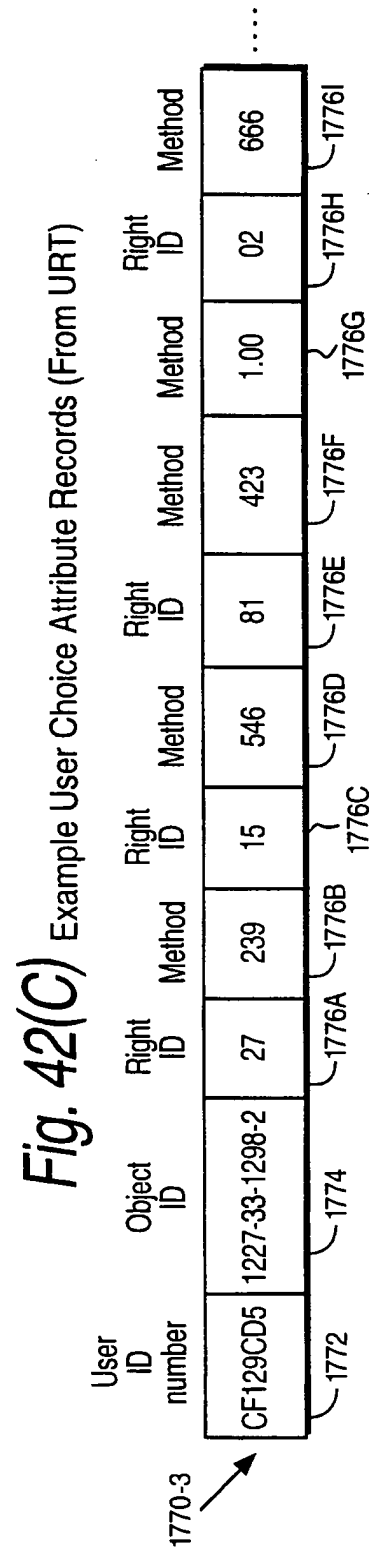
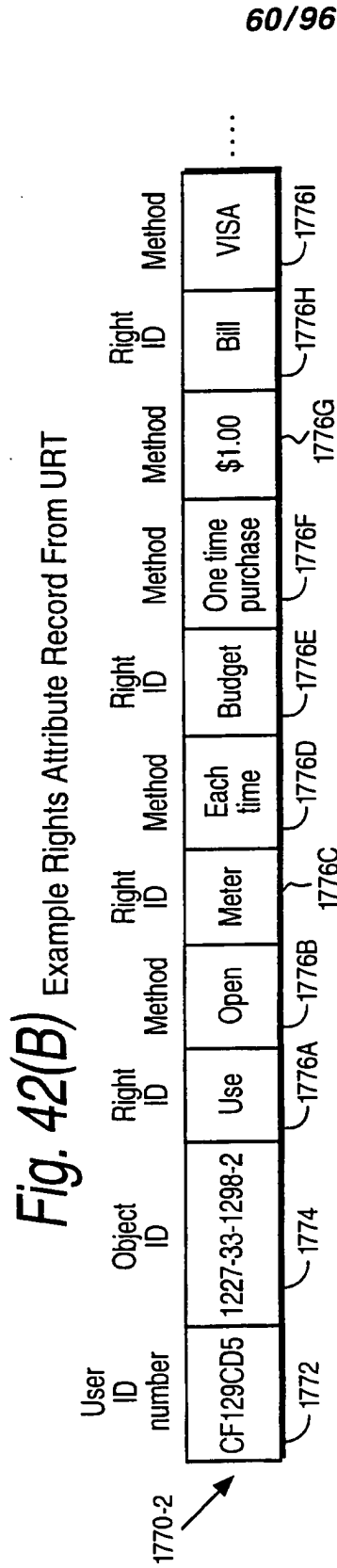
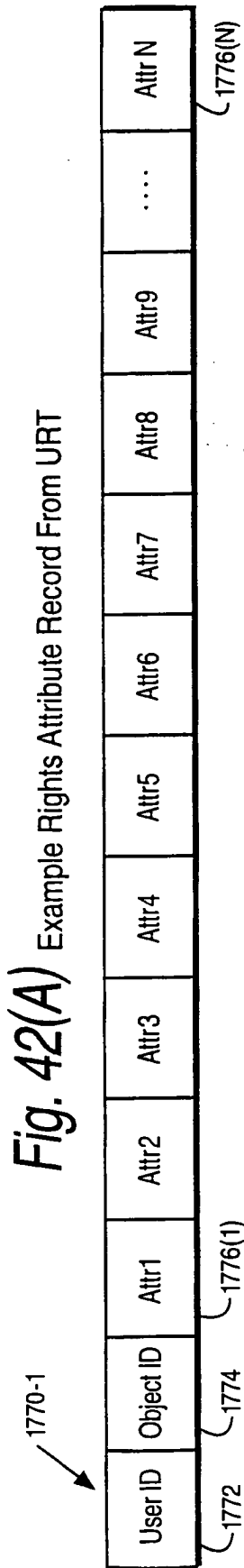


Fig. 40(B)

Fig. 41

Contract attribute records from PERC records method example

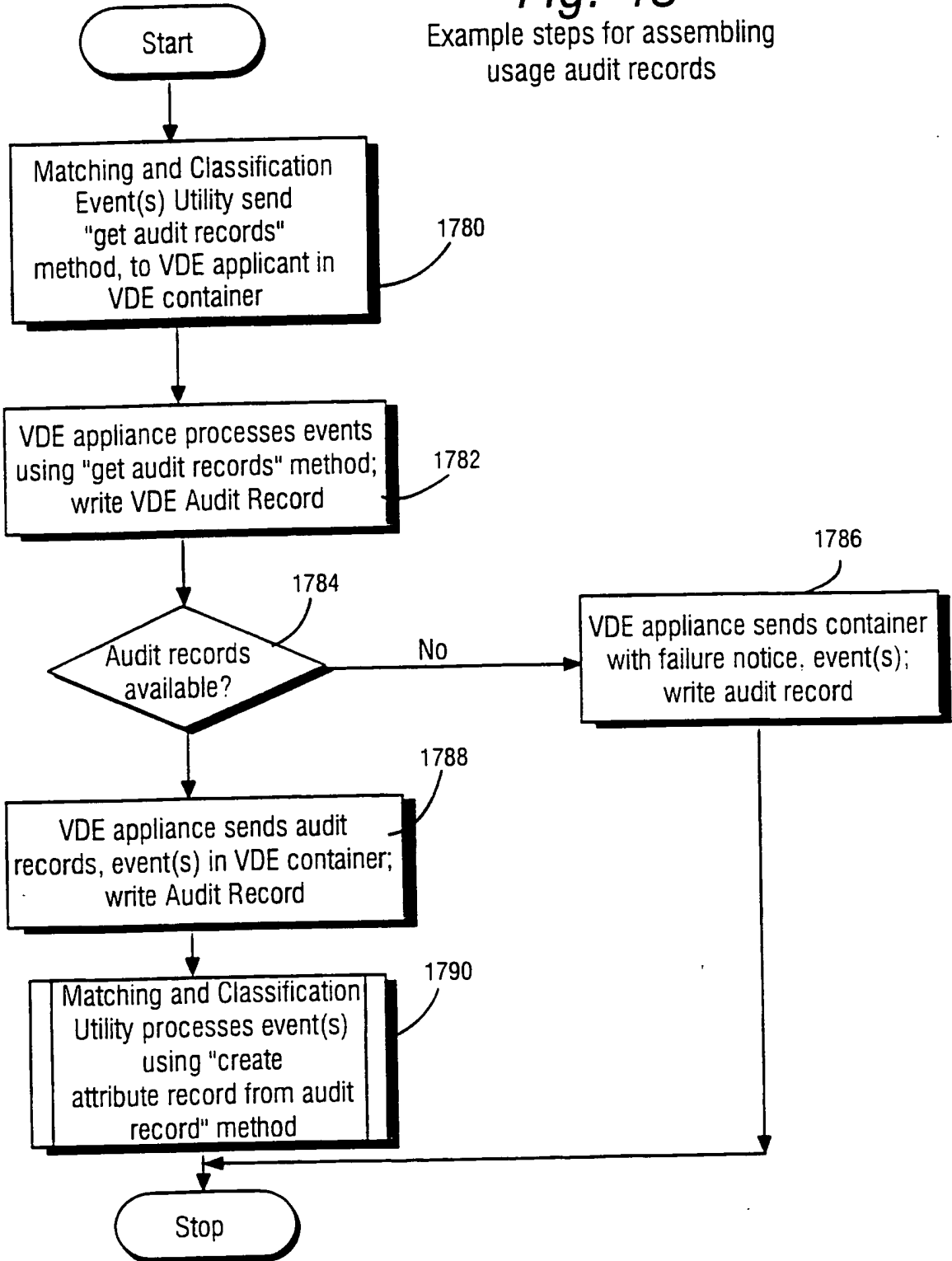




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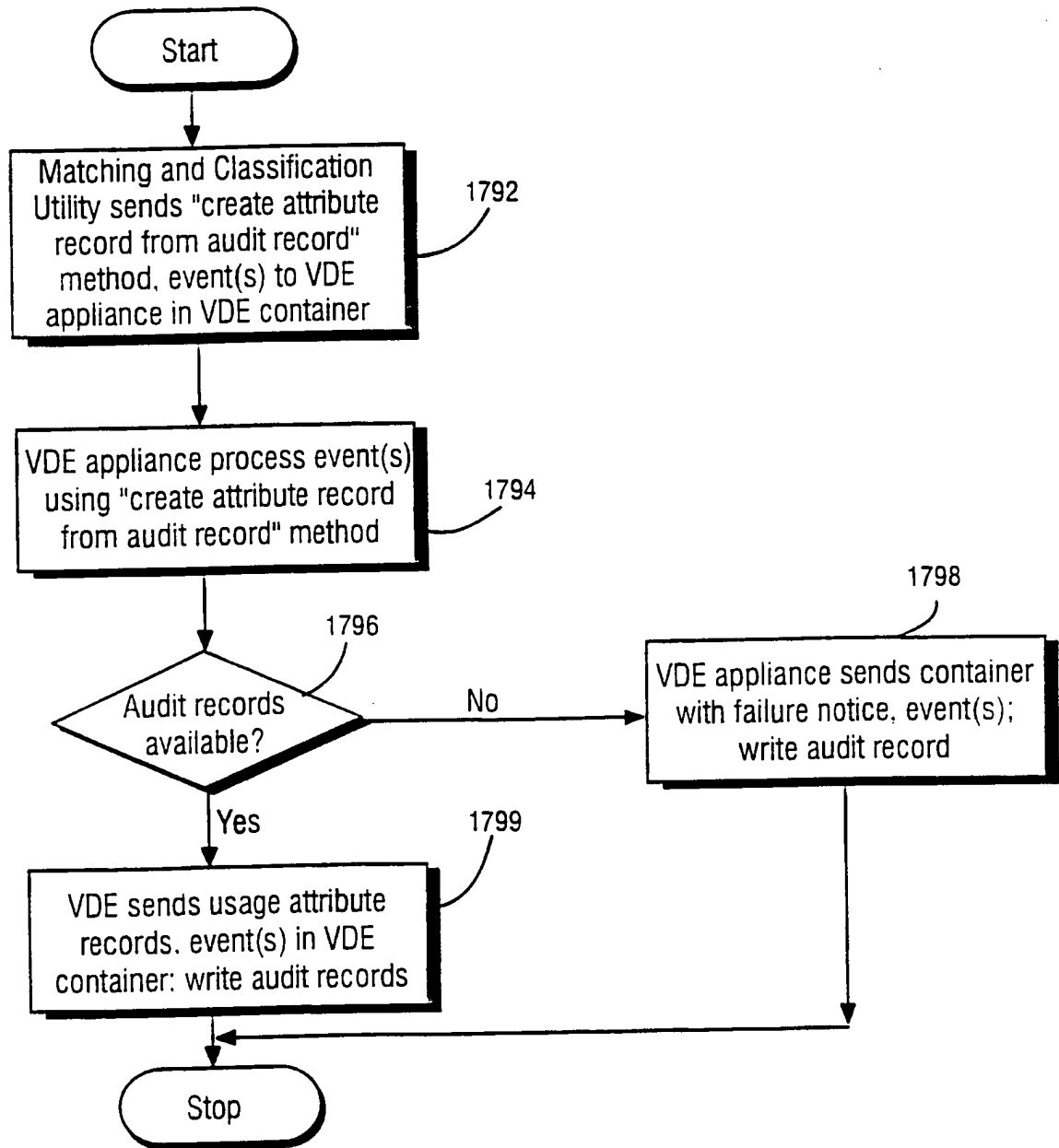
Fig. 43

Example steps for assembling usage audit records



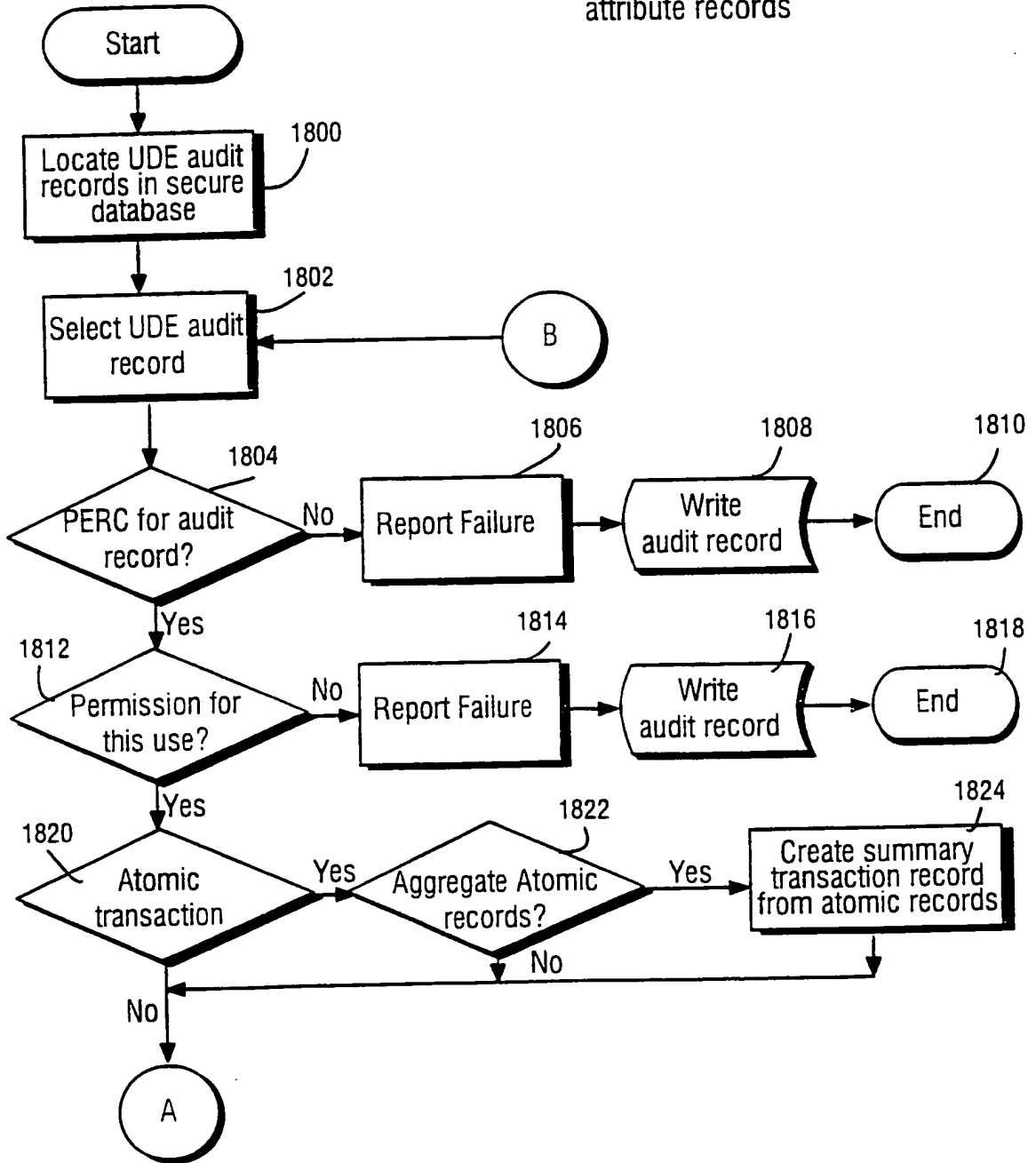
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Fig. 44
Example steps for assembling usage
audit records



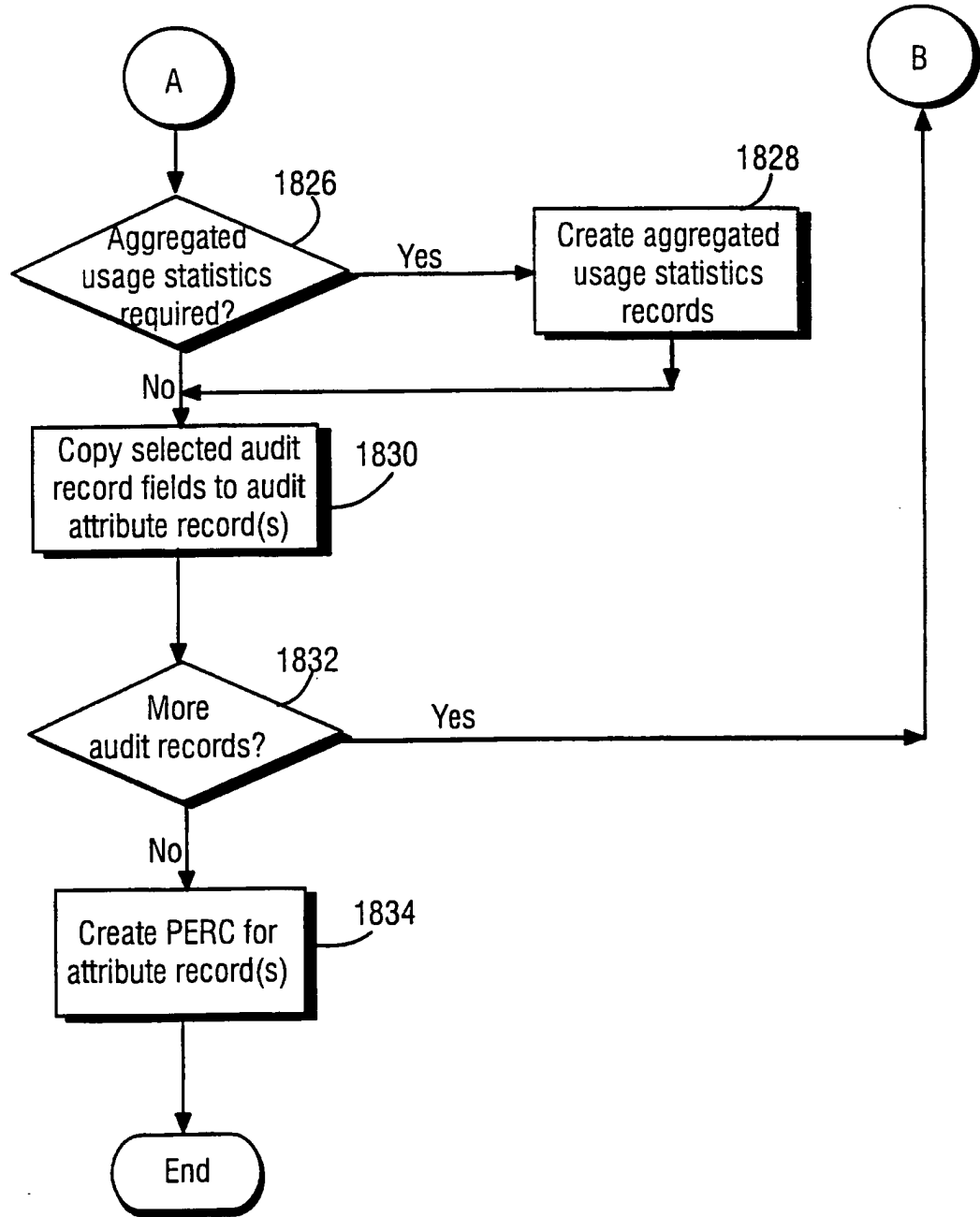
63/96

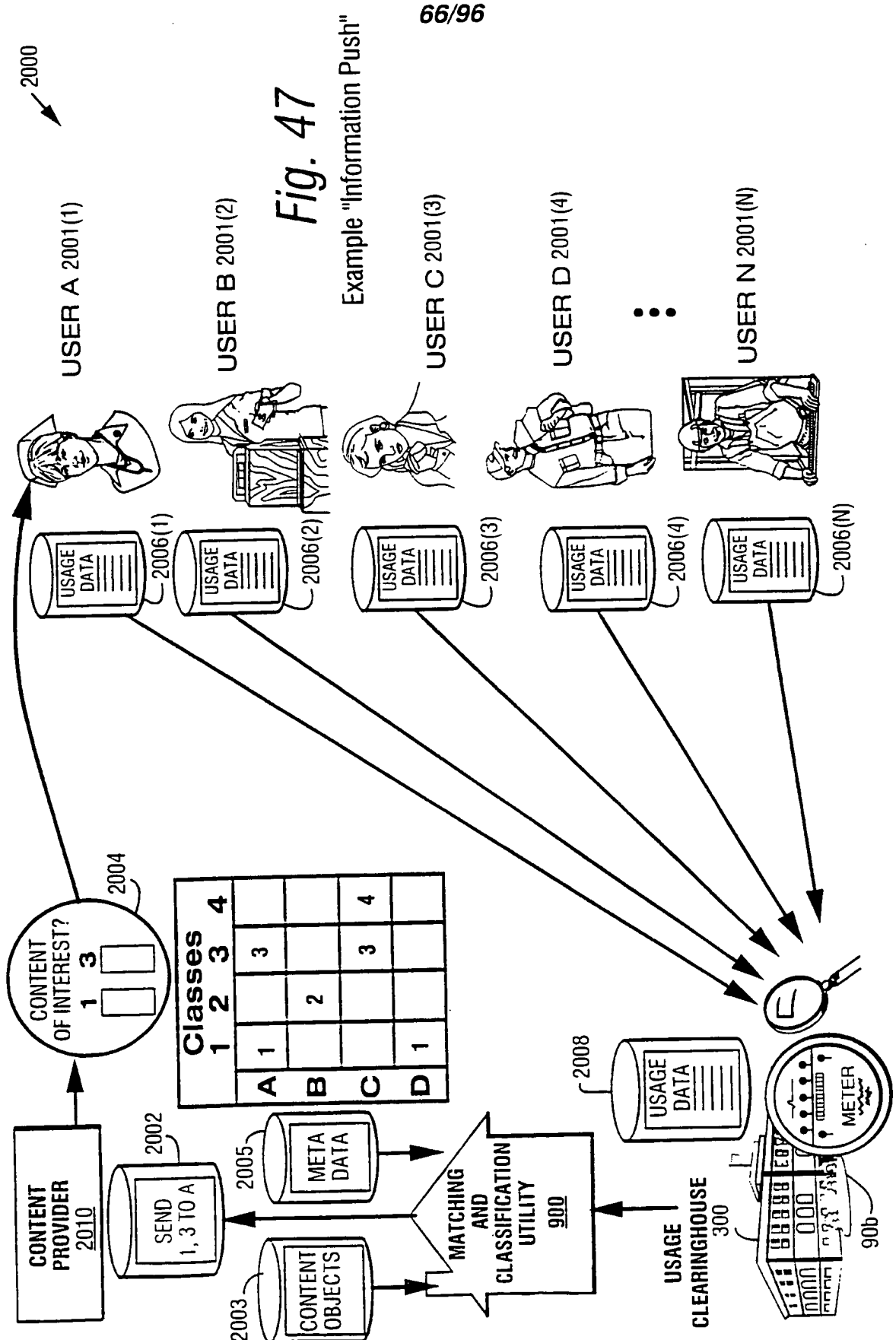
Fig. 45(A)
Example steps to create audit
attribute records



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Fig. 45(B)
Example steps to create audit
attribute records





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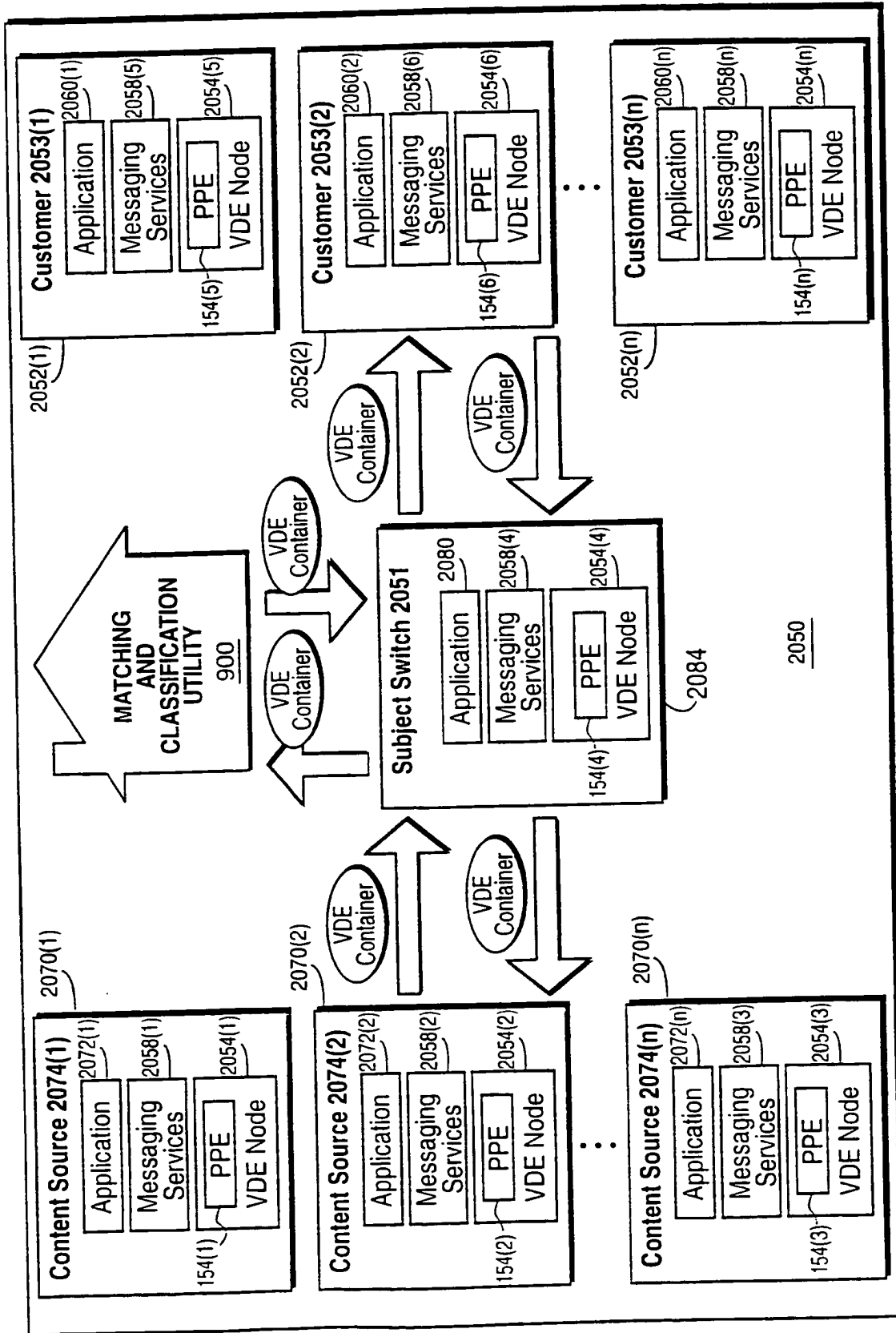


Fig. 47(A) Matching and Classification Utility 900 Supports "Push" models using Subject Switching and Messaging Services

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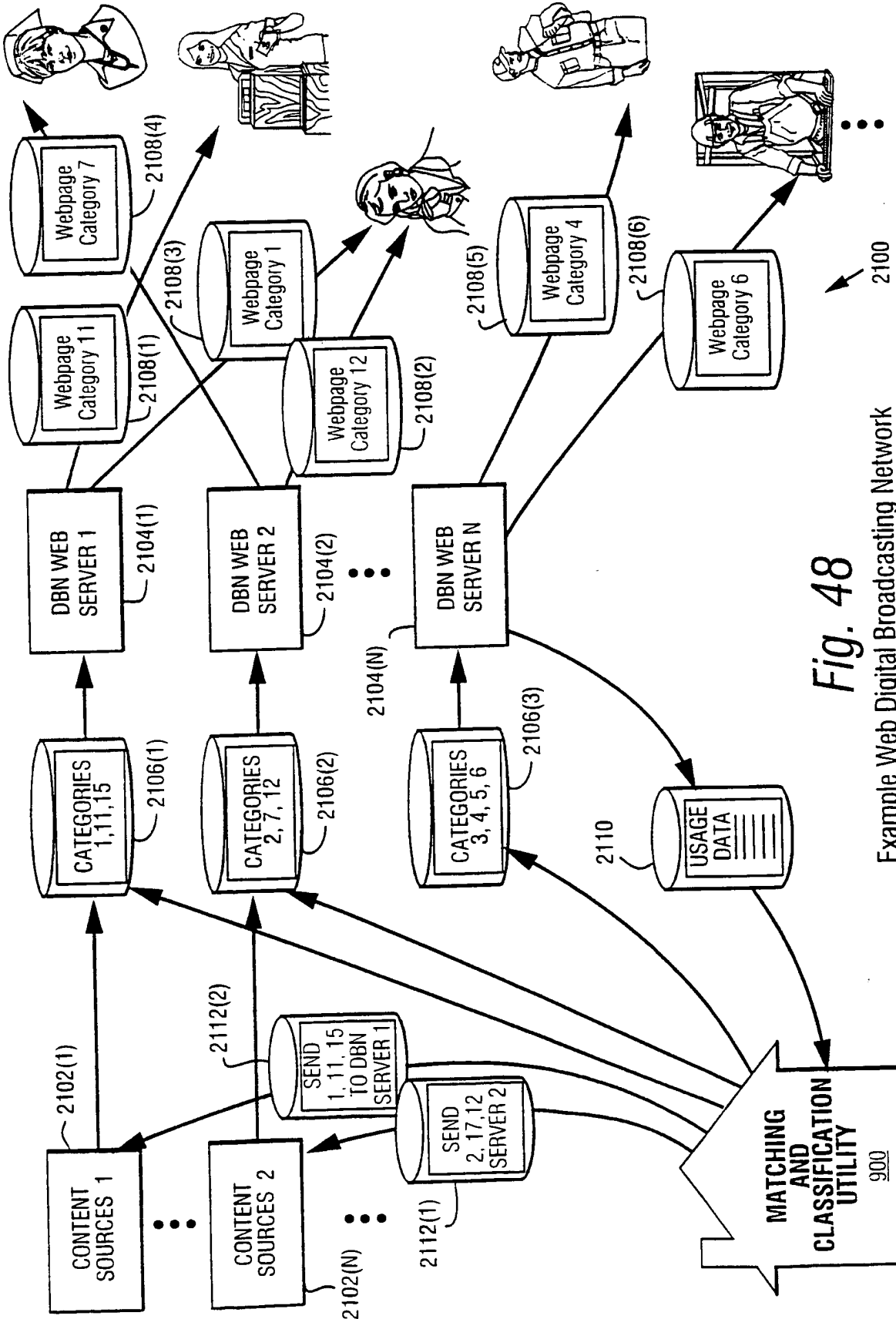


Fig. 48

Example Web Digital Broadcasting Network

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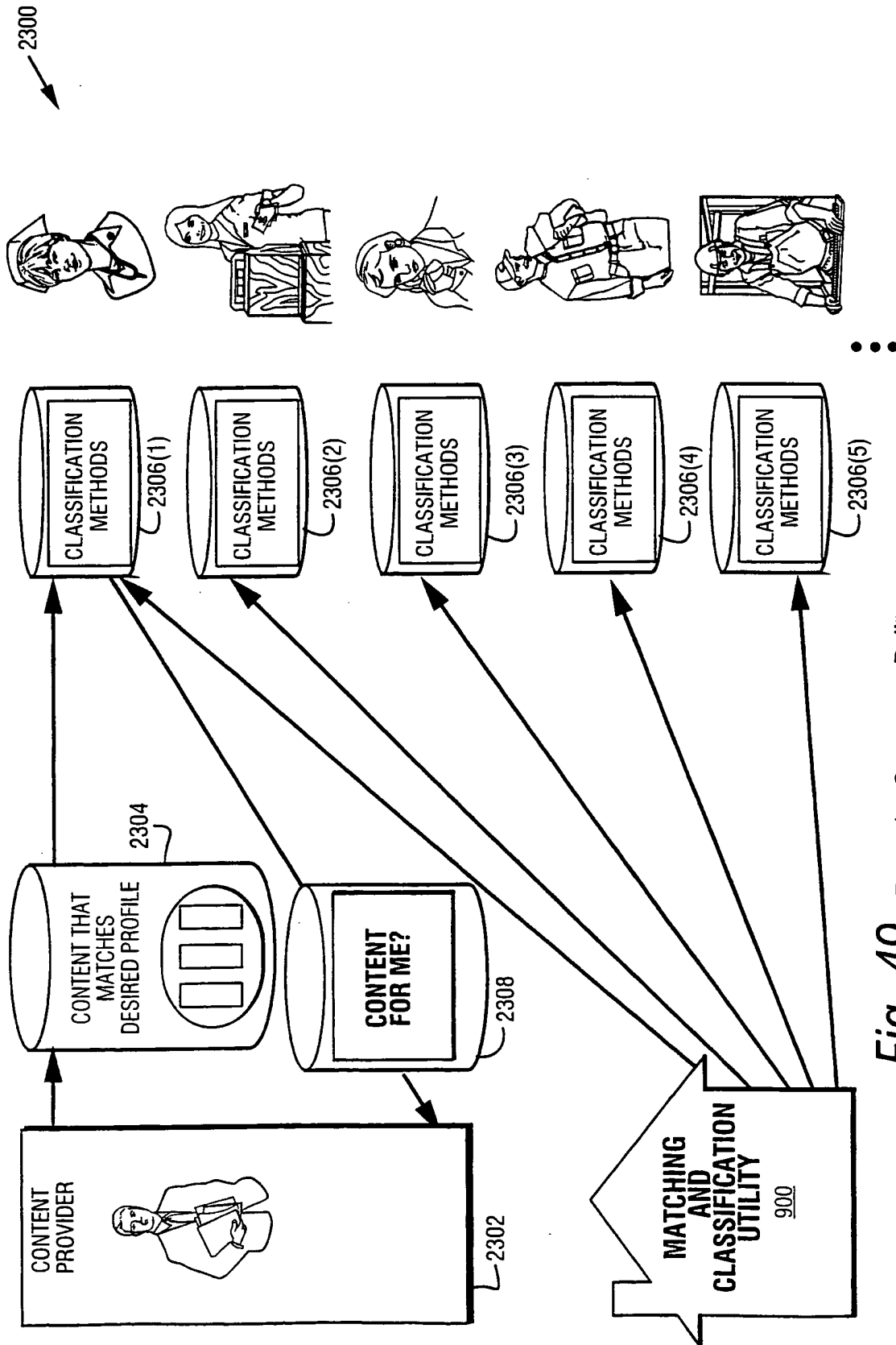


Fig. 49 Example "Consumer Pull"

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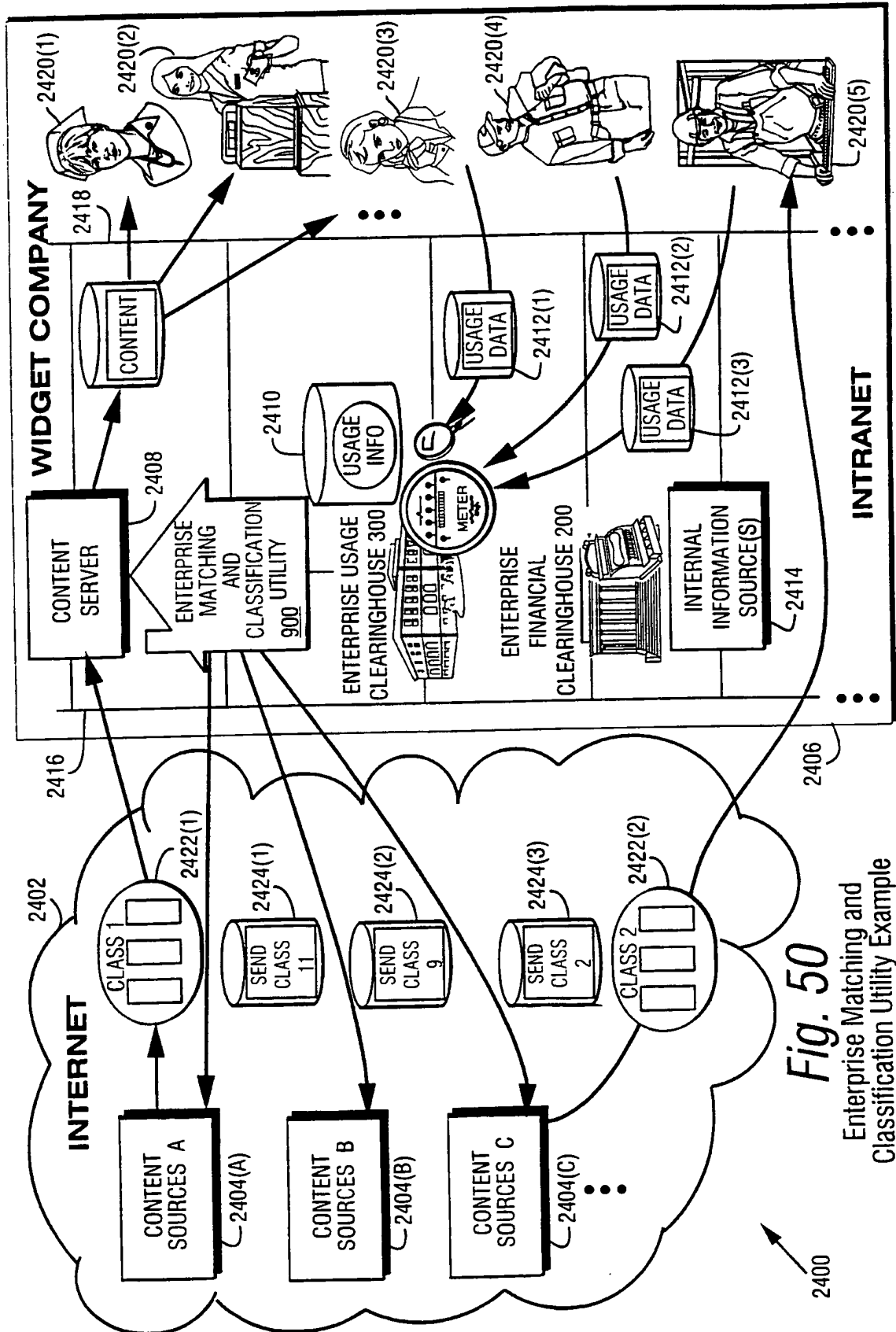
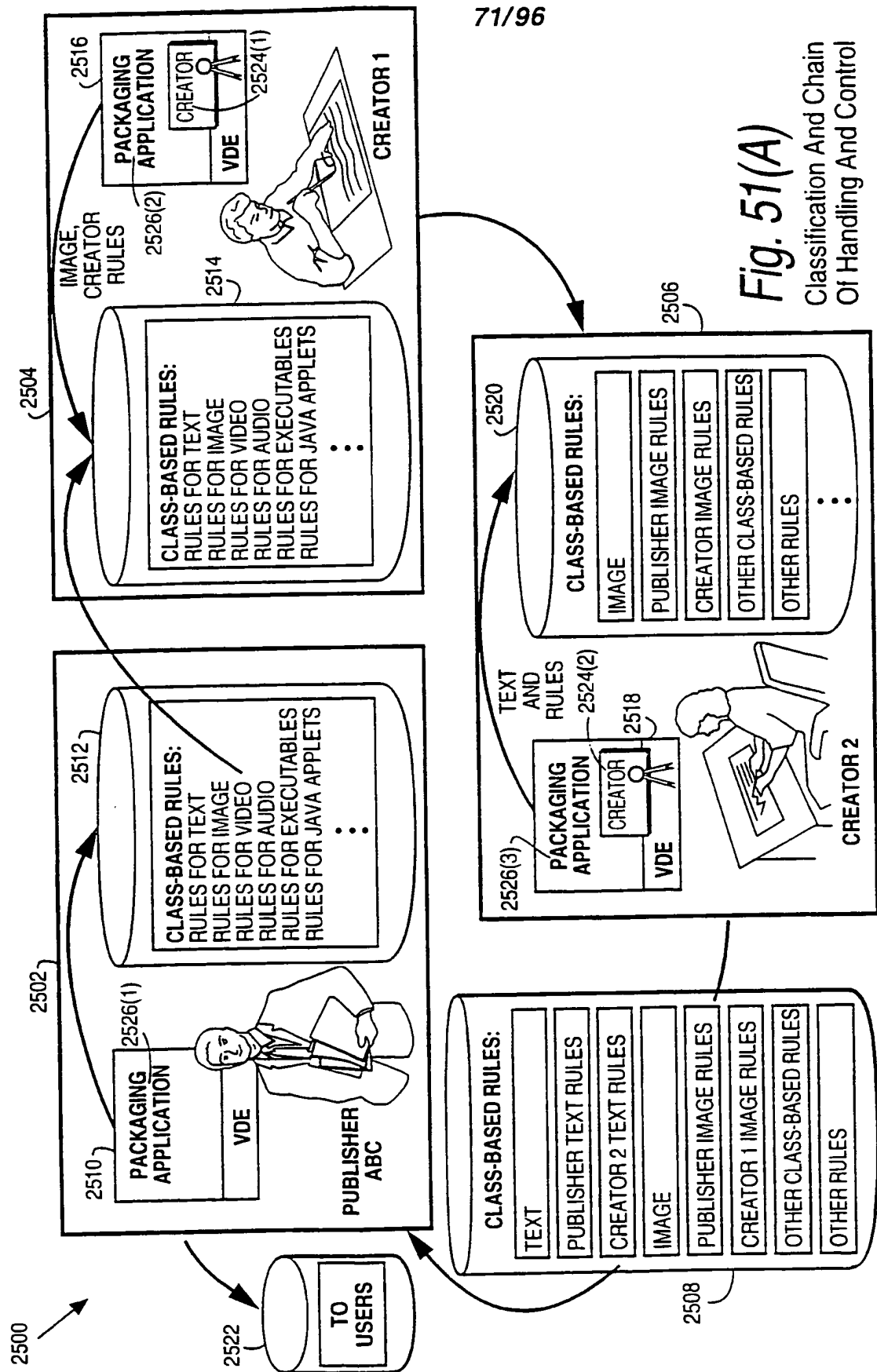


Fig. 50
 Enterprise Matching and
 Classification Utility Example



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Fig. 51(A)
Classification And Chain
Of Handling And Control

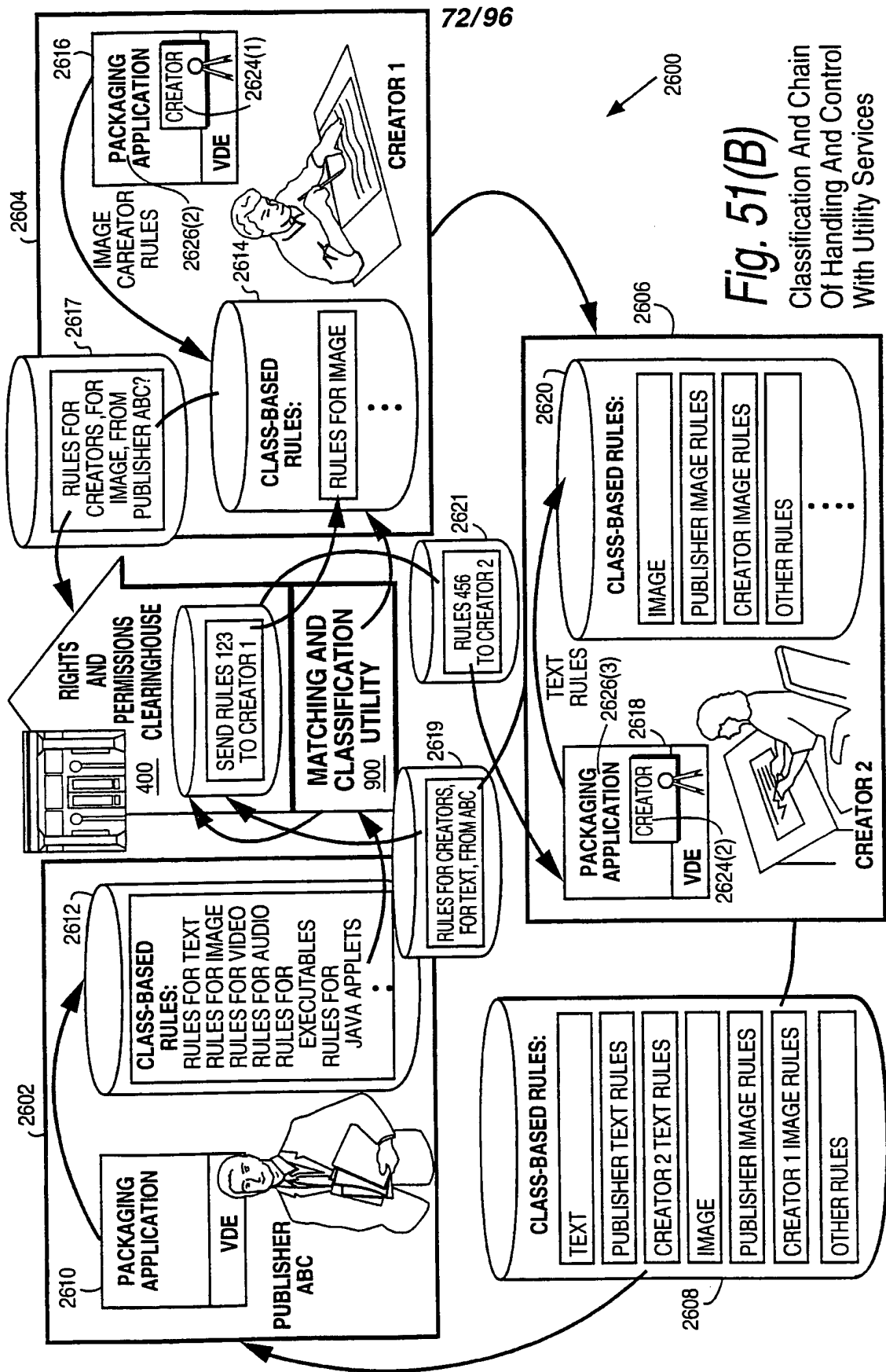


Fig. 51(B)
 Classification And Chain
 Of Handling And Control
 With Utility Services

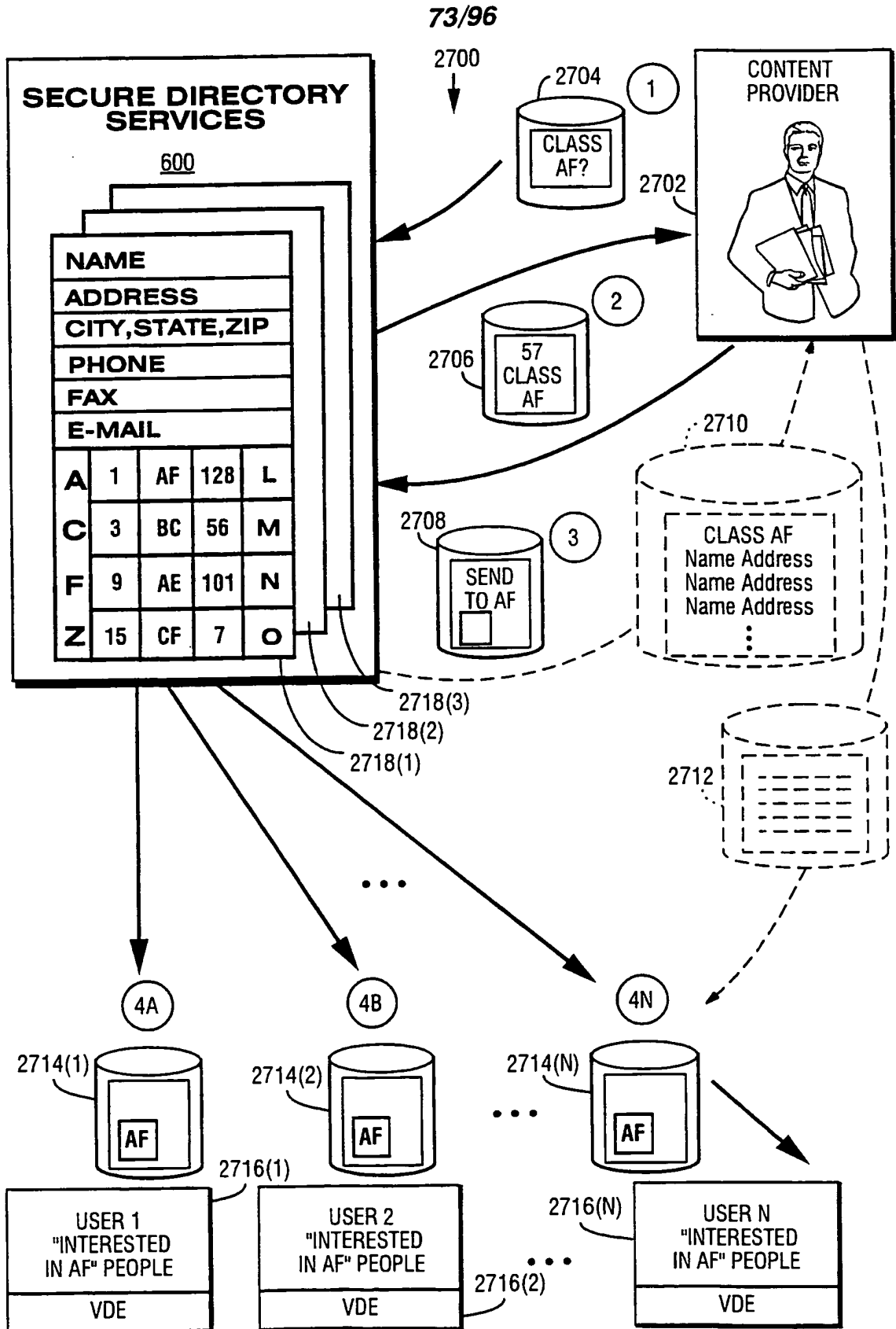


Fig. 52 Secure Directory Services

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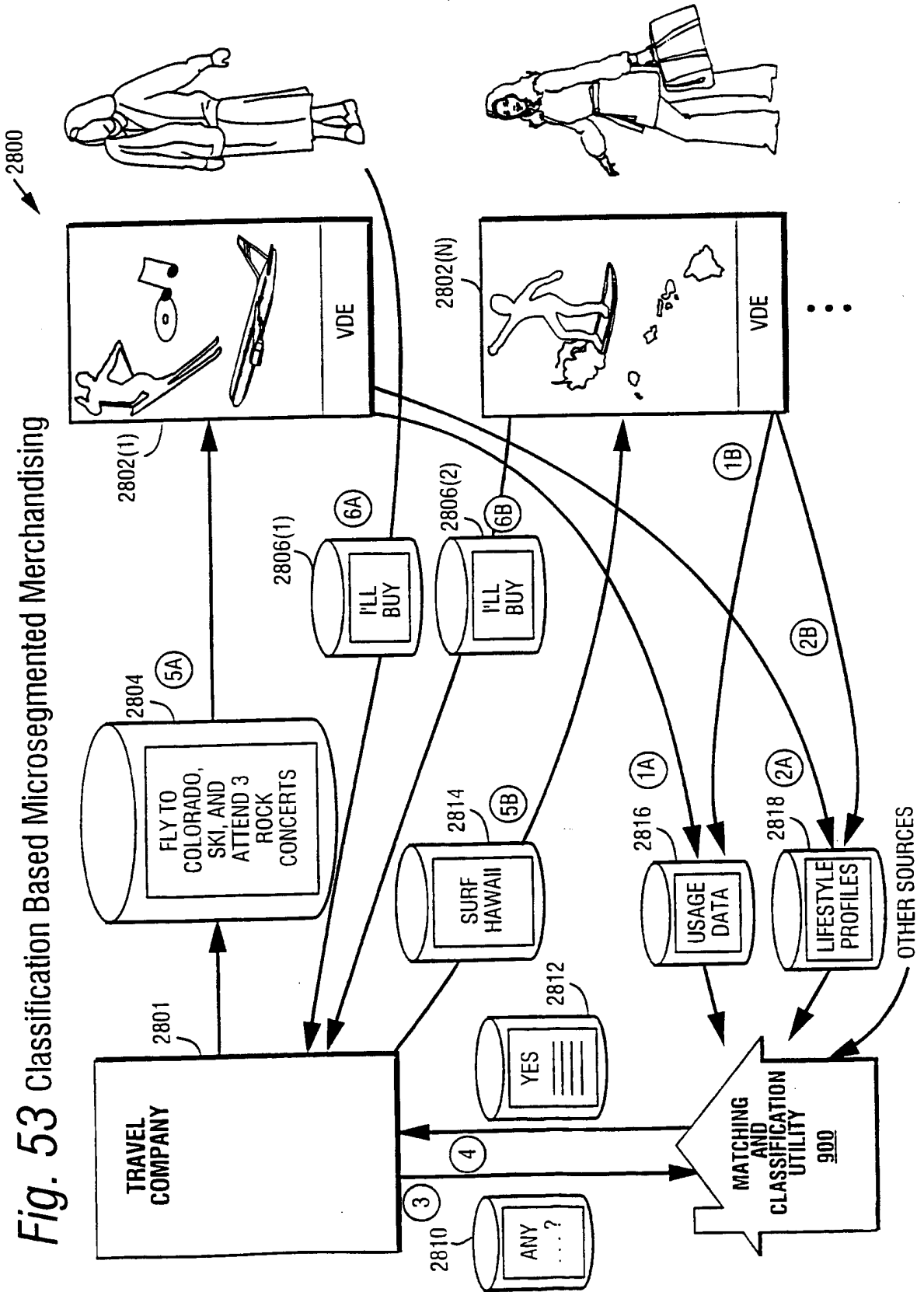


Fig. 53 Classification Based Microsegmented Merchandising

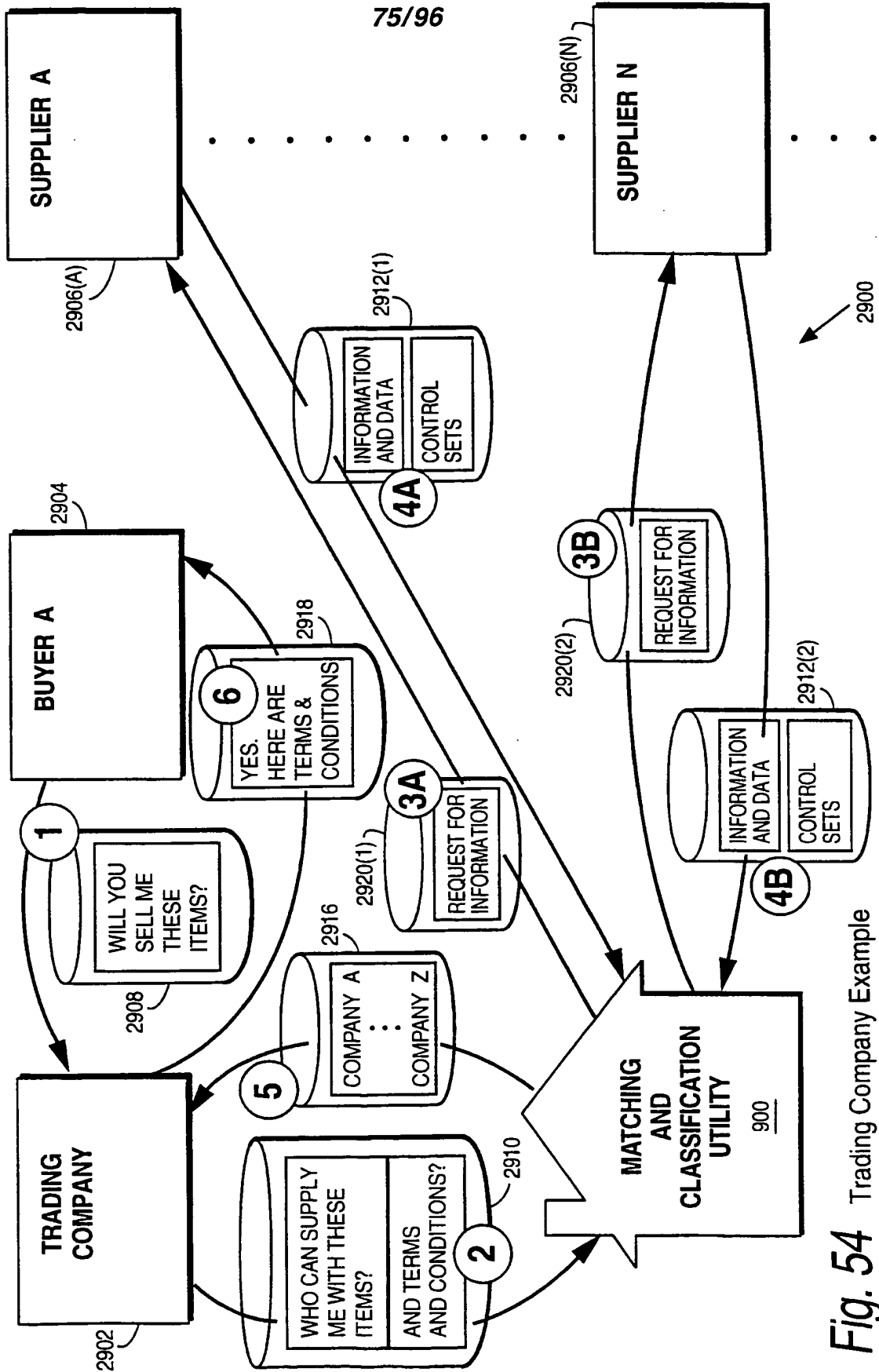


Fig. 54 Trading Company Example

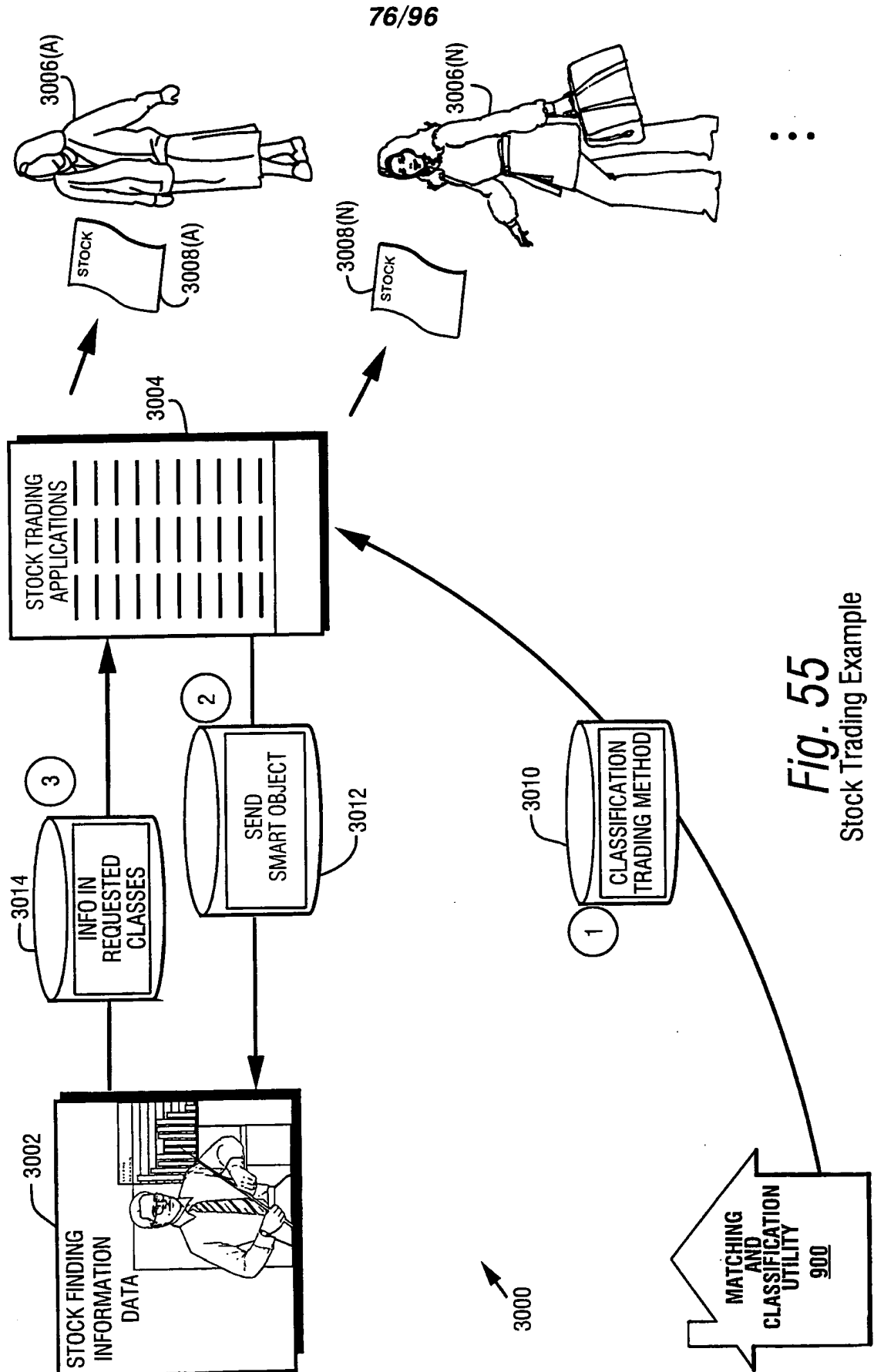


Fig. 55
Stock Trading Example

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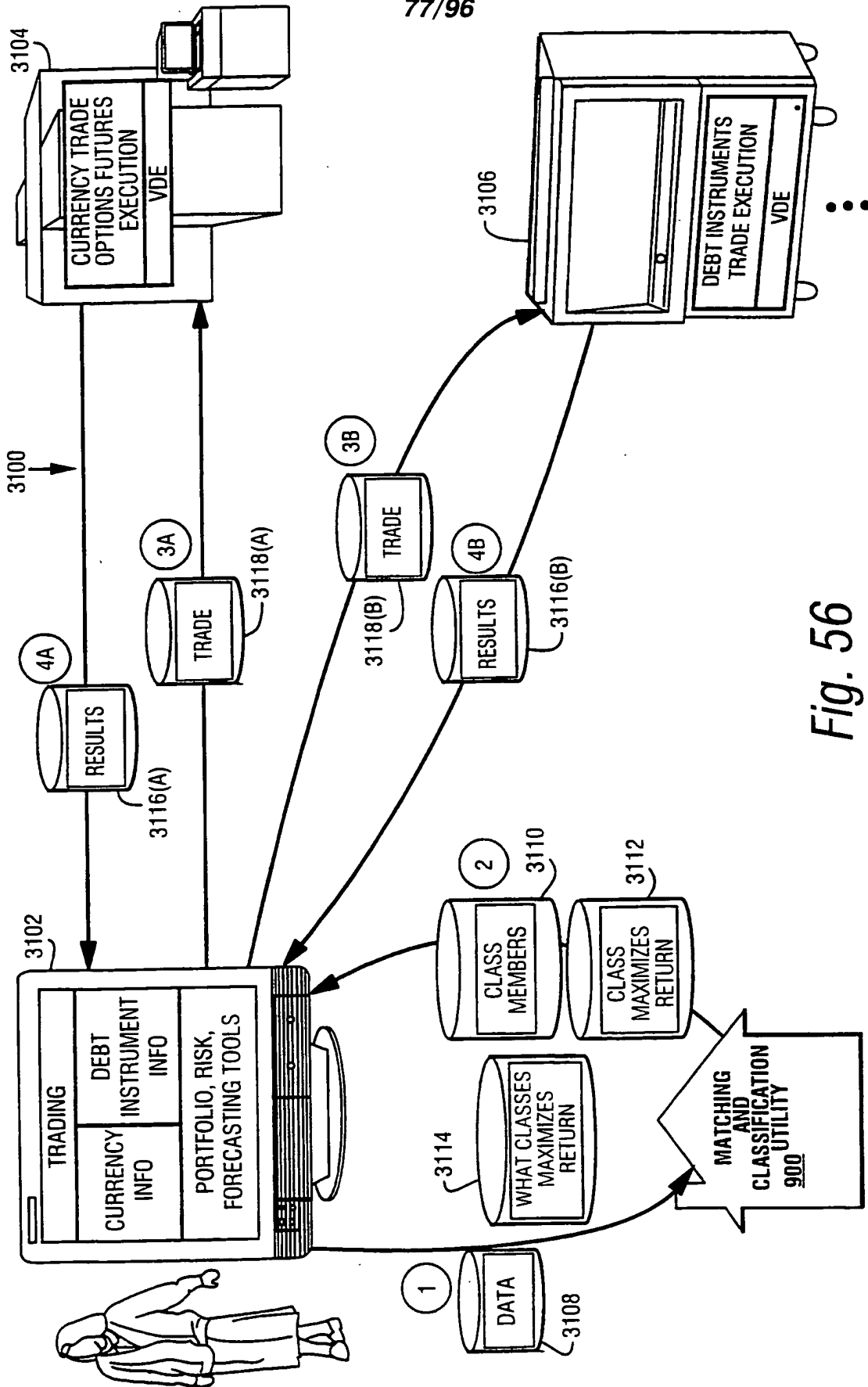


Fig. 56
Currency Trading Example

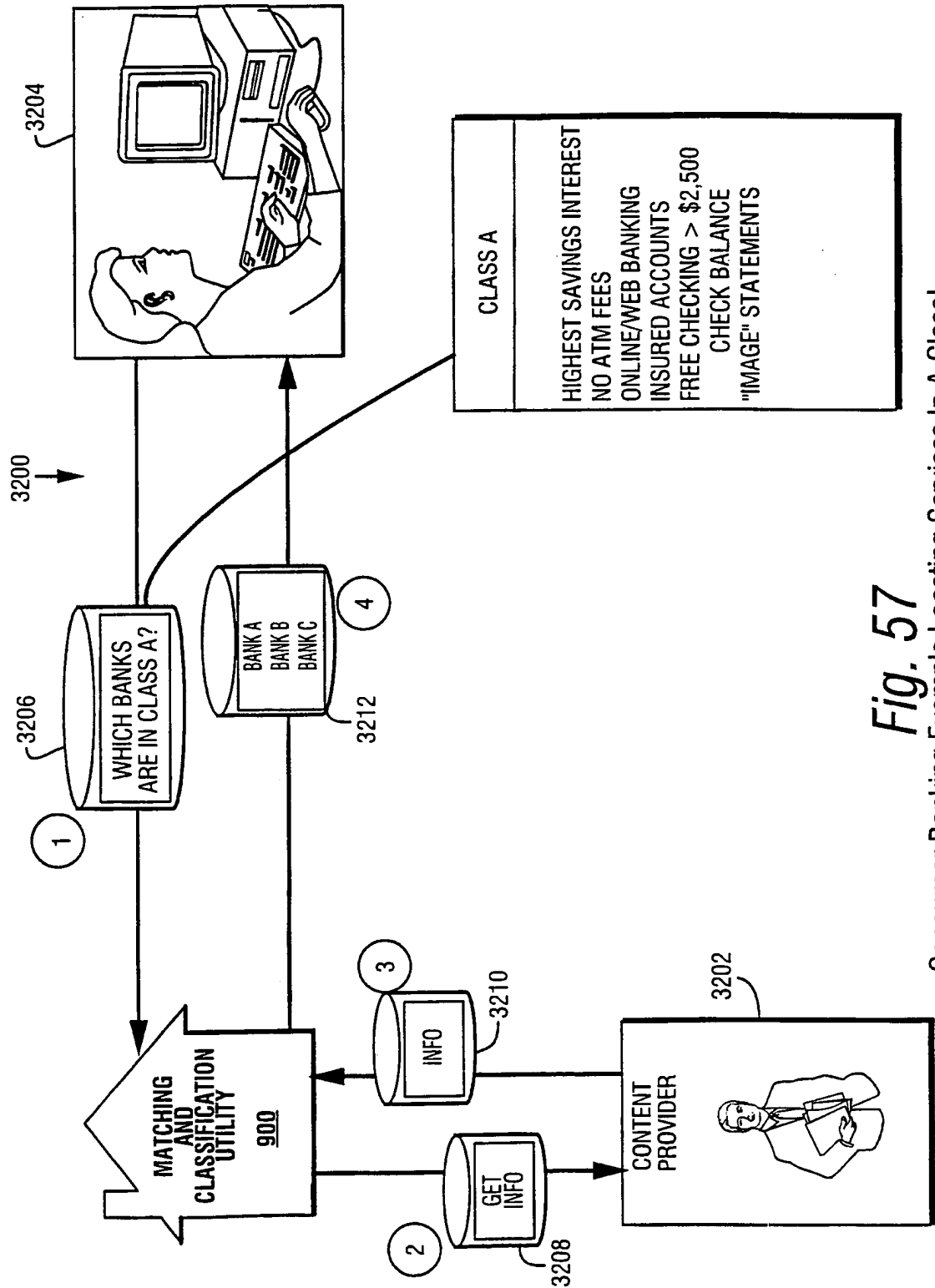


Fig. 57

Consumer Banking Example Locating Services In A Class!

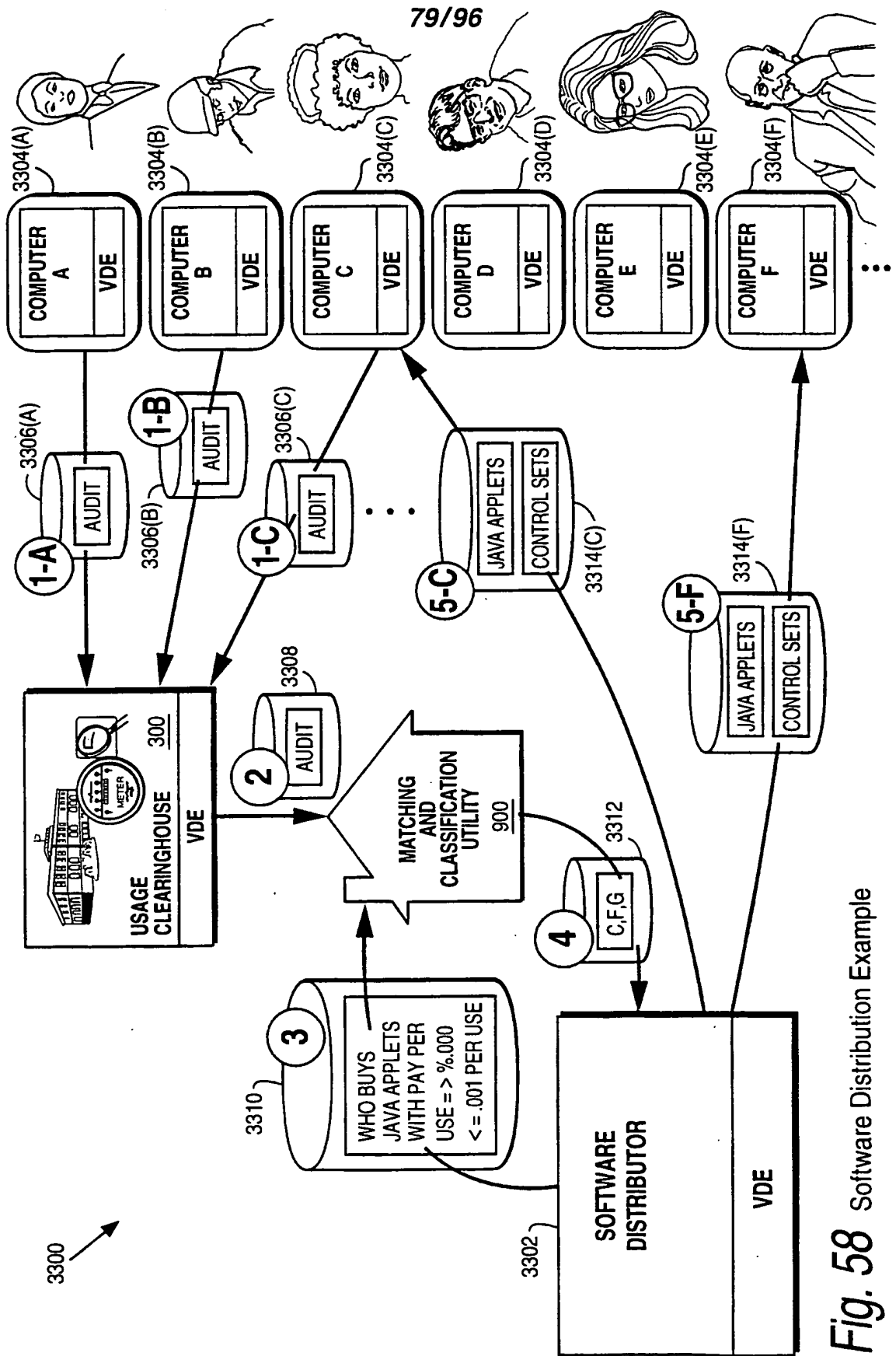


Fig. 58 Software Distribution Example

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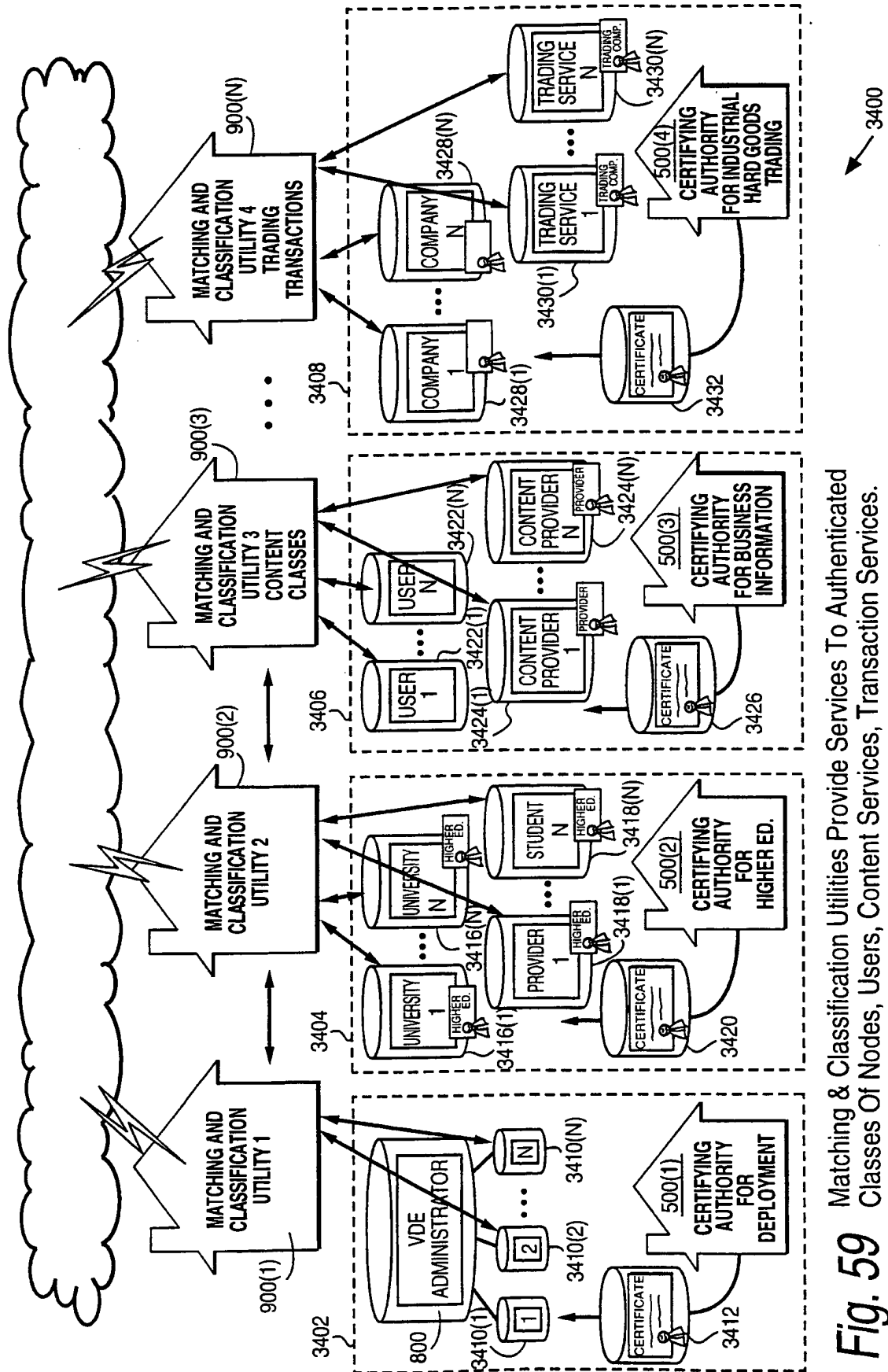


Fig. 59 Matching & Classification Utilities Provide Services To Authenticated Classes Of Nodes, Users, Content Services, Transaction Services.

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TO FIG. 60B

TO FIG. 60B

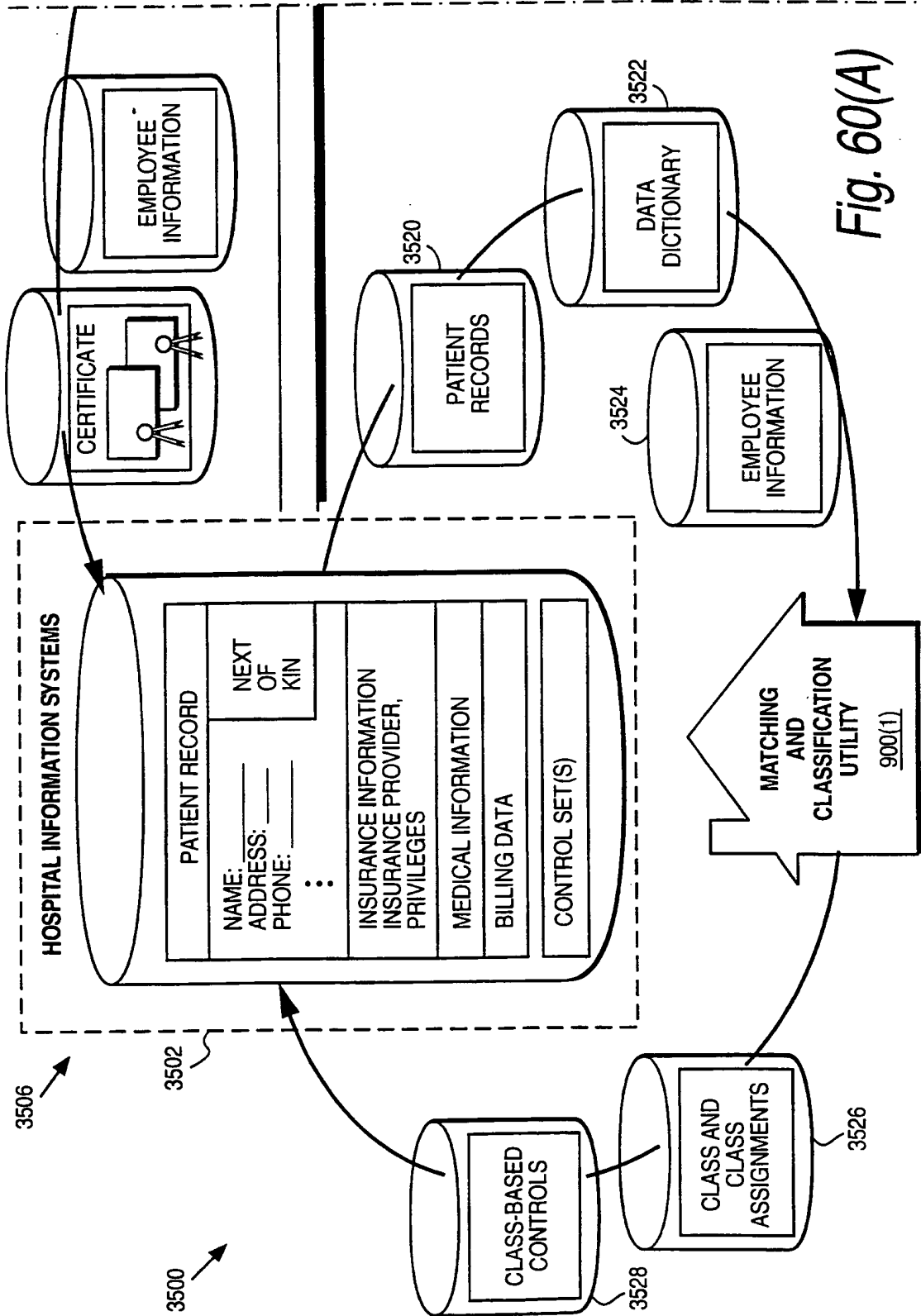


Fig. 60(A)

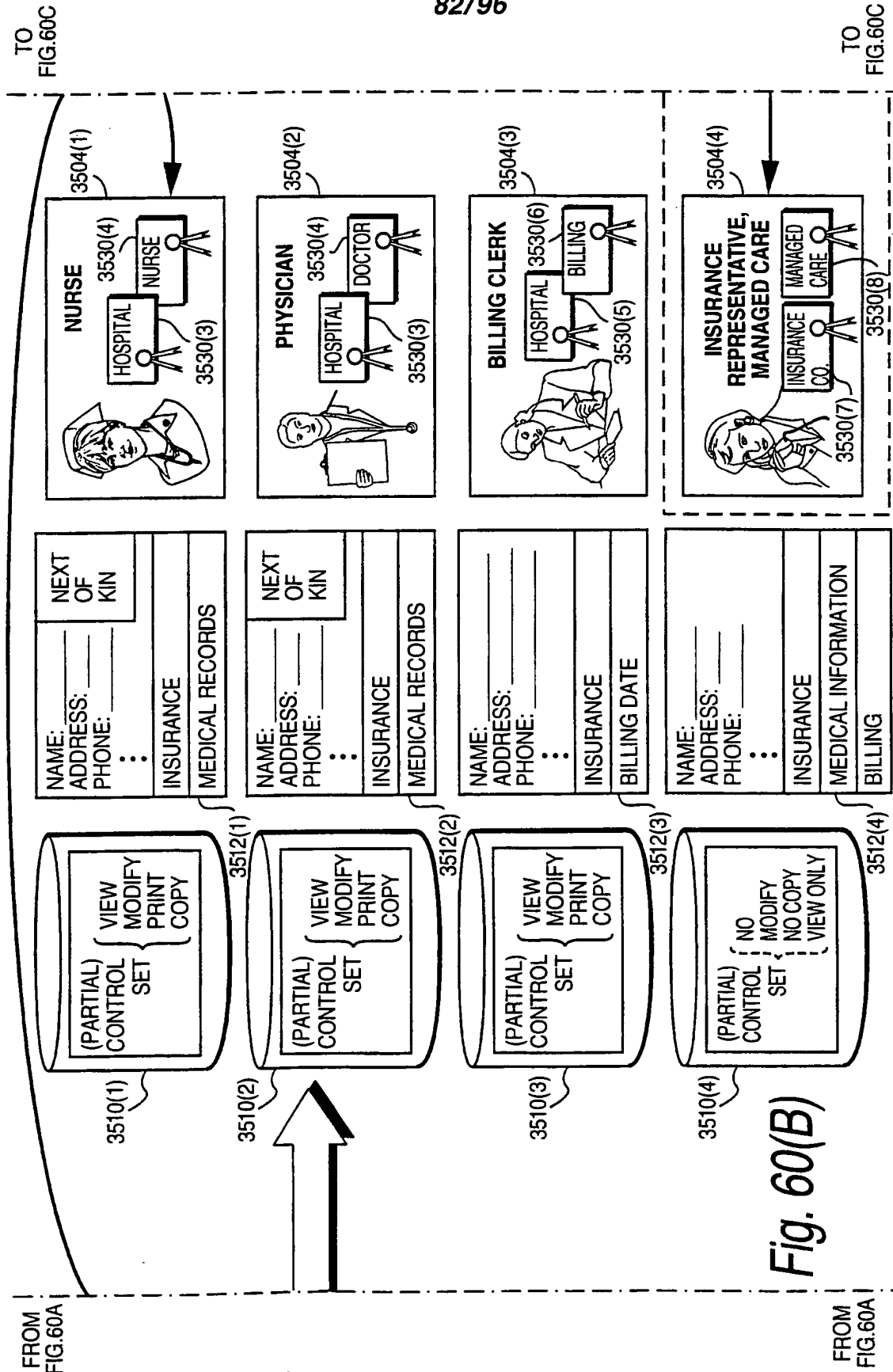


Fig. 60(B)

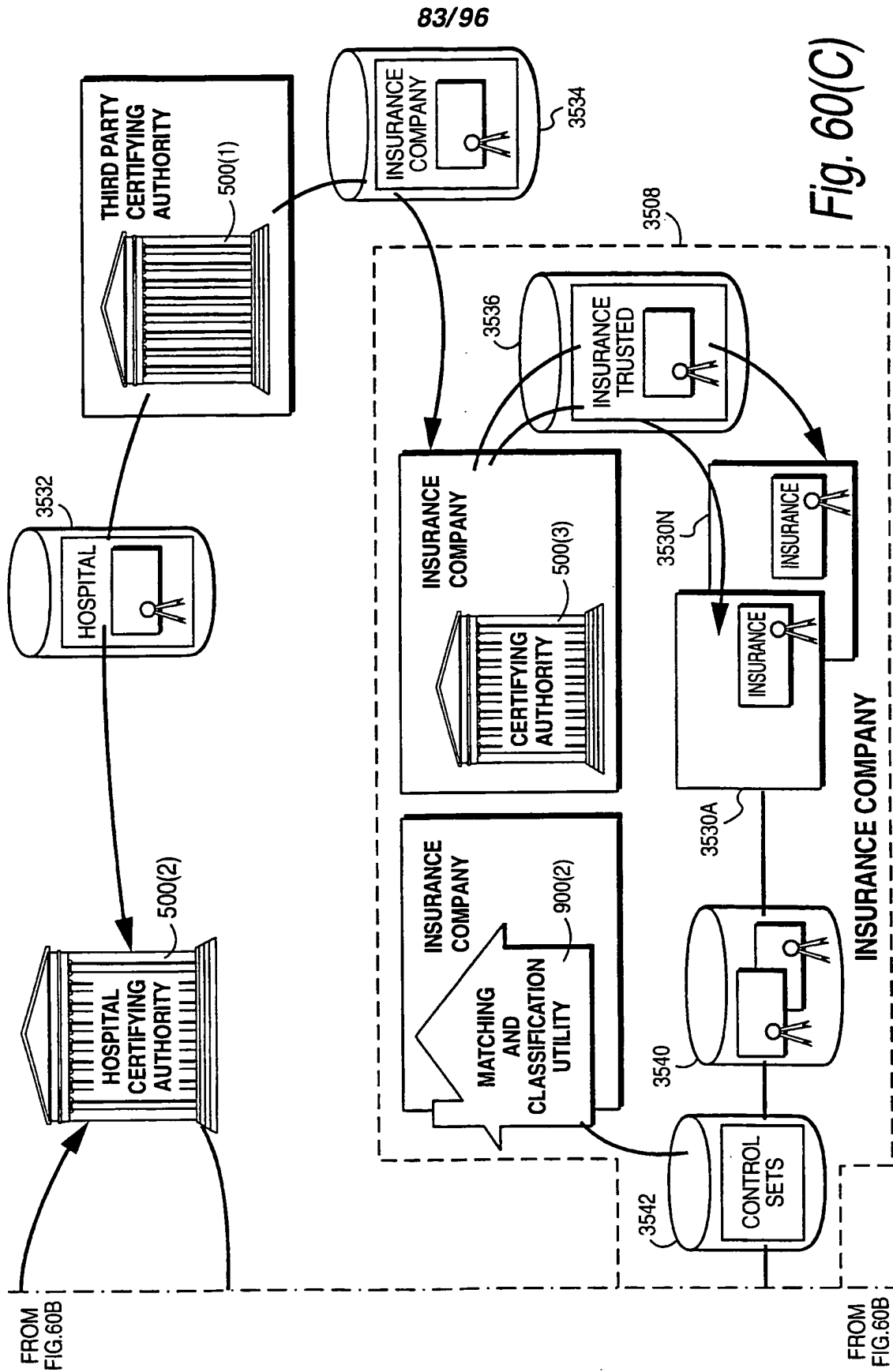


Fig. 60(C)

FROM FIG. 60B

FROM FIG. 60B

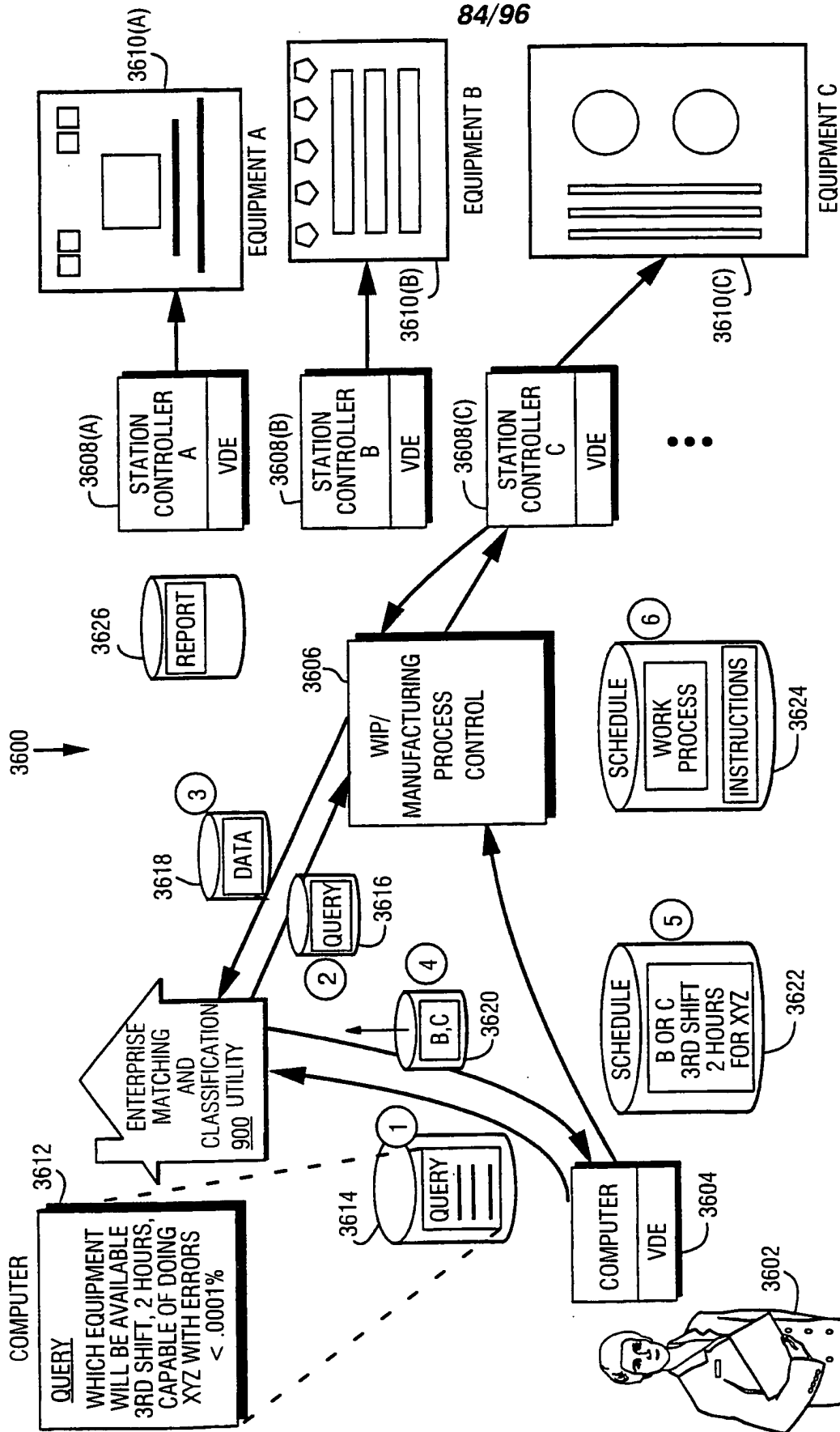


Fig. 61 Workflow Example

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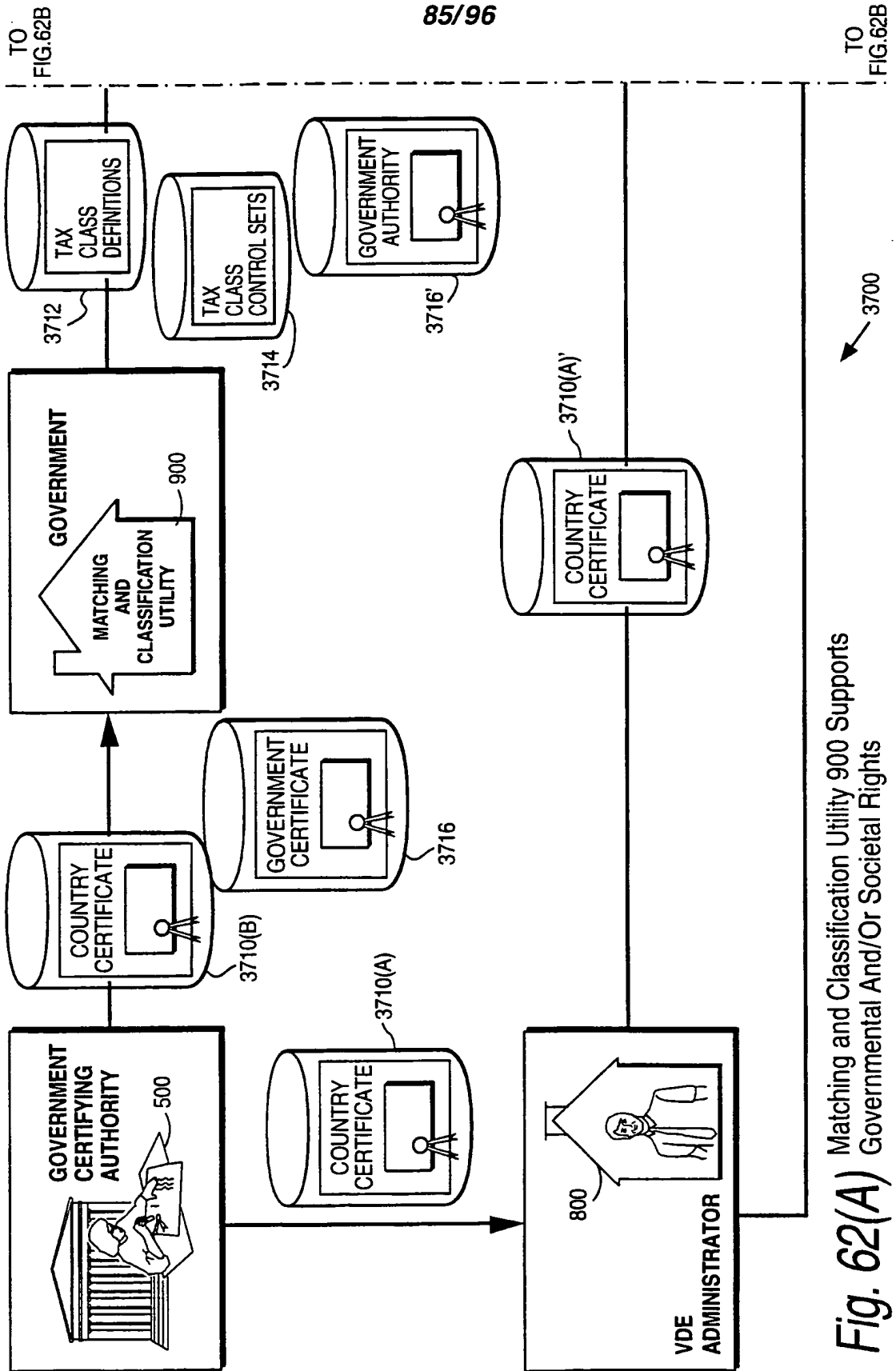
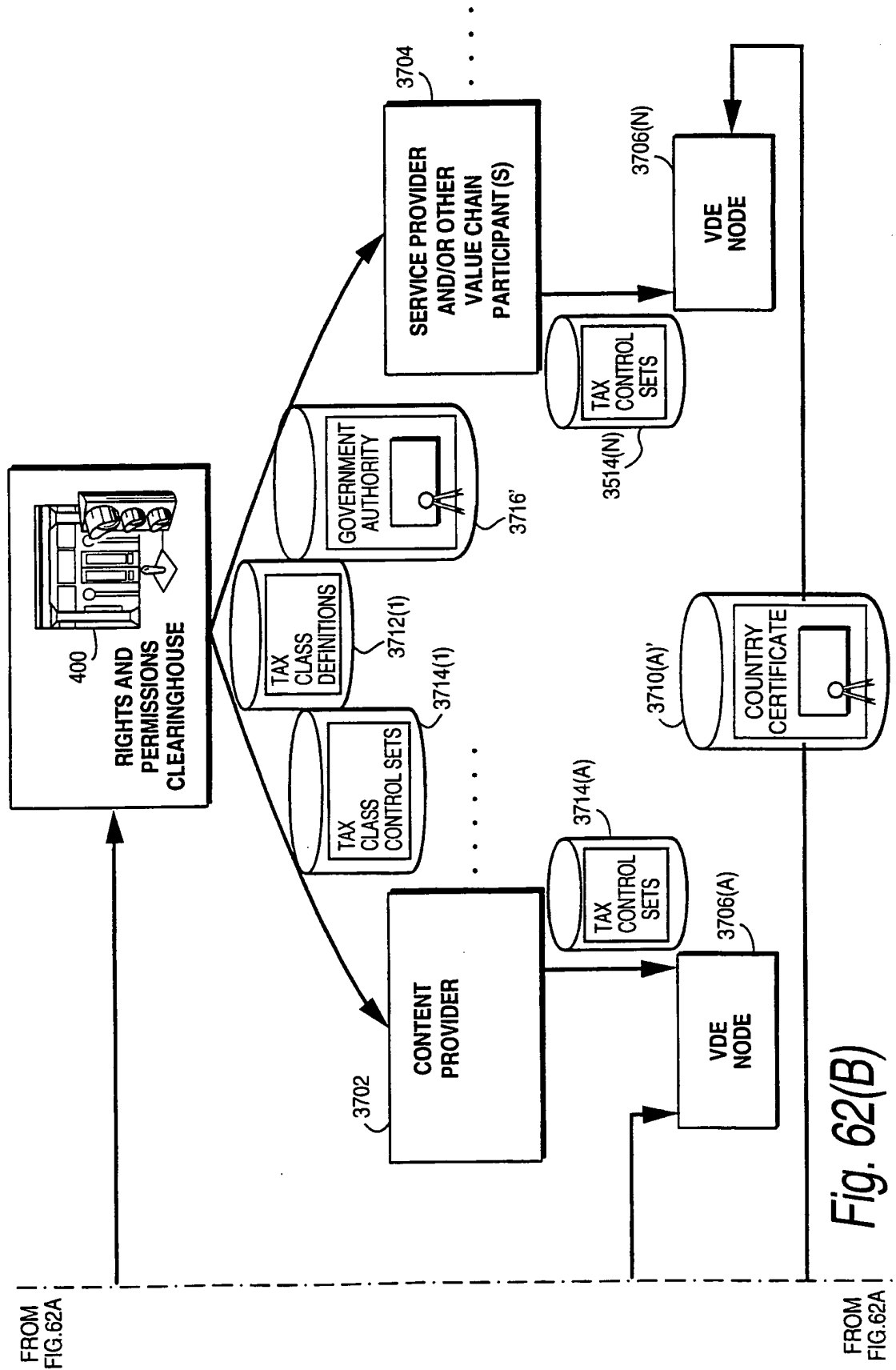


Fig. 62(A) Matching and Classification Utility 900 Supports Governmental And/Or Societal Rights



FROM FIG. 62A

FROM FIG. 62A

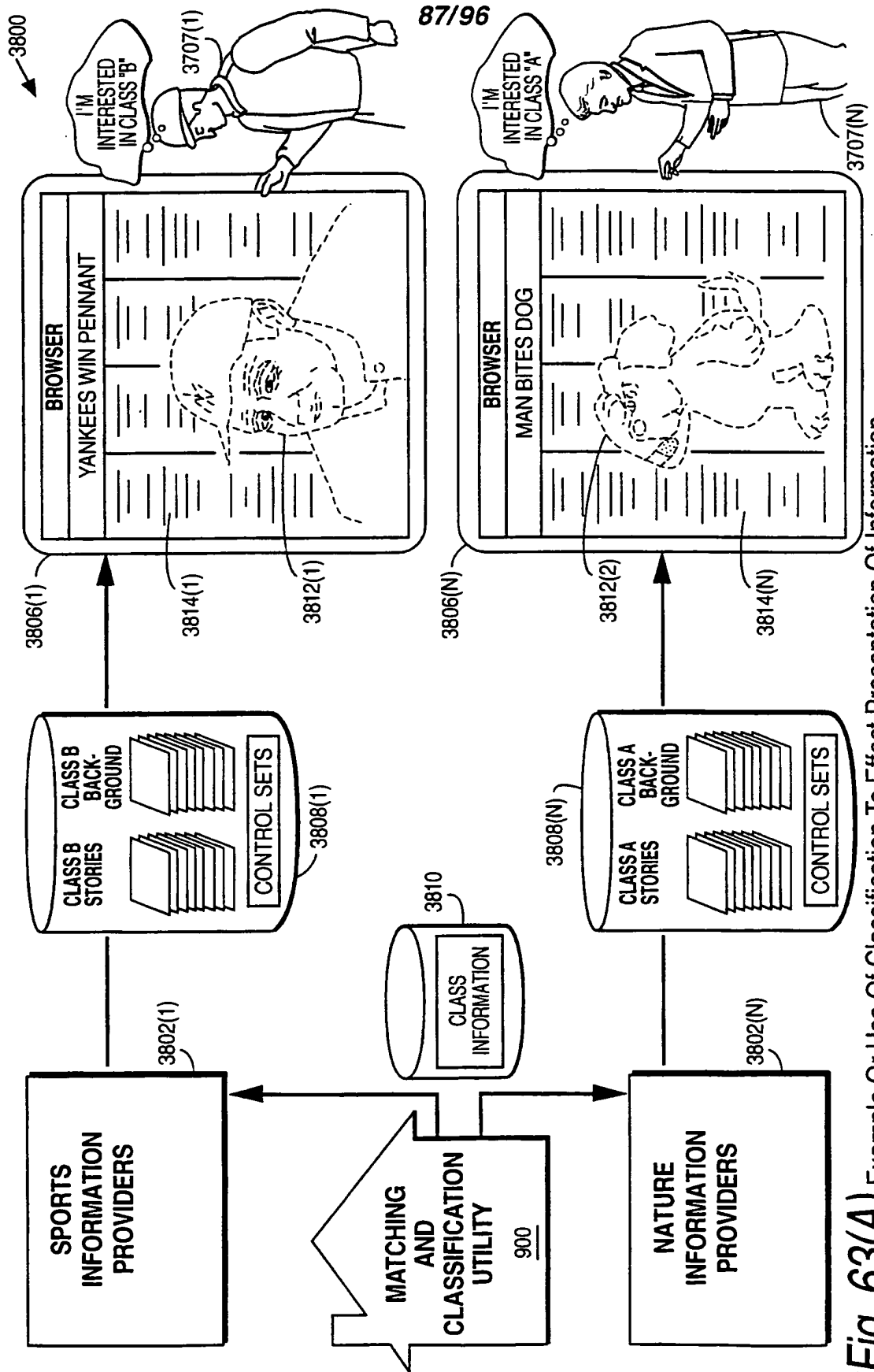
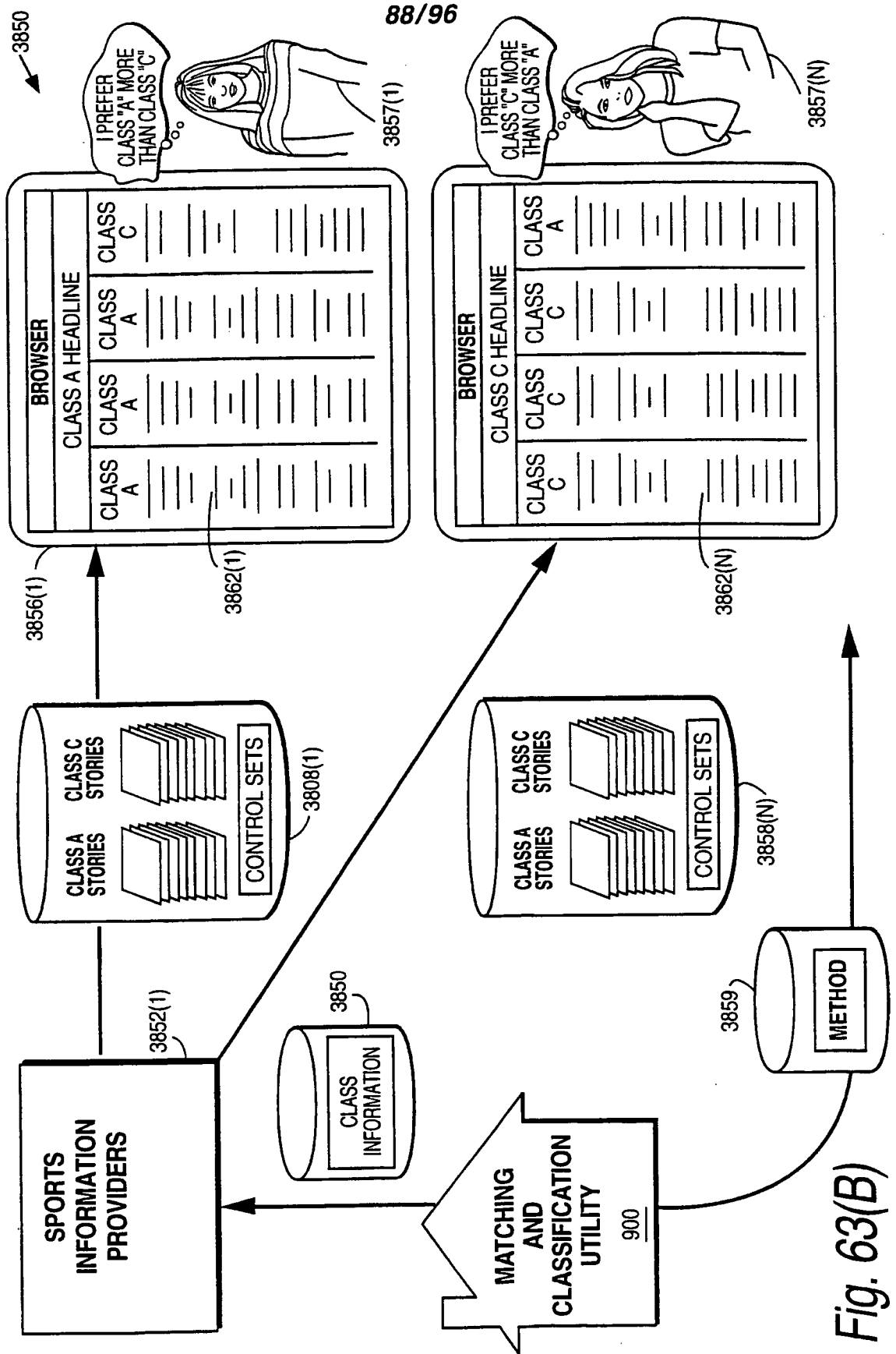


Fig. 63(A) Example Or Use Of Classification To Effect Presentation Of Information.



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Fig. 63(B)

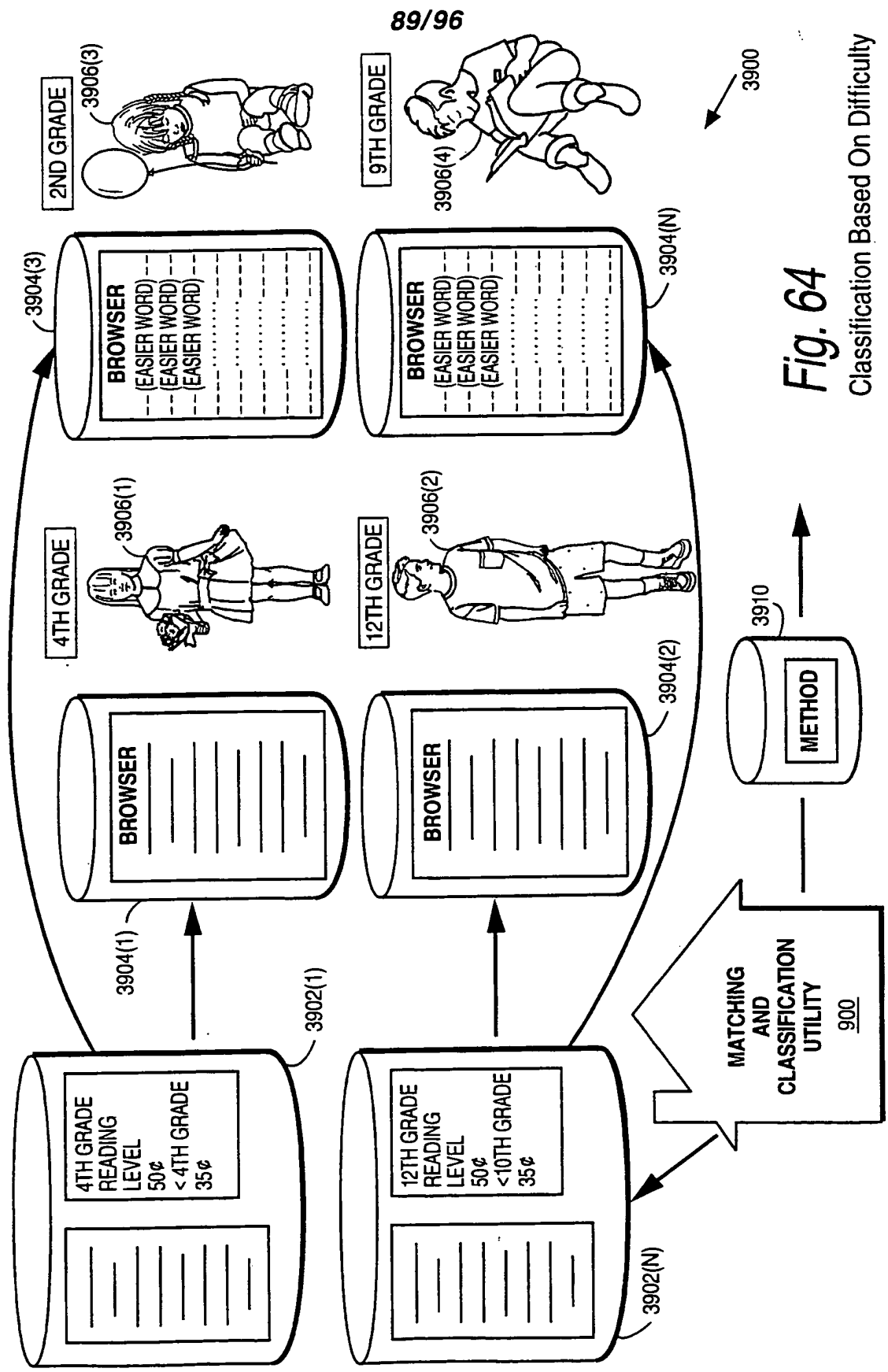


Fig. 64

Classification Based On Difficulty

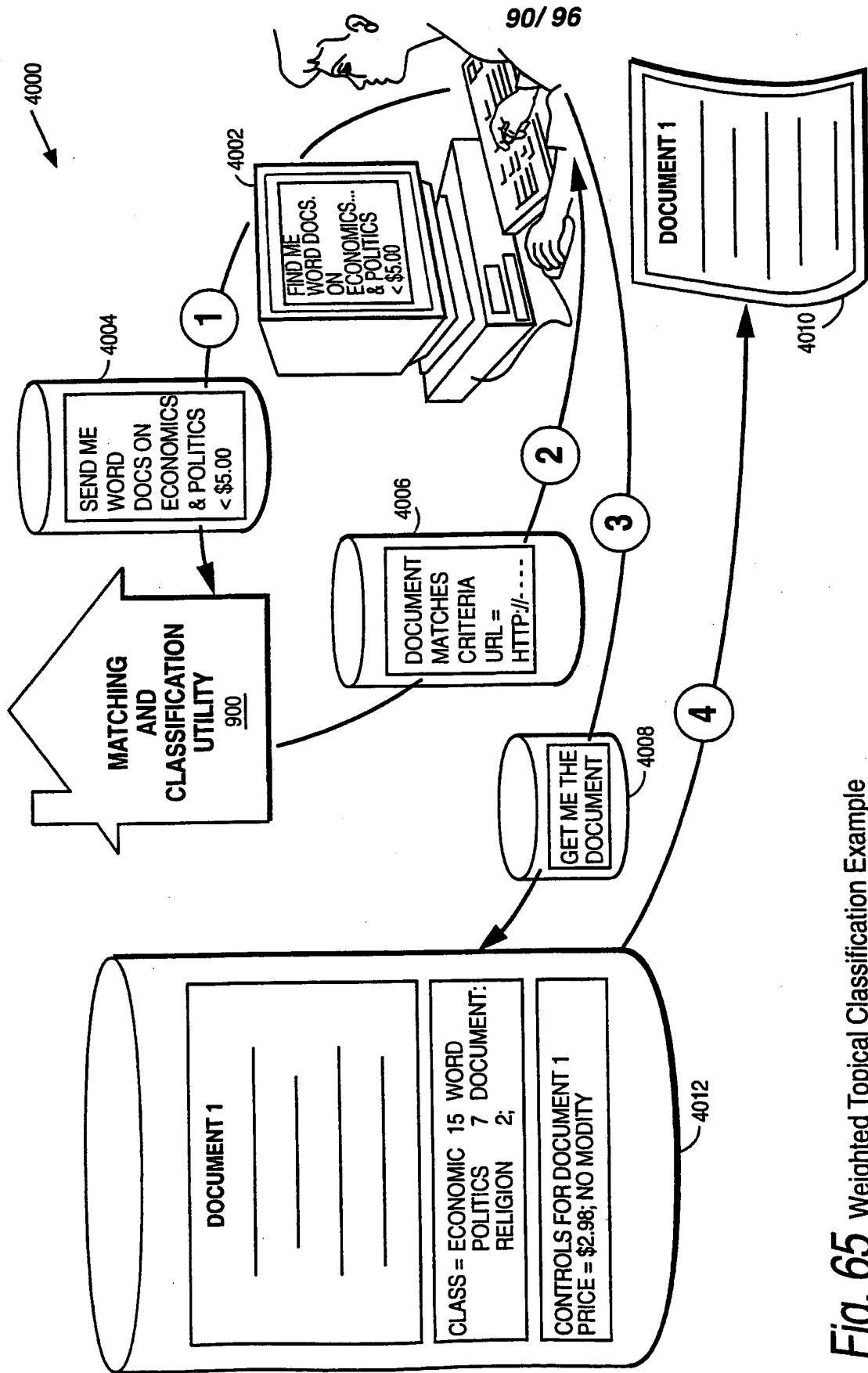


Fig. 65 Weighted Topical Classification Example

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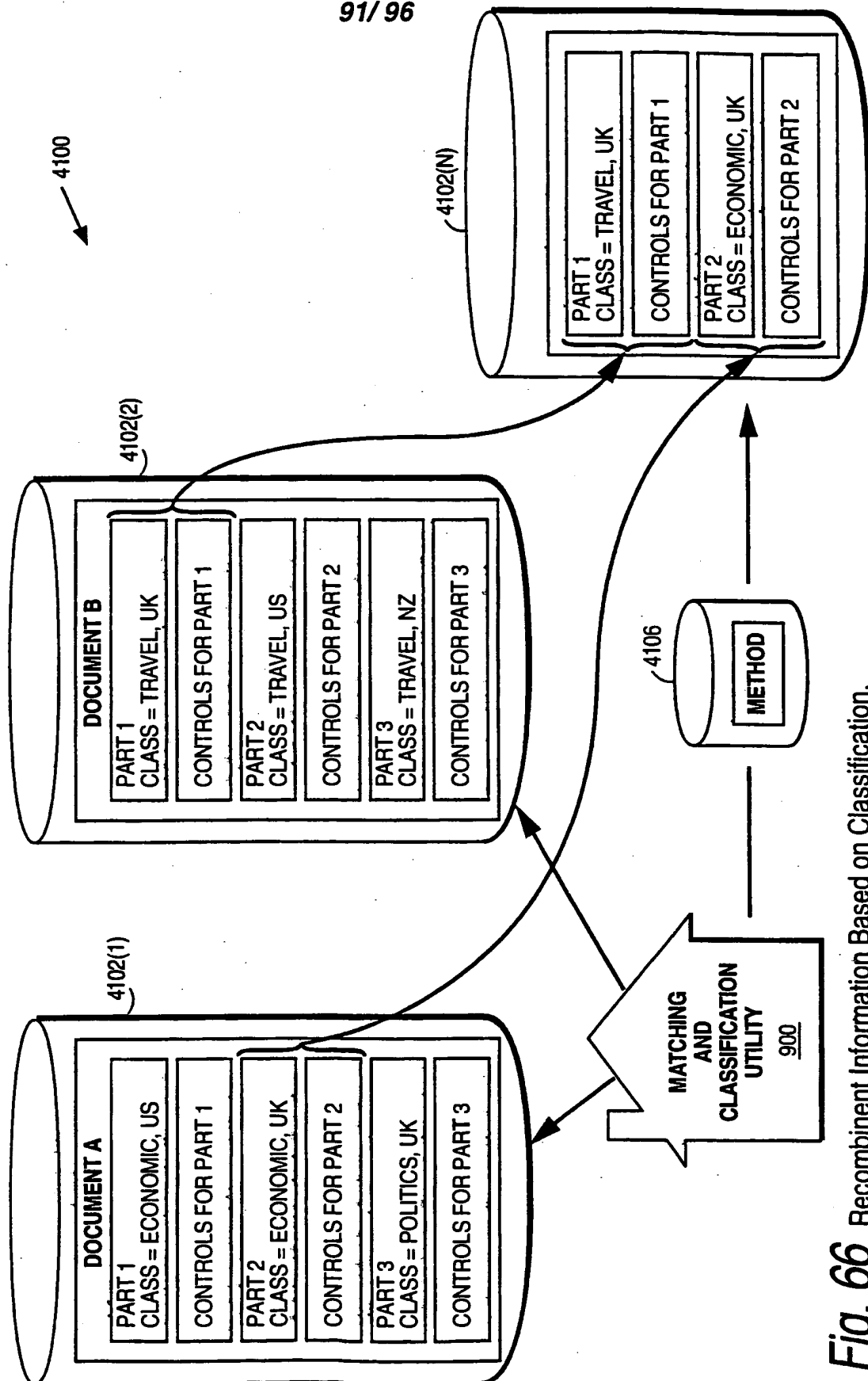


Fig. 66 Recombinant Information Based on Classification.

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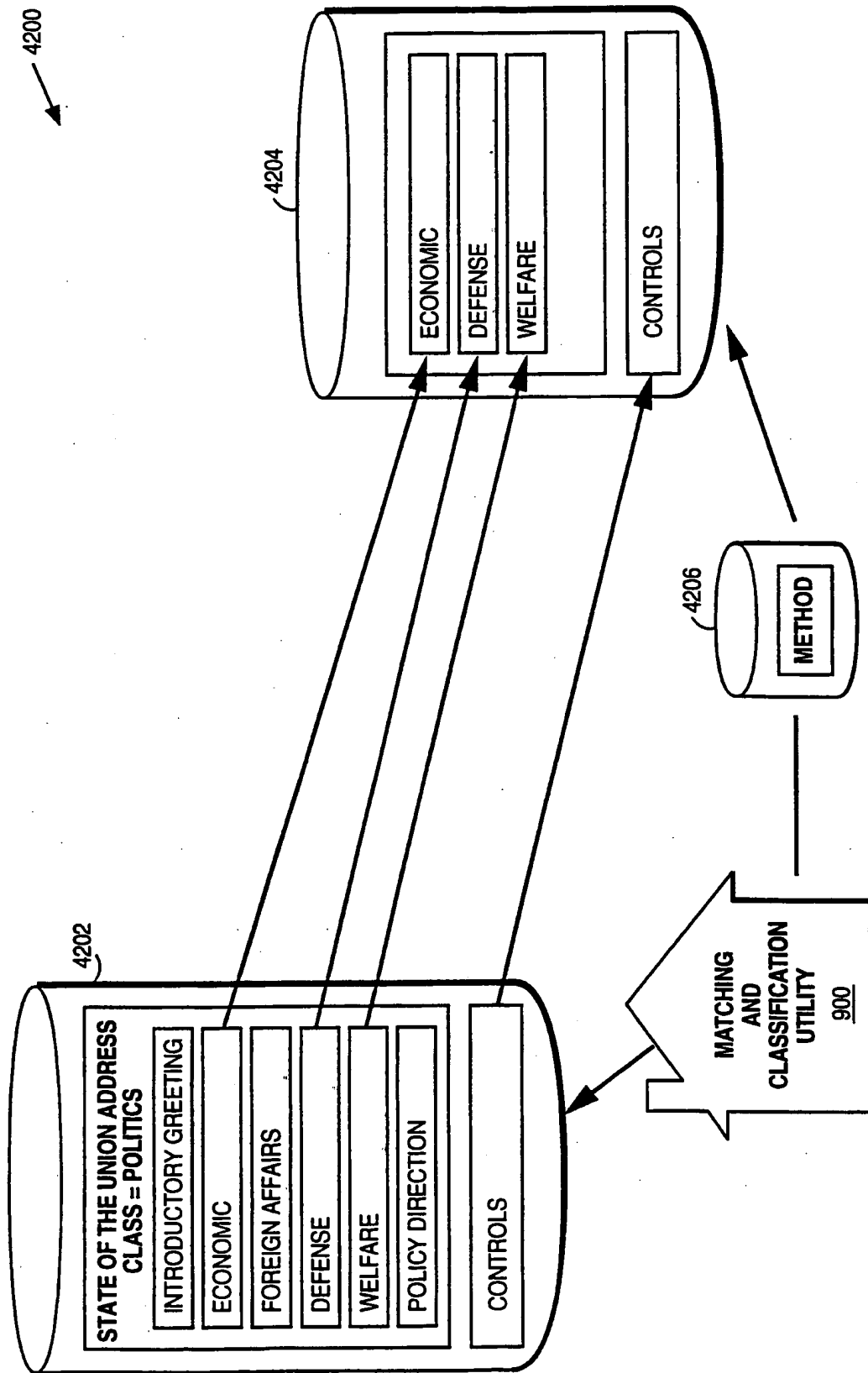


Fig. 67 Nested Classification.

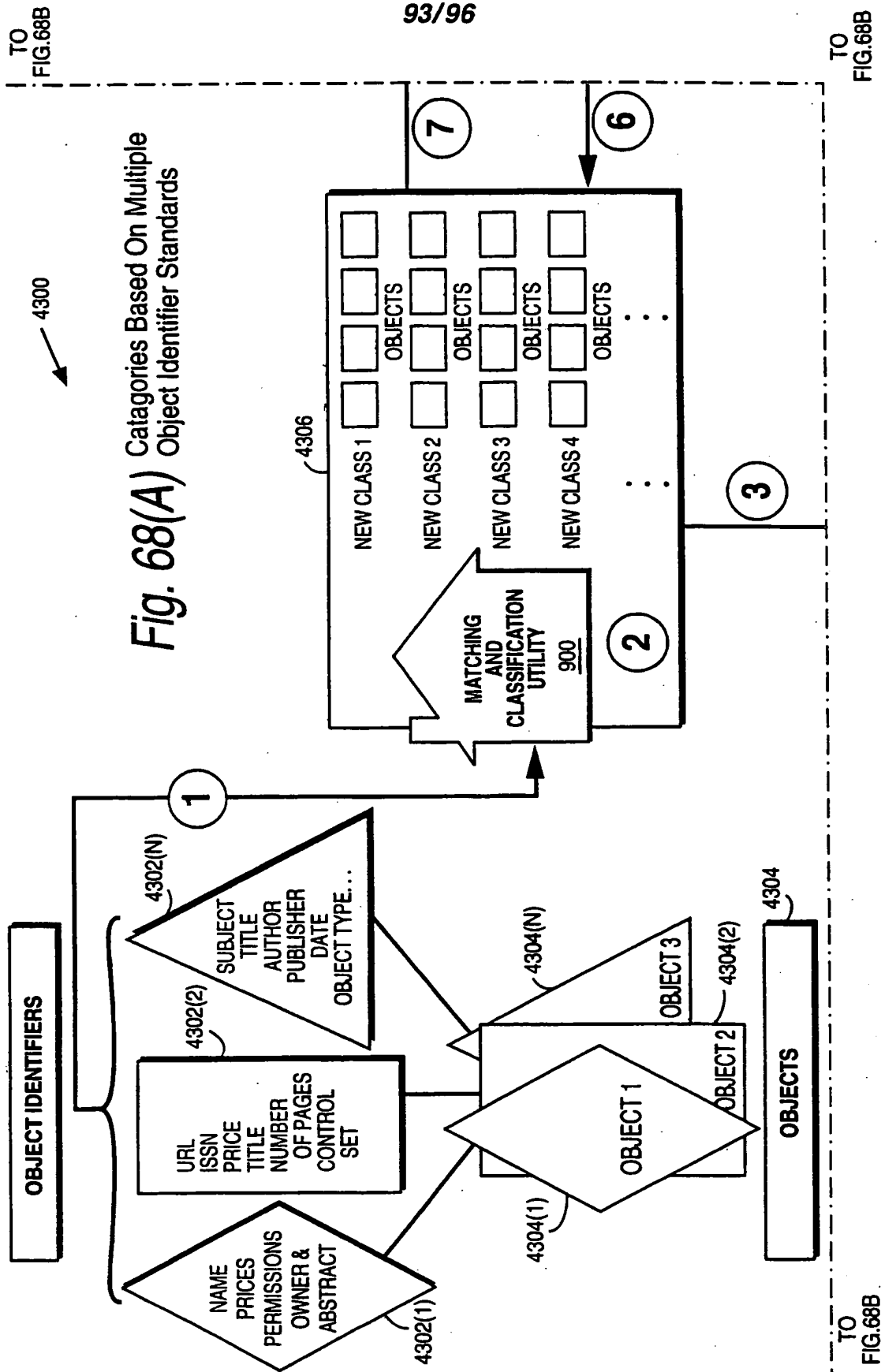


Fig. 68(A) Categories Based On Multiple Object Identifier Standards

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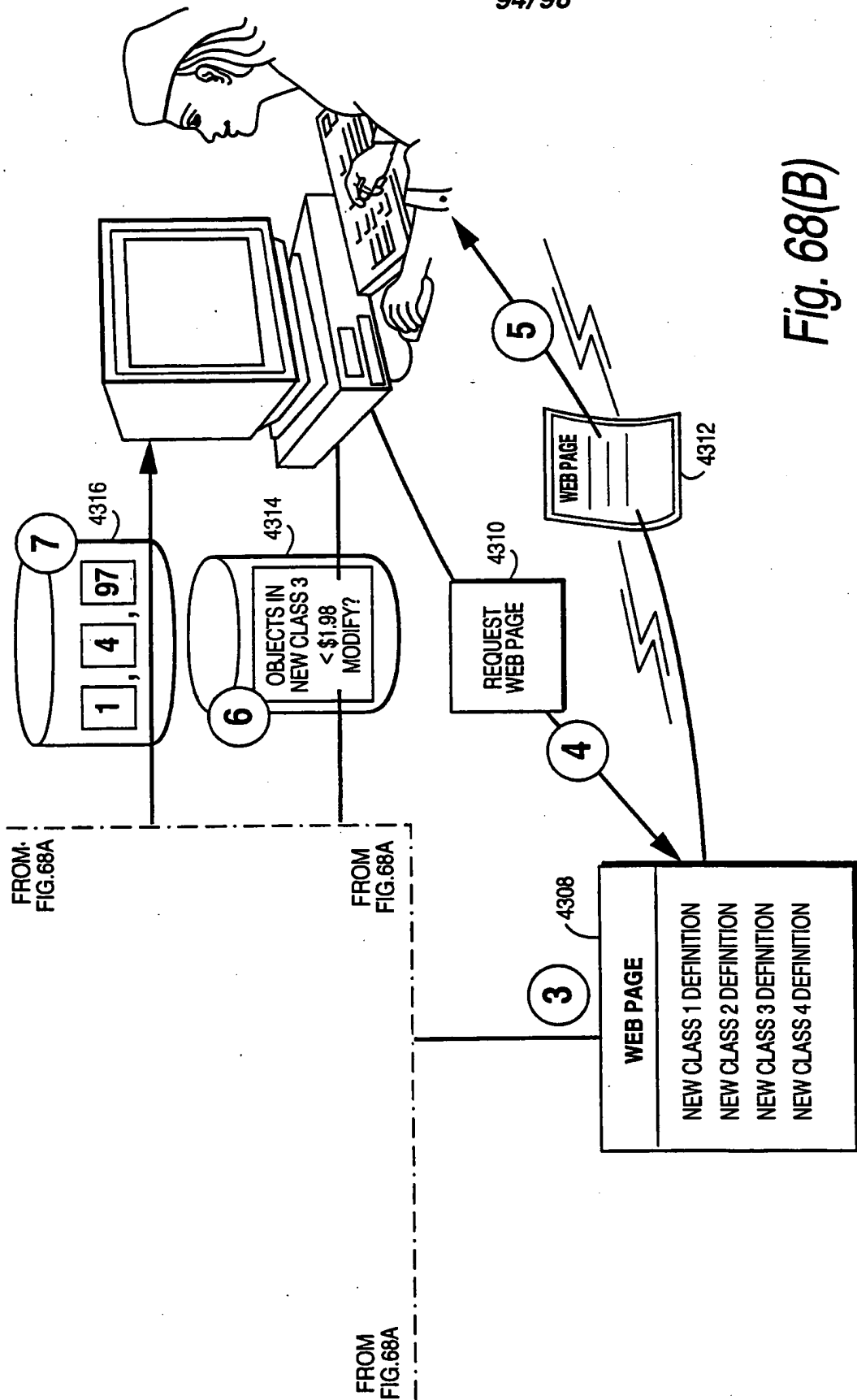


Fig. 68(B)

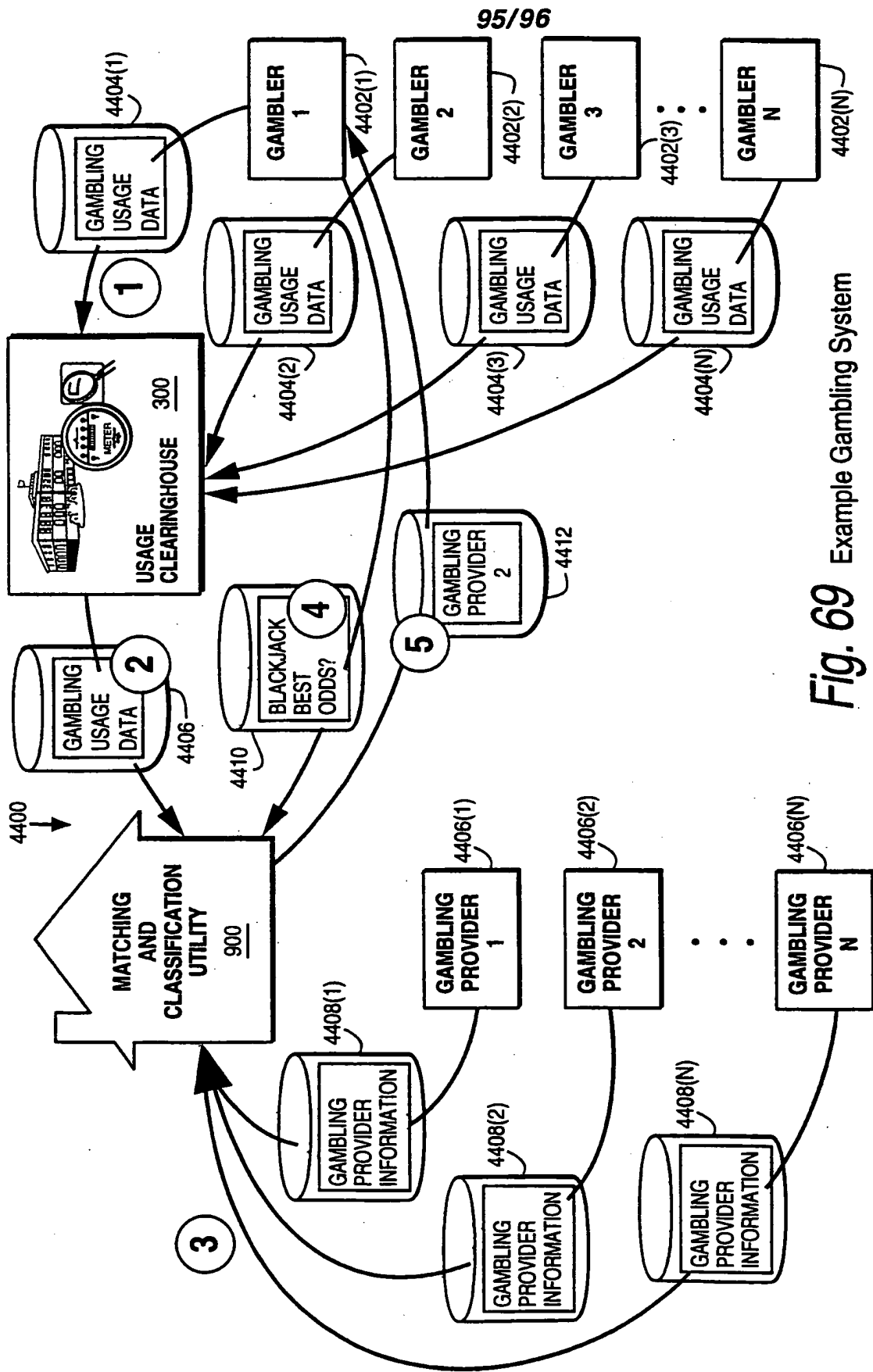


Fig. 69 Example Gambling System



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
10/162,701 06/06/2002 Xin Wang 111325-290100 6475

22204 7590 04/17/2008
NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON, DC 20004-2128

EXAMINER

AUGUSTIN, EVENS J

ART UNIT PAPER NUMBER

3621

MAIL DATE DELIVERY MODE

04/17/2008

PAPER

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

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

DETAILED ACTION

Acknowledgements

1. This is in response to an amendment filed on 01/10/2008. Claims 1, 3, 5-6, 10-11, and 13-14 are amended. Claims 28-29 are added. Claims 1-18 and 28-29 are pending.

Response to Arguments

2. The United States Patent and Trademark Office has fully considered the applicant's arguments filed on 01/10/2008, but has not found those arguments to be persuasive.

Argument 1: Downs et al., fails to disclose, teach or suggest meta-rights, which allow one or more users or devices to transfer rights or to derive new rights.

Response 1: According to the applicant's specification, meta-rights are the rights that one has to manipulate, modify, or otherwise derive other meta-rights or usage rights. Meta-rights can be thought of as secondary usage rights derived from the primary usage rights (specification, par 21). Content providers (entity(s) that supplies the content), providing (equivalent to generating) usage conditions (equivalent to usage rights) also stipulate that the content stores or distributors also have rights to add or narrow the original usage rights (meta-rights or rights derived from the initial usage rights) (column 21, lines 30-36).

Additionally, state variables can be the number of copies a user is allowed to make (column 59, line 50 or rental terms (column 59, lines 55-60). Content providers and distributors specify the number of plays and local copies allowed for the Content, and whether or not the Content may be recorded to an external portable device (state variable). Downs et al. keep track

of the content's copy/play usage and update the copy/play status (column 20, lines 43-50, column 12, lines 11-12).

Application stands finally rejected.

Claim Rejections - 35 USC § 102

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

A person shall be entitled to a patent unless –

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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

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

4. Claims 1-18 and 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Downs et al. (U.S 6226618) (“Downs”).

5. As per claims 1-18 and 28-29, Downs discloses an invention comprising of the following:

A. Content stores or distributors can add or narrow the original usage rights (sub-rights) (column 21, lines 30-36)

B. Content providers set and transmit (equivalent to presenting) the usage conditions to the content stores (column 21, 30-32), which are the first customers or distributors of the content providers.

C. ("obtaining a set of rights associated with an item, said set of rights including a meta-right, wherein the meta-right is provided in digital form, is enforceable by a repository-, and specifies derivable right that can be derived from exercising the meta-right by the rights consumer, a condition that must be satisfied to exercise the meta-right, and a state variable related to the condition, said derivable right being another meta-right or a usage right, whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed; determining by a repository whether the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right;") ---Distributors (first customer) making a request to digital content owners to sale digital content (column 42, lines 65-67, column 43, lines 1-2). The two parties then come to an agreement (column 43, lines 4-5). Inherently, the content provider receives the request - Content providers (entity that supplies the content), providing (equivalent to generating) usage conditions (equivalent to usage rights) - The content providers also stipulate that the content stores or distributors can add or narrow the original usage rights - state variables can be the number of copies a user is allowed to make (column 59, line 50 or rental terms (column 59, lines 55-60). Content providers and distributors specify the number of plays and local copies allowed for the Content, and whether or not the Content may be recorded to an external portable device (state variable). Downs et al. keep track of the content's copy/play usage and update the copy/play status (column 20, lines 43-50, column 12, lines 11-12)

- D. ("**determining whether the rights consumer is entitled to derive the derivable rights specified by the meta-rights**") --The Content Provider(s) 101 sets the allowable Usage Conditions 517 and transmits them to the Electronic Digital Content Store(s) 103 in a SC (see the License Control Layer 501 section). The Electronic Digital Content Store(s) 103 can add to or narrow the Usage Conditions 517 as long as it doesn't invalidate the original conditions set by the Content Provider(s) (Col. 21, ll.30-36). Each Content Provider(s) 101 specifies the Usage Conditions 517 for each of its Content 113 items. Electronic Digital Content Store(s) 103 interpret the Usage Conditions 517 in Metadata SC(s) 620 and use the information to provide different options or Store Usage Conditions 519 to the End-User(s) for purchase of Content 113 (col. 26, ll. 10-16) --
- E. ("**if the rights consumer is entitled to derive the derivable rights specified by the mete-rights, at least one of deriving one or more of the derivable rights and generating a license including the derived rights** ") - ("**transmitting the set of rights, in the form of a license to the item, from the rights supplier to the rights consumer** ") -- Distributors (first customer) making a request to digital content owners to sale digital content (column 42, lines 65-67, column 43, lines 1-2). The two parties then come to an agreement (column 43, lines 4-5). Inherently, the content provider receives the request - After the agreement between the content provider and the distributor (first customer), a digital certificate is created and sent to the distributor (column 43, lines 14-18). Inherently the agreement and certificate is for the content/usage rights request --

- F. ("**the derived rights are rights disposal rights.** "); ("**rights include usage rights** ")
--Usage conditions include copy authorization and target device types, or timed-availability restrictions (col. 10, ll.15-18, Col. 60, ll.15-30) -
- G. ("**the items are content** ") --Content, refers to information and data stored in a digital format including: pictures, movies, videos, music, programs, multimedia and games (col. 6, ll. 45-48) -
- H. ("**derived rights include meta-rights that the rights consumer may transfer to another rights consumer in the form of a license** ") --Content store distributes to the end user information relative to the Content 113 and its use (col. 43, ll. 62-67) - The Electronic Digital Content Store(s) 103 also attaches its own Usage Conditions called Store Usage Conditions 519 or purchase options to the Offer SC(s) 641 (Col. 74, ll.37-40) -
- I. "**the consumer is a content retailer, distributor and publisher** ") --Electronic Digital Content Store(s) 103 are the entities who market the Content 113 through a wide variety of services or applications, such as Content 113 theme programming or electronic merchandising of Content 113. Electronic Digital Content Store(s) 103 manage the design, development, business operations, settlements, merchandising, marketing, and sales of their services. Example online Electronic Digital Content Store(s) 103 are Web sites that provide electronic downloads of software (retailer and publisher) --(col. 9, ll. 61-67, col. 10, ll.1-3) - Content stores being licensed distributors of content (col. 19, 56-58) --

Conclusion

3. **THIS ACTION IS MADE FINAL.** Any new ground(s) of rejection is due to the applicant's amendment. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
 - A. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply 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 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evens Augustin whose telephone number is 571-272-6860. The examiner can normally be reached on Monday thru Friday 8 to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Fischer can be reached on 571-272-6779.


Evens J. Augustin

April 17, 2008

Art Unit 3621

/ANDREW J. FISCHER/

Supervisory Patent Examiner, Art Unit 3621

Index of Claims 	Application/Control No. 10162701	Applicant(s)/Patent Under Reexamination WANG ET AL.
	Examiner EVENS J AUGUSTIN	Art Unit 3621

✓	Rejected
=	Allowed

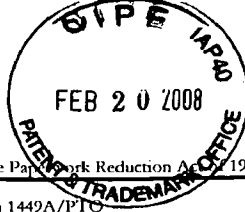
-	Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claims renumbered in the same order as presented by applicant
 CPA
 T.D.
 R.1.47

CLAIM		DATE							
Final	Original	04/14/2008							
	1	✓							
	2	✓							
	3	✓							
	4	✓							
	5	✓							
	6	✓							
	7	✓							
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	23	-							
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	28	✓							
	29	✓							



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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known	
		Application Number	10/162,701
		Filing Date	June 6, 2002
		First Named Inventor	Xin Wang et al.
		Art Unit	3621
		Examiner Name	Augustin, Evens J.
		Attorney Docket Number	111325/290100
Sheet	1	of	9

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)				
	1	US 20010009026	A1	07-19-2001	Terao et al.	
	2	US 20010011276	A1	08-02-2001	Durst Jr. et al.	
	3	US 20010014206	A1	08-16-2001	Artigas et al.	
	4	US 20010037467	A1	11-01-2001	O'Toole Jr. et al.	
	5	US 20010039659	A1	11-08-2001	Simmons et al.	
	6	US 20020001387	A1	01-03-2002	Dillon	
	7	US 20020035618	A1	03-21-2002	Mendez et al.	
	8	US 20020044658	A1	04-18-2002	Wasilewski et al.	
	9	US 20020056118	A1	05-09-2002	Hunter et al.	
	10	US 20020069282	A1	06-06-2002	Reisman	
	11	US 20020099948	A1	07-25-2002	Kocher et al.	
	12	US 20020127423	A1	09-12-2002	Kayanakis	
	13	US 20030097567	A1	05-22-2003	Terao et al.	
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	21	US 4,621,321		11-04-1986	Boebert et al.	
	22	US 4,736,422		04-05-1988	Mason	
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	24	US 4,796,220		01-03-1989	Wolfe	
	25	US 4,816,655		03-28-1989	Musyck et al.	
	26	US 4,888,638		12-19-1989	Bohn	
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	28	US 4,953,209		08-28-1990	Ryder et al.	
	29	US 4,977,594		12-11-1990	Shear	
	30	US 5,014,234		05-07-1991	Edwards	
	31	US 5,129,083		07-07-1992	Cutler et al.	
	32	US 5,138,712		08-11-1992	Corbin	
	33	US 5,174,641		12-29-1992	Lim	
	34	US 5,204,897		04-20-1993	Wyman	
	35	US 5,247,575		09-21-1993	Sprague et al.	
	36	US 5,260,999		11-09-1993	Wyman	
	37	US 5,276,444		01-04-1994	McNair	
	38	US 5,291,596		03-01-1994	Mita	
	39	US 5,293,422		03-08-1994	Loiacono	

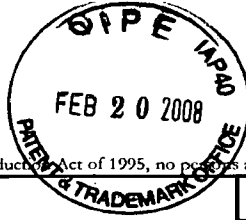
Examiner Signature	Date Considered
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10886649.1

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Substitute for form 1449A/P/O		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	10/162,701
		Filing Date	June 6, 2002
		First Named Inventor	Xin Wang et al.
		Art Unit	3621
		Examiner Name	Augustin, Evens J.
Sheet 2 of 9	Attorney Docket Number	111325/290100	

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)	Publication Date MM-DD-YYYY		
	40	US 5,335,275	08-02-1994	Millar et al.	
	41	US 5,337,357	08-09-1994	Chou et al.	
	42	US 5,386,369	01-31-1995	Christiano	
	43	US 5,453,601	09-26-1995	Rosen	
	44	US 5,485,577	01-16-1996	Eyer et al.	
	45	US 5,504,816	04-02-1996	Hamilton et al.	
	46	US 5,530,235	06-25-1996	Stefik et al.	
	47	US 5,535,276	07-09-1996	Ganesan	
	48	US 5,557,678	09-17-1996	Ganesan	
	49	US 5,629,980	05-13-1997	Stefik et al.	
	50	US 5,636,346	06-03-1997	Saxe	
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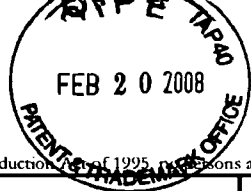
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	10/162,701
		Filing Date	June 6, 2002
		First Named Inventor	Xin Wang et al.
		Art Unit	3621
		Examiner Name	Augustin, Evens J.
Sheet	3	of	9
		Attorney Docket Number	111325/290100

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Examiner Initials*	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)	Publication Date MM-DD-YYYY		
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		Attorney Docket Number	111325/290100
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		Country Code ³	Number ⁴				
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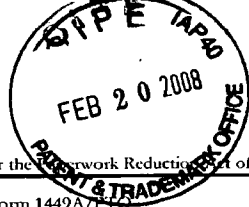
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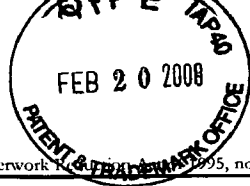
Substitute for form 1449A/PTO		INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Complete if Known		
				Application Number	10/162,701	
Sheet		5	of	9	Filing Date	June 6, 2002
				First Named Inventor	Xin Wang et al.	
				Art Unit	3621	
				Examiner Name	Augustin, Evens J.	
				Attorney Docket Number	111325/290100	

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		Country Code ³	Number ⁴				
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				Application Number	10/162,701	
Sheet		6	of	9	Examiner Name	Augustin, Evens J.
					Attorney Docket Number	111325/290100

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		Country Code ³	Number ⁴				
	160	JP	11032037 A2		Fuji Xerox Co. Ltd.		
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	172	WO	04/103843		S2F Flexico		
			(Abstract only)				
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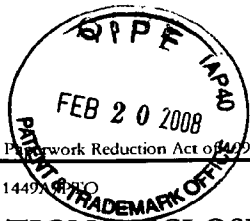
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		Application Number	10/162,701
		Filing Date	June 6, 2002
		First Named Inventor	Xin Wang et al.
		Art Unit	3621
		Examiner Name	Augustin, Evens J.
		Attorney Docket Number	111325/290100
Sheet	7	of	9

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
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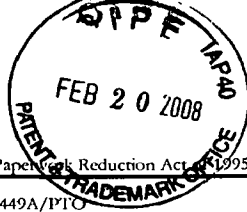
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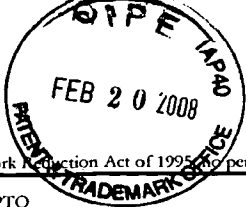
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				Application Number	10/162,701	
Sheet		9	of	9	Examiner Name	Augustin, Evens J.
					Attorney Docket Number	111325/290100

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	213	STEFIK, Summary and Analysis of A13 (Kahn, Robert E and Vinton G Cerf, "The Digital Library Project, Volume 1: The World of Knowbots (DRAFT), An Open Architecture for a Digital Library System and a Plan for its Development," Corporation for National Research Initiatives (March 1988)), pp. 1-25 (May 30, 2007)	

Examiner Signature	/Evens Augustin/	Date Considered	04/14/2008
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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10886649.1

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PATENT

DOCKET NO.: 111325/290100

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant	:	WANG et al.	)	Examiner:
			)	Evens J. Augustin
Serial No.	:	10/162,701)	
			)	Art Unit:
Cnfrm. No.	:	6475	)	3621
)	
Filed	:	June 6, 2002)	
)	
For	:	METHOD AND APPARATUS MANAGING)	
		THE TRANSFER OF RIGHTS)	

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

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Respectfully submitted,

Stephen M. Hertzler
Registration No. 58,247

Date: July 1, 2008

NIXON PEABODY LLP
CUSTOMER NO.: 22204
401 9th Street, N.W., Suite 900
Washington, DC 20004
Tel: 202-585-8000
Fax: 202-585-8080

07/02/2008 AWONDAF1 00000076 192300 10162701
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Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				<i>Complete if Known</i>		
				Application Number	10/162,701	
Sheet		1	of	1	Examiner Name	Evens J. Augustin
					Attorney Docket Number	111325/290100

U.S. PATENT DOCUMENTS						
Examiner Initials ¹	Cite No. ¹	U.S. Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)				
	1.	5,619,570	A1	04-08-1997	Tsutsui	

U.S. PUBLISHED PATENT DOCUMENTS						
Examiner Initials ¹	Cite No. ¹	U.S. Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)				

FOREIGN PATENT DOCUMENTS							
Examiner Initials ¹	Cite No. ¹	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ³
		Country Code ³ Number ⁴	Kind Code ² (if known)				
	2.	EP 0 262 025	A2	03-30-1988	Ogasawara		
	3.	JP 3-063717	A	03-19-1991	Tsutsui et al.	(Ab in EN)	
	4.	JP 6-131371	A	05-13-1994	Tsutsui	(Ab in EN)	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	5.	Johnson et al., "A Secure Distributed Capability Based System," PROCEEDINGS OF THE 1985 ACM ANNUAL CONFERENCE ON THE RANGE OF COMPUTING: MID-80'S PERSPECTIVE: MID-80'S PERSPECTIVE <i>Association for Computing Machinery</i> pp. 392-402 (1985)	

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

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

(12)

EUROPEAN PATENT APPLICATION

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(51) Int. Cl. 4: **G 07 F 7/10**
G 06 F 12/14

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(43) Date of publication of application:
30.03.88 Bulletin 88/13

(64) Designated Contracting States: DE FR GB

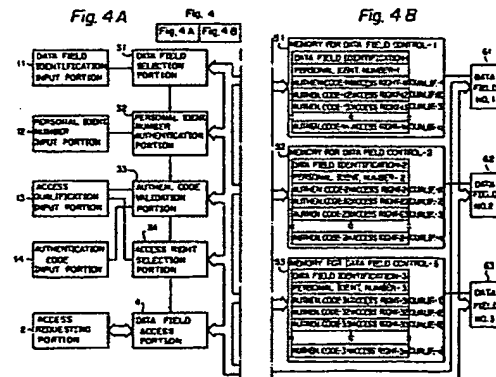
(71) Applicant: **FUJITSU LIMITED**
1015, Kamikodanaka Nakahara-ku
Kawasaki-shi Kanagawa 211 (JP)

(72) Inventor: **Ogasawara, Nobuo**
688-11, Suenaga Takatsu-ku
Kawasaki-shi Kanagawa 213 (JP)

(74) Representative: **Joly, Jean-Jacques et al**
CABINET BEAU DE LOMENIE 55, rue d'Amsterdam
F-75008 Paris (FR)

(54) System for permitting access to data field area in IC card for multiple services.

(57) A system for permitting access to a data field area in an IC card for multiple services using an individual card holder identification number for each of a plurality of data fields (61, 62, 63) or for each group of data fields. Data field identification information (11), a personal identification number (12), access qualification information (13), and an authentication code (14) are supplied to the IC card before an execution of an access to the data field. An authentication is made (in 32, 33) between the personal identification number and the authentication code stored in identification number and the authentication code supplied to the IC card. Based on the result of authentication, an access to the data field area (61, 62 or 63) to which access is requested is permitted within the limit of the access right stored in the IC card (memories 51, 52, 53) corresponding to the access qualification information supplied to the IC card.



EP 0 262 025 A2

Description

SYSTEM FOR PERMITTING ACCESS TO DATA FIELD AREA IN IC CARD FOR MULTIPLE SERVICES

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a system for permitting access to a data field area in an integrated circuit card (IC card) for multiple services.

2. Description of the Related Art

In general, in the use of an IC card for multiple services, a card issuer, a service supplier, a card acceptor, and a card holder are involved. An IC card has a plurality of data fields for the multiple services, and for each of the data fields, the access right, access qualification, of card issuer, service supplier, card acceptor, and card holder should be predetermined. Namely, although a person has access right to a predetermined data field of an IC card, that person should not be authorized to have access to a data field of the IC card other than the predetermined data field.

It is desired that access is permitted only within the limit of the access right to a predetermined data field of a card holder, and access outside such limitation is not permitted, so that the data fields cannot be used in an unauthorized manner.

In the prior art, only a personal identification number (PIN) and an authentication code (AC code) for the whole of an IC card are provided for an IC card for multiple services, and therefore, once a coincident result is obtained as the result of an authentication of the personal identification number and the authentication code, access to all data fields in the IC card becomes possible.

As a result, it is possible for a person, for example, a card acceptor, who is not authorized to have access to the data field in question, will be able to obtain access to the data field in question. This constitute an unfair use of the IC card and a violation of the principle of secrecy of the IC card. Therefore, these problems of the prior art must be solved.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide an improved system for permitting access to a data field area in an IC card for multiple services.

In accordance with the present invention, there is provided a system for permitting access to a data field area in an IC card for multiple services using an individual card holder identification number for each of a plurality of data fields or for each group of data fields, the system comprising: a plurality of data fields in the IC card; a sequence of a data field selection portion, a personal identification number authentication portion, an authentication code validation portion, and an access right selection portion, input portions for inputting data field identification information, a personal identification number, access qualification information, and an authentication code; a data field access portion and an access request portion; and storage portions for storing

information for data field control. An authentication between the information stored in the storage portions and the information input through the input portions is carried out.

Based on the cumulative result of a selection of a data field, a authentication of the personal identification number, a validation of the authentication code, and a selection of the access right, access to a data field area to which access is requested is permitted within the limit of the selected access right.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings,

Fig. 1 is a perspective view of an IC card to which the system according to the present invention is applied;

Fig. 2 shows a fundamental combination of an IC card and a terminal apparatus;

Fig. 3 shows a prior art system for access to a data field area in an IC card for multiple services;

Fig. 4 is a schematic diagram of a system for permitting access to a data field area in an IC card for multiple services according to an embodiment of the present invention;

Fig. 5 shows an example of combinations of the authentication code and the access right; and

Fig. 6 is a flow chart of the operation of the system of Fig. 4.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Before describing a preferred embodiment of the present invention, an IC card to which the system according to the present invention is applied, a fundamental combination of an IC card and a terminal apparatus, and a prior art system for access to a data field area in an IC card for multiple services will be explained with reference to Figs. 1, 2, and 3.

As shown in Fig. 1, an IC card has contacts adapted for electrical connection with external apparatuses, an integrated circuit module beneath the area containing the contact electrodes, and an area to be embossed. As shown in Fig. 2, the circuit of the IC card includes the contacts, a central processing unit (CPU), a read only memory (ROM) for storing a control program, and an electrically erasable and programmable read only memory (EEPROM) or an erasable and programmable read only memory (EPROM) for storing data fields; input information, and control information. The circuit of the IC card can communicate with the program portion in the terminal apparatus.

As shown in Fig. 3, in the prior art, the authentication between the input personal identification number 101 and the stored personal identification number 301 is carried out in the personal identification number authentication portion 201. Based on the coincident result of this authentication, the validation between the input authentication code 102

and the stored authentication 302 is carried out in the authentication code validation portion 202, and based on the result of this validation, the decision obtained from the stored information 303, 304, and 305 for data field identification No. 2, and No. 3 corresponding to the data fields No. 1, No. 2 and No. 3 is carried out in the data field decision portion 203 with respect to the input data field identification information 103.

Once one of the data fields No. 1, No. 2, and No. 3 is chosen according to the decision of one of the data field identification No. 1, No. 2, and No. 3, access through the access request portion 104 is permitted to the chosen data field.

A system for permitting access to a data field area in an IC card for multiple services according to an embodiment of the present invention is shown in Fig. 4. The system of Fig. 4 includes a data field input portion 11, a personal identification number input portion 12, an access qualification input portion 13, an authentication code input portion 14, an access request portion 2, a data field selection portion 31, a personal identification number authentication portion 32, an authentication code validation portion 33, an access right selection portion 34, and a data field access portion 4.

The system of Fig. 4 also includes a data field (No. 1) 61, a data field (No. 2) 62, a data field (No. 3) 63, a memory for data field control (No. 1) 51, a memory for data field control (No. 2) 52, and a memory for data field control (No. 3) 53. The memories 51, 52, and 53 corresponding to the data fields No. 1, No. 2, and No. 3, respectively.

For example, information for the data field identification No. 1, personal identification number (No. 1), authentication code Nos. 11, 12, 13 ... 1n, and information for the access right Nos. 11, 12, 13 ... 1n are stored in the memory 51. The authentication code No. 11 and the information for the access right No. 11 comprises an access qualification No. 1, the authentication code No. 12, and the information for the access right No. 12 comprises an access qualification No. 2, and so on. The authentication code No. 1n and the information for the access right No. 1n comprises an access qualification No. n.

Here, the information for the access right concerns which one of the processes of reading, writing, deleting, and re-writing should be permitted.

In the data field selection portion 31, a comparison between the input data field identification 11 and the data field identification stored in the memories 51, 52, and 53 is carried out, so that one of the data field Nos. 1, 2, and 3 is selected according to the coincident result of that comparison.

In the personal identification authentication portion 32, after the above-mentioned selection of the data field, the authentication between the input personal identification number and the personal identification number stored in the memory corresponding to the selected data field is carried out so that it can be confirmed whether or not the person inputting the personal identification number is the person authorized to use the data field in question.

In the authentication code validation portion 33, after an affirmative confirmation of the personal

identification, a validation concerning the input authentication code and the authentication code stored in the memory corresponding to the selected data field and the input access qualification is carried out so that it can be confirmed whether or not the access executor has the proper authentication code.

In the access right selection portion 34, after an affirmative confirmation of the authentication code, an extraction of the access right information stored in the memory corresponding to the selected data field and input access qualification information is carried out so that the access right permitted to the access executor is selected.

In the data field access portion 4, after the selection of the access right, the access to the selected data field is carried out corresponding to the permitted access right in response to the input access request through the access request portion 2.

An example of the combinations of the authentication codes and the access rights is shown in Fig. 5.

The operation of the system of Fig. 4 will be described below with reference to the flow chart of Fig. 6.

Upon input of an access start request, a data field identification, a personal identification number, access qualification information, and an authentication code, the data field identifications stored in the memory are searched and the data field corresponding to the input data field identification is selected (step S1). When there is no corresponding data field, the process proceeds to the error indication.

When the data field in question is selected, the process proceeds to step S2, where the personal selected data field is authenticated with regard to the input personal identification number. When the stored personal identification number does not coincide with the input personal identification number, the process proceeds to the error indication.

When the stored personal identification number coincides with the input personal identification number, the process proceeds to step S4 where the authentication code corresponding to the input access qualification information is derived, and the validation concerning the derived authentication code and the input authentication code is carried out. When the derived authentication code does not coincide with the input authentication code, the process proceeds to the error indication.

When the derived authentication code coincides with the input authentication code, the process proceeds to step S6, where the access right corresponding to the input access qualification information is derived from the memory for data field control and the decision for access right is made.

Then, in step S7, the request for access to data in the selected data field is executed within the range of the above-described access right.

Claims

1. A system for permitting access to a data

field area in an IC card for multiple services using an individual card holder identification number for each of a plurality of data fields or for each groups of data fields, said system comprising:

- a plurality of data fields in the IC card;
- a sequence of data field selection means, a personal identification number authentication means, an authentication code validation means, and an access right selection means;
- an input means for inputting data field identification information, a personal identification number, access qualification information, and an authentication code;
- a data field access means and access request means; and
- storage means for storing information for data field control;
- comparisons between the information stored in said storage means and the information input through said input means being carried out, for authentication, validation, and selection; and
- based on the cumulative result of a selection of a data field, an authentication of a personal identification number, a validation of an authentication code, and a selection of an access right, access to a data field area to which access is requested is permitted within a limit of the selected access right.

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2. A system according to claim 1 wherein each memory for data field control stores data field identification information, a personal identification number, a plurality of authentication codes, and a plurality of access rights information.

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3. A system according to claim 1, wherein the access qualification information input by said input means is an information for selecting an authentication code and an access right.

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4. A system according to claim 1, wherein the access right information stored in the memories for data field control selected by the access qualification information is represented by one of the processes of reading, writing, deleting, and re-writing.

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5. A system according to claim 1, wherein said personal identification number authentication means is operated based on signals from the data field selection means, the personal identification number input means, and the memories for data field control.

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6. A system according to claim 1, wherein said authentication code validation means is operated based on signals from the personal identification number authentication means, the access qualification input means, the authentication code input means, and the memories for data field control.

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7. A system according to claim 1, wherein said access right selection means is operated based on signals from the authentication code validation means, the access qualification input means, and the memories for data field control.

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Fig. 1

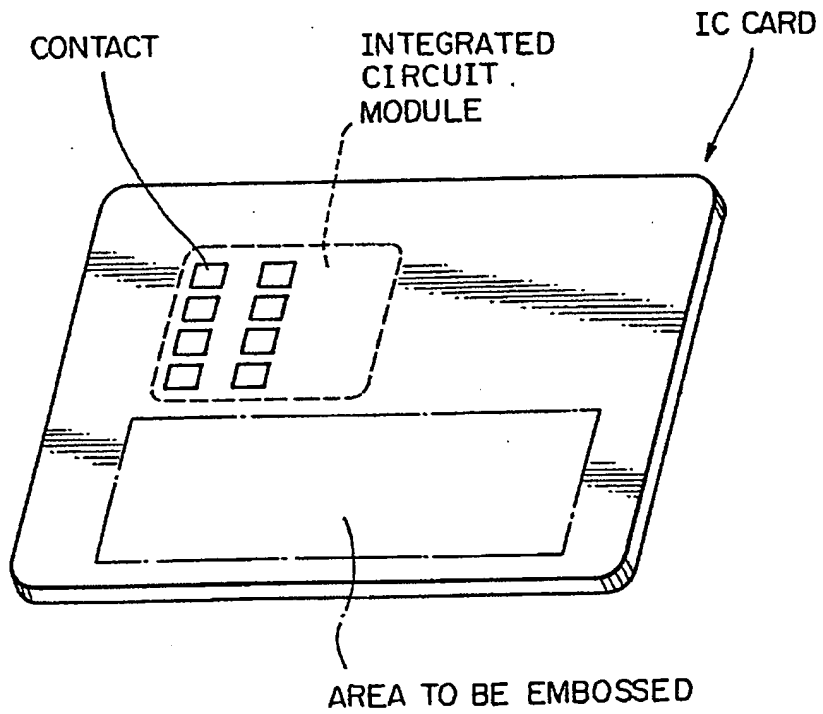


Fig. 2

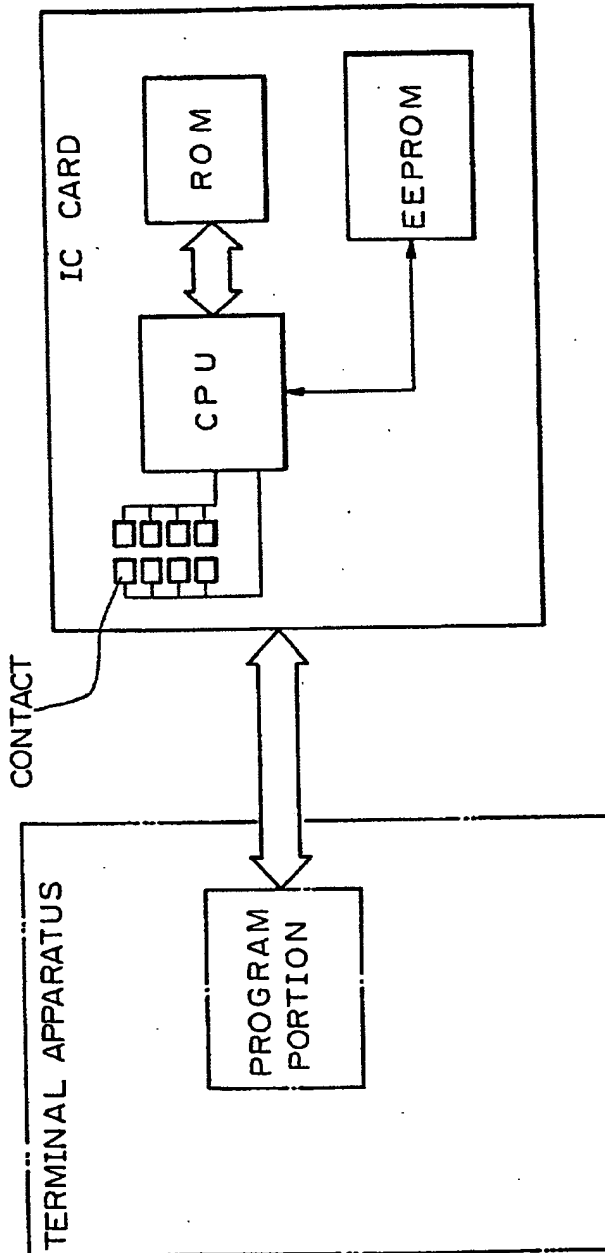


Fig. 3 A

Fig. 3

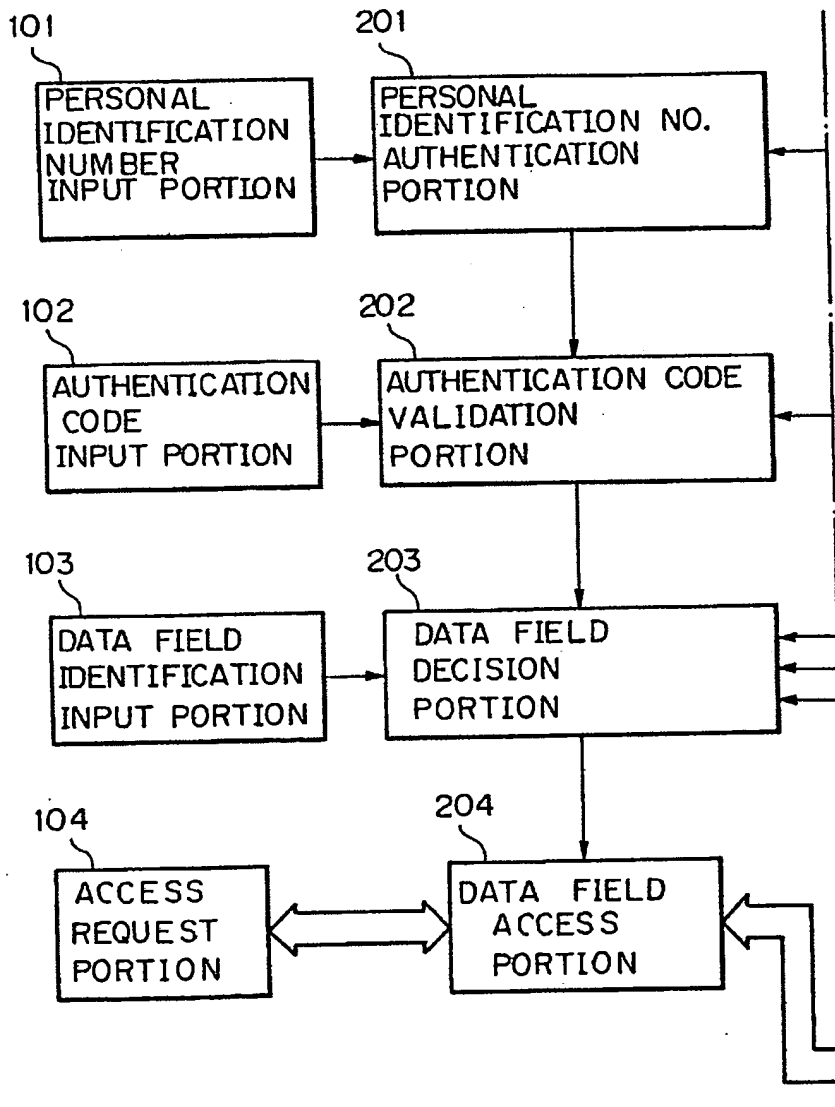


Fig. 3B

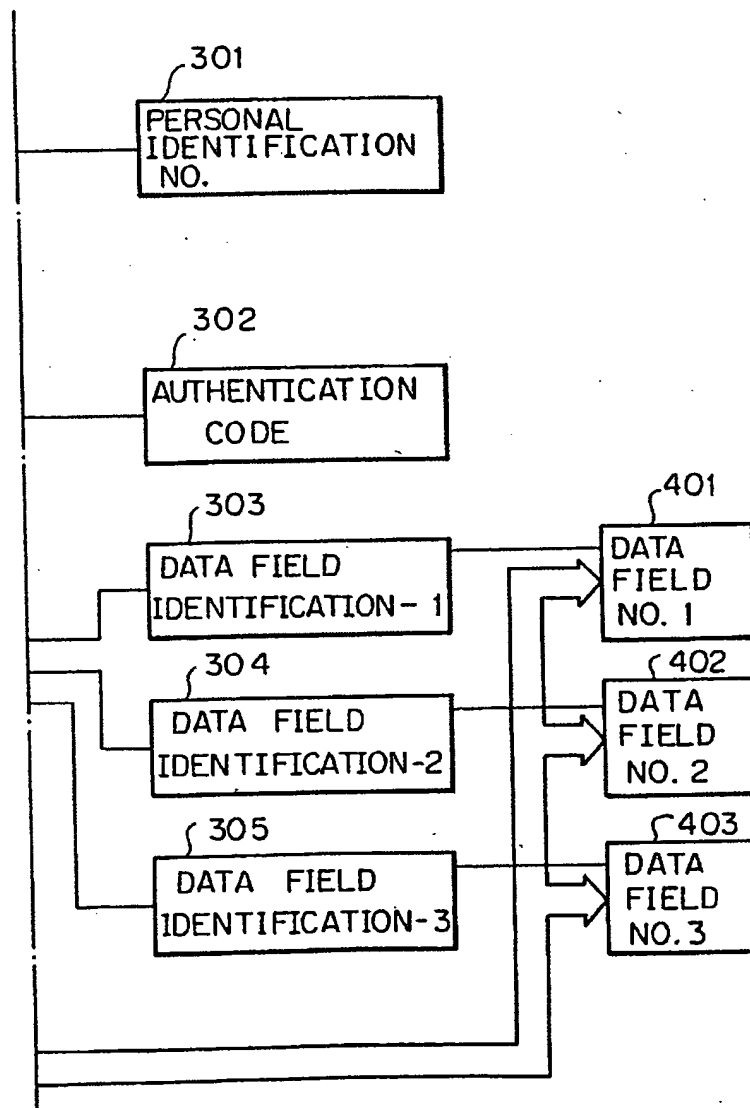


Fig. 4 A

Fig. 4

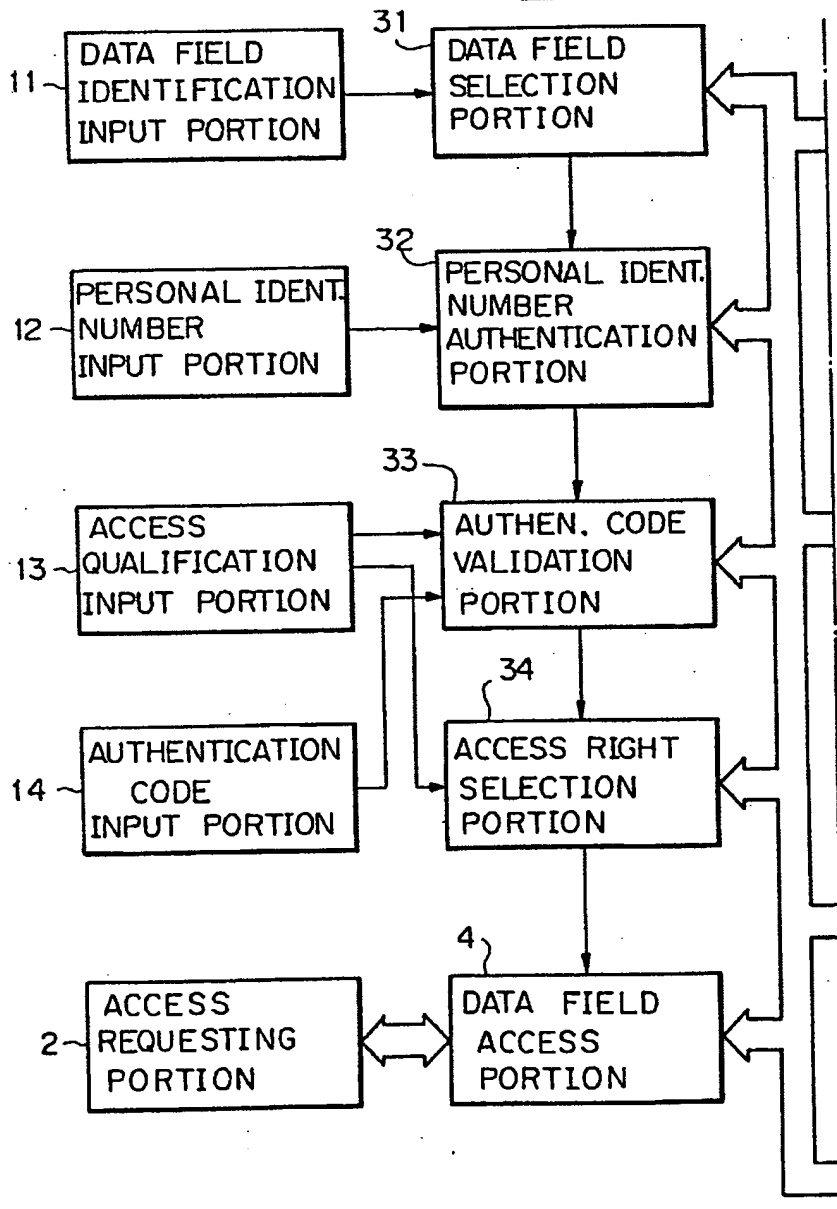


Fig. 4 B

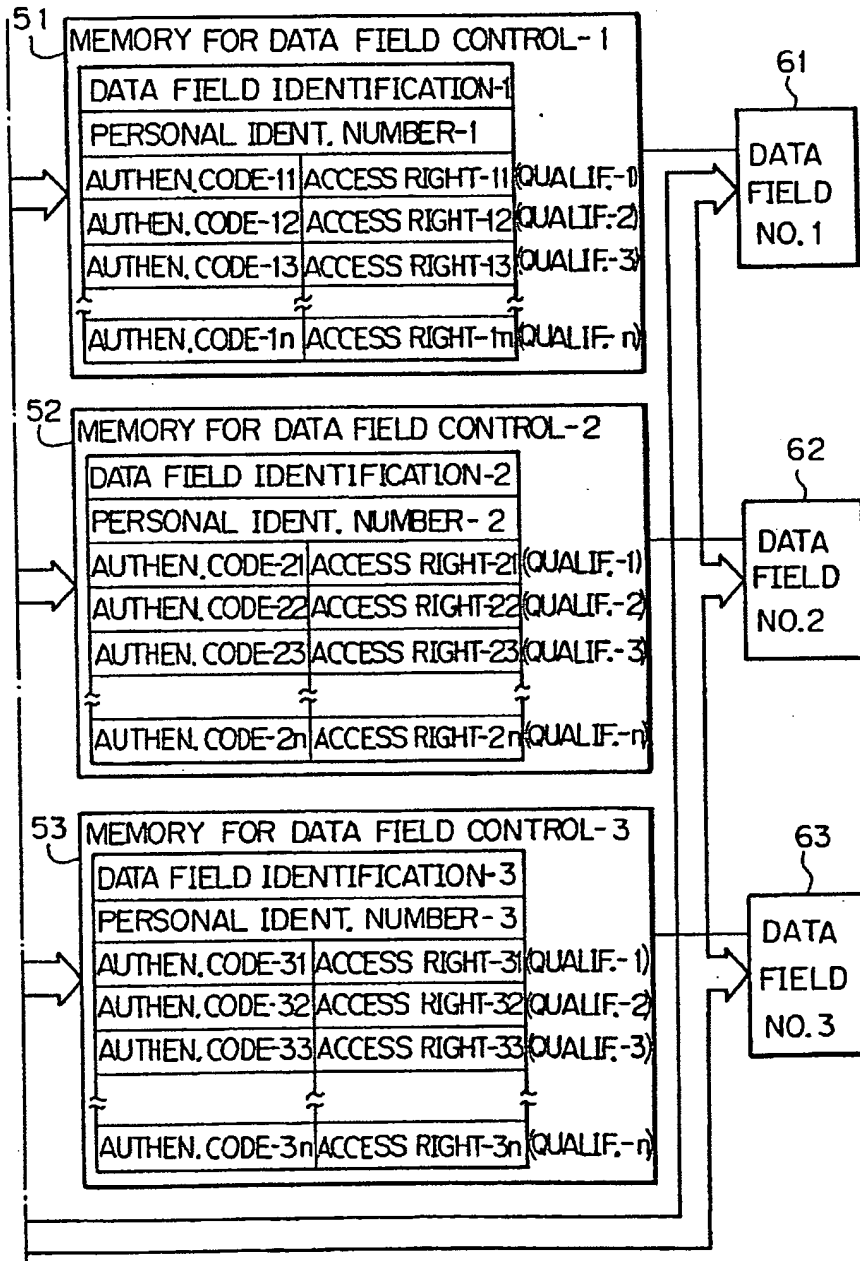


Fig. 5

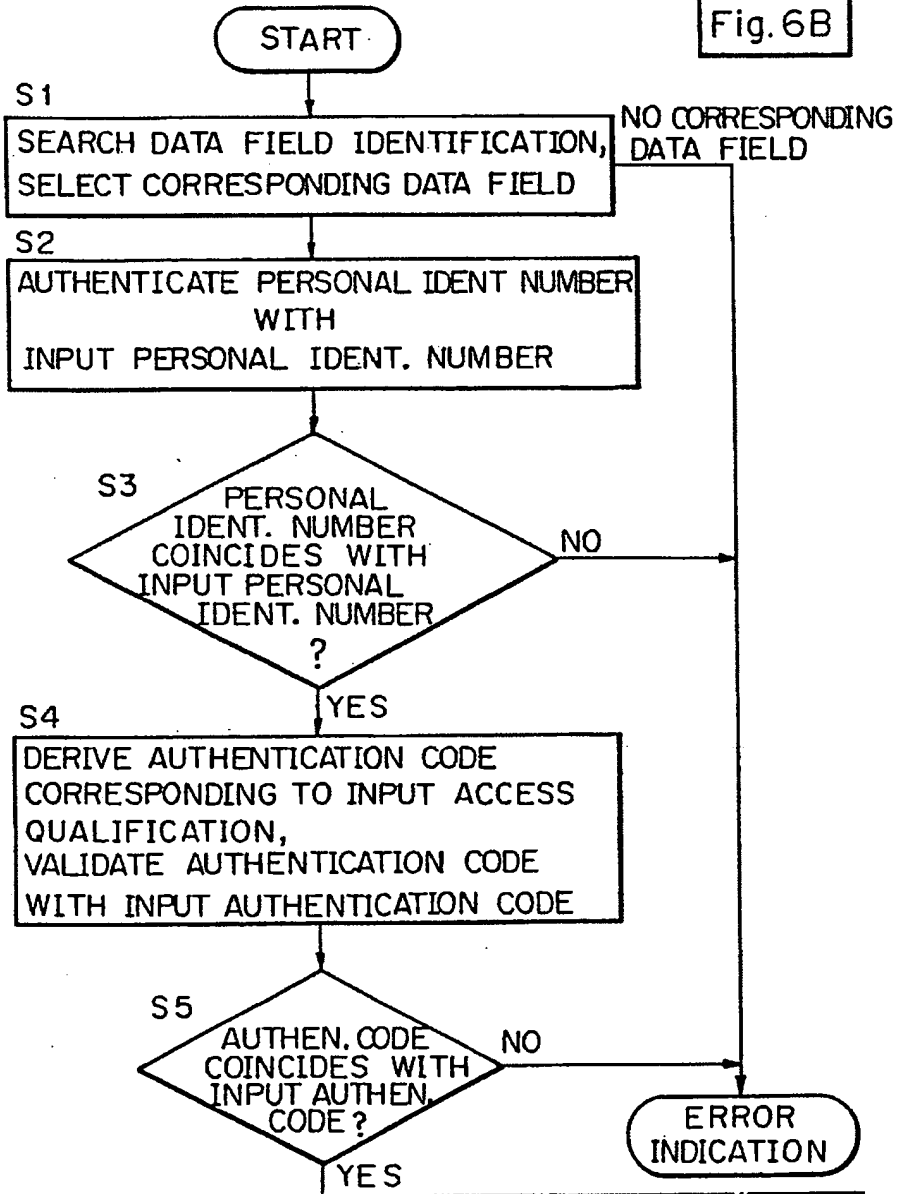
	AUTHENTICATION CODE	ACCESS RIGHT
CARD ISSUER	X X X X X X	R W D RW
SERVICE SUPPLIER	Y Y Y Y Y Y	R W D RW
CARD ACCEPTOR	Z Z Z Z Z Z	R W D RW
CARD HOLDER	(PERSONAL IDENT. NUMBER)	R W D RW

R: READ
W: WRITE
D: DELETE
RW: REWRITE

Fig. 6A

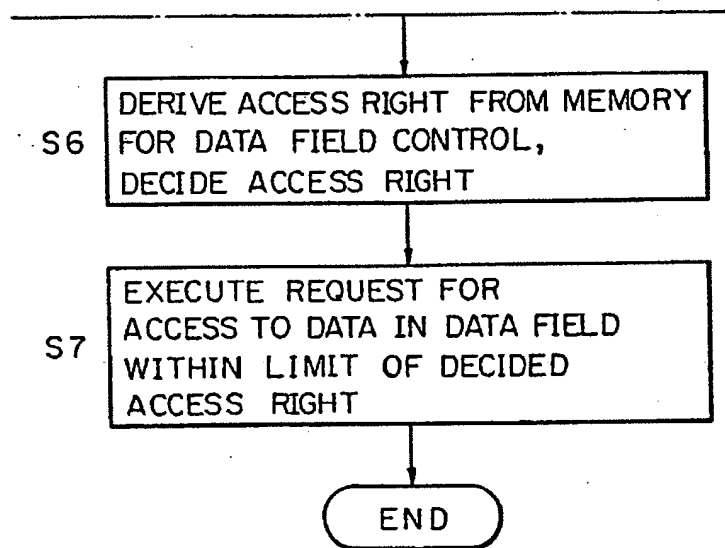
Fig. 6

Fig. 6A
Fig. 6B



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Fig. 6B



BATCH PROCESSING SYSTEM BY SELECTING PLURAL ICONS

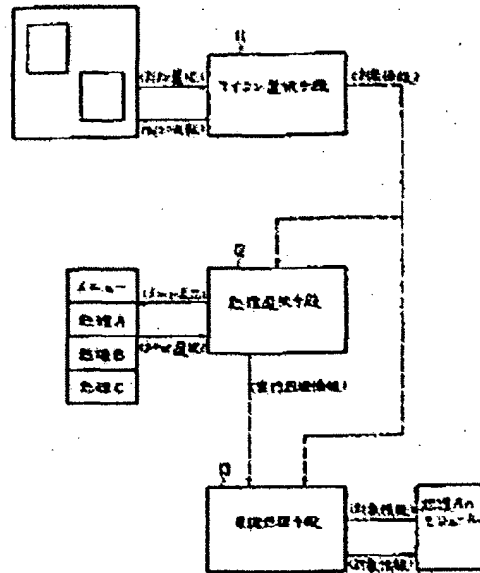
Publication number: JP3063717
 Publication date: 1991-03-19
 Inventor: TSUTSUI KENSAKU; DEWA YUJI
 Applicant: NIPPON ELECTRIC CO
 Classification:
 - international: G06F3/02; G06F3/00; G06F3/048; G06F3/14;
 G06F3/02; G06F3/00; G06F3/048; G06F3/14; (IPC1-7):
 G06F3/02; G06F3/14
 - European:
 Application number: JP19890199025 19890731
 Priority number(s): JP19890199025 19890731

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Abstract of JP3063717

PURPOSE:To decrease the operation burden by determining one from in processings defined in common among all objects corresponding to a selected icon, and repeating this processing to all the objects corresponding to the selected icon.

CONSTITUTION:The subject system is provided with an icon selecting means 11, a processing selecting means 12, and a repetition processing means 13, plural icons corresponding to an arbitrary object being a processing object are selected, and also, one is determined from in processings defined in common among all objects corresponding to the selected icon, and the determined processing is repeated to all the processing request to a computer from a user, especially, at the time of requesting the same processing to plural processing objects, a monotonous repeating operation is replaced with a batch operation, and the operation burden of the user can be reduced.



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⑨ 日本国特許庁(JP)

⑩ 特許出願公開

⑫ 公開特許公報(A) 平3-63717

⑮ Int. Cl.³

G 06 F 3/02
3/14

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7530-5B
8323-5B

⑬ 公開 平成3年(1991)3月19日

審査請求 未請求 請求項の数 1 (全4頁)

⑭ 発明の名称 アイコンの複数選択による一括処理方式

⑯ 特 願 平1-199025

⑰ 出 願 平1(1989)7月31日

⑱ 発 明 者 筒 井 健 作 東京都港区芝5丁目33番1号 日本電気株式会社内
 ⑲ 発 明 者 出 羽 雄 二 東京都港区芝5丁目33番1号 日本電気株式会社内
 ⑳ 出 願 人 日本電気株式会社 東京都港区芝5丁目7番1号
 ㉑ 代 理 人 弁 理 士 井ノ口 壽

明 細 書

1. 発明の名称

アイコンの複数選択による一括処理方式

2. 特許請求の範囲

処理対象である任意のオブジェクトに対応するアイコンを複数選択するためのアイコン選択手段と、前記選択されたアイコンに対応するすべてのオブジェクトの間で共通に定義される処理の中から一つを決定するための処理選択手段と、前記決定された処理を前記選択されたアイコンに対応するすべてのオブジェクトに対して反復するための反復処理手段とを具備して構成したことを特徴とするアイコンの複数選択による一括処理方式。

3. 発明の詳細な説明

(産業上の利用分野)

本発明はコンピュータと利用者との間の対話方式に関し、特に、その利用者からコンピュータへの要求の伝達方式に関する。

(従来の技術)

従来、コンピュータと利用者との間でオブジ

クト指向の対話を行う場合には、処理対象であるオブジェクトに対応する1個のアイコンに対し、実行可能な処理を一つ選択していた。また、利用者が複数のオブジェクトに対して同一の処理を要求する際にも、それぞれに対してアイコン選択、および処理選択の操作を繰返して行っていた。

(発明が解決しようとする課題)

上述した従来のコンピュータと利用者との間の対話方式で操作性を向上する必要がある場合には、単調な繰返し操作を一括操作に置換えることにより、利用者の操作負担の軽減を図る必要がある。上述した従来技術では、利用者からコンピュータへの処理要求において、各オブジェクトについて必ずアイコンの選択、および処理の選択の操作を行わなければならない、利用者の操作負担は大きいという欠点がある。

本発明の目的は、処理対象である任意のオブジェクトに対応するアイコンを複数選択するとともに、選択されたアイコンに対応するすべてのオブジェクトの間で共通に定義される処理の中から一

つを決定し、決定された処理を選択されたアイコンに対応するすべてのオブジェクトに対して反復することによつて上記欠点を除去し、操作負担を減ずることができるように構成したアイコンの複数選択による一括処理方式を提供することにある。

(課題を解決するための手段)

本発明によるアイコンの複数選択による一括処理方式は、アイコン選択手段と、処理選択手段と、反復処理手段とを具備して構成したものである。

アイコン選択手段は、処理対象である任意のオブジェクトに対応するアイコンを複数選択するためのものである。

処理選択手段は、選択されたアイコンに対応するすべてのオブジェクトの間で共通に定義される処理の中から一つを決定するためのものである。

反復処理手段は、上記決定された処理を上記選択されたアイコンに対応するすべてのオブジェクトに対して反復するためのものである。

(実施例)

次に、本発明に関して図面を参照して説明する。

以下に、第2図～第7図を参照して画面での操作例を説明する。

第2図において、アイコンをポイント10で指示すると、これにより選択が行われ、選択が記憶されたフォルダアイコン51は反転表示される。引続き、第3図において、他のアイコンをポイント10で指示すると、これにより複数選択が可能であり、選択が記憶された文書アイコン52は同様に反転表示される。これらは、本方式のアイコン選択手段によつて行われる。第4図において、メニュー30をポイント10で指示すると、これにより選択を記憶したすべてのアイコン51、52に共通的に定義された処理が提示される。このとき、共通して選択可能なメニュー項目は、31で代表されるように英数字で表わされ、そうでないメニュー項目は32で代表されるように破線文字で表わされる。第5図において、ポイント10でメニュー30中のメニュー項目33を指示するとこれにより、処理の選択が行われて選択が記憶される。これらは、本方式の処理選択手段

第1図は、本発明によるアイコンの複数選択による一括処理方式の一実施例を示すブロック図である。

第1図において、11はアイコン選択手段、12は処理選択手段、13は反復処理手段である。

第1図においてアイコン選択手段11は利用者が選択する画面上の複数のアイコンに対応する各オブジェクトの情報を取得して記憶する。また、当該情報は処理選択手段12に伝えられ、それらオブジェクトで共通に定義されている実行可能処理がメニューとして画面上に表示される。処理選択手段12は利用者によるその一つを選択させ、選択された処理の情報を取得して記憶する。反復処理手段13は、処理選択手段12で記憶した実行処理を行うモジュールに対し、アイコン選択手段11で記憶したオブジェクトの情報を1件づつ伝達し、オブジェクトの情報がなくなるまで上記動作を繰返す。これにより、本方式は構成される。

第2図～第7図は、それぞれ第1図に示すアイコンによる操作例を示す説明図である。

12によつて行われる。第6図においては、処理選択手段により記憶されている複製という処理がフォルダアイコン51に適用された結果、同様のフォルダアイコン53が画面上に生成されている。引続き、第7図においては、文書アイコン52にも複製処理が適用され、同様の文書アイコン54が画面上に生成されている。これにより、第6図および第7図の処理が実行されている間は、利用者は何等操作をする必要がなくなつたわけである。

(発明の効果)

以上説明したように本発明は、処理対象である任意のオブジェクトに対応するアイコンを複数選択するとともに、選択されたアイコンに対応するすべてのオブジェクトの間で共通に定義される処理の中から一つを決定し、決定された処理を選択されたアイコンに対応するすべてのオブジェクトに対して反復することによつて、利用者からコンピュータへの処理要求において、特に複数処理対象に対して同一処理を要求する際に、手順を繰返し操作が一括操作に置き換えられ、利用者の操作

負担が軽減できるという効果がある。

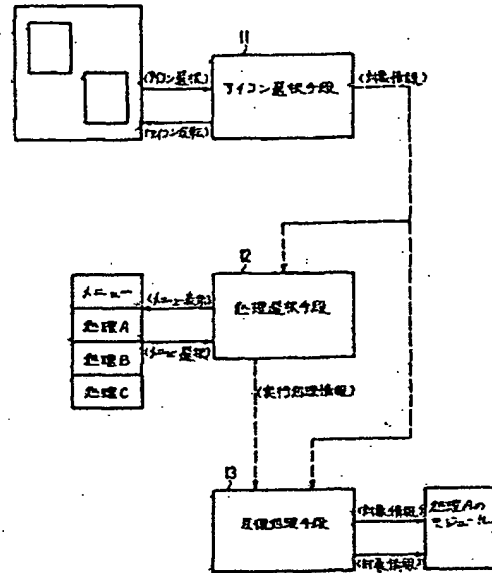
4. 図面の簡単な説明

第1図は、本発明によるアイコンの複数選択による一括処理方式の一実施例を示すブロック図である。

第2図～第7図は、それぞれ第1図に示すアイコンによる操作例を示す説明図である。

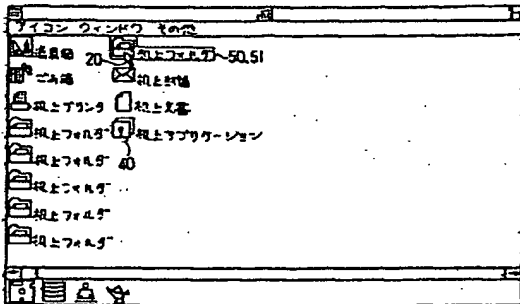
- 11・・・アイコン選択手段
- 12・・・処理選択手段
- 13・・・反復処理手段
- 20・・・ポインタ
- 30・・・メニュー
- 31～33・・・項目
- 40、50～54・・・アイコン

第1図

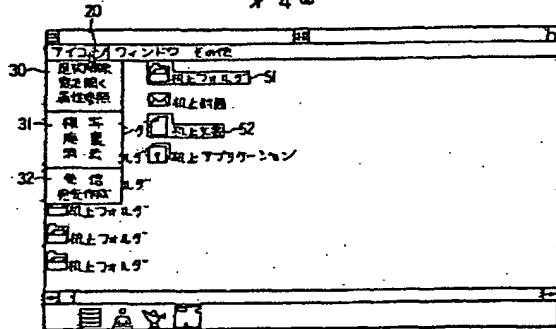


特許出願人 日本電気株式会社
代理人 弁理士 井ノ口 壽

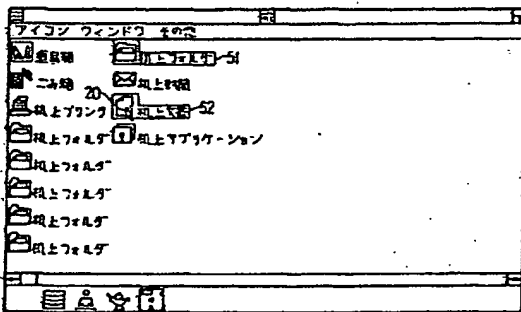
第2図



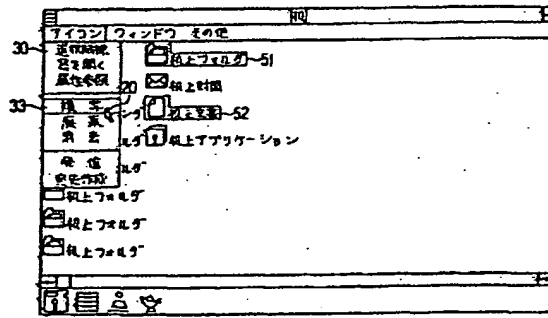
第4図



第3図




第5図



INFORMATION SUPPLYING/COLLECTING DEVICE

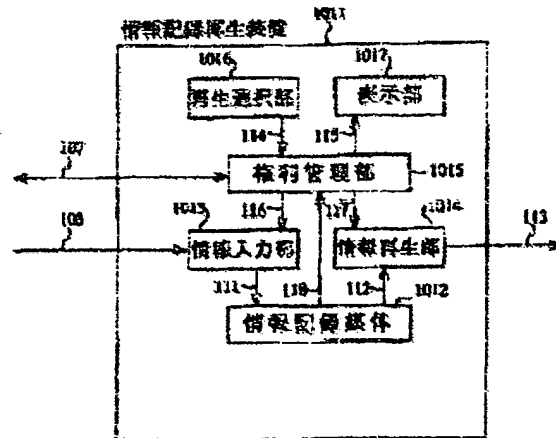
Publication number: JP6131371
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 Inventor: TSUTSUI KIYOUYA
 Applicant: SONY CORP
 Classification:
 - International: G07F7/08; C04B28/04; G06F21/24; G06Q30/00; G06Q50/00; G07F17/00; H04H9/00; H04N5/775; H04N7/173; H04N5/781; H04N5/85; H04N5/907; G07F7/08; C04B28/00; G06F21/00; G06Q30/00; G06Q50/00; G07F17/00; H04H9/00; H04N5/775; H04N7/173; H04N5/781; H04N5/84; H04N5/907; (IPC1-7): G06F15/21; G07F7/08; G07F17/00
 - European: C04B28/04; H04H9/00R; H04N5/775; H04N7/173C
 Application number: JP19920304706 19921016
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Report a data error here

Abstract of JP6131371

PURPOSE:To obtain the information on the reactions of the viewers and to improve the safety of the information control by acquiring quickly the information and attaining the flexible payment of the charge. **CONSTITUTION:**The input of information is carried out to an information recording/reproducing device 1011 and also the information is recorded and reproduced to an information recording medium 1012 under the control of a right control part 1015. When the input of information is controlled to an information input part 1013 together with the control of recording given to the medium 1012 respectively, the part 1015 controls the information input function or the information recording function of the part 1013 by a control signal 116. A signal 103 is sent to the medium 1012 through the part 1013 as the information 111. When the reproduction of information is controlled to the medium 1012, the part 1015 reads the information 118 on the type and the reproduction conditions, etc., on the information itself out of those information recorded in the medium 1012. The information 118 is sent to a display part 1017 and shown there as the display information 115.



Data supplied from the esp@cenet database - Worldwide

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(71) 出願人 000002185

ソニー株式会社

東京都品川区北品川6丁目7番35号

(72) 発明者 筒井 京弥

東京都品川区北品川6丁目7番35号 ソニ

株式会社内

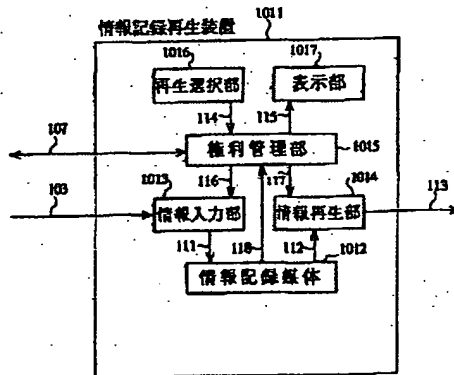
(74) 代理人 弁理士 榎本 義雄

(54) 【発明の名称】 情報提供収集装置

(57) 【要約】

【目的】 情報の迅速な入手、柔軟な料金支払いを可能とし、視聴者の反応に関する情報を得る。また、情報管理の安全性を高める。

【構成】 権利管理部1015の制御の下に、情報記録再生装置1011への入力、情報記録媒体1012への記録及び再生が行なわれる。情報入力部1013への入力、または情報記録媒体1012への記録を制御する場合には、権利管理部1015は、制御信号116によって、情報入力部1013の情報入力機能または情報記録機能が制御される。信号103は、情報入力部1013を通して情報記録媒体1012に情報111として送られる。一方、情報記録媒体1012からの再生を制御する場合には、権利管理部1015においては、情報記録媒体1012に記録されている情報のうち、その情報自身の種類や再生条件などの情報118を読み出す。それが表示情報115として表示部1017に送って表示される。



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【特許請求の範囲】

【請求項1】 情報記録媒体および権利管理手段を備え、権利管理手段の制御により情報の記録または再生の制御を行なう情報記録装置から成ることを特徴とする情報提供収集装置。

【請求項2】 上記権利管理手段においては、上記記録媒体に記録された権利管理情報に基づいて制御を行なうことを特徴とする請求項1に記載の情報提供収集装置。

【請求項3】 上記権利管理情報は、記録もしくは再生前後で内容が変化することを特徴とする請求項2に記載の情報提供収集装置。

【請求項4】 上記権利管理情報は、記録または再生が許可される有効期限であることを特徴とする請求項2に記載の情報提供収集装置。

【請求項5】 上記記録媒体に記録される情報の一部は、その情報自身の内容を示すものであることを特徴とする請求項1に記載の情報提供収集装置。

【請求項6】 上記記録媒体は、半導体メモリであることを特徴とする請求項1に記載の情報提供収集装置。

【請求項7】 上記記録媒体及び上記権利管理手段は、1枚のカードに実装されている情報記録装置から成ることを特徴とする請求項1に記載の情報提供収集装置。

【請求項8】 上記記録媒体には書き換え不可能な情報を記録し、再生時に権利管理を行なうことを特徴とする請求項1に記載の情報提供収集装置。

【請求項9】 上記記録媒体には、情報提供装置から書き換え可能な情報を記録することを特徴とする請求項1に記載の情報提供収集装置。

【請求項10】 上記記録媒体への情報の記録は、上記情報提供装置による正当性認証が成立した場合に行なわれることを特徴とする請求項9に記載の情報提供収集装置。

【請求項11】 上記正当性認証は、上記情報提供装置及び上記情報記録装置に記録され、その値自身が暗号化された鍵情報に基づいて行なわれることを特徴とする請求項10に記載の情報提供収集装置。

【請求項12】 上記情報の再生は再生選択信号に基づいて行なわれることを特徴とする請求項1に記載の情報提供収集装置。

【請求項13】 上記情報の再生は、外部からの再生選択信号に基づいて行なわれることを特徴とする請求項1に記載の情報提供収集装置。

【請求項14】 上記情報の再生は、上記情報提供装置によって、上記情報記録装置の正当性認証が成立した場合に行なわれることを特徴とする請求項13に記載の情報提供収集装置。

【請求項15】 上記正当性認証は、上記情報記録装置及び上記情報記録装置に記録され、暗号化された鍵情報に基づいて行なわれることを特徴とする請求項14に記載の情報提供収集装置。

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【請求項16】 上記権利管理情報は、権利管理情報更新装置により書き換え可能であることを特徴とする請求項2に記載の情報提供収集装置。

【請求項17】 上記権利管理情報の書き換えは、上記情報記録装置によって、上記権利管理情報更新装置の正当性認証が成立した場合に行なわれることを特徴とする請求項16に記載の情報提供収集装置。

【請求項18】 上記正当性認証は、上記権利管理情報更新装置及び上記情報記録装置に記録され、暗号化された鍵情報に基づいて行なわれることを特徴とする請求項17に記載の情報提供収集装置。

【請求項19】 上記権利管理更新装置に記録された鍵情報と、上記情報記録装置に記録された鍵情報とは異なる値を持つことを特徴とする請求項18に記載の情報記録装置。

【請求項20】 上記情報記録装置の挿入部と挿出部を別々に備え、上記情報記録装置への記録を行なう情報提供装置から成ることを特徴とする情報提供収集装置。

【請求項21】 内部に記録媒体を備え、その記録媒体に記録されている情報を上記情報再生装置に転送する情報提供装置から成ることを特徴とする請求項20に記載の情報提供収集装置。

【請求項22】 上記記録媒体として半導体メモリを用いる情報提供装置から成ることを特徴とする請求項21に記載の情報提供収集装置。

【請求項23】 上記記録媒体から上記情報記録装置への情報の転送を、端子を用いて行なう情報提供装置から成ることを特徴とする請求項20に記載の情報提供収集装置。

【請求項24】 上記記録媒体から上記情報提供装置への情報の転送を非接触の手段で行なうことを特徴とする請求項20に記載の情報提供収集装置。

【請求項25】 上記情報提供装置から転送された情報を、上記情報記録装置に転送し、上記権利管理手段の制御の下に上記情報の再生を行なう情報記録装置から成ることを特徴とする情報提供収集装置。

【請求項26】 再生利用する情報を記録する第1の情報記録媒体と、その情報の再生利用者の入力に係わる情報を記録する第2の情報記録媒体と、

その第2の情報記録媒体に記録された情報を外部に伝送するための伝送手段とを備えていることを特徴とする情報提供収集装置。

【請求項27】 上記第1の情報記録媒体に対し、外部からの情報の書き込みが可能であることを特徴とする請求項26に記載の情報提供収集装置。

【請求項28】 上記情報の再生利用者の入力に係わる情報が、第1の情報記録媒体に記録された情報再生によって入力が見られる選択情報であることを特徴とする請求項26に記載の情報提供収集装置。

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【請求項29】 上記情報の再生利用者の入力に係わる情報が、その情報の再生利用状況に関する情報であることを特徴とする請求項26に記載の情報提供収集装置。

【請求項30】 上記第1の情報記録媒体は、1Cメモリで構成されていることを特徴とする請求項26に記載の情報提供収集装置。

【請求項31】 上記第2の情報記録媒体は、1Cメモリで構成されていることを特徴とする請求項26に記載の情報提供収集装置。

【請求項32】 構成要素が1枚のカードに実装されている情報記録装置から成ることを特徴とする請求項26に記載の情報提供収集装置。

【請求項33】 上記第2の情報記録媒体に記録された情報を読み出す手段を備えたことを特徴とする情報提供収集装置。

【請求項34】 上記第2の情報記録媒体から読みだされた情報に基づく情報を記録する媒体を装備することを特徴とする請求項33に記載の情報提供収集装置。

【請求項35】 上記第1の情報記録媒体への情報の書き込み機能を装備していることを特徴とする請求項33

【請求項36】 有線または無線の伝達手段を装備し、上記第2の情報記録媒体から読み出された情報に基づく情報を、一旦記録媒体に蓄積した後、または蓄積をせずに、処理を加え、または処理を加えずに上記伝達手段によって送信できることを特徴とする請求項33に記載の情報提供収集装置。

【請求項37】 上記情報記録装置の上記第2の情報記録媒体から読みだされた情報の種類あるいは内容に依存して、情報提供条件あるいは情報利用条件が変化するこ

【請求項38】 複数個の上記情報記録装置から、上記伝達手段によって、上記第2の情報記録媒体から読みだされた情報に基づく情報を収集することを特徴とする情報提供収集装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】 本発明は、ニュース、音楽等の情報を迅速に入手及び提供し、視聴者の反応を知るための手段を備えた情報記録装置に関するものである。

【0002】

【従来の技術】 従来より、例えば、特開平3-118690号に述べられているように、「無線、または有線により情報送信用の制御線に接続され、情報入力手段、該入力手段より入力した情報を情報記録媒体へ記録する記録手段、該情報記録媒体の排出口、および決済手段から構成されたことを特徴とする情報記録装置」という技術が知られている。

【0003】 これを用いれば、例えば、手持ちのカセットテープを情報記録装置にセットし、コイン、カード、

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使用回数管理等の決済処理をすることにより情報記録装置を介してニュース、音楽等の情報をダビングし、提供することができる。そして、従来例では、以下の方法が記載されている。利用者は、上記情報記録装置の挿入口にカセットテープ等の記録媒体を挿入するとともに、コインの投下および情報の選択を行なう。そして、上記情報記録装置は、それらに基づいて挿入された上記情報記録媒体に情報をダビングし、挿入口と同一の排出口から上記記録媒体を排出する。

【0004】 一方、流行歌などの音楽やクイズ等を供給する媒体として、ラジオやテレビ等の放送が利用されることが多い。

【0005】

【発明が解決しようとする課題】 従来例の方法では、カセットテープ等、ダビング速度が遅い場合には問題にならない。ところが、例えば、半導体メモリを用いた記録媒体へのダビングを考えた場合には、情報提供は瞬時に行なうことが可能である。しかし、その場合に、記録媒体へのダビングは瞬時に終了するにも拘わらず、いちいちコイン等を使用して決済を行なうのでは、情報入手者にコイン投入等の余分な負担がかかることになり、時間もかかる。そのため、従来例では、例えば駅などで多くの人が情報を入力しようとしても、電車の待ち合わせ時など、限られた時間内に情報が得られる人数には限りが出てしまうことになる。

【0006】 また、従来例では、各利用者の情報選択動作やコインの投入動作とともに、情報記録装置の記録媒体の吸引、排出作用が隘路となり、各利用者は、これらの作用が終了するまで情報記録装置を占有することになる。そのため、従来例では、多くの利用者に迅速に情報を供給することができなかった。

【0007】 さらに、従来例では、上記情報記録媒体への記録時に決済がなされる。ところが、例えば、記録された情報のうち、情報入手者に興味があるのは、そのほんの一部だけで、実際にはその部分しか再生しなかった場合がある。しかし従来例では、そうした場合でも、決済は情報記録時に行なわれているので、情報入手者は、すべての情報に対する料金を払わなければならないという不都合が生じる場合がある。

【0008】 また、従来、放送局は一方的に番組を流すだけである。従って、従来例においては、視聴者が、実際にそれらの番組をどのように視聴しているかの実態や、どの曲に人気があるかといった情報を把握することは困難であった。また、例えば、クイズ番組においても、従来例においては、視聴者の正答率を把握したり、視聴者同士で正答率を競ったりすることは困難であった。

【0009】 これに対し、双方向機能を持ったCATVを使用して、これらの情報を把握するという方法も提案されている。しかし、これらは視聴のための装置が屋内

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に固定されているため、屋外での視聴者の状況を知るためには適用できない、という欠点があった。

【0010】また、一般に、正当な権利管理情報更新装置は、厳重に管理することが可能である。しかし、情報記録（再生）装置は多数の人が使用するため、厳重に管理することが難しい。しかも、不当な権利管理情報更新装置が1台でもできると、それによって多数の情報記録（再生）装置内の残度数が更新され得るので危険である。

【0011】本発明はこのような状況に鑑みてなされたものであり、情報の迅速な入手、柔軟な料金支払いを可能とし、さらに、視聴者の反応に関する情報を得ることができるようにすることを目的とする。また、情報管理の安全性を高めることを目的とする。

【0012】

【課題を解決するための手段】請求項1に記載の情報提供収集装置は、情報記録媒体1043及び権利管理手段としての権利管理部1045を備え、権利管理手段としての権利管理部1045の制御により情報の記録または再生の制御を行なう情報記録装置1041から成ることを特徴とする。

【0013】請求項2に記載の情報提供収集装置は、上記権利管理手段としての権利管理部1045において、上記記録媒体1043に記録された権利管理情報としての残度数情報Dに基づいて制御を行なうことを特徴とする。

【0014】請求項3に記載の情報提供収集装置は、上記権利管理情報としての残度数情報Dが、記録もしくは再生前後で内容が変化することを特徴とする。

【0015】請求項4に記載の情報提供収集装置は、上記権利管理情報としての残度数情報Dが、記録または再生が許可される有効期限であることを特徴とする。

【0016】請求項5に記載の情報提供収集装置は、上記記録媒体1043に記録される情報の一部が、その情報自身の内容を示すものであることを特徴とする。

【0017】請求項6に記載の情報提供収集装置は、上記記録媒体1043が、半導体メモリであることを特徴とする。

【0018】請求項7に記載の情報提供収集装置は、上記記録媒体1043及び上記権利管理手段としての権利管理部1045が、1枚のカードに実装されている情報記録装置1041から成ることを特徴とする。

【0019】請求項8に記載の情報提供収集装置は、上記記録媒体1043には書き換え不可能な情報を記録し、再生時に権利管理を行なうことを特徴とする。

【0020】請求項9に記載の情報提供収集装置は、上記記録媒体1043には、情報提供装置1001から書き換え可能な情報を記録することを特徴とする。

【0021】請求項10に記載の情報提供収集装置は、上記記録媒体1043への情報の記録が、上記情報提供

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装置1001による正当性認証が成立した場合に行なわれることを特徴とする。

【0022】請求項11に記載の情報提供収集装置は、上記正当性認証が、上記情報提供装置1001及び上記情報記録装置1041に記録され、暗号化された鍵情報としての秘密鍵Kに基づいて行なわれることを特徴とする。

【0023】請求項12に記載の情報提供収集装置は、上記情報の再生が、再生選択信号としての再生選択情報114に基づいて行なわれることを特徴とする。

【0024】請求項13に記載の情報提供収集装置は、上記情報の再生が、外部からの再生選択信号としての再生選択情報114に基づいて行なわれることを特徴とする。

【0025】請求項14に記載の情報提供収集装置は、上記情報の再生が、上記情報提供装置1001によって、上記情報記録装置1041の正当性認証が成立した場合に行なわれることを特徴とする。

【0026】請求項15に記載の情報提供収集装置は、上記正当性認証が、上記情報提供装置1001及び上記情報記録装置1041に記録され、暗号化された鍵情報としての秘密鍵Kに基づいて行なわれることを特徴とする。

【0027】請求項16に記載の情報提供収集装置は、上記権利管理情報としての残度数情報Dが、権利管理情報更新装置1061により書き換え可能であることを特徴とする。

【0028】請求項17に記載の情報提供収集装置は、上記権利管理情報としての残度数情報Dの書き換えが、上記情報記録装置1041によって、上記権利管理情報更新装置1061の正当性認証が成立した場合に行なわれることを特徴とする。

【0029】請求項18に記載の情報提供収集装置は、上記正当性認証が、上記権利管理情報更新装置1061及び上記情報記録装置1041に記録され、暗号化された鍵情報としての復号化鍵L及び暗号化鍵Mに基づいて行なわれることを特徴とする。

【0030】請求項19に記載の情報提供収集装置は、上記権利管理更新装置1061に記録された鍵情報としての暗号化鍵Mと、上記情報記録装置1041に記録された鍵情報としての復号化鍵Lとは異なる値を持つことを特徴とする。

【0031】請求項20に記載の情報提供収集装置は、上記情報記録装置1041の挿入部と挿出部を別々に備え、上記情報記録装置1041への記録を行なう情報提供装置1001から成ることを特徴とする。

【0032】請求項21に記載の情報提供収集装置は、内部に記録媒体2012を備え、その記録媒体2012に記録されている情報を上記情報記録装置1041に転送する情報提供装置1001から成ることを特徴とする。

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る。

【0033】請求項22に記載の情報提供収集装置は、上記記録媒体2012として半導体メモリを用いる情報提供装置1001から成ることを特徴とする。

【0034】請求項23に記載の情報提供収集装置は、上記記録媒体2012から上記情報記録装置1041への情報の転送を端子2041を用いて行なうことを特徴とする。

【0035】請求項24に記載の情報提供収集装置は、記録媒体2023から情報記録装置2031への情報の転送を非接触の手段で行なうことを特徴とする。

【0036】請求項25に記載の情報提供収集装置は、上記情報提供装置1001から転送された情報を、上記情報記録装置1041に転送し、上記権利管理手段としての権利管理部1045の制御の下に上記情報の再生を行なう情報記録装置1041から成ることを特徴とする。

【0037】請求項26に記載の情報提供収集装置は、再生利用する情報を記録する第1の情報記録媒体4013と、その情報の再生利用者の入力に係わる情報を記録する第2の情報記録媒体4017と、その第2の情報記録媒体4017に記録された情報を外部に伝送するための伝送手段としての伝送部3008とを備えていることを特徴とする。

【0038】請求項27に記載の情報提供収集装置は、上記第1の情報記録媒体4013に対し、外部からの情報の書き込みが可能であることを特徴とする。

【0039】請求項28に記載の情報提供収集装置は、上記情報の再生利用者の入力に係わる情報が、第1の情報記録媒体4013に記録された情報再生によって入力

【0040】請求項29に記載の情報提供収集装置は、上記情報の再生利用者の入力に係わるその情報が、その情報の再生利用状況に関する情報であることを特徴とする。

【0041】請求項30に記載の情報提供収集装置は、上記第1の情報記録媒体4013が、ICメモリで構成されていることを特徴とする。

【0042】請求項31に記載の情報提供収集装置は、上記第2の情報記録媒体4017が、ICメモリで構成されていることを特徴とする。

【0043】請求項32に記載の情報提供収集装置は、構成要素が1枚のカードに実装されている情報記録装置5021から成ることを特徴とする。

【0044】請求項33に記載の情報提供収集装置は、上記第2の情報記録媒体4017に記録された情報を読み出す手段としての制御部4014を備えたことを特徴とする。

【0045】請求項34に記載の情報提供収集装置は、上記第2の情報記録媒体4017から読みだされた情報

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に基づく情報を記録する媒体としての記録媒体3007を装備することを特徴とする。

【0046】請求項35に記載の情報提供収集装置は、上記第1の情報記録媒体4013への情報の書き込み機能を装備していることを特徴とする。

【0047】請求項36に記載の情報提供収集装置は、有線または無線の伝送手段としての伝送部3002、3008を装備し、上記第2の情報記録媒体4017から読み出された情報に基づく情報を、一旦記録媒体3007に蓄積した後に、または蓄積をせずに、処理を加え、または処理を加えずに上記伝送手段によって送信できることを特徴とする。

【0048】請求項37に記載の情報提供収集装置は、上記第2の情報記録媒体4017から読みだされた情報の種類あるいは内容に依存して、情報提供条件あるいは情報利用条件が変化することを特徴とする。

【0049】請求項38に記載の情報提供収集装置は、複数個の上記情報記録装置5021から、上記伝送部3008によって、上記第2の情報記録媒体3007から読みだされた情報に基づく情報を収集することを特徴とする。

【0050】

【作用】請求項1に記載の情報提供収集装置においては、権利管理部1045の制御により情報の記録または再生の制御が行われる。以上のことにより、柔軟な料金支払いが可能となる。

【0051】請求項2に記載の情報提供収集装置においては、権利管理部1045において、上記記録媒体1043に記録された残度数情報Dに基づいて制御が行なわれる。以上のことにより、柔軟な料金支払いが可能となる。

【0052】請求項3に記載の情報提供収集装置においては、残度数情報Dが、記録もしくは再生前後で内容が変化する。以上のことにより、柔軟な料金支払いが可能となる。

【0053】請求項4に記載の情報提供収集装置においては、残度数情報Dが、記録または再生が許可される有効期限である。以上のことにより、柔軟な料金支払いが可能となる。

【0054】請求項5に記載の情報提供収集装置においては、記録媒体1043に記録される情報の一部が、その情報自身の内容を示す。以上のことにより、柔軟な料金支払いが可能となる。

【0055】請求項6に記載の情報提供収集装置においては、記録媒体1043が、半導体メモリである。以上のことにより、情報の迅速な入手が可能となる。

【0056】請求項7に記載の情報提供収集装置においては、記録媒体1043及び権利管理部1045が、1枚のカードに実装されている情報記録装置1041から成る。以上のことにより、情報の迅速な入手が可能とな

る。

【0057】請求項8に記載の情報提供収集装置においては、記録媒体1043には書き換え不可能な情報が記録され、再生時に権利管理が行なわれる。以上のことにより、柔軟な料金支払いが可能となる。

【0058】請求項9に記載の情報提供収集装置においては、記録媒体1043に、情報提供装置1001から書き換え可能な情報が記録される。以上のことにより、柔軟な料金支払いが可能となる。

【0059】請求項10に記載の情報提供収集装置においては、記録媒体1043への情報の記録が、上記情報提供装置1001による正当性認証が成立した場合に行なわれる。以上のことにより、情報管理の安全性が高められる。

【0060】請求項11に記載の情報提供収集装置においては、上記正当性認証が、情報提供装置1001及び情報記録装置1041に記録され、秘密鍵Kに基づいて行なわれる。以上のことにより、情報管理の安全性が高められる。

【0061】請求項12に記載の情報提供収集装置においては、上記情報の再生が、再生選択信号114に基づいて行なわれる。以上のことにより、柔軟な料金支払いが可能となる。

【0062】請求項13に記載の情報提供収集装置においては、上記情報の再生が、外部からの再生選択信号114に基づいて行なわれる。以上のことにより、柔軟な料金支払いが可能となる。

【0063】請求項14に記載の情報提供収集装置においては、上記情報の再生が、情報提供装置1001によって、情報記録装置1041の正当性認証が成立した場合に行なわれる。以上のことにより、情報管理の安全性が高められる。

【0064】請求項15に記載の情報提供収集装置においては、上記正当性認証が、情報提供装置1001及び情報記録装置1041に記録され、秘密鍵Kに基づいて行なわれる。以上のことにより、情報管理の安全性が高められる。

【0065】請求項16に記載の情報提供収集装置においては、残度数情報Dが、権利管理情報更新装置1061により書き換え可能である。以上のことにより、柔軟な料金支払いが可能となる。

【0066】請求項17に記載の情報提供収集装置においては、残度数情報Dの書き換えが、情報記録装置1041によって、権利管理情報更新装置1061の正当性認証が成立した場合に行なわれる。以上のことにより、情報管理の安全性が高められる。

【0067】請求項18に記載の情報提供収集装置においては、上記正当性認証が、権利管理情報更新装置1061及び情報記録装置1041に記録され、復号化鍵L及び暗号化鍵Mに基づいて行なわれる。以上のことによ

り、情報管理の安全性が高められる。

【0068】請求項19に記載の情報提供収集装置においては、権利管理更新装置1061に記録された暗号化鍵Mと、情報記録装置1041に記録された復号化鍵Lとは異なる値を持つ。以上のことにより、情報管理の安全性が高められる。

【0069】請求項20に記載の情報提供収集装置においては、情報記録装置1041の挿入部と排出部を別々に備え、情報記録装置1041への記録を行なう情報提供装置1001から成る。以上のことにより、情報の迅速な入手が可能となる。

【0070】請求項21に記載の情報提供収集装置においては、内部に記録媒体2012を備え、その記録媒体2012に記録されている情報を情報記録装置1041に転送する情報提供装置1001から成る。以上のことにより、情報の迅速な入手が可能となる。

【0071】請求項22に記載の情報提供収集装置においては、記録媒体2012として半導体メモリを用いる情報提供装置1001から成る。以上のことにより、情報の迅速な入手が可能となる。

【0072】請求項23に記載の情報提供収集装置においては、記録媒体2012から情報記録装置1041への情報の転送が端子2041を用いて行なわれる。以上のことにより、情報の迅速な入手が可能となる。

【0073】請求項24に記載の情報提供収集装置においては、記録媒体2023から情報記録装置2031への情報の転送が非接触の手段で行なわれる。以上のことにより、情報の迅速な入手が可能となる。

【0074】請求項25に記載の情報提供収集装置においては、情報提供装置1001から転送された情報を、情報記録装置1041に転送し、権利管理部1045の制御の下に上記情報の再生を行なう情報記録装置1041から成る。以上のことにより、柔軟な料金支払いが可能となる。

【0075】請求項26に記載の情報提供収集装置においては、情報記録媒体4013により、再生利用する情報が記録され、情報記録媒体4017により、再生利用者の入力に係わる情報が記録される。そして、伝達部3008により、情報記録媒体4017に記録された情報が外部に伝達される。以上のことにより、柔軟な料金支払いが可能となる。

【0076】請求項27に記載の情報提供収集装置においては、情報記録媒体4013に対し、外部からの情報の書き込みが可能である。以上のことにより、柔軟な料金支払いが可能となる。

【0077】請求項28に記載の情報提供収集装置においては、再生利用者の入力に係わる情報が、情報記録媒体4013に記録された情報再生によって入力が促される選択情報である。以上のことにより、視聴者の反応に関する情報が得られる。

【0078】請求項29に記載の情報提供収集装置においては、再生利用者の入力に係わるその情報が、その情報の再生利用状況に関する情報である。以上のことにより、視聴者の反応に関する情報が得られる。

【0079】請求項30に記載の情報提供収集装置においては、情報記録媒体4013が、ICメモリで構成されている。以上のことにより、情報の迅速な入手が可能となる。

【0080】請求項31に記載の情報提供収集装置においては、情報記録媒体4017が、ICメモリで構成されている。以上のことにより、情報の迅速な入手が可能となる。

【0081】請求項32に記載の情報提供収集装置においては、構成要素が1枚のカードに実装されている情報記録装置5021から成る。以上のことにより、情報の迅速な入手が可能となる。

【0082】請求項33に記載の情報提供収集装置においては、情報記録媒体4017に記録された情報が、制御部4014により読み出される。以上のことにより、視聴者の反応に関する情報が得られる。

【0083】請求項34に記載の情報提供収集装置においては、記録媒体3007により、情報記録媒体4017から読みだされた情報に基づく情報が記録される。以上のことにより、視聴者の反応に関する情報が得られる。

【0084】請求項35に記載の情報提供収集装置においては、情報記録媒体4013への情報の書き込み機能が装備されている。以上のことにより、柔軟な料金支払いが可能となる。

【0085】請求項36に記載の情報提供収集装置においては、情報記録媒体4017から読み出された情報に基づく情報が、一旦記録媒体3007に蓄積された後に、伝達部3002、3008により送信される。または、上記情報が蓄積されずに、処理が加えられ、または処理が加えられずに伝達部3002、3008により送信される。以上のことにより、柔軟な料金支払いが可能となる。

【0086】請求項37に記載の情報提供収集装置においては、情報記録媒体4017から読みだされた情報の種類あるいは内容に依存して、情報提供条件あるいは情報利用条件が変化する。以上のことにより、柔軟な料金支払いが可能となる。

【0087】請求項38に記載の情報提供収集装置においては、複数の配情報記録装置5021から、伝達部3008によって、情報記録媒体3007から読みだされた情報に基づく情報が収集される。以上のことにより、視聴者の反応に関する情報が得られる。

【0088】

【実施例】以下、本発明の好ましい実施例について、図面を参照しながら説明する。図1は、本発明の方法によ

る情報提供収集装置の一実施例における情報記録再生装置の外観を示したものである。この実施例の装置の一端には、情報提供装置結合端子が付いている。ここを通じて、情報提供装置から情報記録再生装置内に設置された記録媒体に情報がコピーされる。また、この実施例の装置の前面には、表示手段としての表示部と、再生選択手段としての再生選択ボタンが装備されている。

【0089】次に、その動作について説明する。上記表示部は、上記情報記録再生装置内に記録された情報の内容を表示することができる。情報提供収集装置の利用者は、上記表示部に表示されたものをもとに、ボタン等の再生選択手段を用いて必要な情報を選択的に再生することができる。情報の内容は、テキスト情報、音声情報、映像情報およびコンピュータプログラム等を含み、特に限定されない。ここでプログラムの再生とは、そのプログラムを実行することを意味するが、この場合、実行時に使用者が必要に応じて情報を入力しても良い。再生信号がテキストや映像信号の場合には、その再生信号は液晶装置等でできた表示部に表示され、音声情報の場合にはイヤホンに出力される。図1の実施例には描かれていないが、もちろんイヤホンのかわりに、スピーカが装備されていても良く、あるいは、その両方が装備されていても良い。その場合には、スピーカに音声情報の再生結果が出力されても良い。

【0090】やはり図1の実施例には描かれていないが、さらに再生信号は、外部端子が設けられて外部のCRTやスピーカ等に接続されてもよい。なお、記録媒体の種類も、特に限定はない。しかし、一般的に、記録媒体は、高速にコピーが可能で、かつ、ランダムアクセスが容易で、携帯性にも優れたICメモリが使用されると便利である。

【0091】図2は、本発明のもう1つの実施例の外観図である。この例では、図1の情報記録再生装置が、情報記録装置と情報再生装置とに物理的に分離して構成されている。そして、情報記録装置は1枚のカードに実装されている。ただし、再生時には、上記情報記録装置と上記情報再生装置との間でデータおよび制御のやりとりが必要になるので、両者を結合する情報提供装置結合端子及び情報再生装置結合端子が上記情報記録装置及び上記情報再生装置に装備されている。ただし、上記情報記録装置の上記情報記録装置結合端子及び上記情報再生装置結合端子は、実際には1つの端子を切り替えて使用されるように構成されることも可能である。その動作については、図1と同様であり、ここでは省略する。

【0092】図3は、本発明に係わる情報提供収集装置の一実施例における情報提供装置の外観図である。情報提供装置内には記録媒体が設置され、情報が記録されている。図3では省略されているが、記録する情報においては、有線または無線による情報伝達手段によって送信するようにすると便利である。ただし、もちろん、記録

済みの記録媒体が直接上記情報提供装置に挿入されても良い。

【0093】図3の実施例の情報提供装置の前面には、記録されている情報の内容や価格等を表示する表示手段としての表示部が装備されている。また、上記情報提供装置の前面には、どの情報を情報提供手段から出力するかを選択する出力選択手段としての出力選択ボタンが装備されている。そして、その出力選択ボタンにより、情報入手希望者は欲しい情報を選択することができる。さらに、上記情報提供装置の前面には、情報記録再生装置または情報記録装置を挿入するための挿入排出口が備えてある。その動作について説明する。情報の入手は、上記情報提供装置の挿入排出口に情報記録再生装置または情報記録装置が挿入され、情報のコピーを受けることによって実現される。

【0094】図4は、本発明に係わる情報提供収集装置のもう一つの実施例における情報提供装置の外観図である。この実施例では、挿入口と排出口が距離を置いて分離されている。そして、情報提供装置内には、情報記録装置を運ぶベルトが備えてある。その動作について説明する。上記挿入口から情報記録装置が挿入されると、その情報記録装置は上記ベルトに運ばれて排出口から出てくる。そして、情報入手希望者は歩きながら情報の入手をすることができる。以上のように、この実施例は多くの人に迅速に情報を提供する場合に便利である。

【0095】図5は、本発明の情報提供収集装置の一実施例における情報提供装置のブロック図である。図5において、情報記録媒体1003は、ハードディスクや光磁気ディスク等、何であって良い。しかし、一般的には、ランダムアクセスが可能で、情報記録再生装置の記録速度と同等の読み出しが可能であると効率が良い。そのため、記録媒体1003は、ICメモリによって構成されていると便利である。情報記録媒体1003は、情報出力部1004に接続され、情報出力部1004は、制御部1005に接続されている。制御部1005には、出力選択部1006及び表示部1007に接続されている。そして、以上の構成により、情報提供装置1001を成している。一方、情報記録媒体1003は情報伝達部1002にも接続されている。

【0096】次に、その動作について説明する。情報101が、有線、無線等の情報伝達部1002によって送られ、情報記録媒体1003に記録される。その情報記録媒体1003から読みだされた情報102は、情報出力部1004を通して信号103として出力される。情報出力部1004は制御部1005により情報の出力制御を受ける。制御部1005は、表示部1007に情報の内容や提供条件、情報提供処理過程の経過等の信号105を送る。それと共に、制御部1005は、情報入手希望者が出力選択部1006を通じて入力した出力選択情報104を受け取る。そして、制御部1005は、図

6に示す情報記録再生装置1011の権利管理部1015と後述する内容の通信107を行なう。その結果に基づいて、信号106により情報出力部1004の制御が行なわれる。その制御に基づいて、情報出力部1004は、情報記録媒体1003から読みだした情報102を情報記録再生装置1011に信号103として出力する。

【0097】図6は、本発明の情報提供収集装置の一実施例における情報記録再生装置のブロック図である。図6において、情報記録媒体1012は、情報入力部1013、権利管理部1015及び情報再生部1014に接続されている。そして、情報再生部1014及び情報入力部1013は、権利管理部1015に接続されている。さらに、権利管理部1015には、再生選択部1016及び表示部1017が接続されている。そして、以上の構成により、情報記録再生装置1011を成している。

【0098】次に、その動作について説明する。情報記録再生装置1011においては、権利管理部1015の制御の下に、情報記録再生装置1011への入力、情報記録媒体1012への記録及び再生が行なわれる。情報入力部1013への入力または情報記録媒体1012への記録を制御する場合には、権利管理部1015は、図5に示す情報提供装置1001の制御部1005と、後述する内容の通信107を行なう。その結果に基づいて、制御信号116によって、情報入力部1013の情報入力機能または情報記録機能が制御される。そして、信号103は、情報入力部1013を通して情報記録媒体1012に情報111として送られる。

【0099】一方、情報記録媒体1012からの再生を制御する場合には、権利管理部1015においては、情報記録媒体1012に記録されている情報のうち、その情報自身の種類や再生条件などの情報118を読み出す。それが表示情報115として表示部1017に送って表示される。この表示情報115に基づいて、装置の使用が再生選択部1016によって入力した再生選択信号としての再生選択情報114が、権利管理部1015に送られる。そして、権利管理部1015においては、後述する処理を行なうことによって、情報再生部1014に再生制御信号117を送る。これに基づいて、情報再生部1014においては、情報記録媒体1012から情報112を読み出し、音や映像、テキストなどの再生信号113を出力する。ただし、再生信号113が映像やテキストである場合には、例えば、その映像やテキストが表示部1017上に再生されても良い。

【0100】図7は、図5に示す情報提供装置1001における制御部1005の実施例を示したものである。図7において、メモリ1021は、CPU1022に接続され、CPU1022は、乱数発生部1023に接続されている。以上のように、制御部1005は、メモリ

1021とCPU1022及び乱数発生部1023で構成されている。そして、メモリ1021には、暗号化された秘密鍵Kが記録されている。その動作については、後のフローチャートで述べる。

【0101】図8は、図6に示す情報記録再生装置1011における権利管理部1015の実施例を示したものである。図8において、メモリ1031は、CPU1032に接続されている。そして、権利管理部1015は、メモリ1031及びCPU1032で構成されている。また、メモリ1031には、暗号化された鍵情報としての秘密鍵K及び権利管理情報としての残度数情報Dが記録されている。

【0102】ここで残度数情報Dとは、情報記録再生装置1011が、その時点で、あと何回外部から情報を入力して記録してもいいか、あるいは、何回その情報を再生してもいいか、という権利情報を表すものである。ただし、残度数情報Dは、それら記録または再生の回数を直接表すものでなくても良い。例えば、残度数情報Dは、その情報を記録または再生するのに必要な権利の単位の数量を表し、情報の内容によって異なる数量の単位が記録または再生時に減じられていくものとしても良い。また、残度数というのも権利管理情報の一例であり、例えば、残度数のかわりに、記録や再生の許される有効期限が記録してあってもよい。その動作については、後のフローチャートで述べる。

【0103】図9は、本発明の情報提供収集装置の一実施例において、情報記録再生装置への記録時に決済が行なわれる場合について説明するフローチャートである。ここで図9において、情報提供装置1001及び情報記録再生装置1011間の通信107及び情報の送受信信号113の実施例について説明を行なう。

【0104】先ずステップ1で、情報の入手希望者は、情報記録再生装置1011を情報提供装置1001に挿入し、出力選択部1006を用いて出力選択を行なう。ステップ2で、制御部1005は、この出力選択情報104を受信する。それと共に、ステップ10で、制御部1005と権利管理部1015との間で通信201が行なわれる。そして、後述する方法により、権利管理部1015の認証が行なわれる。ステップ3で、これにより権利管理部1015の正当性が証明されれば、ステップ5で、その情報の入手に必要な度数202が権利管理部1015に送信される。しかし、ステップ3で、もし正当性が証明されない場合には、ステップ4が実行される。ステップ4では、正当性が証明されないことが表示部1007に表示され、情報記録再生装置1011が排出されるなどのコピー不可処理1が行なわれる。

【0105】一方、ステップ5で、その正当性が証明された権利管理部1015は、ステップ11で、情報の入手に必要な度数情報を受信する。ステップ12では、権利管理部1015は、上記必要度数情報と権利管理部1

015自身が保持する残度数情報Dとを比較する。そして、もし必要度数が残度数よりも等しいか、少なければ、ステップ13で、コピー要求信号203が制御部1005に送信される。ステップ6では、制御部1005は、コピー要求信号203を受信する。ステップ7では、情報記録媒体1003内の情報が情報103として情報記録再生装置1011に送信される。そして、ステップ14で、情報記録再生装置1011は、情報103を受信し記録する。それと共に、ステップ15で、残度数が減るように変更される。

【0106】一方、ステップ12で、必要度数が残度数より大きい場合には、ステップ16で、権利管理部1015はコピー不可処理2要求信号205を送信する。ステップ8では、制御部1005はコピー不可処理2要求信号205を受信する。そして、ステップ9で、コピー不可であることが表示部1007に表示されるなどのコピー不可処理2が行なわれる。このようにして、情報送信が行なわれたり、必要度数が残度数より大きいためにコピー不可処理2が行なわれる。

【0107】ところで、以上の処理後、情報入手希望者が別の情報の入手を希望する場合がある。その場合は、情報記録媒体1012に十分な記録領域が確保できるのであれば、情報入手希望者が、別の情報の入手を希望することを情報記録装置に入力する。そして、情報提供装置1001及び情報記録再生装置1011は上述の処理を繰り返すようにしても良い。なお、権利管理情報として、残度数のかわりに有効期限が記録されている場合も考えられる。その場合には、権利管理部1015は、必要度数と残度数との比較ではなく、図では省略されているクロックに基づいて、現在の日付時刻と有効期限との比較を行なう。そして、残度数の変更にあたるような処理は不用になる。

【0108】図10は、図9に示す認証のための通信201について説明するフローチャートである。先ず、ステップ31で、制御部1005は乱数Pを発生する。ステップ32で、上記乱数Pが権利管理部1015に送信される。それと共に、ステップ33で、秘密鍵Kと乱数Pに依存する関数 $f(K, P)$ の値Aが計算される。

【0109】一方、ステップ36で、権利管理部1015は乱数Pを受信する。そして、ステップ37でも、関数 $f(K, P)$ の値Bが計算される。ステップ38で、上記値Bが制御部1005に送信される。ステップ34で、値Bを受信した制御部1005は、値Aと値Bとを比較する。ステップ35で、値Aと値Bとが、もし一致していれば、この権利管理部1015は正しい秘密鍵Kの値を保持し、正しい決済を行なう正当なものであると判断される。しかし、値Aと値Bとが、もし一致しなければ、この権利管理部1015は不当なものであると見なされる。

【0110】ここで、認証の方法としては、例えば、権

利管理部1015が保持している秘密鍵Kを直接、制御部1005に送信し、制御部1005が正しい秘密鍵Kの値が送られてきたかを検証するという方法も採ることができる。しかし、実施例のような方法が用いられれば、秘密鍵Kが、制御部1005や権利管理部1015の外に出ることはないで、安全性が高められる。また、認証の方法としては、後述する公開鍵暗号を利用した方法を用いることももちろん、可能である。

【0111】図11は、本発明の情報提供収集装置の一実施例において、権利管理部1015が情報の記録時ではなく、再生時に情報使用の決済を行なう場合の処理の流れのついて説明するフローチャートである。ステップ51で、情報記録媒体1012に記録されている情報のうち、どの部分を再生するか再生選択がなされる。ステップ52で、権利管理部1015においては、残度数が再生に必要な度数以上であるかどうかを調べ、もしそうであれば、ステップ54が実行される。そして、情報が再生されると共に、ステップ55で、残度数が減るように変更される。一方、ステップ52で、残度数が必要度数に満たない場合には、ステップ53で、残度数が必要度数に満たないことが表示部1017に表示されるなどの再生不可処理が行なわれる。

【0112】なお、残度数のかわりに有効期限が記録されている場合も考えられる。その場合には、権利管理部1015においては、必要度数と残度数との比較ではなく、図では省略されているクロックに基づいて、現在の日付時刻と有効期限との比較を行なう。そして、この場合には、残度数の変更にあたるような処理は不用になる。なお、このように再生時に権利管理が行なわれる場合、記録媒体への書き込みは必ずしも情報提供装置を通じて行なわれなくても良い。例えば、マスクROMに記録されている情報が上述の方法で再生時に決済されるようにしても良い。

【0113】図12は、図2の実施例における情報記録再生装置の構成を示すブロック図である。図12において、情報記録再生装置は、情報記録装置1041と情報再生装置1051とに分離している。権利管理部1045は、情報入力部1044及び情報出力部1042とに接続され、情報入力部1044は、情報記録媒体1043に接続されている。また、情報記録媒体1043は、情報出力部1042に接続されている。以上の構成により、情報記録装置1041を成している。

【0114】一方、情報再生部1052は、再生制御部1053に接続され、再生制御部1053は、再生選択部1054及び表示部1055に接続されている。以上の構成により、情報再生装置1051を成している。そして、情報出力部1042は、情報再生装置1051に接続され、権利管理部1045は、再生制御部1053に接続されている。図1の実施例の場合と対応する部分には同一の符号を付してあり、その説明は適宜省略す

る。なお、情報記録装置1041は、1枚のカードに実装されている。

【0115】次に、その動作について説明する。図12の場合には、図6に示す権利管理部1015の機能は、権利管理部1045と再生制御部1053とに分離されている。情報記録媒体1043に情報が記録される時に、その情報の権利管理が行なわれる場合には、権利管理部1045は図6の権利管理部1015と同様に機能する。一方、情報記録媒体1043からの再生時に権利管理が行なわれる場合には、権利管理部1045及び再生制御部1053が、それら両者間の通信120を通じて、図6の権利管理部1015と同様の機能を果たす。

【0116】尚、この場合、権利管理部1045は、情報出力部1042の出力を制御信号121によって制御する。そのことにより、情報の再生が許可されたり禁止されたりする。もちろん、情報記録媒体1043からの出力そのものが制御されることによっても、同様の機能を実現することは可能である。尚、不当な情報再生装置によって情報が再生されることを防ぐため、例えば、再生選択の前に、情報記録装置1041による情報再生装置1051の認証が行なわれるようにしても良い。

【0117】本発明において、残度数などの権利管理情報は、重要な役割を持つ。そして、上記権利管理情報は、正当な権利管理情報更新装置を用いて、安全かつ容易に更新することが可能である。以下、これについて説明を行なう。

【0118】図13は、権利管理情報更新装置の実施例の外観を示したものである。権利管理情報更新装置の前面には、情報記録(再生)装置を出し入れする挿入排出口及びコイン投入口がついている。その動作について説明する。権利管理情報の更新が必要な場合には、情報記録(再生)装置が挿入排出口に挿入されると共に、コイン投入口に必要の対価が入れられる。ただしもちろん、権利管理情報更新装置が人手によって管理され、その人が更新希望者から対価を受け取って、情報記録(再生)装置を挿入排出口に挿入するようにしても良い。

【0119】図14は、図13の実施例において、権利管理部1015及び権利管理情報更新装置1051の構成を示すブロック図である。ただし、権利管理情報の更新に直接関係しない部分については省略してある。図14において、権利管理部1015には、図8に示された他に乱数発生部1033が装備されており、また、メモリ1031には、暗号化された鍵情報としての復号化鍵L及び残度数情報Dが記録されているものとする。この復号化鍵Lの意味と働きについては後述する。そして、乱数発生部1033及びメモリ1031は、CPU1032に接続されている。また一方、権利管理情報更新装置1061には、メモリ1062、CPU1063及びコイン受入部1064が装備されている。そして、メモリ1062には、暗号化鍵Mが記録されているものとする

る。この暗号化鍵Mは前述の復号化鍵Lと対になるものであるが、その意味と働きについては後述する。メモリ1062及びコイン受入部1064はCPU1063に接続されている。そして、CPU1032とCPU1063とが、通信301を行なうことによって、権利管理情報の更新は行なわれる。

【0120】図15は、図13の実施例において、権利管理部1015及び権利管理情報更新装置1061の処理のフローチャートを示したものである。権利管理情報更新装置1061に権利管理部1015が挿入されると、ステップ61で、権利管理部1015によって権利管理情報更新装置1061の認証302が始まる。認証の結果、ステップ62で、権利管理情報更新装置1061が正当なものであると認められれば、ステップ63で、残度数更新のための処理が準備される。しかし、ステップ62で、正当であると認められなければ、残度数更新拒否処理が行なわれる。ここで、残度数更新拒否処理は単に何もしないだけでも良いが、権利管理情報更新装置1061にその残度数更新拒否をすることが送信されても良い。

【0121】次に、残度数更新の処理として、ステップ65で、認証が開始された後、ステップ66で、権利管理情報更新装置1061はコインの投入を確認する。ステップ67で、入金された額303が権利管理部1015に送信される。ステップ63で、権利管理部1015が上記額303を受信し、ステップ64で、その額に応じて残度数が増加するように変更される。一方、権利管理情報更新装置は排出口から情報記録(再生)装置を排出する。

【0122】図16は、図13の実施例において、認証の処理の流れを示したものである。認証の方法としては、例えば、図10に示したものと同様に権利管理部1015と権利管理情報更新装置1061とで共通の秘密鍵を用いて行なうこともできる。しかし、そのような方法をとった場合、万が一、権利管理部1015に記録されている秘密鍵の情報が漏洩すると、不当な権利管理情報更新装置の制作が可能になる。

【0123】一般に、正当な権利管理情報更新装置は、厳重に管理することが可能である。しかし、情報記録(再生)装置は多数の人が使用するため、厳重に管理することが難しい。しかも、不当な権利管理情報更新装置が1台でもできると、それによって多数の情報記録(再生)装置内の残度数が更新され得るので危険である。そのため、この実施例では、公開鍵暗号を用いた認証を利用している。

【0124】公開鍵暗号については、例えば Cryptography and Data Security, Dorothy Elizabeth Robling Denning, 1982 Addison-Wesley Publishing Compa

ny, Inc., Reading, Mass., U. S. A.)

(日本語訳)

暗号とデータセキュリティ

上岡忠弘、小嶋格、奥島晶子訳 培風館

に詳細が記述されている。この技術を使うと、情報の暗号化時に使われる暗号化鍵と、暗号化情報の復号化時に使用される復号化鍵とが別なものに設定できる。しかも、復号化鍵が知られても、それから暗号化鍵を知ることが極めて困難なものにすることができ、安全性が高まる。

【0125】以下、図16に示された認証のための処理手順について述べる。まず、ステップ81で、権利管理部1015は乱数Qを発生する。ステップ82で、乱数Qが権利管理情報更新装置1061に送信される。それと共に、ステップ86で、権利管理情報更新装置1061が乱数Qを受信する。ステップ87で、権利管理情報更新装置1061は、暗号化鍵Mと乱数Qとに依存する関数e(M, Q)の値Rを計算する(暗号化)。ステップ88で、値Rが権利管理部1015に送信されると共に、ステップ83で、値Rが権利管理部1015を受信される。ステップ84で、権利管理部1015は、復号化鍵Lと値Rとに依存する関数d(L, R)の値Sを計算する(復号化)。ステップ85で、値Sが乱数Qと一致するかどうか調べられる。そして、値Sと乱数Qとがもし一致しているのであれば、権利管理情報更新装置1061は正当なものであると判断される。しかし、値Sと乱数Qとが一致しなければ、権利管理情報更新装置1061は不当なものであると判断される。

【0126】以上のように、本発明では、情報をコピーする側の情報提供装置ではなく、情報記録媒体と一体となった情報記録(再生)装置の側が決済等の権利管理を行なう機能を持つ。そのことにより、情報記録媒体への記録時だけでなく再生時の決済が可能になる。それと共に、記録時の決済の場合にも、情報入手者に余分な負担がかからないことが可能である。また、本発明による方法では、情報記録装置への記録媒体の挿入口と排出口とが分離している。それで、各利用者は挿入口に記録媒体を挿入した後、排出口へと移動することにより、多数の利用者が次々と情報記録装置を利用することが可能となる。そして、暗号化鍵を知ることが極めて困難なものにすることができ、安全性が高まる。

【0127】図17は図4の情報提供装置の内部の構成例を示したものである。図17において、挿入口2002と排出口2003とが情報転送部2001を介してベルト2004により連絡されている。

【0128】次に、その動作について説明する。挿入口2002から挿入された情報記録装置は、ベルト2004によって、情報転送部2001に送られる。そして、情報転送部2001では、上記情報記録装置内の記録媒

体に情報が記録される。その後、上記情報記録装置は、ベルト2004によって排出口2003へと運ばれ排出される。もちろん、ベルト2004のかわりに、例えば、高圧の空気によって上記情報記録装置が移動されても良い。

【0129】図18は情報転送部2001の内部構成を示したものである。図18において、情報記録媒体2012は、例えば、半導体メモリ等で構成されている。制御部2011は、記録部2013及び情報記録媒体2012に接続されている。そして、情報記録媒体2012と記録部2013とは接続されている。さらに、記録部2013には端子2014が接続されている。

【0130】次に、その動作について説明する。情報記録媒体2012に記録されている情報402は、制御部2011からの制御信号401に基づいて記録部2013へと送られる。さらに、記録部2013から出力された情報404が、端子2014を通じて情報記録装置の端子に送られる。この情報404は、制御信号403に基づいた記録部2013の作用によって情報記録装置内の情報記録媒体に記録される。

【0131】図19は、情報転送部のもう1つの内部構成例を示したものである。この例では、情報転送は非接触の方法で行なわれる。情報転送部2021は、制御部2022と情報記録媒体2023及び送信部2024とで構成されている。制御部2022は、送信部2024及び情報記録媒体2023に接続されている。そして、情報記録媒体2023と送信部2024とは接続されている。さらに、送信部2024は電磁波などの方法により、情報記録装置2031内の受信部2032と連絡されている。また、情報記録装置2031は、受信部2032と記録部2033及び情報記録媒体2034とで構成されている。そして、受信部2032は記録部2033に接続され、記録部2033は情報記録媒体2034に接続されている。

【0132】次に、その動作について説明する。情報記録媒体2023に記録されている情報502は、制御部2022からの制御信号501に基づいて送信部2024へと送られる。送信部2024においては、制御信号503に基づいて、情報504を情報記録装置2031内の受信部2032に電磁波などの方法により送信する。この情報504は、記録部2033の作用によって情報記録媒体2034に記録される。

【0133】以上のように、本発明による方法においては、情報提供装置への記録媒体の挿入口2002と排出口2003とを分離した。そして、利用者は挿入口2002に記録媒体を挿入した後、排出口2003へと移動する。そのことにより、多数の利用者が次々と情報提供装置を利用することが可能である。

【0134】図20は、図19の情報記録装置及び情報再生装置のブロック図である。図20において、情報記

録装置1071には情報記録媒体1073及び権利管理部1072が装備されている。権利管理部1072は、例えばCPU及びメモリから構成されている。そのメモリには、情報記録媒体に記録されている情報を再生する権利が記録されている。その権利は、例えば、情報記録媒体内の情報をあと何度再生することができるかを表す残度数である。そして情報記録媒体1073は権利管理部1072に接続されている。一方、情報再生部1078は再生制御部1077に接続され、再生制御部1077は再生選択部1075及び表示部1076に接続されている。以上の構成により、情報再生装置1074を成している。

【0135】次に、その動作について説明する。権利管理部1072において、先ず、情報記録媒体1073に記録されている情報のうち、その情報自身の種類や再生に必要な権利の度数等の情報122を読み出す。そして、再生制御部1077に通信124が送信される。再生制御部1077においては、信号127を表示部1076に送り通信124の内容を表示する。情報利用希望者が、再生選択部1075を用いて、情報記録媒体1073に記録されているもののうち、どれを再生するかを選択する。すると、その選択情報126は再生制御部1077に送られる。その選択情報126は、さらに通信124を通じて、権利管理部1072に送られる。権利管理部1072においては、残度数が、その情報を再生するのに必要な度数以上であるかを調べる。そして、残度数が、その情報を再生するのに必要な度数以上であれば、その情報は再生可能と見なされる。それと共に、残度数から必要度数分が減じられる。

【0136】しかし、残度数が、その情報を再生するのに必要な度数以下であれば、その情報は再生不可と見なされる。再生可能であれば、制御信号123が情報記録媒体1073に送信される。それと共に、通信124が再生制御部1077に送信される。そこで、情報記録媒体1073は、記録されている情報125を出力する。その情報125は情報再生部1078に送信される。再生制御部1077から、情報再生の制御信号128が情報再生部1078に送られる。そして、情報再生部1078においては、受信した情報125を音声信号等129に変換して出力する。

【0137】以上のように、図20に示された情報記録装置及び情報再生装置を使用すれば、再生時に、その情報利用の選択及び決済を実現することができる。

【0138】図21は、情報提供と情報収集が同時に容易に行なえる実施例における情報記録再生装置の外觀を示したものである。図21において、情報記録再生装置の前面には表示部及び選択部が装備されている。また、情報記録再生装置の側面には、イヤホン及び情報提供収集装置結合端子601、602が装備されている。

【0139】次に、その動作について説明する。情報提

10 供集装置結合端子601を通じて、情報提供装置から情報記録再生装置内に設置された記録媒体に情報がコピーされる。また、情報提供装置結合端子602を通じて、情報提供装置へ情報記録再生装置内に設置された記録媒体から情報が伝送される。ただし、情報提供装置結合端子601、602は、実際には同一の端子を切り替えて使用されるようにしてもよい。さらに、この実施例の装置には表示部と再生ボタンが装備されている。表示部には装置内に記録された情報の内容が表示される。上記表示部に表示されたものをもとに、装置の使用者は、選択ボタンを用いて必要な情報を選択的に再生することができる。また、利用者は、その他の選択情報を入力したりすることもできる。

【0140】図22は、図21の実施例に対するもう一つの実施例の外観図である。この例では、図21の情報記録再生装置が、情報記録装置と情報再生装置とに物理的に分離して構成されている。そして、上記情報記録装置の構成要素が1枚のカードに実装されている。図21の場合と対応する部分には同一の符号を付してあり、その説明は適宜省略する。図22の実施例の装置には、情報再生装置結合端子603がついている。

【0141】次に、その動作について説明する。情報提供装置結合端子601を通じて、情報提供装置から情報記録再生装置内に設置された記録媒体に情報がコピーされる。また、情報提供装置結合端子602を通じて、情報提供装置へ情報記録再生装置内に設置された記録媒体から情報が伝送される。ただし、情報提供装置結合端子601、602は、実際には同一の端子を切り替えて使用されるようにしてもよい。また、再生時には、情報記録装置と情報再生装置との間で、データ及び制御のやりとりが必要になる。それで、上記情報記録装置と情報再生装置とを結合する情報再生装置結合端子603が、情報記録装置及び情報再生装置に装備されている。ただし、情報記録装置の情報提供装置結合端子601、602及び情報再生装置結合端子603は、実際には1つの端子を切り替えて使用されるように構成されることも可能である。

【0142】図23は、図21または図22の実施例における情報提供装置の外観図である。図3の実施例と対応する部分には同一の符号を付してあり、その説明は適宜省略する。情報提供装置内には記録媒体が設置され情報が記録されている。この実施例の情報提供装置には、伝達手段としての有線や他の装置に接続されている。

【0143】次に、その動作について説明する。上記有線を通じて、他の装置から情報提供装置へ情報が送信されたり、情報提供装置内の情報が他の装置へ送信されたりすることが可能である。もちろん、上記有線は無線に代えて使用されることも可能である。また、上記情報提供装置への伝達手段とその他の装置からの伝達手段とは物理的に別なものでもよい。ただし、もちろん、情報提

10 供集装置への情報の入力は通信手段によらなくても、たとえば記録済みの記録媒体が直接、情報提供装置に挿入されてもよい。また、情報提供装置からの情報の出力についても、情報提供装置内の記録媒体が取り外されたり、他の記録媒体へコピーされたりすることによって実現することもできる。そして、情報入手希望者は、欲しい情報を選択することができる。情報入手希望者は、情報提供装置の挿入排出口に、自分のもっている情報記録再生装置または情報記録装置を挿入する。そして、コピーを受けることによって情報が入手される。また、上記情報記録再生装置あるいは情報記録装置内の情報は、これらの装置が情報提供装置に挿入されてから排出されるまでの間に収集される。上記情報は、情報提供装置内の記録媒体に伝送されることによって、迅速かつ容易に収集される。なお、情報提供装置内の記録媒体としては、特に限定はないが、高速にコピーが可能でランダム・アクセスが可能なICメモリによって構成されると便利である。

【0144】図24は、図23の実施例における情報提供装置のブロック図である。また、図25は、図10の実施例における情報記録再生装置のブロック図である。

【0145】図24において、記録媒体3003は制御部3004に接続されている。制御部3004には、記録媒体3007と選択部3005及び表示部3006が接続されている。そして、以上の構成により、情報提供装置3001を成している。また、伝達部3008は制御部3004に接続され、伝達部3002は記録媒体3003に接続されている。

【0146】図25において、再生部4012は記録媒体4013に接続され、記録媒体4013は制御部4014に接続されている。そして、制御部4014には、記録媒体4017と選択部4015及び表示部4016が接続されている。

【0147】次に、その動作について説明する。情報提供装置3001では、有線、無線等の伝達部3002によって送られてきた情報401が、記録媒体3003に記録される。制御部3004においては、記録媒体3003から情報の内容等を示す情報404を読み出して、表示部3006に表示情報407として送り表示する。情報入手希望者は、この表示情報を参考にしてどの情報を入手するかを、選択手段3005を通じて入力する。選択部3005は、選択信号406を制御部3004に送る。そして、制御部3004においては、情報記録再生装置4011の制御部4014との通信403に基づいて、情報を出力するか否かの制御信号405を記録媒体3003に送る。さらに、記録媒体3003においては、その制御によって情報402を情報記録再生装置4011に送る。

【0148】ここで、制御部3004と制御部4014との間の通信403の一例について説明を行なう。制御

部4014においては、情報記録再生装置4011が情報提供装置3001からコピーを受ける権利情報の値、例えば残度数情報Dを記憶している。一方、制御部3004においては、情報入手希望者がコピーを希望する情報をコピーした場合に、残度数情報Dから減じる値、必要度数dを制御部4014に送信する。制御部4014においては、残度数情報Dと必要度数dとの比較を行なう。ここで、Dがdより大きいか等しければ、制御部3004にコピー要求信号が送信されると共に、Dからdを減じた値が新たな残度数情報Dの値とされる。また、Dがdより小さい場合には、制御部3004にコピー不要求信号が送信される。情報402の送信と同時に、または前後して、情報提供装置3001は情報記録再生装置4011から通信403を受信する。ここで、通信403の内容は、情報記録再生装置4011において、記録媒体3003に記録されたどの情報が何回再生されたか、といった情報である。その情報は記録媒体3007に記録される。そして、制御部3004においては、例えば一定時間毎に、記録媒体3007に蓄積された情報408を読み出す。さらに、制御部3004においては、その情報408に統計的な処理を加えた情報409が、計算されて伝送部3008に送出される。

【0149】ただし、情報記録再生装置4011から送られてきた情報（通信403）は、制御部3004によって必ずしも記録媒体3007に蓄積されなくとも良い。そして、情報（通信403）は、直接あるいは統計処理等を通して伝送部3008に送出されても良い。また、情報（通信403）が記録媒体3007に蓄積された場合においても、伝送部3008に送り出す前に、特別の統計処理は行われなくても良い。さらにまた、制御部3004が記録媒体3007に情報を記録する前に、統計処理などが施されても良い。

【0150】一方、情報提供装置3001から情報の入手後、情報再生希望者の要求にしたがって、情報記録再生装置4011ではまず、制御部4014は、記録媒体4013から情報の内容等512を読み出す。そして、その情報は表示部4016に表示情報515として送られて表示される。情報再生希望者は、この表示情報を参考にして、どの情報を再生するかを、選択部4015を通じて入力する。選択部4015は選択信号514を制御部3014に送る。そして、制御部4014においては、選択信号514に基づいて、記録媒体4013に制御信号513を送る。その制御信号513に基づいて、記録媒体4013は情報511を出力する。そして、再生部4012は情報511を再生する。また、制御部4014においては、選択部4015への入力に依存する情報516を、記録媒体4017に記録する。情報記録再生装置4011が次回、情報提供装置3001と結合される時、記録媒体4017に記録された情報は、制御部4014を通じて、情報提供装置3001に送られ

る。
 【0151】ここで、「選択部4015への入力に依存する情報」とは、例えば、再生選択信号514そのものであっても良い。この場合、情報記録再生装置4011の使用者の情報再生利用実態に関する情報が得られる。「選択部4015への入力に依存する情報」の別の例として、クイズ情報に関する解答選択情報、あるいは、それを統計処理した情報であっても良い。この場合、情報記録再生装置4011の使用者のクイズに対する正解率が得られる。「選択部4015への入力に依存する情報」の別の例として、アンケートに関する解答選択情報、あるいは、それを統計処理した情報であっても良い。上記情報が例えば、記録媒体4013から再生された音楽のうち、情報記録再生装置4011の使用者が最も気に入ったものの選択情報とする。その選択情報が統計処理されることによって、どの音楽に人気があるかが把握される。

【0152】なお、多数の情報提供装置において収集された情報がセンターに集められ、それらの情報が統計処理されることによって、より有益な情報利用にかんするデータが得られる。また、情報記録再生装置から情報提供装置に送られる情報によって、情報提供装置から情報記録再生装置への条件を変化させても良い。例えば、上述のアンケートに協力する場合には、情報提供装置において、情報入手のための必要度数dの値を予め小さくしても良い。こうすることによって、情報使用者はより安価で情報入手が可能となり、情報提供者はより多くの使用者からのアンケート結果を期待することができる。また、クイズ情報を提供する場合には、情報提供装置において、その正解率によって必要度数dの値を変化させても良い。こうすることにより、情報利用者はゲーム性を楽しむことができる。なお、記録媒体3003及び記録媒体3007においては、一体となっている記録媒体の異なる部分を使用するようにしても良い。

【0153】図26は、図22に示す実施例の構成を示すブロック図である。図26において、記録媒体5017は制御部5018に接続され、制御部5018は記録媒体5013に接続されている。そして、以上の構成により、情報記録装置5021を成している。一方、再生部5012は制御部5019に接続されている。また、制御部5019は選択部5015及び表示部5016接続されている。そして、以上の構成により、情報再生装置5031を成している。

【0154】次に、その動作について説明する。この実施例の場合には、図25に示す制御部4014の機能が、制御部5018と制御部5019及び通信621によって実現される。まず、情報提供装置3001から送られてきた情報102が、記録媒体5013に記録される。情報再生希望者の要求にしたがって、情報記録装置5021では、制御部5018が、記録媒体501

3から情報の内容等612を読み出す。そして、その情報は、制御部5019から通信121を介して表示部5016に表示情報615として送られ、表示される。情報再生希望者は、この表示情報を参考にして、どの情報を再生するかを、選択部5015を通じて入力する。選択部5015は選択信号614を制御部5019に送る。そして、制御部5019においては、選択信号614に基づいて、制御部5018を介して、記録媒体5013に制御信号613を送る。その制御信号613に基づいて、記録媒体5013は情報611を出力する。そして、再生部5012は制御信号617に基づき情報611を再生する。また、制御部5018においては、選択部5015への入力に依存する情報616を、記録媒体5017に記録する。情報記録装置5021が次回、図24に示す情報提供装置3001と結合される時、記録媒体5017に記録された情報は、通信103を介して情報提供装置3001に送られる。

【0155】なお、図24に示す情報提供装置3001は情報提供機能と情報収集機能の両方を備えており、情報提供と情報収集が同時に容易に行なえるという利点を持っているが、これは必ずしも必要条件ではなく、情報提供装置で情報の提供を行ない、情報収集装置で情報の収集を行なうようにしてもよい。

【0156】以上の説明からも明らかなように、本発明では、1Cメモリー等で構成された記録媒体を装備した情報記録装置に音楽やクイズ等の番組が、情報提供装置から転送される。それと共に、これらの番組を再生する際に、視聴者が入力した選択情報が記録される。そして、これらの情報が情報提供装置に転送される。そのことにより、視聴者の反応に関する情報が得られる。そして、情報提供者が容易に、情報利用者の情報利用実態や好み等を把握することができる。さらにこうした情報を利用してサービス内容を充実させることができる。

【0157】
【発明の効果】以上のように、請求項1に記載の情報提供収集装置によれば、情報記録媒体および権利管理手段を備え、権利管理手段の制御により情報の記録または再生の制御を行なう情報記録装置から成るようにしたので、柔軟な料金支払いが可能となる。

【0158】請求項2に記載の情報提供収集装置によれば、上記権利管理手段においては、上記記録媒体に記録された権利管理情報に基づいて制御を行なうようにしたので、柔軟な料金支払いが可能となる。

【0159】請求項3に記載の情報提供収集装置によれば、上記権利管理情報は、記録もしくは再生前後で内容が変化するようにしたので、柔軟な料金支払いが可能となる。

【0160】請求項4に記載の情報提供収集装置によれば、上記権利管理情報は、記録または再生が許可される有効期限であるようにしたので、柔軟な料金支払いが可

能となる。
【0161】請求項5に記載の情報提供収集装置によれば、上記記録媒体に記録される情報の一部は、その情報自身の内容を示すものであるようにしたので、柔軟な料金支払いが可能となる。

【0162】請求項6に記載の情報提供収集装置によれば、上記記録媒体は、半導体メモリであるようにしたので、情報の迅速な入手が可能となる。

【0163】請求項7に記載の情報提供収集装置によれば、上記記録媒体及び上記権利管理手段は、1枚のカードに実装されている情報記録装置から成るようにしたので、情報の迅速な入手が可能となる。

【0164】請求項8に記載の情報提供収集装置によれば、上記記録媒体には書き換え不可能な情報を記録し、再生時に権利管理を行なうようにしたので、柔軟な料金支払いが可能となる。

【0165】請求項9に記載の情報提供収集装置によれば、上記記録媒体には、情報提供装置から書き換え可能な情報を記録するようにしたので、柔軟な料金支払いが可能となる。

【0166】請求項10に記載の情報提供収集装置によれば、上記記録媒体への情報の記録は、上記情報提供装置による正当性認証が成立した場合に行なわれるようにしたので、情報管理の安全性が高められる。

【0167】請求項11に記載の情報提供収集装置によれば、上記正当性認証は、上記情報提供装置及び上記情報記録装置に記録され、その値自身が暗号化された鍵情報に基づいて行なわれるようにしたので、情報管理の安全性が高められる。

【0168】請求項12に記載の情報提供収集装置によれば、上記情報の再生は再生選択信号に基づいて行なわれるようにしたので、柔軟な料金支払いが可能となる。

【0169】請求項13に記載の情報提供収集装置によれば、上記情報の再生は、外部からの再生選択信号に基づいて行なわれるようにしたので、柔軟な料金支払いが可能となる。

【0170】請求項14に記載の情報提供収集装置によれば、上記情報の再生は、上記情報提供装置によって、上記情報記録装置の正当性認証が成立した場合に行なわれるようにしたので、情報管理の安全性が高められる。

【0171】請求項15に記載の情報提供収集装置によれば、上記正当性認証は、上記情報記録装置及び上記情報記録装置に記録され、暗号化された鍵情報に基づいて行なわれるようにしたので、情報管理の安全性が高められる。

【0172】請求項16に記載の情報提供収集装置によれば、上記権利管理情報は、権利管理情報更新装置により書き換え可能であるようにしたので、柔軟な料金支払いが可能となる。

【0173】請求項17に記載の情報提供収集装置によ

れば、上記権利管理情報の書き換えは、上記情報記録装置によって、上記権利管理情報更新装置の正当性認証が成立した場合に行なわれるようにしたので、情報管理の安全性が高められる。

【0174】請求項18に記載の情報提供収集装置によれば、上記正当性認証は、上記権利管理情報更新装置及び上記情報記録装置に記録され、暗号化された鍵情報に基づいて行なわれるようにしたので、情報管理の安全性が高められる。

【0175】請求項19に記載の情報提供収集装置によれば、上記権利管理更新装置に記録された鍵情報と、上記情報記録装置に記録された鍵情報とは異なる値を持つようにしたので、情報管理の安全性が高められる。

【0176】請求項20に記載の情報提供収集装置によれば、上記情報記録装置の挿入部と排出部を別々に備え、上記情報記録装置への記録を行なう情報提供装置から成るようにしたので、情報の迅速な入手が可能となる。

【0177】請求項21に記載の情報提供収集装置によれば、内部に記録媒体を備え、その記録媒体に記録されている情報を上記情報再生装置に転送する情報提供装置から成るようにしたので、情報の迅速な入手が可能となる。

【0178】請求項22に記載の情報提供収集装置によれば、上記記録媒体として半導体メモリを用いる情報提供装置から成るようにしたので、情報の迅速な入手が可能となる。

【0179】請求項23に記載の情報提供収集装置によれば、上記記録媒体から上記情報記録装置への情報の転送を、端子を用いて行なう情報提供装置から成るようにしたので、情報の迅速な入手が可能となる。

【0180】請求項24に記載の情報提供収集装置によれば、上記記録媒体から上記情報提供装置への情報の転送を非接触の手段で行なうようにしたので、情報の迅速な入手が可能となる。

【0181】請求項25に記載の情報提供収集装置によれば、上記情報提供装置から転送された情報を、上記情報記録装置に転送し、上記権利管理手段の制約の下に上記情報の再生を行なう情報記録装置から成るようにしたので、柔軟な料金支払いが可能となる。

【0182】請求項26に記載の情報提供収集装置によれば、再生利用する情報を記録する第1の情報記録媒体と、その情報の再生利用者の入力に係わる情報を記録する第2の情報記録媒体と、その第2の情報記録媒体に記録された情報を外部に伝達するための伝達手段とを備えているようにしたので、柔軟な料金支払いが可能となる。

【0183】請求項27に記載の情報提供収集装置によれば、上記第1の情報記録媒体に対し、外部からの情報の書き込みが可能であるようにしたので、柔軟な料金支

払いが可能となる。

【0184】請求項28に記載の情報提供収集装置によれば、上記情報の再生利用者の入力に係わる情報が、第1の情報記録媒体に記録された情報再生によって入力が促される選択情報であるようにしたので、視聴者の反応に関する情報が得られる。

【0185】請求項29に記載の情報提供収集装置によれば、上記情報の再生利用者の入力に係わる情報が、その情報の再生利用状況に関する情報であるようにしたので、視聴者の反応に関する情報が得られる。

【0186】請求項30に記載の情報提供収集装置によれば、上記第1の情報記録媒体は、ICメモリで構成されているようにしたので、情報の迅速な入手が可能となる。

【0187】請求項31に記載の情報提供収集装置によれば、上記第2の情報記録媒体は、ICメモリで構成されているようにしたので、情報の迅速な入手が可能となる。

【0188】請求項32に記載の情報提供収集装置によれば、構成要素が1枚のカードに実装されている情報記録装置から成るようにしたので、情報の迅速な入手が可能となる。

【0189】請求項33に記載の情報提供収集装置によれば、上記第2の情報記録媒体に記録された情報を読み出す手段を備えるようにしたので、視聴者の反応に関する情報が得られる。

【0190】請求項34に記載の情報提供収集装置によれば、上記第2の情報記録媒体から読みだされた情報に基づく情報を記録する媒体を装着するようにしたので、視聴者の反応に関する情報が得られる。

【0191】請求項35に記載の情報提供収集装置によれば、上記第1の情報記録媒体への情報の書き込み機能を装着しているようにしたので、柔軟な料金支払いが可能となる。

【0192】請求項36に記載の情報提供収集装置によれば、有線または無線の伝達手段を装着し、上記第2の情報記録媒体から読み出された情報に基づく情報を、一旦記録媒体に蓄積した後に、または蓄積をせずに、処理を加え、または処理を加えずに上記伝達手段によって送信できるようにしたので、柔軟な料金支払いが可能となる。

【0193】請求項37に記載の情報提供収集装置によれば、上記情報記録装置の上記第2の情報記録媒体から読みだされた情報の種類あるいは内容に依存して、情報提供条件あるいは情報利用条件が変化するようにしたので、柔軟な料金支払いが可能となる。

【0194】請求項38に記載の情報提供収集装置によれば、複数個の上記情報記録装置から、上記伝達手段によって、上記第2の情報記録媒体から読みだされた情報に基づく情報を収集するようにしたので、視聴者の反応

に関する情報が得られる。

【図面の簡単な説明】

【図1】本発明の情報提供収集装置の一実施例における情報記録再生装置の外観を示した外観図である。

【図2】本発明の情報提供収集装置の一実施例において、情報記録再生装置が、情報記録装置と情報再生装置とに物理的に分離して構成されている場合の外観を示す外観図である。

【図3】本発明の情報提供収集装置の一実施例における情報提供装置の外観を示す外観図である。

【図4】本発明の情報提供収集装置のもう一つの実施例における情報提供装置の外観を示す外観図である。

【図5】本発明の情報提供収集装置の一実施例における情報提供装置の構成を示すブロック図である。

【図6】本発明の情報提供収集装置の一実施例における情報記録再生装置の構成を示すブロック図である。

【図7】図5に示す情報提供装置1001における制御部1005の実施例の構成を示すブロック図である。

【図8】図6に示す情報記録再生装置1011における権利管理部1015の実施例の構成を示すブロック図である。

【図9】本発明の情報提供収集装置の一実施例において、情報記録再生装置への記録時に決済が行なわれる場合について説明するフローチャートである。

【図10】図9に示す認証のための通信201について説明するフローチャートである。

【図11】本発明の情報提供収集装置の一実施例において、権利管理部1015が情報の記録時ではなく、再生時に情報使用の決済を行なう場合の処理の流れのについて説明するフローチャートである。

【図12】図2の実施例における情報記録再生装置の構成を示すブロック図である。

【図13】本発明の情報提供収集装置の一実施例において、権利管理情報更新装置の実施例の外観を示す外観図である。

【図14】図13の実施例において、権利管理部1015及び権利管理情報更新装置1061の構成を示すブロック図である。

【図15】図13の実施例において、権利管理部1015及び権利管理情報更新装置1061の処理を説明する

フローチャートである。

【図16】図13の実施例において、認証の処理の流れを説明するフローチャートである。

【図17】図4の実施例における情報提供装置の内部の構成を示すブロック図である。

【図18】図17の実施例における情報転送部2001の内部構成を示したものである。

【図19】図17の実施例における情報転送部のもう一つの内部構成を示したものである。

【図20】図19の実施例における情報記録装置及び情報再生装置の構成を示すブロック図である。

【図21】本発明の情報提供収集装置の一実施例において、情報提供と情報収集が同時に容易に行なえる実施例における情報記録再生装置の外観を示す外観図である。

【図22】図20の実施例における情報記録再生装置に対するもう一つの実施例の外観を示す外観図である。

【図23】図20または図21の実施例における情報提供装置の外観を示す外観図である。

【図24】図22の実施例における情報提供装置の構成を示すブロック図である。

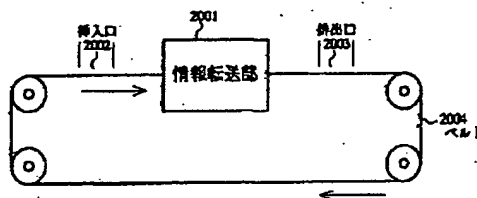
【図25】図10の実施例における情報記録再生装置の構成を示すブロック図である。

【図26】図21に示す実施例における情報記録再生装置の構成を示すブロック図である。

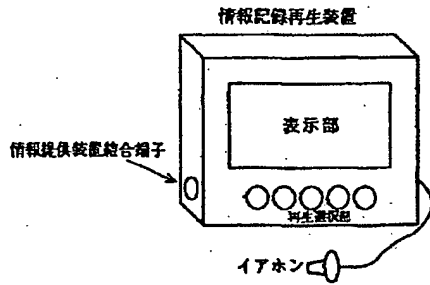
【符号の説明】

- 103 信号
- 111, 112, 118 情報
- 113 再生信号
- 114 再生選択情報 (再生選択信号)
- 115 表示情報
- 116 制御信号
- 117 再生制御信号
- 1011 情報記録再生装置
- 1012 情報記録媒体
- 1013 情報入力部
- 1014 情報再生部
- 1015 権利管理部 (権利管理手段)
- 1016 再生選択部
- 1017 表示部

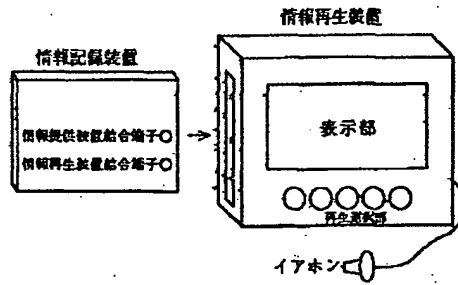
【図17】



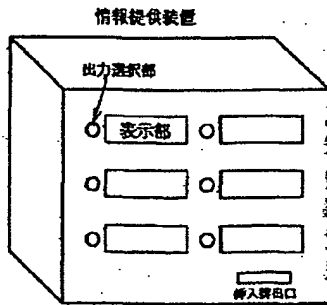
【図1】



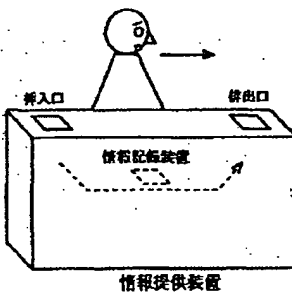
【図2】



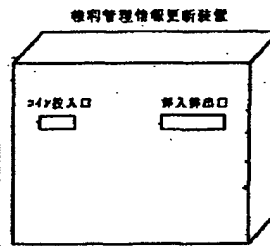
【図3】



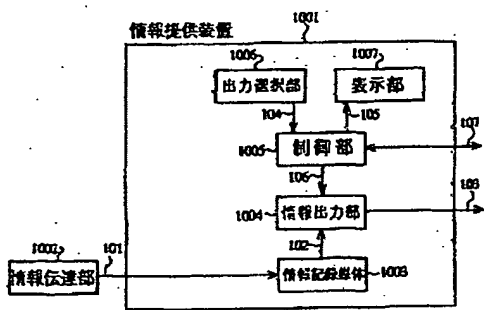
【図4】



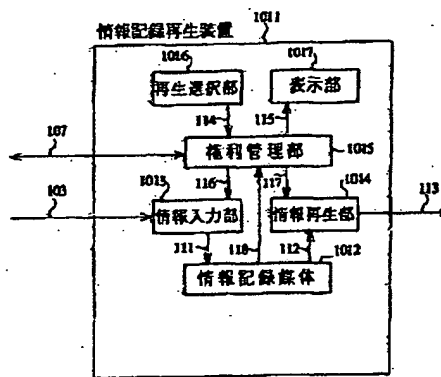
【図13】



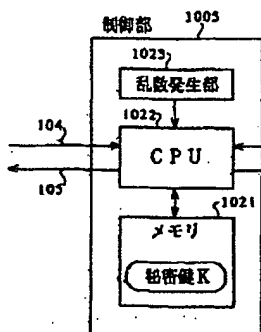
【図5】



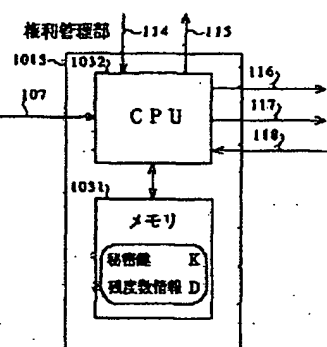
【図6】



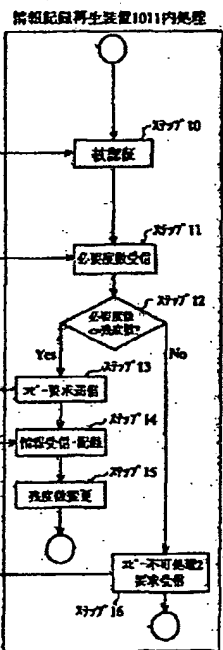
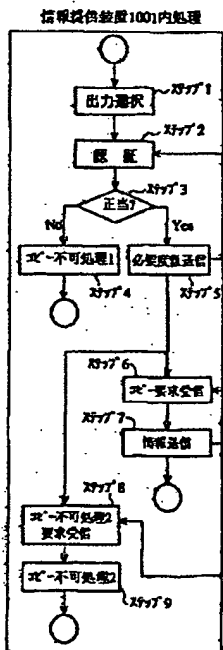
【図7】



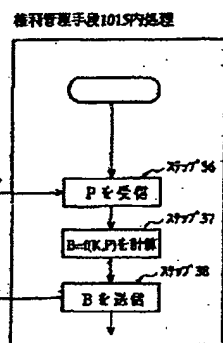
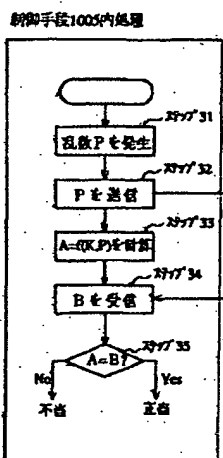
【図8】



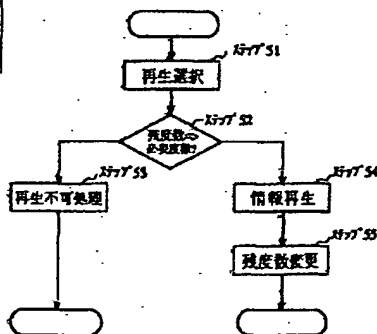
【図9】



【図10】

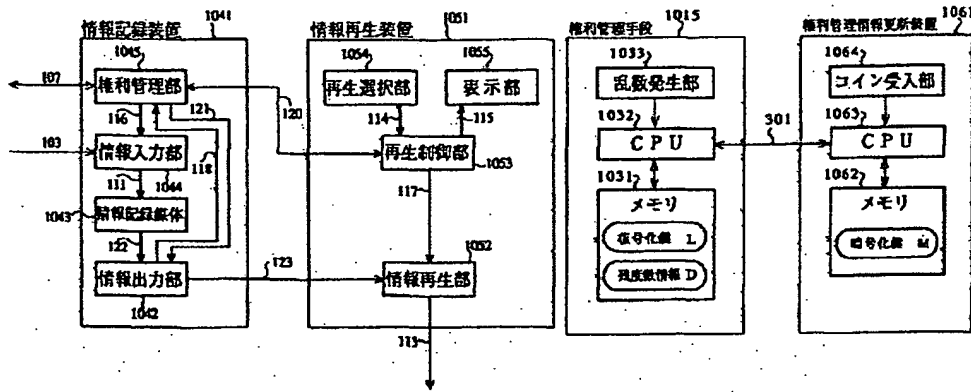


【図11】



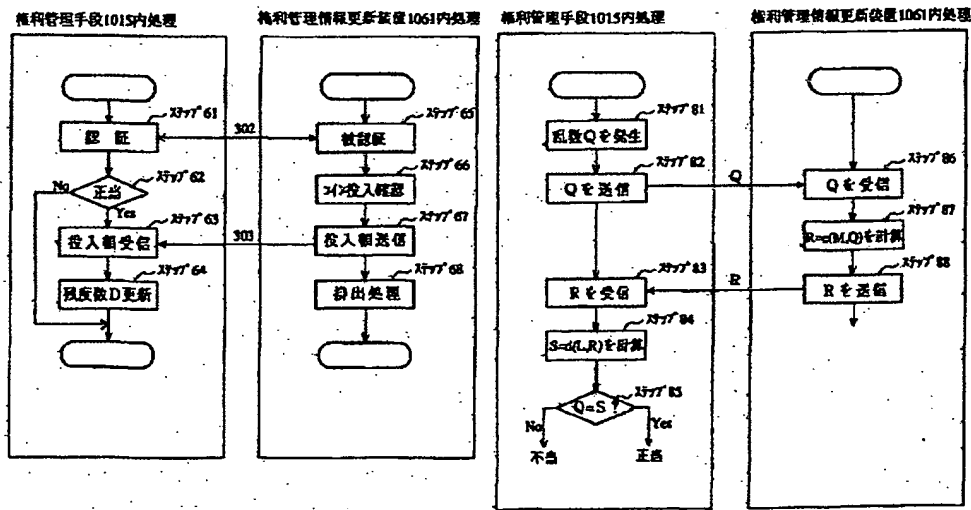
【図12】

【図14】



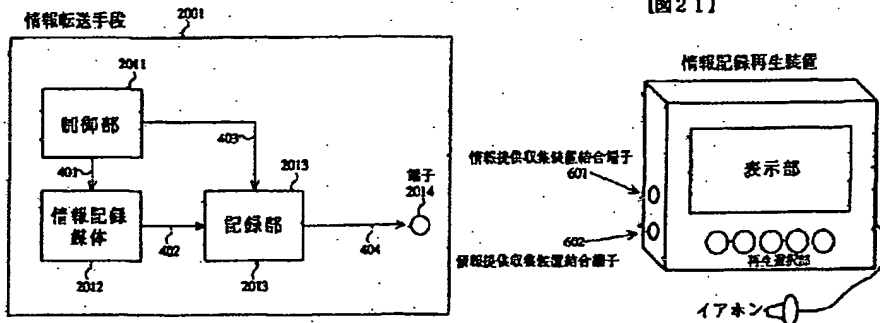
【図15】

【図16】

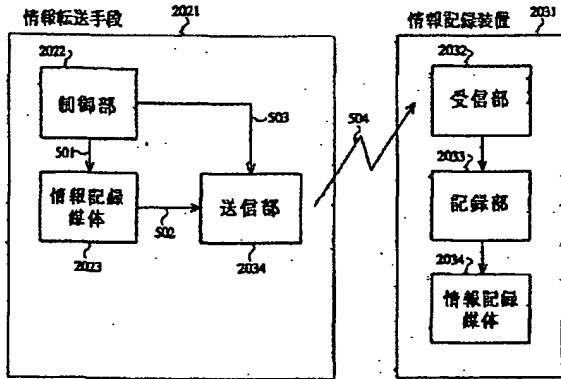


【図18】

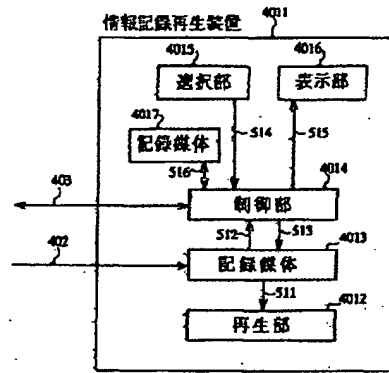
【図21】



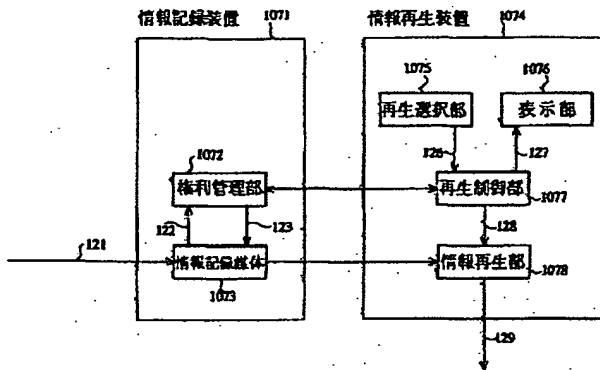
【図19】



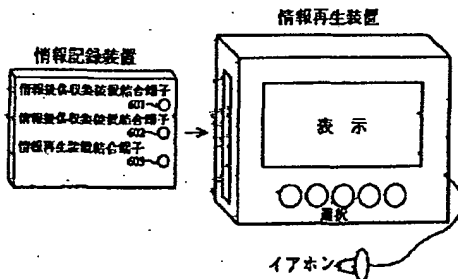
【図25】



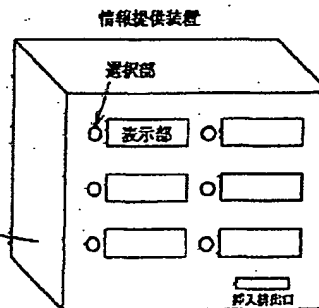
【図20】



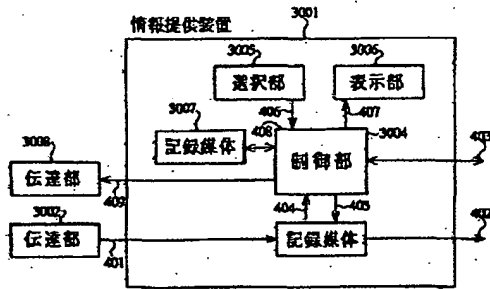
【図22】



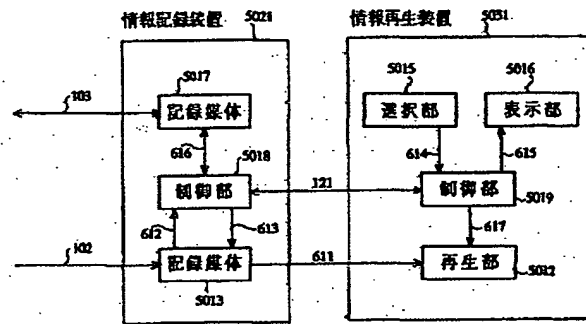
【図23】



【図24】



【図26】



NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES	Docket Number (Optional) 111325-290100
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<p style="text-align: center;">CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.89(a)]</p> <p>I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, or being facsimile transmitted to the USPTO at _____, on _____.</p> <p>Signature: _____ Name: _____</p>	<p>In re Application of: Xin WANG et al.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Application No: 10/162,701</td> <td style="width: 50%;">Filed: June 6, 2002</td> </tr> <tr> <td colspan="2" style="text-align: center;">For: METHOD AND APPARATUS MANAGING THE TRANSFER OF RIGHTS</td> </tr> <tr> <td>Group Art Unit: 3621</td> <td>Examiner: Evens J. Augustin</td> </tr> </table>	Application No: 10/162,701	Filed: June 6, 2002	For: METHOD AND APPARATUS MANAGING THE TRANSFER OF RIGHTS		Group Art Unit: 3621	Examiner: Evens J. Augustin
Application No: 10/162,701	Filed: June 6, 2002						
For: METHOD AND APPARATUS MANAGING THE TRANSFER OF RIGHTS							
Group Art Unit: 3621	Examiner: Evens J. Augustin						

Applicant hereby **appeals** to the Board of Patent Appeals and Interferences from the decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1)) \$ 510.00

- Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is: \$ _____
- A check in the amount of the fee is enclosed.
- Payment by credit card. Form PTO-2038 is attached.
- The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.
- The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 19-2380. I have enclosed a duplicate copy of this sheet.
- A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

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

I am the

- applicant/inventor. _____
Signature
- assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- attorney or agent of record _____/Anthony J. Canning, Reg. # 62,107/
Typed or printed name
- attorney or agent acting under 37 CFR 1.34(a).
Registration number if acting under 37 CFR 1.34(a) _____ July 17, 2008
Date

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

*Total of _____ forms are submitted.

Electronic Patent Application Fee Transmittal

Application Number:	10162701			
Filing Date:	06-Jun-2002			
Title of Invention:	Method and apparatus managing the transfer of rights			
First Named Inventor/Applicant Name:	Xin Wang			
Filer:	Anthony J. Canning/Lynette James			
Attorney Docket Number:	111325-290100			
Filed as Large Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Notice of appeal	1401	1	510	510
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				510

Electronic Acknowledgement Receipt

EFS ID:	3634163
Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	22204
Filer:	Anthony J. Canning/Lynette James
Filer Authorized By:	Anthony J. Canning
Attorney Docket Number:	111325-290100
Receipt Date:	17-JUL-2008
Filing Date:	06-JUN-2002
Time Stamp:	15:35:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$510
RAM confirmation Number	1172
Deposit Account	192380
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes) /Message Digest	Multi Part /.zip	Pages (if appl.)
1	Notice of Appeal Filed	111325-290100_-_Notice_of_Appeal.pdf	25274 df8f8991372a80926c547b66fcf4683b9db55d93	no	1

Warnings:

Information:

2	Fee Worksheet (PTO-06)	fee-info.pdf	8143 ea6be2d0a021e3682377b5e8ac2b0c3927e96512	no	2
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Warnings:

Information:

Total Files Size (in bytes):			33417		
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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



Handwritten initials and a crossed-out number 3621 with a dollar sign.

Docket No: 111325-290100

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of)
Xin WANG et al.)
Application No. 10/162,701) Art Unit: 3621
Filed: June 6, 2002) Confirmation No. 6475
For: METHOD AND APPARATUS MANAGING)
THE TRANSFER OF RIGHTS)

INFORMATION DISCLOSURE STATEMENT

United States Patent and Trademark Office
Customer Window, Mail Stop Amendment
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. §1.56, the accompanying information is being submitted in accordance with 37 C.F.R. §§1.97 and 1.98.

In accordance with the duty of disclosure as set forth in 37 C.F.R. §1.56, Applicants hereby submit the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98. In accordance with the PTO notice dated July 11, 2003, waiving the requirement under 37 CFR 1.98 (a)(2)(i) for submitting copies of each cited U.S. Patent, for all U.S. national patent applications filed after June 30, 2003, no copies of U.S. Patents are enclosed. However, copies of foreign patents and non-patent literature are submitted under 37 CFR 1.98(a)(2).

The undersigned certifies that either (1) each item of information contained in this information disclosure statement was first cited in a communication from a foreign patent office in connection with a counterpart foreign application not more than three (3) months prior to the filing of this statement, or (2) no item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a

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09/05/2008 AMNDAF1 00000030 192380 10162701
01 FC:1806 188.00 DA




Docket No: 111325-290100

counterpart foreign application and to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this statement.

It is requested that the accompanying PTO-1449 be considered and made of record in the above-identified application. To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

The Commissioner is hereby authorized to charge the **Deposit Account No. 19-2380** in the amount of **\$180.00** representing IDS fee and any other fees associated with this filing.

Respectfully submitted,

By: 

Marc S. Kaufman
Registration No. 35,212

NIXON PEABODY LLP
401 9th Street, N.W.
Suite 900
Washington, D.C. 20004-2128
(202) 585-8000

September 4, 2008



Substitute for form 1449A/PTO		<i>Complete if Known</i>		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	10/162,701	
		Filing Date	June 6, 2002	
		First Named Inventor	Xin WANG et al.	
		Art Unit	3621	
		Examiner Name	Evens J. Augustin	
Sheet		of	Attorney Docket Number	111325-290100

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)				
		US-5,287,408		02-15-1994	Samson	
		US-5,390,297		02-14-1995	Barber et al.	
		US-5,553,143		09-03-1996	Ross et al.	
		US-5,564,038		10-08-1996	Grantz et al.	
		US-5,625,690		04-29-1997	Michel et al.	
		US-5,638,513		05-10-1997	Ananda	
		US-5,414,852		05-09-1995	Kramer et al.	
		US-				
		US-				
		US-				

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Perritt, "Technologies Strategies for Protecting IP in the Network Multimedia Environment", Apr. 2-3, 1993, Knowbot Permissions.	
		Delaigle, "Digital Watermarking", Spie Conference in Optical Security and Counterfeit Deterrence Techniques, San Jose, CA Feb, 1996, Vol. 2659 pp 99-110.	

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

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of:	)	Confirmation No.: 6475
Xin WANG et al.	)	Group Art Unit: 3621
Serial No. 10/162,701	)	Examiner: Evens J. AUGUSTIN
Filed: June 6, 2002)	
For: METHOD AND APPARATUS	)	Date: September 15, 2008
MANAGING THE TRANSFER OF)	
RIGHTS)	

APPEAL BRIEF

Mail Stop Appeal Brief – Patents

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

Sir:

In accordance with the provisions of 35 U.S.C. § 134 and 37 C.F.R. § 41.37, Appellants submit this Appeal Brief in support of the Notice of July 17, 2008, to appeal the Examiner’s final rejections in the Final Office Action of April 17, 2008.

I. REAL PARTY IN INTEREST

ContentGuard, Inc. is the assignee and real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are presently no appeals or interferences known to the Appellants, the Appellants’ representative, or the assignee, which will directly affect or be directly affected by or have a bearing on the Board’s decision in the pending appeal.

III. STATUS OF CLAIMS

For the purposes of this Appeal, claims 1-18, 28 and 29 are pending, and claims 19-27 are canceled. This Appeal is taken from the rejection of claims 1-18, 28 and 29, as submitted in the Appendix herewith.

IV. STATUS OF AMENDMENTS

No claim amendments have been made subsequent to the Final Office Action of April 17, 2008.

V. SUMMARY OF CLAIMED SUBJECT MATTER

This Appeal is taken from the rejection of claims 1-18, 28 and 29, of which claims 1 and 10 are independent.

Independent claim 1 relates to a method for transferring rights adapted to be associated with items from a rights supplier to a rights consumer, the method comprising obtaining a set of rights associated with an item, said set of rights including a meta-right (see the specification, paragraphs [0028]-[0030]), wherein the meta-right is provided in digital form (see the specification, paragraphs [0034]-[0036]), is enforceable by a repository (see the specification, paragraph [0044]-[0046]), and specifies a derivable right that can be derived from exercising the meta-right by the rights consumer (see the specification, paragraphs [0028]-[0030]), a condition that must be satisfied to exercise the meta-right (see the specification, paragraphs [0028]-[0030]), and a state variable related to the condition (see the specification, paragraphs [0036]-[0038]), said derivable right being another meta-right or a usage right (see the specification, paragraphs [0028]-[0030]), whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed (see the specification, paragraphs [0028]-[0029]), determining by a repository whether the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right (see the specification, paragraphs [0044]-[0046]), and if the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right, deriving the derivable right and generating a license including the derived

right, said license being enforceable by a repository (see the specification, paragraphs [0044]-[0046]).

Independent claim 10 relates to a license associated with an item and adapted to be used within a system for managing the transfer of rights to the item from a rights supplier to a rights consumer, said license being adapted to be stored on a computing device, said license comprising, a set of rights associated with an item, said set of rights including a meta-right (see the specification, paragraphs [0028]-[0030]), wherein the meta-right is provided in digital form (see the specification, paragraphs [0034]-[0036]), is enforceable by a repository (see the specification, paragraphs [0044]-[0046]), and specifies a derivable right that can be derived from exercising the meta-right by the rights consumer (see the specification, paragraphs [0028]-[0030]), a condition that must be satisfied to exercise the meta-right (see the specification, paragraphs [0028]-[0030]), and a state variable related to the condition (see the specification, paragraphs [0036]-[0038]), said derivable right being another meta-right or a usage right (see the specification, paragraphs [0028]-[0030]), whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed (see the specification, paragraphs [0028]-[0029]), a principal designating at least one rights consumer who is authorized to exercise the meta-right to derive the derivable right specified by the meta-right (see the specification, paragraphs [0028]-[0030]), and a mechanism for providing access to the item in accordance with the set of rights (see the specification, paragraphs [0028]-[0030]).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The ground of rejection to be reviewed on appeal is the rejection of claims 1-18, 28 and 29 under 35 U.S.C. § 102(b) as allegedly being anticipated by *Downs et al.* (U.S. Patent No. 6,226,618).

VII. ARGUMENTS

A. Claims 1-18, 28 and 29 are not anticipated by Downs under 35 U.S.C. § 102(b).

Claims 1-18, 28 and 29 were rejected in the Final Office Action of April 17, 2008, as being anticipated by *Downs et al.* under 35 U.S.C. § 102(b). However, *Downs et al.* fails to disclose, teach or suggest the invention recited in the pending claims.

1. The Claimed Invention Recites Clearly Novel Features

Independent claim 1 (emphasis added) recites:

A method for transferring rights adapted to be associated with items from a rights supplier to a rights consumer, said method comprising:

obtaining a set of rights associated with an item, said set of rights including a meta-right, **wherein the meta-right is provided in digital form, is enforceable by a repository, and specifies a derivable right that can be derived from exercising the meta-right by the rights consumer, a condition that must be satisfied to exercise the meta-right, and a state variable related to the condition, said derivable right being another meta-right or a usage right, whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed;**

determining by a repository whether the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right; and

if the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right, deriving the derivable right and generating a license including the derived right, said license being enforceable by a repository.

Independent claim 10 (emphasis added) recites:

A license associated with an item and adapted to be used within a system for managing the transfer of rights to the item from a rights supplier to a rights consumer, said license being adapted to be stored on a computing device, said license comprising:

a set of rights associated with an item, said set of rights including a meta-right, **wherein the meta-right is provided in digital form, is enforceable by a repository, and specifies a derivable right that can be derived from exercising the meta-right by the rights consumer, a condition that must be satisfied to exercise the meta-right, and a state variable related to the condition, said derivable right being another meta-right or a usage right, whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed;**

a principal designating at least one rights consumer who is authorized to exercise the meta-right to derive the derivable right specified by the meta-right; and

a mechanism for providing access to the item in accordance with the set of rights.

Thus, the invention recited in independent claims 1 and 10 includes at least the novel features of a meta-right provided in digital form, which is enforceable by a repository, and specifies a derivable right that can be derived from exercising the meta-right by the rights consumer, a condition that must be satisfied to exercise the meta-right, and a state variable related to the condition.

2. Downs et al. Fails to Disclose, Teach or Suggest Meta-Rights as Disclosed by the Present Invention

In contrast to the present invention, *Downs et al.* is generally directed to a conventional digital rights management (DRM) system requiring a specific Player Application. For example, col. 11, lines 30-54 of *Downs et al.* provides:

The End-User Device(s) 109 can be any player device that 30
contains an End-User Player Application 195 (described
later) compliant with the Secure Digital Content Electronic
Distribution System 100 specifications. These devices may
include PCS, set top boxes (IRDs), and Internet appliances.
The End-User Player Application 195 could be implemented 35
in software and/or consumer electronics hardware. In addition
to performing play, record, and library management
functions, the End-User Player Application 195 performs SC
processing to enable rights management in the End-User
Device(s) 109. The End-User Device(s) 109 manages the 40
download and storage of the SCs containing the Digital
Content; requests and manages receipt of the encrypted
Digital Content keys from the Clearinghouse(s) 105; processes the watermark(s) every time the Digital Content is
copied or played; manages the number of copies made (or 45
deletion of the copy) in accordance with the Digital Content's
Usage Conditions; and performs the copy to an
external media or portable consumer device if permitted.
The portable consumer device can perform a subset of the
End-User Player Application 195 functions in order to 50
process the content's Usage Conditions embedded in the
watermark. The terms End-User(s) and End-User Player
Application 195 are used throughout this to mean through
the use or running-on an End-User Device(s) 109.

Page 3, paragraph 5 of the Office Action dated April 17, 2008, states:

A. Content stores or distributors can add or narrow the original usage rights (sub-rights) (column 21, lines 30-36)

B. Content providers set and transmit (equivalent to presenting) the usage conditions to the content stores (column 21, 30-32), which are the first customers or distributors of content providers.

However, column 21, lines 30-42 of *Downs et al.* actually recites:

The Content Provider(s) 101 sets the allowable Usage Conditions 517 and transmits them to the Electronic Digital Content Store(s) 103 in a SC (see the License Control Layer 501 section). The Electronic Digital Content Store(s) 103 can add to or narrow the Usage Conditions 517 as long as it doesn't invalidate the original conditions set by the Content Provider(s) 101. The Electronic Digital Content Store(s) 103 then transmits all Store Usage Conditions 519 (in a SC) to the End-User Device(s) 109 and the Clearinghouse(s) 105. The Clearinghouse(s) 105 perform Usage Conditions Validation 521 before authorizing the Content 113 release to an End-User Device(s) 109.

As seen above, *Downs et al.* is completely silent with regard to meta-rights. Appellants respectfully submit that even if the usage rights disclosed by *Downs et al.* could be equated with the meta-rights of present independent claims 1 and 10, which Appellants submit they cannot, the usage rights disclosed by *Downs et al.* are for consumers, and are **not** meta-rights the content provider or content store exercises to issue rights to consumers. Rather, the store or distributor in *Downs et al.* simply passes the usage conditions on to the consumers.

Appellants respectfully submit that merely adding to or narrowing usage conditions “as long as it doesn’t invalidate the original conditions set by the Content Provider” as disclosed by *Downs et al.* is not the same from specifying and exercising meta-rights to derive the derivable rights specified by the meta-rights, as recited by present independent claims 1 and 10. For example, *Downs et al.* is completely silent with how to specify and control what usage rights and conditions can be added or narrowed.

Appellants wish to note that a meta-right is distinguishable from a derivable right. When a meta-right is exercised, a derivable right is what is derived. For example, the meta-right of issuing a play right to a song is different from the play right itself, and when exercising the meta-right, the play right is derived or issued to its existence.

Thus, simply disclosing that the content store may “add to or narrow the Usage Conditions as long as it doesn’t invalidate the original conditions set by the Content Provider” neither anticipates nor renders obvious at least these features recited by the claims.

3. Downs et al. Fails to Disclose, Teach or Suggest (1) A Derivable Right That Can Be Derived From Exercising The Meta-Right By The Rights Consumer, (2) A Condition That Must Be Satisfied To Exercise The Meta-Right, and (3) A State Variable Related To The Condition

The Examiner purports on page 4 of the Final Office Action dated April 17, 2008 that *Downs et al.* discloses meta-rights, as recited in independent claims 1 and 10, specifying (1) *a derivable right that can be derived from exercising the meta-right by the rights consumer*, (2) *a condition that must be satisfied to exercise the meta-right*, and (3) *a state variable related to the condition*, by stating that “[t]he content providers also stipulate that the content stores or distributors can add or narrow the original usage rights – state variables can be the number of copies a user is allowed to make (column 59, line 50 or rental terms (column 59, lines 55-60)”.

However, col. 59, lns. 50 and 55-60 of *Downs et al.*, actually recites:

- For a purchase transaction:
the number of playable copies the End-User(s) is allowed to make.
onto what kinds of media he/she make those copies (e.g., CD-Recordable (CD-R), MiniDisc, Personal Computer).
4. the period of time during which the purchase/rental transaction is allowed to occur (i.e., an End-user(s) can purchase/rental under the terms of this usage condition only after the beginning availability date and before the last date of availability).
 5. the countries from which an End-User(s) can transact this purchase (or rental).

As seen in the above-cited passage, even if the usage rights of *Downs et al.* could be equated to the derivable right or the meta-right of the present invention, which Appellants submit they cannot, *Downs et al.* is completely silent with regard to *a derivable right that can be derived from exercising the meta-right by the rights consumer*, (2) *a condition that must be satisfied to exercise the meta-right*, and (3) *a state variable related to the condition*, as substantially recited in independent claims 1 and 10. To the contrary, as seen above, *Downs et al.* merely discloses purchase transaction criteria, and **not** meta-rights and usage rights, as disclosed in independent claims 1 and 10 of the present invention.

Thus, *Downs et al.* also fails to disclose meta-rights specifying (1) *a derivable right that can be derived from exercising the meta-right by the rights consumer*, (2) *a condition that must be satisfied to exercise the meta-right*, and (3) *a state variable related to the condition*, as substantially recited in independent claims 1 and 10.

B. Conclusions

Therefore, at least for the above reasons, *Downs et al.* fails to disclose, teach or suggest the invention recited in independent claims 1 and 10. The dependent claims are also allowable over *Downs et al.* based on their own merits and for at least the reasons as argued above with respect to their independent claims.

Accordingly, Appellants submit that the rejection of claims 1-18, 28 and 29 under 35 U.S.C. § 102(b) in view of *Downs et al.* should be overturned, and an indication of immediate allowability is respectfully requested.

Respectfully submitted,
NIXON PEABODY, LLP

Date: September 15, 2008

/Anthony J. Canning, Reg. No. 62,107/
Anthony J. Canning
Registration No. 62,107

NIXON PEABODY
401 9th Street, N.W., Suit 900
Washington, DC 20004
(202) 585-5000
(202) 585-8080 (Fax)

VIII. CLAIMS APPENDIX

1. (Previously Presented) A method for transferring rights adapted to be associated with items from a rights supplier to a rights consumer, said method comprising:

obtaining a set of rights associated with an item, said set of rights including a meta-right, wherein the meta-right is provided in digital form, is enforceable by a repository, and specifies a derivable right that can be derived from exercising the meta-right by the rights consumer, a condition that must be satisfied to exercise the meta-right, and a state variable related to the condition, said derivable right being another meta-right or a usage right, whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed;

determining by a repository whether the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right; and

if the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right, deriving the derivable right and generating a license including the derived right, said license being enforceable by a repository.

2. (Original) A method recited in claim 1, further comprising, transmitting the set of rights, in the form of a license to the item, from the rights supplier to the rights consumer.

3. (Previously Presented) A method as recited in claim 1, wherein the derivable right is a rights disposal right.

4. (Original) A method as recited in claim 1, wherein the items are content.

5. (Previously Presented) A method as recited in claim 1, wherein the derivable right includes usage rights.

6. (Previously Presented) A method as recited in claim 1, wherein the derivable right includes meta-rights that the rights consumer may transfer to another rights consumer in the form of a license.

7. (Original) A method as recited in claim 4, wherein the consumer is a content distributor.
8. (Original) A method as recited in claim 4, wherein the consumer is a content retailer.
9. (Original) A method as recited in claim 4, wherein the consumer is a content publisher.
10. (Previously Presented) A license associated with an item and adapted to be used within a system for managing the transfer of rights to the item from a rights supplier to a rights consumer, said license being adapted to be stored on a computing device, said license comprising:
 - a set of rights associated with an item, said set of rights including a meta-right, wherein the meta-right is provided in digital form, is enforceable by a repository, and specifies a derivable right that can be derived from exercising the meta-right by the rights consumer, a condition that must be satisfied to exercise the meta-right, and a state variable related to the condition, said derivable right being another meta-right or a usage right, whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed;
 - a principal designating at least one rights consumer who is authorized to exercise the meta-right to derive the derivable right specified by the meta-right; and
 - a mechanism for providing access to the item in accordance with the set of rights.
11. (Previously Presented) A license as recited in claim 10, wherein the derivable right is a rights disposal right.
12. (Original) A license as recited in claim 10, wherein the items are content.
13. (Previously Presented) A license as recited in claim 10, wherein the derivable right includes usage rights.

14. (Previously Presented) A license as recited in claim 10, wherein the derivable right includes meta-rights that the rights consumer may transfer to another rights consumer in the form of a license.

15. (Original) A license as recited in claim 12, wherein the consumer is a content distributor.

16. (Original) A license as recited in claim 12, wherein the consumer is a content retailer.

17. (Original) A license as recited in claim 12, wherein the consumer is a content publisher.

18. (Original) A license as recited in claim 10, further comprising a digital signature corresponding to a party issuing the license.

19-27. (Canceled)

28. (Previously Presented) A method of claim 1, further comprising:
receiving a request from the rights consumer to exercise a right; and
determining whether the rights consumer is authorized to exercise the requested right according to the set of rights.

29. (Previously Presented) A method of claim 28, further comprising:
receiving a request from the rights consumer to modify a right included in the set of rights; and
determining whether the rights consumer is authorized to modify the requested right based on the meta-right.

IX. EVIDENCE APPENDIX

There is no evidence related to this Appeal.

X. RELATED PROCEEDINGS APPENDIX

There are no related proceedings to this Appeal.

Electronic Patent Application Fee Transmittal

Application Number:	10162701
Filing Date:	06-Jun-2002
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Filer:	Anthony J. Canning/Peaches Thomas
Attorney Docket Number:	111325-290100

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:				
Filing a brief in support of an appeal	1402	1	510	510

Post-Allowance-and-Post-Issuance:

Extension-of-Time:

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				510

Electronic Acknowledgement Receipt

EFS ID:	3942062
Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	22204
Filer:	Anthony J. Canning/Peaches Thomas
Filer Authorized By:	Anthony J. Canning
Attorney Docket Number:	111325-290100
Receipt Date:	15-SEP-2008
Filing Date:	06-JUN-2002
Time Stamp:	14:49:42
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$510
RAM confirmation Number	46
Deposit Account	192380
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Appeal Brief Filed	2008-06-18_Appeal_Brief.pdf	160887 <small>7feff6d6c46597dd1530d60488cf8ada5a09a97</small>	no	13
Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	29689 <small>4f1e634396985103bea2d3378575d772744e1681</small>	no	2
Warnings:					
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		10162701
	Filing Date		2002-06-06
	First Named Inventor	Torrance Xin Wang	
	Art Unit		3621
	Examiner Name	Evens J. Augustin	
	Attorney Docket Number		111325/290100

U.S.PATENTS							Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
	1	5287408		1994-02-15	Samson		
	2	5390297		1995-02-14	Barber et al.		
	3	5553143		1996-09-03	Ross et al.		
	4	5564038		1996-10-08	Grantz et al.		
	5	5625690		1997-04-29	Michel et al.		
	6	5638513		1997-06-10	Ananda		
	7	5414852		1995-05-09	Kramer et al.		
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		10162701	
	Filing Date		2002-06-06	
	First Named Inventor	Torrance Xin Wang		
	Art Unit		3621	
	Examiner Name	Evens J. Augustin		
	Attorney Docket Number		111325/290100	

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² j	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	5-100939	JP		1993-04-23			<input type="checkbox"/>
	2	7-36768	JP		1995-02-07			<input type="checkbox"/>

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

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	Delaigle, "Digital Watermarking," Spie Conference in Optical Security and Counterfeit Deterrence Techniques, San Jose, CA (Feb. 1996)	<input type="checkbox"/>
	2	Perritt, "Technologies Strategies for Protecting Intellectual Property in the Networked Multimedia Environment," Knowbots, Permissions Headers and Contract Law (Apr. 2 -3 1993)	<input type="checkbox"/>

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EXAMINER SIGNATURE

Examiner Signature		Date Considered	
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	10162701
Filing Date	2002-06-06
First Named Inventor	Torrance Xin Wang
Art Unit	3621
Examiner Name	Evens J. Augustin
Attorney Docket Number	111325/290100

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

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STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

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First Named Inventor	Torrance Xin Wang
Art Unit	3621
Examiner Name	Evens J. Augustin
Attorney Docket Number	111325/290100

CERTIFICATION STATEMENT

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

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

OR

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

See attached certification statement.

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

None

SIGNATURE

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

Signature	/Marc S. Kaufman, Reg. No. 35,212/	Date (YYYY-MM-DD)	2008-11-04
Name/Print	Marc S. Kaufman	Registration Number	35,212

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FILE SYSTEM

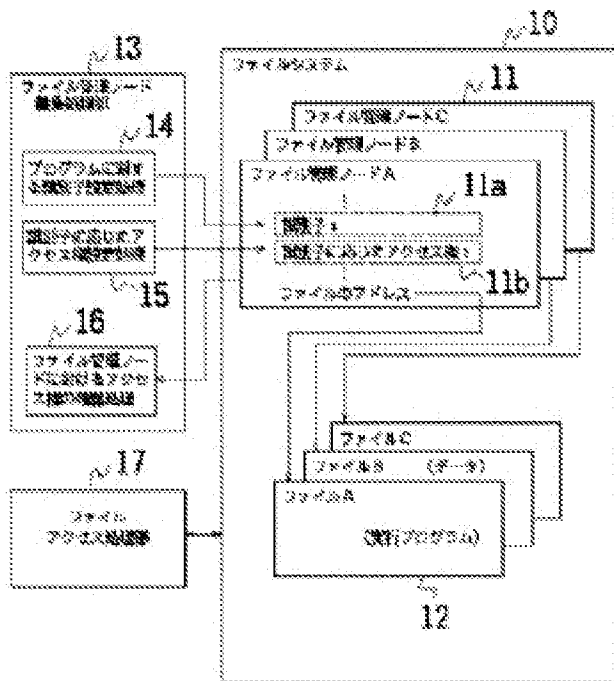
Publication number: JP5100939
Publication date: 1993-04-23
Inventor: HAYATA HIROSHI
Applicant: FUJI XEROX CO LTD
Classification:
 - **international:** G06F12/00; G06F12/00; (IPC1-7): G06F12/00
 - **European:**
Application number: JP19910213036 19910731
Priority number(s): JP19910213036 19910731

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Abstract of JP5100939

PURPOSE:To execute read-out and write of a file only from a specific program by deciding an identifier of a program by an identifier of a file management node, and executing the access management by the access right corresponding to the identifier.

CONSTITUTION:An access right setting means 13 sets an identifier 11a given to a program of a file 12 as file management information to a file management node 11 for managing the file 12. Also, the access right 11b corresponding to the identifier 11a is registered and set as the access right of the file 12. In such a way, in the case of accessing the file 12 by executing the program, a file access managing means 17 decides an identifier of the program concerned by the identifier 11a set to the file management node 11. Subsequently, by this identifier, the access right 11b registered in the file management node 11 of the file 12 being an access object is discriminated. In accordance with information of this access right 11b, an access of the file 12 is controlled.



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(71) 出願人 000005496

富士ゼロックス株式会社
東京都港区赤坂三丁目3番5号

(72) 発明者 早田 宏

神奈川県川崎市高津区坂戸100番1号K S
P/R&Dビジネスパークビル 富士ゼロ
ックス株式会社内

(74) 代理人 弁理士 南野 貞男 (外2名)

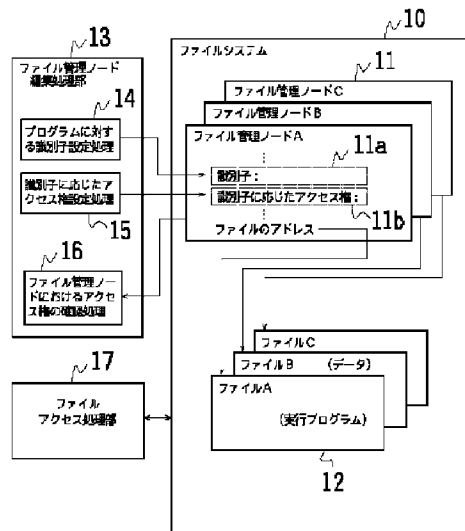
(54) 【発明の名称】 ファイルシステム

(57) 【要約】

【目的】 ある特定のプログラムからのみ、ファイルの読み出し、ファイルへの書き込みを可能とするファイルシステムを提供する。

【構成】 ファイル対応のファイル管理ノードに当該ファイルのアクセス権を登録し、ファイル管理ノードに登録したアクセス権により、ファイルアクセスを行うファイルシステムにおいて、ファイル管理ノードに当該ファイルのプログラムに与える識別子と、識別子対応のアクセス権とを登録し、プログラム実行によりファイルにアクセスする場合、ファイル管理ノードの識別子により当該プログラムの識別子を判定し、当該プログラムの識別子により、アクセス対象のファイルのファイル管理ノードの識別子に対応して設定されたアクセス権により、当該ファイルのアクセス管理を行う。

図1



【特許請求の範囲】

【請求項1】 各々のファイル対応に設けられるファイル管理ノードに当該ファイルのアクセス権を登録し、ファイル管理ノードに登録したアクセス権により、各々のファイルのアクセスを行うファイルシステムにおいて、ファイル管理ノードに、当該ファイルのプログラムに与える識別子と当該ファイルのアクセス権として更に識別子対応のアクセス権とを登録するアクセス権設定手段と、プログラムの実行によりファイルにアクセスする場合に、ファイル管理ノードの識別子により当該プログラムの識別子を判定し、当該プログラムの識別子により、アクセス対象のファイルのファイル管理ノードに登録された識別子に対応して設定されたアクセス権により、ファイルのアクセスを管理するファイルアクセス管理手段とを含むことを特徴とするファイルシステム。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、ファイルシステムに関し、特に、情報処理装置におけるファイルシステムにおいて、アクセス権によるファイル管理機能を有効利用してシステムのセキュリティを高めたファイルシステムに関するものである。

【0002】

【従来の技術】従来、情報処理システムにおいて、ある目的を持ったデータの集まりはファイルとして取り扱われ、データ処理がなされる。ファイルはシステム規模が大きくなると、爆発的に増加する。このため、多くの各種のファイルを統一的に取り扱うための手法が開発されている。例えば、ファイル管理は、情報処理装置で取り扱われる各種のファイルを標準的な方法で統一的に管理し、プログラムが簡便な使用方でファイルに関する処理を効率よく、経済的に行える機能を提供する。このようなファイル管理の機能は、オペレーティングシステムの中におけるファイルシステムとして提供される。プログラムは、オペレーティングシステムが提供するファイルシステムのインタフェースを介して、ファイルへの読み出しや書込みを行うことになる。その場合、各々のファイルは、アクセス権によるファイル管理が行なわれ、データ保護、システムの機密保護などが機能できるようになっている。

【0003】例えば、UNIXシステムにおけるファイルシステムでは、ファイルからのデータの読み出しは、readシステムコールで行なわれ、また、ファイルへのデータの書き込みは、writeシステムコールで行なわれる(Maurie J Bach著/坂本文・多田好克・村井純 訳“UNIXカーネルの設計”，1991年6月10日，共立出版発行，pp51～54，pp82～87などを参照)。

【0004】このようなファイルシステムにおいては、ユーザのファイルアクセスリクエストに対してのファイ

ルへの読み出しや書込みの制御は、ファイルに対するアクセス権で管理されている。ファイルのアクセス権に関する情報はiノード(ファイル管理ノード)に設けられ、このiノードにおけるファイル管理情報により管理される。図6はファイル管理ノードであるiノードの一例を説明する図である。iノードは次のようなフィールドから構成される。

ファイル所有者識別子：所有者は個人所有者と「グループ」所有者が分け持ち、ファイルにアクセスする権利を持つ所有者を定義する。

ファイルの種類：ファイルは通常型、ディレクトリ、文字型またはブロック特殊ファイル、FIFO(パイプ)のいずれかである。

ファイルへのアクセス許可：システムは、ファイルの所有者、ファイルのグループ所有者、その他の利用者の3つの等級に従ってファイル保護を行う。各等級に対して当該ファイルの読出し(r)、書込み(w)、実行(x)に関するアクセス権を持ち、個々に設定する。例えば、ディレクトリのファイルは、実行できないため、

ディレクトリに対する実行許可では、当該ディレクトリの中でファイル名を探す権利を有することを意味する。

ファイルへのアクセス時刻：ファイルを最後に更新した時刻、最後にアクセスした時刻、iノードを最後にアクセスした時刻を示す。

ファイル内のデータにディスクアドレスに関するアドレス表：利用者はファイル中のデータをバイトの論理ストリームとして扱うが、システムのカーネルはデータを不連続なディスクブロックとして管理する。iノードはファイルのデータを含むディスクブロックを識別する。

ファイルの大きさ：ファイル中のデータは、バイト0から始まるファイルの最初から数えたバイト数でアドレス指定することができる。このファイルの大きさは、ファイル中のデータの最高のバイト変位よりも1だけ大きい。例えば、利用者があるファイルを作成し、ファイルのバイト変位1000のところから1バイトのデータを書込んだ場合、ファイルの大きさは1001バイトとなる。

【0005】例えば、図6に示すiノードの例は、“MJB”が所有する通常型のファイルのiノードの例である。このファイルは6030バイトのデータを含んでおり、許可モード(アクセス権)として“rwxr-xr-x”の9桁の文字データを設定している。ここでの最初の3桁の文字“rwx”により、ファイルシステムは所有者“MJB”に対して、ファイルの読出し、書込み、実行を許可していることを意味している。また、次の3桁の文字“r-x”により、“OS”というグループのメンバーに対し、ファイルシステムは当該ファイルの読出しと実行のみを許可していることを意味し、そして、最後の3桁の文字“r-x”により、他の利用者に対して、ファイルシステムは当該ファイルの読出しと実

行のみを許可することを意味している。。このため、“OS”というグループのメンバーと他の利用者は、当該ファイルに対して、ファイルの読出しと実行だけが可能であり、書込みはできない。

【0006】また、iノードでは、最終アクセス時刻、最終更新時刻などの時刻情報を保持して、ファイルを管理している。この例のiノードでは、最後に誰かがこのファイルを読み出したのは1990年10月23日午後1時45分であり、最後に誰かがこのファイルに書込みをしたのは1990年10月22日午後10時30分であるという管理情報が保持されている。

【0007】このように、UNIXシステムのファイルシステムでは、各々のファイルに1対1に設けられたファイル管理ノード(iノード)を用い、そのファイル管理ノードに当該ファイルのアクセス権、所有者などのファイル管理情報を設定し、当該ファイルを管理している。

【0008】

【発明が解決しようとする課題】ところで、ファイルシステムでは、上述のように、ファイル管理ノードに設定する当該ファイルのアクセス権、所有者などのファイル管理情報により、当該ファイルが管理されているため、利用者がアクセス権さえ、何らの方法により持てば、同じファイルを複数のプログラムから読み出したり、書込んだりできることになる。このようなファイルシステムを用いて、例えば、データベース管理システムのような特定のプログラムからのみファイルへの読み出しや書込みを行い、一般のプログラムからは読み出しのみしか行えないようなシステムを構成する場合には、上述のようなファイル管理機能では、その対応のプログラムを実現する上で不具合が生ずることになる。

【0009】本発明は、上記のような問題点を解決するためになされたものであり、本発明の目的は、ある特定のプログラムからのみファイルの読出し、ファイルへの書込みを可能とするファイルシステムを提供することにある。

【0010】

【課題を解決するための手段】上記の目的を達成するため、本発明のファイルシステムは、各々のファイル対応に設けられるファイル管理ノード(11;図1)に当該ファイル(12;図1)のアクセス権を登録し、ファイル管理ノードに登録したアクセス権により、各々のファイルのアクセスを行うファイルシステムにおいて、ファイル管理ノード(11;図1)に、当該ファイルのプログラムに与える識別子と当該ファイルのアクセス権として更に識別子対応のアクセス権とを登録するアクセス権設定手段(13;図1)と、プログラムの実行によりファイルをアクセスする場合に、ファイル管理ノードの識別子により当該プログラムの識別子を判定し、当該プログラムの識別子により、アクセス対象のファイルのファ

イル管理ノードに登録された識別子に対応して設定されたアクセス権により、ファイルのアクセスを管理するファイルアクセス管理手段(17;図1)とを含むことを特徴とする。

【0011】

【作用】ファイルシステムにおいては、各々のファイル対応に設けられるファイル管理ノード(11)に当該ファイル(12)のアクセス権を登録し、ファイル管理ノードに登録したアクセス権によって、各々のファイルのアクセス権が管理され、ファイルのアクセス制御が行なわれる。このようなファイルシステムにおいて、アクセス権設定手段(13)と、ファイルアクセス管理手段(17)とが設けられる。アクセス権設定手段(13)は、ファイルを管理するためのファイル管理ノード(11)に、ファイル管理情報として、当該ファイルのプログラムに与える識別子を設定し、更にファイルのアクセス権として、識別子対応のアクセス権とを登録設定する。これにより、ファイルアクセス管理手段(17)は、プログラムの実行によりファイルをアクセスする場合、ファイル管理ノードに設定した識別子により当該プログラムの識別子を判定し、当該プログラムの識別子により、アクセス対象のファイルのファイル管理ノードに登録された識別子に対応して設定されたアクセス権を判別し、当該アクセス権の情報に従って、ファイルのアクセスを行うアクセス制御を行う。

【0012】このように、実行プログラムのファイルからは、プログラム実行にかかるファイルアクセス要求が発行された場合、当該プログラムの識別子が判定され、その識別子に対応して設定されているアクセス権によりファイルアクセス制御が行なわれる。これにより、単にファイル所有者、利用者に対して設定されているアクセス権によるファイルアクセス制御のみでなく、実行プログラムのレベルでのアクセス権でのファイルのアクセス制御が可能となり、ファイル操作、ファイル処理、ファイル管理などシステム構築の自由度が大きくなり、また、システムの安全性を配慮したシステム構成が容易に実現可能となる。

【0013】

【実施例】以下、本発明の一実施例を図面により具体的に説明する。図1は本発明の一実施例にかかるファイルシステムの要部構成を説明するブロック図である。図1において、10はファイルシステム、11は各々のファイル管理ノード、12は各々のファイルを示している。各々のファイル12とファイル管理ノード11とは1対1に対応している。ファイルAに対してはファイル管理ノードAが対応し、ファイルBに対してはファイル管理ノードBが対応し、また、ファイルCに対してはファイル管理ノードCが対応している。ファイル管理ノード12には自己が管理する該当のファイルにおける実行プログラムに対して、識別子を設定するため識別子フィール

ド11aと、識別子に応じたアクセス権を設定するための識別子アクセス権フィールド11bが設けられている。

【0014】このようなファイル管理ノード12に対して、識別子、識別子に応じたアクセス権などを個別に設定し、また、設定したファイル管理情報の確認を行うため、ファイル管理ノード編集処理部13が設けられる。このファイル管理ノード編集処理部13の処理機能により、プログラムに対する識別子設定処理14、識別子に応じたアクセス権設定処理15、ファイル管理ノードにおけるアクセス権確認処理16などが行なわれる。

【0015】また、このように設定されたファイル管理ノードにおけるファイル管理情報を用いて、ファイルアクセス処理を行う場合のファイルアクセス制御を行うため、ファイルアクセス処理部17がシステム内に設けられる。

【0016】図2は、ファイルシステムにおけるファイル管理ノードと各ファイルの関係をファイル管理情報のデータ例と共に説明する図である。データファイルのファイル管理ノードの例を図2(A)に示し、実行プログラムファイルのファイル管理ノードの例を図2(B)に示している。各ファイル管理ノードは、従来のファイルシステムにおけるファイル管理ノードと同様に、ファイル所有者、ファイル所有者のグループ、ファイルの最終アクセス時刻、ユーザに応じたアクセス権、ファイルの実体のディスク上の位置を示すディスクのアドレスなどのファイル管理情報を保持しており、ここでは、更に、プログラムに与えられる識別子、プログラムに応じたアクセス権のファイル管理情報が付加される。

【0017】ファイル内容がデータであるファイル21に対するファイル管理ノード20には、ファイル管理情報として、所有者“Hayata”，グループ“FXKSP”，最終アクセス時刻“Apr. 5 1991 19:00:00”，最終変更時刻“Apr. 4 1991 12:30:00”，ユーザに応じたアクセス権“rwxr-xr-x”，プログラムに応じたアクセス権“(100rwx)(101r--)(102r-x)”，プログラムに与えられる識別子“0”，ディスクのアドレス“12345”が設定されている。

【0018】ファイル内容が実行プログラムであるファイル23に対するファイル管理ノード22には、ファイル管理情報として、所有者“Hayata”，グループ“FXKSP”，最終アクセス時刻“Apr. 3 1991 19:00:00”，最終変更時刻“Apr. 3 1991 12:30:00”，ユーザに応じたアクセス権“rwxr-xr-x”，プログラムに応じたアクセス権“0”，プログラムに与えられる識別子“100”，ディスクのアドレス“22345”が設定されている。

【0019】この例では、データファイルのファイルA

(21)に関して、そのファイル管理情報であるプログラムに応じたアクセス権として、“(100 rwx)(101 r--)(102 r-x)”が設定されている。この設定のプログラムに応じたアクセス権の意味は、識別子100のプログラムについては、読出し、書込み、実行を許可し、識別子101のプログラムについては、読出しのみを許可し、また、識別子102のプログラムについては、読出し、実行を許可し、書込みは許可しない。それら以外のプログラムについては、読出しも、書込みも、実行も許可しないことを意味している。なお、ファイルAの識別子フィールドは“0”となっており、実行形式ファイルの実行プログラムファイルでないため、ファイルAには識別子は与えられていない。

【0020】また、実行プログラムファイルのファイルBに関しては、そのファイル管理情報であるプログラムに与えられる識別子として“100”が設定されており、このファイルBにおけるプログラムには識別子100が与えられることを示している。また、ファイルBは、データファイルではないので、プログラムに応じたアクセス権のファイル管理情報は設定されておらず、当該フィールドの各々の識別子に応じたアクセス権の情報は与えられていない。

【0021】図3は、ファイル管理ノードのファイル管理情報を用いてファイルアクセス時に行なわれるアクセス権チェック処理の一例を示すフローチャートである。この処理は、ファイルアクセス処理部(17;図1)により行なわれる。このアクセス権チェック処理では、まず、ステップ31において、実行プログラムファイルに対するファイル管理ノードを得ると、次に、ステップ32において、ファイル管理ノードからプログラムに与えられた識別子IDを得る。次に、ステップ33において、読み出し対象ファイルのファイル管理ノードを得る。そして、次のステップ34において、ファイル管理ノードからプログラムに応じたアクセス権データAを読み出す。次に、ステップ35において、読み出したアクセス権データAの中からプログラム識別子IDに対応するアクセス権ACを得る。そして、次のステップ36において、アクセス権ACの内容の判別を行い、アクセス権に応じたアクセス処理を行う。すなわち、アクセス権ACにread許可がある場合には、当該ファイル読出しが可能なので、リターン処理を行い、ファイルアクセスを行っているREADシステムコールのメインルーチンに戻る。アクセス権ACにread許可がない場合には、当該ファイル読出しが不可なので、エラーリターン処理を行い、ファイルのリードエラー処理を行う。

【0022】このようにして、プログラムの実行中にファイルがアクセスがなされた場合、当該実行プログラムに与えられている識別子に対応のファイル管理ノードから得て、この識別子よりアクセス対象のファイル管理ノードから、識別子対応のアクセス権(プログラムに応じ

たアクセス権)を得て、このアクセス権により、ファイルアクセスを行うファイル管理を行う。これにより、アクセス権情報によるアクセス管理は、単にファイル所有者、利用者に対して設定されているアクセス権によるファイルアクセス制御のみでなく、実行プログラムのレベルでのアクセス権でのファイルのアクセス制御が可能となる。また、ファイル処理、ファイル操作にかかるシステム構築の自由度が大きくなり、システムの安全性を配慮したシステム構成が容易に実現可能となる。

【0023】次に、このようなファイルシステムに用いられるファイル管理ノードにおけるファイル管理情報を設定し、確認するための処理機能要素について説明する。前述したように、ここでは、ファイル管理ノードに対して、識別子、識別子に応じたアクセス権などを個別に設定し、また、設定したファイル管理情報の確認を行うため、ファイル管理ノード編集処理部(13;図1)が設けられている。このファイル管理ノード編集処理部の各々の処理機能により、プログラムに対する識別子設定処理、識別子に応じたアクセス権設定処理、ファイル管理ノードにおけるアクセス権確認処理などが行なわれる。

【0024】図4はファイル管理ノードに対するプログラム識別子設定処理を示すフローチャートであり、また、図5はファイル管理ノードに対するプログラム対応のアクセス権設定処理を示すフローチャートである。例えば、図4に示すファイル管理ノードに対するプログラム識別子設定処理では、まず、ステップ41において、ファイル名から対応するファイル管理ノードを得て、次のステップ42で、このファイル管理ノードに対してプログラムに与える識別子をセットする。具体的には、例えば、ファイル毎のファイル管理ノードに、当該ファイルの識別子を設定する手続き関数として、次のような関数形式のプログラムset_idを作成して実行する。

set_id(ファイル名, 識別子)

set_idは、実行プログラムであるファイル名ならびに識別子を引数としてとり、指定したファイル名のファイル管理ノードに指定した識別子を書き込む処理を行う手続き関数である。

【0025】また、図5に示すファイル管理ノードに対するプログラム対応のアクセス権を設定する処理では、まず、ステップ51において、ファイル名から対応するファイル管理ノードを得て、次のステップ52において、このファイル管理ノードに対して、識別子とそれに応じたアクセス権データをセットする。具体的には、例えば、ファイル毎のファイル管理ノードに対し、識別子(プログラム)に応じたアクセス権を設定する手続き関数として、次のような関数形式のプログラムchapmodを作成して実行する。

chapmod(ファイル名, 識別子, アクセス権)

chapmodは、ファイル名、識別子ならびにアクセス権を

引数として取り、指定したファイル名に対応するファイル管理ノードに、指定した識別子に応じとそれに対応したアクセス権の情報を書き込む処理を行う手続き関数である。

【0026】また、ファイルアクセスを行う上でのファイル毎の各々の識別子に応じたアクセス権を確認する機能コマンドは、ファイルの読出し、書込みなどのファイルアクセスを行うreadや、writeなどのシステムインタフェース機能を用いることにより実行する。すなわち、システムにおけるファイルインタフェース機能を用いて、従来からユーザ対応に設定したアクセス権の確認処理と同様にして、プログラム(識別子)に対応して設定したアクセス権の確認を行う。

【0027】以上説明したように、本実施例のファイルシステムによれば、実行プログラムのファイルに識別子を与えて、当該ファイルのプログラムに対応する識別子を設定しておき、また、アクセス対象のデータのファイルには、識別子に応じたアクセス権を与えておく。これにより、プログラム実行により、データファイルへのアクセスが行なわれる場合、実行プログラムのファイルに設定された識別子により、プログラムに設定された識別子を判定し、この識別子に基づいて、データファイルの識別子対応のアクセス権を判定する。そして、このアクセス権によりファイルアクセス制御を行う。これにより、ファイル管理を、ユーザーレベルだけでなく、プログラムレベルにおいても同様に行うことができる。また、プログラム毎に一意の識別子を与えることにより、特定のプログラムからのみのアクセスの制御を可能とするファイルが実現できる。

【0028】

【発明の効果】以上に説明したように、本発明によれば、実行プログラムのファイルからは、プログラム実行にかかるファイルアクセス要求が発行された場合、ファイル管理ノードから当該プログラムの識別子が判定され、データファイルのファイル管理ノードにその識別子に対応して設定されているアクセス権によりファイルアクセス制御が行なわれる。これにより、単にファイル所有者、利用者に対して設定されているアクセス権によるファイルアクセス制御のみでなく、実行プログラムのレベルでのアクセス権でのファイルのアクセス制御が可能となる。また、ファイル操作、ファイルの管理などのシステム構築の自由度が大きくなり、システムの安全性を配慮したシステム構成が容易に実現可能となる。

【図面の簡単な説明】

【図1】 図1は本発明の一実施例にかかるファイルシステムの要部構成を説明するブロック図、

【図2】 図2はファイルシステムにおけるファイル管理ノードと各ファイルの関係をファイル管理情報のデータ例と共に説明する図、

【図3】 図3はファイル管理ノードのファイル管理情

報を用いてファイルアクセス時に行なわれるアクセス権
チェック処理の一例を示すフローチャート、

【図4】 図4はファイル管理ノードに対するプログラ
ム識別子設定処理を示すフローチャート、

【図5】 図5はファイル管理ノードに対するプログラ
ム対応のアクセス権

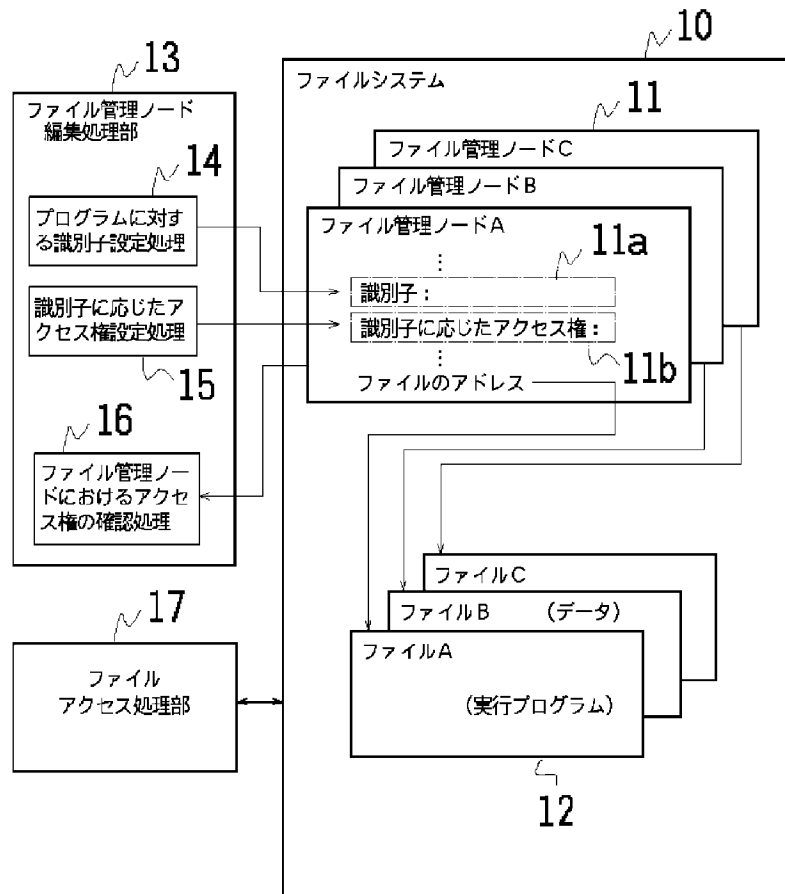
【図6】 図6はファイル管理ノードであるiノードの
一例を説明する図である。

【符号の説明】

10…ファイルシステム、11…ファイル管理ノード、
11a…識別子フィールド、11b…識別子アクセス権
フィールド、12…ファイル、13…ファイル管理ノ
ード編集処理部、17…ファイルアクセス処理部、20…
ファイル管理ノードA、21…ファイルA（データファ
イル）、22…ファイル管理ノードB、21…ファイル
B（実行プログラムファイル）。

【図1】

図1



【図2】

図2 (A)

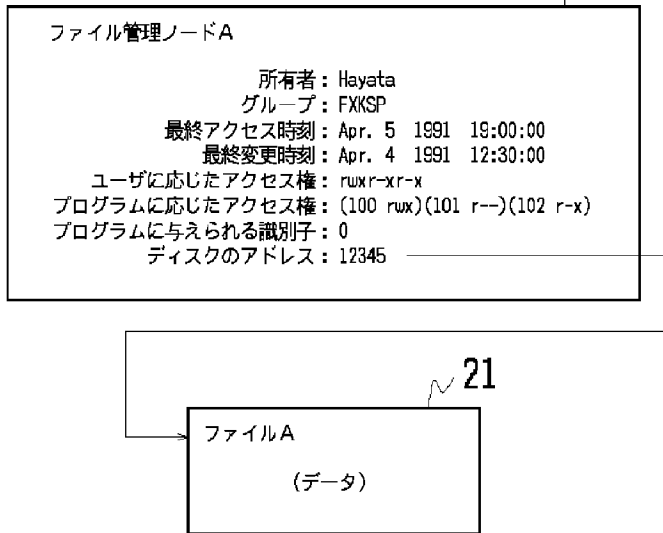
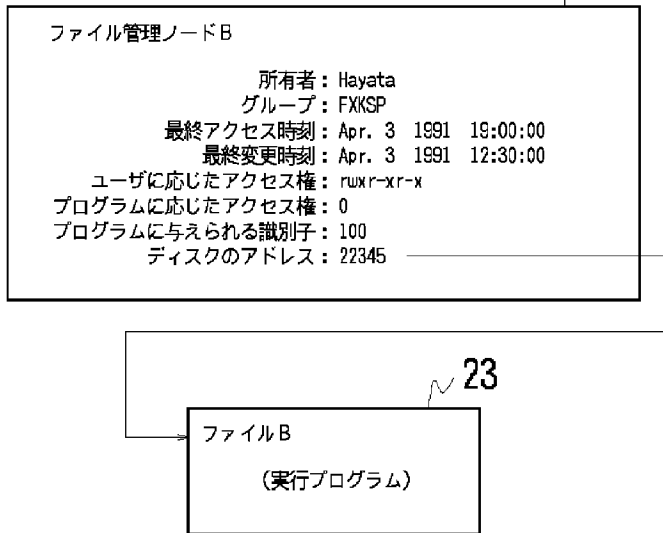
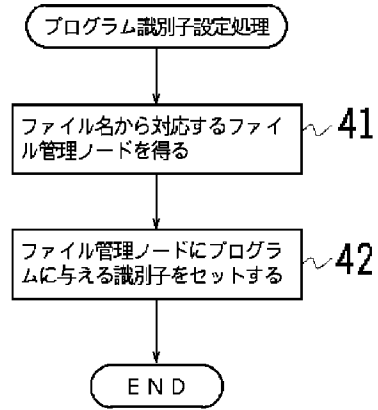


図2 (B)



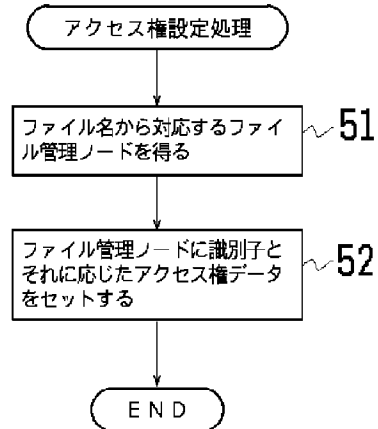
【図4】

図4



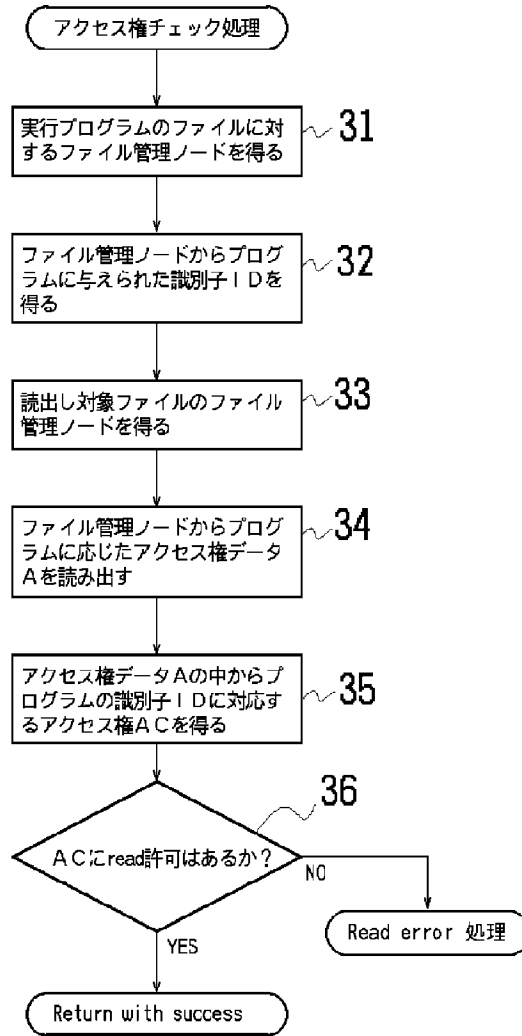
【図5】

図5



【図3】

図3



【図6】

図6

iノード	所有者: MJB
	グループ: OS
	ファイル種類: 通常ファイル型
	許可モード: rwxr-xr-x
	最終アクセス時刻: Oct. 23 1990 1:45 P.M.
	最終変更時刻: Oct. 22 1990 10:30 A.M.
	iノードの最終更新時刻: Oct. 23 1990 1:30 P.M.
	大きさ: 6030バイト
	ディスクのアドレス:

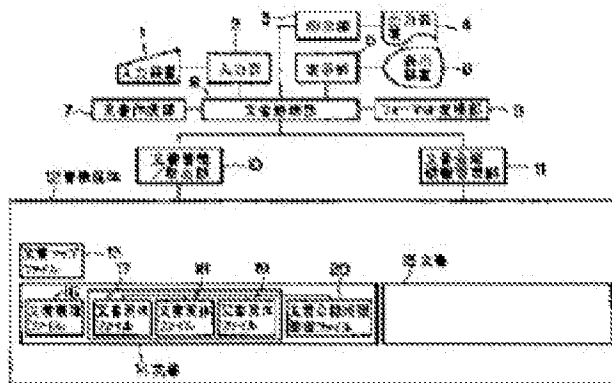
ELECTRONIC FILING DEVICE

Publication number: JP7036768
Publication date: 1995-02-07
Inventor: OTSUKA SACHIYO; SASAKI MASAHIRO
Applicant: MATSUSHITA ELECTRIC IND CO LTD
Classification:
 - **international:** **G06F12/00; G06F12/14; G06F21/24; G06F12/00; G06F12/14; G06F21/00; (IPC1-7): G06F12/00; G06F12/14**
 - **European:**
Application number: JP19930175470 19930715
Priority number(s): JP19930175470 19930715

Report a data error here

Abstract of JP7036768

PURPOSE:To permit any person who owns a right in accordance with respective disclosure level to approach a targeted document without permission or a password and to perform security management in a wide range flexibly by performing a document by attaching disclosure level information and discloser information including disclosure destination information. **CONSTITUTION:**The disclosure information consists of the disclosure level information representing to what degree it can be disclosed and the disclosure destination information representing to whom it can be disclosed. The disclosure information inputted from an input device 1 is sent from an input part 2 to a document processing part 8. and it is delivered from the document processing part 8 to a document disclosure information registration part 11. The document disclosure information registration part 11 retrieves a corresponding document file name from a document map file 13, and furthermore, retrieves a disclosure information managing file name from a document managing file 16, and sets the disclosure information on a corresponding document disclosure information managing file 20. When document disclosure is requested from the input part 1 by a user, the document disclosure information managing part 11 checks the disclosure information by the request of the document processing part 8.



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(71) 出願人 000005821

松下電器産業株式会社

大阪府門真市大字門真1006番地

(22) 出願日 平成5年(1993)7月15日

(72) 発明者 大塚 幸代

大阪府門真市大字門真1006番地 松下電器産業株式会社内

(72) 発明者 佐々木 雅宏

大阪府門真市大字門真1006番地 松下電器産業株式会社内

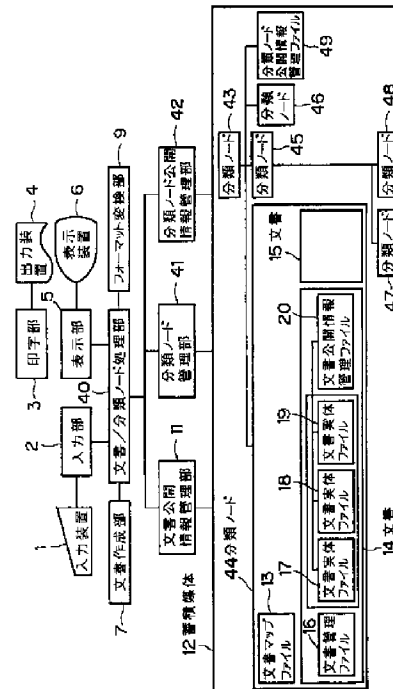
(74) 代理人 弁理士 蔵合 正博

(54) 【発明の名称】 電子ファイル装置

(57) 【要約】

【目的】 文書および文書を階層的に分類した分類ノードの存在明示の許可、閲覧の許可、複写印刷の許可、登録更新の許可からなる公開レベルおよび公開先を管理するための公開情報管理ファイルを備え、公開情報管理ファイルに設定管理されている情報に従い文書または分類単位で処理を行うことにより、ユーザおよびグループに対して文書または分類ノードの詳細なセキュリティ機構を提供することを目的とする。

【構成】 文書公開情報管理部 11 を設け、文書の公開レベルおよび公開先を設定管理することにより、公開レベルに応じて文書を処理し、また、分類ノード公開管理部 41 を設け、文書を階層的に分類した分類ノードの管理を行うとともに、分類ノード公開情報管理部 42 を設けることにより、分類単位での公開レベルおよび公開先を設定管理し、公開レベルに応じて分類ノードを処理する。



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【特許請求の範囲】

【請求項1】 1以上のファイルで構成された文書ごとに、公開程度を表わす公開レベル情報と公開相手を表わす公開先情報を含む公開情報を付加して管理する手段を備えた電子ファイル装置。

【請求項2】 公開情報を設定、変更可能とした請求項1記載の電子ファイル装置。

【請求項3】 1以上のファイルで構成された文書の蓄積保管および取り出しを管理する文書蓄積/取出部と、蓄積した前記文書の処理の許可レベルとして該当文書の10 一覧表示の許可、該当文書の内容表示の許可、該当文書の複写印刷の許可、該当文書の内容更新の許可の少なくとも4レベルが設定可能な公開レベル情報と複数の公開先情報からなる公開情報を格納する文書公開情報格納手段と、前記公開情報を設定管理および検査する文書公開情報管理部と、前記文書公開情報管理部の検査結果に応じて文書を処理する文書処理部とを備えた電子ファイル装置。

【請求項4】 1以上のファイルで構成された文書を分類ノードと呼ぶ文書の集合として処理し、前記分類ノードを階層的に設定管理するとともに分類ノード内の文書を管理する分類ノード管理部と、前記分類ノード内の文書の処理の許可レベルとして該当文書の一覧表示の許可、該当文書の内容表示の許可、該当文書の複写印刷の許可、該当文書の内容更新の許可の少なくとも4レベルが設定可能な公開レベル情報および複数の公開先情報からなる公開情報を格納する文書公開情報格納手段と、前記公開情報を設定管理および検査する文書公開情報管理部と、前記分類ノードの処理の許可レベルとして該当分類ノードの一覧表示の許可、該当分類ノードおよび該当分類ノード下の文書の一覧表示の許可、該当分類ノードの複写および該当分類ノード下の文書すべての複写印刷の許可、該当分類ノード下の新規分類ノード作成および新規文書登録の許可の少なくとも4レベルが設定可能な公開レベル情報と複数の公開先情報からなる分類ノード公開情報を格納する分類ノード公開情報格納手段と、前記分類ノード公開情報を設定管理および検査する分類ノード公開情報管理部と、前記文書公開情報管理部および前記分類ノード公開情報管理部の検査結果に応じて文書および分類ノードを処理する文書/分類ノード処理部とを備えた電子ファイル装置。

【請求項5】 公開情報が公開期間情報を含む請求項1から4のいずれかに記載の電子ファイル装置。

【発明の詳細な説明】

【0001】

【産業上の利用分野】本発明は、セキュリティ機構を有する電子ファイル装置に関するものである。

【0002】

【従来の技術】近年、オフィス業務の効率化、ペーパーレス化、省スペース化などを目的とする電子ファイル装

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置は、システム開発以来オフィス内で急速に普及し、そのシステムに対する要求も、使用範囲として専門に文書を入力管理する業務担当者から、個人および一般作業グループへと広がり、運用形態としてもさまざまな業務および文書への適応が求められてきており、文書の共有形態と文書のセキュリティ機構においてもさまざまな運用形態に適合できる機能が要求されている。

【0003】このような要求に対応するために、従来の電子ファイル装置では、基本的には文書ごとにパーミッションあるいはパスワード等を設け、文書に対する操作レベルと操作範囲を設定し、文書の保護を実現していた。この場合、文書に対して許される操作のレベルとして、該当の文書に対しての読み出し、書き込みの許可を与えるかどうかという許可レベルを設定し、また、許可レベルを与え得る操作者として、該当の文書の持ち主あるいは持ち主が属しているグループのメンバーあるいは全員などの設定を行っていた。

【0004】

【発明が解決しようとする課題】しかしながら、上記の従来の構成では、文書の保護を文書ごとに設けたパスワード等により行っており、許可レベルが文書の読み出しおよび書き込みのみに限られているため、あるいは許可レベルを与え得る操作者としてユーザおよび単一グループ等に限定されているため、さまざまな運用形態に適合できる柔軟なセキュリティ機構を提供することができないという問題点を有していた。

【0005】本発明は、このような従来の問題点を解決するもので、文書に対する公開レベルの設定を細かに行なえるようにするとともに、公開先をユーザおよびグループの区別なく複数設定可能とし、柔軟かつ広範囲なセキュリティ機構を備えた電子ファイル装置を提供することを目的とする。

【0006】

【課題を解決するための手段】上記目的を達成するために、本発明の電子ファイル装置は、1以上のファイルで構成された文書ごとに、公開程度を表わす公開レベル情報と公開相手を表わす公開先情報を含む公開情報を付加して管理するようにしたものである。

【0007】本発明はまた、1以上のファイルで構成された文書を分類ノードで階層的に管理し、文書と同様に各分類ノードについても公開情報を付加して管理するようにしたものである。

【0008】本発明はまた、公開情報に公開期間を加えるようにしたものである。

【0009】

【作用】したがって、本発明によれば、文書を公開レベル情報と公開先情報を含む公開情報を付加して管理することにより、それぞれの公開レベルに対応した権利を有する者であれば、パーミッションやパスワードがなくても誰でも目的的文書に近づくことができ、柔軟で広範囲

なセキュリティ管理を行なうことができる。

【0010】また本発明によれば、文書が分類ノードにより階層的に管理されている場合には、分類ノードについても文書と同様に公開情報を付加して管理することにより、より柔軟で極め細かなセキュリティ管理を行なうことができる。

【0011】さらに本発明によれば、公開情報に公開期間を加えることにより、さらに柔軟で極め細かなセキュリティ管理を行なうことができる。

【0012】

【実施例】

(実施例1) 以下、本発明の実施例について、図面を参照しながら説明する。図1は本発明の第1の実施例における電子ファイル装置の概略構成を示すブロック図である。図1において、1はユーザがデータを入力する入力装置、2は入力装置1を制御する入力部、3は印刷の制御を行なう印刷部、4は印刷を行なう出力装置、5は表示を制御する表示部、6は表示を行なう表示装置、7は文書の作成を行なう文書作成部、8は装置全体の制御を行ない、文書を処理する文書処理部、9は文書処理部8からの指示を受け、文書のフォーマット変換を行なうフォーマット変換部、10は作成された文書の蓄積保管および取り出しを管理する文書蓄積/取出部、11は文書の公開情報を設定管理および検査する文書公開情報管理部、12は文書および各種管理情報の蓄積を行なう蓄積媒体、13は文書を探し出すための情報を格納する文書マップファイル、14、15は複数のファイルによって構成された論理的な集まりを表わす文書、16は文書を構成するファイル群を管理するための情報を格納する文書管理ファイル、17、18、19は個々の文書を構成する文書実体ファイル、20は公開先情報および公開レベル情報からなる公開情報を格納する文書公開情報管理ファイルである。

【0013】以上のように構成された電子ファイル装置について以下その動作を説明する。まず、文書を構成するファイル群が管理されるまでの処理を説明する。ユーザにより作成された文書が入力装置1を通じて入力部2または文書作成部7から文書処理部8へと送られると、文書を構成するファイル群は文書処理部8から文書蓄積/取出部10を経て蓄積媒体12に送られる。蓄積媒体12では、文書蓄積/取出部10によって図2(a)に示す文書管理ファイル16が作成されて文書管理ファイル名と文書名とが登録され、図2(c)に示す文書マップファイル13にその文書名および文書管理ファイル名からなる文書マップ情報が登録される。次に、図2

(b)に示す文書公開管理情報ファイル20が作成され、文書管理ファイル16に文書名と公開情報管理ファイル名と文書実体ファイル名が登録され、その文書に対する構成が管理される。以上のように登録され管理された文書は、文書蓄積/取出部10によって文書を構成す

るファイル群が取り出され、文書処理部8を経て表示および印刷などの文書処理が行なわれる。

【0014】次に、作成された文書の公開情報の初期設定を行なう場合について説明する。公開情報は、どの程度まで公開してよいかを示す公開レベル情報と、だれ(個人またはグループ)に公開してよいかを示す公開先情報からなる。入力装置1から入力された公開情報は、入力部2から文書処理部8へ送られ、文書処理部8から文書公開情報登録部11へ渡される。文書公開情報管理部11は、まず図2に示す文書マップファイル13から、該当の文書管理ファイル名を探し、さらに文書管理ファイル16から公開情報管理ファイル名を探し、該当の文書公開情報管理ファイル20に公開情報を設定する。文書公開情報管理ファイル20に設定された公開情報は、本実施例では、ユーザ1に対しては公開レベルとしてEで表わされる該当文書の一覧表示の許可、グループ1に対しては公開レベルとしてBで表わされる該当文書の内容表示の許可、グループ2に対しては公開レベルとしてCで表わされる該当文書の複写印刷の許可、ユーザ2に対しては公開レベルとしてIで表わされる該当文書の内容更新の許可等が設定されている。公開レベルは、Eを最下位としてB、C、Iの順番に高くなっており、上位のレベルはその下位のレベルをすべて含むように定義されている。このようにして公開情報の設定を行なったある文書に対し、入力部1からユーザまたはグループが文書公開を要求した場合は、文書処理部8の要求により文書公開情報管理部11が公開情報のチェックを行ない、文書処理部8へ処理結果の通知を行なった後、フォーマット変換部9を経由して、表示部5、印刷部3で処理が行なわれる。

【0015】以下、図3を参照して文書公開情報管理部11における公開情報のチェック処理について説明をする。まず入力部1から例えばユーザ1による文書の公開レベルBの要求が入力された場合、文書処理部8からユーザ名とユーザ1の属している全てのグループ名からなる公開先情報群および公開レベルが文書公開情報管理部11に渡され(ステップ31)、文書公開情報管理部11は、この要求に対し文書マップファイル13を読み込み、該当の文書管理ファイル名を探し(ステップ32)、探し出した文書管理ファイル16から該当文書の公開情報管理ファイル名を探す(ステップ33)。探し出した文書公開情報管理ファイル20を読み出し、公開先情報群の一つの情報を文書公開情報管理ファイル20の公開情報の中から検出する(ステップ34)。検出ができなかった場合は、公開先情報群の全てのチェックが終了するまでこの処理を繰り返し(ステップ35)、チェックが終了した場合は異常値を文書処理部8へ返す(ステップ36)。検出できた場合は、公開レベルの設定がB以上(CおよびIを含む。)のレベルかどうかを判定し(ステップ37)、公開レベルがこの条件を満た

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している場合は正常値を文書処理部8へ返し(ステップ38)、満たしていない場合は、公開先情報群のチェックが全て終了しているかを判定する(ステップ35)。文書処理部8は、文書公開情報管理部11からの公開情報のチェック結果に従って処理を行なう。

【0016】このように、上記第1の実施例によれば、1以上のファイルで構成された文書ごとに、公開程度を表わす公開レベル情報と公開相手を表わす公開先情報とを含む公開情報を任意に設定して管理する手段を備えているので、それぞれの公開レベルに対応する権利を有する者であれば、パーミッションやパスワードによらず、誰でも目的の文書に近づくことができ、柔軟なセキュリティ管理を行なうことができる。

【0017】(実施例2)次に、本発明の第2の実施例について図面を参照しながら説明する。図4は本発明の第2の実施例における電子ファイル装置の概略構成を示すブロック図であり、図1に示した第1の実施例と同じ構成要素には同じ符号を付してある。図4において、1はユーザがデータを入力する入力装置、2は入力装置1を制御する入力部、3は印刷の制御を行なう印刷部、4は印刷を行なう出力装置、5は表示を制御する表示部、6は表示を行なう表示装置、7は文書の作成を行なう文書作成部、9は文書のフォーマット変換を行なうフォーマット変換部、11は文書の公開情報を設定管理および検査する文書公開情報管理部、12は文書および各情報の蓄積を行なう蓄積媒体、13は文書を探し出すための情報を格納する文書マップファイル、14、15は複数のファイルによって構成された論理的な集まりを表わす文書、16は文書を構成するファイル群を管理するための情報を格納する文書管理ファイル、17、18、19は個々の文書を構成する文書実体ファイル、20は公開先および公開レベルからなる公開情報を格納する文書公開情報管理ファイルであり、以上は図1の構成と同様なものである。図1の構成と異なるのは、装置全体の制御を行ない文書を処理する文書処理部8を分類ノードを処理する機能を加えた文書/分類ノード処理部40としたことと、文書を階層的に分類した情報を設定管理する分類ノード管理部41、分類ノードの公開レベルを設定管理する分類ノード公開情報管理部42、文書を階層的に分類している分類ノード43、44、45、46、47、48、分類ノードの公開先および公開レベルからなる公開情報を格納する分類ノード公開情報管理ファイル49を加えたことである。分類ノード公開情報管理ファイル49は、各分類ノード43~48のそれぞれに設けられている。

【0018】以上のように構成された電子ファイル装置の動作について、まず文書の登録を行なう場合について説明する。ユーザにより作成された文書は、入力装置1を通じて入力部2または文書作成部7から文書/分類ノード処理部40へ送られるとともに、登録文書名および

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その文書を登録される登録場所分類ノード名がユーザにより入力装置1から入力される。文書/分類ノード処理部40は、分類ノード公開情報管理部42で登録場所の分類ノードの公開レベルのチェックを行なった後、分類ノード管理部41に文書を構成するファイル群の登録を依頼する。依頼を受けた分類ノード管理部41は、蓄積媒体12に階層的に設定されている分類ノードをたぐり、ユーザにより指定された登録場所の分類ノードを探し出し、該当分類ノード下に文書を構成するファイル群を登録する。以降、登録場所の分類ノード内でのファイル群の管理は実施例1と同様に行なわれる。

【0019】次に、登録された文書を閲覧する場合について説明する。入力装置1からある文書に対して閲覧要求が入力部2を経て文書/分類ノード処理部40へ通知されると、その閲覧文書名と文書が存在する分類ノード名が文書/分類ノード処理部40へ渡される。文書/分類ノード処理部40は、分類ノード公開情報管理部42における分類ノードの公開情報のチェックを行なった後、さらに文書公開情報管理部11に文書の公開情報のチェックを依頼する。文書公開情報管理部11は、分類ノードをたぐり、指定の分類ノード下で実施例1と同様の処理を行なう。その結果に従って文書/分類ノード処理部40は、分類ノード管理部41に該当文書のファイル群の取り出しを依頼し、文書の処理を行なう。

【0020】分類ノードおよび文書の公開レベル設定内容と効果は、図5に示すような形で定義されている。分類ノードに設定可能な公開レベルは、それぞれ実施例1の文書に設定する公開レベルと同様に、Eで表わされる存在明示許可、Bで表わされる閲覧許可、Cで表わされる複写印刷許可、Iで表わされる登録更新許可の4レベルとなっている。分類ノードは、最上位を1つのルートノードとして、その下に枝分かれした階層構造になっている。したがって、ある分類ノードに対してEが許可されると、階層構造上において該当分類ノードが属している分類ノード以上の分類ノード名の一覧表示が許可され、該当分類ノードの存在が確認される。またある文書に対してEが許可されると、該当文書が属している分類ノードにおける文書の一覧表示が許可され、該当文書の存在が確認される。またある分類ノードに対してBが許可されると、階層構造上において該当分類ノード以上でB以下のレベル(B、E)が設定されている分類ノードおよびそれらに属している文書の一覧表示が許可され、該当分類ノードの内容が確認可能となる。またある文書に対してBが許可されると、該当文書の内容表示が許可され、該当文書の内容が確認可能となる。さらにある分類ノードに対してCが許可されると、該当分類ノードが複写元分類ノードとして設定可能となり、階層構造上において該当分類ノード以上でC以下のレベル(B、E)が設定されている分類ノード群およびそれらに属してC以下のレベルが設定されている文書群がまとめて複写印

刷可能となる。またある文書に対してCが許可されると、階層構造上において該当文書が属している分類ノード以上の分類ノードにおいてC以下のレベルが設定されている文書が複写印刷可能となる。さらにまた、ある分類ノードに対してIが許可されると、階層構造上において該当分類ノード以上でI以下のレベル（I、C、B、E）が設定されている分類ノード群およびそれらに属しているすべての文書群について、移動、削除、更新、新規作成等が可能になる。文書に対してIが許可されると、既に存在するすべての文書について同様な内容更新が可能となる。

【0021】次に、図6および図7を参照して分類ノードの公開情報チェック処理について説明する。まず入力装置1から例えばユーザ2による分類ノードの公開レベルBの要求が入力されると、文書/分類ノード処理部40からユーザ2による分類ノードの公開レベルBの要求が分類ノード公開情報管理部42に通知される（ステップ61）。分類ノード公開情報管理部42は、この要求に対し指定の分類ノードに移動し（ステップ62）、移動先の該当分類ノードで固定ファイル名である分類ノード公開情報管理ファイル49を探し出し（ステップ63）、公開先情報群の一つの情報を分類ノード公開情報管理ファイル49の公開情報の中から検出する（ステップ64）。検出できなかった場合は、公開先情報群の全てのチェックが終了するまでこの処理を繰り返し（ステップ65）、チェックが終了した場合は、異常値を文書/分類ノード処理部40へ返す（ステップ66）。検出できた場合は公開レベルの設定がB以上のレベルかどうかを判定し（ステップ67）、公開レベルがこの条件を満たしている場合は正常値を文書処理部40へ返し（ステップ68）、満たしていない場合は、公開先情報群のチェックが全て終了しているかを判定する（ステップ65）。文書/分類ノード処理部40は、分類ノード公開情報管理部42からの公開情報のチェック結果に従って処理を行なう。

【0022】このように、上記第2の実施例によれば、1以上のファイルで構成された文書を分類ノードで階層的に管理し、文書については上記第1の実施例と同様に管理するとともに、分類ノードについても同様に公開情報を付加して管理することにより、より柔軟で極め細かなセキュリティ管理を行なうことができる。

【0023】（実施例3）次に、本発明の第3の実施例について説明する。図8は本発明の第3の実施例における電子ファイル装置の概略構成を示すブロック図であり、図4に示した第2の実施例と同じ構成要素には同じ符号を付してある。図8において、1はユーザがデータを入力する入力装置、2は入力装置1を制御する入力部、3は印刷の制御を行なう印刷部、4は印刷を行なう出力装置、5は表示を制御する表示部、6は表示を行なう表示装置、7は文書の作成を行なう文書作成部、9は

文書のフォーマット変換を行なうフォーマット変換部、12は文書および各情報の蓄積を行なう蓄積媒体、13は文書を探し出すための情報を格納する文書マップファイル、14、15は複数のファイルによって構成された論理的な集まりを表す文書、17、18、19は個々の文書を構成する文書実体ファイル、40は装置全体の制御を行ない文書と分類ノードを処理する文書/分類ノード処理部、41は文書を階層的に分類した情報を設定管理する分類ノード管理部であり、以上は図4の構成と同様なものである。図4の構成と異なるのは、文書の公開レベルを設定管理する文書公開情報管理部11を、これに文書の公開期間の設定管理を行なう機能を加えて文書公開情報管理部80としたことと、分類ノードの公開レベルを設定管理する分類ノード公開情報管理部42を、これに分類ノードの公開期間の設定管理を行なう機能を加えて分類ノード公開情報管理部81としたことと、文書の公開先および公開レベルからなる公開情報を格納する文書公開情報管理ファイル20を、これに公開期間を設定可能として文書公開情報管理ファイル82としたことと、分類ノードの公開先および公開レベルからなる公開情報を格納する分類ノード公開情報管理ファイル49を、これに公開期間を設定可能として分類ノード公開情報管理ファイル83としたことである。

【0024】次に、以上のように構成された電子ファイル装置の動作について説明するが、文書の登録処理および登録された文書を閲覧する処理については実施例2と同様なので、ここでは文書および分類ノードの公開期間の設定を行なう処理について説明する。まず入力装置1から入力された公開先および公開レベルからなる公開情報と公開期間は、入力部2から文書/分類ノード処理部40へ送られ、文書/分類ノード処理部40の指示により文書公開情報管理部80および分類ノード公開情報管理部81が、それぞれ図9に示す文書公開情報管理ファイル82および分類ノード公開情報管理ファイル83の中に、公開期間および公開情報をそれぞれ設定する。

【0025】図10および図11は分類ノードおよび文書の公開期間のチェックを行なう処理を示している。図10において、入力装置1から例えばユーザ2による分類ノードの公開レベルBのチェックが要求された場合、文書/分類ノード処理部40からユーザ2による分類ノードの公開レベルBの要求が分類ノード公開情報管理部81に通知される（ステップ101）。分類ノード公開情報管理部81は、本要求に対し指定の分類ノードに移動し（ステップ102）、移動先の該当分類ノードで固定ファイル名である分類ノード公開情報管理ファイル63を探し出し（ステップ103）、図9に示す分類ノード公開情報管理ファイル83から公開期間の判定を行ない（ステップ104）、公開期間内であれば正常値を返し（ステップ107）、公開期間外ならば以降、分類ノードの公開情報のチェックを実施例2と同様、まず公開

先情報群の一つの情報を分類ノード公開情報管理ファイル83の公開情報の中から検出し(ステップ105)、検出できなかった場合は、公開先情報群の全てのチェックが終了するまでこの処理を繰り返し(ステップ108)、チェックが終了した場合は、異常値を文書/分類ノード処理部40へ返す(ステップ109)。検出できた場合は、公開レベルの設定がB以上のレベルかどうかを判定し(ステップ106)、公開レベルがこの条件を満たしている場合は、正常値を文書/分類ノード処理部40へ返し(ステップ107)、満たしていない場合は、公開先情報群のチェックが全て終了しているかを判定する(ステップ108)。文書/分類ノード処理部40は、分類ノード公開情報管理部81からの公開情報のチェック結果に従って処理を行なう。

【0026】また、図11において、例えばユーザ1による文書の公開レベルBのチェックが要求された場合(ステップ111)、文書/分類ノード処理部40からユーザ1による文書公開の要求が文書情報管理部80に通知され、文書公開情報管理部80は、本要求に対し以降、文書の公開情報を設定管理しているファイル群から実施例1と同様に、文書管理ファイル16を探し(ステップ112)、次いで文書公開情報管理ファイル82を探し出し(ステップ113)、図9に示す文書公開情報管理ファイル82の公開期間の判定を行ない(ステップ114)、公開期間内であれば正常値を返し(ステップ117)、期間外であれば、以降、文書の公開情報のチェックを実施例1と同様に処理し(ステップ115、116、118)、その処理結果を文書/分類ノード処理部40へ返す(ステップ119)。

【0027】このように、上記第3の実施例によれば、公開情報に公開期間を加えることにより、さらに柔軟で極め細かなセキュリティ管理を行なうことができる。

【0028】

【発明の効果】以上のように、本発明によれば、文書を公開レベル情報と公開先情報を含む公開情報を付加して管理することにより、それぞれの公開レベルに対応した権利を有する者であれば、パーミッションやパスワードがなくても誰でも目的の文書に近づくことができ、柔軟で広範囲なセキュリティ管理を行なうことができる。

【0029】また本発明によれば、文書が分類ノードにより階層的に管理されている場合には、分類ノードについても文書と同様に公開情報を付加して管理することにより、より柔軟で極め細かなセキュリティ管理を行なうことができる。

【0030】さらに本発明によれば、公開情報に公開期間を加えることにより、さらに柔軟で極め細かなセキュリティ管理を行なうことができる。

【図面の簡単な説明】

【図1】本発明の第1の実施例における電子ファイル装置の概略構成を示すブロック図

【図2】本発明の第1の実施例における蓄積媒体におけるファイル構造を示す模式図

【図3】本発明の第1の実施例における公開情報のチェック処理を示すフロー図

【図4】本発明の第2の実施例における電子ファイル装置の概略構成を示すブロック図

【図5】本発明の第2の実施例における公開レベルの一覧を示す模式図

【図6】本発明の第2の実施例における公開情報のチェック処理を示すフロー図

【図7】本発明の第2の実施例における分類ノード公開情報管理ファイルの構造を示す模式図

【図8】本発明の第3の実施例における電子ファイル装置の概略構成を示すブロック図

【図9】本発明の第3の実施例におけるファイル構造を示す模式図

【図10】本発明の第3の実施例における分類ノードの公開期間のチェック処理を示すフロー図

【図11】本発明の第3の実施例における文書の公開期間のチェック処理を示す別のフロー図

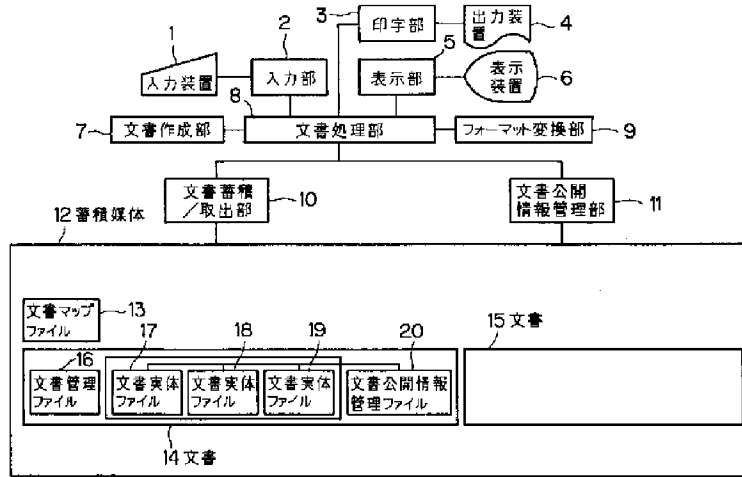
【符号の説明】

- 1 入力装置
- 2 入力部
- 3 印刷部
- 4 出力装置
- 5 表示部
- 6 表示装置
- 7 文書作成部
- 8 文書処理部
- 9 フォーマット変換部
- 10 文書蓄積/取出部
- 11 文書公開情報管理部
- 12 蓄積媒体
- 13 文書マップファイル
- 14 文書
- 15 文書
- 16 文書管理ファイル
- 17 文書実体ファイル
- 18 文書実体ファイル
- 19 文書実体ファイル
- 20 公開情報管理ファイル
- 40 文書/分類ノード処理部
- 41 分類ノード管理部
- 42 分類ノード公開情報管理部
- 43 分類ノード
- 44 分類ノード
- 45 分類ノード
- 46 分類ノード
- 47 分類ノード
- 50 48 分類ノード

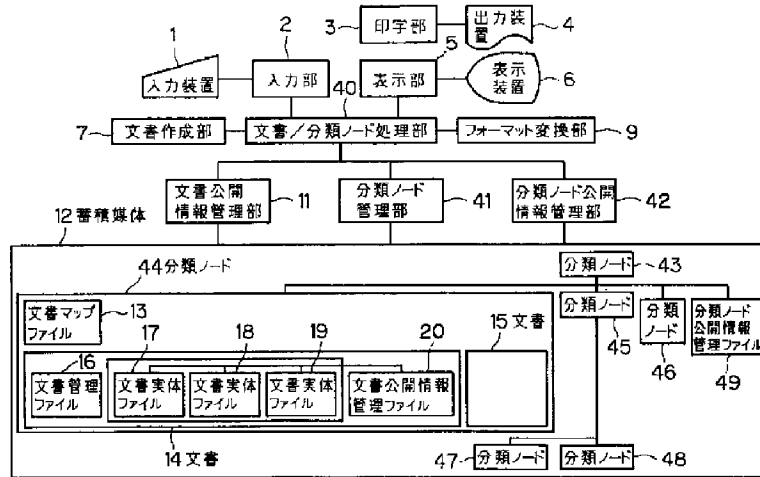
- 4 9 分類ノード公開情報管理ファイル
- 5 0 公開情報
- 8 0 文書公開情報管理部

- 8 1 分類ノード公開情報管理部
- 8 2 文書公開情報管理部
- 8 3 分類ノード公開情報管理ファイル

【図1】



【図4】

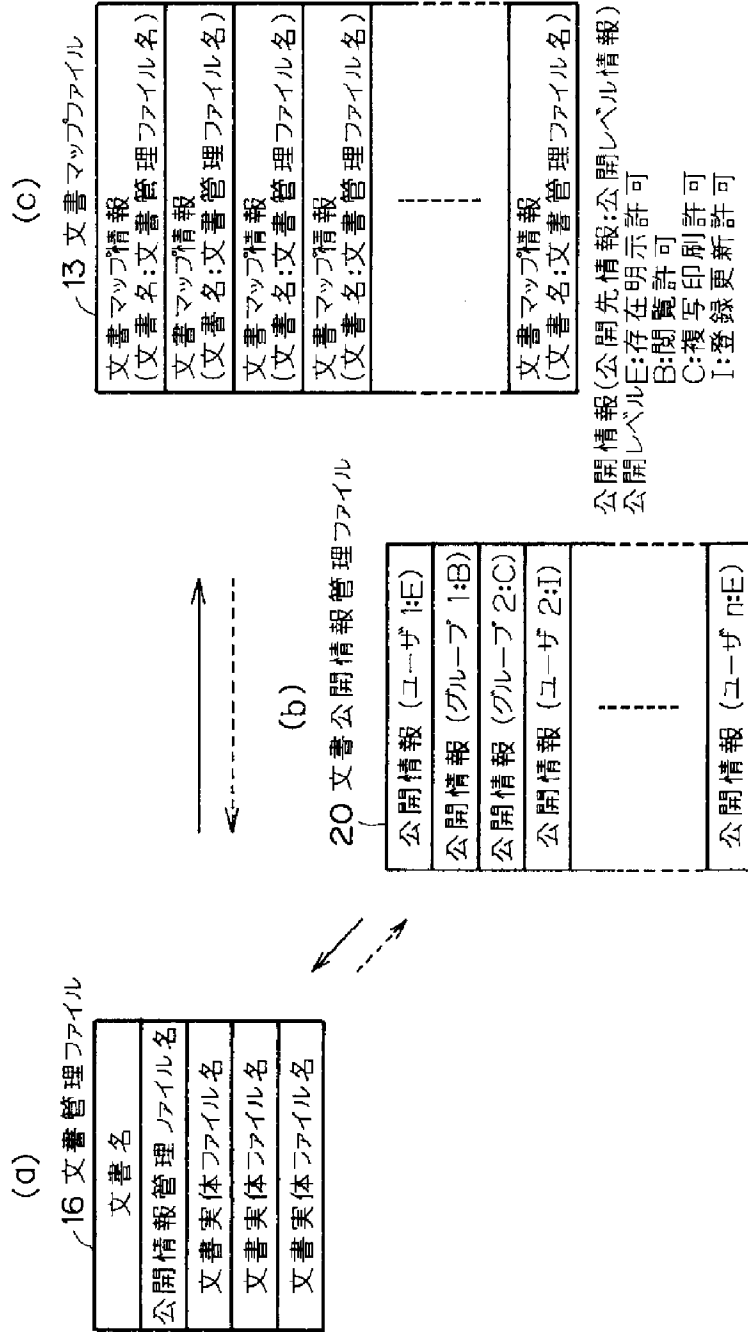


【図7】

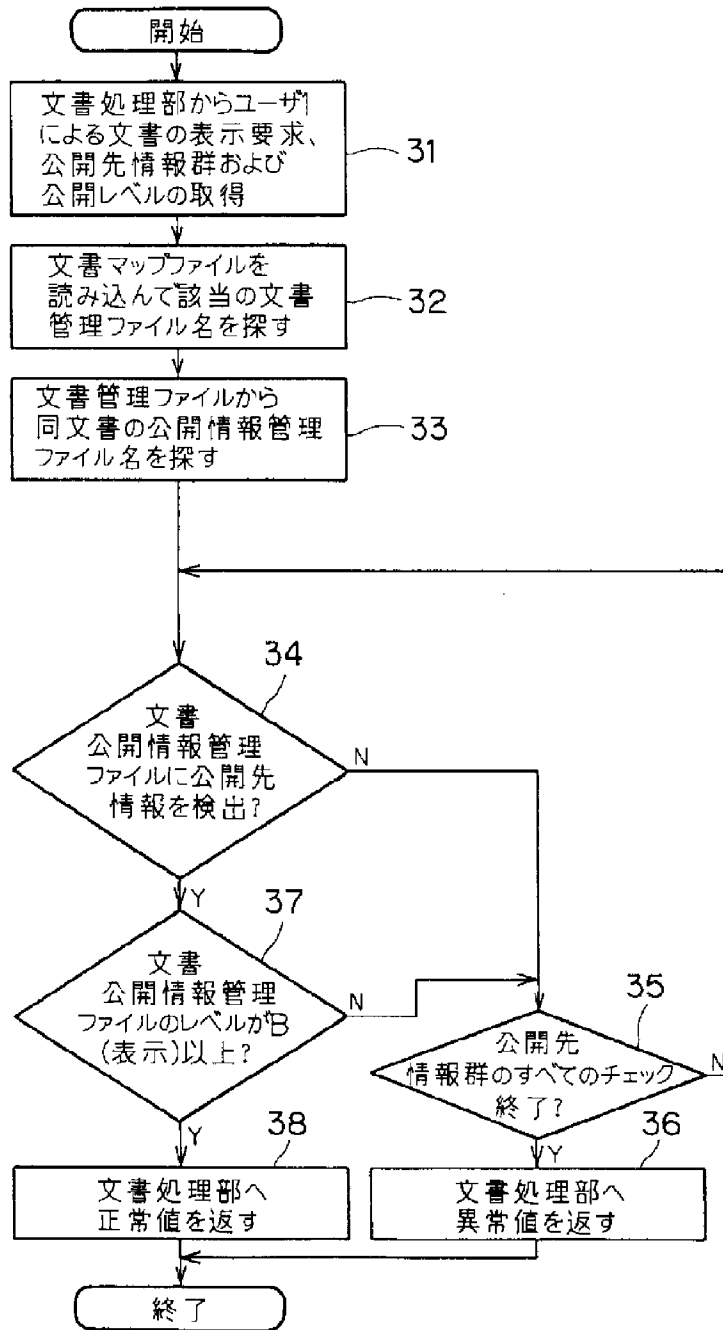
49 分類ノード公開情報管理ファイル

公開情報 (ユーザ 1E)
公開情報 (グループ 1:B)
公開情報 (グループ 2:C)
公開情報 (ユーザ 2:I)
公開情報 (ユーザ n:E)

【図2】



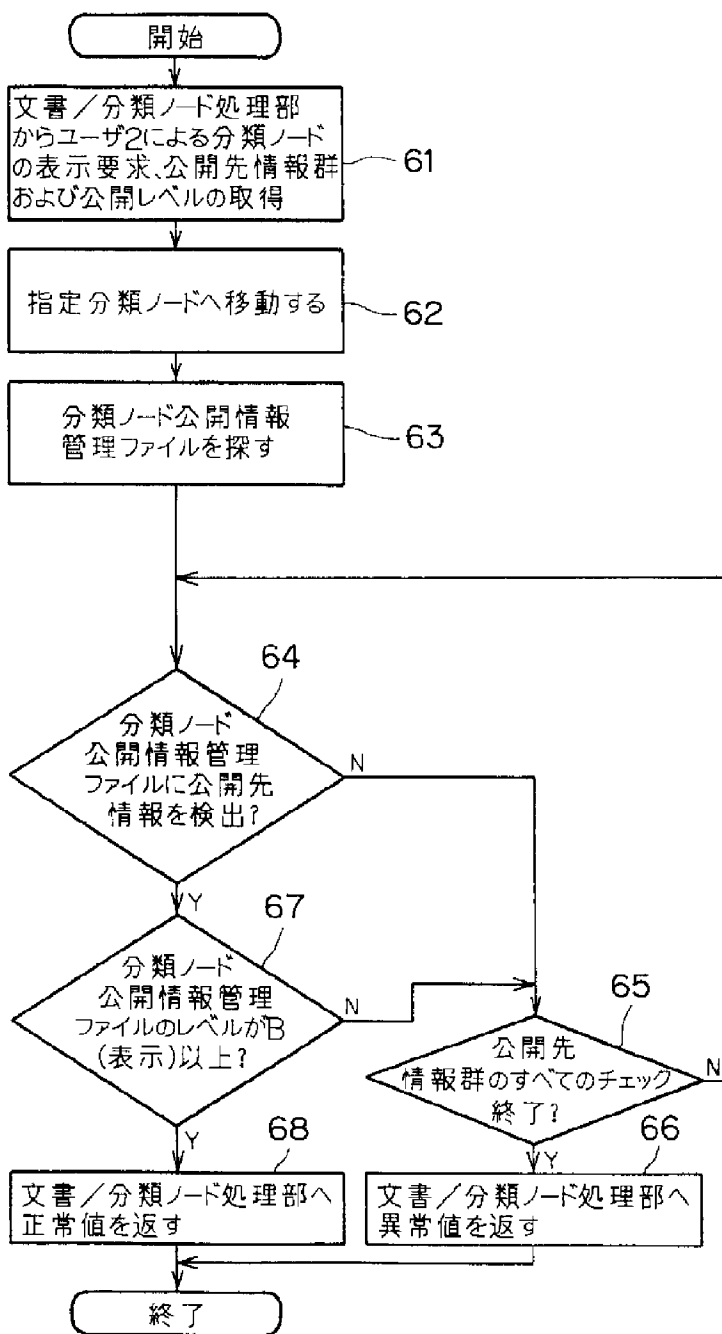
【図3】



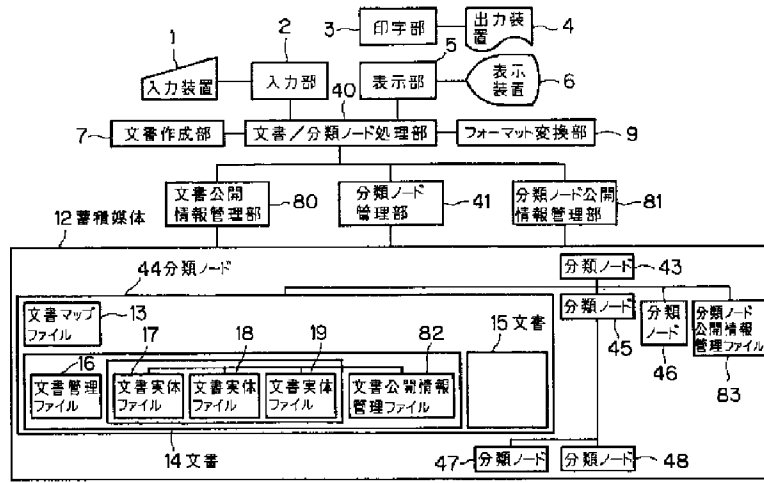
【図5】

公開レベル	効果	
	分類ノード	文書
存在明示許可 E	階層構造上における該当分類ノード以上のノード名一覧表示の許可	該当文書の一覧表示の許可
閲覧許可 B	階層構造上における該当分類ノード以上のノードの内容表示の許可	該当文書の内容表示の許可
複写印刷許可 C	階層構造上における該当分類ノード以上のノードおよびそれらに属する文書についての複写印刷の許可	該当文書の複写印刷の許可
登録更新許可 I	階層構造上における該当分類ノード以上のノードおよびそれらに属する文書についての移動、削除、更新、新規作成の許可	該当文書の内容更新の許可

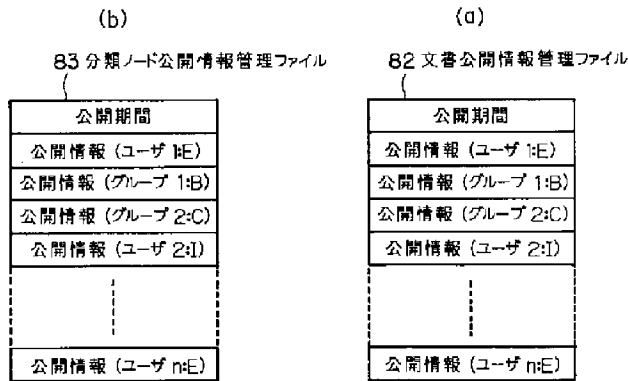
【図6】



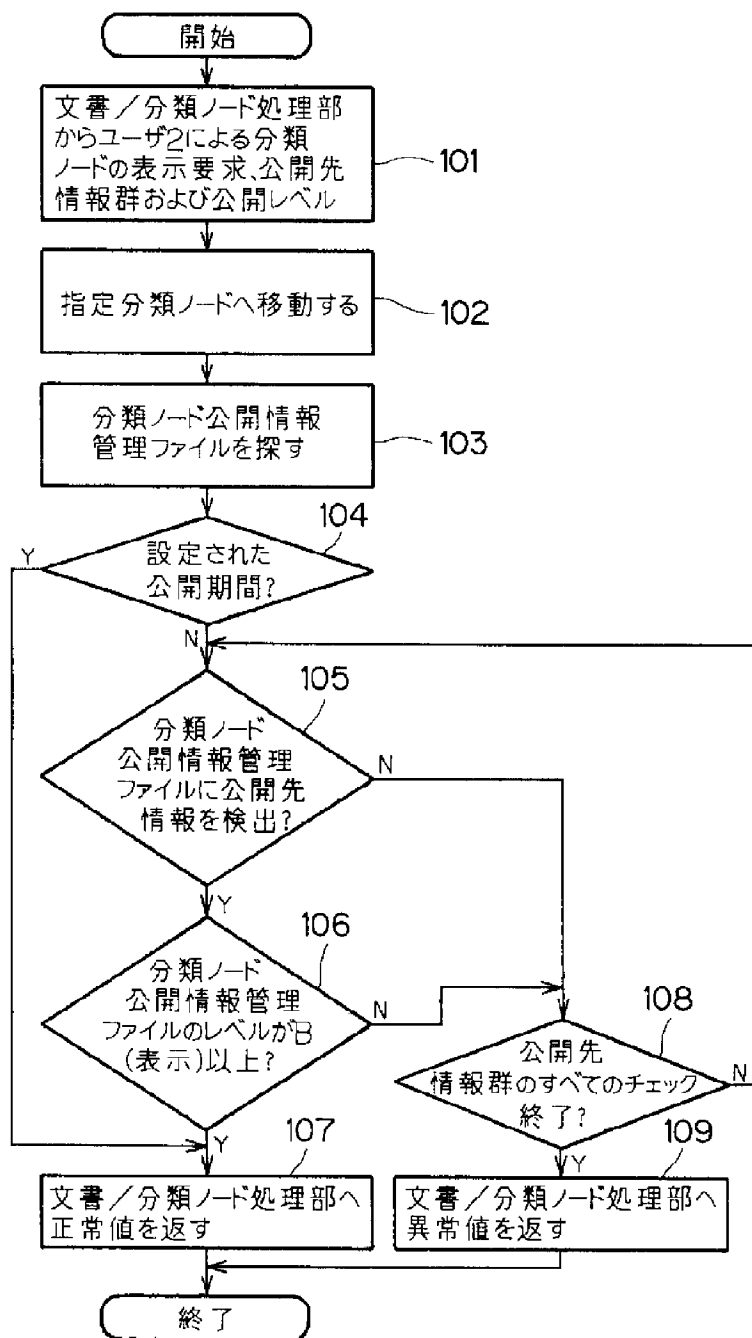
【図8】



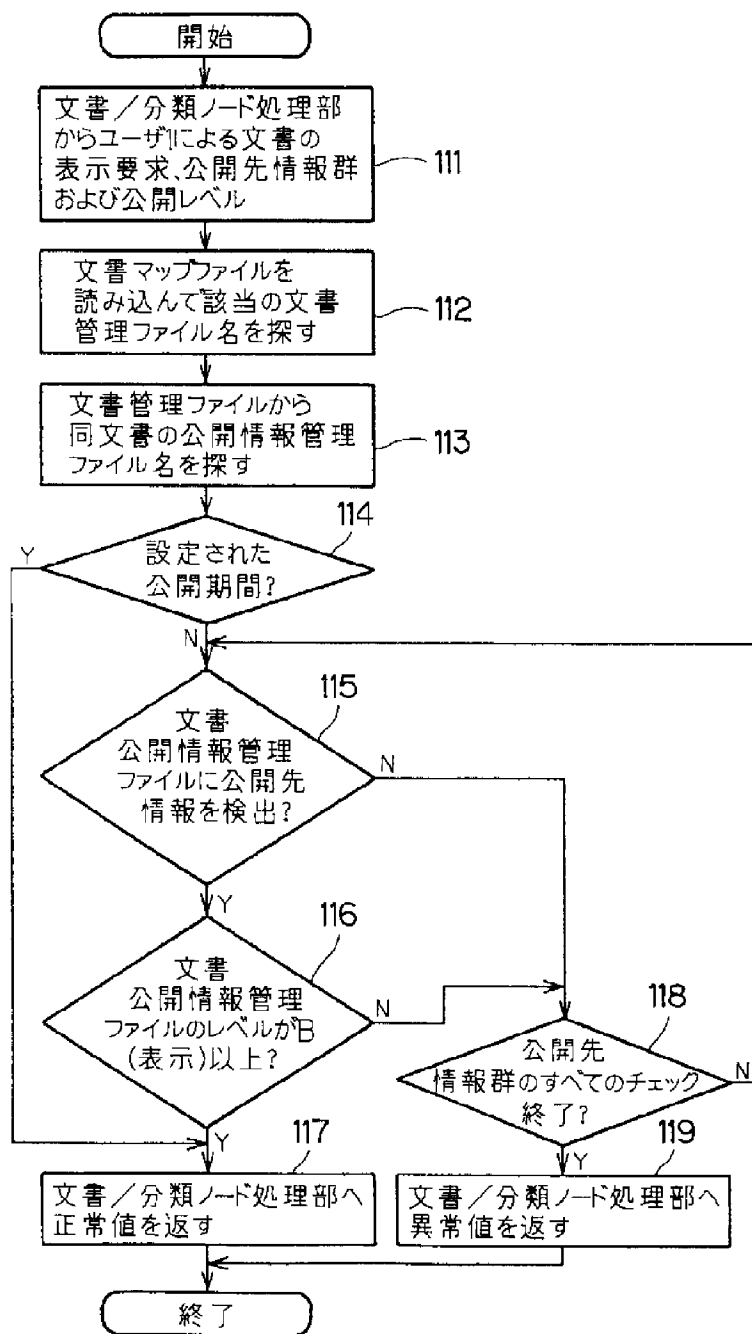
【図9】



【図10】



【図11】



Electronic Patent Application Fee Transmittal

Application Number:	10162701
Filing Date:	06-Jun-2002
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Filer:	Marc S. Kaufman/Peaches Thomas
Attorney Docket Number:	111325-290100

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	4229328
Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	22204
Filer:	Marc S. Kaufman/Peaches Thomas
Filer Authorized By:	Marc S. Kaufman
Attorney Docket Number:	111325-290100
Receipt Date:	04-NOV-2008
Filing Date:	06-JUN-2002
Time Stamp:	14:52:13
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$180
RAM confirmation Number	8244
Deposit Account	192380
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Information Disclosure Statement (IDS) Filed (SB/08)	290100_-_2008-11-04_-_IDS. pdf	737697 505ea82626f18be94d76651f32fbcc0ea29e 9e2f	no	5
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Information:					
2	Foreign Reference	JP_05100939.pdf	609457 bbd745e5cc6a7e23c3d4e26147ee093a0b6 b625c	no	10
Warnings:					
Information:					
3	Foreign Reference	JP_07036768.pdf	897168 599cef0b88e01779a27c41bcf68378dd1063 72d7	no	16
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Information:					
4	NPL Documents	Delaigne_Digital_1996.pdf	542236 533b2ba855f0906f13954d8ccf50c5d04442 e485	no	12
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Warnings:					
Information:					
Total Files Size (in bytes):			3288672		

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		10162701	
	Filing Date		2002-06-06	
	First Named Inventor	Xin Wang		
	Art Unit	3621		
	Examiner Name	AUGUSTIN, EVENS J		
	Attorney Docket Number	111325-290100		

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6044466	A1	2000-03-28	Anand et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ² j	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							<input type="checkbox"/>

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

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		10162701
	Filing Date		2002-06-06
	First Named Inventor	Xin Wang	
	Art Unit		3621
	Examiner Name	AUGUSTIN, EVENS J	
	Attorney Docket Number	111325-290100	

	1		<input type="checkbox"/>
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If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	10162701
	Filing Date	2002-06-06
	First Named Inventor	Xin Wang
	Art Unit	3621
	Examiner Name	AUGUSTIN, EVENS J
	Attorney Docket Number	111325-290100

CERTIFICATION STATEMENT

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

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

OR

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

- See attached certification statement.
- Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- None

SIGNATURE

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

Signature	/Stephen M. Hertzler, Reg. No. 58247/	Date (YYYY-MM-DD)	2008-12-31
Name/Print	Stephen M. Hertzler	Registration Number	58247

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Electronic Patent Application Fee Transmittal

Application Number:	10162701
Filing Date:	06-Jun-2002
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Filer:	Stephen M. Hertzler
Attorney Docket Number:	111325-290100

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	4545148
Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	22204
Filer:	Stephen M. Hertzler
Filer Authorized By:	
Attorney Docket Number:	111325-290100
Receipt Date:	31-DEC-2008
Filing Date:	06-JUN-2002
Time Stamp:	16:12:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$180
RAM confirmation Number	1030
Deposit Account	192380
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Filed (SB/08)	290100.pdf	76644 cd9e84838796571d05eb202d101071a7cd 21c7d7	no	4
Warnings:					
Information:					
This is not an USPTO supplied IDS fillable form					
2	Fee Worksheet (PTO-06)	fee-info.pdf	29890 b1680a4603c64e8958ef40b20e57a692fb1 d287c	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			106534		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
10/162,701 06/06/2002 Xin Wang 111325-290100 6475

22204 7590 01/07/2009
NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON, DC 20004-2128

EXAMINER

AUGUSTIN, EVENS J

ART UNIT PAPER NUMBER

3621

MAIL DATE DELIVERY MODE

01/07/2009

PAPER

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

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



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/162,701
Filing Date: June 06, 2002
Appellant(s): WANG ET AL.

Anthony J. Canning
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 09/15/2008 appealing from the Office action mailed 04/17/2008.

Art Unit: 3621

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6226618

Downs et al.

08-1998

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(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 102

1. 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 –

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

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

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

2. Claims 1-18 and 28-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Downs et al. (U.S 6226618) (“Downs”).
3. As per claims 1-18 and 28-29, Downs discloses an invention comprising of the following:
 - A. Content stores or distributors can add or narrow the original usage rights (sub-rights) (column 21, lines 30-36)
 - B. Content providers set and transmit (equivalent to presenting) the usage conditions to the content stores (column 21, 30-32), which are the first customers or distributors of the content providers.
 - C. **("obtaining a set of rights associated with an item, said set of rights including a meta-right, wherein the meta-right is provided in digital form, is enforceable by**

Art Unit: 3621

a repository-, and specifies derivable right that can be derived from exercising the meta-right by the rights consumer, a condition that must be satisfied to exercise the meta-right, and a state variable related to the condition, said derivable right being another meta-right or a usage right, whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed; determining by a repository whether the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right;") ---Distributors (first customer) making a request to digital content owners to sale digital content (column 42, lines 65-67, column 43, lines 1-2). The two parties then come to an agreement (column 43, lines 4-5). Inherently, the content provider receives the request - Content providers (entity that supplies the content), providing (equivalent to generating) usage conditions (equivalent to usage rights) - The content providers also stipulate that the content stores or distributors can add or narrow the original usage rights - state variables can be the number of copies a user is allowed to make (column 59, line 50 or rental terms (column 59, lines 55-60). Content providers and distributors specify the number of plays and local copies allowed for the Content, and whether or not the Content may be recorded to an external portable device (state variable). Downs et al. keep track of the content's copy/play usage and update the copy/play status (column 20, lines 43-50, column 12, lines 11-12)

- D. ("**determining whether the rights consumer is entitled to derive the derivable rights specified by the meta-rights**") --The Content Provider(s) 101 sets the allowable Usage Conditions 517 and transmits them to the Electronic Digital Content

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Store(s) 103 in a SC (see the License Control Layer 501 section). The Electronic Digital Content Store(s) 103 can add to or narrow the Usage Conditions 517 as long as it doesn't invalidate the original conditions set by the Content Provider(s) (Col. 21, ll.30-36). Each Content Provider(s) 101 specifies the Usage Conditions 517 for each of its Content 113 items. Electronic Digital Content Store(s) 103 interpret the Usage Conditions 517 in Metadata SC(s) 620 and use the information to provide different options or Store Usage Conditions 519 to the End-User(s) for purchase of Content 113 (col. 26, ll. 10-16) --

- E. (**"if the rights consumer is entitled to derive the derivable rights specified by the mete-rights, at least one of deriving one or more of the derivable rights and generating a license including the derived rights "**) - (**"transmitting the set of rights, in the form of a license to the item, from the rights supplier to the rights consumer "**) -- Distributors (first customer) making a request to digital content owners to sale digital content (column 42, lines 65-67, column 43, lines 1-2). The two parties then come to an agreement (column 43, lines 4-5). Inherently, the content provider receives the request - After the agreement between the content provider and the distributor (first customer), a digital certificate is created and sent to the distributor (column 43, lines 14-18). Inherently the agreement and certificate is for the content/usage rights request --
- F. (**"the derived rights are rights disposal rights. "**); (**"rights include usage rights "**) --Usage conditions include copy authorization and target device types, or timed-availability restrictions (col. 10, ll.15-18, Col. 60, ll.15-30) -

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- G. ("**the items are content** ") --Content, refers to information and data stored in a digital format including: pictures, movies, videos, music, programs, multimedia and games (col. 6, ll. 45-48) -
- H. ("**derived rights include meta-rights that the rights consumer may transfer to another rights consumer in the form of a license** ") --Content store distributes to the end user information relative to the Content 113 and its use (col. 43, ll. 62-67) - The Electronic Digital Content Store(s) 103 also attaches its own Usage Conditions called Store Usage Conditions 519 or purchase options to the Offer SC(s) 641 (Col. 74, ll.37-40) -
- I. "**the consumer is a content retailer, distributor and publisher** ") --Electronic Digital Content Store(s) 103 are the entities who market the Content 113 through a wide variety of services or applications, such as Content 113 theme programming or electronic merchandising of Content 113. Electronic Digital Content Store(s) 103 manage the design, development, business operations, settlements, merchandising, marketing, and sales of their services. Example online Electronic Digital Content Store(s) 103 are Web sites that provide electronic downloads of software (retailer and publisher) --(col. 9, ll. 61-67, col. 10, ll.1-3) - Content stores being licensed distributors of content (col. 19, 56-58) –

(10) Response to Argument

Argument 1: Downs et al., fails to disclose, teach or suggest meta-rights, which allow one or more users or devices to transfer rights or to derive new rights.

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Response 1: According to the appellant's specification, meta-rights are the rights that one has to manipulate, modify, or otherwise derive other meta-rights or usage rights. Meta-rights can be thought of as secondary usage rights derived from the primary usage rights (specification, par 21). Content providers (entity(s) that supplies the content), providing (equivalent to generating) usage conditions (equivalent to usage rights) also stipulate that the content stores or distributors also have rights to add or narrow the original usage rights (meta-rights or rights derived from the initial usage rights) (column 21, lines 30-36) – (see table broadest claim 1).

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Limitation #	<u>Claim 1</u>	<u>Prior Art (Downs, US 6226618)</u>
1	Obtaining a set of rights associated with an item, said rights including meta-rights...	Obtaining/providing usage conditions (equivalent to usage rights), The content providers also stipulate that the content stores or distributors can add or narrow the original usage rights (Column 59, Line 50, 55-60)
2	Determining whether the rights consumer is entitled to derive the the derivable or meta-rights	The content providers also stipulate that the content stores or distributors can add or narrow the original usage rights (Column 59, Line 50, 55-60), as long as it does not violate the original conditions set by the content providers (Col. 21, Line 30-36). Before selling the content, distributor and content owner come an agreement to do so (Col. 43, Lines4-5)
3	if the rights consumer is entitled for meta-rights, transmit a license to rights consumer	Column 43, Lines14-18

Rights Supplier = Content provider
Rights Consumer = digital content store or distributor
Usage Rights = Usage conditions such as copy protection
License = Digital certificate given to distributor
Meta-rights = Subrights, or additional usage conditions derived from the usage rights

Each Content Provider(s) 101 specifies the Usage Conditions 517 for each of its Content 113 items. Electronic Digital Content Store(s) 103 interpret the Usage Conditions 517 in Metadata SC(s) 620 and use the information to provide different options or Store Usage Conditions 519 to the End-User(s) for purchase of Content 113 (col. 26, ll. 10-16) –

Art Unit: 3621

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Evens J. Augustin/
Primary Examiner, AU 3621
January 7, 2009

Conferees:

/A. J. F./
Andrew J. Fischer
Supervisory Patent Examiner, Art Unit 3621

/C.L.H./
Calvin L Hewitt II
Supervisory Patent Examiner, Art Unit 3685



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Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
10/162,701 06/06/2002 Xin Wang 111325-290100 6475

22204 7590 03/06/2009
NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON, DC 20004-2128

EXAMINER

AUGUSTIN, EVENS J

ART UNIT PAPER NUMBER

3621

MAIL DATE DELIVERY MODE

03/06/2009

PAPER

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

Art Unit: 3621

ACTION

1. The USPTO's Board of Patent Appeals and Interferences ("Board") returned this application to the Examiner. See "**APPEAL CENTER RETURN**" mailed on February 21, 2009 ("February 2009 Order").
2. In the February 2009 Order, the Board ordered the Examiner to:
 - (1) To consider IDS dated 08/07/02,07/01/08,09/04/08,11/04/08,12/31/08;
 - (2) for such further action as may be appropriate.
3. In accordance with (1) IDS dated 08/07/02,07/01/08,09/04/08,11/04/08,12/31/08 have been considered.
4. In accordance with (2) above, it is the Examiner's position that no further action is necessary.

Conclusion

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to EVENS J. AUGUSTIN whose telephone number is 571-272-6860. The examiner can normally be reached on 10am - 6pm M-F.
2. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Fischer can be reached on (571)272-6779.

/Evens J. Augustin/
March 6, 2009
Art Unit 3621

Application/Control Number: 10/162,701
Art Unit: 3621

Page 3



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

Substitute for form 1449A/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>				Complete if Known		
				Application Number	10/162,701	
Sheet		1	of	1	Examiner Name	Evens J. Augustin
				Attorney Docket Number	111325/290100	

U.S. PATENT DOCUMENTS						
Examiner Initials ¹	Cite No. ¹	U.S. Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)				
	1.	5,619,570	A1	04-08-1997	Tsutsui	

U.S. PUBLISHED PATENT DOCUMENTS						
Examiner Initials ¹	Cite No. ¹	U.S. Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)				

FOREIGN PATENT DOCUMENTS							
Examiner Initials ¹	Cite No. ¹	Foreign Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ³
		Country Code ³ Number ⁴	Kind Code ² (if known)				
	2.	EP 0 262 025	A2	03-30-1988	Ogasawara		
	3.	JP 3-063717	A	03-19-1991	Tsutsui et al.	(Ab in EN)	
	4.	JP 6-131371	A	05-13-1994	Tsutsui	(Ab in EN)	

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials ¹	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	5.	Johnson et al., "A Secure Distributed Capability Based System," PROCEEDINGS OF THE 1985 ACM ANNUAL CONFERENCE ON THE RANGE OF COMPUTING: MID-80'S PERSPECTIVE: MID-80'S PERSPECTIVE <i>Association for Computing Machinery</i> pp. 392-402 (1985)	

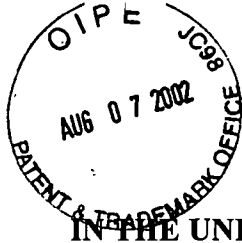
Examiner Signature	/Evens Augustin/	Date Considered	03/04/2009
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPFP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at 222.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

11018190.1

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /EA/



Application No. 10/162,701
Docket No. 111325/000113

0300
#2
5

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Xin WANG	) Examiner: Unassigned
Serial No. 10/162,701 ✓	) Group Art Unit:
Filed: 06/06/2002)
For: METHOD AND APPARATUS MANAGING THE)
TRANSFER OF RIGHTS)
)

INFORMATION DISCLOSURE STATEMENT

Commissioner of Patents
Washington, D.C. 20231

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. §1.56, Applicants hereby submit the following information in conformance with 37 C.F.R. §§ 1.97 and 1.98. Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed.

The documents are being submitted within three (3) months of the filing of this application or entry into the national stage of this application, or before the first Office Action on the merits, whichever is later, therefore no fee or certification is required under 37 C.F.R § 1.97(b).

It is requested that the accompanying information disclosure statement be considered and made of record in the above-captioned application. To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

The Commissioner is hereby authorized to charge any fees connected with this filing which may be required now, or credit any overpayment to Deposit Account No. 19-2380.

Respectfully submitted,

By: Marc S. Kaufman, Esq.
Registration No. 35,212

NIXON PEABODY LLP
8180 Greensboro Drive, Suite 800
McLean, Virginia 22102
Telephone: (703) 770-9300

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /EA/

NVA235510.1

Form PTO-1449
(Rev. 8-83)

U.S. Department of Commerce
Patent and Trademark Office

Atty Docket 111325-113

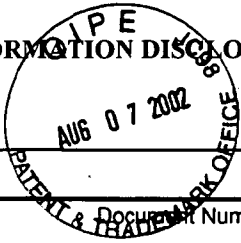
Serial No. 10/162,701

INFORMATION DISCLOSURE STATEMENT

Applicants: Xin WANG

Filing Date: June 06, 2002

Group Art Unit:



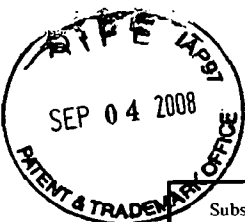
U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Subclass	Filing Date (if appropriate)
	4,713,753	12/15/1987	Beobert et al.			
	5,052,040	09/24/1991	Preston et al.			
	5,301,231	04/05/1994	Abraham et al.			
	5,502,766	03/26/1996	Boebert et al.			
	5,649,013	07/15/1997	Stuckey et al.			
	5,737,413	04/07/1998	Akiyama et al.			
	5,737,416	04/07/1998	Cooper et al.			
	5,757,907	05/26/1998	Cooper et al.			
	6,253,193	06/26/2001	Ginter et al.			
	6,301,660	10/09/2001	Benson			
	6,327,652	12/04/2001	England et al.			
	6,330,670	12/11/2001	England et al.			

Examiner /Evens Augustin/

Date Considered 03/04/2009

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



Substitute for form 1449A/PTO		<i>Complete if Known</i>		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(use as many sheets as necessary)</i>		Application Number	10/162,701	
		Filing Date	June 6, 2002	
		First Named Inventor	Xin WANG et al.	
		Art Unit	3621	
		Examiner Name	Evens J. Augustin	
Sheet		of	Attorney Docket Number	111325-290100

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	U.S. Patent Document		Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code ² (if known)				
		US-5,287,408		02-15-1994	Samson	
		US-5,390,297		02-14-1995	Barber et al.	
		US-5,553,143		09-03-1996	Ross et al.	
		US-5,564,038		10-08-1996	Grantz et al.	
		US-5,625,690		04-29-1997	Michel et al.	
		US-5,638,513		05-10-1997	Ananda	
		US-5,414,852		05-09-1995	Kramer et al.	
		US-				
		US-				
		US-				

FOREIGN PATENT DOCUMENTS								
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
		Perritt, "Technologies Strategies for Protecting IP in the Network Multimedia Environment", Apr. 2-3, 1993, Knowbot Permissions.	
		Delaigle, "Digital Watermarking", Spie Conference in Optical Security and Counterfeit Deterrence Techniques, San Jose, CA Feb, 1996, Vol. 2659 pp 99-110.	

Examiner Signature	/Evens Augustin/	Date Considered	03/04/2009
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	10162701
	Filing Date	2002-06-06
	First Named Inventor	Torrance Xin Wang
	Art Unit	3621
	Examiner Name	Evens J. Augustin
	Attorney Docket Number	111325/290100

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	4	5564038		1996-10-08	Grantz et al.		
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	1	Delaigle, "Digital Watermarking," Spie Conference in Optical Security and Counterfeit Deterrence Techniques, San Jose, CA (Feb. 1996)	<input type="checkbox"/>
	2	Perritt, "Technologies Strategies for Protecting Intellectual Property in the Networked Multimedia Environment," Knowbots, Permissions Headers and Contract Law (Apr. 2 -3 1993)	<input type="checkbox"/>

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Application Number	10162701
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	Filing Date		2002-06-06	
	First Named Inventor	Xin Wang		
	Art Unit	3621		
	Examiner Name	AUGUSTIN, EVENS J		
	Attorney Docket Number	111325-290100		

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	Filing Date	2002-06-06
	First Named Inventor	Xin Wang
	Art Unit	3621
	Examiner Name	AUGUSTIN, EVENS J
	Attorney Docket Number	111325-290100

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Row 1: 10/162,701, 06/06/2002, Xin Wang, 111325-290100, 6475
Row 2: 22204, 7590, 06/16/2009, NIXON PEABODY, LLP, 401 9TH STREET, NW, SUITE 900, WASHINGTON, DC 20004-2128
Row 3: EXAMINER AUGUSTIN, EVENS J
Row 4: ART UNIT 3621, PAPER NUMBER
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WASHINGTON, DC 20004-2128

Appeal No: 2009-011700

Application: 10/162,701

Appellant: Xin Wang et al.

Board of Patent Appeals and Interferences Docketing Notice

Application 10/162,701 was received from the Technology Center at the Board on June 15, 2009 and has been assigned Appeal No: 2009-011700.

A review of the file indicates that the following documents have been filed by appellant:

Appeal Brief filed on: September 15, 2008

Reply Brief filed on: NONE

Request for Hearing filed on: NONE

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10/162,701 06/06/2002 Xin Wang 111325-290100 6475

22204 7590 07/27/2010
NIXON PEABODY, LLP
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SUITE 900
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EXAMINER

AUGUSTIN, EVENS J

ART UNIT PAPER NUMBER

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2
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4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES
6

7
8 *Ex parte* XIN WANG,
9 THANH TA,
10 GUILLERMO LAO, and
11 EDDIE J. CHEN
12

13
14 Appeal 2009-011700
15 Application 10/162,701
16 Technology Center 3600
17

18
19 Decided: July 27, 2010
20

21
22 Before MURRIEL E. CRAWFORD, ANTON W. FETTING, and BIBHU R.
23 MOHANTY, *Administrative Patent Judges*.
24 FETTING, *Administrative Patent Judge*.

25 DECISION ON APPEAL¹
26

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

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STATEMENT OF THE CASE

Xin Wang, Thanh Ta, Guillermo Lao, and Eddie J. Chen (Appellants) seek review under 35 U.S.C. § 134 (2002) of a final rejection of claims 1-18 and 28-29, the only claims pending in the application on appeal.

We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION²

We AFFIRM.

THE INVENTION

The Appellants invented a method for transferring rights associated to items from a rights supplier to a rights customer. Specification ¶ 0008.

An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below [bracketed matter and some paragraphing added].

1. A method for transferring rights adapted to be associated with items from a rights supplier to a rights consumer, said method comprising:

[1] obtaining a set of rights associated with an item, said set of rights including a meta-right, wherein the meta-right is provided in digital form, is enforceable by a repository, and specifies a derivable right that can be derived from exercising

² Our decision will make reference to the Appellants’ Appeal Brief (“App. Br.,” filed September 15, 2008) and the Examiner’s Answer (“Ans.,” mailed January 7, 2009), and Final Rejection (“Final Rej.,” mailed May 24, 2006).

1 the meta-right by the rights consumer, a condition that must be
2 satisfied to exercise the meta-right, and a state variable related
3 to the condition, said derivable right being another meta-right
4 or a usage right, whereby the meta-right is distinct from any
5 usage rights specifying how the item can be used and
6 distributed;

7 [2] determining by a repository whether the rights consumer
8 is entitled to exercise the meta-right to derive the derivable right
9 specified by the meta-right; and

10 [3] if the rights consumer is entitled to exercise the meta-
11 right to derive the derivable right specified by the meta-right,
12 deriving the derivable right and generating a license including
13 the derived right, said license being enforceable by a repository.

14

15

THE REJECTIONS

16 The Examiner relies upon the following prior art:

Downs et al. US 6,226,618 B1 May 1, 2001

17

18 Claims 1-18 and 28-29 stand rejected under 35 U.S.C. § 102(b) as being
19 anticipated by Downs.

20

ISSUES

21 The issue of whether the Examiner erred in rejecting claims 1-18 and 28-
22 29 under 35 U.S.C. § 102(b) as being anticipated over Downs turns on
23 whether Downs describes meta-rights as required by the claimed invention.

24

FACTS PERTINENT TO THE ISSUES

25 The following enumerated Findings of Fact (FF) are believed to be
26 supported by a preponderance of the evidence.

1 *Facts Related to the Prior Art*

2 *Downs*

3 01. Downs is directed to a system and related tools for the secure
4 delivery and rights management of digital assets, such as print
5 media, films, games, and music over global communications
6 networks. Downs 1:52-57.

7 02. Downs describes a digital content electronic distribution system
8 that has a rights management architecture which consists of layers
9 to protect the usage of content. Downs 19:40-45. A content usage
10 layer permits the specification and enforcement of the conditions
11 or restrictions imposed on the use of content at end user devices.
12 Downs 21:23-26. Conditions may specify the number of plays
13 allowed for the content, whether the creation of a secondary copy
14 is permitted, the number of secondary copies, or whether the
15 content can be copied to an external device. Downs 21:26-30.
16 The content provider sets the allowable usage conditions and
17 transmits them to the electronic store. Downs 21:30-33. The
18 electronic store can add to or narrow the usage conditions, as long
19 as the original conditions are not invalidated, and then transmit the
20 usage conditions to the end user device. Downs 21:33-39.

21 03. The content provider creates metadata container and a content
22 container for every content distributed. Downs 23:37-39. The
23 metadata secure container includes metadata (such as artist name,
24 CD cover art, or other content dependant parts), usage conditions,

1 templates, watermarking instructions, certificates, and digital
2 signatures. Downs 29:35-61 and 30:19-51.

3 *Facts Related To The Level Of Skill In The Art*

4 04. Neither the Examiner nor the Appellants have addressed the
5 level of ordinary skill in the pertinent art of digital rights
6 management systems. We will therefore consider the cited prior
7 art as representative of the level of ordinary skill in the art. *See*
8 *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001)
9 (“[T]he absence of specific findings on the level of skill in the art
10 does not give rise to reversible error ‘where the prior art itself
11 reflects an appropriate level and a need for testimony is not
12 shown’”) (quoting *Litton Indus. Prods., Inc. v. Solid State Sys.*
13 *Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985).

14 *Facts Related To Secondary Considerations*

15 05. There is no evidence on record of secondary considerations of
16 non-obviousness for our consideration.

17 ANALYSIS

18 *Claims 1-18 and 28-29 rejected under 35 U.S.C. § 102(b) as being*
19 *anticipated by Downs*

20 The Appellants first contend that Downs fails to describe the feature of a
21 meta-right that is provided in digital form and is enforceable by a repository
22 as required by claims 1 and 10. App. Br. 5-6. We disagree with the
23 Appellants. Downs describes a content usage layer that permits the
24 specification and enforcement of the conditions or restrictions imposed on

1 the use of content at end user devices. FF 02. The specification and
2 enforcement of conditions are usage rights. These usage rights are included
3 in a metadata container. FF 03. Usage rights include conditions that may
4 specify the number of plays allowed for the content, whether the creation of
5 a secondary copy is permitted, the number of secondary copies, or whether
6 the content can be copied to an external device. FF 02. As such, the usage
7 conditions embedded in the metadata container are defined and enforceable,
8 which is the same as the meta-rights of the claimed invention.

9 The Appellants specifically contend that the usage rights described by
10 Downs are for consumers and are not meta-rights the content provider or
11 store exercises to issue rights to consumers. App. Br. 6. We disagree with
12 the Appellants. First, the Appellants fail to provide any specific rationale as
13 to the general allegation that Downs' usage rights cannot be the claimed
14 meta-rights. As discussed *supra*, the usage rights embedded in the metadata
15 container are the same as the claimed meta-rights. App. Br. 6. Additionally,
16 Downs describes that the content stores can add and narrow the usage
17 conditions as long as the original conditions are not invalidated. FF 02. As
18 such, the content providers set and define the original conditions and content
19 stores can add or narrow conditions. Therefore, the Appellants' argument
20 that the stores simply pass usage conditions on to the consumers is not found
21 persuasive.

22 The Appellants further argue that the usage rights described by Downs
23 are simply passed from the store or distributor to the consumer and there is
24 not description as to how to specify and control what usage rights and
25 conditions can be added or removed. App. Br. 6. We disagree with the
26 Appellants. Claim 1 fails to recite any limitations requiring how to specify

1 and control what usage rights and conditions can be added or removed. As
2 such, the Appellants are arguing limitations not found in the claims and
3 these arguments are not found persuasive.

4 The Appellants additionally contend that Downs fails to describe meta-
5 rights specifying (1) a derivable right that can be derived from exercising the
6 meta-right by the rights consumer, (2) a condition that must be satisfied to
7 exercise the meta-right, and (3) a state variable related to the condition.
8 App. Br. 7-8. The Appellants specifically argue that Downs merely
9 describes purchase transaction criteria and not meta-rights. App. Br. 7. We
10 disagree with the Appellants. As discussed *supra*, Downs describes usage
11 rights embedded in a metadata container that describes a right that can be
12 derived from exercising the usage right. FF 02. For example, Downs
13 describes a usage right of the ability to create a secondary copy of purchased
14 content and the exercise of this usage right allows a user to create a copy.
15 FF 02. Downs further describes a condition that must be satisfied in order to
16 exercise usage rights. FF 02. For example, Downs describes a usage right
17 of specifying the number of secondary copies a user is permitted to make,
18 where the condition that must be satisfied is that the number of copies
19 already made must be below a defined threshold number. FF 02. Downs
20 also describes a state variable to a condition, including variables for the
21 number of copies already created or a variable describing the total number of
22 copies permitted. FF 02. Therefore, Downs describes more than a mere
23 financial transaction. The Appellants fail to provide any further rationale as
24 to how Downs is deficient in describing the claimed limitations and as such
25 the Appellants' arguments are not found persuasive.

1 The Appellants further contend that dependant claims 2-9, 11-18, and
2 28-29 are allowable for the same reasons discussed *supra*. App. Br. 8.
3 However, the Appellants' arguments in support of claims 1 and 10 were not
4 found persuasive *supra* and therefore are not found persuasive here for the
5 same reasons.

6 CONCLUSIONS OF LAW

7 The Examiner did not err in rejecting claims 1-18 and 28-29 under 35
8 U.S.C. § 102(b) as being anticipated by Downs.

9 DECISION

10 To summarize, our decision is as follows.

- 11 • The rejection of claims 1-18 and 28-29 under 35 U.S.C. § 102(b) as
12 being anticipated by Downs is sustained.

13 No time period for taking any subsequent action in connection with this
14 appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R.
15 § 1.136(a)(1)(iv) (2007).

16 AFFIRMED

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20

21 mev

22 NIXON PEABODY, LLP
23 401 9TH STREET, NW
24 SUITE 900
25 WASHINGTON DC 20004-2128

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	Filing Date	06-06-2002
	First Named Inventor	Xin Wang
	Art Unit	3621
	Examiner Name	Evens J. Augustin
	Attorney Docket Number	111325-290100

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Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	22204
Filer:	Jeffrey Costellia/Yvette Jones
Filer Authorized By:	Jeffrey Costellia
Attorney Docket Number:	111325-290100
Receipt Date:	10-SEP-2010
Filing Date:	06-JUN-2002
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Application Type:	Utility under 35 USC 111(a)

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

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

I hereby appoint:

Practitioners associated with the Customer Number:

98804

OR

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

Name	Registration Number	Name	Registration Number

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

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

The address associated with Customer Number:

98804

OR

<input type="checkbox"/> Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

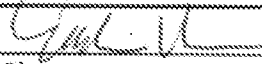
Assignee Name and Address:

ContentGuard Holdings, Inc.
222 N. Sepulveda Blvd., Suite 1400
El Segundo, CA 90245

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

SIGNATURE of Assignee of Record

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

Signature		Date	9/16/2010
Name	Eddie Chen	Telephone	
Title	Chief Technology Officer		

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

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

Privacy Act Statement

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

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

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

AUTHORIZATION TO ACT ON BEHALF OF THE ASSIGNEE

UNDER 37 CFR 3.73(b)(2)(i)

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

Sir:

The practitioners associated with Customer Number 98804 have been authorized (or empowered) to act on behalf of ContentGuard Holdings, Inc. before the United States Patent and Trademark Office (i.e. to sign the enclosed submission on behalf of the assignee), pursuant to 37 CFR 3.73(b)(2)(i).

If any additional information is required in this regard, please contact the undersigned as soon as possible.

Respectfully submitted,

Date: September 16, 2010

/Stephen M. Hertzler, Reg. No. 58,247/
Stephen M. Hertzler
Registration No. 58,247

REED SMITH LLP
CUSTOMER NO.: 98804
1301 K Street N.W.
Suite 1100 – East Tower
Washington, D.C. 20005

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

STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Xin Wang, et al.

Application No./Patent No.: 10/162,701 Filed/Issue Date: 06-06-2002

Titled: Method and apparatus managing the transfer of rights

CONTENTGUARD HOLDINGS, INC., a Corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

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

the patent application/patent identified above, by virtue of either:

A. An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 013316, Frame 0992, or for which a copy therefore is attached.

OR

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

1. From: _____ To: _____

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

2. From: _____ To: _____

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

3. From: _____ To: _____

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

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

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

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

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

/Stephen M. Hertzler, Reg. No. 58,247/
Signature

2010-09-16
Date

Stephen M. Hertzler, Reg. No. 58,247
Printed or Typed Name

Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Privacy Act Statement

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

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1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
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8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt

EFS ID:	8434134
Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	22204
Filer:	Stephen M. Hertzler
Filer Authorized By:	
Attorney Docket Number:	111325-290100
Receipt Date:	16-SEP-2010
Filing Date:	06-JUN-2002
Time Stamp:	15:41:45
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	Executed_POA.pdf	673384 <small>656bb8c41bc47cfc1f8d885dd454c9a76d2af7fb</small>	no	2

Warnings:

Information:

2	Miscellaneous Incoming Letter	Authorization_Statement.pdf	457176	no	1
			14f6b1acd391e279d24182bfff821898c15697ac0		

Warnings:

Information:

3	Assignee showing of ownership per 37 CFR 3.73(b).	290100_37CFR373_Certificate.pdf	422760	no	2
			49bf791be1143ac80cbe81aa471161332812704		

Warnings:

Information:

Total Files Size (in bytes):			1553320		
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New Applications Under 35 U.S.C. 111

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

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

New International Application Filed with the USPTO as a Receiving Office

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

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Patent Application of:	)	Confirmation No. 6475
Xin WANG et al.	)	Group Art Unit: 3621
Serial No. 10/162,701	)	Examiner: Evens J. AUGUSTIN
Filed: June 6, 2002)	
For: METHOD AND APPARATUS	)	Date: September 23, 2010
MANAGING THE TRANSFER OF)	
RIGHTS)	

**REQUEST FOR RECONSIDERATION OF THE
DECISION ON APPEAL DATED JULY 27, 2010**

Mail Stop Appeal Brief – Patents

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

Sir:

Appellants respectfully request reconsideration of the Board of Patent Appeals and Interference’s Decision on Appeal dated July 27, 2010 (“the Decision”). Appellants believe the Board misapprehended or overlooked the express definition of the claim terms set forth in the Specification, and thus, misconstrued the scope of the claims.

I. APPELLANTS’ INVENTION

Appellants conceived a novel and non-obvious method and license to be used within a system for transferring rights. Aspects of the invention include obtaining a set of rights associated with an item, the set of rights including a meta-right, wherein the meta-right is provided in digital form, is enforceable by a repository, and specifies a derivable right that can be derived from exercising the meta-right by the rights consumer, a condition that must be satisfied to exercise the meta-right, and a state variable related to the condition, the derivable right being

another meta-right or a usage right, whereby the meta-right is distinct from any usage rights specifying how the item can be used and distributed, determining by a repository whether the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right, and if the rights consumer is entitled to exercise the meta-right to derive the derivable right specified by the meta-right, deriving the derivable right and generating a license including the derived right, the license being enforceable by a repository.

II. SUBJECT MATTER REJECTION UNDER 35 U.S.C. 102(B)

Claims 1-18, 28 and 29 are not anticipated by *Downs et al.* (U.S. Patent No. 6,226,618). Specifically, Appellants maintain that *Downs et al.* fails to disclose, teach or suggest meta-rights as recited in the pending claims.

As noted in Appellants' Appeal Brief filed on September 15, 2008, *Downs et al.* is generally directed to a conventional digital rights management (DRM) system in which rights to content are exercised by consumers to thereby control use of the content by the consumers, i.e. users of the content. In the Decision, the Patent Office Board of Appeals ("the Board") found that "Downs describes usage rights embedded in a metadata container that describes a right that can be derived from exercising the usage right, FF 02. For example, Downs describes a usage right of the ability to create a secondary copy of the purchased content *and the exercise of the right allows a user to create a copy*" (emphasis supplied). See Page 7, lines 10-14 of the Decision.

It is clear from the example noted by the Board that *Downs et al.* teaches rights that control *use* of content, such as creating a copy of the content. In contrast, the claimed invention is directed to meta-rights that control the derivation of a "derivable right" which is "another meta-right or a usage right". The meta-right controls the creation, i.e. derivation, of another right. Exercise of the meta-right does not result in use of content. Instead, when a meta-right is exercised, a derivable right is what is derived. For example, when construed properly (as noted below in reference to the Decision on Appeal in Appeal No. 2009-008480), the meta-right of issuing a play right to a song is different from the play right itself. When exercising the meta-

right, the play right is derived or issued to its existence, whereas when exercising the play right, the song is played and no other rights are derived. Furthermore, embedding usage rights in a metadata container does not make or change usage rights into meta-rights; this is because the metadata container in *Downs et al.* only carries the information it contains as metadata (not meta-rights in the sense of the Specification) to content.

The specification expressly defines the claimed “meta-right” as “... the rights that one has to generate, manipulate, modify, dispose of, or otherwise derive rights.” See paragraph [0028] of the Specification. In the Decision, the Board appears to ignore this express definition set forth in the Specification of the application.

In contrast, in a previous case, the Board came to the decision that such a definition must be considered. See Decision on Appeal, Appeal No. 2009-008480 (“the Prior Decision”), issued December 16, 2009, a copy of which is submitted herewith. (Appellants note that both the present case and the prior case were decided before Judge Murriel E. Crawford).

In the case related to the Prior Decision, the application is owned by the Party in Interest in this case and the claims also recited “meta-rights”. Although the claims under appeal in the Prior Decision are not the same as those at issue in this case, a similar definition of “meta-rights” was set forth in the specification. In the Prior Decision, the Board construed the term “meta-rights” in view of the definition set forth in the Specification and thus came to the conclusion that “(w)e do not find the information about conditions set forth in ‘metadata’ that *Downs et al.* discloses to be the same as the ‘meta-rights’ as claimed.” See page 7, lines 4-8 of the Prior Decision. As a result, the Examiner’s rejection of the claims, based on the same reference at issue in this case, was reversed in the Prior Decision.

Due to the distinctions in the claims and the fact that the application at issue in the Prior Decision is not legally related to the application at issue in this appeal, Appellants did not realize, at the time of filing the Appeal Brief in this case, the import of the prior appeal. However, in view of the somewhat contradictory decisions in the two cases, it becomes apparent that the Prior Decision is relevant to this appeal.

Downs et al. is completely silent with regard to meta-rights, as properly construed. Appellants respectfully submit that merely allowing the content store to add to or narrow usage conditions in a blunt and systematic manner, irrespective to any content and any usage right granted to the content the usage conditions are associated with, “as long as it doesn’t invalidate the original conditions set by the Content Provider” as disclosed by *Downs et al.* is not the same as specifying and exercising meta-rights to derive the derivable rights specified by the meta-rights, as recited by the present independent claims 1 and 10. Simply disclosing that the content store may “add to or narrow the Usage Conditions as long as it doesn’t invalidate the original conditions set by the Content Provider” neither anticipates nor renders obvious at least these features recited by the claims.

Therefore, at least for the above reasons, Appellant maintain that *Downs et al.* fails to disclose, teach or suggest the invention recited in independent claims 1 and 10. The dependent claims are also allowable over *Downs et al.* based on their own merits and for at least the reasons as argued above with respect to their independent claims.

III. ADDITIONAL POTENTIALLY RELEVANT CASES ON APPEAL

In view of the somewhat contradictory decisions in the Decision and the Prior Decision discussed above, Appellants note that the following applications on appeal may also be considered to be relevant to these proceedings. The applications are noted herein because the term “meta-right” is recited in one or more of the claims on appeal.

- U.S. Patent Application No. 10/956,070, filed October 4, 2004 (Notice of Appeal filed March 13, 2008) (Attorney Docket No. 111325-235000)
- U.S. Patent Application No. 11/389,096, filed March 27, 2006 (Notice of Appeal filed June 28, 2010) (Attorney Docket No. 111325-164700)

Due to the distinctions in the claims and the fact that these applications are not legally related to the application at issue in this appeal, Appellants did not realize, at the time of filing the Appeal Brief in this case, the potential relevance of these appeals.

IV. CONCLUSIONS

Accordingly, Appellants submit that the affirmance of the rejection of claims 1-18, 28 and 29 under 35 U.S.C. § 102(b) in view of *Downs et al.* should be reconsidered and reversed, and an indication of immediate allowability is respectfully requested.

Respectfully submitted,

Date: September 23, 2010

/Marc Kaufman, Reg. No. 35,212/
Marc Kaufman
Registration No. 35,212

REED SMITH LLP
CUSTOMER NO.: 98804
1301 K Street N.W.
Suite 1100 – East Tower
Washington, D.C. 20005



UNITED STATES PATENT AND TRADEMARK OFFICE

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

Table with columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Includes fields for EXAMINER (AUGUSTIN, EVENS J), ART UNIT (3621), PAPER NUMBER, MAIL DATE (12/16/2009), and DELIVERY MODE (PAPER).
Handwritten notes: RECEIVED JUN 18 2009, NIXON PEABODY LLP, kah

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

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



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/162,212	06/05/2002	Xin Wang	111325-230300	3700
22204	7590	12/16/2009	EXAMINER	
NIXON PEABODY, LLP 401 9TH STREET, NW SUITE 900 WASHINGTON, DC 20004-2128			AUGUSTIN, EVENS J	
			ART UNIT	PAPER NUMBER
			3621	
			MAIL DATE	DELIVERY MODE
			12/16/2009	PAPER

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

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte XIN WANG and BIJAN TADAYON

Appeal 2009-008480
Application 10/162,212
Technology Center 3600

Decided: December 16, 2009

Before MURRIEL E. CRAWFORD, HUBERT C. LORIN, and
JOSEPH A. FISCHETTI, *Administrative Patent Judges*.

LORIN, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Xin Wang and Bijan Tadayon (Appellants) seek our review under 35 U.S.C. § 134 of the final rejection of claims 1-19 and 29-40. We have jurisdiction under 35 U.S.C. § 6(b) (2002).

SUMMARY OF DECISION

We REVERSE.¹

THE INVENTION

The invention “relates to a method and system for digital rights management and, more particularly, to a method and system for automatically offering and granting rights over a communications network or other channels.” Specification [0003].

Claim 1, reproduced below, is illustrative of the subject matter on appeal.

1. A method for transferring usage rights adapted to be associated with items within a digital rights management system, said method comprising:
 - generating, by a supplier, at least one first offer including usage rights and meta-rights for the items, said usage rights defining a manner of use for the items, said meta-rights specifying rights to derive usage rights or other meta-rights for the items;
 - presenting, by the supplier, said offer to a first consumer in said system,

¹ Our decision will make reference to the Appellants’ Appeal Brief (“Br.,” filed Jul. 7, 2006) and the Examiner’s Answer (“Answer,” mailed Feb. 13, 2007).

wherein the offer expresses what rights the consumer can acquire for the items;
receiving, by the supplier, a selection from the first consumer indicating desired usage rights and meta-rights; and
generating, by the supplier, a first license granting to the first consumer the usage rights and meta-rights for the items,
wherein the first license grants the usage rights and meta-rights that are selected by the first consumer during the receiving step.

THE REJECTIONS

The Examiner relies upon the following as evidence of unpatentability:

Downs	US 6,226,618 B1	May 1, 2001
Hitson	US 2002/0010759 A1	Jan. 24, 2002

The following rejections are before us for review:

1. Claims 1-13, 15-18, and 29-40 are rejected under 35 U.S.C. §102(b) as being anticipated by Downs.
2. Claim 14 is rejected under 35 U.S.C. §103(a) as being unpatentable over Downs.
3. Claim 19 is rejected under 35 U.S.C. §103(a) as being unpatentable over Downs and Hitson.

ISSUE

The issue is whether Downs describes, expressly or inherently, “meta-rights” as claimed.

FINDINGS OF FACT

We find that the following enumerated findings of fact (FF) are supported by at least a preponderance of the evidence. *Ethicon, Inc. v.*

Quigg, 849 F.2d 1422, 1427 (Fed. Cir. 1988) (explaining the general evidentiary standard for proceedings before the Office).

1. All the claims call for “meta-rights.”
2. The Specification provides an express definition for “meta-rights”:

Rights can specify transfer rights, such as distribution rights, and can permit granting of rights to others or the derivation of rights. Such rights are referred to as “meta-rights”. Meta-rights are the rights that one has to manipulate, modify, or otherwise derive other meta-rights or usage rights. Meta-rights can be thought of as usage rights to usage rights. Meta-rights can include rights to offer, grant, obtain, transfer, delegate, track, surrender, exchange, and revoke usage rights to/from others. Meta-rights can include the rights to modify any of the conditions associated with other rights. For example, a meta-right may be the right to extend or reduce the scope of a particular right. A meta-right may also be the right to extend or reduce the validation period of a right.

Specification [0030] (p. 9).

3. The Examiner defines “meta-rights” to mean “Sub-rights, or additional usage conditions derived from the usage rights.” Answer 8.
4. According to the Examiner, Downs describes “meta-rights” at col. 9, lines 33-35 and col. 10, ll. 15-18. Answer 3.
5. Col. 9, ll. 33-35, of Downs discloses: “The Metadata Assimilation and Entry Tool 161 is also used to enter the Usage Conditions for the Content 113. The data in Usage Conditions can include copy restriction rules, the wholesale price, and any business rules deemed necessary.”
6. Col. 10, ll. 15-18, of Downs discloses: “The secondary usage conditions data can include retail business offers such as Content 113

purchase price, pay-per-listen price, copy authorization and target device types, or timed-availability restrictions.”

PRINCIPLES OF LAW

Claim Construction

During examination of a patent application, a pending claim is given the broadest reasonable construction consistent with the specification and should be read in light of the specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004).

Anticipation

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987).

ANALYSIS

The rejection of claims 1-13, 15-18, and 29-40 under 35 U.S.C. §102(b) as being anticipated by Downs.

It was proper that the Examiner first attempted to construe the claims before reaching a determination as to whether Downs anticipated the claimed subject matter. *Cf. In re Crish*, 393 F.3d 1253, 1256 (Fed. Cir. 2004): “A determination that a claim is anticipated, under 35 U.S.C. § 102(b) involves two analytical steps. First, the Board must interpret the claim language, where necessary. Because the PTO is entitled to give claims their broadest reasonable interpretation, our review of the Board's claim construction is limited to determining whether it was reasonable. *In re*

Morris, 127 F.3d 1048, 1055 (Fed. Cir. 1997). Secondly, the Board must compare the construed claim to a prior art reference and make factual findings that “each and every limitation is found either expressly or inherently in [that] single prior art reference.” *Celeritas Techs. Ltd. v. Rockwell Int'l Corp.*, 150 F.3d 1354, 1360 (Fed. Cir. 1998).” FF 3.

However, “claims are to be read in the light [of the specification], not in a vacuum.” *In re Dean*, 291 F.2d 947, 951 (CCPA 1961). The written description is “always highly relevant” in construing a claim, and “the specification ... is the single best guide to the meaning of a disputed term.” *Vitronics Corp. v. Conceptor, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

Here the Specification provides an express definition of “meta-rights”. FF 2. The definition for “meta-rights” given in the Specification governs the construction to be given that term in the claims.

[O]ur cases recognize that the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor's lexicography governs. *See CCS Fitness, Inc. v. Brunswick Corp.*, 288 F.3d 1359, 1366 (Fed. Cir. 2002). In other cases, the specification may reveal an intentional disclaimer, or disavowal, of claim scope by the inventor. In that instance as well, the inventor has dictated the correct claim scope, and the inventor's intention, as expressed in the specification, is regarded as dispositive. *See SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys., Inc.*, 242 F.3d 1337, 1343-44 (Fed. Cir. 2001).

Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005).

The Examiner did not rely on the definition for “meta-rights” expressly provided in the Specification but construed the term in a manner that would cover information about conditions set forth in “metadata” like

those described in Downs. FF 5 - 6. However, information about conditions set forth in “metadata” is not the same as “meta-rights” as the Appellants have defined them - which are “the rights that one has to manipulate, modify, or otherwise derive other meta-rights or usage rights.” FF 2. We do not find the information about conditions set forth in “metadata” that Downs discloses to be the same as the “meta-rights” as claimed. Accordingly, we find that a prima facie case of anticipation of the claimed subject matter over Downs has not been established.

The rejection of claim 14 under 35 U.S.C. §103(a) as being unpatentable over Downs.

and

The rejection of claim 19 under 35 U.S.C. §103(a) as being unpatentable over Downs and Hitson.

Claims 14 and 19 depend on claim 15 whose rejection under § 102 is reversed. *See supra*. The rationale in support of the rejections of these claims relies on a construction of the claim term “meta-rights” which is inconsistent with the definition of that term as expressly provided for in the Specification. Answer 6-7. See FF 2. Since the claims have not been given the broadest reasonable construction *in light of the Specification*, a prima facie case of obviousness of the *claimed* subject matter has not been established.

CONCLUSIONS

We conclude that the Appellants have shown that the Examiner erred in rejecting claims 1-13, 15-18, and 29-40 under 35 U.S.C. §102(b) as being anticipated by Downs; claim 14 under 35 U.S.C. §103(a) as being

Appeal 2009-008480
Application 10/162,212

unpatentable over Downs; and, claim 19 is rejected under 35 U.S.C. §103(a)
as being unpatentable over Downs and Hitson.

DECISION

The decision of the Examiner to reject claims 1-19 and 29-40 is
reversed.

REVERSED

mev

NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON DC 20004-2128

Electronic Acknowledgement Receipt

EFS ID:	8482343
Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	98804
Filer:	Stephen M. Hertzler
Filer Authorized By:	
Attorney Docket Number:	111325-290100
Receipt Date:	23-SEP-2010
Filing Date:	06-JUN-2002
Time Stamp:	14:05:01
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for Rehearing of BPAI Decision	290100_Rehearing.pdf	504883 <small>bd3285771929b88d40c6859b3405b9035a50e5d1</small>	no	5

Warnings:

Information:

2	Affidavit/Dec/Exhibit after Notice of Appeal	290100_Decision_in_230300.pdf	260322 c788a024d5329e83997dd9270ea970e5bd d5d736	no	10
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Total Files Size (in bytes):	765205
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New Applications Under 35 U.S.C. 111

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

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New International Application Filed with the USPTO as a Receiving Office

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		10162701	
	Filing Date		2002-06-06	
	First Named Inventor	Xin Wang		
	Art Unit	3621		
	Examiner Name	AUGUSTIN, EVENS J		
	Attorney Docket Number	111325-290100		

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	6397355	B1	2002-05-28	Curtis et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1					

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NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	10162701
	Filing Date	2002-06-06
	First Named Inventor	Xin Wang
	Art Unit	3621
	Examiner Name	AUGUSTIN, EVENS J
	Attorney Docket Number	111325-290100

1	Workshop on Digital Rights Management for the Web, World Wide Web Consortium, Minutes from the Architecture/ Infrastructure Session, January 2001.	<input type="checkbox"/>
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If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	10162701
	Filing Date	2002-06-06
	First Named Inventor	Xin Wang
	Art Unit	3621
	Examiner Name	AUGUSTIN, EVENS J
	Attorney Docket Number	111325-290100

CERTIFICATION STATEMENT

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

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

OR

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

- See attached certification statement.
- Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- None

SIGNATURE

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

Signature	/Stephen M. Hertzler, Reg. 58247/	Date (YYYY-MM-DD)	2010-09-23
Name/Print	Stephen M. Hertzler	Registration Number	58,247

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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

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

Electronic Patent Application Fee Transmittal

Application Number:	10162701
Filing Date:	06-Jun-2002
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Filer:	Stephen M. Hertzler
Attorney Docket Number:	111325-290100

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	8485435
Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	98804
Filer:	Stephen M. Hertzler
Filer Authorized By:	
Attorney Docket Number:	111325-290100
Receipt Date:	23-SEP-2010
Filing Date:	06-JUN-2002
Time Stamp:	23:08:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Filed (SB/08)	290100_-_2010-09-23_-_IDS. pdf	412274 <small>8167bcab58560d5ad31f444ef6dbbdf323e adc49</small>	no	4

Warnings:

Information:

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2	NPL Documents	Workshop_on_Digital_Rights.pdf	1426089	no	12
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Warnings:

Information:

3	Fee Worksheet (PTO-875)	fee-info.pdf	29890	no	2
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New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

Electronic Patent Application Fee Transmittal

Application Number:	10162701
Filing Date:	06-Jun-2002
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Filer:	Stephen M. Hertzler
Attorney Docket Number:	111325-290100

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:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Submission- Information Disclosure Stmt	1806	1	180	180
Total in USD (\$)				180

Electronic Acknowledgement Receipt

EFS ID:	8489181
Application Number:	10162701
International Application Number:	
Confirmation Number:	6475
Title of Invention:	Method and apparatus managing the transfer of rights
First Named Inventor/Applicant Name:	Xin Wang
Customer Number:	98804
Filer:	Stephen M. Hertzler
Filer Authorized By:	
Attorney Docket Number:	111325-290100
Receipt Date:	24-SEP-2010
Filing Date:	06-JUN-2002
Time Stamp:	07:52:43
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$180
RAM confirmation Number	9477
Deposit Account	501529
Authorized User	

The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Fee Worksheet (PTO-875)	fee-info.pdf	29890 424b6826e8ca98ca81ed7512543ca0a26d865c55	no	2

Warnings:**Information:**

Total Files Size (in bytes):	29890
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/162,701	06/06/2002	Xin Wang	111325-290100

CONFIRMATION NO. 6475

POA ACCEPTANCE LETTER

98804
Reed Smith LLP
P.O. Box 488
Pittsburgh, PA 15230



Date Mailed: 09/29/2010

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/16/2010.

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

/snguyen/

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



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/162,701	06/06/2002	Xin Wang	111325-290100

CONFIRMATION NO. 6475

POWER OF ATTORNEY NOTICE



22204
NIXON PEABODY, LLP
401 9TH STREET, NW
SUITE 900
WASHINGTON, DC 20004-2128

Date Mailed: 09/29/2010

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 09/16/2010.

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

/snguyen/

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



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Table with columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
Row 1: 10/162,701, 06/06/2002, Xin Wang, 10-537-US (cg290100), 6475
Row 2: 98804, 7590, 11/19/2010, [Empty], [Empty]
Row 3: Reed Smith LLP, P.O. Box 488, Pittsburgh, PA 15230, [Empty], [Empty]
Row 4: [Empty], [Empty], [Empty], EXAMINER, [Empty]
Row 5: [Empty], [Empty], [Empty], AUGUSTIN, EVENS J, [Empty]
Row 6: [Empty], [Empty], [Empty], ART UNIT, PAPER NUMBER
Row 7: [Empty], [Empty], [Empty], 3621, [Empty]
Row 8: [Empty], [Empty], [Empty], NOTIFICATION DATE, DELIVERY MODE
Row 9: [Empty], [Empty], [Empty], 11/19/2010, ELECTRONIC

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1 UNITED STATES PATENT AND TRADEMARK OFFICE

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3
4 BEFORE THE BOARD OF PATENT APPEALS
5 AND INTERFERENCES
6

7
8 *Ex parte* XIN WANG,
9 THANH TA,
10 GUILLEMO LAO, and
11 EDDIE J. CHEN
12

13
14 Appeal 2009-011700
15 Application 10/162,701
16 Technology Center 3600
17

18
19 Before MURRIEL E. CRAWFORD, ANTON W. FETTING, and
20 BIBHU R. MOHANTY, *Administrative Patent Judges*.

21 FETTING, *Administrative Patent Judge*.

22 DECISION ON REQUEST FOR REHEARING¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

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STATEMENT OF CASE

This is a decision on rehearing in Appeal 2009-011700. We have jurisdiction under 35 U.S.C. § 6(b) (2002). Requests for Rehearing are limited to matters misapprehended or overlooked by the Board in rendering the original decision. 37 C.F.R. § 41.52 (2007).

ISSUES ON REHEARING

Appellants raise an issue that relates to the construction of claim 1. The Appellants argue the panel should have been constrained to construe claim 1 according to a definition of meta-rights in the specification.

ANALYSIS

In our decision, we found that claims 1-18 and 28-29 were anticipated by the applied art. Decision 8.

The Appellants argue that Downs describes usage rights, and such rights are not meta-rights as in the claims. Request 2-3. The Specification states that “[m]eta-rights can be thought of as usage rights to usage rights.” Specification ¶ 28. The Specification therefore contradicts the Appellants’ contention and is consistent with the panel’s construction.

The Appellants also seek to put additional evidence in the form of related Board decisions before the panel for consideration. Such evidence is not timely entered at this stage. 37 C.F.R. § 41.33 (2007).

CONCLUSION

Nothing in Appellants’ request has convinced us that we have improperly construed claim 1 as argued by the Appellants. Accordingly, we deny the request.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/162,701	06/06/2002	Xin Wang	10-537-US (cg290100)	6475

98804 7590 01/25/2011

Reed Smith LLP
P.O. Box 488
Pittsburgh, PA 15230

EXAMINER

ART UNIT PAPER NUMBER

DATE MAILED: 01/25/2011

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10162701	6/6/2002	WANG ET AL.	10-537-US (cg290100)

Reed Smith LLP
P.O. Box 488
Pittsburgh, PA 15230

EXAMINER

EVENS J.. AUGUSTIN

ART UNIT	PAPER
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3621 20110119

DATE MAILED:

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Commissioner for Patents

The Board of Patent Appeals and Interferences ("the Board") affirmed the rejections against claims 1-8 and 28-29 on July 27th, 2010. A decision on reconsideration was denied by the Board on November 19, 2010 . Applicant is given a ONE MONTH TIME PERIOD from the mailing date of this letter in which to submit a request for continued examination (RCE) under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e), to avoid ABANDONMENT of the application. NO EXTENSIONS OF TIME UNDER 37 CFR 1.136(a) WILL BE GRANTED. Prosecution is otherwise closed.

/EVENS J. AUGUSTIN/
Primary Examiner, Art Unit 3621



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Table with columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO., EXAMINER, ART UNIT, PAPER NUMBER, NOTIFICATION DATE, DELIVERY MODE. Includes application details for Xin Wang and examiner Augustin, Evens J.

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

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ptoipinbox@reedsmith.com
mskaufman@reedsmith.com

Notice of Abandonment	Application No.	Applicant(s)	
	10/162,701	WANG ET AL.	
	Examiner	Art Unit	
	EVENS J. AUGUSTIN	3621	

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

This application is abandoned in view of:

1. Applicant's failure to timely file a proper reply to the Office letter mailed on _____.
 - (a) A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
 - (b) A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.
(A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
 - (c) A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
 - (d) No reply has been received.

2. Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
 - (a) The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
 - (b) The submitted fee of \$_____ is insufficient. A balance of \$_____ is due.
The issue fee required by 37 CFR 1.18 is \$_____. The publication fee, if required by 37 CFR 1.18(d), is \$_____.
 - (c) The issue fee and publication fee, if applicable, has not been received.

3. Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
 - (a) Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
 - (b) No corrected drawings have been received.

4. The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.

5. The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.

6. The decision by the Board of Patent Appeals and Interference rendered on 07/27/10 and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. The reason(s) below:

/EVENS J. AUGUSTIN/
Primary Examiner, Art Unit 3621

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.