

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
TYLER DIVISION**

MIRROR WORLDS, LLC,

Plaintiff,

v.

APPLE INC.,

Defendant.

Civil Action No. 6:08-CV-88 LED

JURY TRIAL DEMANDED

APPLE INC.,

Counterclaim Plaintiff,

v.

MIRROR WORLDS, LLC,  
MIRROR WORLDS TECHNOLOGIES,  
INC.,

Counterclaim Defendants.

**EXPERT REPORT OF DR. FEINER RE: CLAIM CONSTRUCTION OF US. PATENT  
NOS. 6,006,227; 6,638,313; 6,725,427; and 6,768,999**

## **I. QUALIFICATIONS**

A copy of my *curriculum vitae*, which describes my qualifications, responsibilities, employment history, honors, awards, appointments, society memberships and publications is attached to this report as Exhibit A.

## **II. SCOPE OF WORK**

I have been retained by Weil Gotshal & Manges LLP on behalf of Apple Inc., and asked to provide my opinion about how a hypothetical person of “ordinary skill in the art” would understand certain aspects, including certain claim terms and phrases, of four U.S. Patents, Nos. 6,006,227; 6,638,313; 6,725,427; and 6,768,999 (the “Mirror Worlds patents”, respectively “the ’227 patent”, “the ’313 patent”, “the ’427 patent”, and “the ’999 patent”).<sup>1</sup> For certain claim phrases that use the word “means” and a functional word or phrase, I also have been asked to determine (1) whether the phrase by itself connotes a definite structure to a person of ordinary skill in the art; and separately, (2) what structures described in the patents are both clearly linked to the function and necessary to perform the function.

I note that the ‘227 patent, ‘313 patent, and ‘427 patent have identical specifications, except for their titles and the few lines at the top of column 1 in the ‘313 patent and ‘427 patent that state that those patents are continuations of the application that led to the ‘227 patent. For simplicity and consistency, throughout this report I refer to the ‘227 patent specification only, though this reference should be understood as a reference to all three identical specifications.

---

<sup>1</sup> Copies of U.S. Patent Nos. 6,006,227; 6,638,313; 6,725,427; and 6,768,999 are attached hereto as Exhibits B-E.

### III. MATERIALS CONSIDERED

In forming the opinions expressed in this report, I reviewed and considered the Mirror Worlds patents and their file histories. I also considered my own knowledge and experience regarding the perspective of a person of ordinary skill in the art.

### IV. PERSON OF ORDINARY SKILL IN THE ART

I understand that patents are to be interpreted from the point of view of a hypothetical person of “ordinary skill in the art” as of the time of the invention. Here, the Mirror Worlds patents all claim priority back to 1996, although I understand that Apple contends that the ’999 patent is only entitled to a priority date of 2001. Throughout this report, I apply the perspective of a person with a Ph.D. in computer science in 1996, or some equivalent combination of education and experience.

### V. CLAIM TERMS TO BE CONSTRUED

#### A. “Stream”

A person of ordinary skill reviewing the Mirror Worlds patents would understand that the word “stream” was not being used in an ordinary sense, but rather to have a specific meaning defined in the Mirror Worlds patents. The person of ordinary skill would understand that the word “stream” in the Mirror Worlds patents means “*a time-ordered sequence of documents that functions as a diary of a person or an entity’s electronic life and that is designed to have three main portions: past, present and future.*”

**Specification.** The Mirror Worlds patents explain that they present a “document stream operating system,” which is an alternative to “conventional operating systems” that use hierarchical file-and-folder organization:

- ’227 patent at 1:20-2:24<sup>2</sup>: “Conventional operating systems frequently confuse inexperienced users because conventional operating systems are not well

---

<sup>2</sup> Throughout this report, emphasis is added unless otherwise stated.

suiting to the needs of most users.... *[C]onventional operating systems require the user to invent pointless names for files and to construct organizational hierarchies that quickly become obsolete.* Named files are an invention of the 1950's and the hierarchical directories are an invention of 1960's.... *[C]onventional operating systems suffer from at least the following disadvantages: (1) a file must be 'named' when created and often a location in which to store the file must be indicated resulting in unneeded overhead; (2) users are required to store new information in fixed categories, that is directories or subdirectories, which are often an inadequate organizing device;... and (6) the historical context of a document is lost because no tracking of where, why and how a document evolves is performed. 'Naming' a file when created and choosing a location in which to place the file is unneeded overhead: when a person grabs a piece of paper and starts writing, no one demands that a name be bestowed on the sheet or that a storage location be found. Online, many filenames are not only pointless but useless for retrieval purposes. Storage locations are effective only as long as the user remembers them....*

*A solution to these disadvantages is to use a document stream operating system.... One object of the present invention is to provide a document stream operating system and method which solves many, if not all, of the disadvantages of conventional operating systems. Another object of the present invention is to provide a document stream operating system in which documents are stored in one or more chronologically ordered streams. An additional object of the present invention is to provide an operating system in which the location and nature of file storage is transparent to the user, for example, the storage of the files is handled automatically and file names are only used if a user chooses to invent such names."*

- '227 patent at Abstract: "A document stream operating system and method is disclosed in which: (1) documents are stored in one or more chronologically ordered streams; (2) the location and nature of file storage is transparent to the user; (3) information is organized as needed instead of at the time the document is created..."
- '227 patent at 1:4-11: "*The present invention relates to an operating system in which documents are stored in a chronologically ordered 'stream'. In other words, that is, as each document is presented to the operating system, the document is placed according to a time indicator in the sequence of documents already stored relative to the time indicators of the stored documents.*"

As these passages illustrate, the word "stream" is used in the Mirror Worlds patents to describe the operating system that the inventors envisioned as an alternative to conventional operating systems, one where documents are stored in a "stream", instead of in the

hierarchical file and folder system of conventional operating systems. The word “stream” is carefully defined in the specification:

- ’227 patent at 4:6-30: “A ‘stream’ according to the present invention is a time-ordered sequence of documents that functions as a diary of a person or an entity’s electronic life. Every document created and every document sent to a person or entity is stored in a main stream. The tail of a stream contains documents from the past, for example starting with an electronic birth certificate or articles of incorporation. Moving away from the tail and toward the present and future, that is, toward head of the stream more recent documents are found including papers in progress or new electronic mail. A document can contain any type of data including but not limited to pictures, correspondence, bills, movies, voice mail and software programs. Moving beyond the present and into the future, the stream contains documents allotted to future times and events, such as, reminders, calendar items and to-do lists. Time-based ordering is a natural guide to experience. Time is the attribute that comes closest to a universal skeleton-key for stored experience. Accordingly, streams add historical context to a document collection with all documents eventually becoming read-only, analogously as history becomes ‘set in stone’. The stream preserves the order and method of document creation. Also, like a diary, a stream records evolving work, correspondence and transactions because historical context can be crucial in an organizational setting.”
- ’227 patent at 5:53-6:3: “A stream has three main portions: past, present, and future. The ‘present’ portion of the stream holds ‘working documents’, which also includes the timepoint in the stream where new documents are created and where incoming documents are placed. As documents age and newer documents are added, older documents pass from the user’s view and enter the ‘past portion’... The ‘future’ portion of the stream allows documents to be created in the future. Future creation is a natural method of posting reminders, for example, meeting dates and scheduling information. The system allows users to dial to the future by selecting a future timepoint for a document. The present invention keeps the document until that future time occurs.”

These passages show a person of ordinary skill that the Mirror Worlds patents expressly define the word “stream” as “a time-ordered sequence of documents that functions as a diary of a person or an entity’s electronic life,” and that is designed to have “three main portions: past, present and future.”

**File History.** Statements made by Mirror Worlds to the Patent Office during prosecution of the ’227 patent corroborate this understanding. Mirror Worlds told the Patent

Office that “a stream is a time-ordered sequence of documents (data units) that functions as a virtual object (diary).” ’227 CCFH at 765.

**B. “Main Stream” (‘227 patent claims 1, 13, and 25, ‘313 patent claim 2)**

A person of ordinary skill reviewing the Mirror Worlds patents would understand that the phrase “main stream” had a specific meaning in the context of the patents, as opposed to an ordinary meaning in the context of computer science, and would understand that the phrase “main stream” in the Mirror Worlds patents refers to “*a stream that stores every document received by or generated by the computer system.*”

**Specification and File History.** The specification states that “*Every document created and every document send [sic] to a person or entity is stored in a main stream.*” ’227 patent at 4:8-10. Reflecting this, the claims of the ’227 patent (independent claims 1, 13, 25) require a “main stream for receiving each data unit received by or generated by the computer system.” Explaining this claim language to the Patent Office, Mirror Worlds said that a “‘main stream’ is a type of stream which receives every data unit received by (external) or generated by (internal) the computer system.” ’227 CFH at 765 [emphasis in original]. “The requirement that a data unit be in the main stream, as recited in the amended claims, results from the inherent structure of the main stream as the *storage backbone* of the present invention.” ’227 CCFH at 770.

This requirement of storing every document (data unit) in the main stream was part of how Mirror Worlds distinguished its invention from email systems, such as Microsoft Outlook, which use time-based ordering. Outlook, like many other email programs, automatically presents incoming email in time-based order. However, unlike the stream-based operating systems described in the Mirror Worlds patents, Outlook does not organize all of a user’s documents, only email, calendar entries, etc. Thus, as Mirror Worlds told the Patent Office, “[i]n contrast [to Outlook], the present invention as recited in the amended claims does

not permit any segregation from the main stream, but instead requires each data unit to be present at least on the main stream.” ’227 CFH 779.

**C. “Timestamp To Identify” / “Timestamp Which Identifies” (’227 patent claims 1, 13 and 25)**

A person of ordinary skill reviewing the Mirror Worlds patents would understand that the phrase “selecting a timestamp to identify each data unit” had a specific meaning in the context of the patents, as opposed to an ordinary meaning in the context of computer science, and would understand that the phrases “timestamp to identify” and “timestamp which identifies” refer to “*a date and time value that uniquely identifies each document.*”

**Specification and File History.** To the Patent Office, in defining the terminology it used in its claims, Mirror Worlds stated that “a ‘timestamp’ is a date/time used to *uniquely* identify each data unit.” ’227 CFH at 765. One of ordinary skill in the art would have accepted and relied on this definition proffered by Mirror Worlds, as there is nothing inconsistent in the specification or the claims of the patents. Mirror Worlds also told the Patent Office that “a counter which overflows periodically can not be a timestamp, since the timestamp would then not uniquely identify the data unit.” ’227 CFH at 765-766. Here, Mirror Worlds deliberately and repeatedly uses the term “uniquely”, and provides the negative example of a cycling counter, to make it clear that no two data units can have the same timestamp.

**D. “Archiving” (’313 patent claims 1 and 9; ’427 patent claims 1 and 8)**

A person of ordinary skill reviewing the Mirror Worlds patents would understand that the term “archiving” had a specific meaning in the context of the patents, consistent with the ordinary meaning in the context of computer science, and would understand that the phrase “archiving” refers to “*moving from immediately-accessible storage to long-term storage.*”

**Specification and File History.** Mirror Worlds described what “archiving” means in the ’227 patent as follows:

- '227 patent at 10:16-24: “All documents older than some date d may be moved by the server from immediately-accessible storage to cheaper, long-term storage. When a document is archived in this way, however, the browse card of that document may remain available in immediately-accessible storage, so that the archived document appears in a regular way in the viewport. When a user opens an archived document, the user may incur some delay as the server locates and reloads the body of the document.”

This understanding is consistent with the use of “archiving” elsewhere in the specification where *retrieval* of documents from the archive is contemplated:

- '227 patent at 1:60-67: “Data archiving is an area where conventional electronic systems perform poorly compared to paper-based systems. Paper-based systems are first and foremost archiving systems, yet data archiving is difficult in conventional desk-top systems. Often, users throw out old data rather than undertaking the task of archiving and remembering how to get the data back. If *archiving and retrieval of documents* is convenient, old information could be reused more often.”
- '227 patent at 10:25-33: “Automatic archiving is a feature of the standalone embodiment and user-managed web site embodiment. In either embodiment, the streams operating system monitors remaining disk space and *when available space is low, the operating system asks the user to pop in some diskettes or other storage media*. Similarly *when an archived document needs to be reloaded, the operating system tells the user which diskettes or other storage media to insert*.”

From the definition of archiving provided in the specification and from the supporting passages in the specification, a person of ordinary skill in the art would understand “archiving” to mean “*moving from immediately-accessible storage to long-term storage*.”

**E. “Means for selecting a timestamp to identify each data unit” (‘227 patent claim 1)**

As stated above, a person of ordinary skill reviewing the Mirror Worlds patents would understand that the phrase “timestamp to identify” refers to “a date and time value that uniquely identifies each document.” With this in mind, one of ordinary skill in the art in the 1996 timeframe would not recognize “means for selecting a timestamp to identify each data unit” as referring to a particular structure or class of structures. A “timestamp” is a well-known and commonly used computer-software structure. However, the function of “selecting a timestamp

to identify each data unit” is not performed with just a “timestamp.” There needs to be some mechanism (i.e., software structure) for selecting a timestamp for every data unit, such that each timestamp uniquely identifies its data unit. Thus, I understand that “means for selecting a timestamp to identify each data unit” will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

In the ’227 patent, that structure is not disclosed: there is not sufficient structure disclosed to allow performance of the function of “selecting a timestamp to identify each data unit.” The specification contains some limited statements regarding using time to identify data units:

- ’227 patent at 4:34-46: “Users create documents by means of the new and clone operations. New creates a new, empty document and adds the document to the main stream. Clone duplicates an existing document and adds the duplicate to the main stream *at a new time point*. Documents can also be created indirectly through the transfer operation. The transfer operation copies a document from one stream to another stream. *Creation of a document is ‘transparent’ because documents, by default, are added to the at the present time point. Internally, the document is identified by a time indication so no name is required* from the user for the document. Nevertheless, a user can optionally name a document is desired.”
- ’227 patent at 5:53-6:3: “A stream has three main portions: past, present, and future. *The ‘present’ portion of the stream holds ‘working documents’, which also includes the timepoint in the stream where new documents are created and where incoming documents are placed.* As documents age and newer documents are added, older documents pass from the user’s view and enter the ‘past portion’... The ‘future’ portion of the stream allows documents to be created in the future. Future creation is a natural method of posting reminders, for example, meeting dates and scheduling information. *The system allows users to dial to the future by selecting a future timepoint for a document.* The present invention keeps the document until that future time occurs.”
- ’227 patent at 7:44-63: “Setting the viewport time causes the cursor to point to that timepoint position in the stream such that all documents forward of that timepoint, that is, towards the head of the stream have a future timestamp and all documents behind that timepoint, that is, towards the tail, have a past timestamp. As time progresses, this cursor moves forward towards the head of the stream. *When the cursor slips in front of the present timepoint ‘future’ documents are added to the visible part of the stream in the viewpoint, just*

like new mail arrives. The effect of setting the time to the future or past is to reset the time-cursor temporarily to a fixed position designated by the user. Normally the user interface displays all documents from the past up to the time-cursor. Setting the time-cursor to the future allows the user to see documents in the future part of the stream. *Creating a document in the future results in a document with a future timestamp.* Once the user is finished time-tripping, the user can reset to the present time by selecting the ‘Set time to present’ menu option in the time menu.”

Even assuming that these disclosures suggest using timestamps, none of them says anything about how to select a timestamp so that it will *uniquely* identify *each* of the documents, as required. The closest disclosures, highlighted above, are that (1) “documents, by default, are added to the [stream, *sic*] at the present time point. Internally, the document is identified by a time indication so no name is required” and that (2) “Creating a document in the future results in a document with a future timestamp.” These disclosures suggest using computer hardware and software to assign a timestamp to new, cloned, or received documents (data units) that is by default, the current (present) time of the computer system, and that is equal to the future time point selected by the user, if the user has set the “time cursor” that controls which portion of the stream is displayed to the future (i.e., is “time-tripping”).

While this structure would work to assign identifying timestamps to many documents, it does not address three common and important situations. The first is when the system receives a document, such as an academic paper, that has its own date(s). Is the paper stored in the stream at the time that it was received, or is it stored using another date, such as the date that the paper was published? The patents do not disclose how to decide, when a document is received, whether to assign the default (current) timestamp, whether to use some other date associated with the document, or if the latter, what to do if there are multiple dates associated with the document (e.g., if the document were edited by one user at one time, and created by another user at another time).

The second situation is when two documents would otherwise get the same timestamp. For example, how are timestamps assigned if two emails are received at the same

time? Or if a new document is created at the same time an email is received? Or if two articles are received that were published on the same day? If two documents have the same timestamp, then neither is *identified* by the timestamp. It is certainly possible in computer systems for multiple documents to be created and/or received arbitrarily close in time to each other. The Mirror Worlds patents do not explain how to address this situation.

Various solutions occur to me. For example, the system could make the timestamps it uses for identification unique by composing them from two parts: the value of the system clock  $c$  and a value  $u$  intended to ensure uniqueness. Each timestamp that is given a  $c$  identical to that of one or more other timestamps would be given a  $u$  different from that of any of those other timestamps. In part, one way to accomplish this is to serialize requests for timestamps, so that the previous value of  $u$  given for the current value  $c$  is known. However, it is not sufficient for each of a series of requested timestamps that have the same  $c$  to be given a different value of  $u$  (e.g., by resetting  $u$  to 0 whenever a timestamp is requested whose  $c$  is different from that of the last request, and incrementing  $u$  otherwise). The problem with this approach is that it does not take into account the ability to create a document with a future timestamp. That is, for any time  $c$ , there may already be one or more documents previously created at that time “in the future” whose timestamps have that value  $c$  and various values of  $u$ . Therefore, when creating a new timestamp, it will be necessary to ensure that it does not duplicate one already in use (e.g., by using a  $u$  that is higher than the highest  $u$  already in use for the current  $c$ , which could be determined by inspecting documents on the main stream whose timestamps have the current value of  $c$ ). An alternative would be to use a  $u$  that was initialized to 0 at the creation of the main stream and was incremented with the creation of each timestamp, independent of the value of  $c$ . (Note that each timestamp would have a unique value of  $u$ . However,  $c$  is still needed for the timestamp to express time, rather than just creation sequence.)

One of the approaches that I have outlined above would allow the creation of timestamps that uniquely identify documents. However, none of these solutions is disclosed in the Mirror Worlds patents, nor is any other solution disclosed.

The third situation not addressed is how to assign a timestamp to a document that is being modified. The Mirror Worlds patents explain that the “stream preserves the order and method of document creation” and that “like a diary, a stream records evolving work, correspondence and transactions because historical context can be crucial.” ’227 patent at 4:26-29. They also explain that the “[c]lone [operation] duplicates an existing document and adds the duplicate to the main stream at a new time point.” ’227 patent at 4:36-38. The Mirror Worlds patents disclose nothing, however, about how the stream “records evolving work.” Suppose a user begins editing a document that was first created a week earlier. Is a new document with the present timestamp added to the stream when the user opens it? Or is the timestamp the timestamp of the moment it is first modified after opening? Is a new document added to the stream at the present timepoint every time the user “saves” the document? Or, every time the user types a new character? And, how are undo and redo commands handled? Obviously there is a balance here: if too many documents are added to the stream, the stream will become cluttered with many nearly identical versions of the same document. If too few are added, the stream will not serve its purpose of recording “evolving work.” The Mirror Worlds patents do not explain how to handle this.

As a result of these three situations not being addressed by the Mirror Worlds patents, one of ordinary skill in the art would recognize that the Mirror Worlds patents do not provide sufficient structure to allow selection of a timestamp that uniquely identifies each data unit. Thus, there is not sufficient structure disclosed to allow performance of the function of “selecting a timestamp to identify each data unit.” As a result, I understand that the claims containing this means-plus-function element are indefinite.

**F. “means for associating each data unit with at least one chronological indicator having the respective timestamp” (‘227 patent claim 1)**

I understand that the parties agree that a “chronological indicator” is “a data structure containing at least a timestamp.” A person of ordinary skill in the art in the 1996 timeframe would not recognize “means for associating each data unit with at least one chronological indicator having the respective timestamp” as referring to a particular structure or class of structures. I understand that Mirror Worlds contends that “each data unit,” “timestamp,” and “chronological indicator having a respective timestamp” are structural elements. However, the function of “*associating* each data unit with at least one chronological indicator *having* the respective timestamp” is not performed solely by the existence of a “data unit,” “timestamp,” and/or “chronological indicator.” There needs to be some mechanism (i.e., software structure) for putting the timestamp (assuming that it has been selected, which as described above is not disclosed) into the chronological indicator so that it “has” the timestamp. Once the timestamp is put into the chronological indicator, there also needs to be some mechanism (i.e., software structure) to associate the data unit with the chronological indicator. These mechanisms are not described by the claim language, yet are necessary to perform the function of “associating each data unit with at least one chronological indicator having the respective timestamp.” Thus, I understand it will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

**G. “means for associating each data unit with at least one chronological indicator having a respective timestamp which identifies the data unit” (‘227 patent claim 25)**

This phrase is a combination of the two phrases previously discussed, “means for associating each data unit with at least one chronological indicator having the respective timestamp,” and “means for selecting a timestamp to identify each data unit.”

As explained above, one of ordinary skill in the art in the 1996 timeframe would not recognize “means for associating each data unit with at least one chronological indicator

having a respective timestamp which identifies the data unit” as referring to a particular structure or class of structures. I understand that Mirror Worlds contends that “each data unit,” “timestamp,” and “chronological indicator having a respective timestamp” are structural elements. However, the function of “*associating* each data unit with at least one chronological indicator *having* the respective timestamp which identifies the data unit” is not performed solely by the existence of a “data unit,” “timestamp,” and/or “chronological indicator.” There first needs to be some mechanism (i.e., software structure) for selecting a timestamp which identifies the data unit and putting the identifying timestamp into the chronological indicator so that it “has” the timestamp. As explained above, that mechanism is not described in the patents. There further needs to be some mechanism (i.e., software structure) to associate the data unit with the chronological indicator. These mechanisms are not described by the claim language, yet are necessary to perform the function of “*associating* each data unit with at least one chronological indicator *having* the respective timestamp which identifies the data unit.” Thus, I understand that “means for selecting a timestamp to identify each data unit” will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

Furthermore, as described above, the patent does not describe sufficient structure to allow selection of a timestamp that uniquely identifies each data unit. Thus, there is not sufficient structure disclosed to allow performance of the function of “*associating* each data unit with at least one chronological indicator having the respective *timestamp which identifies* the data unit.” As a result, I understand that the claim containing this means-plus-function element is indefinite.

**H. “means for generating a main stream of data units” (‘227 patent claims 1 and 25)**

As stated above, a person of ordinary skill in the art reviewing the Mirror Worlds patents would understand that “main stream” refers to “*a stream that stores every document*

*received by or generated by the computer system.*” I understand that Mirror Worlds disagrees, contending that a “main stream” is “a stream of each data unit, or document, received by or generated by the computer system.” Under either construction, a person of ordinary skill in the art in the 1996 timeframe would not recognize “means for generating a main stream of data units” as referring to a particular structure or class of structure. I understand that Mirror Worlds contends that “a main stream of data units ... for receiving each data unit received by or generated by the computer system” is structure. However, the function of “generating a main stream of data units” is not performed with just a “main stream.” There needs to be some mechanism (i.e., software structure) for generating the main stream. That mechanism is not described by the claim language. Thus, I understand this phrase will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

**I. “means for generating ... at least one substream” (‘227 patent claims 1 and 25)**

I understand that Mirror Worlds contends that a “substream” is “a subset of data units, or documents, yielded by a filter on a stream, the filter identifying certain documents within the stream,” and that Apple contends that a “substream” is “a stream that is a subset of data units, or documents, yielded by a filter on a stream, the filter identifying certain documents within the stream” Under either construction, a person of ordinary skill in the art in the 1996 timeframe would not recognize “means for generating at least one substream” as referring to a particular structure or class of structure. I understand that Mirror Worlds contends that “at least one substream ... for containing data units only from the main stream” is structure. However, the function of “generating at least one substream” is not performed with just a “substream.” There needs to be some mechanism (i.e., software structure) for generating the substream. That mechanism is not described by the claim language. Thus, I understand this phrase will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in

the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

**J. “means for displaying alternative versions of the content of the data units” (‘227 patent claim 6)**

A person of ordinary skill in the art in the 1996 timeframe would not recognize “means for displaying alternative versions of the content of the data units” as referring to a particular structure or class of structures. I understand that Mirror Worlds contends that “alternative versions of the content of the data units” is structure. However, the function of “displaying alternative versions” is not performed with just “alternative versions.” There needs to be some mechanism (i.e., hardware and software structure) for doing the displaying. A wide variety of such mechanisms were known, but no such mechanism is described by the claim language. Thus, I understand this phrase will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

**K. “means for archiving a data unit associated with a timestamp older than a specified time point while retaining the respective chronological indicator and/or a data unit having a respective alternative version of the content of the archived data unit” (‘227 patent claim 9)**

A person of ordinary skill in the art in the 1996 timeframe would not recognize this “means for archiving ...” element as referring to a particular structure or class of structures. I understand that Mirror Worlds contends that “archiving a data unit associated with a timestamp older than a specified time point” and “retaining the respective chronological indicator and/or a data unit having a respective alternative version of the content of the archived data unit” are structural elements. I disagree. A “timestamp” is a known software element, but “archiving a data unit associated with a timestamp older than a specified time point” could be performed by any structure capable of performing that function. It would not even need to be software—it could be performed by a librarian, for example. The same is true for the function of “retaining the respective chronological indicator and/or a data unit having a respective alternative version

of the content of the archived data unit.” In other words, the claim language does not describe any mechanism (i.e., hardware and software structure) for performing the “archiving ...” and “retaining ...” function. Thus, I understand this phrase will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

**L. “means for operating on any of the streams using a set of operations selected by a user” (‘227 patent claim 10)**

A person of ordinary skill in the art in the 1996 timeframe would not recognize “means for operating on any of the streams using a set of operations selected by a user” as referring to a particular structure or class of structures. I understand that Mirror Worlds contends that “a set of operations selected by a user” is structure. I disagree. Moreover, the function of “operating on any of the streams” is not performed with just “set of operations selected by a user.” A mechanism (i.e. software structure) needs to be described for applying the user-selected operation, or set of operations, to the streams. In other words, there needs to be a mechanism so that the “operations selected by a user” are used to perform the function “operating on any of the streams.” The mechanism for allowing use of a user-selected operation on a stream is not described by the claim language. Thus, I understand this phrase will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

**M. “means for generating a data unit comprising an alternative version of the content of another data unit” (‘227 patent claim 12)**

A person of ordinary skill in the art in the 1996 timeframe would not recognize “means for generating a data unit comprising an alternative version of the content of another data unit” as referring to a particular structure or class of structures. I understand that Mirror Worlds contends that “a data unit comprising alternative versions of the content of the data units” is structure. However, the function of “generating a data unit comprising an alternative version” is not performed with just the “data unit comprising alternative versions.” There needs to be some

mechanism (i.e., software structure) for doing the “generating.” No such mechanism is described by the claim language, which, as written, encompasses any possible means of performing the function. Thus, I understand this phrase will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

**N. “document organizing facility” (‘427 patent claims 1, 8, 16, and 25)**

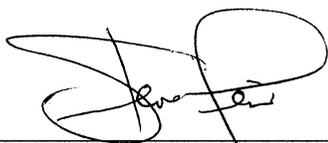
A person of ordinary skill in the art in the 1996 timeframe would not recognize “document organizing facility” as referring to a particular structure or class of structures, because the word “facility” is completely generic. The phrase “document organizing facility” encompasses any possible means of performing the function of “document organizing.” It includes a public library and the desk of an IRS worker (or just about any office worker in America). It also encompasses any number of computer software processes and programs running on computers, including, for example, Windows Explorer and Mac OS Finder. Because the phrase “document organizing facility” encompasses any possible means of performing the function of “document organizing,” I understand it will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

**O. “means for selecting which data units are represented on the display device by selecting one of the document representations and displaying document representations corresponding to data units having timestamps within a range of a timepoint” (‘227 patent claim 25)**

A person of ordinary skill in the art in the 1996 timeframe would not recognize “means for selecting which data units are represented on the display device by selecting one of the document representations and displaying document representations corresponding to data units having timestamps within a range of a timepoint” as referring to a particular structure or class of structures. I understand that Mirror Worlds contends that “document representations” and “pointing device” are structure. However, the function of “selecting which data units are

represented on the display device by selecting one of the document representations and displaying document representations corresponding to data units having timestamps within a range of a timepoint” is not performed with just “document representations” and a “pointing device.” There needs to be some mechanism (i.e., software structure) for doing the “selecting” and “displaying” of the document representations to be displayed, including some means of determining the claimed “range,” and then some means of determining the “document representations corresponding to data units having timestamps” that are within that range. No such mechanisms are described by the claim language, which, as written, encompasses any possible means of performing these functions. Thus, I understand this phrase will be classified as a “means-plus-function” term and that it will be limited to the structures disclosed in the specification that are clearly linked to its function, and necessary to perform that function, if such structure exists.

Dated: November 24, 2009

  
/s/ \_\_\_\_\_  
**Dr. Steven K. Feiner**