Appendix F – Part 16

Defendants' Supplemental Prior Art Statement
'228 Patent
(TC1670-TC1694)

to

TimeBase's Memorandum in Support of Its Motion for Summary Judgment of No Invalidity

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version set, so that at most one version is associated with any coordinate in the version space," at 366.

- *See, e.g.*, "Our framework provides the means by which a database designer can specify a multi-dimensional logical structure to the version set. This logical structure can then be used to choose versions easily and conveniently," at 367.

- **Sciore 1994:**

Sciore 1994 discloses "each point on the multidimensional space is defined by the value of one or more of a plurality of attributes." Specifically, Sciore 1994 discloses, for the bicycle example, attributes style, number of speeds, frame, and design date. Sciore 1994 explicitly discloses that these attributes can be used as part of a "multi-dimensional space" and that defining attribute values will specify a particular version in that multi-dimensional space. For example:

- *See, e.g.*, pages 81, 94–103.

- *See, e.g.*, "An *object* is defined to be an instance of a given *type*. A type defines a set of *attributes* for each of its instances, and a set of *operations* on these instances. The set of attributes and operations is called the *scheme* of the type. Each attribute of an object may contain either a *value* or a *reference* to another object," at 80.

- *See, e.g.*, "This attribute can be thought of as defining a one-dimensional time line, and allows the version set to be viewed as a function from times to versions," at 95–96.

- *See, e.g.*, "In section 5 we examine the semantics of versioning in some common applications, and show in each case how the version set of any object can be viewed as a multidimensional space," at 79.

- *See, e.g.*, "Logical and physical times are orthogonal concepts, and define a two-dimensional version space," at 96.

- *See, e.g.*, "The previous section showed that the semantics of both CAD and historical databases imposes a multidimensional structure on version sets," at 96.

- *See, e.g.*, "Note that under this new definition, instances of *Bicycle* have exactly the same attributes as before . . . . The difference is that three of the attributes have been designated as defining a three-dimensional version space," at 97.

- *See, e.g.*, "The choice of dimensions in Figure 7 was totally arbitrary on our part. We could just as easily have declared Bicycle to have fewer (or more) dimensions," at 98.

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- *See, e.g.*, "In particular, a desired version of an object can be specified by giving its coordinates in the multidimensional space defined by its type," at 98.

- *See, e.g.*, "We also considered the semantics of versioning applications, and saw that version sets often form a multidimensional space," at 103.

- **Stonebraker 1990:**

Stonebraker 1990 discloses "each point on the multidimensional space is defined by the value of one or more of a plurality of attributes." Specifically, Stonebraker 1990 discloses a multi-dimensional database where the attributes are points on axes of a multidimensional space. For example:

- *See, e.g.*, Introduction, page 125 (saying that POSTGRES is a "three-dimensional solution" to "real-world data management problems").

- *See, e.g.*, section II.B, beginning on page 126 (discussing attribute types and inheritance)

- *See, e.g.*, "It is also possible to interact with at POSTGRES database by utilizing a navigational interface. . . . Because POSTGRES gives each record a unique identifier (OID), it is possible to use the identifier for one record as a data item in a second record. Using optionally definable indexes on OID's it is then possible to navigate from one record to the next by running one query per navigation step," at 126.

- **Stonebraker 1994:**

Stonebraker 1994 discloses "wherein each point on the multidimensional space is defined by the value of one or more of a plurality of attributes." Specifically, Stonebraker 1994 discloses a multidimensional space stored in a POSTGRES database. Stonebraker 1994 further discloses navigation along the dimensional axes. For example:

- "Although Tioga uses POSTGRES, our proposal can readily be adapted to any system that supports an extendible type system, user defined functions, and a multi-dimensional access method" at 2.

- "Although it is possible to support an interface b/w the browser and the DBMS which allows browsing of an arbitrary collection of DBMS types, we chose a different approach. Each object may be of an arbitrary type, but it must have associated with it a **geometry**. The geometry of an object describes its location in an **application coordinate space**. All objects in an application are located in this common N-dimensional coordinate system, whose dimensions are appropriate to the specific application. The geometry of an object may be either a polygon [footnote text: "In this document, 'polygon' refers to a general N-dimensional polyhedron, not merely a two-dimensional polygon."] or a point. It is the job of the human recipe

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designer to ensure that the recipe produces the geometry representation (polygon or point) expected by some browser. Failure to provide this will result in a type mismatch. To achieve a common polygon representation, we have defined a standard N-dimensional polygon, **N-D-polygon**. The generic tuple passed from the browser from a recipe will have the form: {value, type, location}. The value can be an instance of a base type or a composite type, and its location is represented by the N-D-polygon as indicated. For example, the value might be a satellite image; its type might be AVHRR, and the location associated with it might be a rectangle representing one of the quadrants of a U.S. Geological Survey map," at 4.

- "The browser has three ways to relocate its position in N-space: it can move to a previously designated identifier, it can move to a specific N-D-point which it calculates in some fashion, or it can move in some direction, denoted by $(\Delta_1, \ldots, \Delta_N)$ until some condition F(value) <operator> <constant> is true. This third relocation command is useful, for example, if a user is browsing Hurricane Hugo, and wishes to **fast-forward** the hurricane, i.e. skip or skim through images sorted by time, until Hugo hits land. If landfall of the hurricane can be expressed as a predicate, then the appropriate MOVE command would look like MOVE along (0,0,…,+1) until hits_land(Hurricane.hugo) = TRUE. The +1 means a movement along the positive time axis, assuming time is the last dimension in this coordinate system. Note that recipes may be fast-forwarded in this fashion in any dimension," at 5.

- **Taylor 1994:**

Taylor 1994 discloses "wherein each point on the multidimensional space is defined by the value of one or more of a plurality of attributes." Specifically, Taylor 1994 discloses attributes and their relationship to dimensions. For example:

- "SHIC provides for multiple classifications of an item which is crucial for classifying media items such as photographs where one scene could be classified in several different ways," at 240.

- "The temporal classification schema . . . stores information relating artefacts to some existence in time. The schema consists of year time point identifiers that constitute the relevant temporal span," at 240.

- *See* figure 1.

- "The combination of the conceptual, temporal and geographical classification spaces and their respective operators means that information requests do not need to be limited to one particular dimension. They can be multi-dimensional. An example of such a query would be: Show me Costume from Pontypridd during the Victorian era. The temporal dimension provides a method by which a temporal walk through a concept can be obtained. A temporal walk consists of showing the development of an historical concept or geographic area over time. In practical terms this requires

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the ordering of a set of media items according to the information stored in the temporal schema," at 242.

- **Travis & Waldt:**

  Travis & Waldt discloses "each point on the multidimensional space is defined by the value of one or more of a plurality of attributes." Specifically, Travis & Waldt discloses storing multiple attributes that provide additional information about the text-based data being stored. For example:

  - *See, e.g.*, "The loader also makes available to the database parameterized information that can be used later to search and retrieve the appropriate objects. Such parameter information is object identifiers, author names, creation and modification dates, and perhaps some keywords. Most of this information can be obtained by querying the attributes on the element tags in the content of the document object," at 204.

  - *See, e.g.*, "In addition to the name of an element, the start-tag can contain information about the element. This additional information is called an 'attribute'. Attributes can be used to indicate additional information for processing. For example, although the creation date and author may never be printed in any form from this document, this information might be needed in order to load a database or decide which elements are to be included in a particular rendering," at 221

  - *See, e.g.*, "Attributes are used to convey extra information about an element," at 239.

  - *See, e.g.*, "Our general rule is that an element contains information that is to be published or appear in the rendered output forms, which attributes are used to further describe that information (information about information)," at 239.

  - *See, e.g.*, pages 304–07.

- **Wilkinson 1998:**

  Wilkinson 1998 discloses "wherein when the user selects the one or more selectable links, the plurality of portions related to a current portion based on the current portion's attributes are displayed as a graphical representation of a multidimensional space that is configured to allow a user to select and thereby display text-based data represented by a point on the multidimensional space." Specifically, Wilkinson 1998 discloses a graphical user interface that displayed portions of text-based data to a user, allowed the user to select a link or enter a command to access the table of contents, which was a graphical representation of a multidimensional space, and which was configured to allow a user to select and thereby display other portions of text-based data. For

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example:

- *See, e.g.,* "In the Web interface, an alternative view is used to give some view of the temporal nature of a document. A full table of contents is replaced by a skeleton outline of each of the fragments together with a version list for each fragment," at 169.

- *See, e.g.*, "Several important relationships that can be exploited by navigation are: A document's location in an information space. A document's relationship to an information space. A document's membership of a set of related documents." at 95.

- **Wilson 1990:**

Wilson 1990 discloses "each point on the multidimensional space is defined by the value of one or more of a plurality of attributes." Specifically, Wilson 1990 discloses storing an index of catchwords associated with each stored document that can be used to manage the stored documents. For example:

- *See, e.g.*, "it is easy to provide a structured index composed of the terms appearing in the catchword section," at 125.

- *See, e.g.*, "When the user enters the Justus running under Guide he is given a choice of three methods of access…index of pre-defined terms," at 125.

- **Wilson 1992:**

Wilson discloses "each point on the multidimensional space is defined by the value of one or more of a plurality of attributes." Specifically, Wilson discloses that attributes such as name of the amending author and date of the amendment can be stored. Wilson discloses that these attributes can be used as part of a multidimensional space in that these attributes describe nodes which are linked together into a network "where, in principle, any node in the system can b accessed from any other node." For example:

- *See, e.g.*, "The defining characteristic of hypertext is not its ability to accommodate hierarchical structures, but its capacity to support directed graphs; that is, networks were, in principle, any node in the system can be accessed from any other node," at 170.

- *See, e.g.*, "Explicit location references in the text to other nodes, either within the same document or in other documents, can be automatically converted to hypertext links. The effect of this conversion is to integrate many disparate documents into a seamless textual universe," at 170.

- *See, e.g.*, "An electronic system makes it easier to store the name of the amending author and the date of the amendment where these are required," at 180.

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- *See, e.g.*, "Figure 14 shows the lowest level of catchword index: Fig. 15 shows four expanded entries for the headword criminal law. The full text of any of these law reports can be obtained by selecting the appropriate numerical button," at 181.

- **The Pre-1997 Westlaw/Westmate System**:

  The Westlaw/Westmate system contained attributes associated with portions and amended portions, and so using the system would entail performing this method. *See, e.g.*:

  - DataBasics 1993, ("United States Code Annotated"): Disclosing multiple attributes, at doc no. 79858-59.

  - Westlaw DB 1991, (disclosing the TNDX file containing attributes associated with statutory sections) at 14-15.

  - Wren 1994, "the CALR vendors have divided documents in their databases into units corresponding to elements that recur in cases and other legal authorities. These units are called "fields" in WESTLAW . . . . The term "field," though, is broadly used in computer terminology to refer to divisions within documents in any database . . . ." at 75.

- **The Pre-1997 Premise System**:

  The Premise system contained attributes associated with portions and amended portions, and so using the system would entail performing this method. *See, e.g.*:

  - Premise Software & Statutes: Select "Search/Search Book…" and then change the "Search Using" field to "Fields Template," which will then list several of the attributes of the portions and amended portions.

  - Premise Publisher: 11 (defining "Detail" to be "A set of descriptive information fields about a single object in PREMISE Publisher, e.g., document . . . .); 151–154 (showing how to add, change, and delete attributes associated with documents); 181–89 (showing how to add attributes to a Premise database)

- **The Astoria System (pre-1997):**

  The Astoria System associated portions of documents with attributes as a means for organizing such portions. For example:

  - *See, e.g.,* Astoria 1997-1: "Astoria provides a multilingual engine that lets users search on document content, structure, attributes, and version information," at THOM00211909.

  - *See, e.g.,* Astoria 1997-1: "Astoria provides a mechanism for associating arbitrary,

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user-definable attributes with Astoria objects. Custom Attributes provide a means for Astoria users to store relevant information directly with any object, providing a robust foundation for object status tracking, and the search and assembly of individual document components." "Astoria users specify a value for the custom attribute and then can search, retrieve, and assemble new documents based on custom attribute values," at THOM00211911. • *See, e.g.,* Astoria 1997-1: "Astoria Link Clusters allow users to link components in hypertext fashion within and between documents. Through Link Clusters, users can identify associations—for instance, topical relationships—between related components without changing the location of the component. This allows Astoria users to organize related information so they can reference and update it more quickly," at THOM00211908. • *See, e.g.,* XSoft: "LINKS: Users can connect elements to other elements in hypertext fashion within and between documents using links. The links let workers create non-linear paths of relationship through the database," at THOM00198648-49. • **The EnAct System** (previously known as Themis)**:** The EnAct system has many attributes that organize the portions and amended portions of legislation, and so using the system would entail performing this method. *See, e.g.*: • TSS 1994-2, at SAIC002754, and explanatory material at SAIC002753–2781 (showing the attributes within the EnAct databases). • **The SCALEplus System:** The SCALEplus system has many attributes that organize the portions and amended portions of legislation, and so using the system would entail performing this method. *See, e.g.*: • Kerr 2000: Figures accompanying paragraphs 180 (page 6-4), 187 (page 6-6), 429 (page 11-3), 491 (page 11-19). • **The Documentum/Interleaf System:** The Documentum/Interleaf system has many attributes that organize the portions and amended portions, and so using the system would entail performing this method. For example: • *See, e.g.,* Ovum Interleaf 1996, at 254–55 (and figure H2.3) ("RDM has several mandatory attribute types."). • *See, e.g.,* Ovum Documentum 1996, at 208–09 ("Documentum offers good scope for

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organizing documents via the attributes which come built-in with the system.").
• **The Federal Rules of Civil Procedure System:** The Federal Rules of Civil Procedure system a method of using a system in which each point in the multidimensional space is defined by one or more attributes. • **The Law Desk NY System:** The Law Desk NY system a method of using a system in which each point in the multidimensional space is defined by one or more attributes. • **The Law Desk USCS System:** The Law Desk USCS system a method of using a system in which each point in the multidimensional space is defined by one or more attributes. • **The Social Security Plus System:** The Social Security Plus system a method of using a system in which each point in the multidimensional space is defined by one or more attributes. • **The UCC System:** The UCC system a method of using a system in which each point in the multidimensional space is defined by one or more attributes.
Claim 37: In addition to the prior art listed above in conjunction with Claim 36, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 37:
wherein the results are produced using one or more attributes Each of the references discussed above with regard to claim 14 discloses "the results are produced using one or more attributes." The supporting quotations for this assertion are provided above in connection with claim 14.
Claim 38: In addition to the prior art listed above in conjunction with Claim 36, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 38:
wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes. • **Agosti 1991:**

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Agosti 1991 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Agosti 1991 discloses links between stored text-based documents, including links defined by the auxiliary data stored at the hyperconcept level. For example:

- *See, e.g.*, "The representation of an object at this level is made by means of: connections to documents which are related to it…connections to the auxiliary data items," at 318.
- *See, e.g.*, "The collection of document objects is organised at the first level of the architecture as a 'hyperdocument', that is in the form of a lattice structure," at 318.
- *See, e.g.*, "The hyperdocument is made up of a network of structural links combined with the network of reference links…This means that the user may choose to follow along one path or another even in consideration of the direction of the references present within the semantic units," at 318.
- *See, e.g.*, "The model supports navigability through the document collection. Due to the fact that specific cross-references are often present between the documents of the collection, the system must explicitly be able to support navigability through these connections," at 318.
- *See, e.g.*, "Each of the two levels of the system's architecture represents a distinct network of nodes and links," at 319.
- *See, e.g.*, "The model supports navigation between the two levels by means of the navigability function. In this way it is at all times possible to pass from the hyperdocument to the hyperconcept and back again," at 320.
- *See, e.g.*, "By clicking the mouse button the object pointed is activated, i.e. the system receives the order to move in the direction indicated and to present the pertaining information or to execute the requisite function," at 322.
- *See, e.g.*, "It is possible to shift directly from any point in the hypertext network to other hyperdocuments by making use of the links existing between them," at 322.
- *See, e.g.*, "The nodes included within the single documents contains a function which allows all the links which bind that single document to the others to be displayed," at 323.

- **Arnold-Moore 1994:**

Arnold-Moore 1994 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Arnold-Moore 1994 discloses both static links and dynamic links which can be inserted into the stored text-based data. These links are defined, at least in part,

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by attributes such as time. For example:

- *See, e.g.*, "In this context hypertext would allow the note to be visible to the user only after they have selected (usually by pointing and clicking a mouse) a 'button' which is displayed with the text on the screen. Each separate unit of text which is presented on the screen is termed a *node*. The interrelated nodes and the links between them together form *hypertext*," at 3.
- *See, e.g.*, "Hypertext allows the user to do exactly that. It's applicability to the legal domain and particularly statutes is widely recognized," at 4.
- *See, e.g.*, "The functionality of a hypertext database should also be supported. These include tracing links and queries based on the existence of links," at 5.
- *See generally, e.g.*, 6.
- *See generally, e.g.*, 12.
- *See, e.g.*, "Within a versioned hypertext, two kinds of links are possible: 1. static links – which refer to a specific version or part of a version; 2. dynamic links – which refer to the latest version or part or, more generally, to the version at a corresponding time," at 14
- *See, e.g.*, "Whether links should be in-line (appearing explicitly in the text) or stored in a separate link table seems dependent on the intended application," at 14.

- **Arnold-Moore 1994-2:**

Arnold-Moore 1994-2 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Arnold-Moore 1994-2 discloses links between stored text-based documents, which are defined, at least in part, by attributes such as an absolute identifier. For example:

- *See, e.g.*, "This information is explored by browsing, rather than querying, however we may view the traversal of a link as another kind of query," at THOM00196608.
- *See, e.g.*, "Finally, we will certainly wish to follow any hypertext links that are provided," at THOM00196608.
- *See, e.g.*, "When versioning hypertext, links can either be static or dynamic. In order to support static links to element we require an absolute identifier for each ELF. The EID is also useful for supporting dynamic inclusion of sub-elements," at THOM00196611.

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- **Arnold-Moore 1997-2:**

  Arnold-Moore 1997-2 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Arnold-Moore 1997-2 discloses use of SGML to create links between stored pieces of legislation. The disclosed links are defined, at least in part, by attributes such as section number. For example:

  - *See, e.g.*, "Themis uses SGML to store legislation," at 175.
  - *See, e.g.*, "Legislation has been described as providing a cross-reference network," at 179.
  - *See, e.g.*, "Hypertext allows the user to do exactly that. It's applicability to the legal domain and particularly statutes is widely recognized," at 179.
  - *See, e.g.*, "This text needs to be associated with the intended target element. For example the reference to 'section 135' (See Figure 3) will need to be associated with the element which has a section number of '135' (See Figure 5) in the target document," at 181.
  - *See, e.g.*, "Thus all links in Themis are dynamic rather than static," at 181.

- **Bachman 1973:**

  Bachman 1973 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Bachman 1973 discloses links that permit movement to the next or previous stored document, or from an attribute to a document described by that attribute. For example:

  - *See, e.g.*, "He can start at the beginning of the database, or at any known record, and sequentially access the 'next' record in the database until he reaches a record of interest or reaches the end," at 656.
  - *See, e.g.*, "He can enter the database with a database key that provides direct access to the physical location of a record," at 656.

- **Campbell 1988:**

  Campbell 1988 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Campbell 1988 discloses links between each node, which are defined by attributes. For example:

  - *See, e.g.*, "Nodes are related by links. A link defines a relationship between a source

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node and a destination node and can be followed in either direction. A cross-context link relates two nodes in different contexts and is useful for sharing data between two contexts. The generality provided by link attributes allows application writers to define their own notions of link types or link end-point attachment schemes," at 857.

- *See, e.g.*, "Guide uses buttons – special areas on a screen – to represent links in a document between the information the screen and related information. When a button is selected, by clicking the mouse, Guide follows the link to display the related information. Replacement buttons replace the button icon displayed on the screen with the information associated with that button," at 858.

- *See, e.g.*, "The various button relationships are modeled as links," at 858.

- *See, e.g.*, "Figure 2 shows an example of a note button. The Document Browser contains the text being examined; the icon within the browser represents the note button. The Note Browser contains the note associated with the note button," at 858.

- *See, e.g.*, "Therefore, the other end of the link representing the button can point to the entire node that contains the button's information," at 858.

- *See, e.g.*, "FileBoxes can be represented in the HAM using nodes, links, and attributes. Both FileBoxes and notecards are equivalent to nodes. The model uses a node attribute to determine whether a node is a FileBox or a notecard. Links show which notecards (or FileBoxes) are in a particular FileBox. Link attributes determine which links refer to other FileBoxes and notecards," at 860.

- **Elmasri 1990:**

Elmasri 1990 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Elmasri 1990 discloses links between time-based versions of information. For example:

- *See, e.g.*, "However, numerous past versions of the object may also exist. These versions of an object are linked to the current version and may be recovered through the use of various known techniques . . . ." Summary of the Invention.

- **Haake 1992:**

Haake 1992 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Haake discloses that attributes link portions together. For example:

- *See, e.g.*, "Composite nodes contain an ordered set of references to other hypertext objects while atomic nodes contain data like text, graphics etc. All hypertext objects are equipped with attributes holding information like names of

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nodes or labels of links." at 43.

- *See, e.g.*, "CHS offers nodes, links, and composites that can be equipped with application-defined attributes. Objects can be accessed by their attribute values using the query language of the underlying database system of CHS," at 46.

- **Horne 1997:**

Horne 1997 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Horne 1997 discloses links, defined by the attribute of time, between versions of stored statutes. For example:

- *See, e.g.*, "But markup could go further. It could give the dates on which the amendments were made, the dates on which they took effect, and the names of the Acts or SI which had made them, and the user's program could use this markup to display a statute as it was on a particular date chosen by the user and could offer hypertext cross-references to the amending legislation," at 3.

- *See, e.g.*, "HMSO have a program called 'the Statute Law Database'. This is an electronic version of Statutes in Force. It contains in SGML form the law as it was on a particular date in the 1980s together with all acts and statutory instruments which have come into force since that time. All of these are linked together," at 3.

- **Kim 1996:**

Kim 1996 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Kim 1996 discloses encoding links, including links defined by the attribute of a unique identifier, between stored multimedia. For example:

- *See, e.g.*, "Meanwhile, hypermedia data relate multimedia data by linking them together, and permit users to browse related parts through links," at 496.

- *See, e.g.*, "Besides, HOML defines virtual objects and dynamic link objects, which can decide a link destination with a query result in run time," at 497.

- *See, e.g.*, "The anchor element specifies the source or the destination of a link. Since there can be many anchor elements in a text element, each anchor element should have a unique identifier," at 497.

- *See, e.g.*, "The link element specifies a relation between a source object and a destination object through navigation. According to the number of destination objects, there are single links, multi-destination links and dynamic links," at 498.

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- **Larson 1988:**

  Larson 1988 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Larson 1988 discloses links between stored text-based documents. For example:

  - *See, e.g.*, "A hypertext system is made up of a set of 'nodes' and 'links'. . . . Links are associative connections between nodes. They may represent a variety of associative connections, including citations, quotations, or similarity of content. They may also represent a hierarchic structuring of the nodes," at 195.

- **Lo 1995:**

  Lo 1995 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Lo 1995 discloses encoding the stored documents with links defined by SGML tags. For example:

  - *See, e.g.*, "Links and versioning are two important aspects of document management," at 339.

  - *See, e.g.*, "This paper thus attempts to describe a specific set of link versioning behaviors to provide a platform to explore the various issues of link versioning," at 339.

  - *See, e.g.*, "Links represent inherent associations of content and structure of texts. Efficient management of links allows convenient cross referencing in information browsing," at 339.

  - *See, e.g.*, "Link sources and destinations can be defined by SGML tags," at 339.

  - *See, e.g.*, "intra-version link: both the source and the destination of the link are located in the same version, eg the ink ab; intra-version link: both the source and the destination of the link are located in the same document, but different versions, eg the link ef; inter-document link: both the source and the destination of the link are located in different documents, eg the link ed," at 340.

  - *See, e.g.*, "An intra-version link is static in nature," at 340.

  - *See, e.g.*, "In contrast to intra-version links, inter-document links are dynamic in nature, tending towards switching or augmenting destination references whenever new versions are created in which their destinations are duplicated," at 341.

  - *See, e.g.*, "The first method is the traditional method (also employed by SGML) of referencing locations with unique identification. The second method attempts to

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manage links as objects, each with an identification itself," at 342.

- *See, e.g.*, "Conceptually this method specifies unique identifiers (Ids) for referent elements (destinations); and directional links can be established by making references (Ref) from the reference elements (sources) to the referent elements' identifiers," at 342.

- **Lo 1996:**

Lo 1996 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Lo 1996 discloses links that connect documents.

- *See generally* section 2.1 (and subsections) entitled "Linking," beginning on page 15.

- *See, e.g.,* page 9, section 1.2.2 (Managing Functions). For example: "Link support is a facility provided by the basic service layer. Managing links is a direct support of non-linearity of documents as mentioned in Section 1.1. Link support is a prerequisite to information retrieval by browsing. It is also particularly important in depicting the dependence relationships between various documents, if such relationships need to be maintained and utilized . . . ."

- *See, e.g.,* page 11, section 1.3. For example: "Links and versioning are two important aspects of document management. Efficient management of links allows convenient cross referencing in information browsing."

- *See, e.g.,* page 12, section 1.4. For example: "In particular, SGML structures can be utilized to implement links."

- *See generally, e.g.*, section 2.1, starting on page 15, entitled "Linking."

- *See generally, e.g.*, section 2.3.2, starting on page 39, entitled "SGML Support for Linking."

- *See, e.g.,* figure 2.5, page 41.

- **Osterbye 1992:**

Osterbye 1992 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Osterbye 1992 discloses using links between stored nodes, which are defined, at least in part, by the element of date. For example:

- *See, e.g.*, "Links are one-to-one, and can be anchored to nodes in both ends," at 34.

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- *See, e.g.*, "A link can point to a specific element, in which case the link always points to the same element. Or the link can point to the current element, meaning the newest element in the version group," at 38.

- *See, e.g.*, "The link is an entity that relates a source node to a destination node (or subtypes of nodes)," at 38.

- **Sacks-Davis 1994:**

  Sacks-Davis 1994 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Sacks-Davis 1994 discloses encoding links between stored documents defined by SGML attributes. For example:

  - *See, e.g.*, "SGML can be used to support advanced presentation modes such as hypertext," at THOM00198835.

  - *See, e.g.*, "Access by SGML attributes is a commonly used method for supporting hypertext links," at THOM00198839.

- **Sacks-Davis 1995:**

  Sacks-Davis 1995 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Sacks-Davis 1995 discloses encoding links, defined by attributes, between stored documents using hypertext. For example:

  - *See, e.g.*, "In addition to atomic attributes and structured attributes, Atlas supports reference attributes. A reference is a tuple comprising the global key of a record or nested record. In the hypertext example, bidirectional links between documents and their associated nodes are maintained using reference attributes, so that in table Hypertext, attribute doc has values from the domain of the key of the Document table, namely, attribute doc_id," at 456.

  - *See, e.g.*, "Rather than store documents as monolithic objects in a database it is more efficient to represent documents as a set of smaller fragments, which can be connected by links. Links allow users to browse documents by following the original document structure, and to discover knowledge by browsing fragments in the other documents. This is the basic paradigm underlying hypertext systems," at 465.

- **Sciore 1991:**

  Sciore 1991 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Sciore 1991 discloses encoding stored documents with "pointers" to other stored

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documents. For example:

- *See, e.g.*, "Typically, refinement is implemented by including the scheme of T1 in each T2-object, and extension is implemented by storing a pointer to a T1-ojbect in each T2-object," at 357.

- **Stonebraker 1990:**

Stonebraker 1990 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Stonebraker 1990 discloses that every record in the POSTGRES database contains a linking means defined by the attribute of a unique identifer. For example:

- *See e.g.*, "Because POSTGRES gives each record a unique identifier (OID), it is possible to use the identifier for one record as a data item in a second record. Using optionally definable indexes on OID's it is then possible to navigate from one record to the next by running one query per navigation step," at 126.

- **Taylor 1994:**

Taylor 1994 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Taylor 1994 discloses links between entities. For example:

- *See, e.g.*, "We had adopted a schema based upon binary relations (BR) . . . . A binary relationship is a relationship between two entities," at 239.

- **Travis & Waldt:**

Wilson discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Travis & Waldt discloses hypertext links, defined by attributes such as ID, to other parts of a document or to other documents. For example:

- *See, e.g.*, "HTML provides a simple means to place hypertext links in your document. These links can point to locations in your own document, to other documents at your side, or even to documents at other sites around the world," at 56.

- *See generally, e.g.*, 241–42 (defining ID, IDREF, IDREFS).

- *See generally, e.g.*, 293–95 ("In modern terms these [cross-references] are called hyperlinks."; "In SGML, we usually use an empty element to indicate a link to some other part of the document. The ID and IDREF declared values for attribute definition lists are used to assure uniqueness (in the case of ID) and valid reference (in the case of IDREF) within the document.").

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- **Wilkinson 1998:**

  Wilkinson 1998 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Wilkinson 1998 discloses linking documents together based on attributes. For example:

  - *See, e.g.,* "A user's ability to find documents is enhanced if there are links between a currently viewed document and related documents. This is a consequence of the *clustering hypothesis*: closely associated documents tend to be relevant to the same requests. If one document of a cluster is identified, then others can be reached by navigation," at 96.

  - *See, e.g.*, "Each version can be identified using the document identifier and either an integer version number or a timestamp . . . .," at 97.

  - *See, e.g.*, "As discussed later, it may well be appropriate to store links to and from other documents as attributes rather than as part of the content." at 18.

- **Wilson 1988:**

  Wilson 1988 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Wilson 1988 discloses encoding links between stored documents using hypertext, including links defined by attributes such as date. For example:

  - *See, e.g.*, "Justus automatically highlights inter-statute references and intra-statute references. When a user selects a reference, the text corresponding with that reference is displayed," at 27.

  - *See, e.g.*, "Terms that are defined within the interpretation section of the statute are also highlighted through the statute; the definition can be displayed on request," at 27.

  - *See, e.g.*, "By selecting the button [BEFORE 5 JULY 1973], we can see the text of Section 167(2)(a) before it was amended: figure 9," at 35.

- **Wilson 1990:**

  Wilson 1990 discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Wilson 1990 discloses encoding links between stored documents using hypertext. For example:

  - *See, e.g.*, "In directed graph systems, the text is divided into segments called nodes: in principle any node in the system should be accessible from any other node," at

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123.

- *See, e.g.*, "Each node in a hypertext system has a label or name or, in Guide, a definition button. This label can be used as a link icon or, in Guide, a usage button or a glossary button, any number of times throughout the text. When a link icon or button (definition, usage or glossary) appears on the display it is highlighted in some way: in Guide, by using bold type face or by underlining. It can be selected using a pointed device such as a mouse. When this happens the hypertext system finds and displays the text associated with that icon or button," at 123.

- **Wilson 1992:**

Wilson discloses "wherein the plurality of portions is related to the current portion by at least one link defined by one or more of the plurality of attributes." Specifically, Wilson discloses both hypertext links or "buttons" that link between versions of legislative material. Wilson also discloses automatic recognition of citations within text-based data which can then be replaced with hypertext links. For example:

- *See, e.g.*, "Local buttons are an ideal mechanism for multiple versions. An electronic system makes it easier to store the name of the amending author and the date of the amendment where these are required. Figure 12 shows a section of the Industrial Relations Act 1971 with local buttons for an earlier version. Figure 13 shows the button expanded," at 179-180.

- *See, e.*g., "Explicit location references in the text to other nodes, either within the same document or in other documents, can be automatically converted to hypertext links," at 170.

- *See, e.g.*, "Another example is a cross-reference. Consider the requirement to create a link to an on-line database containing legal citations. The name of the citation must be rendered on the screen in a different color and underlined, which informs the user that the item is associated with an external link. Either of the following approaches will work…," at 306.

- **The Pre-1997 Westlaw/Westmate System**:

The Westlaw/Westmate system contained links relating portions together, and so using the system would entail performing this method. *See, e.g.*:

- www.westlaw.com, California Statutes Annotated Database from 1996 (CA-STAN96), CA BUS & PROF § 2 (showing linking means within statutory portion)

- The Essential Guide 1996, at 15: "Jump is the feature on WESTLAW that lets you move instantly from one location to another. To use Jump, simply press **Tab** until your cursor reaches the Jump marker (> or ▶), then press **Enter**. If you use a mouse,

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you can position the cursor on the Jump marker and click or double-click."

- *See generally* The Essential Guide 1996, at Chapter "5.4 Jump"
- The Essential Guide 1996, at 136, showing a statutory section, including some of the fields within a statute, as well as a link to a related case.
- The Essential Guide 1996, at 154, showing a link from a law review article to a case.

- **The Pre-1997 Premise System**:

The Premise system contained links relating portions together, and so using the system would entail performing this method. *See, e.g.*:

- Premise Publisher: 3 ("By marking your original source documents, you can add embedded references to create links, which allow you to jump directly to other documents, images, PREMISE electronic books, applications or WESTLAW . . . ."); 11 (defining "Hypertext Link" as "A section of text that refers to a related piece of text . . . or an object. The related information is the target of the reference."); 30 (explaining "References and Target Points"); 49 (showing means for linking in PREMISE); 156–61 (describing how to add links to documents)
- Premise Publisher: 30 (stating that the chapter is instructing the user how to insert markup code into documents for purposes of publishing them via PREMISE); 74–96 (explaining how to add the correct markup tags and attributes to an ASCII file); 359 (defining "Data markup"); 360 (defining "Data markup codes")

- **The Astoria System (pre-1997):**

The Astoria System associated documents or portions of documents with links defined by attributes. For example:

- *See, e.g.,* Screen shots, at THOM00211907-08.
- *See, e.g.,* Astoria 1997-1: "Astoria provides a multilingual engine that lets users search on document content, structure, attributes, and version information," at THOM00211909.
- *See, e.g.,* Astoria 1997-1: "Astoria detects and maintains revision history at the component level, not just at the document level. . . Astoria stores versioning information in an efficient format, and past versions are always available for republishing or for providing an audit trail," at THOM00211908.
- *See, e.g.,* XSoft: "REVISION TRACKING: Because of its sophisticated integration with SGML editors, Astoria maintains revision information on individual elements,

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and past versions are always available," at THOM00198648.

- *See, e.g.,* Astoria 1997-1: "Astoria provides a mechanism for associating arbitrary, user-definable attributes with Astoria objects. Custom Attributes provide a means for Astoria users to store relevant information directly with any object, providing a robust foundation for object status tracking, and the search and assembly of individual document components." "Astoria users specify a value for the custom attribute and then can search, retrieve, and assemble new documents based on custom attribute values," at THOM00211911.

- *See, e.g.,* Astoria 1997-1: "Astoria Link Clusters allow users to link components in hypertext fashion within and between documents. Through Link Clusters, users can identify associations—for instance, topical relationships—between related components without changing the location of the component. This allows Astoria users to organize related information so they can reference and update it more quickly," at THOM00211908.

- *See, e.g.,* XSoft: "LINKS: Users can connect elements to other elements in hypertext fashion within and between documents using links. The links let workers create non-linear paths of relationship through the database," at THOM00198648-49.

- **The EnAct System** (previously known as Themis)**:**

The legislation within the EnAct system uses a markup language, including links, and so using the system would entail performing this method. *See, e.g.*:

- Arnold-Moore 1997-2, at 179 (text following the heading: "Cross References"), and in particular: "The *Themis* system uses SGML tags to identify both internal and external cross references (typically identified in the user interface by a shaded background). Each target element has an identifier (unique within that document) in the tag which can then be included in the tag of the source of the reference. . . . These tags—in combination with an SGML display which supports hypertext—allow users to navigate from the text of the reference (See Figure 3) to the fragment which contains the element to which the reference refers (See Figure 5). The identifier from the source tag is used to construct a query which retrieves the appropriate fragment from the database."

- http://web.archive.org/web/19990430002036/www.thelaw.tas.gov.au/background.html: "advanced searching and browsing capabilities with all cross-references and amendment history information stored as electronic hyperlinks"

- **The Federal Rules of Civil Procedure System:**

The Federal Rules of Civil Procedure system a method of using a system which had portions related by at least one link defined by one or more of a plurality of attributes.

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• **The Law Desk USCS System:** The Law Desk USCS system a method of using a system which had portions related by at least one link defined by one or more of a plurality of attributes. • **The New Mexico Law System:** The New Mexico Law on Legal Ethics system a method of using a system which had portions related by at least one link defined by one or more of a plurality of attributes. • **The NY CLS Beta System:** The NY CLS Beta system a method of using a system which had portions related by at least one link defined by one or more of a plurality of attributes. • **The OnPoint System:** The OnPoint system a method of using a system which had portions related by at least one link defined by one or more of a plurality of attributes.
Claim 39: In addition to the prior art listed above in conjunction with Claims 36 & 38, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 39:
wherein the at least one link comprises any piece of information additional to the text of the text-based data. Each of the references discussed above with regard to claim 5 discloses "the at least one link comprises any piece of information additional to the text of the text-based data." The supporting quotations for this assertion are provided above in connection with claim 5.
Claim 40: In addition to the prior art listed above in conjunction with Claims 36, 38, 39, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 40:
wherein the at least one link comprises a code or markup that allows departure and destination points to be created between portions of the text-based data. Each of the references discussed above with regard to claim 6 discloses "the at least one link comprises a code or markup that allows departure and destination points to be created between portions of the text-based data." The supporting quotations for this assertion are provided above in connection with claim 6.
Claim 41: In addition to the prior art listed above in conjunction with Claims 36 & 38, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the

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following references disclose, teach or render obvious Claim 41:
wherein said at least one link comprises an identification code for a corresponding portion of text-based data. Each of the references discussed above with regard to claim 7 discloses "said at least one link comprises an identification code for a corresponding portion of text-based data." The supporting quotations for this assertion are provided above in connection with claim 7.
Claim 42: In addition to the prior art listed above in conjunction with Claims 36 & 38, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 42:
wherein the amended portion of text-based data is amended by performing at least one of the group consisting of adding data to the portion, deleting data from the portion, and modifying data of the portion. Each of the references discussed above with regard to claim 8 discloses "the amended portion of text-based data is amended by performing at least one of the group consisting of adding data to the portion, deleting data from the portion, and modifying data of the portion." The supporting quotations for this assertion are provided above in connection with claim 8.
Claim 43: In addition to the prior art listed above in conjunction with Claims 36 & 38, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 43:
wherein the text-based data comprises legislation or material related to said legislation. Each of the references discussed above with regard to claim 9 discloses both "the text-based data comprises legislation or material related to a provision of said legislation" and "the text-based data comprises legislation or material related to said legislation." The supporting quotations for this assertion are provided above in connection with claim 9.
Claim 44: In addition to the prior art listed above in conjunction with Claims 36, 38, 43, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 44:
wherein each of the plurality of portions of text-based data is a respective provision of said legislation or material related to a provision of said legislation. Each of the references discussed above with regard to claim 10 discloses "each of the plurality of portions of text-based data is a respective provision of said legislation or material related to a provision of said legislation." The supporting quotations for this assertion are provided above in connection with claim 10.

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Claim 45: In addition to the prior art listed above in conjunction with Claims 36, 38, 43, 44, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 45:
wherein said provision is a section, schedule or appendix of an Act, or a section, schedule or appendix of a regulation. Each of the references discussed above with regard to claim 11 discloses "said provision is a section, schedule or appendix of an Act, or a section, schedule or appendix of a regulation." The supporting quotations for this assertion are provided above in connection with claim 11.
Claim 46: In addition to the prior art listed above in conjunction with Claims 36 & 38, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 46:
wherein each portion is a block of the text-based data, the block being larger than a single word and less than the entirety of the text-based data Each of the references discussed above with regard to claim 12 discloses "each portion is a block of the text-based data, the block being larger than a single word and less than the entirety of the text-based data." The supporting quotations for this assertion are provided above in connection with claim 12.
Claim 47: In addition to the prior art listed above in conjunction with Claim 36, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 47:
wherein the markup language is Standard Generalised Markup Language (SGML) or eXtensible Markup Language (XML). Each of the references discussed above with regard to claim 3 discloses both "the markup language is Standard Generalised Markup Language (SGML) or extensible Markup Language (XML)" and "the markup language is Standardised Markup Language (SGML) or eXtensible Markup language (XML)." The supporting quotations for this assertion are provided above in connection with claim 3.
Claim 48: In addition to the prior art listed above in conjunction with Claims 36 & 47, and Subject to the Court's claim construction, and given Defendants' understanding of Plaintiff's incomplete contentions regarding the construction and application of the claims, the following references disclose, teach or render obvious Claim 48:
wherein the text-based data is encoded using one or more Document Type Definitions (DTD) or Style Sheet Mechanisms (SSM). Each of the references discussed above with regard to claim 4 discloses "the text-based data is encoded using one or more Document Type Definitions (DTD) or Style Sheet

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Mechanisms (SSM)." The supporting quotations for this assertion are provided above in connection with claim 4.

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