

Appendix F – Part 1

Defendants' Supplemental Prior Art Statement
'228 Patent
(TC1240-TC1269)

to

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

APPENDIX F

DEFENDANTS' SUPPLEMENTAL

PRIOR ART STATEMENT

'228 PATENT

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Claim 1: 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 the following elements of Claim 1:

(a) A method for electronically publishing text-based data, the method comprising:

• **Agosti 1991:**

Agosti 1991 discloses "a method for electronically publishing text-based data." Specifically, Agosti 1991 discloses a method for electronically publishing text-based data such as legislative material and other legal texts. For example:

- See, e.g., "A Two-Level Hypertext Retrieval Model for Legal Data," at title.
- See, e.g., "EXPLICIT is based on a two-level architecture which holds the two main parts of the informative resource managed by an information retrieval tool: the collection of documents and the indexing term structure," at 316.
- See, e.g., "The experimental prototype, called HyperLaw, manages a collection of full text legal documents and a vocabulary of indexing terms," at 317.
- See, e.g., "The collection is made of objects of the real world: in the common practice of information retrieval these objects are textual documents," at 318.
- See, e.g., "The system thus created, called HyperLaw, is an experimental tool for handling legal collections of full text and reference documents: law, case law, legal authority," at 321.
- See, e.g., "The document collection used includes norm texts (State, Regional, Provincial laws, etc.," at 322.

• **Anwar 1996:**

Anwar 1996 discloses "a method for electronically publishing text-based data." Specifically, Anwar 1996 discloses a method for electronically presenting data, including text-based data, on a computer. For example:

- See, e.g., "This invention provides a computer including . . . at least one display device The multi-dimensional display and manipulation system includes an [sic] user interface and a multi-dimensional data object subsystem where the subsystem includes means for creating, populating, updating, manipulating, storing, retrieving, modifying and analyzing multi-dimensional data objects and the user interface includes means for displaying and graphically manipulating the multi-dimensional data objects in a window defined on a display device. The multi-dimensional data objects include multi-sided geometrical objects having a side for each dimensionality of the data to be represented by the data object.," at Summary of

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the Invention.

- *See, e.g.*, “Multi-dimensional is any set of information that has associated with it many attributes which require considerably more than [sic] three dimensions to display, analyze and manipulate the data, i.e., each country, each state within a country, each city within each state within each country, etc. [i.e. text-based data],” at 4:60–67.

- **Arnold-Moore 1994:**

Arnold-Moore 1994 discloses “a method for electronically publishing text-based data.” Specifically, Arnold-Moore 1994 discloses improvements to Computer Aided Legal Research systems, which publishes various text-based data, including legislative materials. For example:

- *See, e.g.*, “We discuss a data model for the storage, retrieval, and display of legislation in large database collections. Using free-text retrieval, the logical structure of SGML, and the browsing power of hypertext, arbitrary versions of statutes can be displayed, combining the traditional power of paper and current computer research tools,” at Abstract.
- *See, e.g.*, “Large-scale databases of legal texts were amongst the first applications to explore the possibilities of computer-aided information retrieval. These CALR (Computer Aided Legal Research) systems have improved markedly over the many years that they have been available to lawyers and legal researchers,” at 1.

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

Arnold-Moore 1994-2 discloses “a method for electronically publishing text-based data.” Specifically, Arnold-Moore 1994-2 discloses a method for electronically publishing text-based data such as legislative material. For example:

- *See, e.g.*, “A data model and query language for accessing structured documents expressed in SGML is presented,” at THOM00196608.
- *See, e.g.*, “A new class of document databases is emerging. These databases consist of large structured documents. Examples include databases of government legislation, maintenance manuals for systems as complex as aircraft carriers, and encyclopedia, and the documentation associated with a large software engineering project,” at THOM00196608.

- **Arnold-Moore 1995:**

Arnold-Moore 1995 discloses “a method for electronically publishing text-based data.” Specifically, Arnold-Moore 1995 discloses a computer based publishing system using

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the SGML language to publish legislative material. For example:

- *See, e.g.*, “This paper proposes an architecture for a system which accepts Amending Acts expressed in SGML and produces a database of resulting versions of the Principle Acts, and describes its implementation,” at Abstract.
- *See, e.g.*, discussing “computer-aided legal research (CALR) systems,” at 297.

• **Arnold-Moore 1997:**

Arnold-Moore 1997 discloses “a method for electronically publishing text-based data.” Specifically, Arnold-Moore 1997 discloses a computer-implemented database system for publishing text-based data such as legislative material. For example:

- *See, e.g.*, “The Themis system is an integrated drafting environment for legislation,” at 56.
- *See, e.g.*, “The Themis system manages a library of legislation which is encoded in the Structured Generalized Markup Language (SGML),” at 58.

• **Arnold-Moore 1997-2:**

Arnold-Moore 1997-2 discloses “a method for electronically publishing text-based data.” Specifically, Arnold-Moore 1997-2 discloses the Themis system, which is a digital library for publishing text based data comprising legislation. For example:

- *See, e.g.*, “We provide an overview of the Themis system, a commercial implementation of a digital library of legislation. Themis uses SGML to store legislation,” at 175.

• **Bachman 1973:**

Bachman 1973 discloses “a method for electronically publishing text-based data.” Specifically, Bachman 1973 discloses a computer-implemented database system for publishing text-based data such as, for example, personnel files, airline reservations, and laboratory experiments. For example:

- *See, e.g.*, “From this point, I want to begin the programmer’s training as a full fledged navigator in an n -dimensional data space,” at 654.
- *See, e.g.*, “It involves all aspects of storing, retrieving, modifying, and deleting data in the files on personnel and production, airline reservations, or laboratory experiments – data which is used repeatedly and updated as new information becomes available,” at 654.

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• **Bentley 1979:**

Bentley 1979 discloses “a method for electronically publishing text-based data.” Specifically, Bentley 1979 discloses a computer-implemented database system for publishing various records. For example:

- *See, e.g.*, “The study of data structure for facilitating rapid searching is a fascinating subject of both practical and theoretical interest,” at 397.
- *See, e.g.*, “In database terminology a file is a collection of records, each containing several attributes or keys,” at 397.
- *See, e.g.*, “In a geographic database of U.S. cities...,” at 398.
- *See, e.g.*, “To compile an honor list of older students...,” at 398.

• **Campbell 1988:**

Campbell 1988 discloses “a method for electronically publishing text-based data.” Specifically, Campbell 1988 discloses a computer-implemented database system for publishing various records. For example:

- *See, e.g.*, “The Hypertext Abstract Machine (HAM) is a general-purpose, transaction-based, multi-user server for a hypertext storage system,” at 856.
- *See, e.g.*, “The HAM stores all of the information it manages in graph, or databases, on a host machine’s file systems,” at 856.
- *See, e.g.*, “UNIX manual pages provide a convenient example of how the HAM can model Intermedia webs. The manual page for the mail command is used to create a small web of information. Each document (manual page) is represented as a HAM node,” at 859-860.

• **Fay 1996:**

Fay 1996 discloses “a method for electronically publishing text-based data.” Specifically, Fay 1996 discloses a computer based system for managing a number of complex versioned documents. For example:

- *See, e.g.*, “A system of managing a large number of complex versioned documents,” at Abstract.

• **Haake 1992:**

Haake 1992 discloses “a method for electronically publishing text-based data.” Specifically, Haake 1992 discloses a computer-implemented hypertext system for

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electronic authoring and publishing. For example:

- *See, e.g.*, “Publishing can be characterized as the incremental, cooperative production of documents. Therefore, support for the maintenance of the final and interim data is an ultimate demand. In general, versioning is considered an important issue in hypertext systems,” at 43.

- **Horne 1997:**

Horne 1997 discloses “a method for electronically publishing text-based data.” Specifically, Horne 1997 discloses a computer-implemented database system for publishing statutes. For example:

- *See, e.g.*, “Since the mid 1980s every statute and statutory instrument has been coded using SGML (the Standard Generalized Markup Language),” at 2.
- *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,” at 3.

- **Kim 1996:**

Kim 1996 discloses “a method for electronically publishing text-based data.” Specifically, Kim 1996 discloses a computer-implemented database system for publishing various types of multimedia, including text-based data. For example:

- *See, e.g.*, “In this paper, we design a new hypermedia markup language using SGML and implement an object-oriented hypermedia system on top of the Postgres,” at 496.
- *See, e.g.*, “Multimedia applications, such as digital libraries, electronic publishing, teleconferencing, and visualization, have already become engrained in our practice,” at 496.
- *See, e.g.*, “Multimedia data basically concerns with semi-structured and complex data, such as text, audio, images and moving pictures,” at 496.

- **Larson 1988:**

Larson 1988 discloses “a method for electronically publishing text-based data.” Specifically, Larson 1988 discloses a method for electronically publishing text-based data such as hypertext. For example:

- *See, e.g.*, “This paper takes a more reasoned look at the nature and potential of hypertext and hypermedia developments, and considers their problems as well as their possibilities for large scale information systems. We will first present a

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conceptual model of hypertext and hypermedia systems without regard to implementation. The characteristics of some representative hypertext systems are then discussed. Finally, the major problems faced by hypertext systems, and some possible solutions based on research in information retrieval are suggested,” at 195.

• **Lo 1995:**

Lo 1995 discloses “a method for electronically publishing text-based data.” Specifically, Lo 1995 discloses a computer-implemented document management system for publishing text-based documents, including documents with multiple versions. For example:

- *See, e.g.*, “Links and versioning are two important aspects of document management,” at 339.
- *See, e.g.*, “Links represent inherent associations of content and structure of texts,” at 339.
- *See, e.g.*, “Recently there is a growing interest and research focus on version control in hypertext systems, which certainly provides support to the domain of document management with link versioning,” at 339.
- *See, e.g.*, “Furthermore, while the description of a document’s structure is primarily applied in publication, database technology could also make use of this structural knowledge to enhance its management of documents,” at 339.
- *See, e.g.*, “Currently a prototype that handles links and versioning of documents is being implemented on a Structured Information Manager (SIM), a document management database developed by Collaborative Information Technology Research Institute (CITRI), Melbourne,” at 345.

• **Lo 1996:**

Lo 1996 discloses “a method for electronically publishing text-based data.” Specifically, Lo 1996 discloses a system for storing, managing, querying, and displaying multimedia data. For example:

- *See, e.g.*, page 7, section 1.2.1, describing the requirements and capabilities of Document Management Systems, including “document formation, document storage, document discovery, document delivery and document removal.”

• **Osterbye 1992:**

Osterbye 1992 discloses “a method for electronically publishing text-based data.” Specifically, Osterbye 1992 discloses a computer-implemented document management system for publishing text-based documents, such as systems used in museums, in

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instruction books, and for software development. For example:

- *See, e.g.*, “This paper discusses issues related to providing version control in hypertext systems,” at 33.
- *See, e.g.*, “There are two main types of hypertext systems, those for browsing, and those for authoring. The former allow the user to browse through information provided by someone else, but not to add new information. These systems can be found at for instance, museums, or as instruction books. The latter type is typically used for development of products, such as the above mentioned hyperdocuments used at museums, or for e.g. software engineering,” at 33.
- *See, e.g.*, “The data model used in this paper is illustrated in figure 1. The top of the hierarchy is an entity which allows attributes to be attached to all entities,” at 34.

• **Promenschenkel 1995:**

Promenschenkel 1995 discloses “a method for electronically publishing text-based data.” Specifically, Promenschenkel 1995 discloses electronically publishing text-based documents. For example:

- *See, e.g.*, “A new OCLC/IDI system designed to revolutionize the way documents, journals and magazines are created and distributed is being implemented at the Association for Computing Machinery (ACM),” at 1.
- *See, e.g.*, “The ACLC/IDI System of Total Electronic Publishing Services (STEPS) ... enables a totally electronic publishing process, from authoring to eventual distribution in print and electronic form,” at 1.

• **Sacks-Davis 1994:**

Sacks-Davis 1994 discloses “a method for electronically publishing text-based data.” Specifically, Sacks-Davis 1994 discloses a computer-implemented database system for publishing text-based documents. For example:

- *See, e.g.*, “Documents stored in a database system can have complex internal structure described by a language such as SGML,” at THOM00198835.
- *See, e.g.*, “The requirement for future systems will be to store complex documents such as journal articles, complete books or entire libraries. Such database systems need to provide much of the functionality associated with traditional database systems hitherto absent from text databases while maintaining the traditional functionality of text retrieval systems,” at THOM00198835.
- *See, e.g.*, “A typical library stores periodicals, dictionaries, encyclopedias, text books, and novels all in the one repository, and a text database should be able to replicate

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this behavior,” at THOM00198837.

• **Sacks-Davis 1995:**

Sacks-Davis 1995 discloses “a method for electronically publishing text-based data.” Specifically, Sacks-Davis 1995 discloses a computer-implemented database system for publishing text-based documents. For example:

- *See, e.g.*, “Advanced database applications require facilities such as text indexing, image storage, and the ability to store data with a complex structure... In this paper we describe Atlas, a nested relational database system that has been designed for text-based applications,” at 454.

• **Sciore 1991:**

Sciore 1991 discloses “a method for electronically publishing text-based data.” Specifically, Sciore 1991 discloses a computer-implemented database system for publishing text-based documents. For example:

- *See, e.g.*, “Many database applications require the storage and manipulation of different versions of data objects,” at 355.
- *See, e.g.*, “There are three application areas for which versioning has become especially important: historical databases, CASE systems, and CAD databases,” at 355.
- *See, e.g.*, “Our results can be used by general-purpose database systems to provide high-level support for versioning; application systems (such as CASE tools) will be much easier to write. Moreover, our results increase the overall understanding of what versioning is all about. Consequently, it seems likely that our ideas can be mapped easily to post-relational and deductive systems,” at 357.

• **Sciore 1994:**

Sciore 1994 discloses “a method for electronically publishing text-based data.” Specifically, Sciore 1994 discloses a computer implemented database system for publishing text based data, and discusses specific examples of bicycle designs and employment records. For example:

- *See, e.g.*, “This article has been concerned with encoding the basic ideas of versioning and configuration management into a data model,” at 104.
- *See, e.g.*, “Many database applications require the storage and manipulation of different versions of data objects,” at Abstract.

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• **Stonebraker 1990:**

Stonebraker 1990 discloses “a method for electronically publishing text-based data.” Specifically, Stonebraker 1990 discloses a system for storing, managing, querying, and retrieving multimedia data. For example:

- *See generally* page 125, at Introduction.

• **Taylor 1994:**

Taylor 1994 discloses “a method for electronically publishing text-based data.” Specifically, Taylor 1994 discloses a system for storing, managing, querying, and displaying multimedia data. For example:

- *See, e.g.*, “The work described here is part of a hypermedia research project . . . which aims to explore the potential of a semantic database approach to hypermedia architecture,” at 239.
- *See, e.g.*, “The current media base is a collection of approximately 100 historical photographs of Pontypridd as well as some textual and oral histories,” at 239.

• **Travis & Waldt:**

Travis & Waldt discloses “a method for electronically publishing text-based data.” Specifically, Travis & Waldt disclose a computer based publishing system using the SGML language. For example:

- *See, e.g.*, “This Chapter discusses the business issues and goals that drive an organization to implement a publishing system based on SGML, including technological changes in publishing systems and the opportunities they present to a system designer. Concepts of SGML, database publishing, and the goals of an SGML-based publishing system are discussed,” at 3-4.
- *See passim.*

• **Wilkinson 1998:**

Wilkinson 1998 discloses “a method for electronically publishing text-based data.” The entire Wilkinson 1998 reference discusses document management systems, and Chapter 5 discusses publication of electronic documents.

• **Wilson 1988:**

Wilson 1988 discloses “a method for electronically publishing text-based data.” Specifically, Wilson 1988 discloses a computer-implemented database system for

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publishing text-based documents, such as statutes. For example:

- *See, e.g.*, “Justus is an information retrieval system for an integrated legal database...It runs under the hypertext system, Guide,” at 27.

- **Wilson 1990:**

Wilson 1990 discloses “a method for electronically publishing text-based data.” Specifically, Wilson 1990 discloses a computer-implemented database system for publishing text-based documents, including legal texts. For example:

- *See, e.g.*, “The conversion was completed as part of the Justus project, which aims to provide an integrated hypertext law library containing diverse documents all of which have been converted by the Justus programs to hypertext documents,” at 119.

- **Wilson 1992:**

Wilson 1992 discloses “a method for electronically publishing text-based data.” Specifically, Wilson 1992 discloses the computer-implemented Guide system for storing legal documents, including legislative materials. For example:

- *See, e.g.*, “This paper looks at some common structures for legal documents and describes how these structures can be mapped automatically into the Guide hypertext system,” at Abstract.
- *See, e.g.*, “A version of Guide has been developed by Office Workstations Ltd. (OWL) to run on Macintoshes and IBM PC’s,” at 162.

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

The Westlaw/Westmate system is a computer-implemented system for creating, processing, and publishing text-based legislation. Use of this system therefore constitutes a method for electronically publishing text based data. *See generally, e.g.* Wren 1994. *See also, e.g.*;

- The Essential Guide 1996, at 3: “You can use WESTLAW to retrieve information from primary sources, such as cases and statutes from all 50 states and the District of Columbia, and from secondary sources, such as law reviews and treatises. You can seamlessly access Dow Jones News/Retrieval sources, including *The Wall Street Journal*, the same-day *New York Times* News Service and over 2,000 other sources. In addition, WESTLAW contains hundreds of databases from DIALOG, the world’s largest online source of factual information. Subjects covered include business, current events, intellectual property, medicine, science and technology, and much more.”

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• **The Pre-1997 Premise System:**¹

The Premise system is a computer-implemented system for creating, processing, and publishing text-based legislation. Use of this system therefore constitutes a method for electronically publishing text based data. *See generally, e.g.* THOM00194621–23 and Premise Publisher, at 2.

• **The Astoria System (pre-1997):**

The Astoria System is a computer-implemented system for creating, processing, and publishing text-based data. Use of this system therefore constitutes a method for electronically publishing text-based data. For example:

- *See, e.g.,* Astoria 1997-1: “Astoria . . . is a powerful yet easy-to-use document component management system that provides the information repository and management infrastructure needed to help organizations capture critical business knowledge and distribute it more efficiently. . . . Astoria is ideally suited to applications where organizations capture, manage, reuse, and distribute business knowledge using multiple output methods: paper, CD-ROM, and the World Wide Web. . . . [A] commercial publisher . . . can make a single unit of information pay for itself many times over by republishing it in multiple documents and on multiple media.” at THOM00211907.

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

The EnAct system is a computer-implemented system for creating, processing, and publishing text-based legislation. Use of this system therefore constitutes a method for electronically publishing text based data. For example:

- TSS 1994, “Drafting System with Automatic Consolidation,” at 4-5 (text following the heading).
- Arnold-Moore 1997-2, at Abstract.
- TSS 1999.

• **The SCALEplus System:**

The SCALEplus system is a computer-implemented system for creating, processing, and publishing text-based legislation. Use of this system therefore constitutes a method for electronically publishing text based data. *See generally* Kerr 2000, Chapter 6.

¹Select “File/Library Maintenance/Install CD-ROM Book...” from menu to install the West’s Annotated California Codes.

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• **The Documentum/Interleaf System²:**

The Documentum/Interleaf system is a computer-implemented system for creating, processing, and publishing text-based documents. Use of this system therefore constitutes a method for electronically publishing text based data. *See generally* Ovum Documentum 1996; Ovum Interleaf 1996.

• **The Core Materials on Legal Ethics System:**

The Core Materials on Legal Ethics system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

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

The Federal Rules of Civil Procedure system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

• **The Law Desk NY System:**

The Law Desk NY system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

• **The Law Desk USCS System:**

The Law Desk USCS system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

• **The New Mexico Law System:**

The New Mexico Law on Legal Ethics system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

• **The NY Official Reports System:**

The NY Official Reports system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

• **The NY CLS Beta System:**

The NY CLS Beta system is a computer-implemented system for creating, processing,

² The term “Documentum/Interleaf System” is used herein to indicate a variety of interrelated systems that can be mixed and matched by customers. For example, this “system” could be (and indeed was) configured in a variety of ways by customers: *e.g.* Documentum/Leafconnect; Interleaf/RDM; Documentum/Accelera; Documentum/RightSite; Documentum standing alone, etc.

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and publishing text-based legal materials.

- **The OnPoint System:**

The OnPoint system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

- **The Social Security Plus System:**

The Social Security Plus system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

- **The UCC System:**

The UCC system is a computer-implemented system for creating, processing, and publishing text-based legal materials.

(b) dividing the text-based data into a plurality of portions of text-based data;

- **Agosti 1991:**

Agosti 1991 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Agosti 1991 discloses storing predefined portions consisting of legal documents such as legislative acts, or portions of such documents. For example:

- *See, e.g.*, “The system thus created, called HyperLaw, is an experimental tool for handling legal collections of full text and reference documents: law, case law, legal authority,” at 321.
- *See, e.g.*, “Each node of the hypderdocument is an informative item consisting of the document representation, which follows the previously introduced structure, together with the text of the document. A complete document may be represented by a node or a set of nodes,” at 318.

- **Anwar 1996:**

Anwar 1996 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Anwar 1996 discloses a method for electronically presenting data, including portions of text-based data. For example:

- *See, e.g.*, “The inventor has found that a new multi-dimensional display and manipulation system can be implemented on a computer or in a computer memory that allow a user to display, manipulate and analyze large data structures that have many different levels and type of data,” at 6:7–11.
- *See, e.g.*, Sample Problem, starting at 11:60, demonstrating that the data consists of

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text-based portions.

• **Arnold-Moore 1994:**

Arnold-Moore 1994 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Arnold-Moore 1994 discloses storing legislative acts, or predefined portions of legislative acts such as sections, which are referred to in the article alternatively as “elements,” “nodes,” and/or “atoms.” For example:

- *See, e.g.*, “The problem of presentation is addressed by storing Acts ... in SGML format ... which would state that every act must contain sections, and each section must contain text. Each Act would then be encoded with tags which identify which text was included in each element,” at 1.
- *See, e.g.*, “Contrast this with legislation where a single Act of Parliament might be broken down into many hundreds of numbered sections which in turn are broken into numbered sub-sections or paragraphs and sub-paragraphs. In larger Acts, these sections are grouped in chapters, parts, divisions and/or subdivisions each with a label and usually a heading or title. Within each Act and across all the legislation of a particular governing body, the use and nomenclature of each level of structure is consistent. To avoid confusion with these terms which have specific meaning in the context of legislation they are referred to collectively as *elements* of the document,” at 2.
- *See, e.g.*, “We propose to break each level into its constituent parts. The data level which is the structure containing the text we break into two parts: 1. The atoms – or smallest retrievable units which may be grouped by version, by document, or by time; 2. the version skeletons – which contain the structure of each version together with pointers to the atoms which they contain,” at 15.
- *See, e.g.*, “A particular SGML document can be thought of as a tree containing text only at its leaf nodes,” at 8
- *See, e.g.*, “The simplest solution to this problem is to apply the amending Acts (either by hand or automatically) once to produce each consolidation, and to store each consolidation as well as the principal Act (and each of the amending Acts),” at 9. *See also* Figure 1(b).
- *See, e.g.*, “An alternative to this, is not a strictly delta representation, but falls somewhere between that and the independent version storage scheme. By generalizing the results of Su and Chen for relational databases, we can treat SGML documents as trees of elements. Where successive consolidations do not change a particular element, we store a pruned tree with a stub marking that the element has not changed. The element can be retrieved from the previous consolidation. Where it has changed we represent the new element,” at 11.

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- *See generally* 11-12.
- *See, e.g.*, “Alternatively the power of SGML can be applied to break the consolidation into pieces and store only the version skeletons and elements,” at 12.
- *See, e.g.*, “we break each Act into atoms (in this case sections and schedules),” at 15.

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

Arnold-Moore 1994-2 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Arnold-Moore 1994-2 discloses storing predefined portions consisting of legal documents such as legislative acts, or portions of such documents. For example:

- *See, e.g.*, “The model also gives flexibility to the implementor to retrieve whole documents and decompose them, retrieve atomic elements and recombine them, or pursue alternatives which retrieve the elements directly,” at THOM00196608.
- *See, e.g.*, “In this case, information is typically broken into small units,” at THOM00196608.
- *See, e.g.*, “The database should also allow for partial document retrieval. The whole of a government Act may be an inappropriate retrieval unit, if one is searching for a definition. There may be a number of relevant portions of a single document that are relevant, and yet the whole document may still be an inappropriate retrieval unit,” at THOM00196608.
- *See, e.g.*, “We chose elements as our base rather than whole documents as an SGML document is always an element, and using elements adds generality to the query without undue additional complexity allowing arbitrary node sizes instead of the traditional fixed node size,” at THOM00196612.

- **Arnold-Moore 1995:**

Arnold-Moore 1995 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Arnold-Moore 1995 discloses breaking legislative material into logical pieces, such as sections or paragraphs, for storage. For example:

- *See, e.g.*, “[L]egislation has a complex structure which follows predefined rules. All Acts contain numbered sections. These sections can themselves contain subsections, paragraphs, subparagraphs, clauses, subclauses and definitions. In larger Acts these sections may be collected in a combination of chapters, parts, divisions and subdivisions. To avoid confusion with the specific meaning of these terms in legislation we collectively describe these as the elements of an Act,” at 297.
- *See, e.g.*, The structure of legislation allows for “retrieval by the content of particular

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elements and retrieval of elements at an arbitrary level,” at 297.

• **Arnold-Moore 1997:**

Arnold-Moore 1997 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Arnold-Moore 1997 discloses storing predefined portions consisting of portions of legislative acts. For example:

- *See, e.g.*, “The Fragments which make up the document are generated rather than simply being assembled or having the results of user queries inserted in particular places,” at 58.
- *See, e.g.*, “The section elements contains the headnote, and text elements and two attributes, secno which is the number of the section, and id which is a unique identifier within that document for that section which encodes much of the context information about that element,” at 58.

• **Arnold-Moore 1997-2:**

Arnold-Moore 1997-2 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Arnold-Moore 1997-2 discloses storing legislative acts, or predefined portions of legislative acts such as sections, which are referred to as elements.” For example:

- *See, e.g.*, “Themis uses SGML to store legislation,” at 175.
- *See, e.g.*, “In particular, the complex structure of legislation and different versions of a particular piece of legislation can be better supported,” at 175.
- *See, e.g.*, “By contract, each category of legislation has a strictly defined structure, Statutes are broken into numbered sections (each of which may contain numbered subsections, paragraphs and subparagraphs) and schedules. These sections may be collected in parts, divisions or subdivisions,” at 175.
- *See, e.g.*, “Digital legislation libraries need to reflect this independence by allowing the user to retrieve either individual elements (providing each element is a cohesive whole) or the whole Statute,” at 176.
- *See, e.g.*, “A digital library which makes use of SGML can provide access to elements and not just whole documents,” at 177.
- *See, e.g.*, “In the Themis system we have chosen to fragment documents at the section level for the body of the Statutes as all Statutes have a section (or equivalent), and in the tail, schedules and appendices are fragmented only if they contain Parts, an Annexure or a Code,” at 177.

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• **Bachman 1973:**

Bachman 1973 inherently discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Bachman 1973 discloses storing text-based data without specifying or limiting the size of the stored data. For example:

- *See, e.g.*, “From this point, I want to begin the programmer’s training as a full fledged navigator in an n dimensional data space,” at 654.
- *See, e.g.*, “It involves all aspects of storing, retrieving, modifying, and deleting data in the files on personnel and production, airline reservations, or laboratory experiments – data which is used repeatedly and updated as new information becomes available,” at 654.

• **Bentley 1979:**

Bentley 1979 inherently discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Bentley 1979 discloses storing text-based data without specifying or limiting the size of the stored data. For example:

- *See, e.g.*, “In database terminology a file is a collection of records, each containing several attributes or keys,” at 397.
- *See, e.g.*, “In a geographic database of U.S. cities...,” at 398.
- *See, e.g.*, “To compile an honor list of older students...,” at 398.

• **Campbell 1988:**

Campbell 1988 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Campbell 1988 discloses storing portions of documents, such as individual pages of a user manual. For example:

- *See, e.g.*, “A node contains arbitrary data that can be stored as text or as fixed-length binary blocks,” at 856.
- *See, e.g.*, “UNIX manual pages provide a convenient example of how the HAM can model Intermedia webs. The manual page for the mail command is used to create a small web of information. Each document (manual page) is represented as a HAM node,” at 859-60.

• **Fay 1996:**

Fay 1996 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Fay 1996 discloses that documents are divided into subparts for

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purposes of storage. For example:

- *See, e.g.*, “Each element of a document is associated with a data field. For example, one node of a tree may be a chapter, and contain textual data in the form of a chapter heading, a chapter introductory paragraph, a chapter abstract, etc., as well as “structural” data such as the identity of a parent (document), identity of children (sections), and connections to other places in other documents where the same language may also be used,” at 1:25-32.

• **Haake 1992:**

Haake 1992 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Haake 1992 discloses a system that stores portions of text-based data. For example,

- *See, e.g.*, “SEPIA’s basic hypertext objects are typed atomic nodes, typed composite nodes, and typed labeled links. Composite nodes contain an ordered set of references to other hypertext objects while atomic nodes contain data like text, graphics etc,” at 44.

• **Horne 1997:**

Horne 1997 inherently discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Horne 1997 discloses storing text-based statutes without specifying or limiting the size of the stored data. For example:

- *See, e.g.*, “Since the mid 1980s every statute and statutory instrument has been coded using SGML (the Standard Generalized Markup Language),” at 2.
- *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,” at 3.

• **Kim 1996:**

Kim 1996 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Kim 1996 discloses storing “nodes” or “elements” of information that are sufficiently small to avoid storing redundant data. For example:

- *See, e.g.*, “Finally, our hypermedia system can provide database management system functions such as ... version control of structured document components as separate objects,” at 496.
- *See, e.g.*, “The identifier makes it possible not only to share hypermedia data between documents written in HOML but also to avoid redundant data and data

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fragmentation. As the Dexter Hypertext Reference Mode suggests, we distinguish nodes from links, i.e., a relation between hypermedia data,” at 497.

- *See, e.g.*, “Fourthly, since a composite object can refer elements, i.e., atomic objects, the composite object provides a syntax for the synchronization of its reference elements,” at 497.

- **Larson 1988:**

Larson 1988 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Larson 1988 discloses storing portions of text-based data, including documents. For example:

- *See, e.g.*, “A hypertext system is made up of a set of ‘nodes’ and ‘links’. Nodes represent information sources in digital form. They may be segments of text,” at 195.

- **Lo 1995:**

Lo 1995 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Lo 1995 discloses storing text-based documents. For example:

- *See, e.g.*, “Links and versioning are two important aspects of document management,” at 339.
- *See, e.g.*, “Links represent inherent associations of content and structure of texts,” at 339.
- *See, e.g.*, “Recently there is a growing interest and research focus on version control in hypertext systems, which certainly provides support to the domain of document management with link versioning,” at 339.
- *See, e.g.*, “The document database may never delete any committed document version,” at 340.
- *See, e.g.*, “Currently a prototype that handles links and versioning of documents is being implemented on a Structured Information Manager (SIM), a document management database developed by Collaborative Information Technology Research Institute (CITRI), Melbourne,” at 345.

- **Lo 1996:**

Lo 1996 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Lo 1996 discloses dividing documents into portions and storing the portions. For example:

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- *See, e.g.*, page 7, section 1.2.1, describing the requirements of Document Management Systems, including for example: “document formation, document storage, document discovery, document delivery and document removal.”
- *See, e.g.*, page 23: “Hypertext is characterized by the notion of non-linear organization and presentation of textual information. The non-linearity is achieved by breaking down documents into a number of pages, which are then linked to each other in a network.”
- *See, e.g.*, page 32, text following heading “The Fragmentation Model”: “Since structure can be recognized in documents, components such as chapters or sections can be recognized and hence be manipulated individually. The fragmentation model makes use of this advantage brought by the described structure to store only the modified components of a document when a new version of it is created.”
- *See, e.g.*, page 34: “Möller recognizes that structured documents can be partitioned into a number of smaller units (fragments), each of which may contain one specific information item.”
- *See generally, e.g.*, section 2.3.4, starting on page 44, entitled “SGML Document Fragmentation.”
- **Osterbye 1992:**

Osterbye 1992 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Osterbye 1992 discloses storing text-based documents as nodes in the disclosed system. For example:

 - *See, e.g.*, “Is it desirable to keep versions of the individual nodes and links, or do we only want to track entire ‘hyperdocuments’?” at 33.
 - *See, e.g.*, “Nodes are entities which have contents, and are specialized into atomic nodes which do not contain other entities, and composites which do contain other entities,” at 34.
 - *See, e.g.*, “In software engineering there are two levels of versioning. The lowest levels are the different modules that make up the programs. Each module can exist in several versions, and all the versions of a module is often referred to as a version group,” at 34.
 - *See, e.g.*, “Nodes correspond to modules; notes will normally be short, e.g. sections or paragraphs rather than chapters, or routines rather than files,” at 35.
 - *See, e.g.*, “The node is the basic entity for storing contents. We require all nodes to have an attribute for contents and a name. Nodes are versioned,” at 38.

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• **Peltonen 1993:**

Peltonen 1993 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Peltonen 1993 discloses storing portions of text-based data, including documents. For example:

- *See, e.g.*, “*Documents* represent any data for design tools: drawings, manuals, bitmap images, etc. Originally we only used the concepts of a document and document version. However, our industrial partner turned out to require a considerably richer document structure. A document therefore includes a number of subdocuments, each subdocument has a number of subdocument versions, and each subdocument version has a number of representations,” at 6.
- *See, e.g.*, Figure 2.
- *See, e.g.*, “Documents are composed of *subdocuments*. For instance, suppose a drawing comprises several sheets, each of which is manipulated as a separate file by the drawing tool. The sheets of the drawing as a whole form a single document, and each sheet is a subdocument. Subdocuments are also needed for a text document which includes figures made with a separate drawing program. The text file and the graphics files are stored in the database as separate subdocuments,” at 7.

• **Promenschenkel 1995:**

Promenschenkel 1995 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Promenschenkel 1995 discloses storing components of documents which can later be compiled. For example:

- *See, e.g.*, “This allows components to be stored, manipulated and eventually assembled automatically as a magazine, electronic journal, book or in virtually any other form chosen by the publishers,” at 1.
- *See, e.g.*, “STEPS automatically translates the articles into SGML and stores them in a BASISplus database using the BASIS SGML server,” at 2.

• **Sacks-Davis 1994:**

Sacks-Davis 1994 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Sacks-Davis 1994 discloses storing “elements” of information that can be combined to form a complete document. For example:

- *See, e.g.*, “The last possibility we consider is to use an element-based model designed specifically for SGML documents. While alternatives that rely on retrieving multiple tuples or objects must then combine the objects to give the full text of the element, and those retrieving whole documents must decompose documents to extract the elements, the element approach supports retrieval by element directly,” at

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THOM00198841.

- *See, e.g.*, “It is also possible to index the atomic elements (objects or relations) and then define a join operation for text objects or relations that allows these results to be combined to access higher level elements, an approach applicable to either relational or object-based models,” at THOM00198844.

- **Sacks-Davis 1995:**

Sacks-Davis 1995 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Sacks-Davis 1995 discloses storing “fragments” or “nodes” of information that are smaller than an entire document. For example:

- *See, e.g.*, “A hypertext node is represented by a record in the Hypertext table and consists of a node identifier, a reference to the associated document, the content of the node, and a nested table of links to related nodes,” at 455.
- *See, e.g.*, “Records are atomic; that is, they are always stored and retrieved as an indivisible unit,” at 460.
- *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,” at 465.
- *See, e.g.*, “Once the structure is determined, a document can be partitioned into fragments to be stored in a database system,” at 465.
- *See, e.g.*, “Since document parts, such as chapters or sections, are represented as subtrees within a document tree, the Hypertext table will typically contain an attribute identifying the parent of a node and another attribute identifying the sibling order of a node within a tree,” at 465.

- **Sciore 1991:**

Sciore 1991 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Sciore 1991 discloses storing predefined portions such as, for example, bicycle designs or employee records. For example:

- *See, e.g.*, “Our results can be used by general-purpose database systems to provide high-level support for versioning; application systems (such as CASE tools) will be much easier to write. Moreover, our results increase the overall understanding of what versioning is all about. Consequently, it seems likely that our ideas can be mapped easily to post-relational and deductive systems,” at 357.
- *See, e.g.*, “Each instance of a BicycleDesign models a design project, and has associated requirements, a sponsoring client, and a due date. Each instance of

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BicycleVersion models a particular version of a given design,” at 358.

- *See, e.g.*, “Each EmployeeHistory object records a change to its associated employee,” at 364.

- **Sciore 1994:**

Sciore 1994 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Sciore 1994 discloses storing text based data such as bicycle designs or employment records, which are referred to in the article as “versions of an object.” For example:

- *See, e.g.*, “The schema declaration of Figure 1 illustrates the above concepts. Each instance of Bicycle models a CAD design project, and has an associated project name, client and due date. The type BicycleVersion models versions of a given bicycle design,” at 81.
- *See, e.g.*, “Figure 3 illustrates an historical database in EXTRA-V. This scheme has three conceptual types: Person, Employee, and Company. A version of a conceptual object denotes a previous or current state of the object. Each time a versioned attribute changes, a new version is created corresponding to the new state,” at 87.
- *See, e.g.*, “Each Employee version contains the information about an employee during some time interval,” at 87.

- **Stonebraker 1990:**

Stonebraker 1990 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Stonebraker 1990 discloses a system for storing portions of text-based data. For example:

- *See generally* page 125, at Introduction (discussing storage of newspaper article and related multi-media information).

- **Taylor 1994:**

Taylor 1994 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Taylor 1994 discloses a database and system for storing, querying, and displaying portions of text-based data. For example:

- *See, e.g.*, “The current media base is a collection of approximately 100 historical photographs of Pontypridd as well as some textual and oral histories,” at 239.

- **Travis & Waldt:**

Travis & Waldt discloses “dividing the text-based data into a plurality of portions of

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text-based data.” Specifically, Travis & Waldt discloses breaking documents into logical pieces for storage. For example:

- *See, e.g.*, “Currently, the documents are stored in either complete document form, or as very large document fragments. Access to smaller document fragments concurrently by multiple authors could expedite editing speed and allow for easier reuse of information. Storing document information as logical elements, which may be very small portions of documents, will create a large number of units of information that will need to be managed. Again, the DBMS is designed to manage large numbers of smaller information elements,” at 17.
- *See, e.g.*, “In implementing an SGML database, the most important factor is to determine the level of granularity. That is, which objects should be tracked and managed as a single piece. Sometimes this is a chapter or section, but it could be as large as the entire book or as small as every element or word,” at 110-111.
- *See, e.g.*, “The key to successful entity management is to break a document into logical pieces, which can be managed independently, while maintaining their identity in a particular document or set of documents,” at 185.
- *See, e.g.*, “The Industrial Relations Act itself is a node that consists of the general description of the Act, nine Part nodes, and eight Schedule nodes,” at 162.
- *See, e.g.*, “The most important factor when implementing an SGML-enabled database is to determine the level at which the document information will be split. This is usually called ‘granularity’, and each piece is called a ‘grain’ or ‘atom’ Grains are typically chapters or parts, but we have seen implementations where each paragraph is stored separately Setting the grain size too large may cause unnecessary data access overhead Setting the grain size too small causes problems, also,” at 202–03.
- *See, e.g.*, “Determining the proper level of granularity is largely a matter of how the data is structured, and what its purpose is in the enterprise,” at 203.
- *See, e.g.*, “Sometimes, the level of granularity is self-defining. A common way is to break by chapter or sub-chapter. It is the level at which the author is likely to work. In many situations, even if a book has several authors or maintainers, a chapter will be owned by a single person. By setting the grain size to this object, the database reflects what the users do naturally,” at 203.
- *See, e.g.*, “A database loader in an SGML-enabled system contains some kind of “atomizer” that breaks the source document into the grain-sized pieces mentioned above,” at 204.
- **Wilkinson 1998:**

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Wilkinson 1998 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Wilkinson 1998 discloses dividing documents into portions and storing the portions. For example:

- *See, e.g.*, “[E]ither documents or their components have to be stored. The key task in using components is to decide on how documents are to be partitioned into components. The advantage in storing components instead of whole documents is that useful fragments can be retrieved without incurring the cost of retrieving whole documents,” at 100.
- *See, e.g.* “Alternatively, documents can be regarded as sets of fragments that have properties including type, parents, and children,” at 103.

- **Wilson 1992 :**

Wilson 1992 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Wilson 1992 discloses storing legislative acts, or predefined portions of legislative acts such as sections. For example:

- *See, e.g.*, “An Act of Parliament may be divided into parts, sections, subsections, and paragraphs; a schedule, into subschedules, paragraphs and subparagraphs. An act must have at least one subsection; a schedule at least one paragraph. Hence, the text is already divided into segments...the text segments are the basic units of information, or lowest level nodes, of the hypertext system,” at 161.

- **Wilson 1988:**

Wilson 1988 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Wilson 1988 discloses storing documents, such as legislation, as hypertext nodes. For example:

- *See, e.g.*, “Justus automatically converts machine-readable versions of a variety of legal documents into hypertext documents for the Guide hypertext system,” at 30.
- *See, e.g.*, “In a hypertext system, texts are divided into segments, sometimes called nodes,” at 32.
- *See, e.g.*, “The text of a statute is particularly amendable to representation in a hypertext system because it is already highly structured,” at 32.
- *See, e.g.*, “Each subsection label provided by the legal draftsmen is automatically converted by Justus into a node name or, in Guide terms, a definition button,” at 32.

- **Wilson 1990:**

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Wilson 1990 discloses “dividing the text-based data into a plurality of portions of text-based data.” Specifically, Wilson 1990 discloses storing legal documents as hypertext nodes. For example:

- *See, e.g.*, “The conversion was completed as part of the Justus project, which aims to provide an integrated hypertext law library containing diverse documents all of which have been converted by the Justus programs to hypertext documents,” at 119.
- *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 123.
- *See, e.g.*, “the lowest level node is a single sentence,” at 123.
- *See, e.g.*, “The definition file is the full text of the law reports segmented into labeled nodes...The nodes correspond with the basic components of a law report described above,” at 124.

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

The Westlaw/Westmate system discloses “dividing the text-based data into a plurality of portions of text-based data.” *See, e.g.*:

- DataBasics 1993, at doc no. 79858–59 (“United States Code Annotated”): “A document is an annotated or unannotated section of USCA.”
- www.westlaw.com: any annual statutory database prior to 1998
- Westlaw DB 1991, at 18–21 (disclosing the TEXT file containing predefined portions of text-based data)
- Wren 1994, at 109–11, 141–42 (discussing statutory sections being searchable on Westlaw)
- The Essential Guide 1996, at 136 (showing that the text-based data within WESTLAW is stored as statutory sections)

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

The Premise system discloses “dividing the text-based data into a plurality of portions of text-based data.” *See, e.g.*:

- Premise Software & Statutes: “Browse” the “Document List” in the CA-STAT-AN1 database within the Premise software to view the portions of legislation associated

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with the Premise system.

• **The Astoria System (pre-1997):**

The Astoria System contained predefined portions of text-based data. Use of this system therefore constitutes a method for dividing the text-based data into a plurality of portions of text-based data. For example:

- *See, e.g.*, Astoria 1997-1: “Astoria lets users navigate through the document depository and view documents down to the individual components that comprise them.” at THOM00211907.
- *See, e.g.*, XSoft Astoria: “Astoria deals with the concept of ‘document components.’ A document component is a piece that is designed to be maintained as a unit, whether this be at the volume or book level, or at some finer granular point, such as paragraph or list.” (THOM00198652)

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

The EnAct system discloses “dividing the text-based data into a plurality of portions of text-based data.” *See, e.g.*:

- Arnold-Moore 1997-2, at 177–78: “In the *Themis* system we have chosen to fragment documents at the section level By using SGML to store the Statutes, we can automate the process of fragmenting large documents and only present to the user the part of the document that the user requests.”
- <http://web.archive.org/web/19990430002036/www.thelaw.tas.gov.au/background.html>: “All legislation in the database is broken up into a number of fragments (ie. one fragment per Section or Schedule).”

• **The SCALEplus System:**

The SCALEplus system discloses “dividing the text-based data into a plurality of portions of text-based data.” *See, e.g.*:

- Kerr 2000, at 11-13, ¶ 490: “The standard unit of retrieval for legislation is a section of an Act or a regulation in Regulations . . . and for caselaw is the entire case. Users are able to modify the searchable scope of these retrieved documents.”
- SCALEplus Secrets, at 2: “SCALEplus has lots of information that is huge, particularly legislation. SCALEplus data is formatted in HTML which is common to all World Wide Web applications but is ideally suited for one or a few pages—to view a document you have to wait for the browser to load it (often over a modem). Because of this the decision was made to turn each piece of legislation into a number of HTML files, each file being a section of that Legislation. When a results list is

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returned from SCALEplus what you see are the HTML files that have been found that match your search. For Legislation this will be a section of an Act; for Caselaw an individual case.”

• **The Documentum/Interleaf System:**

The Documentum/Interleaf system discloses “dividing the text-based data into a plurality of portions of text-based data.” *See, e.g.:*

- Interleaf provides support for compound documents, wherein documents are broken into components. *See Ovum Interleaf 1996, at 256–57.*
- Documentum provides support for compound documents, wherein documents are broken into components. *See Ovum Documentum 1996, at 210–212:* “Similarly, Documentum can be integrated with SGML parsers for importing SGML documents: using the parser, a large SGML document is turned into a set of compound documents, based on the internal document structure defined by the Document Type Definition.”

• **The Core Materials on Legal Ethics System:**

The Core Materials on Legal Ethics system contained predefined portions of text-based data.

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

The Federal Rules of Civil Procedure system contained predefined portions of text-based data.

• **The Law Desk NY System:**

The Law Desk NY system contained predefined portions of text-based data.

• **The Law Desk USCS System:**

The Law Desk USCS system contained predefined portions of text-based data.

• **The New Mexico Law System:**

The New Mexico Law on Legal Ethics system contained predefined portions of text-based data.

• **The NY Official Reports System:**

The NY Official Reports system contained predefined portions of text-based data.

• **The NY CLS Beta System:**

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The NY CLS Beta system contained predefined portions of text-based data.

- **The OnPoint System:**

The OnPoint system contained predefined portions of text-based data.

- **The Social Security Plus System:**

The Social Security Plus system contained predefined portions of text-based data.

- **The UCC System:**

- The UCC system contained predefined portions of text-based data.

(c) obtaining an amended portion of text-based data that is amended relative to one of the plurality of portions of text-based data;

- **Agosti 1991:**

Agosti 1991 discloses “obtaining an amended portion of text-based data that is amended relative to one of the plurality of portions of text-based data.” Specifically, Agosti 1991 discloses that the stored nodes can be changed and new nodes stored. Agosti 1991 further notes that this capability facilitates the storage of legal materials which evolve over time, such as statutory material. For example:

- *See, e.g.*, “This means, for example, that the insertion of a new descriptive term in the hyperconcept does not imply any modification of the hyperdocument; in the same way, insertion of a new document doesn’t entail any variation in the hyperconcept,” at 320.
- *See, e.g.*, “The model allows insertion and removal of single items of information maintaining the integrity of reference within the two level structure,” at 320.
- *See, e.g.*, “When the object is inserted in the network it becomes a node of the structure,” at 320.
- *See, e.g.*, “The system thus created, called HyperLaw, is an experimental tool for handling legal collections of full text and reference documents: law, case law, legal authority,” at 321.
- *See, e.g.*, “It is in fact possible to insert new information items into the hypertext network of the system loading them in from an external source file... This function is particularly important in the handling of a set of information which evolves in time,” at 324.