



(12) **United States Patent**
Davis

(10) **Patent No.:** **US 7,421,648 B1**
(45) **Date of Patent:** **Sep. 2, 2008**

- (54) **REUSABLE DATA MARKUP LANGUAGE** 5,838,906 A * 11/1998 Doyle et al. 709/202
 5,838,965 A 11/1998 Kavanagh et al.
 (75) Inventor: **Russell T. Davis**, Bethesda, MD (US) 5,894,311 A 4/1999 Jackson
 5,913,214 A 6/1999 Madnick et al.
 (73) Assignee: **e-Numerate Solutions, Inc.**, McLean, VA (US) 5,917,485 A 6/1999 Spellman et al.
 5,920,828 A 7/1999 Norris et al.
 (*) Notice: Subject to any disclaimer, the term of this 5,948,113 A 9/1999 Johnson et al.
 patent is extended or adjusted under 35 5,950,196 A * 9/1999 Pyreddy et al. 707/5
 U.S.C. 154(b) by 0 days. 5,956,737 A * 9/1999 King et al. 715/517
 5,974,413 A * 10/1999 Beauregard et al. 707/6
 5,999,944 A 12/1999 Lipkin
 6,014,661 A 1/2000 Ahlberg et al. 707/3

(21) Appl. No.: **09/573,778**

(22) Filed: **May 18, 2000**

(Continued)

Related U.S. Application Data

- (60) Provisional application No. 60/183,152, filed on Feb. 17, 2000, provisional application No. 60/135,525, filed on May 21, 1999.

- (51) **Int. Cl.**
G06F 15/00 (2006.01)
G06F 17/00 (2006.01)

- (52) **U.S. Cl.** **715/234**; 715/205; 705/1;
705/14; 717/106

- (58) **Field of Classification Search** 715/517,
715/501.1, 513, 205, 234; 717/108, 106;
707/5-6; 705/1, 14

See application file for complete search history.

- (56) **References Cited**

U.S. PATENT DOCUMENTS

- 4,674,043 A 6/1987 Hernandez et al.
 5,276,776 A 1/1994 Grady et al.
 5,339,392 A 8/1994 Risberg et al.
 5,423,032 A 6/1995 Byrd et al.
 5,603,021 A 2/1997 Spencer et al.
 5,737,592 A 4/1998 Nguyen et al.
 5,754,939 A 5/1998 Herz et al.
 5,822,587 A * 10/1998 McDonald et al. 717/108

OTHER PUBLICATIONS

Suzuki et al., Managing the software design documents with XML, ACM Proceedings of the 16th annual international conference on Computer documentation, Sep. 1998. pp. 127-136.*

(Continued)

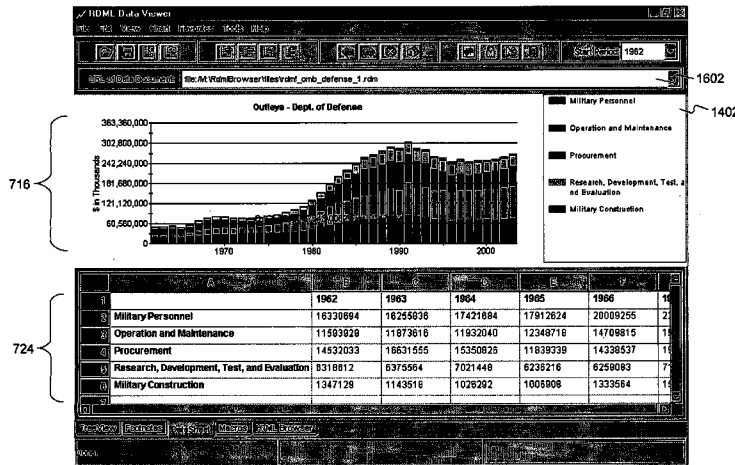
Primary Examiner—William L Bashore

(74) *Attorney, Agent, or Firm*—Finnegan, Henderson, Farabow, Garrett & Dunner, LLP

(57) **ABSTRACT**

Methods and systems provide a computer markup language, referred to as Reusable Data Markup Language (“RDML”), and a data viewer for retrieving, manipulating and viewing documents and files in the RDML format that may be stored locally or over a network (e.g., the Internet). Generally, RDML permits the browsing and manipulation of numbers, as opposed to text and images like in HTML, and does so by including attributes describing the meaning of the numbers to be attached to the numbers. Documents compliant with the markup language encapsulate machine-readable documentation with numbers and data, and permit the data viewer to act as a combination web browser and spreadsheet to automatically read, interpret and manipulate the numbers and data.

4 Claims, 40 Drawing Sheets



U.S. PATENT DOCUMENTS

6,026,388 A 2/2000 Liddy et al.
 6,026,397 A 2/2000 Sheppard
 6,034,676 A 3/2000 Egan et al.
 6,058,385 A 5/2000 Koza et al.
 6,065,026 A 5/2000 Cornelia et al.
 6,092,036 A 7/2000 Hamann
 6,097,888 A 8/2000 Simonyi
 6,108,662 A 8/2000 Hoskins et al.
 6,121,924 A 9/2000 Meek et al.
 6,134,563 A 10/2000 Clancey et al.
 6,160,549 A 12/2000 Touma et al.
 6,167,409 A 12/2000 DeRose et al.
 6,173,284 B1 1/2001 Brown
 6,195,676 B1 2/2001 Spix et al.
 6,199,046 B1* 3/2001 Heinzle et al. 705/1
 6,199,080 B1 3/2001 Nielsen
 6,223,189 B1 4/2001 Steffens et al.
 6,240,407 B1 5/2001 Chang et al.
 6,243,698 B1 6/2001 Powers et al.
 6,256,030 B1 7/2001 Berry et al.
 6,314,562 B1 11/2001 Biggerstaff
 6,317,750 B1 11/2001 Tortolani et al.
 6,349,307 B1 2/2002 Chen
 6,351,755 B1 2/2002 Najork et al.
 6,356,920 B1 3/2002 Vandersluis
 6,366,915 B1 4/2002 Rubert et al.
 6,370,537 B1 4/2002 Gilbert et al.
 6,370,549 B1 4/2002 Saxton
 6,373,504 B1 4/2002 Nielsen
 6,374,274 B1 4/2002 Myers et al.
 6,418,433 B1 7/2002 Chakrabarti et al.
 6,421,656 B1 7/2002 Cheng et al.
 6,421,822 B1 7/2002 Pavela
 6,446,048 B1* 9/2002 Wells et al. 705/35
 6,460,059 B1 10/2002 Wisniewski
 6,470,349 B1 10/2002 Heninger et al.
 6,493,717 B1 12/2002 Junkin
 6,505,246 B1 1/2003 Land et al.
 6,507,856 B1 1/2003 Chen et al.
 6,581,068 B1 6/2003 Bensousan et al.
 6,591,272 B1 7/2003 Williams
 6,594,653 B2 7/2003 Colby et al.
 6,615,258 B1 9/2003 Barry et al.
 6,629,094 B1 9/2003 Colby et al.
 6,635,089 B1 10/2003 Burkett et al.
 6,667,747 B1 12/2003 Spellman et al.
 6,721,736 B1 4/2004 Krug et al.
 6,745,384 B1 6/2004 Biggerstaff
 6,886,005 B2 4/2005 Davis
 6,912,293 B1 6/2005 Korobkin
 6,920,608 B1 7/2005 Davis
 2001/0018687 A1 8/2001 Gonzalez et al.
 2001/0020237 A1 9/2001 Yarnall et al.
 2001/0049687 A1 12/2001 Russell
 2002/0023141 A1 2/2002 Yen et al.
 2002/0052954 A1 5/2002 Polizzi et al.
 2002/0091696 A1 7/2002 Craft et al.
 2002/0198985 A1 12/2002 Fraenkel et al.
 2003/0041077 A1 2/2003 Davis
 2003/0078883 A1* 4/2003 Stewart et al. 705/39
 2003/0167213 A1 9/2003 Jammes et al.
 2005/0086126 A1 4/2005 Davis

2005/0182709 A1 8/2005 Belcsak et al.
 2005/0198042 A1 9/2005 Davis

OTHER PUBLICATIONS

Information on Exchange Rates of Africa, Asia, and Australasia, web site: <<http://eh.net/hmit/exchangerates/infoafr.htm>>, pp. 1-3, 2002 by EH.NET, downloaded Oct. 19, 2006.*
 Order of magnitude (online Wikipedia article), <http://en.wikipedia.org/wiki/Orders_of_magnitude>, 2006 Wikimedia Foundation, Inc., pp. 1-4, downloaded Oct. 19, 2006.*
 Bruce Halberg, "Special Edition, Using Microsoft® Excel 97, Bestseller Edition," Que® Corporation (1997).
 Elliott Rusty Harold, "XML™ Bible," IDG Books Worldwide, Inc., An International Data Group Company (1999).
 David Megginson, "Structuring XML Documents," Prentice Hall PTR, Upper Saddle River, NJ (1998).
 Bruce Hallberg et al., "Special Edition, Using Microsoft® Excell 97, Bestseller Edition," Que® Corporation (1997).
 Elliott Rusty Harold, "XML™ Bible," IDG Books Worldwide, Inc., An International Data Group Company (1999).
 David Megginson, "Structuring XML Documents," Prentice Hall PTR, Upper Saddle River, NJ (1998).
 Extensible Business Reporting Language (XBRL) 2.0 Specification, (Dec. 14, 2001), Editors: Luther Hampton, e-Numerate; David vun Kannon, KPMG LLP; pp. 1-42.
 Microsoft Press Computer Dictionary, Third Edition, Microsoft Press, p. 511 (1997) (3 pages).
 Online Ohio CPA Newsletter, A Monthly Electronic Publication of the Ohio Society of Certified Public Accountants; Aug. 2000, vol. 1, No. 14 (7 pages).
 Tools [online], extensible Business Reporting Language, [retrieved on Aug. 13, 2002]. Retrieved from the Internet <URL: <http://www.xbrl.org/Tools.htm>> (5 pages).
 XBRL Essentials, (A nontechnical introduction to the extensible Business Reporting Language, the digital language of business), Jan. 2001, Charles Hoffman, CPA; Carolyn Strand, PhD, CPA, (AICPA), pp. 1-17.
 XBRL Home Page [online], extensible Business Reporting Language, [retrieved on Aug. 13, 2002]. Retrieved from the Internet <URL: <http://www.xbrl.org>> (3 pages).
 XBRL Technical Specification [online], extensible Business Reporting Language, [retrieved on Aug. 13, 2002]. Retrieved from the Internet <URL: <http://www.xbrl.org/TR/2001/default.htm>> (1 page).
 The XML Cover Pages, Extensible Business Reporting Language (XBRL), (1994-2002), Robin Cover, pp. 1-18.
 Berkley et al., The Road to Better Business Information Making a Case for XBRL, Winter 2000, Microsoft, pp. 1-13.
 Blattner, Special Edition Using Microsoft Excel (R), May 3, 1999 (C) Que Corporation "Adding a Secondary Axis to the Chart" (3 pages).
 Gilster, Paul, *Finding It On The Internet: The Internet Navigator's Guide to Search Tools & Techniques*, 2nd edition (1996) (3 pages).
 Hamscher et al., Extensible Business Reporting language (XBRL) Specification, Jul. 31, 2000, XBRL Organization, pp. 1-27.
 Charles Hoffman and Carolyn Strand, "XBRL Essentials, A Non-technical Introduction to eXtensible Business Reporting Language (XBRL), the Digital Language of Business Reporting," pp. 1-148 (2001).
 Jon Rienstra, "Using Excel® in Chemistry," http://www.asa3.org/chemistry/computers_in_chemistry/excel_tips.html (1995) (4 pages).
 Simon St. Laurent, "Why XML?," <http://www.simonstl.com/articles/whyxml.htm> (1998) (5 pages).

* cited by examiner

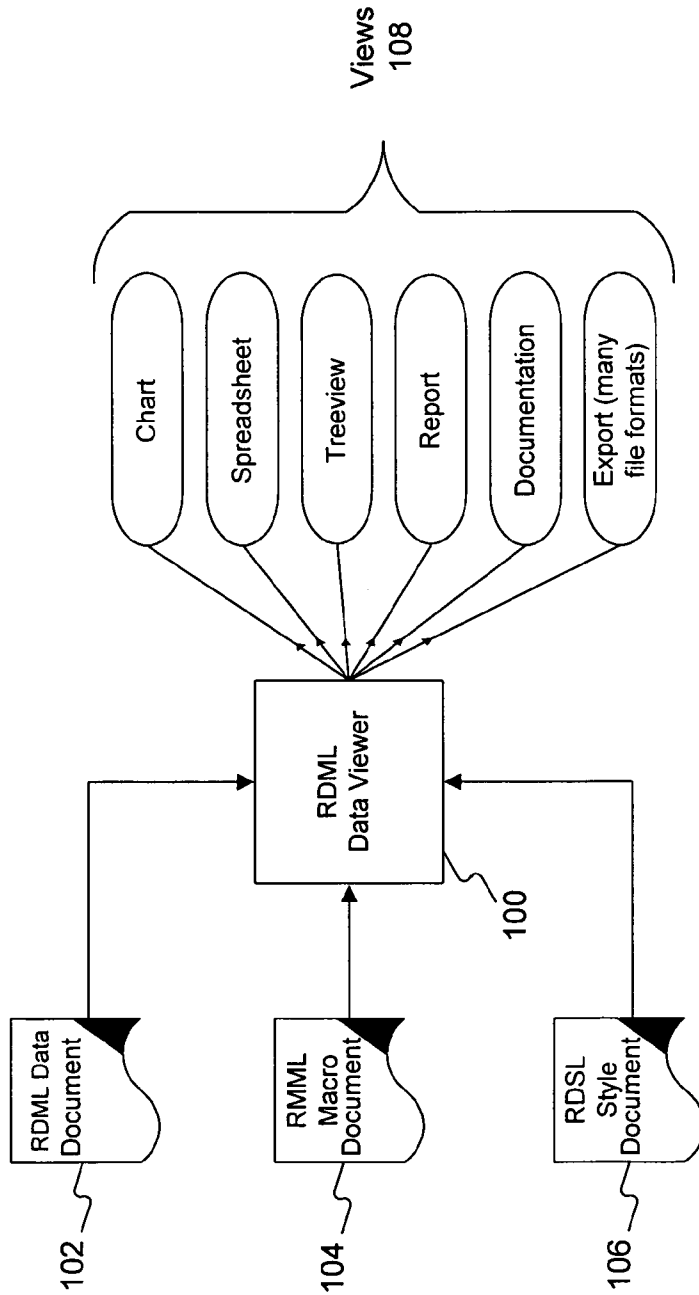


FIG. 1

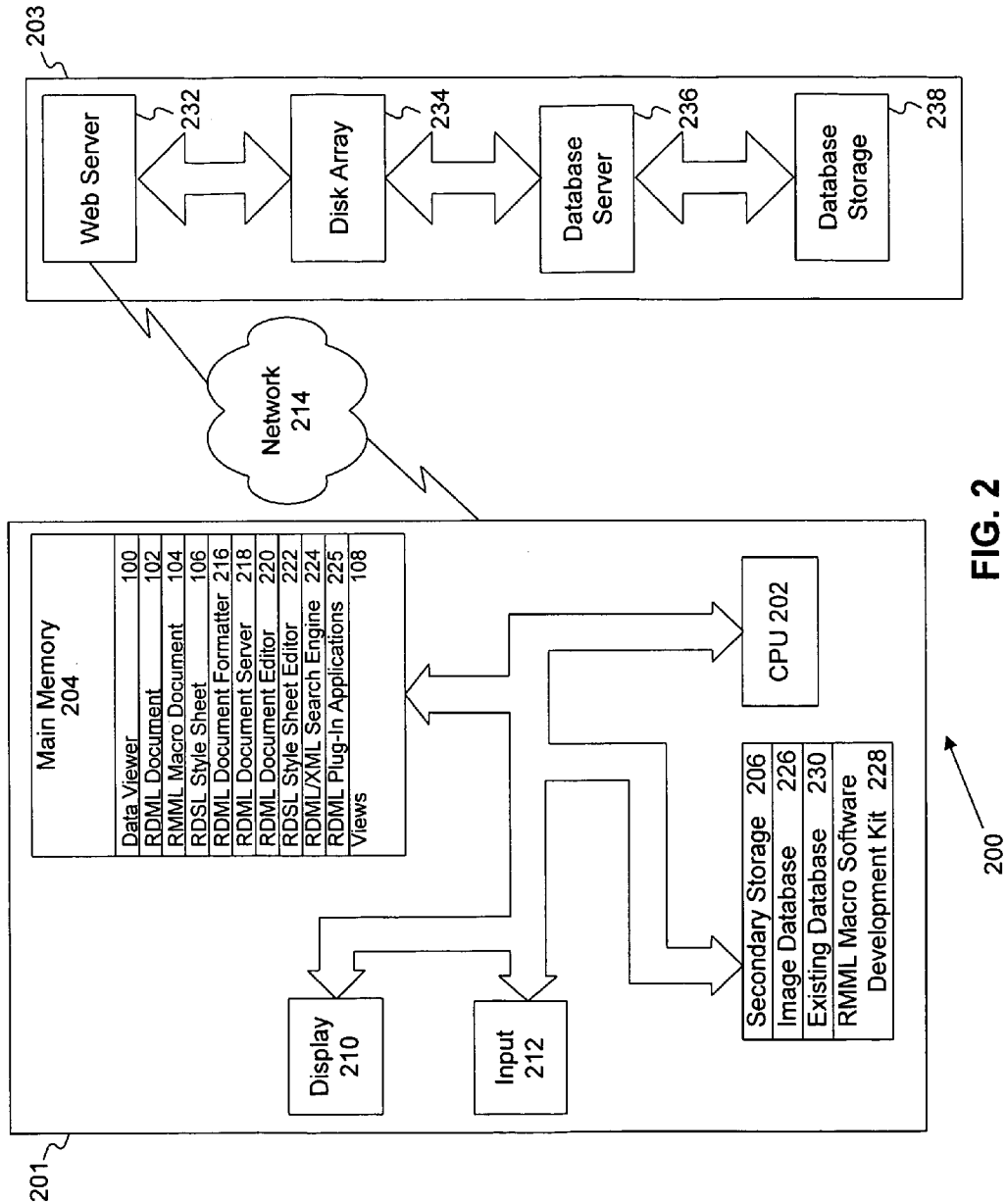


FIG. 2

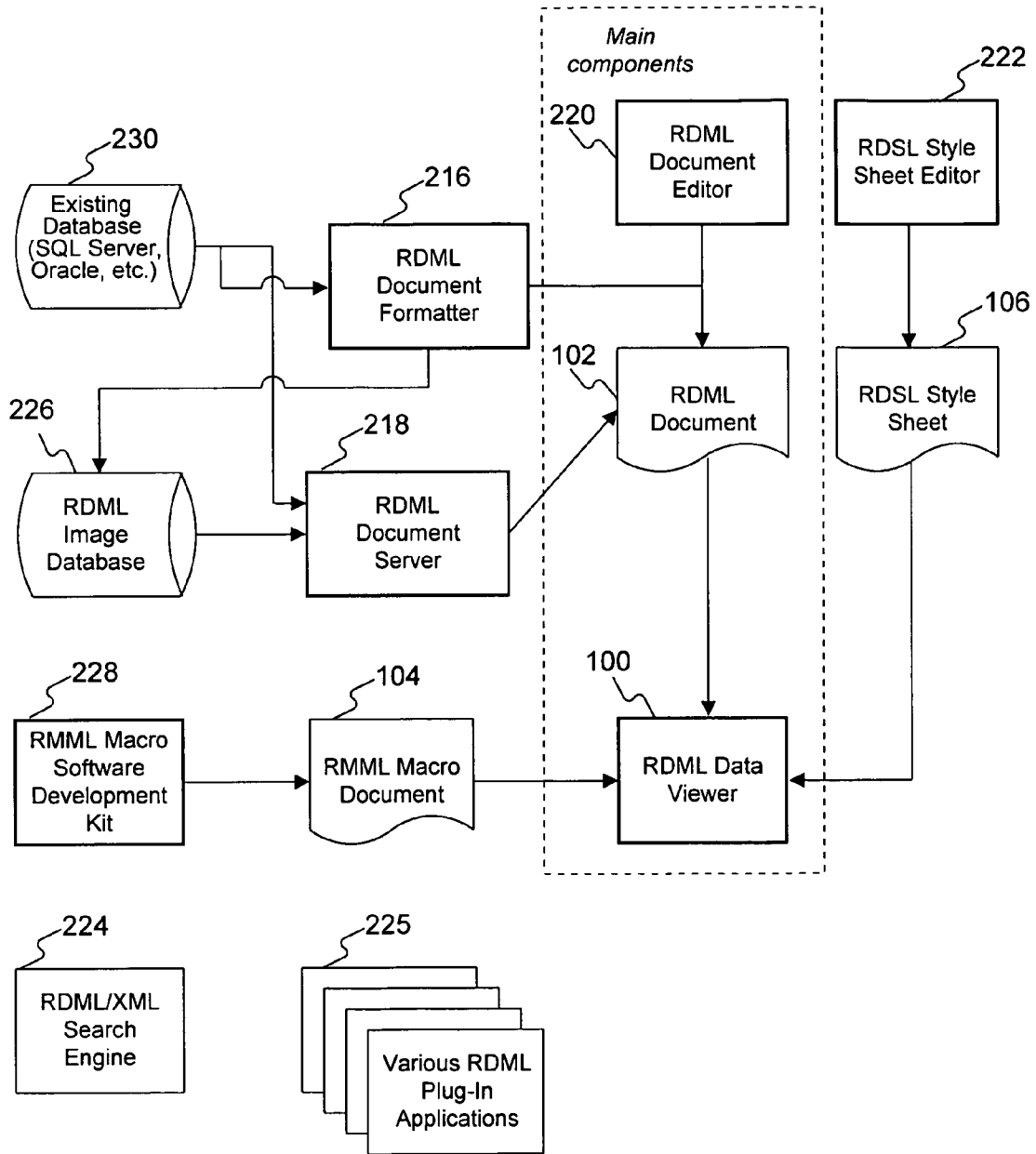


FIG. 3

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.