

# Exhibit C





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(12) EX PARTE REEXAMINATION CERTIFICATE (5391st)

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Doyle et al.

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(54) **DISTRIBUTED HYPERMEDIA METHOD FOR AUTOMATICALLY INVOKING EXTERNAL APPLICATION PROVIDING INTERACTION AND DISPLAY OF EMBEDDED OBJECTS WITHIN A HYPERMEDIA DOCUMENT**

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(58) Field of Classification Search 715/501.1 See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

5,056,057 A \* 10/1991 Johnson et al. 710/73  
5,425,141 A \* 6/1995 Gedye 345/797  
5,537,526 A \* 7/1996 Anderson et al. 715/515  
5,812,862 A \* 9/1998 Smith et al. 715/515

OTHER PUBLICATIONS

violaTOGO.tar.Z.zip—compressed file on CD artifact disk contains the later Viola source code, referred to as “DX37” in the CAFC opinion. Zip file contains 1,030 files in 34

folders, 7.7 megabytes total, May 31, 1993 (Internet publication date).\*

Duncan, Ray, “Advanced MSDOS Programming”, Microsoft Press, 1986, pp. 390, 391, 486, 487.\*

Lin, Jin-Kun, “Virtual Screen: A Framework for Task Management”, The X Resource, Issue 1, Winter 1992—Proceedings of the 6th Annual X Technical Conference, pp 191–198, 1992.\*

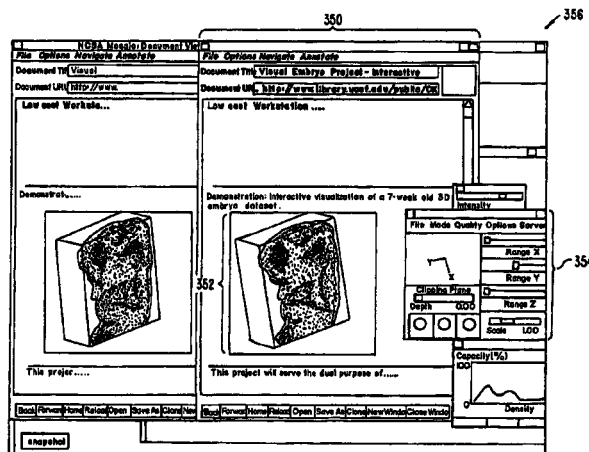
Lin, Jin-Kun, “A Multimedia and Multisource Document Editor of an Open Architecture”, Dept. of Computer Science, University of N.C. at Chapel Hill, ACM 089791–533–X/92/0010/0057, pp. 57–62, 1992.\*

(Continued)

Primary Examiner—St. John Courtenay, III

(57) ABSTRACT

A system allowing a user of a browser program on a computer connected to an open distributed hypermedia system to access and execute an embedded program object. The program object is embedded into a hypermedia document much like data objects. The user may select the program object from the screen. Once selected the program object executes on the user’s (client) computer or may execute on a remote server or additional remote computers in a distributed processing arrangement. After launching the program object, the user is able to interact with the object as the invention provides for ongoing interprocess communication between the application object (program) and the browser program. One application of the embedded program object allows a user to view large and complex multi-dimensional objects from within the browser’s window. The user can manipulate a control panel to change the viewpoint used to view the image. The invention allows a program to execute on a remote server or other computers to calculate the viewing transformations and send frame data to the client computer thus providing the user of the client computer with interactive features and allowing the user to have access to greater computing power than may be available at the user’s client computer.



## OTHER PUBLICATIONS

- Berners-Lee, T., et al., Hypertext Markup Language (HTML), Internet Draft IETF, pp. 1-40, (Jun. 1993).\*
- Raggett, D., HTML+ (Hypertext Markup Language), (Jul. 23, 1993).\*
- Raggett, D., Posting to WWW-Talk Public Mailing List, (Posted Jun. 14, 1993).\*
- Adie, C., Network Access to Multimedia Information, 2nd ed., RARE Project OBR(93)015, RARE, pp. 1-53, Feb. 4, 1994.\*
- Reichard, K., et al., X11R6: the Rumored Changes (Release 6 of the X Window System), Unix Review, vol. 11, No. 5, p. 101(5 pp. 1-4 as printed, May 1993).\*
- Cox, B., Object Oriented Programming: An Evolutionary Approach, Addison-Wesley, pp. 1-12, 1987.\*
- Solaris OpenWindows: Introduction to the ToolTalk Service—A White Paper, Sun Microsystems, Inc., pp. 1-16, 1991.\*
- Tool Inter-Operability: A Hands On Demonstration—A Simple Demonstration of How the ToolTalk Service Works, Sun Microsystems, Inc., pp. 1-24, 1992.\*
- Designing and Writing a ToolTalk Procedural Protocol—A White Paper, Sun Microsystems, Inc., pp. 1-24, 1992.\*
- Fresco Frequently Asked Questions, [www.i.h.kyoto-u.ac.jp/~shom/doc.org/fresco/FAQ.html](http://www.i.h.kyoto-u.ac.jp/~shom/doc.org/fresco/FAQ.html), pp. 1-4, Apr. 13, 1995.\*
- The Andrew View, Carnegie Mellon Univ., [www-2.cs.cmu.edu/People/AUIS/ftp/NEWSLETTERS/ASCII/93Jun.ascii](http://www-2.cs.cmu.edu/People/AUIS/ftp/NEWSLETTERS/ASCII/93Jun.ascii), vol. 2, No. pp.1-12 as printed, Jun. 1993.\*
- The X Window System And Broadway, [www.broadwayinfo.com/bwwhitesbroadwayhct.htm](http://www.broadwayinfo.com/bwwhitesbroadwayhct.htm), Hummingbird Communications Ltd pp. 1-11, 1997.\*
- Neuendorffer, T., ADEW: A Multimedia Interface Builder for Andrew, Proceedings Multi-Media Communications, Applications, and Technology Workshop, pp. 1-19, Jul. 1991.\*
- Palay, A., Andrew Toolkit: An Overview, Tech Rept., Carnegie-Mellon University Information Technology Center, pp. 1-15, 198.\*
- Dettmer, R., X-Windows—the great integrator, IEE Review, vol. 36, No. 6, pp. 219-222, Jun. 1990.\*
- Toye, G., et al., SHARE : A Methodology and Environment for Collaborative Product Development, Proceedings, Second Workshop on Enabling Technologies: Infrastructure for Collaborative Enterprises, 1993, IEEE, pp. 33-47, Apr. 22, 1993.\*
- Lin, J., MediaMosaic—A Multimedia Editing Environment, Proc. of the 5<sup>th</sup> Annual ACM Symposium on User Interface Software and Technology, ACM Press, pp. 135-141, 1992.\*
- Halasz, F., Reflections on NoteCards: Seven Issues for the Next Generation of Hypermedia Systems, ACM Journal on Computer Documentation, vol. 25, No. 3, pp. 71-87, Aug. 2001, reprinting article published in 1988.\*
- Feiner, S., et al., An Experimental System for Creating and Presenting Interactive Graphical Documents, ACM Transactions on Graphics, vol. 1, No. 1, pp. 59-77, Jan. 1982.\*
- Engelbart, D., Knowledge-Domain Interoperability and an Open Hyperdocument System, Proc. of the 1990 ACM Conference on Computer-Supported Cooperative Work, ACM Press, pp. 143-156, 1990.\*
- Meyrowitz, N., Intermedia: The Architecture and Construction of an Object-Oriented Hypermedia System and Applications Framework, Proc. of the Conf. on Object Oriented Programming Systems, Languages, and Applications, ACM Press, pp. 186-201, 1986.\*
- Wiil, U., Issues in the Design of EHTS: A Multiuser Hypertext System for Collaboration, Proc. of the 25<sup>th</sup> Hawaii Int'l. Conf. on Systems Sciences, vol. 2, pp. 629-639, Jan. 1992.\*
- Celentano, A. et al., A Multiple Presentation Document Management System, Proc. of the 10th Annual Int'l. Conf. on Systems Documentation, ACM Press, pp. 63-71, 1992.\*
- Garg, P., et al., A Hypertext System to Manage Life Cycle Documents, Proc. of the 25th Annual Hawaii Int'l. Conf. on System Sciences, 1988, IEEE, vol. 2, pp. 337-346, Jan. 1988.\*
- Kahn, P., Webs, Rees, and Stacks: How Hypermedia System Design Effect Hypermedia Content, Designing and Using Human-Computer Interfaces and Knowledge Based Systems, Elsevier Science Publishers, pp. 443-449, 1989.\*
- Streitz, N., et al., Hypertest: Concepts, Systems, and Application, Cambridge Univ. Press, pp. 1-12, 356-359, 367-369, 1990.\*
- Stotts, P., et al., Hyperdocuments as Automata: Trace-based Browsing Property Verification, UNC CS Technical Report, TR92-038, [citeseer.ist.psu.edu/stotts92hyperdocument.html](http://citeseer.ist.psu.edu/stotts92hyperdocument.html), p. 1, 1992.\*
- Duncan, Ray, "Advanced MSDOS Programming", Microsoft Press, 1986, pp. 390, 391, 486, 487.\*
- Lin, Jin-Kun, "Virtual Screen: A Framework for Task Management", The X Resource, Issue 1, Winter 1992—Proceedings of the 6th Annual X Technical Conference, pp 191-198, 1992.\*
- Lin, Jin-Kun, "A Multimedia and Multisource Document Editor of an Open Architecture", Dept. of Computer Science, University of N.C. at Chapel Hill, ACM 089791-533-X/92/0010/0057, pp. 57-62, 1992.\*

\* cited by examiner

**1**  
**EX PARTE**  
**REEXAMINATION CERTIFICATE**  
**ISSUED UNDER 35 U.S.C. 307**

NO AMENDMENTS HAVE BEEN MADE TO  
THE PATENT

**2**

AS A RESULT OF REEXAMINATION, IT HAS BEEN  
DETERMINED THAT:

5 The patentability of claims **1-10** is confirmed.

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