UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WORKSPOT, INC.,

Petitioner
v.

CITRIX SYSTEMS, INC.,

Patent Owner

Patent No. 8,135,843

Original Issue Date: March 13, 2012

Title: METHODS AND SYSTEMS FOR PROVIDING ACCESS TO AN APPLICATION

Inter Partes Review No. IPR2019-01002

PETITIONER'S ORAL ARGUMENT DEMONSTRATIVE EXHIBIT

Overview of the ‘843 Patent

‘843 Patent – Background


US008135843B2

(12) **United States Patent**
Kramer

(10) **Patent No.: US 8,135,843 B2**
(45) **Date of Patent: Mar. 13, 2012**

(54) **METHODS AND SYSTEMS FOR PROVIDING ACCESS TO AN APPLICATION**

(75) Inventor: **Andre Kramer**, Cambridge (GB)

(73) Assignee: **Citrix Systems, Inc.**, Fort Lauderdale, FL (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 2243 days.

(21) Appl. No.: **10/104,863**

(22) Filed: **Mar. 22, 2002**

(65) **Prior Publication Data**

US 2003/0182392 A1 Sep. 25, 2003

(51) **Int. Cl.**
G06F 15/16 (2006.01)

(52) **U.S. Cl.** **709/227**; 709/217; 709/245

(58) **Field of Classification Search** 709/217, 709/219, 227, 245; 719/311, 328, 329
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,387,425	A	6/1983	El-Gohary	364/200
4,779,189	A	10/1988	Legvold et al.	364/200
4,949,248	A	8/1990	Caro	364/200
5,031,089	A	7/1991	Liu et al.	364/200
5,119,319	A	6/1992	Tanenbaum	364/514
5,155,847	A	10/1992	Kirouac et al.	395/600
5,175,852	A	12/1992	Johnson et al.	395/600
5,187,790	A	2/1993	East et al.	395/725
5,202,971	A	4/1993	Henson et al.	395/425
5,204,897	A	4/1993	Wyman	380/4
5,241,625	A	8/1993	Epard et al.	395/163
5,247,683	A	9/1993	Holmes et al.	395/700
5,249,290	A	9/1993	Heizer	395/650
5,305,440	A	4/1994	Morgan et al.	395/200
5,325,527	A	6/1994	Cwikowski et al.	395/650
5,329,619	A	7/1994	Page et al.	395/200
5,367,688	A	11/1994	Croll	395/700
5,440,719	A	8/1995	Hanes et al.	395/500
5,457,797	A	10/1995	Butterworth et al.	395/650

(Continued)

FOREIGN PATENT DOCUMENTS

DE 19602718 A1 1/1996

(Continued)

OTHER PUBLICATIONS

Venu Vasudevan, “A Web Services Primer”, retrieved by the internet at http://www.xml.com/lpt/a/ws/2001/04/04/webservices/index.html., (Jan. 21, 2005), 10 pages, O’Reilly Media, Inc.

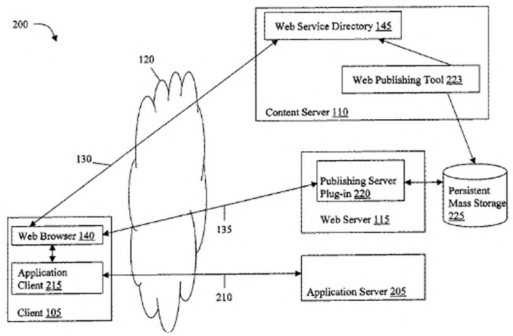
(Continued)

Primary Examiner — Douglas Blair
(74) *Attorney, Agent, or Firm* — Foley & Lardner LLP; John D. Lanza

(57) **ABSTRACT**

The invention enables the publishing of a graphical user interface application on the web in a manner so that they can be discovered by manual or automatic searches. The invention includes the step of receiving a service access point (SAP) from a web service directory. The SAP is associated with a first application and identifies a web server. The invention also includes the step of retrieving address information associated with the first application from the web server identified by the SAP and launching a second application. The second application establishes a communication channel with an application server identified by the retrieved address information. The application server subsequently executes the first application and returns information to the second application.

30 Claims, 3 Drawing Sheets



(73) Assignee: **Citrix Systems, Inc.**, Fort Lauderdale, FL (US)

(22) Filed: **Mar. 22, 2002**

Ex. 1001, Cover; Paper 1, 1

‘843 Patent - Background

Overview

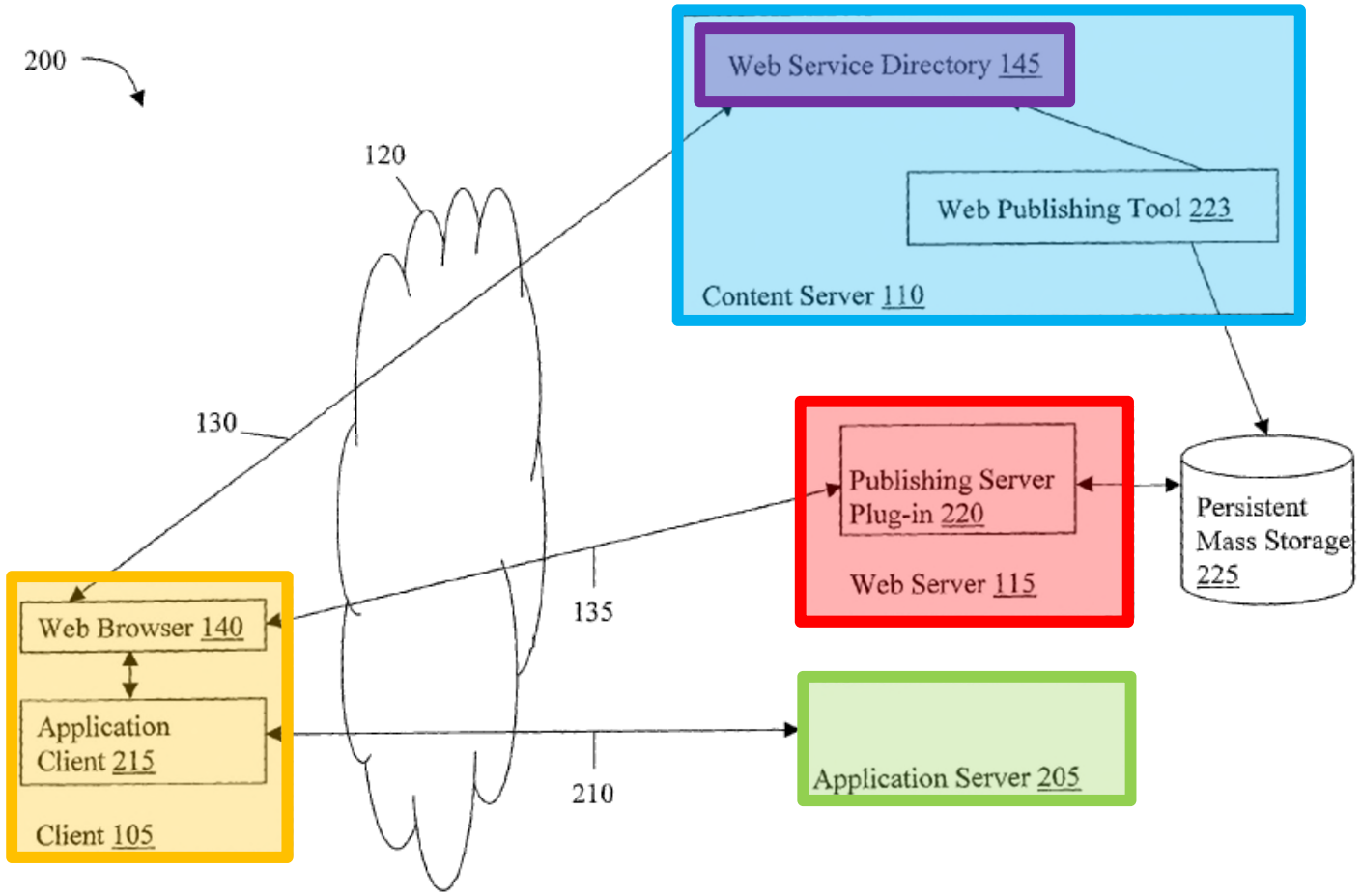


FIG. 2

Claim 1

1. A method of providing access to a remote application to an application client or end user application comprising:

(a) receiving, by a client, from a web service directory on a content server, a service access point associated with a first application, the service access point identifying a web server;

(b) receiving, by the client, from the web server identified by the service access point, address information associated with the first application;

(c) launching, by the client, a second application, the second application communicating via a presentation layer protocol with an application server identified by the received address information; and

(d) launching, by the application server, the first application and returning information to the second application via the presentation layer protocol.

Ex. 1001, FIG. 2 (annotated), Claim 1

‘843 Patent – State of the Art

Overview

‘843 Patent

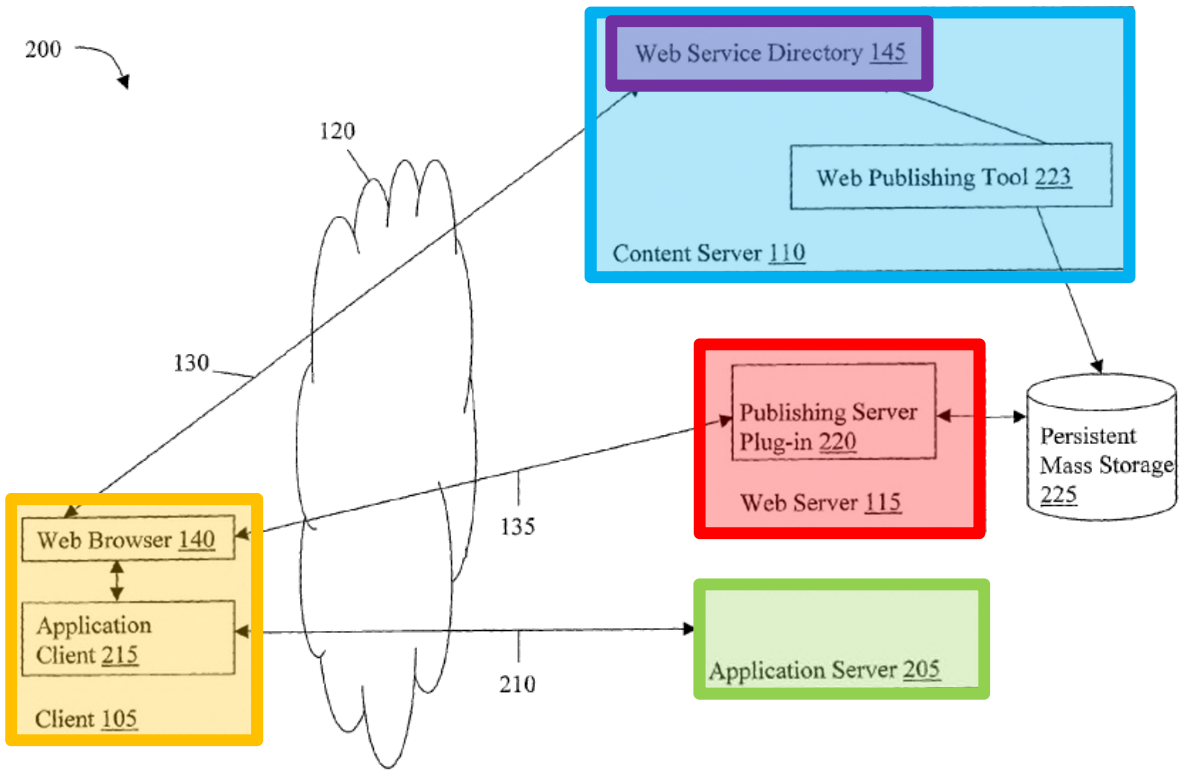
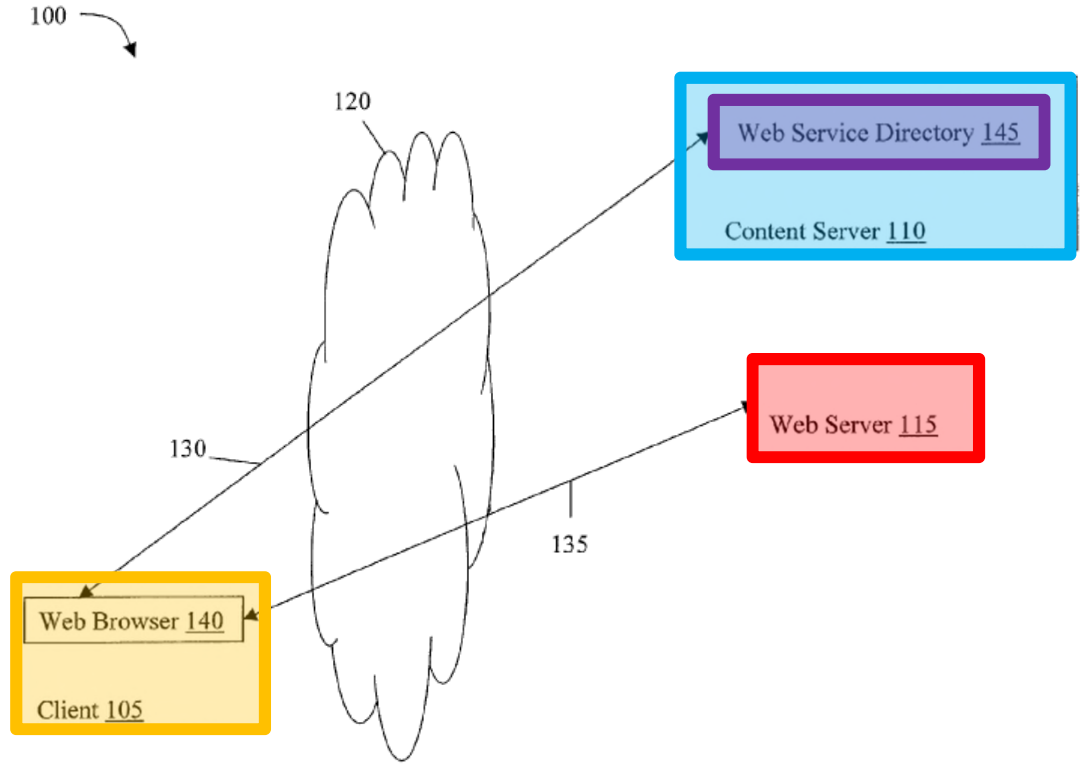


FIG. 2

Applicant Admitted Prior Art



PRIOR ART

FIG. 1

Ex. 1001, FIG. 1 (annotated), FIG. 2 (annotated); 1:22-24; Paper 1, 7-8; Ex. 1016, ¶¶ 65-68

‘843 Patent – State of the Art

Overview

‘843 Patent

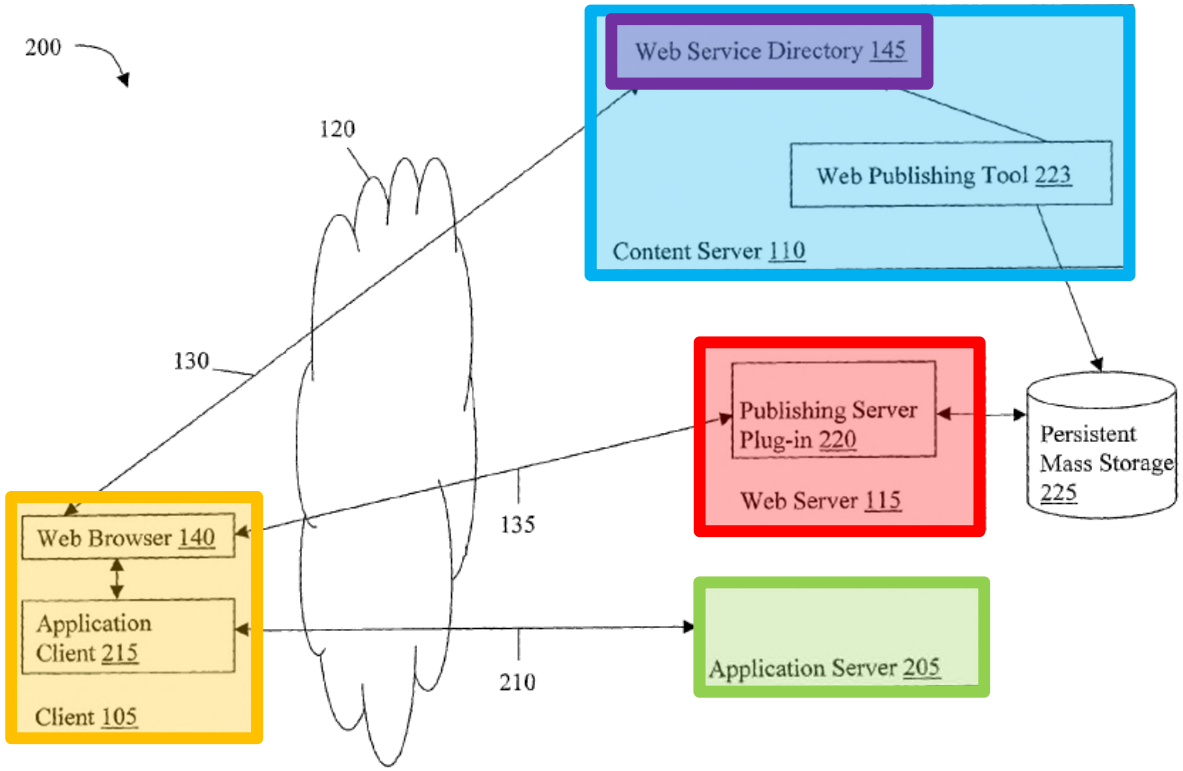


FIG. 2

Duursma – Prior Art

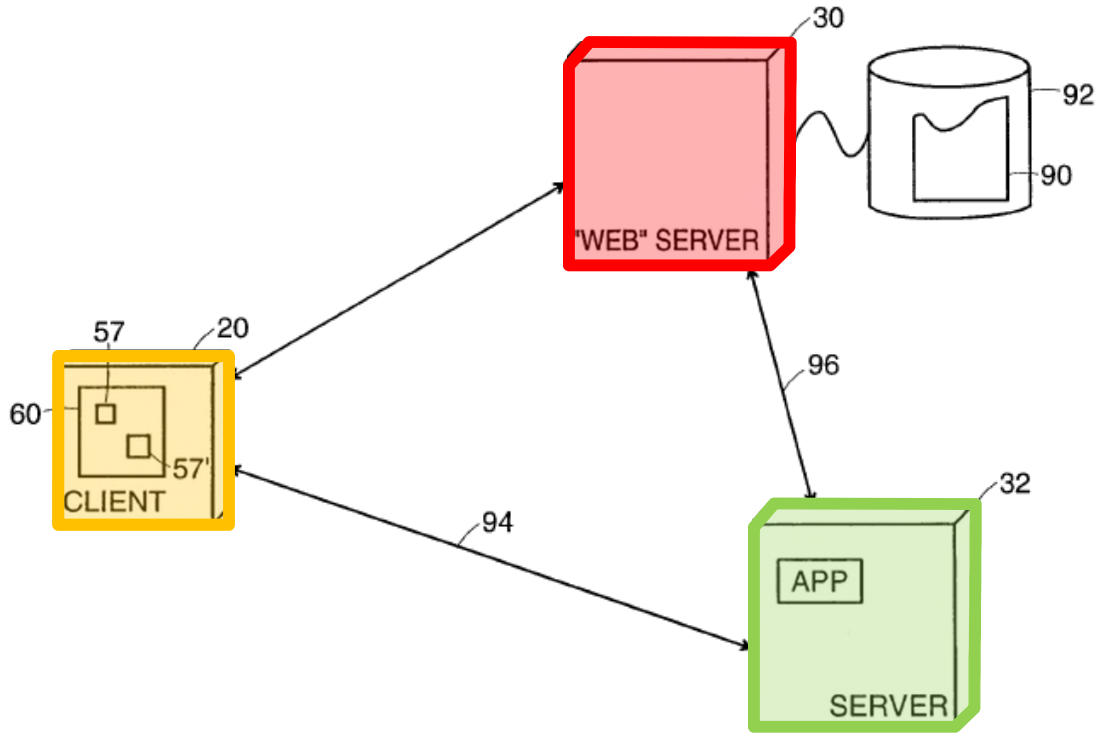


FIG. 3D

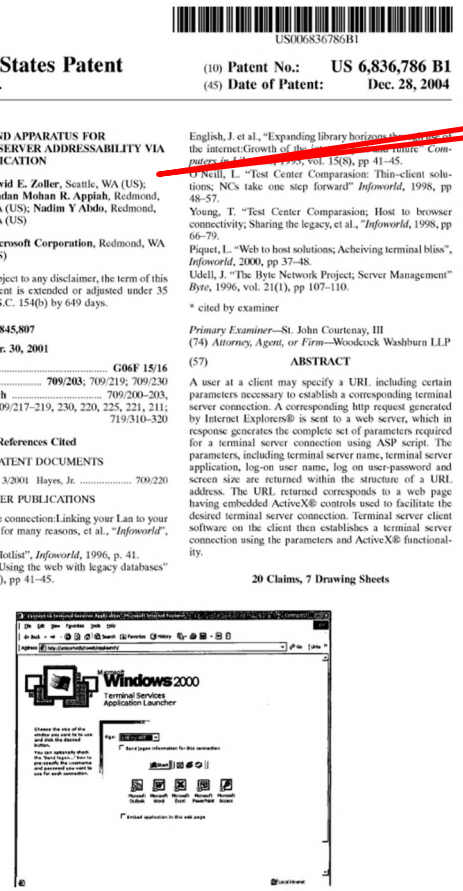
Ex. 1001, FIG. 1 (annotated), Ex. 1004, FIG. 3D (annotated), 19:3-10, 21:19-29; Ex. 1016, ¶ 73; Paper 1, 8-9

Ground 2 – Zoller, Craft, and Duursma

The Zoller Patent (Ex. 1005)

Ground 2

Inventors: **David E. Zoller**, Seattle, WA (US);



US006836786B1

(12) **United States Patent**
Zoller et al.

(10) **Patent No.: US 6,836,786 B1**
(45) **Date of Patent: Dec. 28, 2004**

(54) **METHOD AND APPARATUS FOR TERMINAL SERVER ADDRESSABILITY VIA URL SPECIFICATION**

(75) Inventors: **David E. Zoller**, Seattle, WA (US); **Madan Mohan R. Appiah**, Redmond, WA (US); **Nadim Y Abdo**, Redmond, WA (US)

(73) Assignee: **Microsoft Corporation**, Redmond, WA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 649 days.

(21) Appl. No.: **09/845,807**

(22) Filed: **Apr. 30, 2001**

(51) **Int. Cl.**[7] **G06F 15/16**
(52) **U.S. Cl.** **709/203**; 709/219; 709/230
(58) **Field of Search** 709/200–203, 709/217–219, 230, 220, 225, 221, 211; 719/310–320

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,205,476 B1 * 3/2001 Hayes, Jr. 709/220

OTHER PUBLICATIONS

Farmer,C.,Making the connection:Linking your Lan to your AS/400 makes sense for many reasons, et al., "*Infoworld*", 1996, pp 61–71.
Battey,J. "The Web Hotlist", *Infoworld*, 1996, p. 41.
Biclefeld, A. et al., "Using the web with legacy databases" *Byte*, 1997, vol. 22(7), pp 41–45.
English, J. et al., "Expanding library horizons the ... the internet:Growth of the ... and future" *Computers ...*, 1995, vol. 15(8), pp 41–45.
O Neill, L. "Test Center Comparasion: Thin-client solutions; NCs take one step forward" *Infoworld*, 1998, pp 48–57.
Young, T. "Test Center Comparasion; Host to browser connectivity; Sharing the legacy, et al., "*Infoworld*, 1998, pp 66–79.
Piquet, L. "Web to host solutions; Acheiving terminal bliss", *Infoworld*, 2000, pp 37–48.
Udell, J. "The Byte Network Project; Server Management" *Byte*, 1996, vol. 21(1), pp 107–110.

* cited by examiner

Primary Examiner—St. John Courtenay, III
(74) *Attorney, Agent, or Firm*—Woodcock Washburn LLP

(57) **ABSTRACT**

A user at a client may specify a URL including certain parameters necessary to establish a corresponding terminal server connection. A corresponding http request generated by Internet Explorers® is sent to a web server, which in response generates the complete set of parameters required for a terminal server connection using ASP script. The parameters, including terminal server name, terminal server application, log-on user name, log on user-password and screen size are returned within the structure of a URL address. The URL returned corresponds to a web page having embedded ActiveX® controls used to facilitate the desired terminal server connection. Terminal server client software on the client then establishes a terminal server connection using the parameters and ActiveX® functionality.

20 Claims, 7 Drawing Sheets

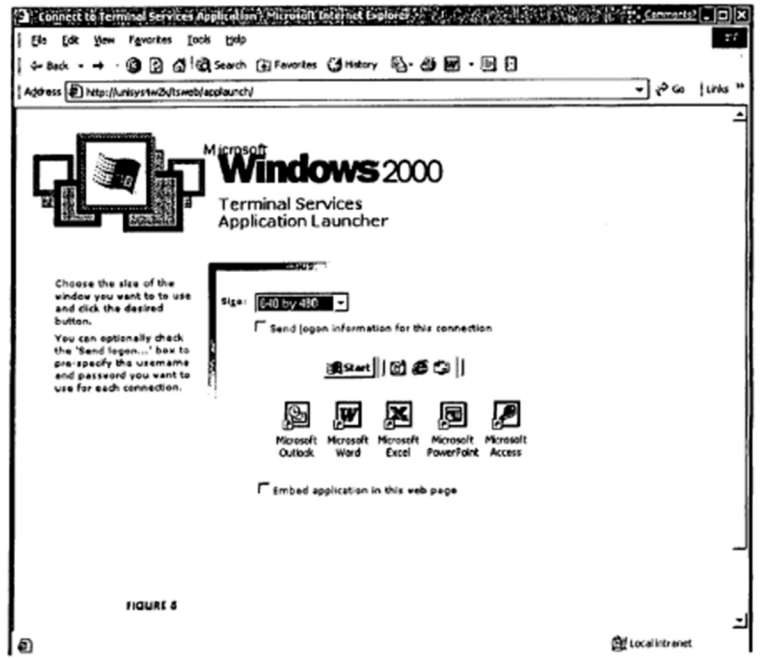


FIG. 5

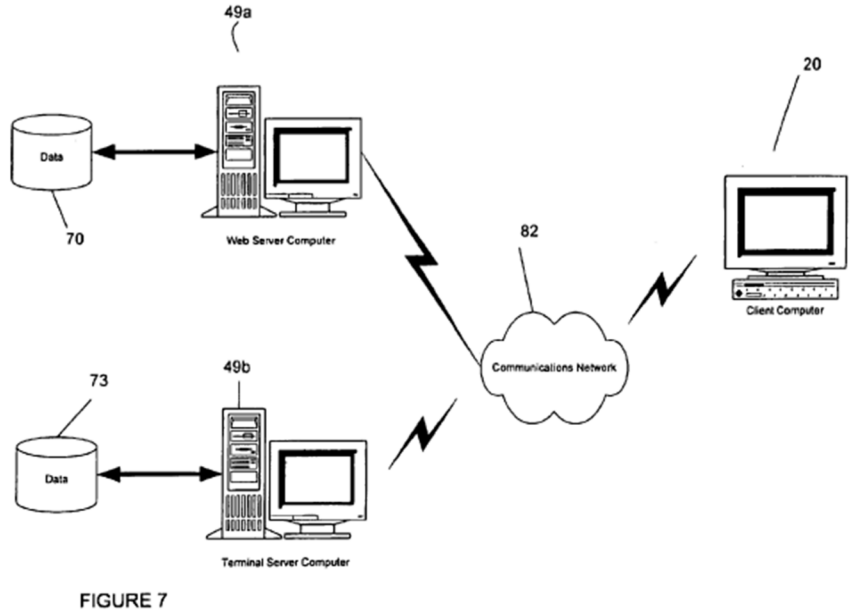


FIGURE 7

FIG. 7

Paper 12, 26-28; Ex. 1005, Cover, FIG. 5, FIG. 7; Ex. 1016, ¶ 88 ("I am the first named inventor of Zoller")

Craft (Ex. 1003)

Ground 2

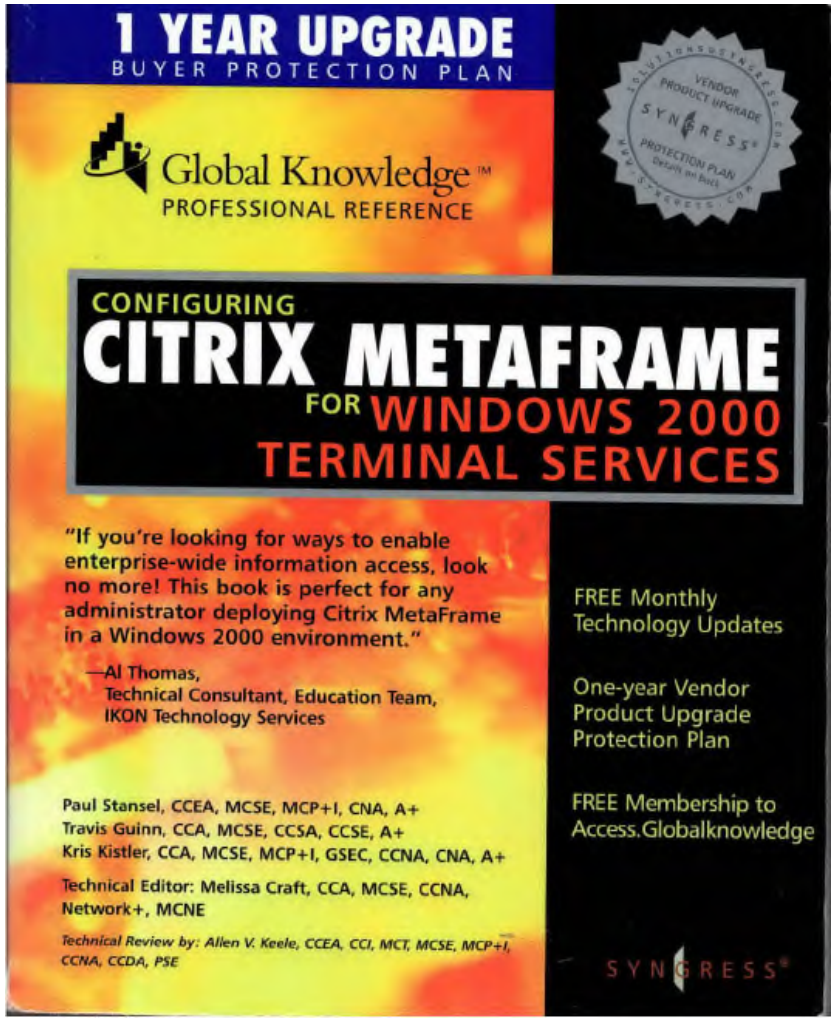
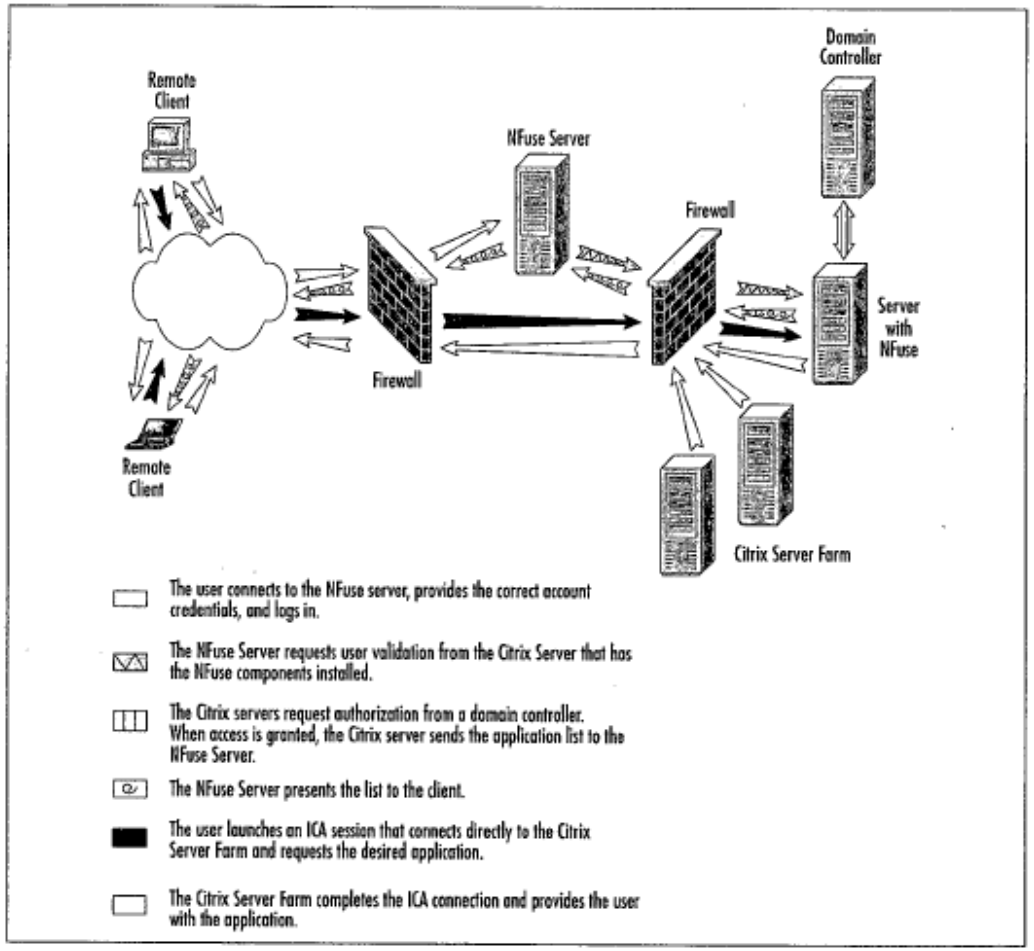


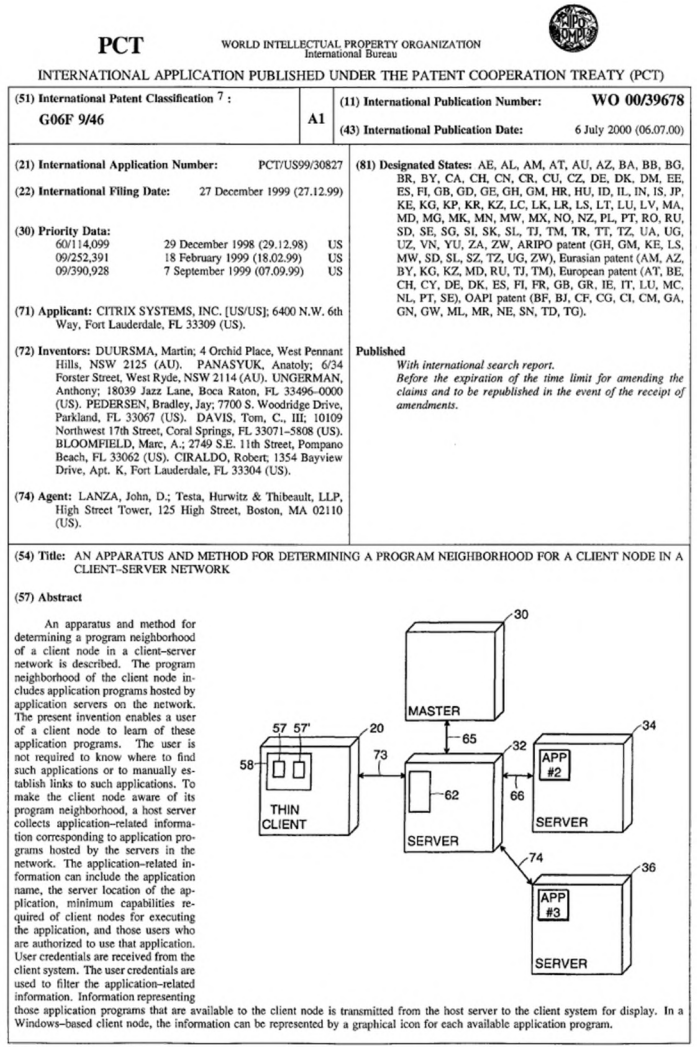
Figure 12.3 The NFuse/Citrix application access flow.



Paper 12, 14-15; Ex. 1003, Cover, FIG. 12.3 (p. 434)

Duursma (Ex. 1004)

Ground 2



PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 7 : G06F 9/46 — A1

(11) International Publication Number: WO 00/39678

(43) International Publication Date: 6 July 2000 (06.07.00)

(21) International Application Number: PCT/US99/30827

(22) International Filing Date: 27 December 1999 (27.12.99)

(30) Priority Data:
60/114,099 29 December 1998 (29.12.98) US
09/252,391 18 February 1999 (18.02.99) US
09/390,928 7 September 1999 (07.09.99) US

(71) Applicant: CITRIX SYSTEMS, INC. [US/US]; 6400 N.W. 6th Way, Fort Lauderdale, FL 33309 (US).

(72) Inventors: DUURSMA, Martin; 4 Orchid Place, West Pennant Hills, NSW 2125 (AU). PANASYUK, Anatoly; 6/34 Forster Street, West Ryde, NSW 2114 (AU). UNGERMAN, Anthony; 18039 Jazz Lane, Boca Raton, FL 33496-0000 (US). PEDERSEN, Bradley, Jay; 7700 S. Woodridge Drive, Parkland, FL 33067 (US). DAVIS, Tom, C., III; 10109 Northwest 17th Street, Coral Springs, FL 33071-5808 (US). BLOOMFIELD, Marc, A.; 2749 S.E. 11th Street, Pompano Beach, FL 33062 (US). CIRALDO, Robert; 1354 Bayview Drive, Apt. K, Fort Lauderdale, FL 33304 (US).

(74) Agent: LANZA, John, D.; Testa, Hurwitz & Thibeault, LLP, High Street Tower, 125 High Street, Boston, MA 02110 (US).

(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: AN APPARATUS AND METHOD FOR DETERMINING A PROGRAM NEIGHBORHOOD FOR A CLIENT NODE IN A CLIENT-SERVER NETWORK

(57) Abstract

An apparatus and method for determining a program neighborhood of a client node in a client-server network is described. The program neighborhood of the client node includes application programs hosted by application servers on the network. The present invention enables a user of a client node to learn of these application programs. The user is not required to know where to find such applications or to manually establish links to such applications. To make the client node aware of its program neighborhood, a host server collects application-related information corresponding to application programs hosted by the servers in the network. The application-related information can include the application name, the server location of the application, minimum capabilities required of client nodes for executing the application, and those users who are authorized to use that application. User credentials are received from the client system. The user credentials are used to filter the application-related information. Information representing those application programs that are available to the client node is transmitted from the host server to the client system for display. In a Windows-based client node, the information can be represented by a graphical icon for each available application program.

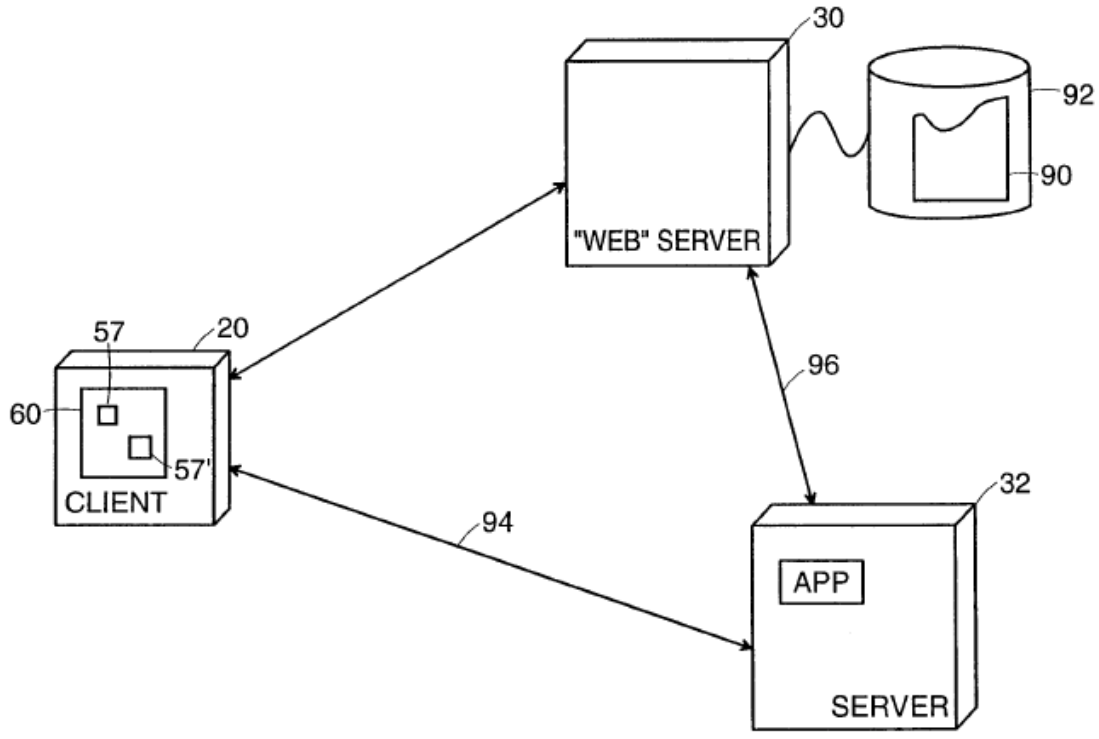


FIG. 3D

Paper 12, 16-17; Ex. 1004, Cover, FIG. 3D

Issue 1: the web server and the content server

Claim Construction

The content server and the web server

Claim Construction

The parties agree that the content server and web server can be implemented on one physical server

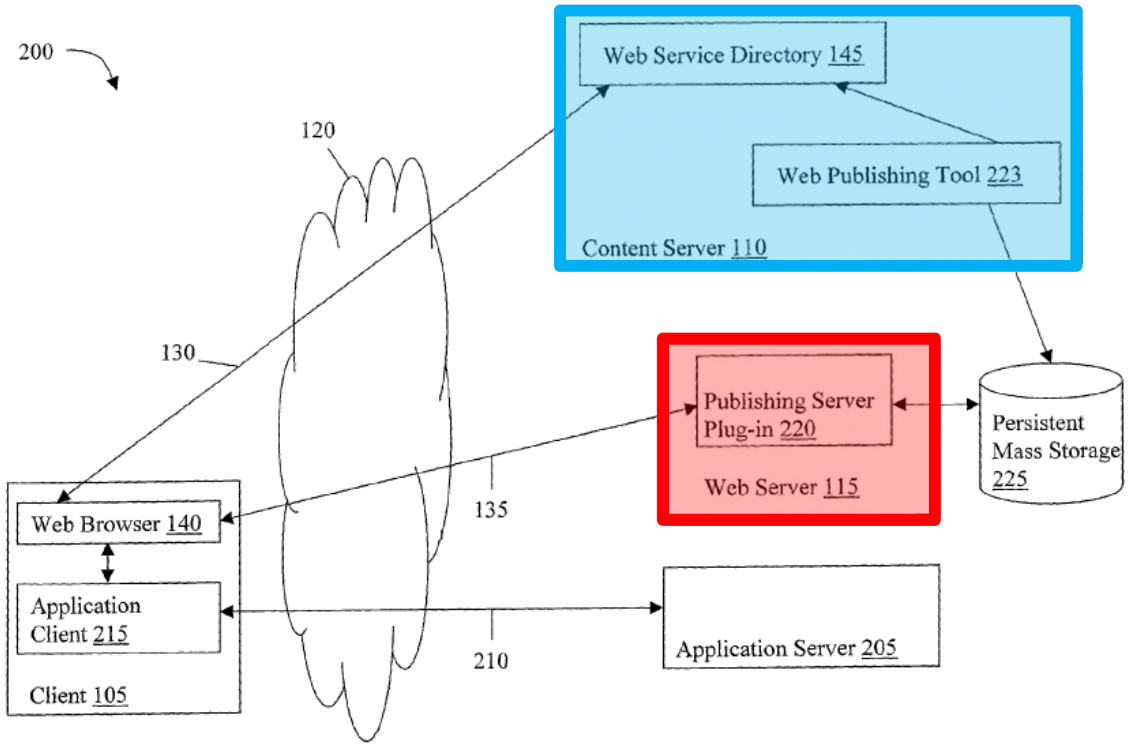


FIG. 2

Although illustrated with three servers **110**, **115**, **205**, any number of servers can be used to implement the functions described above and below. In one embodiment, two or more of the servers **110**, **115**, **205** are aggregated together and provided as a single physical machine. Moreover, any number of clients **105** can be connected to the servers **110**, **115**, **205** to implement the functions described above and below.

Ex. 1001, 4:3-5, FIG. 2 (annotated); Paper 1, 15-17;
Paper 20, 14 ("Patent Owner agrees ... that the 'content server' and the 'web server' may reside on the same physical machine")

The content server and the web server

Patent Owner agrees that the content server and web server can be implemented as software

Patent Owner's Response

Patent Owner agrees with Petitioner that the '843 patent teaches that the "content server" and the "web server" may reside on the same physical machine. *See, e.g.*, Petition 15-17. However, the recited "content server" and "web server" must still be two distinct components, even if residing on the same physical machine. *See Board of Regents Univ. Tex. v. Benq America*, 533 F.3d 1362, 1371 (Fed. Cir. 2008) ("Different claim terms are presumed to have different meanings"). This is at least because the "web server" and "content server" can each be realized in software.

Paper 20, 14

Patent Owner's Expert

Q. A web server can be implemented in software?

A. Like I said, like I've seen some things in firmware. Firmware is just (indiscernible) software. So all web servers are software.

Q. And content servers, are those implemented in software?

A. Most likely, yes.

Ex. 1026, 55:14-22

Paper 23, 4; Ex. 1001, 4:3-5

The content server and the web server

Thus, the claims contemplate one physical machine with software for performing the content server and web server functions

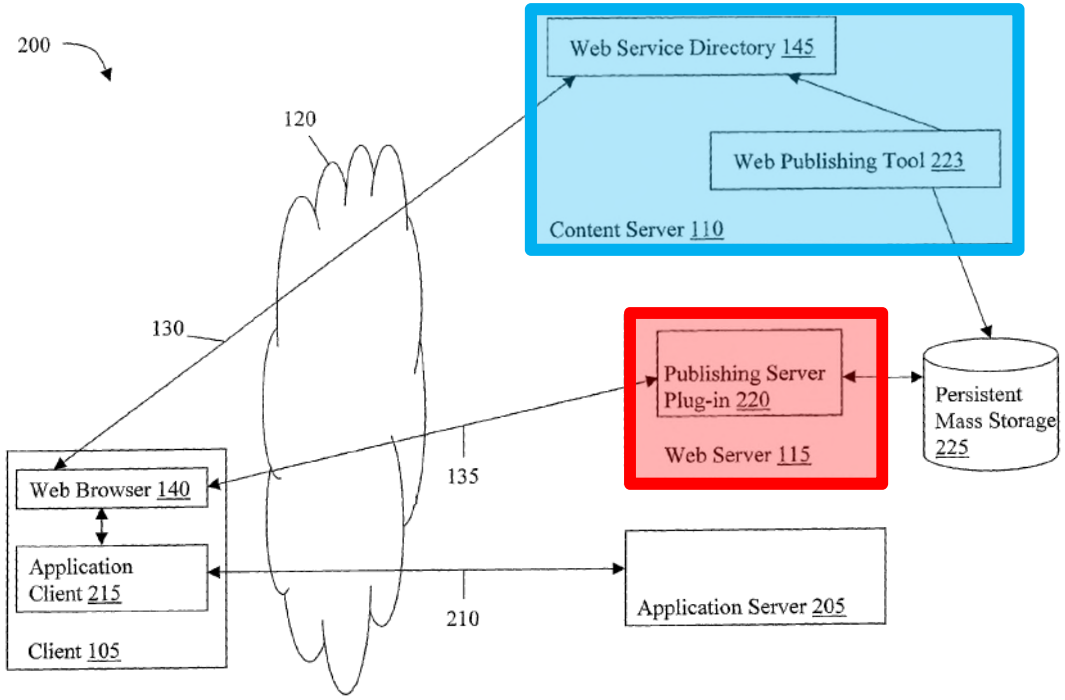


FIG. 2

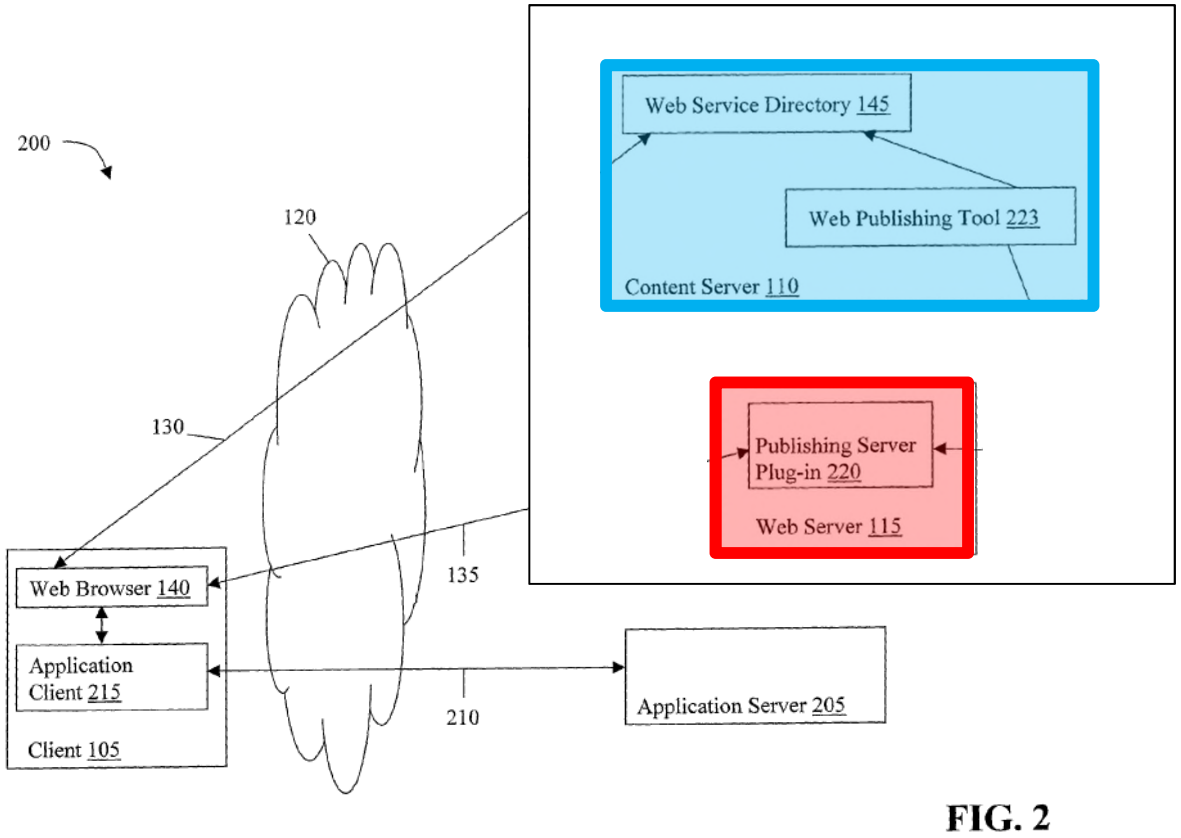


FIG. 2

Paper 23, 4; Paper 20, 14-15; Ex. 1026, 55:14-22; Ex. 1001, 4:3-5, FIG. 2 (annotated); Paper 12, 36

Zoller discloses a content server and a web server

Zoller disclose a content/web server

Ground 2

Trooskin-Zoller Declaration

The web server 49a corresponds to the claimed content server and the claimed web server. The client computer 20 corresponds to the claimed client. Ex. 1005, 7:7-13, 3:33 – 4:20. Zoller discloses that the client device 20 includes browser software such as Microsoft Internet Explorer or Netscape Navigator. Ex. 1005, 5:4-11.

Ex. 1016, ¶ 120; Ex. 1005, 7:7-13, 3:33-4:20,
FIG. 7 (annotated); Paper 1, 51-52; Paper 23, 14-15

Zoller FIG. 7 (annotated)

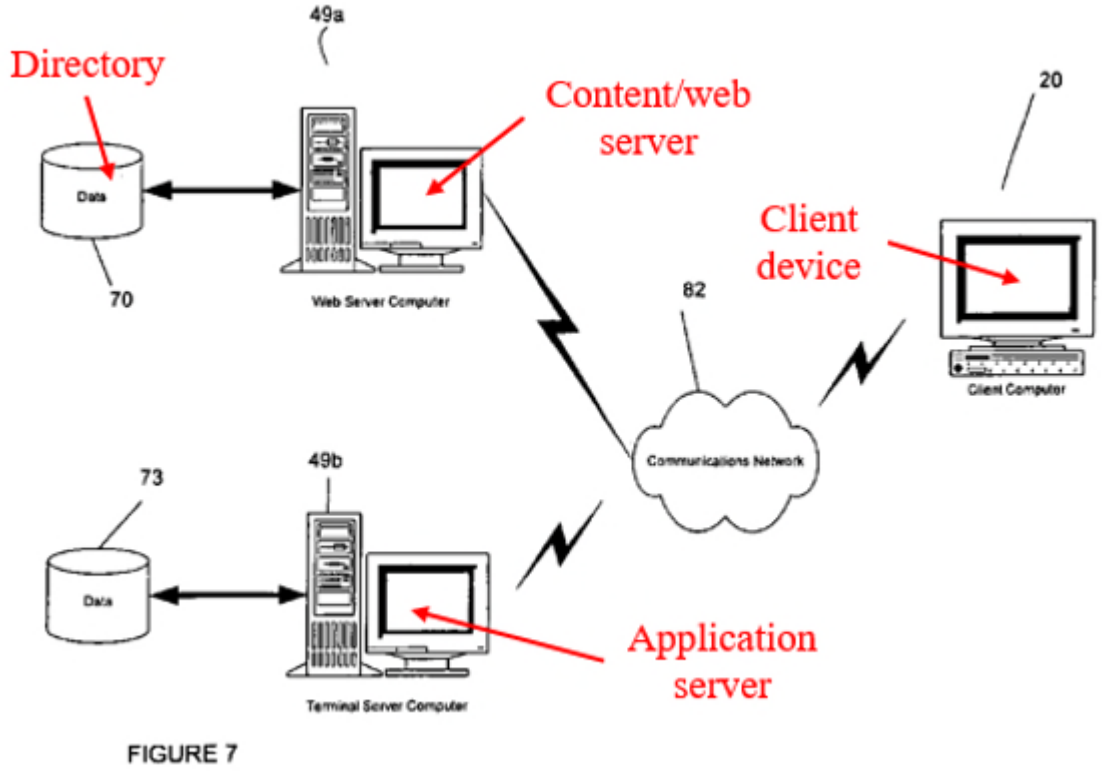


FIGURE 7

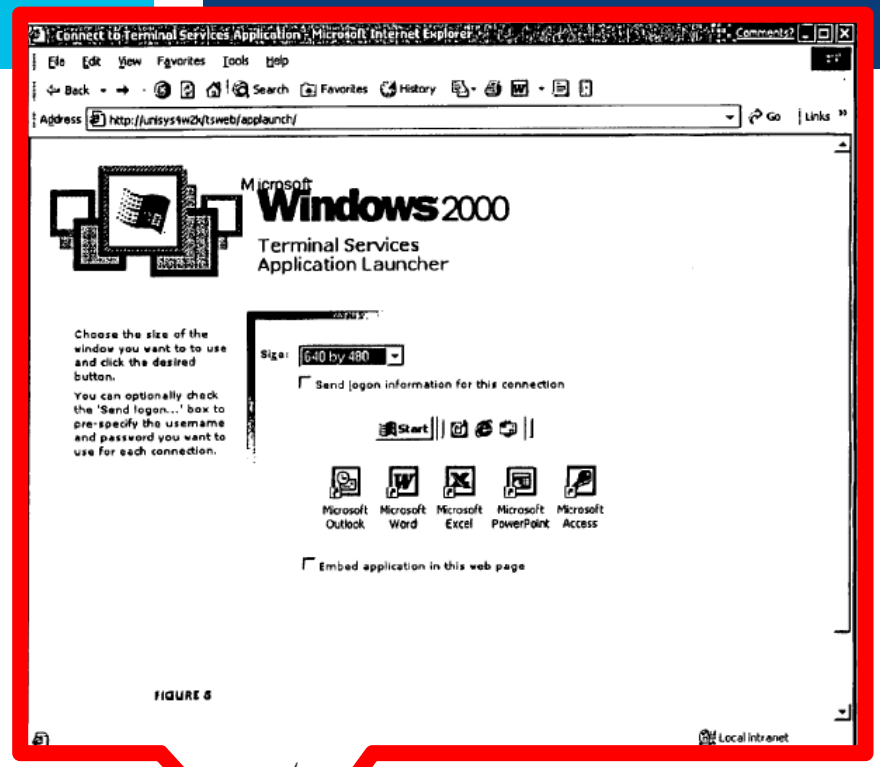
Zoller discloses a content server

Zoller's client receives an application launching query page

122. During step 230, the client 20 receives a web page from the content/web server 49a, namely "an Application Launching query form page allowing a user to specify a particular Microsoft® Corporation software application for execution." Ex. 1005, 6:24-27. This is shown in FIG. 5, reproduced below:

* * *

When the user selects an application button, "an http request and the application identifier parameter is sent to the web server 49." Ex. 1005, 6:27-30. In other words, Zoller discloses that the client 20 queries the web service directory (tsweb) on the content/web server 49a for the Application Launcher page that includes information associated with a first application



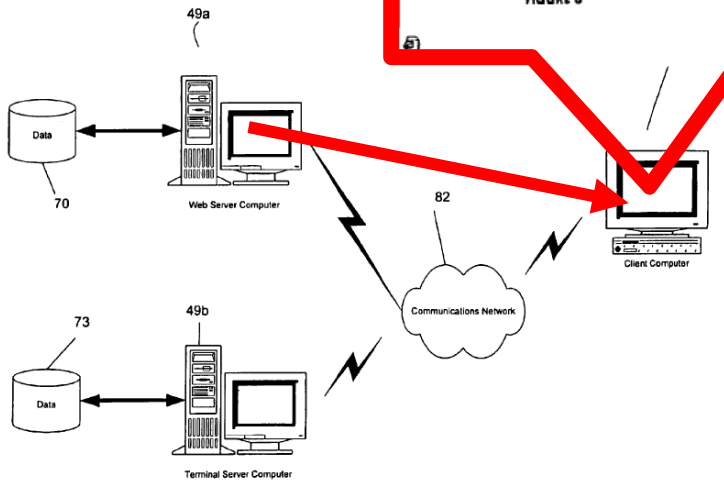


FIGURE 7

Ex. 1016, ¶ 122; Ex. 1005, 6:24-27, 6:27-30, FIGs. 5 and 7 (annotated); Paper 1, 52-54; Paper 23, 14-15

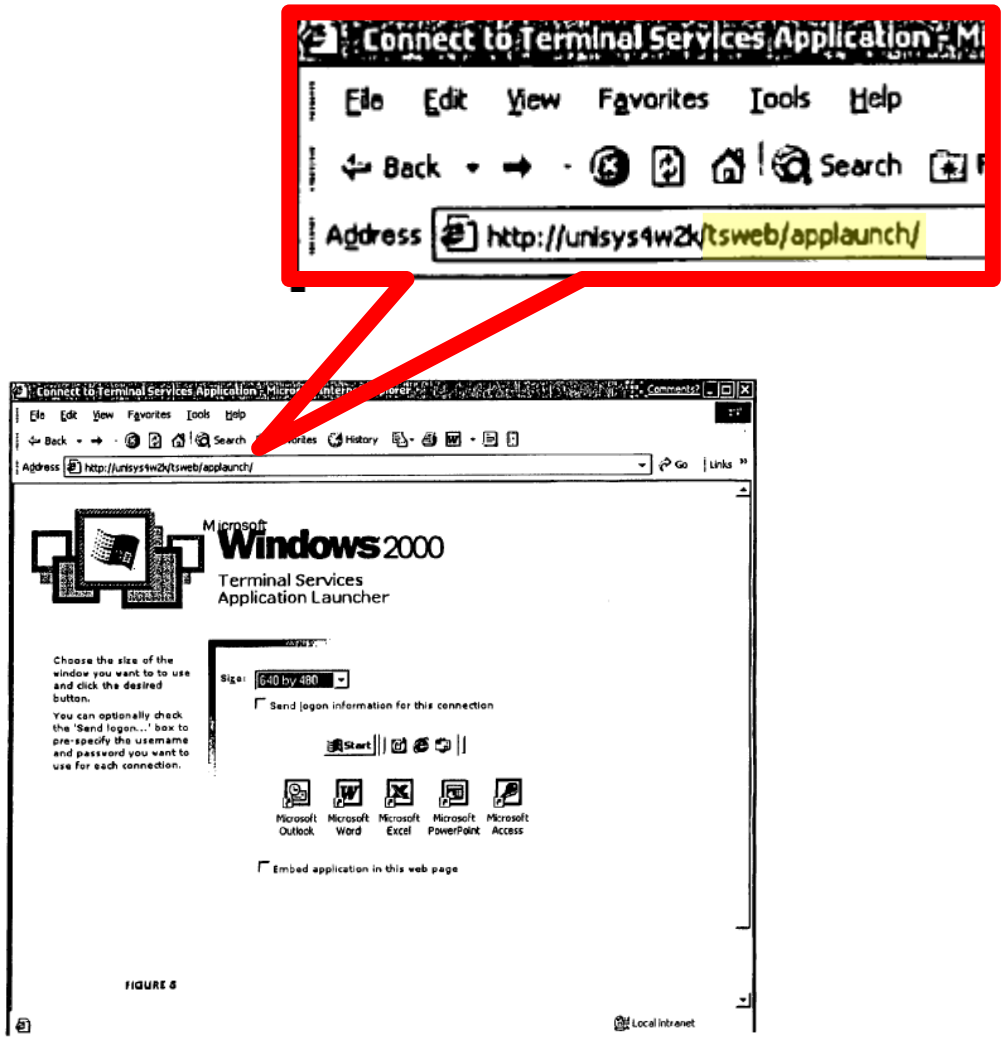
Zoller discloses a content server

Ground 2

Zoller's application launching query page is received from a directory on the server 49a

123. The web/content server 49a includes a directory for providing the icons shown in FIG. 5. This is evidenced by the URL in the address bar in FIG. 5, reproduced below.

124. The field following "http://" (in this case, "unisys4w2k") identifies the content/web server 49a. A POSITA would also recognize that the field "tsweb" refers to a directory on the content/web server 49a that provides the "app launch" page, including the illustrated icons. Moreover, the schematic diagram FIG. 7 shows that the content/web server 49a has a data store 70. Ex. 1005, FIG. 7. The data store 70 stores the content for the "tsweb," which contains the "applaunch page."



Ex. 1016, ¶¶ 123-24; Ex. 1005, FIG. 5 (annotated), FIG. 7; Paper 1, 52-54; Paper 23, 14-15

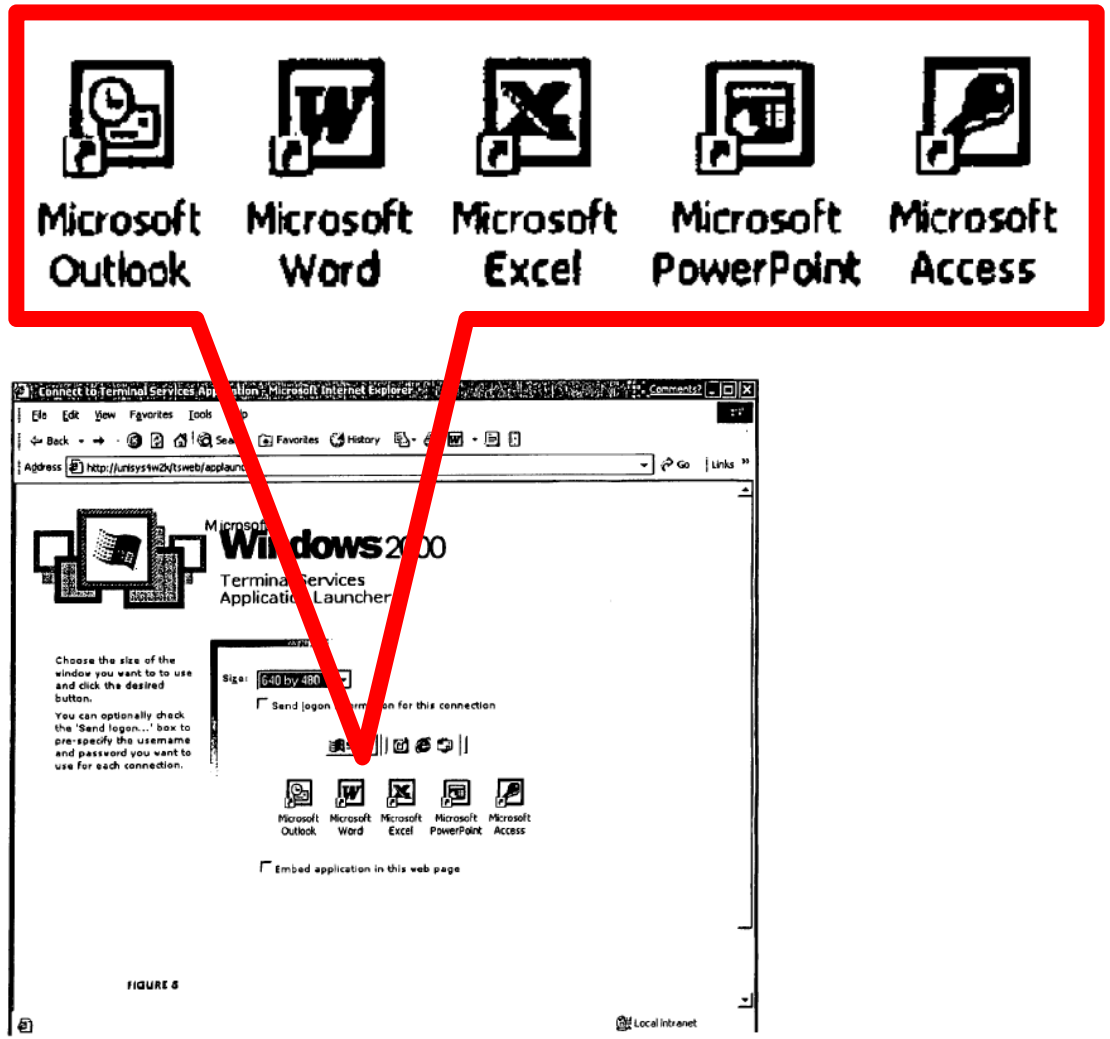
Zoller discloses a content server

The icons in the application launching query page correspond to the claimed SAP

126. Zoller discloses a service access point associated with a first application and identifying a web server. Each of the application buttons in FIG. 5 are associated with an application.

* * *

Zoller discloses that "[a]n HTML document contains text and metadata (commands providing formatting information), as well as ***embedded links*** that reference other data or documents by specifying ***Uniform Resource Locator's (URL's)***." Ex. 1005, 4:59-63 (emphasis added). Each application icon is an embedded hyperlink that points to (i.e., identifies) the content/web server 49a to which the http request is sent. A hyperlink associated with an application and identifying a web server is a "service access point" within the meaning of the '843 patent.



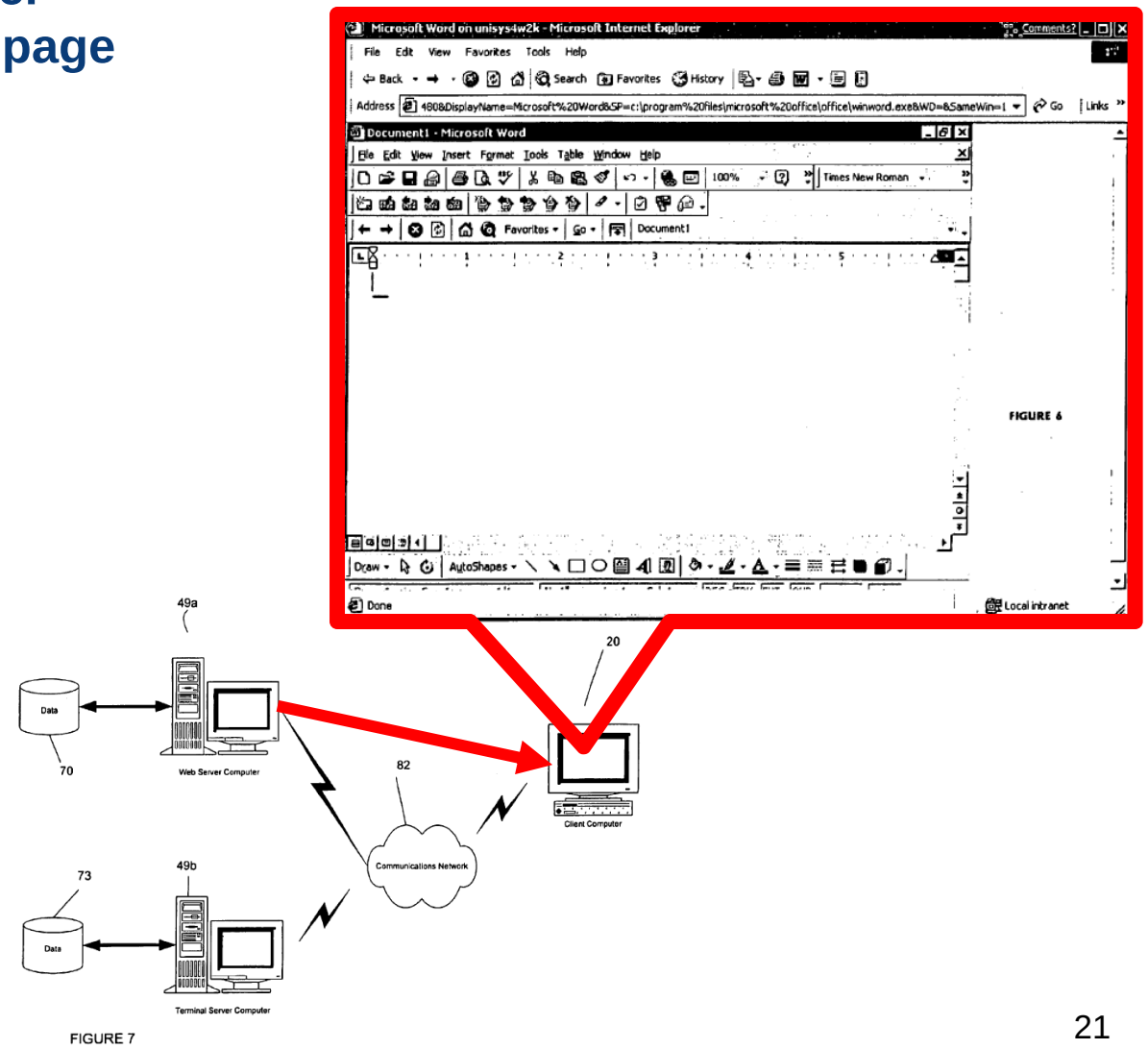
Ex. 1016, ¶ 126; Ex. 1005, 4:59-63, FIG. 5 (annotated); Ex. 2009, 118:18-119:8, 119:21-120:8, 127:13-128:16, 137:6-138:13, 141:4-142:2, 145:19-146:4; Paper 1, 53-54; Paper 23, 14-15

Zoller discloses a web server

Ground 2

The Zoller client receives address information after selecting an icon in the application launching query page

128. After the user selects one of the application icons shown in FIG. 5 and the client 20 sends an http request to the content/web server 49a, "the web server 49 uses an ASP script that utilizes the user specified parameters to generate any additional parameters required to complete the desired terminal server connection." Ex. 1005, 6:35-38. The additional parameters include, for example, "the name of the application to start (e.g., Word, SAP)," and "at a minimum, the ASP script generates ***the directory location on the terminal server*** having the application selected." Ex. 1005, 6:38-45 (emphasis added). Then, "a web page is returned to the client with corresponding URL address having the required parameters." Ex. 1005, 6:45-47.



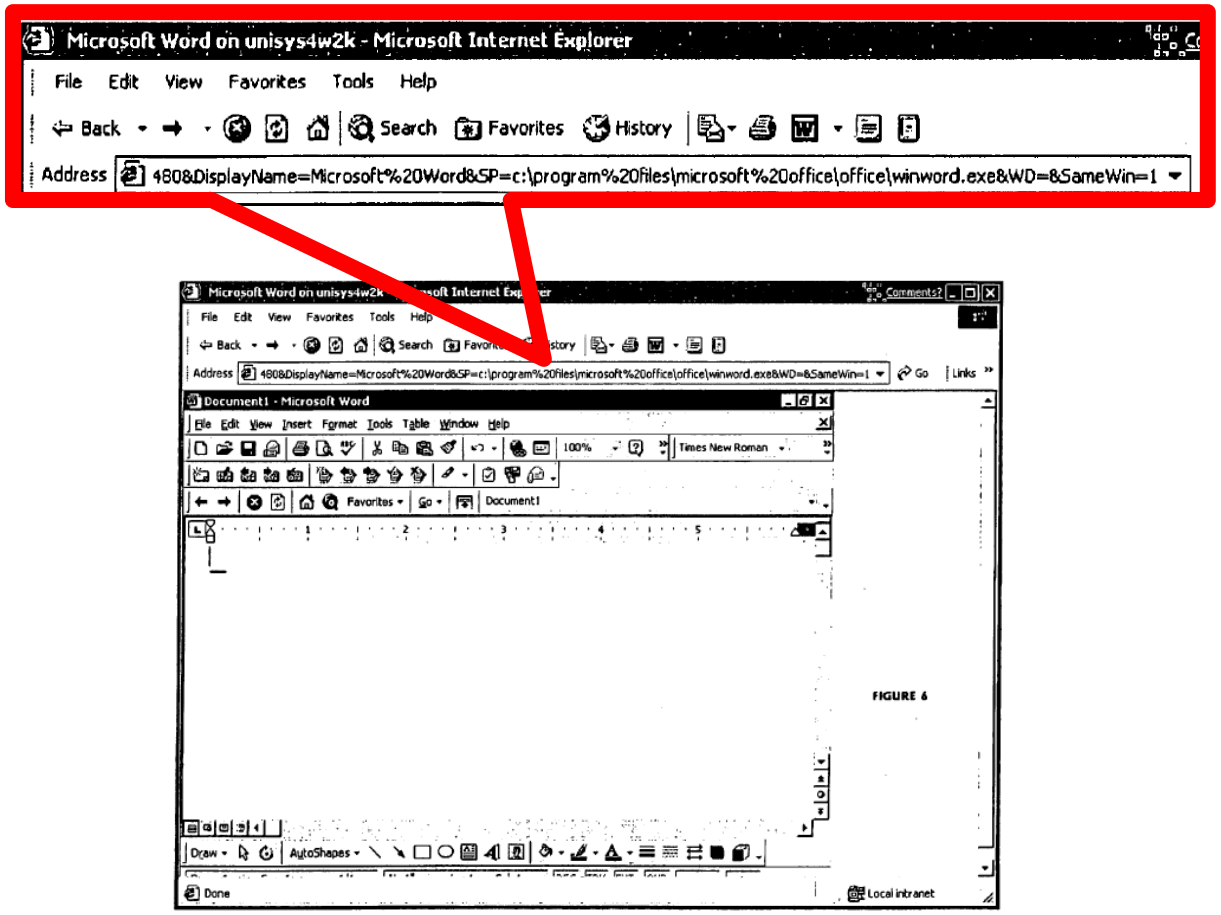
Ex. 1016, ¶ 128; Ex. 1005, 6:35-38, 6:38-45,
FIGs. 6 and 7 (annotated); Paper 1, 53-54; Paper 23, 14-15

Zoller discloses a web server

Ground 2

The Zoller client receives address information after selecting an icon in the application launching query page

129. Zoller teaches that the client 20 receives, from the content/web server 49a, address information (the directory location on the terminal server) associated with the first application. In particular, FIG. 6 of Zoller illustrates a selected Microsoft Word application within an Internet Explorer browser. Ex. 1005, 7:23-25. The URL in the browser's address bar "includes the full address and parameters," including "the word application selected as well as its directory location on the terminal server 49b." *Id.*, 7:25-33.



Ex. 1016, ¶ 129; Ex. 1005, 7:23-25, 7:25-33, FIG. 6 (annotated); Paper 1, 53-54; Paper 23, 14-15

Petitioner's Reply does not contain new invalidity theories

Patent Owner mischaracterizes the Petition

Ground 2

Patent Owner's mischaracterization

The Petition asserted that "Server 49a corresponds to the claimed content and web server." Paper 1, Petition at 51 ("Petition"); *see also id.* at 15-17. Petitioner explicitly argued "that the same logical component in Zoller is both the web server and the content server." The Petition uses the term "content/web server" over 35

Paper 29, 10

The Petition

Accordingly, the prior art need only disclose a single physical server machine that performs the claimed functionalities of the web service directory on the content server and the web server.[4]

Paper 1, 16-17

The Institution Decision

That is the case with respect to Zoller, where Petitioner identifies a physical machine (i.e., web server 49a) with both a "web server" and "content server," and identifies the "tsweb" directory on web server 49a as a "web service directory on a content server." *See* Pet. 51, 56–57.

Paper 12, 36

Patent Owner's "software" argument is meritless

Ground 2

Patent Owner's Response

This is at least because the "web server" and "content server" can each be realized in software.

Paper 20, 14

Patent Owner's Sur-Reply

Petitioner also asserts for the first time that the content server and web server limitations are met by "software." *Id.* Petitioner does not—and cannot—provide any citations to its Petition in support of this "software" theory. "Software" appears only four times and never in reference to either of these limitations. *See* Petition at 52, 61, 66, 77.

Paper 29, 11

The Petition identified software

Zoller's server 49a provides the client 20 "an Application Launching query form page" (FIG. 5) from the ts-web directory, where each application icon is a hyperlink pointing back to and identifying server 49a (i.e., a SAP). Petition, 52-54; Ex. 1005, 4:59-63, 6:24-27, FIG. 5, FIG. 7; Ex. 1016, ¶¶120-24; Ex. 2004, ¶124; Ex. 2009, 118:18-119:8, 119:21-120:8, 127:13-128:16, 137:6-138:13, 141:4-142:2, 145:19-146:4. Thus, the server 49a contains software for performing the claimed content server functions. Ex. 2009, 116:15-119:8; Ex. 1026, 63:18-65:11.

After a user selects an application icon (FIG. 5), the server 49a receives an http request from the client 20 and "uses an ASP" to "generate[]the directory location on the terminal server having the application." Ex. 1005, 6:35-45; Ex. 1016, 128; Ex. 2009, 131:17-132:8, 135:20-136:18. The server 49a returns a web page to the client 20 "with corresponding URL address having the required parameters" (i.e., address information). Ex. 1005, 6:45-47. A POSITA would understand that the server 49a also contains software for performing the claimed functionalities of the web server. Ex. 2009, 116:15-119:8; Ex. 1026, 63:18-65:11.

Paper 23, 14-15

Issue 2: the web service directory

Claim Construction

Web service directory

The parties dispute whether the web service directory must be “searchable”

Petitioner’s Proposed Construction	The Board’s Construction	Patent Owner’s Construction
a directory of information for web services (Paper 23, 1-4)	a directory of information for web services (Paper 12, 13)	Plain and ordinary meaning; or searchable directory for information for web services (Paper 20, 13)

Web service directory

The Institution Decision found that the web service directory's ability to be searched are exemplary embodiments

> The Specification also describes exemplary embodiments in which web service directory 145 is capable of being "searche[d]" by client 105 for a particular web service. *Id.* at col. 4, ll. 49–60. Based on the current record, we do not read these disclosures of exemplary embodiments as limiting the content or functionality of a "web service directory."

Paper 12, 13; Paper 23, 2

Web service directory

Claim Construction

Patent Owner's expert admitted that the disclosed embodiments are not necessarily searchable

To advertise web services, firms or companies can publish their services on the web using the content server **110**. As more and more web services are written, a central repository (i.e., depository) for public web services, or a web service directory **145**, is typically stored on the content server **110**. The web service directory **145** may include a table listing supported web services and may also include documentation for each listed web service.

Ex. 1001, 1:42-49

Q. Is a central repository searchable?

A. Well, a repository is just a repository. It's just -- I mean, it depends.

Q. What does it depend on?

A. Depends on how you store the data. Is it encrypted repository? Or it's maybe unclear repository. Do we have data structures that can be mapped and retrieved in that repository? Do we have any particular -- there's a set of assumptions that need to be gathered to understand if a repository is searchable. That usually -- a repository on itself or just a content storage requires a mechanism or some sort of another entity that it will do and perform the searching because, like I said, a repository is a repository.

Ex. 1026, 26:19-27:10; Paper 23, 2

Web service directory

Dr. Hernandez-Mondragon's Second Declaration

54. A web service directory is a machine-readable directory for locating or accessing web services and is intended to be accessed and utilized by a computer, rather than a human user. This data should be organized using an extensible markup language such as XML. I note that Mr. Zoller seems to recognize this fact when he suggests that web service directories are "inherently extensible." Zoller Depo. Tr. at 69:18-70:10 ("The wonderful thing about a web service directory is it – is they're inherently extensible."). This common format allows the web services directory to provide the information about the web services, such as the SAP's and other related information, in the same manner regardless of the system requesting the service or the service being offered.

55. It is due in large part to this common format and the ability of the computer to parse such data, that web service directories are searchable by the requesting machine. The '843 patent describes that the web service directory may be queried or searched and navigated to discover web services. Id. at 2:47-49, 7:43-53. This organization and structure is demonstrated in the various exemplary protocols listed in the '843 patent. Common web or communication protocols, such as HTML or HTTP, do not provide the extensible structure that one of skill in the art would understand to be part of a web services directory.

Dr. Hernandez-Mondragon's Deposition Testimony

Q. Does a web service directory need to be extensible?

THE WITNESS: I don't know that answer, to be honest. It depends on how things are architected.

Ex. 2004, ¶¶ 54-55; Ex. 1026, 32:23-33:24; Paper 23, 3

Zoller discloses a web service directory

Web service directory

Zoller discloses a web service directory even under Patent Owner's construction because the ts-web folder receives a query

search = query = http request

Q. And a query here in claim 12, is that a request for information?

A. A query is a query, like an http request.

Q. So a query can be an http request; is that right?

A. Was one embodiment of this invention.

Q. Can that be other types of requests?

A. Http get, http post.

Ex. 1026, 94:11-17; Paper 23, 12

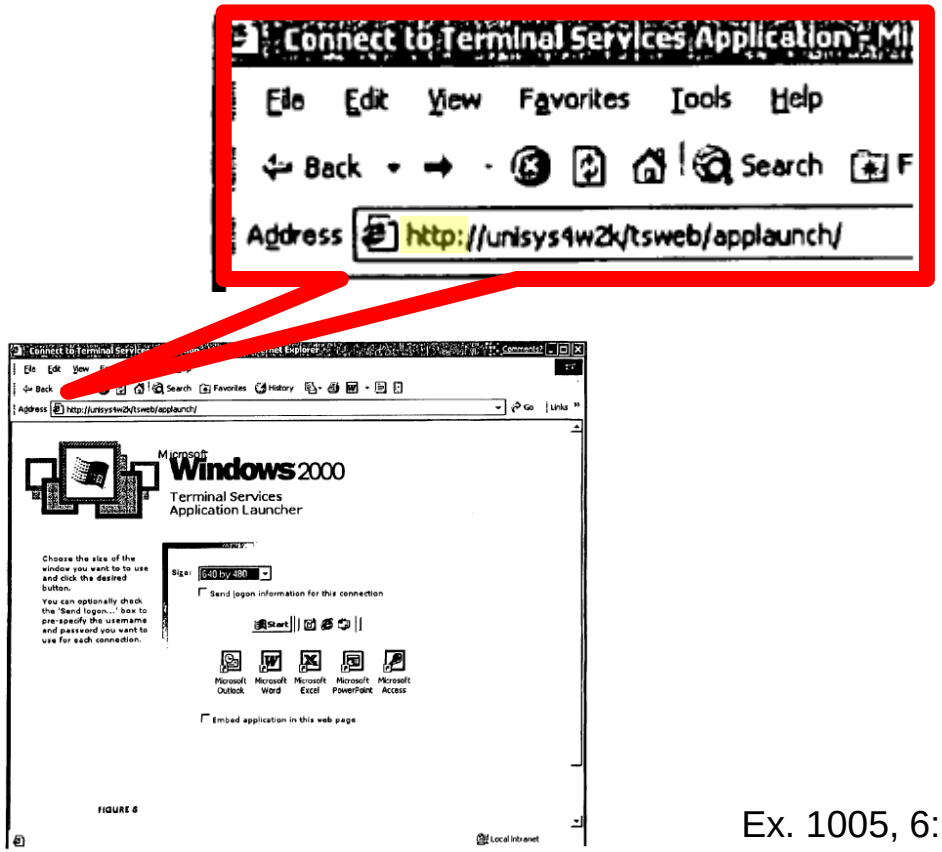
Q. In your view, when it refers to query or navigate, are those both searches?

A. Query is a type of search, and navigate is basically a glorified search.

Ex. 1026, 18:9-12; Paper 23, 12

Web service directory

The ts-web folder on server 49a receives a query from the client 20 and is therefore searchable



When the user selects an application button, "an http request and the application identifier parameter is sent to the web server 49." Ex. 1005, 6:27-30. In other words, Zoller discloses that the client 20 queries the web service directory (tsweb) on the content/web server 49a for the Application Launcher page that includes information associated with a first application

Ex. 1016, ¶ 122

Ex. 1005, 6:13-30; 5:4-11, FIG. 5 (annotated; Ex. 1016, ¶¶ 120-27; Paper 1, 52-57, 66; Paper 23, 12

Duursma also discloses a web service directory

Web service directory

Ground 2

Patent Owner does not contest that Duursma discloses a web service directory with respect to Ground 2

Program Neighborhood

According to the principles of the invention, a user of either client node 10, 20 is able to learn of the availability of application programs hosted by the application servers 30, 32, 34, and 36 in the network 40 without requiring the user to know where to find such applications or to enter technical information necessary to link to such applications. These available application programs comprise the "program neighborhood" of the user. A system for determining a program neighborhood for a client node includes an application program (hereafter referred to as the "Program Neighborhood" application), memory for storing components of the application program, and a processor for executing the application program.

Still referring to Fig. 2C, once the client node 20 is authenticated by the server 30, the server prepares and transmits to the client node 20 an HTML page 88 that includes a Program Neighborhood window 58 in which appears graphical icons 57, 57' representing application programs to which the client node 20 has access. A user of client node 20 invokes execution of an application represented by icon 57 by clicking that icon 57.

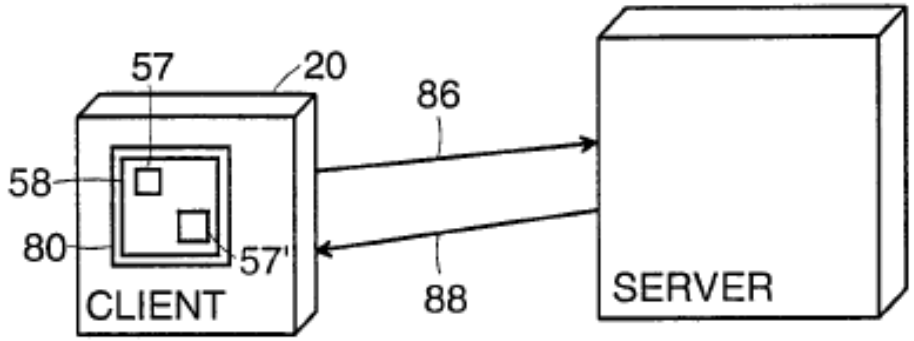


FIG. 2C

Ex. 1004, 10:1-18, 15:14-18; Paper 1, 57-58; Paper 23, 13

Web service directory

Ground 2

Patent Owner does not contest that Duursma discloses a web service directory with respect to Ground 2

Paper 23, 13

Application Database

The application database 48 is a cache of the authorized user and group information for all the public (i.e., published) applications in a server farm or in a group of trusted domains. Each server in a server farm can maintain its own application-related information in persistent storage and build up the database 48 in volatile storage. In another embodiment, all collected application-related information in the database 48 can be stored in persistent storage and made accessible to each other server in the server farm. The database 48 can be implemented in a proprietary format (e.g., as a linked list in memory) or using Novell's Directory Services (NDS) or any directory service adhering to the X.500 standard defined by the International Telecommunication Union (ITU) for distributed electronic directories.

Ex. 1004, 24:3-6; Paper 1, 58; Paper 23, 13

154. One of the web service directory examples in the '843 patent is the Lightweight Directory Access Protocol or "LDAP" (Ex. 1001, 1:55-57), a well-known protocol that adheres to the X.500 standard. *See* Ex. 1022 (titled "X.500 Lightweight Directory Access Protocol").

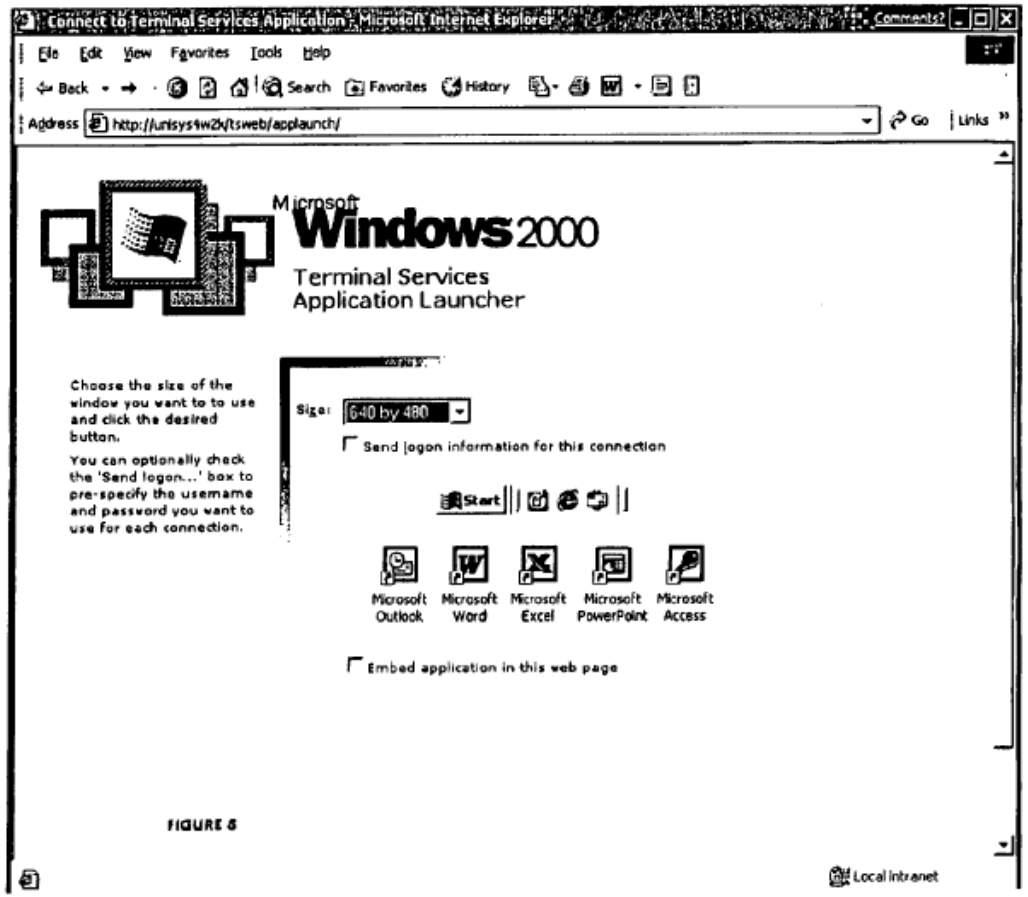
Ex. 1016, ¶ 154; Ex. 1001, 1:55-57; Ex. 1022; Paper 1, 57-58; Paper 23, 13

Motivation to combine Zoller and Duursma

Web service directory

Ground 2

Rationale to combine Zoller and Duursma



Ex. 1005, FIG. 5

156. It would have been obvious to modify Zoller to implement its directory using the directory service taught by Duursma. In the Zoller patent, the Application Launcher page (Zoller, FIG. 5) provided by the directory is static across groups of users. In other words, in order to provide a first list of applications to a first user group and a second list to a second user group, the administrator would need to build two separate Application Launching web pages. This also means that if one wanted to add/subtract an application for a user group, the administrator would need to modify existing web page(s) to reflect the change(s).

Ex. 1016, ¶ 156; Paper 1, 57-59; Paper 23, 13

Web service directory

Ground 2

Rationale to combine Zoller and Duursma

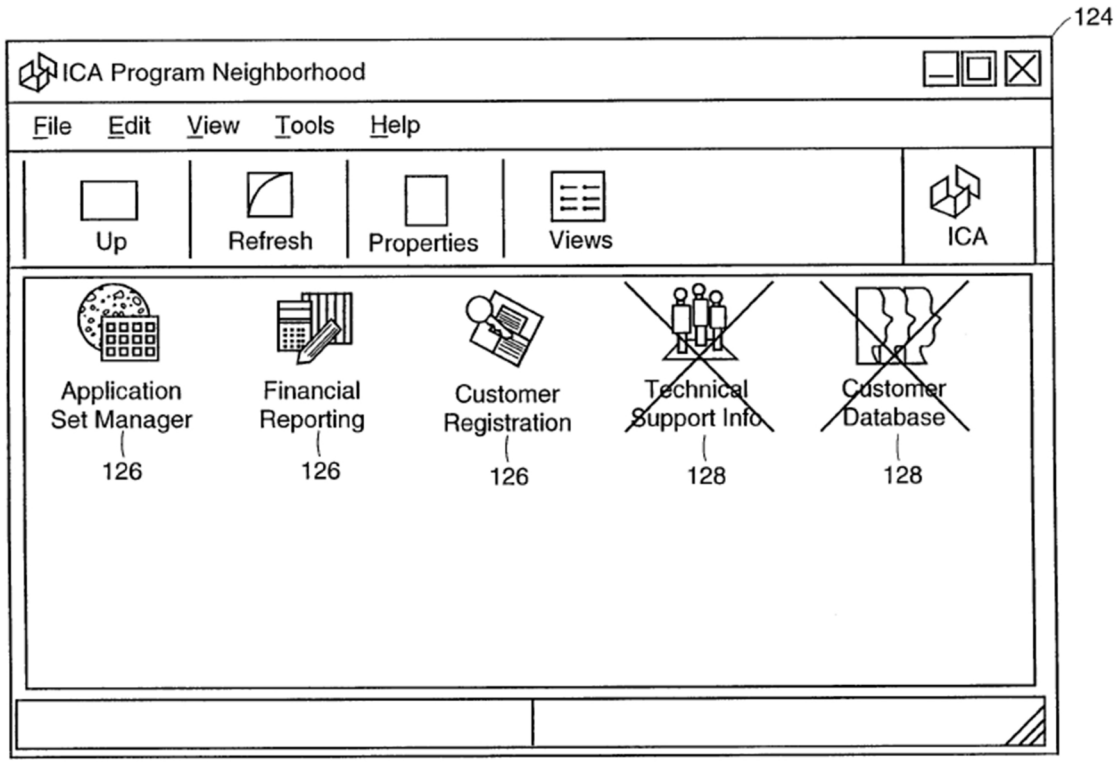


FIG. 6B

Ex. 1004, FIG. 6B

157. In contrast, directory services like those in Duursma allow programmatic updates to the page (*see, e.g.*, Duursma, FIG. 6B) when a change is made (e.g., an application is added to the list). Those skilled in the art would recognize that the web page could be built (programmed) to consult a web service directory, causing the web page to be programmatically updated responsive to changes made using the directory service. Thus, an administrator can "publish" new application(s) using the directory service, and the application launcher page would be automatically updated across all desired user groups. A person skilled in the art would recognize that implementing Zoller's using a X.500 directory service would improve the usability of Zoller from an administrator's perspective using a well-known technique, yielding predictable and successful results.

158. I and my co-inventors implemented the Application Launcher page as it appears in the Zoller patent simply to illustrate the functionality of delivering applications over the web using Microsoft Terminal Services. It was expected that customers could extend the functionality so that their Application Launcher pages would consult a directory service, like those disclosed in Duursma, so that the page would be programmatically updated.

Ex. 1016, ¶¶ 157-58; Paper 1, 57-59; Paper 23, 13

Patent Owner's arguments fail:

- The proposed modification would not result in an "extra step" (Paper 20, 36; Paper 23, 13)
  - Even if there was an "extra step" (there is not), this does not mean that combination would not have been obvious in view of the advantages of programmatically updating the page
- That certain parameters are collected before the application launch page (FIG. 5) is displayed has no bearing on programmatically updating the page (Paper 20, 48; Paper 23, 17; Ex. 1005, 5:43-51, 5:54-60, 6:13-15, 6:21-30; Ex. 1016, ¶¶120-22, 157-59, Paper 1, 52-56)
- The full-path URL to the application can still be stored for later (Paper 20, 49; Paper 23, 17-18; Ex. 1005, 5:7-34-42, 6:27-30, 6:45-49, 7:23-46; Ex. 1016, ¶¶128-29, 143-44, 157-59, Paper 1, 59-60)
  - Even if the full-path URL could not be stored for later (it can), this does not mean that the combination would not have been obvious in view of the advantages of programmatically updating the page

Issue 3: the presentation layer protocol

The presentation layer protocol

Ground 2

Specification

Additionally, the client **105** includes an application client **215** for establishing and exchanging communications with the application server **205** over the client-application server communication channel **210**. In one embodiment, the application client **215** is a GUI application. In some embodiments, the application client **215** is an Independent Computing Architecture (ICA) client, developed by Citrix Systems, Inc. of Fort Lauderdale, Fla., and is also referred to below as ICA client **215**. Other embodiments of the application client **215** include a Remote Display Protocol (RDP) client, developed by Microsoft Corporation of Redmond, Wash., a client-side player, interpreter or simulator capable of executing multimedia applications, email, Java, or .NET code. Moreover, in

lishing server plug-in **220** is a Java Server Page (JSP). Using the publishing server plug-in **220** to facilitate the publishing of remote GUI applications, the client **105** can thereby access the web service, not through a programming interface or a web page, but through a full GUI interface, such as with Citrix's ICA or Microsoft's RDP.

Ex. 1001, 4:33-45, 5:62-67; Paper 1, 19

Prosecution History

One of ordinary skill in the art would understand these types of clients, i.e., ICA and RDP clients, to communicate using presentation protocols. Searches on the Internet provide access to multiple sources defining such protocols and referring directly to ICA and RDP clients. Results of some representative Internet searches include:

- RDP (Remote Desktop Protocol) The presentation services protocol that governs input/output between a Windows terminal client and Windows Terminal Server. It is based on the T.share protocol. (Answers.com definition, available at: http://www.answers.com/topic/remote-desktop-protocol);
- Originally known as the Intelligent Console Architecture, ICA provides a presentation services protocol that governs input/output between the server and clients. ICA also supports local ports for printing and other interconnections. (Techweb.com definition, available at http://www.techweb.com/encyclopedia/defineterm.jhtml?term=ICA).

Presentation protocols, such as RDP or ICA, are also referred to as presentation services protocols. One common definition is the following, from http://www.techweb.com: A protocol that provides graphical interface screen updates to a client station from an application executing in a multiuser computer system. ICA and T.share are examples for the WinFrame and Windows-based Terminal Server systems.

Ex. 1002, 289-90; Paper 1, 19-20

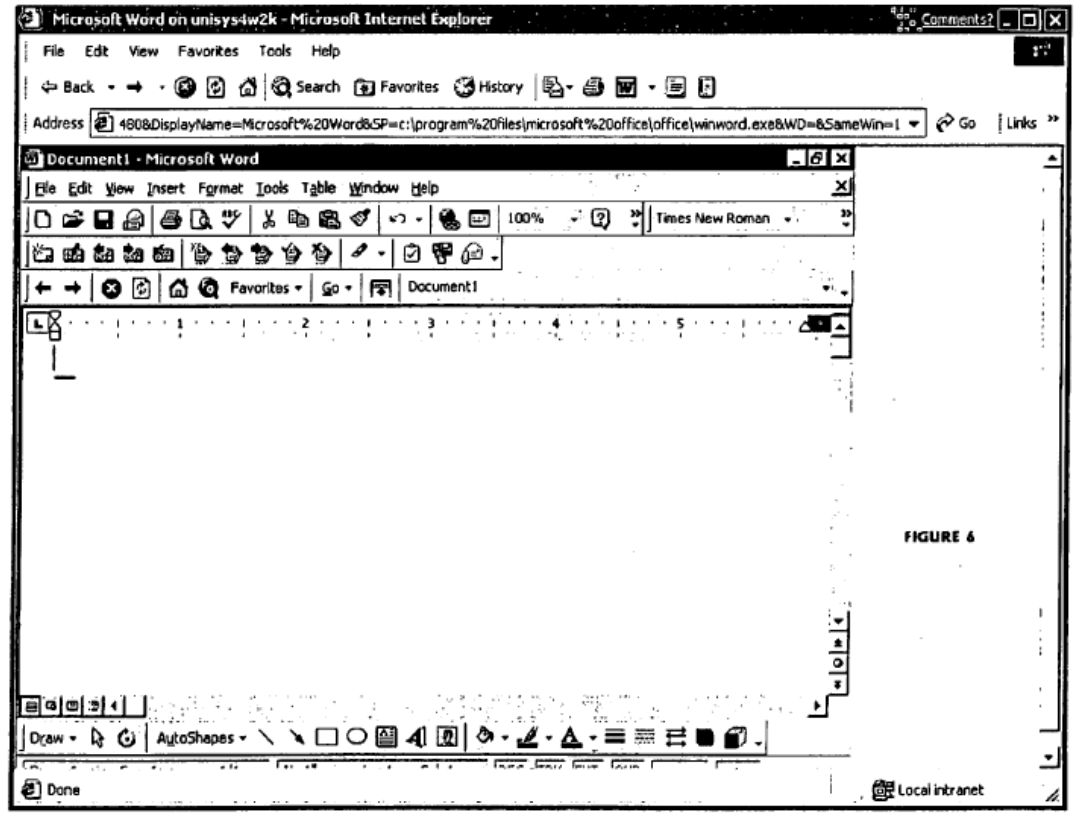
The presentation layer protocol

Ground 2

135. Zoller also discloses that the ActiveX controls communicate via a presentation layer protocol with the application server 49a identified by the address information. *See, e.g.*, Ex. 1005, 6:66-7:2 ("the client 20 initiates the terminal service connection with the terminal server via execution of ActiveX® controls, using whatever ***proprietary protocols*** are necessary to do so") (emphasis added). The "proprietary protocols" disclosed by Zoller are presentation layer protocols within the meaning of the '843 patent, as they are the mechanism used by a terminal server for presenting a remote interface on the client computer.

136. In the case of Zoller, the protocol was Microsoft's Remote Desktop Protocol or RDP. Zoller is directed to Microsoft Terminal Services, which used RDP. Those skilled in the art would immediately recognize this, as confirmed by Craft and Grazaidio.

Ex. 1016, ¶¶ 135-36; Ex. 1001, 6:66-7:2 Paper 1, 61; Paper 23, 8-10



Ex. 1005, FIG. 6

The presentation layer protocol

Ground 2

(54) **METHOD AND APPARATUS FOR TERMINAL SERVER ADDRESSABILITY VIA URL SPECIFICATION**

(75) Inventors: **David E. Zoller**, Seattle, WA (US); **Madan Mohan R. Appiah**, Redmond, WA (US); **Nadim Y Abdo**, Redmond, WA (US)

(73) Assignee: **Microsoft Corporation**, Redmond, WA (US)

(57) **ABSTRACT**

A user at a client may specify a URL including certain parameters necessary to establish a corresponding terminal server connection. A corresponding http request generated by Internet Explorers® is sent to a web server, which in response generates the complete set of parameters required for a terminal server connection using ASP script. The parameters, including terminal server name, terminal server application, log-on user name, log on user-password and screen size are returned within the structure of a URL address. The URL returned corresponds to a web page having embedded ActiveX® controls used to facilitate the desired terminal server connection. Terminal server client software on the client then establishes a terminal server connection using the parameters and ActiveX® functionality.

Ex. 1005, Cover

Ex. 1005, FIG. 5

Ex. 1005, FIG. 3

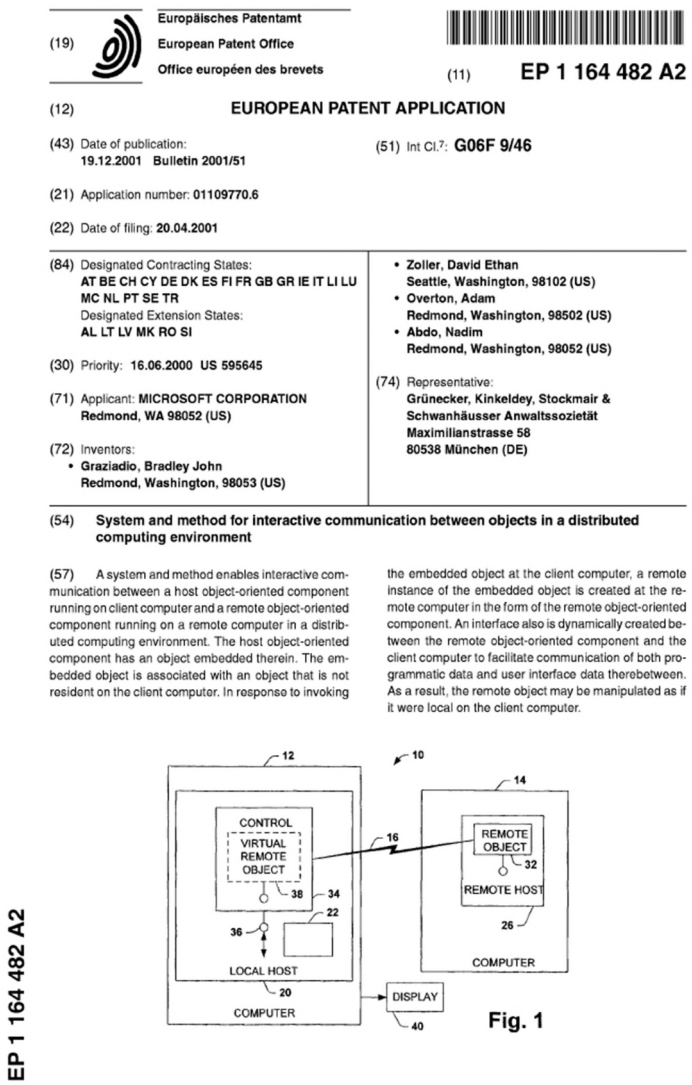
In Step **250**, the client **20** initiates the terminal service connection with the terminal server via execution of ActiveX® controls, using whatever proprietary protocols are necessary to do so. In one embodiment of the present invention, the terminal server box is running Microsoft® Corporation IIS, thus allowing the terminal server to be one in the same as the web server **49**. Thus, the terminal server connection is established with the web server **49**.

Ex. 1005, 6:66-7:6

Ex. 1005, Cover, FIGs. 3 and 5 (annotated), 2:40-41; Paper 1, 62; Ex. 1016, 140; Paper 23, 10-12; Ex. 1026, 107:7-9

The presentation layer protocol

Ground 2



(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 164 482 A2

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
19.12.2001 Bulletin 2001/51

(51) Int Cl.⁷: G06F 9/46

(21) Application number: 01109770.6

(22) Date of filing: 20.04.2001

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: 16.06.2000 US 595645

(71) Applicant: MICROSOFT CORPORATION
Redmond, WA 98052 (US)

(72) Inventors:
• Graziadio, Bradley John
Redmond, Washington, 98053 (US)
• Zoller, David Ethan
Seattle, Washington, 98102 (US)
• Overton, Adam
Redmond, Washington, 98502 (US)
• Abdo, Nadim
Redmond, Washington, 98052 (US)

(74) Representative:
Grünecker, Kinkeldey, Stockmair & Schwanhäusser Anwaltssozietät
Maximilianstrasse 58
80538 München (DE)

(54) System and method for interactive communication between objects in a distributed computing environment

(57) A system and method enables interactive communication between a host object-oriented component running on client computer and a remote object-oriented component running on a remote computer in a distributed computing environment. The host object-oriented component has an object embedded therein. The embedded object is associated with an object that is not resident on the client computer. In response to invoking the embedded object at the client computer, a remote instance of the embedded object is created at the remote computer in the form of the remote object-oriented component. An interface also is dynamically created between the remote object-oriented component and the client computer to facilitate communication of both programmatic data and user interface data therebetween. As a result, the remote object may be manipulated as if it were local on the client computer.

Fig. 1

EP 1 164 482 A2

Ex. 1019

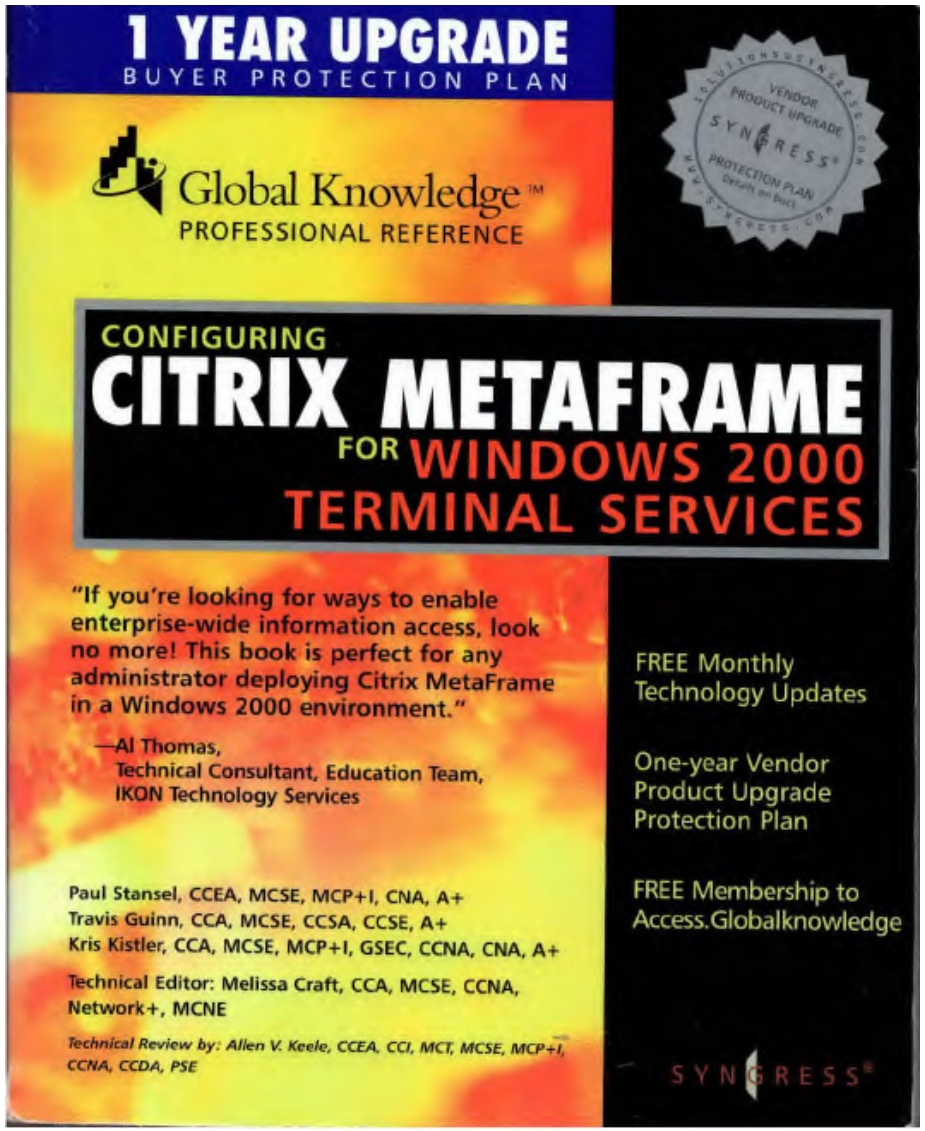
Graziadio confirms that Microsoft Terminal Services use Microsoft RDP

138. Graziadio also confirms that Terminal Services use RDP. Myself and Abdo Nadim are both listed as inventors on Graziadio and Zoller. Graziadio states that "Terminal Server employs a Remote Desktop Protocol (RDP), which allows a client to communicate with the Terminal Server over the network connection. Briefly stated, the Terminal Server session enables applications to execute on the server and communicate the remotely generated user interface over a connection which is displayed locally at the client." Ex. 1019, 6:27-33. "The RDP protocol provides for bi-directional communications of UI data between the client 102 and the remote object at the server 104." Ex. 1019, 11:35-38.

Ex. 1016, ¶ 138 (citing Ex. 1019, 6:27-33, 11:35-38); Paper 1, 61; Paper 23, 9-10

The presentation layer protocol

Ground 2



Craft confirms that Microsoft Terminal Services use Microsoft RDP

140. Zoller describes features of Microsoft's Windows 2000 Terminal Services. *See, e.g.*, Ex. 1005, FIG. 5.

Ex. 1005, FIG. 5 (excerpted)

Terminal Services utilizes Microsoft's Remote Desktop Protocol ("RDP"), a presentation layer protocol, to communicate with a client. This is confirmed by Craft. *See, e.g.*, Ex. 1003, p. 263 ("Remote Desktop Protocol (RDP), is the communication component of Terminal Services"). Craft also confirms that RDP is used with the ActiveX® controls described in Zoller. *See, e.g.*, Ex. 1003, p. 208 ("RDP now offer[s] Web based ActiveX type clients"); *see also id.* p. 186. It

Ex. 1016, ¶ 140; Paper 1, 61-62; Paper 23, 11-12

The presentation layer protocol

Ground 2

Patent Owner's arguments regarding ActiveX are belied by Craft

First, ActiveX is not a presentation layer protocol, but rather a software framework allowing interaction between applications. Ex. 2004 at ¶¶ 134-38. Mr. Zoller does not assert that ActiveX is a presentation layer protocol. Ex. 1016 at ¶ 139.

Paper 20, 41

Mr. Zoller fails, however, to explain how the general knowledge that such protocols exist has any bearing on whether a POSITA, when faced with the ActiveX-based system of the '786 patent, would utilize a presentation layer protocol.

Paper 20, 42-32

140. Zoller describes features of Microsoft's Windows 2000 Terminal Services. *See, e.g.*, Ex. 1005, FIG. 5.

Ex. 1005, FIG. 5 (excerpted)

Terminal Services utilizes Microsoft's Remote Desktop Protocol ("RDP"), a presentation layer protocol, to communicate with a client. This is confirmed by Craft. *See, e.g.*, Ex. 1003, p. 263 ("Remote Desktop Protocol (RDP), is the communication component of Terminal Services"). Craft also confirms that RDP is used with the ActiveX® controls described in Zoller. *See, e.g.*, Ex. 1003, p. 208 ("RDP now offer[s] Web based ActiveX type clients"); *see also id.* p. 186. It

Paper 23, 10-12; Ex. 1003, 208; Ex. 1016, ¶ 137, 140; Petition, 61-62

Motivation to combine Zoller and Craft

Combining Zoller and Craft

Ground 2

Patent Owner Sur-Reply

Further, Petitioner fails to establish that a POSITA would have combined any aspect of Craft with the '786 patent to render obvious the use of RDP as the "proprietary protocol" of the '786 patent. Craft teaches the use of ICA files and the ICA protocol. The mention of RDP in Craft does not establish or render obvious that a POSITA would or could use RDP in the system of the '786 patent.

Paper 29, 17

Craft

Remote Desktop Protocol (RDP)

We've mentioned RDP several times already in this chapter, and now we're going to take a more detailed look at what it is. Remote Desktop Protocol is the backbone of Microsoft's thin-client package. Capable of controlling the transmission of information between the client and the Terminal Services, RDP is responsible for both graphical data transmission and mouse/keyboard transmission. RDP is based on the T.120 standards and was originally shipped as RDP 4.0 in Windows NT 4.0 Terminal Services edition.

Ex. 1003, 31

Petitioner's Reply does not contain new invalidity theories

Patent Owner mischaracterizes the § 103 rationale

Ground 2

Patent Owner mischaracterizes the Petition again

Patent Owner Sur-Reply

Lastly, Petitioner's Reply shifts theories from the instituted ground requiring a § 103 combination with Craft to a new ground relying on only the knowledge of a POSITA, which Craft allegedly corroborates. *Compare* Petition at 4 (defining Ground 2 as § 103 obviousness combination depending on "Zoller in view of Craft and Duursma") with Reply at 15-16 ("Petitioner did not say it would be obvious to substitute a component of Craft into Zoller."); *see also* 37 C.F.R. § 42.104. Petitioner's removal of ***any*** combination between the '786 patent and Craft creates a new ground that impermissibly diverges from those instituted.

Paper 29, 11

The Petition

It was well-known that Terminal Services utilize Microsoft's Remote Desktop Protocol ("RDP"). Ex. 1016, ¶140. This is confirmed by Craft. Ex. 1003, 263 ("Remote Desktop Protocol (RDP), is the communication component of Terminal Services"). Craft also confirms that RDP can be used with the ActiveX controls described in Zoller. Ex. 1003, 208 ("RDP now offer[s] Web based ActiveX type clients"), 186; Ex. 1016, ¶140.

It would have been obvious to combine Craft with Zoller because there is an express motivation to combine them. Ex. 1016, ¶140. Zoller refers to Microsoft Terminal Services and proprietary protocols, and Craft discloses the well-known understanding that Microsoft Terminal Services use Microsoft's Remote Desktop Protocol (RDP). *Id.* Thus, it would have also been obvious to a POSITA to choose RDP as the "proprietary protocol[]" because it was well-known that Microsoft Terminal Services use this protocol, yielding predictable and successful results. *Id.*

Paper 1, 62

Issue 4: the service access point

Zoller discloses a service access point

The service access point

Ground 2

Agreed claim construction: a unique address for an application

Paper 14, 11; Paper 12, 12; Paper 23, 1

Trooskin-Zoller Declaration

126. Zoller discloses a service access point associated with a first application and identifying a web server. Each of the application buttons in FIG. 5 are associated with an application. For example, the icon second from the left n Figure 5 is associated with a Microsoft Word application:

Ex. 1005, FIG. 5 (excerpted)

Zoller discloses that "[a]n HTML document contains text and metadata (commands providing formatting information), as well as ***embedded links*** that reference other data or documents by specifying ***Uniform Resource Locator's (URL's)***." Ex. 1005, 4:59-63 (emphasis added). Each application icon is an embedded hyperlink that points to (i.e., identifies) the content/web server 49a to which the http request is sent. A hyperlink associated with an application and identifying a web server is a "service access point" within the meaning of the '843 patent.

Ex. 1016, ¶ 126; Paper 1, 52-56

The service access point

Ground 2

Patent Owner's Sur-Reply

The '786 patent teaches applications buttons that are provided by the same web server they allegedly identify. Craft teaches icons created by a web server that point back to files on the same web server. The 86 patent's application buttons are not unique addresses and do not identify the alleged web server and the teachings of Craft do not cure that deficiency.

Paper 29, 17

Institution Decision

First, Patent Owner argues that the icon displayed on the web page in Zoller is not a "service access point" because it merely represents parameters passed to the ASP script. Prelim. Resp. 67. We are not persuaded based on the current record. Clicking on an icon in Zoller causes client 20 to send "an http request and the application identifier parameter" to web server 49a. Ex. 1001, col. 6, ll. 27–30. Petitioner sufficiently establishes that the icon, therefore, is a unique hyperlink pointing to web server 49a. Patent Owner further argues that even though the request generated from clicking on the icon in Zoller goes *to* web server 49a, that is not sufficient to "identify" the web server, as recited in claim 1. Prelim. Resp. 67 (citing Ex. 2002 ¶ 123). Patent Owner does not explain in any detail why that would be the case though. To the extent the parties dispute the meaning of "identifying" in claim 1, the parties are encouraged to provide proposed interpretations and address the issue in their papers during trial.

Paper 12, 32

Zoller renders the service access point obvious in view of Craft

Zoller and Craft

Ground 2

Trooksin-Zoller Declaration

127. This understanding is confirmed by Craft, which, like Zoller, describes using Terminal Services to provide applications over the Internet, as described in further detail above. *See, e.g.*, Ex. 1003, p. 287. Craft states that "[a]n administrator can provide their client with a Web page with ***a hyperlink pointing to*** a specific command prompt on a specific server." *Id.* (emphasis added). Because Zoller discloses that selecting an icon sends an http request to the content/web server 49a, the icon is a hyperlink pointing to the content/web server 49a, as confirmed by Craft. It would have been obvious to combine Craft with Zoller because Craft discloses a known technique that would yield predictable results in Zoller – that clicking the icon results in a hyperlink pointing to the content/web server 49a.

Ex. 1016, ¶ 127; Paper 1, 59-60

128. After the user selects one of the application icons shown in FIG. 5 and the client 20 sends an http request to the content/web server 49a, "the web server 49 uses an ASP script that utilizes the user specified parameters to generate any additional parameters required to complete the desired terminal server connection." Ex. 1005, 6:35-38. The additional parameters include, for example, "the name of the application to start (e.g., Word, SAP)," and "at a minimum, the ASP script generates ***the directory location on the terminal server*** having the application selected." Ex. 1005, 6:38-45 (emphasis added). Then, "a web page is returned to the client with corresponding URL address having the required parameters." Ex. 1005, 6:45-47.

Ex. 1016, ¶ 128; Paper 1, 59-60

Zoller and Craft

Ground 2

Patent Owner Response

Further, the system of the '786 patent teaches retrieving a web page with a static list of available applications before the user logs into the application server. Ex. 2004 at ¶ 105. Craft performs a different set of steps; first using login credentials to log in to a server and then retrieving or creating a dynamic web page. There would be no reason to combine the '786 patent with Craft to provide "web pages [that] include hyperlinks pointing to a specific server," as the user would have already selected the server before any links would be presented. Ex. 2004 at ¶ 106-7. The '786 patent teaches a static web page that builds a URL based on parameters provided by the user, including the server that the application resides on. *See supra,* Sections IV.A and VI.A.3. Conversely, Craft teaches a system in which the web server retrieves application data from a back-end server and presents this information to the client as an ICA file after the client selects an icon. *See, e.g.*, Craft at 454-55. Where the '786 patent teaches that a user specifies the desired server, the system of Craft selects and provides that server information without user input. Ex. 2004 at ¶ 106-7.

Paper 20, 45

Institution Decision

We are not persuaded that these differences in how the two references' systems *create* and *use* icons to facilitate access to a remote application indicate that a person of ordinary skill in the art would not have combined their teachings. Petitioner's position is that a person of ordinary skill in the art would understand Craft as "confirm[ing]" that Zoller's icons in fact are hyperlinks. Pet. 54–55. In other words, Petitioner appears to be relying only on Craft's teaching of an icon presented as a hyperlink to a specific server, and does not rely on Craft for any functionality pertaining to the creation or use of such a hyperlink. Further, to the extent Patent Owner contends that the references are incompatible with each other because of how they create and use icons, we do not agree based on the current record. "It is well-established that a determination of obviousness based on teachings from multiple references does not require an actual, physical substitution of elements. . . . Rather, the test for obviousness is what the combined teachings of the references would have suggested to those having ordinary skill in the art." *In re Mouttet*, 686 F.3d 1322, 1332–33 (Fed. Cir. 2012).

Paper 12, 32-33

Zoller renders the service access point obvious in view of Duursma

Zoller and Duursma

Ground 2

Trooskin-Zoller Declaration

143. Duursma further evidences that Zoller's application icons are hyperlinks pointing to the content/web server 49a. Like Zoller, Duursma is directed to a client-server network. *See, e.g.*, Ex. 1004, 1:6-8. Duursma discloses a "Program Neighborhood" that, like Zoller's Application Launcher page, provides graphical icons that can invoke an application. *See, e.g.*, Ex. 1004, 10:10-24. For example, referring to FIG. 2C, the client receives "an HTML page 88 that includes a Program Neighborhood window in which appears graphical icons 57, 57' representing application programs." Ex. 1004, 15:14-18.

Each icon 57, 57' can be "***an encoded URL*** that specifies: the location of the application (i.e., on which servers it is hosted or, alternatively, the address of a master server); a launch command associated with the application; and a template identifying how the output of the application being displayed. Ex. 1004, 21:19-24 (emphasis added). The user launches an application "by double-clicking with a mouse an icon 57, 57' displayed in the Program Neighborhood web page." Ex. 1004, 21:19-21.

Ex. 1016, ¶ 143; Paper 1, 55-56

Duursma

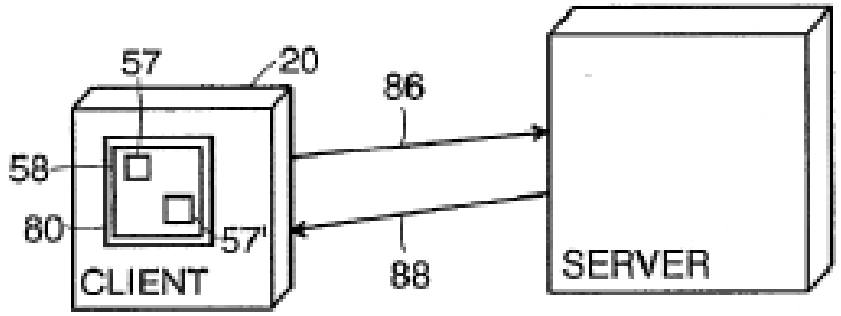


FIG. 2C

Ex. 1004, FIG. 2C (excerpted)

Zoller and Duursma

Ground 2

Patent Owner's Sur-Reply

Fourth, Duursma teaches icons containing fully realized URL's. Conversely, the '786 patent teaches application buttons that send parameters to an ASP script that builds a URL. The user-specific URL's of Duursma would render the ASP script obsolete; there would be no need for the script to build a URL.

Paper 29, 19

Institution Decision

Third, Patent Owner makes similar arguments with respect to the combination of Zoller and Duursma. Prelim. Resp. 61–63 (citing Ex. 2002 ¶¶ 114–18). Petitioner argues that "the hyperlinks of Duursma would not be compatible with the system of Zoller," which creates "parameterized icons," and "one of skill in the art would [not] be motivated to update the static application launching page of Zoller to include programmatic updates like those in Duursma." *Id.* We are not persuaded for reasons similar to those explained above. Again, Petitioner's reliance on Duursma is that the reference teaches a particular type of icon in a web interface (presented as a hyperlink to a specific server) and thereby allegedly "confirms" that Zoller's icons also are hyperlinks. Pet. 55–56. We are not persuaded, based on the current record, that differences in how the two references' systems *create* and *use* icons indicate that a person of ordinary skill in the art would not have combined their teachings.

Paper 12, 32-33

Craft (Ex. 1003) Qualifies as Prior Art

Legal Standard for Printed Publications

Ex. 1003

A reference qualifies as a printed publication if it was publicly available prior to the critical date

- A reference qualifies as a printed publication it is "disseminated or otherwise made available to the extent persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it." *Telefonaktiebolaget LM Ericsson v. TCL Corp.*, 941 F.3d 1341, 1346 (Fed. Cir. 2019) (Paper 12, 18-19, Paper 23, 28; Paper 29, 20)

- "[A] petitioner need not establish that specific persons actually accessed or received a work to show that the work was publicly accessible." *Hulu, LLC v. Sound View Innovations, LLC*, IPR2018-01039 at *4 (PTAB Dec. 20, 2019) (Paper 29, 20)

Craft is prior art

Ex. 1003

Petitioner's evidence:

- Craft bears a 2000 copyright date (Ex. 1003, 5; Paper 1, 3)
- OCLC records demonstrate that Craft was indexed and publicly accessible from libraries as early as November 2000 (Ex. 1014, ¶¶ 11-18; Paper 1, 3; Paper 23, 27-28)
- Numerous websites identify Craft as having been published in 2000 (Ex. 1025; Ex. 1035; Ex. 1036, 4; Ex. 1037, Paper 23, 28)

Patent Owner's evidence:

- None

Craft is prior art

Ex. 1003

Syngress Publishing, Inc., the author(s), and any person or firm involved in the writing, editing, or production (collectively "Makers") of this book ("the Work") do not guarantee or warrant the results to be obtained from the Work.

There is no guarantee of any kind, expressed or implied, regarding the Work or its contents. The Work is sold AS IS and WITHOUT WARRANTY. You may have other legal rights, which vary from state to state.

In no event will Makers be liable to you for damages, including any loss of profits, lost savings, or other incidental or consequential damages arising out from the Work or its contents. Because some states do not allow the exclusion or limitation of liability for consequential or incidental damages, the above limitation may not apply to you.

You should always use reasonable case, including backup and other appropriate precautions, when working with computers, networks, data, and files.

Syngress Media® and Syngress® are registered trademarks of Syngress Media, Inc. "Career Advancement Through Skill Enhancement™," "Ask the Author™," "Ask the Author UPDATE™," "Mission Critical™," and "Hack Proofing™" are trademarks of Syngress Publishing, Inc. Brands and product names mentioned in this book are trademarks or service marks of their respective companies.

KEY	SERIAL NUMBER
001	58PJUY7DSE
002	4RS36835HH
003	Q3NMCDE9V7
004	2C5C87BYMP
005	6AFLCA94DB
006	P636ALT7JA
007	MTPOKBB994
008	35DJKE3ZSV
009	G5EW2E9CFS
010	SM274P525N

PUBLISHED BY
Syngress Publishing, Inc.
800 Hingham Street
Rockland, MA 02370

Configuring Citrix MetaFrame for Windows 2000 Terminal Services

Printed in the United States of America

1 2 3 4 5 6 7 8 9 0

ISBN: 1-928994-18-0

Copy edit by: Jennifer R. Coker
Technical edit by: Melissa Craft
Index by: Robert Saigh
Project Editor: Mark A. Listewnik

Proofreading by: Ben Chadwick
Page Layout and Art by: Shannon Tozier
Co-Publisher: Richard Kristof

Distributed by Publishers Group West

2000 Copyright Date

Configuring Citrix MetaFrame for Windows 2000 Terminal Services

Craft is prior art

Craft was cataloged on November 15, 2000

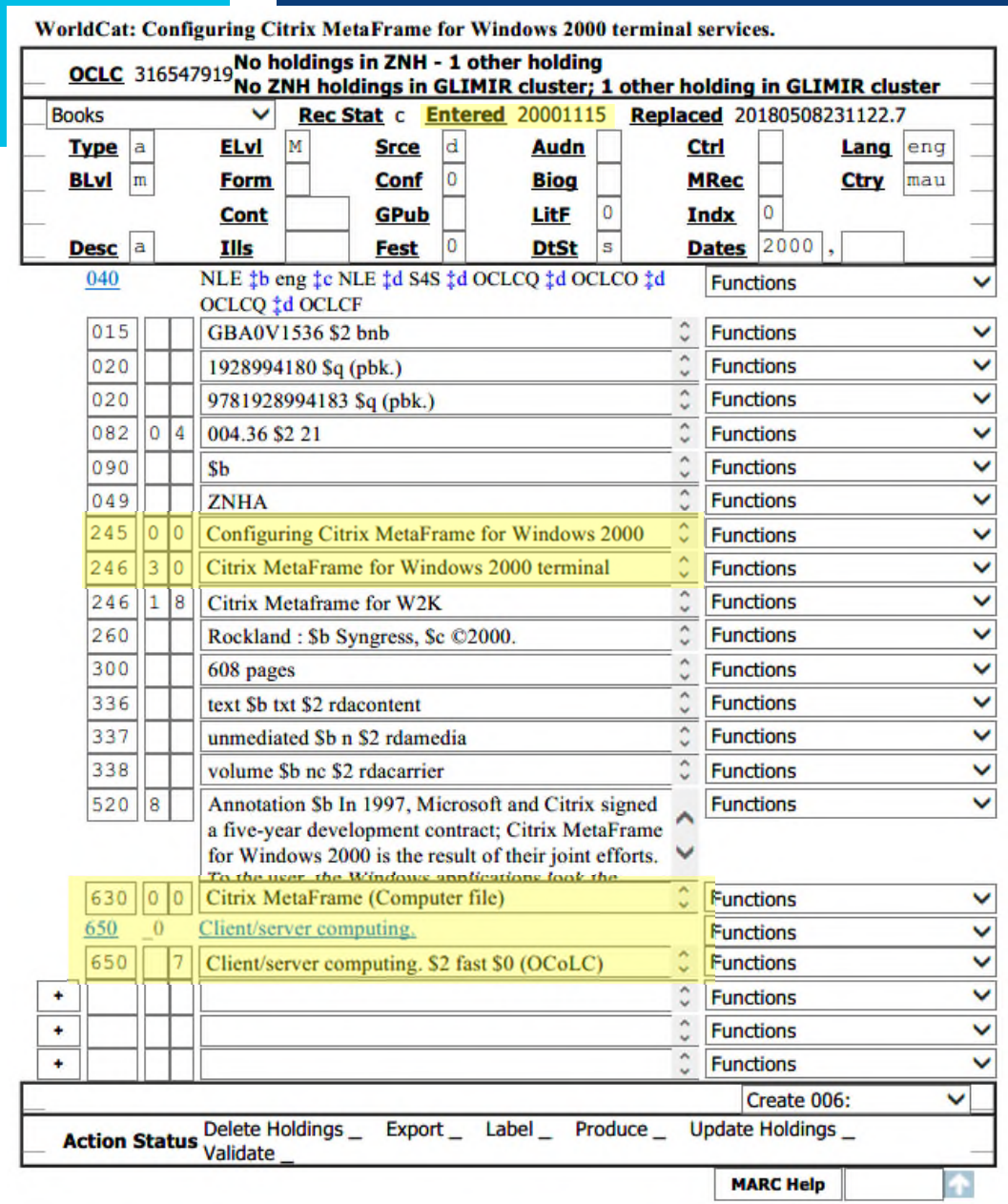
13. Attached hereto as Attachment 1a is a true and correct copy of OCLC record 316547919, which was created on November 15, 2000. The "Entered" date, automatically supplied by OCLC at record creation is 20001115, in the year, month, day format (YYYYMMDD). The 040 field indicates the cataloging library as NLE, which stands for National Library of Scotland.

Ex. 1014, ¶ 13; Paper 1, 3

Craft was indexed by subject matter

8. For example, in the MARC record for the National Library of Scotland (Attachment 1a), the 630 field is "Citrix MetaFrame (Computer File)" and the 650 field is "Client/server computing."

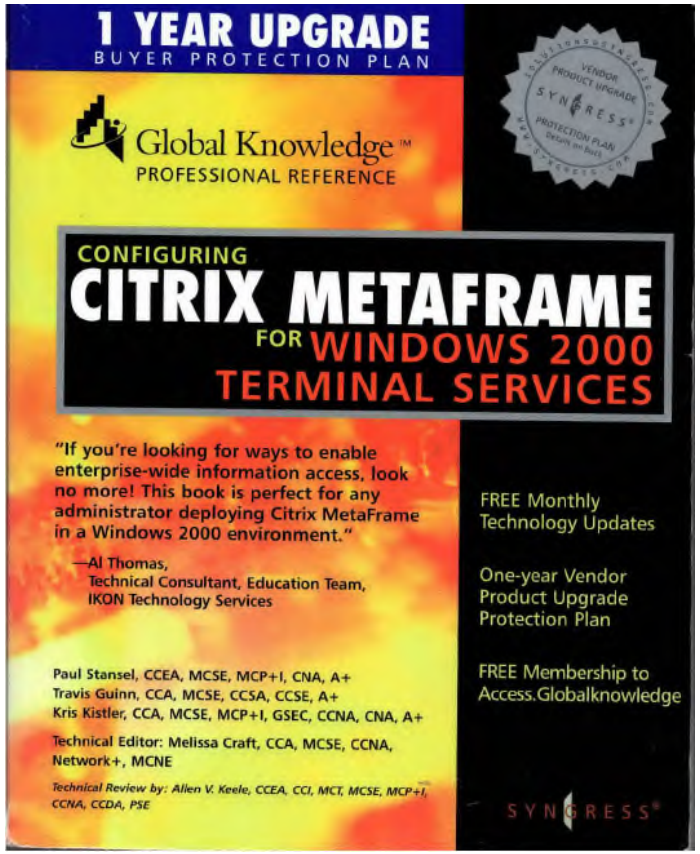
Ex. 1029, ¶ 8, Attachment 1a (annotated);
Paper 23, 27-28



Craft is prior art

Ex. 1003

The Board's Institution Decision found that Craft's title would allow a POSITA to locate Craft



Craft's title, reflected in each of the OCLC records, is "Configuring Citrix MetaFrame for Windows 2000 Terminal Services." *See* Ex. 1003; Ex. 1014, Attachments 1a–1e. The title itself, therefore, references known technology ("Citrix MetaFrame" and "Windows 2000 Terminal Services") pertaining to remote-accessed computer systems and web services that a person of ordinary skill in the art may have used to locate the book. Indeed, the '843 patent references a "MetaFrame server" and "NFUSE developed by Citrix Systems, Inc.," both of which are discussed in Craft. *See* Ex. 1001, col. 6, ll. 52–55, col. 7, ll. 33–36.

Paper 12, 18-19; Ex. 1003, Cover; Ex. 1001, 6:52-55, 7:33-36; Ex. 1026, 149:12-21; Paper 23, 27-28

Craft is prior art

Ex. 1003

Patent Owner's Response misstated the law regarding indexing

Patent Owner's Response

Second, the Whitbeck declaration fails to explain ***how*** Craft was cataloged or indexed in libraries. PTAB panels have recognized that the manner of indexing is critical to the determination of public accessibility. For example, the indexing of a reference in a library is insufficient to show public accessibility unless the reference is indexed in such a way that it could have been found with reasonable diligence by a POSITA interested in the problem the patent addresses. *See Argentum Pharms. LLC v. Res. Corp. Techs., Inc.*, IPR2016-00204, Paper 19 at 9 (PTAB May 23, 2016).

Paper 20, 52-53

Patent Owner's Sur-Reply

The test for public accessibility is not "has the reference been indexed?" and "requires more than technical accessibility." *Acceleration Bay, LLC v. Activision Blizzard Inc.*, 908 F.3d 765, 773, 774 (Fed. Cir. 2018). (finding a reference was not publicly accessible that was not indexed in a meaningful way and no evidence of how or whether searching worked). In situations involving physical materials stored in libraries, "courts may inquire whether a reference was sufficiently indexed, catalogued, and shelved." *Hulu v. Innovations*, No. IPR2018-01039, 2019 WL 7000067, at *4 (P.T.A.B. Dec. 20, 2019).

Paper 29, 20

Craft is prior art

Ex. 1003

Ms. Whitbeck's testimony is based on her expertise as a reference librarian

8. When an OCLC member institution creates a new MARC record, OCLC automatically creates a unique identification number for that record and automatically supplies the date of creation for that record in a fixed field. The MARC record creation date reflects the date on which the item was first cataloged. This creation date appears next to the label "Entered" with the year, month, day format (YYYYMMDD).

9. Once a MARC record has been created or found, information from that record is imported into the holding library's catalog, physical material is labeled, and the material is made available through the holding library. The date of creation of the MARC record by a cataloger at an OCLC member institution reflects when the underlying item is accessible to the public at least by patron request. Following cataloguing, the underlying item is typically processed by library staff and placed on the shelves of the library within a short period of time, i.e., the same day or within a few days depending on the volume of new material and staffing levels at the library.

Ex. 1014, ¶¶ 8-9; Paper 1, 3; Paper 23, 27

Craft is prior art

Ex. 1003

Ms. Whitbeck's deposition testimony

Q. Can you explain to me what paragraph 9 of your first declaration is saying.

A. So basically what this paragraph talks about is --

(Court Reporter comment.)

A. -- based upon my experience and expertise, is how librarians receive material and catalog it and how it is placed into their collections.

So when the material comes in, it's cataloged, and then it's processed and placed into the collection after that material has been received. That essentially makes it accessible to the public when a -- when a patron can go to the shelf and retrieve it, or if a patron requests it, if a material is not yet on the shelf itself.

Ex. 2012, 36:24-37:14

Q. Okay. And so even though you do not have personal knowledge about whether the Craft book was physically available in each of the five libraries, your understanding, as a librarian, is that the library, based on your expertise, would have had -- likely had that book in their possession; is that correct?

A. Correct. In 2001 and 2000, information about books was not readily available on websites. It was very early for that kind of thing.

So I would say almost always -- but it's hard to say in 2000, right -- but a librarian would be in possession of the material that they were cataloging, because they would need that material in order to know the information that they need to complete all the MARC record.

Ex. 2012, 37:15-38:6

Craft is prior art

Ex. 1003

Configuring Citrix Metaframe for Windows 2000 Terminal Services 1st Edition, Kindle Edition

by Melissa Craft (Author)

3 customer reviews

ISBN-13: 978-1928994183
ISBN-10: 1928994180
Why is ISBN important?

Kindle $9.78 - $41.04 | Paperback from $45.77 | Digital from $9.99 | Other Sellers See all 4 versions

Buy $41

Rent $9

eBook features:
- Highlight, take notes, and search in the book
- Length: 543 pages

Available on these devices:
- Kindle Fire HDX
- Kindle for iPad
- Kindle for iPhone
- Kindle for Android Phones
- Kindle for PC
- Kindle for Mac
- See all supported devices

Sold by: Amazon Digital Services LLC

Today through selected d
05/11/2019
Rental price is determined by end
Rent now with 1-Click
Send a free sample
Delive
Angelo's 2nd iPhone

Product details

File Size: 7749 KB
Print Length: 543 pages
Publisher: Syngress; 1st edition (December 6, 2000)
Publication Date: December 6, 2000

Ryan Hoffman

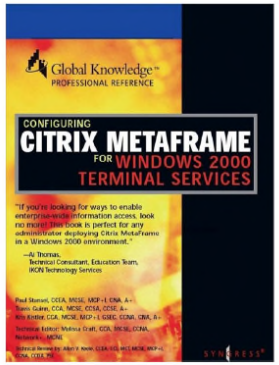
Terrific Resource

December 21, 2000
Format: Paperback

This book is perfect for anyone using, looking to use, or having interest in Citrix MF/Win 2000 Terminal Services. Strong coverage of all the essentials- Routing/Remote Access, Design Considerations, Installation, Configuration, etc. This one is a keeper...

Ex. 1025 (Amazon Listing) (annotated)

Computers & Internet › Network › Paul Stansel, Travis Guinn, Kris Kistler, Melissa Craft & Allen V. Keele



$52.99 Buy Book

Get Sample

Configuring Citrix Metaframe for Windows 2000 Terminal Services

Paul Stansel and Others >

Details | Ratings and Reviews | Related

About the Book

Businesses are teeing up to new challenges brought on by an increasingly virtual environment. Telecommuting has applications with specific business configurations. The pervasive use of the Internet provides an easy, nearly unive The use of hand-held computing has exploded, but questions remain as to what kind of applications can be used.

Information

Language	English	Published	Dec 6, 2000
Genre	Network	Pages	543
Publisher	Elsevier Science	Size	9.7 MB
Seller	Elsevier Ltd.		

Contributors
Paul Stansel
Travis Guinn
Kris Kistler
Melissa Craft
Allen V. Keele

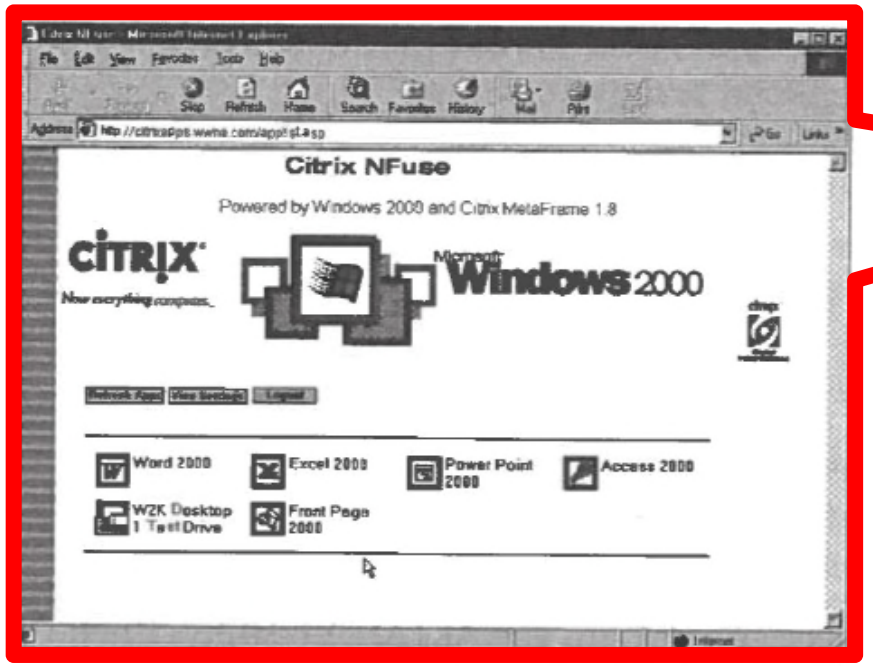
Ex. 1037 (Apple Books)

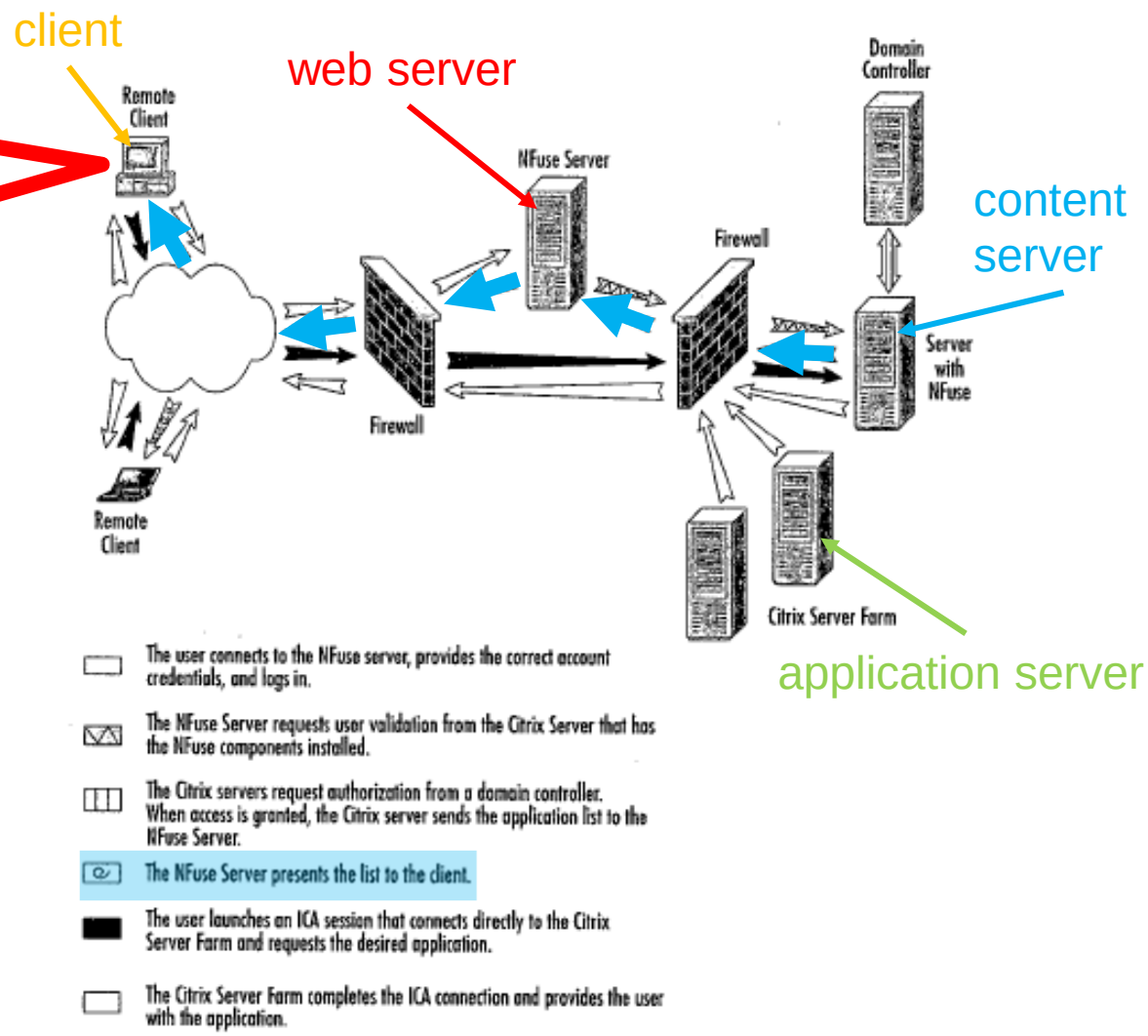
Paper 23, 28; Ex. 1035 (Google Books); Ex. 1036 (Science Direct)

Ground 1

Craft

Ground 1





To counteract this, Citrix has gone one step further and introduced NFuse. This add-on for Citrix servers is a two-part system that makes a Web version of Program Neighborhood available as a dynamically generated Web page. The front end sits on the Web server and authenticates users against an NT Domain database. Once the user's credentials are established, a MetaFrame server that has the back end of NFuse installed provides the user's applications sets in a Web format.

Paper 1, 21-28; Ex. 1016, ¶¶ 99-102, 104-05, 109, 117; Ex. 1003, 45, 52, 433, 442-44, 454-55, Figs. 12.3 and 12.20 (annotated); Ex. 1001, 7:33-36; Paper 23, 21-24

Service access point: a unique address for an application

Paper 14, 11; Paper 12, 12; Paper 23, 1

Craft

When a user connects to an NFuse page you have to configure that service to use port 80 to talk with the NFuse HTTP service and that then passes the client application list to the client. When the client clicks on the application, an .ICA file is created on the fly. This .ICA file contains the IP address of the least busy server and no name resolution is needed, thus there is no need to use 1604. Once the user gets the .ICA file, the Web server has done its job and is no longer needed to make a connection.

Ex. 1003, 455; Paper 1, 27

Zoller Declaration

Craft explains that these application icons are received from the server labeled "Server with NFuse" in Figure 12.3, which includes the Program Neighborhood Service. The "Server with NFuse" corresponds to the claimed content server, and the Program Neighborhood Service corresponds to the claimed web service directory.

Craft discloses that the web server passes the application list from the "Server with NFuse" to the client, i.e., the client does not directly receive the application list from the "Server with NFuse" (content server). *See* Craft, p. 455, Figure 12.3. However, the claim does not prohibit an intermediary between the client and the content server. Craft discloses that the client receives the list of available applications (including the icons shown in Figure 12.20) from the web service directory on the content server, just as the claim requires.

Ex. 1016, Ex. C 1[a], p. 87; Paper 1, 23, 26-27

Level of Ordinary Skill in the Art

Level of Skill in the Art / Expert Qualifications

- **Fed R. Evid. 702 provides that an expert can be qualified by "knowledge, skill, experience, training, or education"**
  - *U.S. v. Roach*, 644 F.3d 763, 764 (8th Cir. 2011) ("Rule 702 does not rank academic training over demonstrated practical experience")
- ***Environmental Designs v. Union Oil Co. of Cal.*, 713 F.2d 693, 696 (Fed. Cir. 1983) (one factor for determining level of skill in the art is education level of workers in the field)**

> little bit of feet wet in this field. So you -- because it's nothing that is formally taught in the electrical or computer engineering school in the world. It's something that is becoming common -- mainstream today. But in the time of the invention that was more like a research and -- or like high-tech companies like Microsoft or others that had this know-how.

Ex. 1026, 168:5-12; Paper 23, 5

Patent Owner's Expert Dr. Hernandez-Mondragon is not Credible

Dr. Hernandez-Mondragon

Dr. Hernandez-Mondragon's declaration in this proceeding

6. I received a B.S. from Costa Rica Institute of Technology in computer engineering, a M.S. from the University of Florida with an emphasis in electrical and computer engineering, and a Ph.D. from the University of Florida with an emphasis on computer engineering. A copy of my *curriculum vitae*, which includes a more detailed summary of my background, experience, patents, and publications, is attached as Appendix A.

Ex. 2004, ¶ 6; Paper 23, 7 n.4

Dr. Hernandez-Mondragon's declaration in IPR2020-00108

7. I have a Ph.D. in Computer Engineering in Mobile Computing in 2002 and obtained a Masters in Science in Electrical and Computer Engineering in 1999, both from the University of Florida. Prior to that, I graduated with my B.S. in Electronics Engineering from Costa Rica Institute of Technology in 1995. A copy of my *curriculum vitae*, which includes a more detailed summary of my background, experience, patents, and publications, is marked as Exhibit 2005.

Ex. 1027, ¶ 7; Paper 23, 7 n.4

The presentation layer protocol

Dr. Hernandez-Mondragon's testimony is inconsistent with Patent Owner's arguments during prosecution

One of ordinary skill in the art would understand these types of clients, i.e., ICA and RDP clients, to communicate using presentation protocols. Searches on the Internet provide access to multiple sources defining such protocols and referring directly to ICA and RDP clients. Results of some representative Internet searches include:

- RDP (Remote Desktop Protocol) The presentation services protocol that governs input/output between a Windows terminal client and Windows Terminal Server. It is based on the T.share protocol. (Answers.com definition, available at: http://www.answers.com/topic/remote-desktop-protocol);
- Originally known as the Intelligent Console Architecture, ICA provides a presentation services protocol that governs input/output between the server and clients. ICA also supports local ports for printing and other interconnections. (Techweb.com definition, available at http://www.techweb.com/encyclopedia/defineterm.jhtml?term=ICA).

Presentation protocols, such as RDP or ICA, are also referred to as presentation services protocols. One common definition is the following, from http://www.techweb.com: A protocol that provides graphical interface screen updates to a client station from an application executing in a multiuser computer system. ICA and T.share are examples for the WinFrame and Windows-based Terminal Server systems.

Ex. 1002, 289-90; Paper 1, 19-20

Q. In the first bullet point here, it's about the middle of the page of 290, do you see where it says "RDP (Remote Desktop Protocol)"?

A. I see that.

Q. And so here the applicant of the '843 patent is telling the patent office that RDP is "The presentation services protocol that governs input/output between a Windows terminal client and Windows Terminal Server."

Do you see that?

A. I see that.

Q. Is it still your opinion that a person of skill in the art would not understand that Microsoft terminal services uses RDP as a presentation layer protocol?

A. In 2002, I still hold my position.

Ex. 1026, 109:18-110:5, 107:10-23, 127:13-128:7; Paper 23, 10 n.6

Zoller and Craft

Ground 2

Hernandez Declaration

110. There would be no motivation to combine the hyperlinks and ICA files of Craft with Zoller, as that combination would generate a system that downloads a file within an RDP session established via ActiveX and then attempt to create an ICA Session within an ongoing ActiveX session. Such a combination would not be helpful and will require undue experimentation as presentation layers would have to work within each other.

Ex. 2004, ¶ 110; Paper 20, 46

Hernandez Deposition

So we're in terminal services. And then basically, like you said here, that it was obvious to write an RDP client, which it was -- you have not shown to me like an RDP API that it was available at the time public outside Microsoft that you could use to write an ActiveX controller. So, I mean...

In Craft...

So the only thing that I can concluded from all those (indiscernible) was that the only way to combine Zoller via Craft would be by generating a series of ICA files that could be first downloaded and then executed with Craft, with an ICA client. That's -- I don't see other way to do this combination. All the other combinations that are described here are basically...

Paper 23, 15-16

Ex. 1026, 118:21-119:15

Dr. Hernandez-Mondragon

Dr. Edwin Hernandez

EGLA CORP Founder | Streaming, Cloud, Wireless, Mobile, AI | Owner EGLAVATOR | TECHEDTV Host | Expert Witness

View full profile

Dr. Edwin Hernandez • 3rd+
EGLA CORP Founder | Streaming, Cloud, Wireless, Mobile, AI | Owner EGLAVAT...
2mo • Edited •

Small inventors have to spend $100,000 - $250,000 to defend their patents against IPR proceedings plus $60,000 to appeal or more! This is without mentioning costs of litigation in Federal Court, which is extremely high. Big Tech Companies refuse to even offer a licensing agreement for any amount, they want to pay $0. I can testify to US Congress about my own experience in this field and how bully these bigTECH firms are fighting inventors specially those that dare to fight for their inventions. #PledgeToAmericasInnovator . Patent owners are called "Trolls" even if they defend their own creations. The system MUST start protecting patent owners from Locals, China is an after thought. If you have patents and have an innovative mind #creativity #innovation #patents #technology then you must NOT support IPRs and bigTECH not paying a dime for using other people's inventions. IPRs are primarily designed to protect major corporations from paying licensing fees to #inventors.

Ex. 1038; Paper 23, 8

CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing Petitioner's Trial Demonstrative was served on August 21, 2020, upon the following parties via email:

VIA ELECTRONIC MAIL

Attorneys for Patent Owner

Larissa S. Bifano

larissa.bifano@dlapiper.com

Zachary Loney

zachary.loney@dlapiper.com

By: /Jennifer Hayes/

Lead Counsel for Petitioner