UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

No. 2007-1056
(Serial No. 09/947,801)

IN RE JED MARGOLIN

Appeal from the United States Patent and Trademark Office Board of Patent Appeals and Interferences.

APPENDIX FOR THE APPELLANT

Corrected

January 4, 2007

Jed Margolin
Applicant, Appellant, pro se
1981 Empire Rd.
Reno, NV 89521-7430
(775) 847-7845
cafc@jmargolin.com

Appendix Table of Contents

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JED MARGOLIN

Appeal No. 2006-2005
Application No. 09/947,801

ON BRIEF

Before THOMAS, HAIRSTON, and BLANKENSHIP, Administrative Patent Judges.

BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 1-5, which are all the claims in the application.

We affirm.

BACKGROUND

The disclosed invention relates to a distributed computing system using the computing resources of Home Network Servers connected through the Internet, where the owners of the Home Network Servers receive something of value in return for access to the Home Network Servers' otherwise unused computing resources. (Abstract.) Claim 1 is reproduced below.

1. A distributed computing system comprising:

(a) a home network server in a subscriber's home;

(b) one or more home network client devices;

(c) an Internet connection;

whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused.

The examiner relies on the following reference:

Ellis	6,167,428	Dec. 26, 2000 (filed May 27, 1999)

Claims 1-5 stand rejected under 35 U.S.C. § 102 as being anticipated by Ellis.

We refer to the Final Rejection (mailed Jun. 15, 2005) and the Examiner's Answer (mailed Jan. 24, 2006) for a statement of the examiner's position and to the Brief (filed Nov. 17, 2005) and the Reply Brief (filed Mar. 16, 2006) for appellant's position with respect to the claims which stand rejected.

OPINION

Based on appellant's remarks in the Brief, we select claim 1 as representative in this appeal. We will decide the appeal on the basis of claim 1. See 37 CFR § 41.37(c)(1)(vii).

Ellis describes networked computers whereby PC (personal computer) users' connections to the Internet may be obtained at no cost, in exchange for making the PCs available for shared processing when otherwise idle. See, e.g., Ellis at col. 11, l. 55 - col. 12, l. 4. There can be no substantive dispute that Ellis discloses that a PC user (i.e., a subscriber to a service that provides Internet access) may receive something of value in return for access to the resources of the PC that would otherwise be unused.

Instant claim 1 recites, however, that the subscriber receives something of value in return for access to the resources of "said home network server" that would otherwise be unused. Claim 1 further recites, inter alia, "a home network server in a subscriber's home. . . ." Appellant argues that the terms in view of their most common meanings in the art, or at least how the terms are to be interpreted in light of the instant specification, distinguish over Ellis.

The examiner contends that the instant specification does not set forth any particular definition for "server" or "home network server." The examiner submits (Answer at 6-7), with reference to a technical dictionary definition, that "server" is understood by the artisan to include a computer or program, on the Internet or another network, that responds to commands from a client. For example, a "file server" may

contain an archive of data or program files such that when a client submits a request for a file, the server transfers a copy of the file to the client. As such, the examiner finds that the artisan would have appreciated that the PCs described by Ellis function as clients with respect to the servers on the Internet, but function as servers when providing resources to other entities on the Internet.

Appellant responds (Reply Brief at 6) that the term "server" is defined differently in the specification, which describes a "Home Network Server" (e.g., spec. ¶ 14). We find that the specification at paragraph 2 sets forth certain definitions, but not for the terms in dispute. Upon review of the entire disclosure, we conclude that the "Home Network Server" described embodiment does not convey a limiting definition for the term "server," nor that the invention is to be limited to the disclosed embodiment. Moreover, the specification teaches (¶ 22) that the invention may be practiced without the specific details that are disclosed.

With respect to the examiner's proffered definition of "server," appellant notes that the examiner relied on the second listed definition, rather than the first. Appellant submits, without citation to any authority, that dictionaries list the definitions of words in the order in which they are most commonly used. The first listed definition for "server" is, according to appellant (Reply Brief at 5): "1. On a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network."

First, we note that appellant's definition of "server" appears to be limited to local area networks and how a server may be implemented on that particular network type. Ellis provides evidence, however, that the artisan did not consider the term "server" to be limited to local area networks. See, e.g., Ellis at col. 22, ll. 30-37 (servers operated by Internet Service Providers).

Second, and more important, the present inquiry relates to the broadest reasonable interpretation of "server" consistent with the specification, rather than how the term might be more commonly used in the art. Both the broader definition offered by the examiner and the narrower definition offered by appellant appear to be consistent with appellant's specification. We cannot discard the broader meaning in favor of the narrower. Claims are to be given their broadest reasonable interpretation during prosecution, and the scope of a claim cannot be narrowed by reading disclosed limitations into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969). Our reviewing court has repeatedly warned against confining the claims to specific embodiments described in the specification. Phillips v. AWH Corp., 415 F.3d 1303, 1323, 75 USPQ2d 1321, 1334 (Fed. Cir. 2005) (en banc).

Instant claim 1 does not recite the functions of the home network server, but only its location (i.e., in a subscriber's home). The claim is thus broad enough to cover either of a server for a home network and a server on a home network. Appellant could

have amended the claim consistent with how appellant wants the claim to be interpreted. "An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process." In re Zletz, F.2d 893 at 322, 13 USPQ2d at 1322.

Ellis teaches that the PCs that provide processing power may reside on home network systems (e.g., col. 17, ll. 22-40). Given the examiner's broad but reasonable interpretation of instant claim 1, Ellis provides support for the examiner's finding of anticipation.

Moreover, Ellis at column 8, line 59 through column 9, line 20 describes the types of computers that may be considered PCs in the context of the disclosure. The personal computers are described as including "network computers," which would seem to include both of conventional server and client computers on the home network systems described elsewhere in Ellis. In this regard, we note that appellant's disclosed Home Network Server 101 is "of conventional design." (Spec. ¶ 23.)

While Ellis is not purported to teach providing the processing services of PC servers for home network systems to the exclusion of PC clients on the systems, we observe that instant claim 1 does not preclude access to the resources of client PCs on a home network.

We have considered all of appellant's arguments in the briefs, but are not persuaded that instant claim 1 has been rejected in error. We thus sustain the rejection of claims 1-5 under 35 U.S.C. § 102 as being anticipated by Ellis.

CONCLUSION

The rejection of claims 1-5 under 35 U.S.C. § 102 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a). See 37 CFR § 1.136(a)(1)(iv).

AFFIRMED

JAMES D. THOMAS
Administrative Patent Judge

KENNETH W. HAIRSTON
Administrative Patent Judge

HOWARD B. BLANKENSHIP
Administrative Patent Judge

) BOARD OF PATENT
) APPEALS
) AND
) INTERFERENCES

JED MARGOLIN
1981 EMPIRE ROAD
RENO, NV 89521-7430

UNITED STATES PATENT APPLICATION

FOR

DISTRIBUTED COMPUTING SYSTEM

INVENTOR: JED MARGOLIN

DISTRIBUTED COMPUTING SYSTEM

CROSS REFERENCES TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application No. 60/249,830 filed on November 17, 2000.

BACKGROUND OF THE INVENTION - Field of Invention

[0002] This invention relates to a distributed computing system. For the purposes of this application the term "distributed computing" includes "distributed storage." The term "Internet" refers to the current world wide packet data communication network and whatever system may replace it regardless of what name it may be given or what communications protocol it may use. It also includes on-line services which, although they may not consider themselves the "Internet", provide a gateway for their subscribers to the Internet.

BACKGROUND OF THE INVENTION - Prior Art

[0003] An article in the November 2000 issue of Scientific American (*Wholesale Computation* by Paul Wallich) describes the distributed computing model used by

SETI@home whereby PC owners volunteer the spare computing resources of their PCs connected to the Internet. The article also describes several commercial companies working on similar distributed computing systems but where the PC owners are paid for access to their PCs.

[0004] Another article in the November 2000 issue of Scientific American (*As We May Live* by W. Wayt Gibbs) describes the home of the future where the home's major systems (as well as a variety of sensors) are networked together and to the Internet.

[0005] There are a number of Internet Service Providers (ISPs) who offer a free Internet connection to users. However, in general, the users give up a great deal of privacy, the users give up a portion of the monitor display area for advertisements, and service is poor.

[0006] U.S. Patent 6,112,225 TASK DISTRIBUTION PROCESSING SYSTEM AND THE METHOD FOR SUBSCRIBING COMPUTERS TO PERFORM COMPUTING TASKS DURING IDLE TIME issued August 29, 2000 to Kraft, et al. describes a method for a distributed computing system that uses a computer's resources during times that the computer would otherwise be unused.

BACKGROUND OF THE INVENTION

[0007] The article in the November 2000 issue of Scientific American (*Wholesale Computation* by Paul Wallich) describes the distributed computing system used by SETI@home whereby PC owners volunteer the spare computing resources of their PCs connected to the Internet. The article also describes several commercial companies working on similar distributed computing systems but where the PC owners are paid for access to their machines. There are several problems such as concerns about the security of the data on which the distributed computing is being performed, as

well as users' concerns about the security of their own data as well as the need to protect the users' computers from potentially malicious code.

[0008] The other article in the November 2000 issue of Scientific American (*As We May Live* by W. Wayt Gibbs) describes the home of the future where the home's major systems (as well as a variety of sensors) are networked together and to the Internet. Even at the present time, more and more homes are networking their existing computers together.

[0009] Typically, in subscribing to one of the number of Internet Service Providers (ISPs) who offer a free Internet connection to users, generally the users give up a great deal of privacy (the user's movements on the Internet are tracked), the users give up a portion of the monitor display area for advertisements (as well as the bandwidth for downloading the ads), and service is poor.

[0010] With the present systems used for distributed computing, where the distributed programming runs on a user's computers, the distributed programming must run under the user's operating system. Unfortunately, most operating systems used on home PCs are less than robust. Upgrading to a more robust operating system frequently means purchasing new software because the old software will not run properly on the new operating system. New versions of the old software might not even be available.

[0011] Upgrading to a more robust operating system may also require purchasing new peripherals because the software drivers needed for peripherals such as scanners and modems may not be available for the new operating system. A further problem is that adding additional applications to a user's computer frequently causes existing applications to stop working. Thus, even after a computer used in an existing distributed computing system is working properly, a user adding an additional, unrelated application, may cause the system to

crash, or even worse, become unreliable. Or, it may simply be really annoying, such as when the Operating System refuses to shut down after being expressly ordered to do so.

[0012] Accordingly, one of the objects and advantages of the present invention is to provide a new method of providing a distributed computing system where the subscriber receives something of value in return for access to the otherwise unused computing resources on their Home Network Server running a robust operating system, in a way that preserves the subscriber's privacy, data security, and investment in hardware and software.

[0013] Further objects and advantages of my invention will become apparent from a consideration of the drawings and ensuing description.

SUMMARY OF THE INVENTION

[0014] A Home Network Server is used in a home to network various clients such as PCs, sensors, actuators, and other devices. It also provides the Internet connection to the various client devices in the Home Network. The Home Network Server also provides a firewall to prevent unauthorized access to the Home Network from the Internet. The use of a Home Network Server, as opposed to the use of peer-to-peer networking, allows a robust operating system to be used. It also allows the users on the Home Network to add additional applications to their PCs without fear of jeopardizing the proper functioning of their Internet security program (firewall) or the distributed computing software. (Although a firewall is not strictly necessary, prudence dictates its use.)

[0015] The otherwise unused capacity of the Home Network Server is used for distributed computing which is controlled by a contracting company through the Internet.

[0016] In exchange for the use of the otherwise unused capacity of the Home Network Server for distributed computing, the contracting company provides the subscriber (nominally

the owner of the Home Network) something of value such as reduced cost of Internet service, free Internet service, or a net payment. The contracting company may alternatively or additionally subsidize the purchase costs of the Home Network Server or other equipment.

[0017] Since Home Network Servers may be located in widely different geographic areas, the use of Home Network Servers for distributed computing also distributes the load on electric utility companies.

[0018] In addition, as CPUs become faster and storage devices such as hard drives and optical storage devices become larger, and fast Internet connections become more widespread, the distributed computing system can also be used as a distributed server system, making large server farms (with their attendant demands on electric utilities) unnecessary.

DESCRIPTION OF THE DRAWINGS

[0019] Fig. 1 shows a configuration of a home network server.

[0020] Fig. 2 shows a configuration of the invention with a firewall between the Internet connection and the Home Network as well as a firewall between the Internet connection and the Distributed Computing application.

[0021] Fig. 3 shows an alternate configuration of the invention with a firewall between the Internet connection and the Home Network as well as a firewall between the Home Network and the Distributed Computing application.

DETAILED DESCRIPTION

[0022] In the following description, numerous specific details are set forth to provide a thorough understanding of the invention. However, it is understood that the invention may be

practiced without these specific details. In other instances, well-known circuits, structures and techniques have not been shown in detail in order not to obscure the invention.

[0023] The general form of the Home Network System is shown in Figure 1. Home Network Server 101 is of conventional design and includes a CPU, memory, mass storage (typically a hard disk drive for operations and a CD-ROM or DVD-ROM Drive for software installation), video display capabilities, and a keyboard. Because video from Home Network Server 101 is used mostly for system installation and monitoring, a standard low-cost video system and monitor may be used. A recordable/rewritable version of the CD-ROM or DVD-ROM drive may be used to provide system and network backup capabilities. An alternative form of system and network backup such as one using magnetic tape may also be used. In addition, Home Network Server 101 may provide sound capabilities for the purpose of providing audible warnings and alarms.

[0024] Home Network Server 101 uses Modem 103 to connect to the Internet. Preferably, Modem 103 provides an always-on connection using DSL, a cable modem, or equivalent. However, as an alternative, Modem 103 may provide a dial-up connection to the Internet.

[0025] Home Network Server 101 connects to Router, Switch, or Hub 102. Although a Router is preferable, a Switch or a Hub may also be used.

[0026] Router, Switch, or Hub 102 connects to one or more clients such as PC_1 104 or Sensor/Actuator_1 106. More than one client PC may be used, such as PC_n 105, and more than one Sensor/Actuator may be used, such as Sensor/Actuator_n 107. Sensor/Actuators are used to control and/or monitor the home's systems such as HVAC and Security and appliances such as refrigerators, washers, and dryers.

[0027] As shown in Figure 2, software Firewall 202 protects Home Network 203 from unwanted intrusions coming from Internet 201. Firewall 204 protects Distributed Computing

Application 205 from unwanted intrusions coming from Internet 201. Firewall 204 also protects against unwanted interactions between Home Network 203 and Distributed Computing Application 205. An alternative arrangement to perform the same functions is shown in Figure 3.

[0028] For reliability, Home Network Server 101 may use a robust operating system that can run for long periods of time without crashing. Additional reliability may be obtained through the use of an Uninterruptible Power Supply (UPS), preferably one that performs power conditioning.

[0029] The otherwise unused capacity of Home Network Server 101 is used for distributed computing which is controlled by a contracting company through the Internet. The contracting company may use the distributed computing resources itself or it may resell the resources to others.

[0030] In exchange for the use of the otherwise unused capacity of Home Network Server 101 for distributed computing, the contracting company provides the subscriber with something of value such as reduced cost of Internet service, free Internet service, or a net payment. The contracting company may alternatively or additionally subsidize the purchase costs of the Home Network Server or other equipment.

[0031] While preferred embodiments of the present invention have been shown, it is to be expressly understood that modifications and changes may be made thereto.

I claim:

1. A distributed computing system comprising:

(a) a home network server in a subscriber's home;

(b) one or more home network client devices;

(c) an Internet connection;

whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused.

2. The distributed computing system of claim 1 further comprising:

(a) a first firewall between said Internet connection and said home network server;

(b) a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network server.

3. A method for providing a distributed computing system comprising the steps of:

(a) providing a home network server in a subscriber's home;

(b) providing one or more home network client devices;

(c) providing an Internet connection;

whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused.

4. The method of claim 3 further comprising the steps of:

(a) providing a first firewall between said Internet connection and said home network server;

(b) providing a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network server.

5. A method for providing a distributed computing system comprising the steps of:

(a) providing a home network server in a subscriber's home;

(b) providing one or more home network client devices;

(c) providing an Internet connection;

(d) providing access to the resources of said home network server that would otherwise be unused;

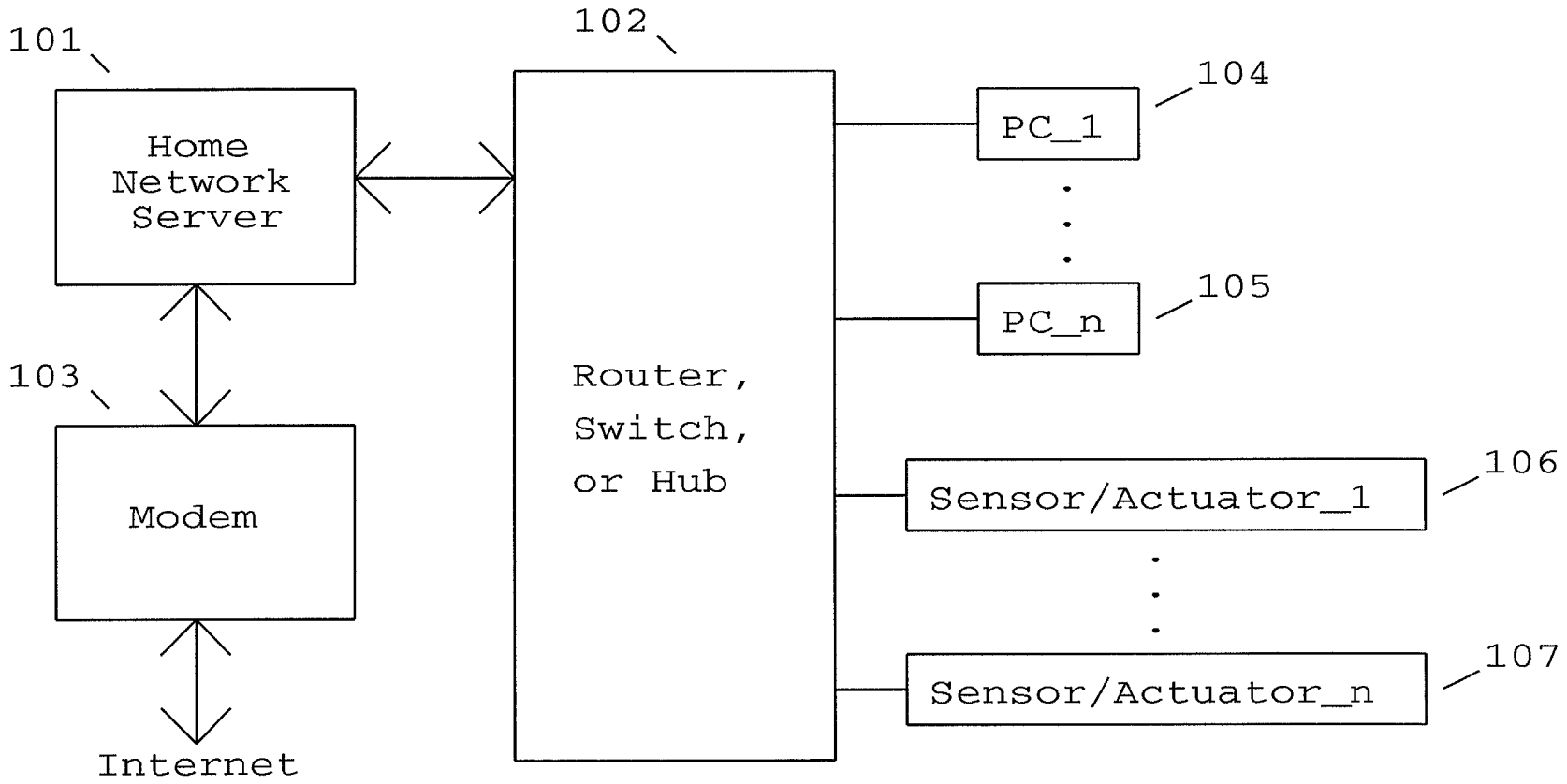
(e) providing a first firewall between said Internet connection and said home network server;

(f) providing a second firewall to prevent unwanted interactions between said access to the resources of said home network that would otherwise be unused and said home network server;

whereby the subscriber receives something of value in return for said access to the resources of said home network server that would otherwise be unused.

ABSTRACT

A distributed computing system uses the computing resources of Home Network Servers connected through the Internet, where the owners of the Home Network Servers receive something of value in return for access to their Home Network Server's otherwise unused computing resources. The contracting company may use these distributed computing resources itself or it may resell the resources to others.



Home Network System

Fig. 1

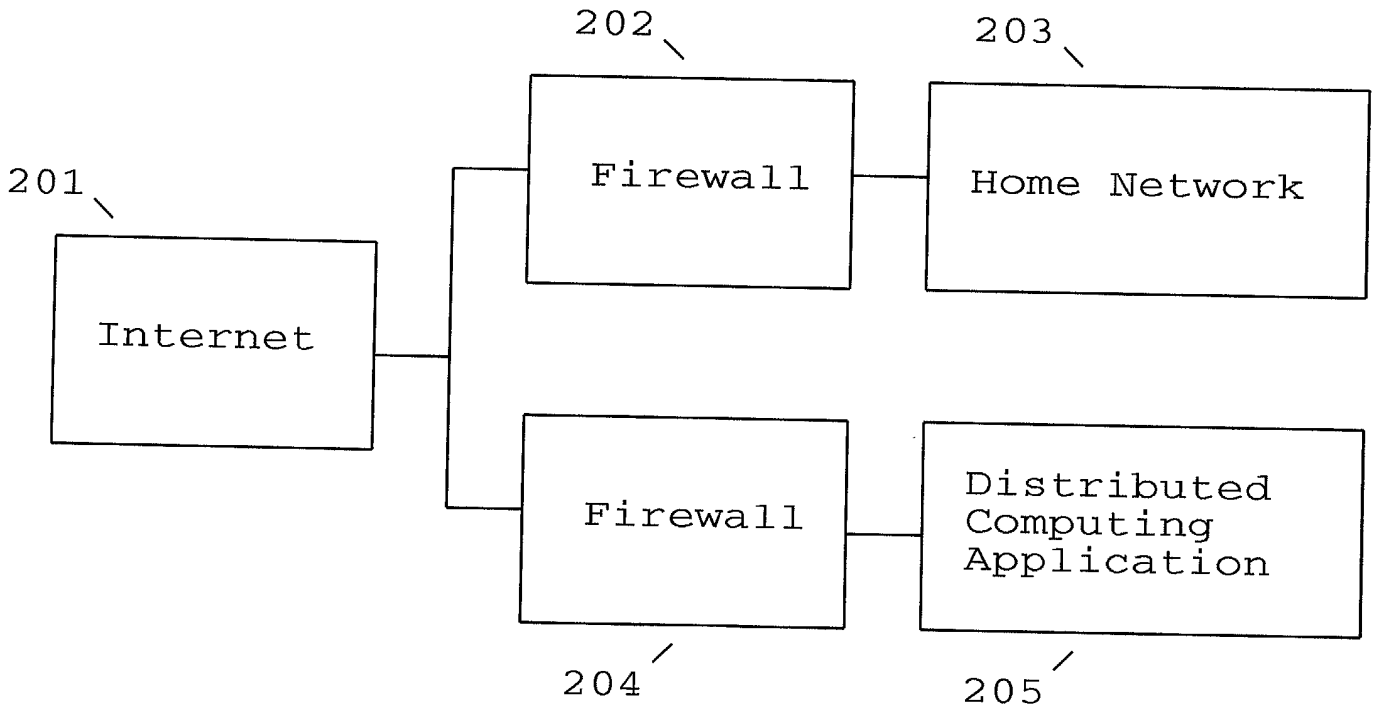

202
203
201
Firewall
Home Network
Internet
Firewall
Distributed
Computing
Application
204
205

Fig. 2

A20

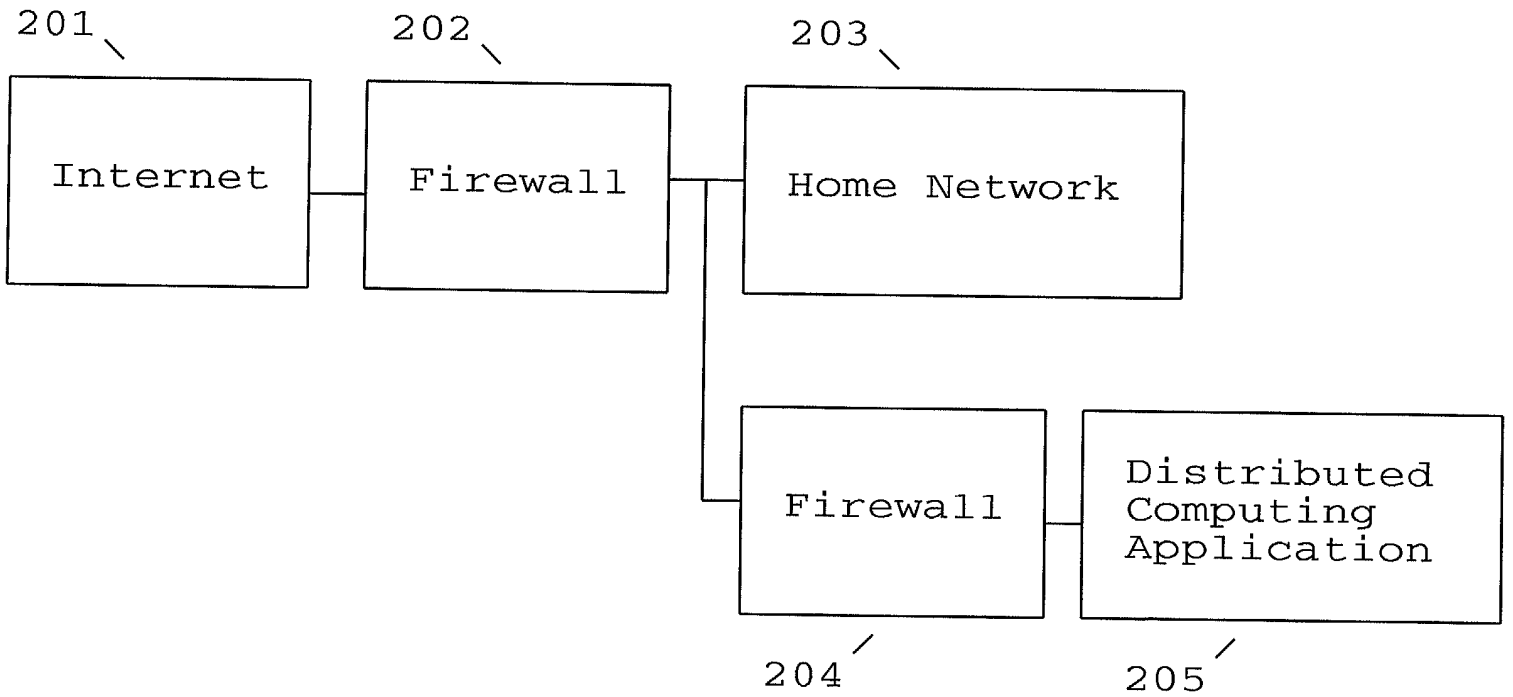

201
202
203
Internet
Firewall
Home Network
Firewall
Distributed Computing Application
204
205

Fig. 3

A21

UBIQUITOUS COMPUTING_HOMES

As We May Live

Computer scientists build a dream house to test their vision of our future

ATLANTA—To pedestrians walking past in the muggy summer heat, the green house at the corner of 10th and Center streets looks very much like any of the other two-story homes in this quiet neighborhood a block north of the **Georgia Institute of Technology.** Only the loud whir of two commercial-size heat pumps in the side yard hints at the fact that the house is infested with network cables threaded through the floorboards, video cameras staring from the ceiling, sensors tucked into kitchen cabinets, workstations stacked in the basement, and computer scientists bustling from room to room.

Inside the house, some passing student has arranged toy magnetic letters on the refrigerator door to spell out the purpose of this odd combination: "Aware Home of the Futur," a laboratory in the shape of a house where humans can try out living in more intimate contact with computers. There's a piece missing from the message, but the project itself has many gaps to fill. Construction wrapped up only a few months ago, and seven faculty members from Georgia Tech's computer science department are still working with a battalion of students to get the house's sensory systems online.

This house does all the light-switching, stereo-piping tricks of "smart" homes that provide technophiles with electronic convenience, but here that is just a starting point. The goal is to make this place the most ambitious incarnation yet of ideas that have been fermenting in computer research labs for a decade, ever since Mark Weiser launched the first "ubiquitous computing" project at the **Xerox Palo Alto Research Center** (PARC) in the late 1980s. In a seminal 1991 article in *Scientific American,* Weiser predicted that human use of computers would in the early 21st century go through a transition comparable to the shift from shared mainframe machines to personally owned workstations, laptops and handhelds. The third generation of "UCs," he argued, should look like everyday objects—name tags, books, jewelry, appliances, walls—

IT'S AWARE: a new computer science lab will monitor its live-in test subjects.

but should be highly interconnected and able to adapt their behavior to different users, locations and situations. In this vision, we will share many kinds of UCs, and the devices will share us.

A decade's work on UbiComp, as it is known in the field, has produced a zoo of ideas and many demos but few real-world tests. **NCR** unveiled a microwave oven that could support e-mail and electronic banking in 1998 and last year demonstrated a trash bin that can use a bar-code scanner on its lid to track the contents of the pantry. Neither has made it beyond prototypes. On a quick stop at the **IBM Almaden Research Center,** Cameron Miner shows me a glass case full of digital jewelry: a tie-bar microphone, earring earphones, a ring with a multicolored LED. "It might flash when you get an incoming call," Miner suggests. But these are mock-ups; they do not actually connect to anything.

No one knows yet what kind of infrastructure is needed to support a UbiComp world, so the designers of 479 10th Street took no chances. Every wall has at least six high-speed jacks to the internal Ethernet network. Cordless devices communicate through a house-wide wireless net. A radio-locating system can pinpoint any tagged object to within 10 feet. The two-gigabit-per-second connection to the university and the Internet is fast enough to transmit several channels of full-screen video and audio. And with some 25 cameras and almost as many microphones trained on the first floor alone, there is plenty of audio and video to go around.

Aaron Bobick, who specializes in computer vision, gives me the grand tour. "Everybody in our department thought building this must be a good thing to do," he says, "although we didn't really have a clear vision of why." The research team eventually decided that those who most need the home of the future are people of the past—not the rich gadget nuts who typically purchase smart homes but rather marginally infirm seniors. "If technology could help you be certain that your parent maintains social contact, takes her medicine, moves around okay, and that means she can stay another 18 months in her own home, then that's a slam-dunk motivator," Bobick

says. "When we told that to the people from Intel, they just loved it." **Intel** is now one of the project's corporate sponsors, along with **Motorola Labs, Andersen Consulting** and **Mitsubishi Electric Research Lab.**

Two engineers from **Sprint,** which is interested in the project, arrive on a fact-finding mission and join us as we resume the tour. "On the surface, this could look like *Big Brother* or *The Truman Show,*" Bobick concedes, gesturing to the video cameras aimed at us from several directions. Our images pour through wires onto the hard disks of computers in the basement. "But it is important to realize that we want to process video data at the spot where it is collected," he continues. "Then these won't really be video cameras but sensors that simply detect people's location or the direction of their gaze. I want to put cameras in the bathrooms, to make that distinction clear. Suppose your shower could detect melanoma? That's something people are working on." Behind Bobick, Elizabeth D. Mynatt grimaces.

Mynatt, the only woman on the team and the one who suggested the focus on the aged, spends half her time working with caregivers and anthropologists to figure out what problems tend to force seniors from their homes and what annoyances and invasions of privacy they might trade to postpone that. This approach sometimes conflicts with the more typical technocentric style of her colleagues. "I call it the 'boys with toys' phenomenon," she says. "Someone builds a hammer and then looks around for something to bang on."

Mynatt does not want cameras in the bathrooms. She used to work with Mark Weiser at Xerox PARC, and she remembers the lessons of his first experiments with ubiquitous computers. "Xerox tried to make everyone in the building wear these active name badges that we had developed," recalls Dan Russell, who worked in Weiser's group at PARC for several years before moving to IBM Almaden. The idea was to let anyone see where anyone else was at any time. "About half the people said, 'No way.' We also tried to put a Web cam in the coffee room, but again there was a huge backlash." This was at the lab where UbiComp was born.

"Still, I feel uncomfortable about focusing too much on the social implications," says Gregory D. Abowd, co-director of the Aware Home Research Initiative. Abowd is designing software that will automatically construct family albums from the video streams collected by the house—the same streams that Bobick claims he wants to distill at each source. Abowd is also trying to build an intercom system that will allow one person to speak with another simply by saying the person's name. And he enthusiastically describes his idea for a program that would automatically place a phone call to your mother when you talk to her picture—but only after checking with her house to make certain she is awake. "I'm under no illusion about the potential this creates for major privacy problems," he says. "But I'm one of 12 children. I'd rather push the boundary of privacy than cower from it."

Just over Abowd's head, a digital photograph of someone's grandmother sits on the mantle. The photo is bordered by pastel butterflies of various shapes and hues. It is a prototype of a device that one might place on an office desk to keep track of a distant relative living in an "aware" home. Every day the photo would contact the house for a status report from the system that tracks Grandmom's physical movement and social interaction; more activity would add a larger butterfly to the history. The idea, suggests Mynatt, who designed the device, is to find calming technology that helps family members feel close and in control without being invasive.

She describes another active project over lunch: "We know that kitchens are hot spots of activity and that older people suffer some cognitive declines that make it difficult for them to deal with interruptions." So she is designing a reminder program that will use the kitchen cameras and sensors to assemble a running montage of snapshots that can remind people what they were doing just before they were interrupted. She is similarly trying to come up with subtle sounds or images that the house can emit to help inhabitants remember important times of day, such as for appointments or medication. Other researchers want to stick small radio-tracking tags on easily misplaced objects such as keys and remote controls. The list of ideas seems to change weekly, reflecting the enormous uncertainties in the UbiComp field about what society needs and what people will accept.

In a year or so, test subjects will help answer that question as they move into the second story of the house and judge whether all this complex infrastructure and software does in fact simplify and enrich daily life. The project has its skeptics. There is no way to know what Weiser would think, unfortunately, because he died suddenly last year from liver cancer at the age of 46. But his colleague Rich Gold worries that the occupants of a UbiComp house may feel it controls them rather than the other way around. In an essay on "intelligent" houses several years ago, Gold wondered: "How smart does the bed in your house have to be before you are afraid to go to sleep at night?"

—W. Wayt Gibbs

A Machine for Living In

The four-bedroom, four-bath Broadband Institute Residential Laboratory built by Georgia Tech has more cameras than windows. Amenities include:

- Computers: at least 60
- Video cameras: 25 (first floor only)
- Microphones: at least 1 per room
- Cabinet sensors: 40 (first floor only)
- Televisions (for fun, not research): 60-inch upstairs, 8-by-12-foot projection system in basement
- Network outlets: 48 (at least one per wall)
- Connections per outlet: 2 Ethernet; 2 coaxial; 2 optical fiber
- Internet bandwidth: 2 gigabits per second (via 4 DSL lines and an optical-fiber link)
- Internal wireless network bandwidth: 11 megabits per second
- Construction cost: at least $750,000, not including computer equipment

NETWORK CABLE: about 10 miles' worth in total.

UNITED STATES PATENT AND TRADEMARK OFFICE

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09/947,801	09/06/2001	Jed Margolin		7358

23497 7590 01/26/2005

JED MARGOLIN
3570 PLEASANT ECHO DRIVE
SAN JOSE, CA 951481916

EXAMINER	
PATEL, CHIRAG R	

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 01/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/947,801	MARGOLIN, JED	
	Examiner	Art Unit	
	Chirag R. Patel	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Ellis (US 6,167,428).

As per claims 1 and 3, Ellis discloses a distributed computing system comprising:

(a) a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

(b) one or more home network client devices; (Col 13 lines 8-29, Figure 9)

(c) an Internet connection; (Col 8 lines 7-10, Col 13 lines 4-7, Figure 1 item 3)

whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused. (Col 7 lines 38-48, Col 10 lines 1-6)

As per claims 2 and 4, Ellis discloses a distributed computing system further comprising:

(a) a first firewall between said Internet connection and said home network server; Ellis teaches the concept of supporting the structure of inserting a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

(b) a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network server. (Col 16 lines 33-42, Col 19 lines 19-25)

As per claim 5, Ellis discloses A method for providing a distributed computing system comprising the steps of:

(a) providing a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

(b) providing one or more home network client devices; (Col 13 lines 8-29, Figure 9)

(c) providing an Internet connection; (Col 8 lines 7-10, Col 13 lines 4-7, Figure 1 item 3)

(d) providing access to the resources of said home network server that would otherwise be unused; (Col 11 lines 55-61, Col 12 lines 17-26, Figure 5)

(e) providing a first firewall between said Internet connection and said home network Server; Ellis teaches the concept of supporting the structure of inserting a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

(f) providing a second firewall to prevent unwanted interactions between said access to the resources of said home network that would otherwise be unused and said home network server; (Col 16 lines 33-42, Col 19 lines 19-25)

wbereby the subscriber receives something of value in return for said access to the resources of said home network server that would otherwise be unused. (Col 7 lines 38-48, Col 10 lines 1-6)

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kraft et al. (US 6,112,225) discloses a system for processing a computer executable task by dividing it into subtasks and distributing the subtasks to remote computer on a network. Crosetto (US 5,590,284) discloses a parallel processing data network of master and slave transputers controlled by a serial control network. Ellis (US 2001/0011294 and US 2001/0013049) discloses a distributed processing system that performs parallel processing among various computers across a network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag R. Patel whose telephone number is (571)272-7966. The examiner can normally be reached on Monday to Friday from 7:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

Notice of References Cited	Application/Control No. 09/947,801	Applicant(s)/Patent Under Reexamination MARGOLIN, JED	
	Examiner Chirag R. Patel	Art Unit 2141	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,167,428	12-2000	Ellis, Frampton E.	709/201
	B	US-6,112,225	08-2000	Kraft et al.	709/202
	C	US-5,590,284	12-1996	Crosetto, Dario B.	712/29
	D	US-2001/0011294	08-2001	ELLIS, FRAMPTON ERROLL (III)	709/201
	E	US-2001/0013049	08-2001	ELLIS, III, FRAMPTON ERROLL	709/201
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
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	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

#2

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complet If Known	
Application Number	
Filing Date	
First Named Inventor	Jed Margolin
Group Art Unit	
Examiner Name	
Attorney Docket Number	

U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	U.S. Patent Document Number	Kind Code[2] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
CP		6,112,225		Kraft, et al.	08-29-2000	
CP		6,038,596		Baldwin, et al.	03-14-2000	column 1, lines 17-44

FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No.[1]	Foreign Patent Document Office[3]	Number[4]	Kind Code[5] (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T[6]

Examiner Signature	Vinay R. Patel	Date Considered	1/21/2005

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

[1] Unique citation designation number. [2] See attached Kinds of U.S. Patent Documents. [3] Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). [4] For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. [5] Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. [6] Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 2 of 2

Complete If Known	
Application Number	
Filing Date	
First Named Inventor	Jed Margolin
Group Art Unit	
Examiner Name	
Attorney Docket Number	

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.[1]	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T[2]
C.P.		*Wholesale Computation* by PAUL WALLACH, Scientific American November 2000, page 42.	
C.P.		*As We May Live* by W. WAYT GIBBS, Scientific American November 2000, pages 36 and 40.	
C.P.		*Internet Data Gain is a Major Power Drain on Local Utilities,* by JOHN COOK, Seattle Post Intelligencer Reporter, Tuesday, September 5, 2000 URL: http://seattlep-i.com/business/data05.shtml	

Examiner Signature		Date Considered	1/21/2005

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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US006167428A

United States Patent [19]

Ellis

[11] Patent Number: 6,167,428

[45] Date of Patent: Dec. 26, 2000

[54] **PERSONAL COMPUTER MICROPROCESSOR FIREWALLS FOR INTERNET DISTRIBUTED PROCESSING**

[76] Inventor: **Frampton E. Ellis**, Suite B2, 2895 S. Abingdon St., Arlington, Va. 22206

[21] Appl. No.: **09/320,660**

[22] Filed: **May 27, 1999**

Related U.S. Application Data

[63] Continuation-in-part of application No. 08/980,058, Nov. 26, 1997, and a continuation of application No. PCT/US97/21812, Nov. 28, 1997.

[60] Provisional application No. 60/031,855, Nov. 29, 1996, provisional application No. 60/032,207, Dec. 2, 1996, provisional application No. 60/033,871, Dec. 20, 1996, provisional application No. 60/066,313, Nov. 21, 1997, and provisional application No. 60/066,415, Nov. 24, 1997.

[51] **Int. Cl.**[7] **G06F 15/173**

[52] **U.S. Cl.** **709/201**; 709/209; 713/201

[58] **Field of Search** 709/201, 200, 709/203, 208, 209, 210, 211, 100, 104, 105; 713/200, 201

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(List continued on next page.)

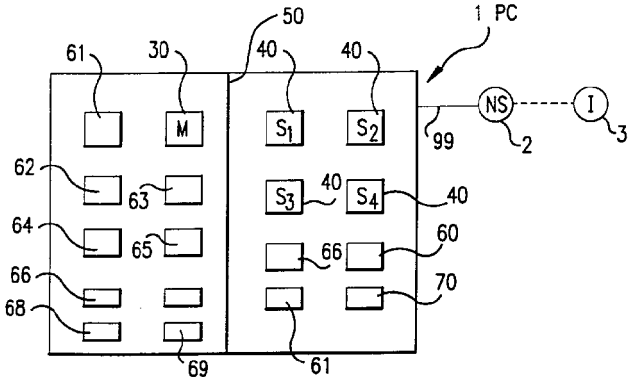
Primary Examiner—Dung C. Dinh

Attorney, Agent, or Firm—Pillsbury Madison & Sutro Intellectual Property

[57] **ABSTRACT**

This invention relates to computer networks having computers like personal computers **(1)** or network servers **(2)** with microprocessors linked **(5)** by transmission means **(4, 14)** and having hardware, and other means such that at least one parallel processing operation occurs that involve at least two computers in the network. This invention also relates to large networks composed of smaller networks, like the Internet **(3)**, wherein more than one separate parallel processing operation involving more than one set of computers occurs simultaneously and wherein ongoing processing linkages can be established between microprocessors of separate computers connected to the network. This invention further relates to business arrangements enabling the shared used of network microprocessors for parallel and other processing wherein personal computer owners provide microprocessor processing power to a network, in exchange for linkage to other computers including linkage to other microprocessors; the basis of the exchange between owners and providers being whatever terms to which the parties agree.

83 Claims, 6 Drawing Sheets



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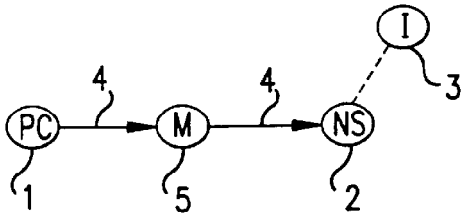

FIG.1

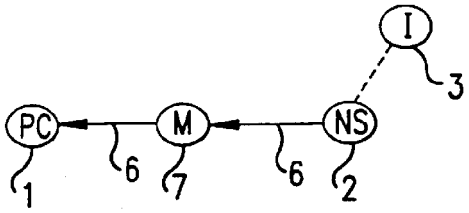

FIG.2

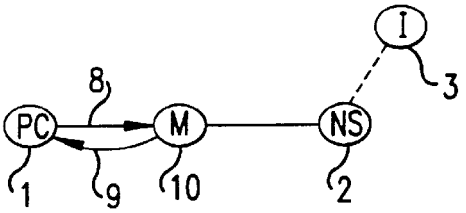

FIG.3

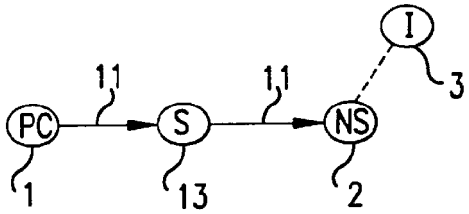

FIG.4A

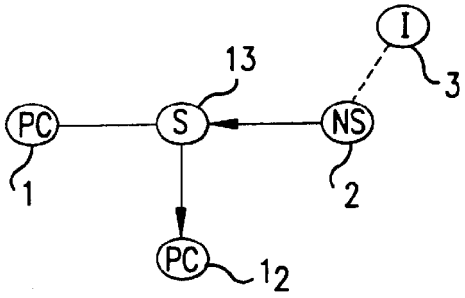

FIG.4B

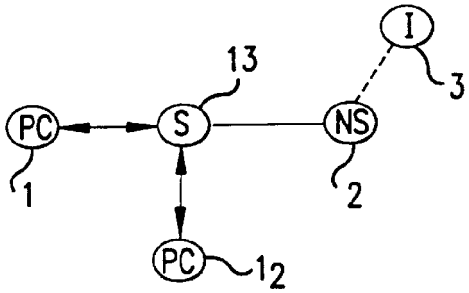

FIG.4C

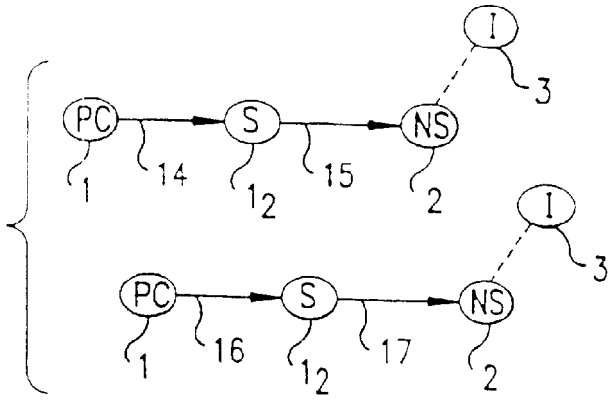

FIG.5

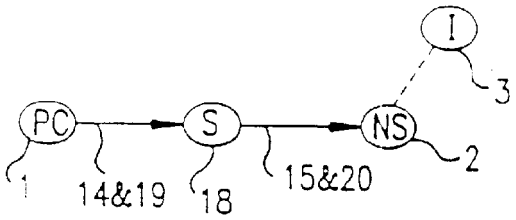

FIG.6

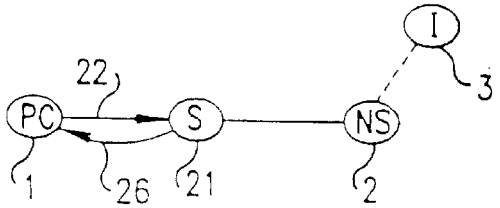

FIG.7

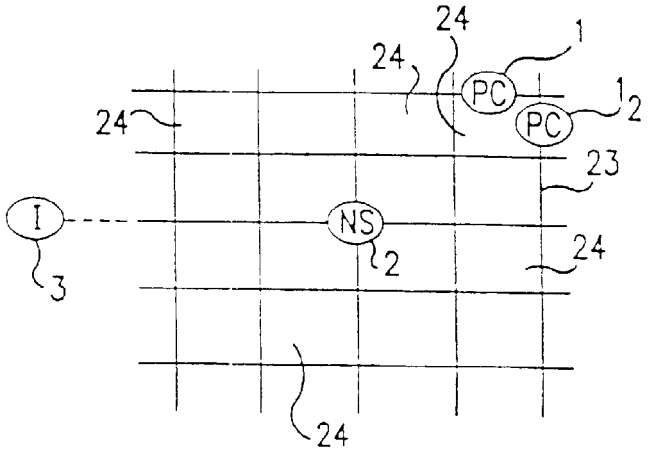

FIG.8

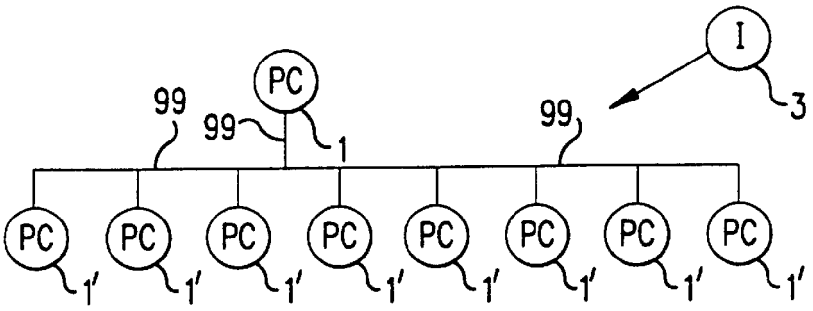

FIG.9

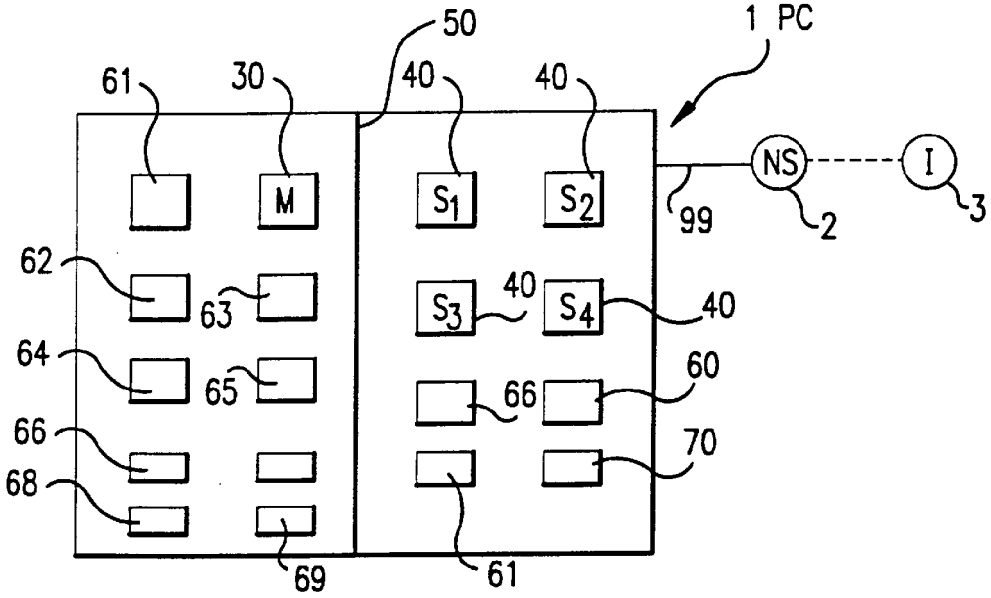

FIG.10A

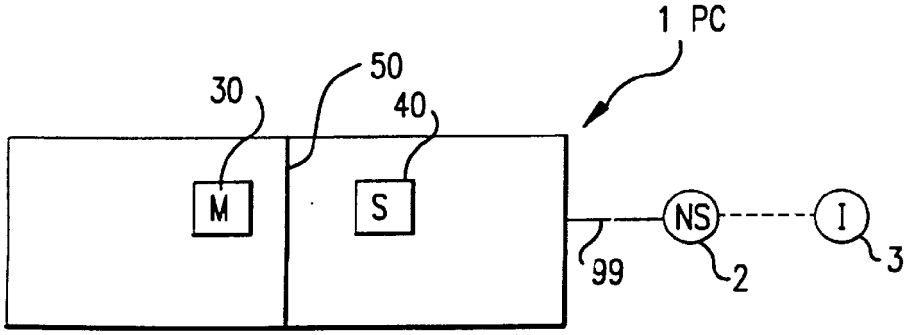

FIG.10B

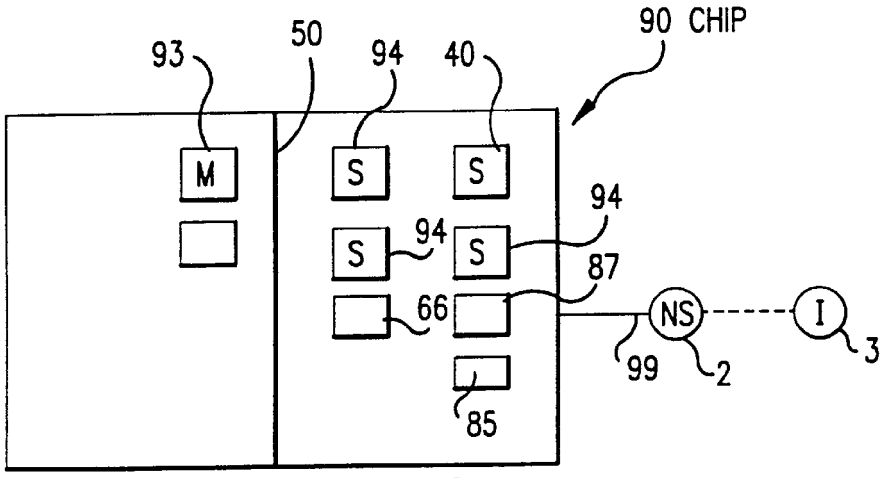

FIG.10C

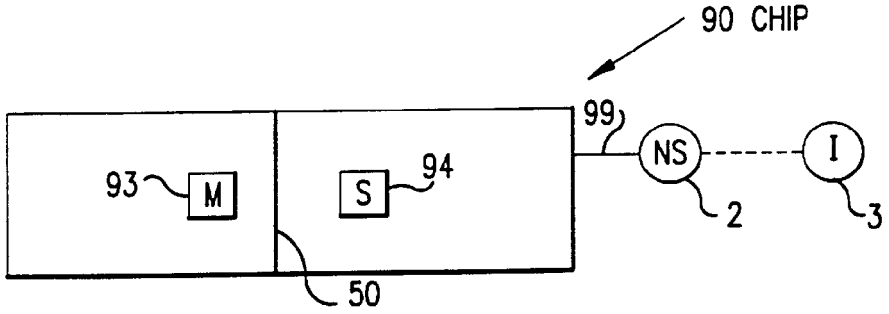

FIG.10D

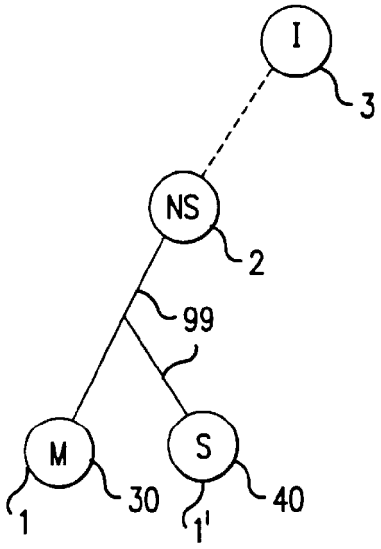

FIG.10E

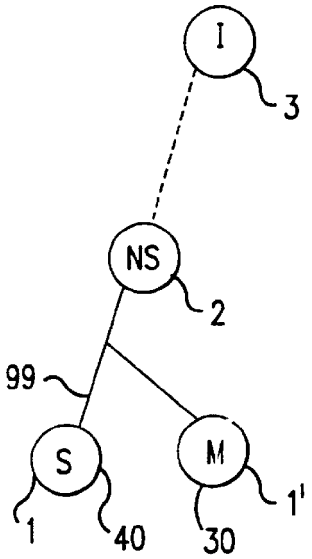

FIG.10F

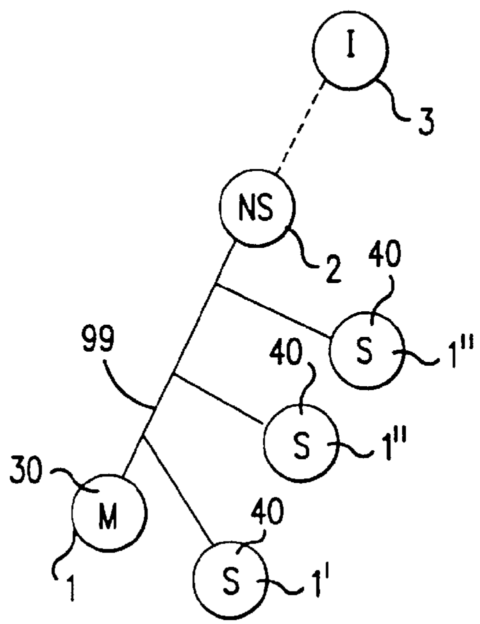

FIG.10G

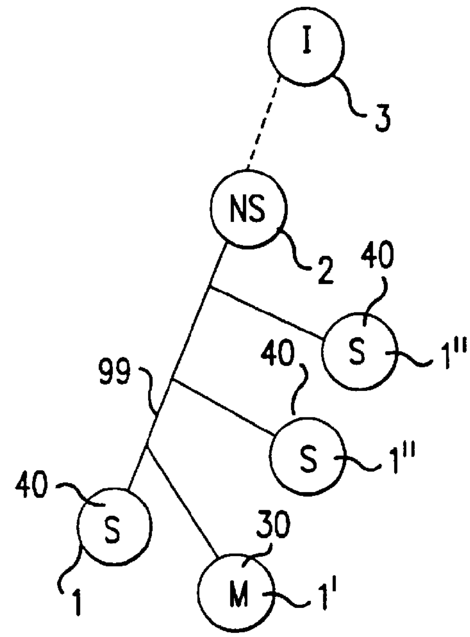

FIG.10H

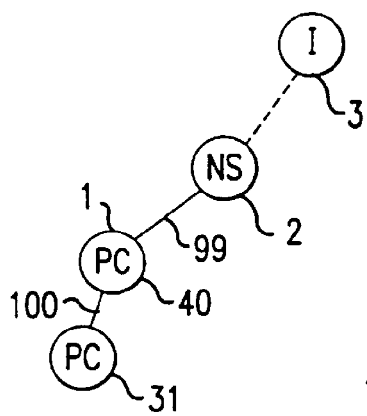

FIG.10I

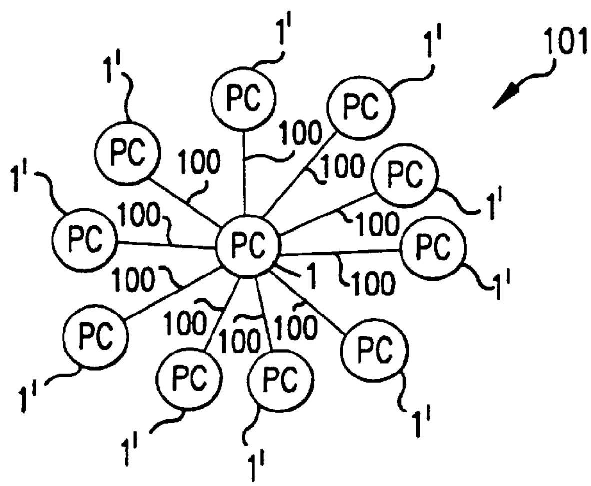

FIG.11

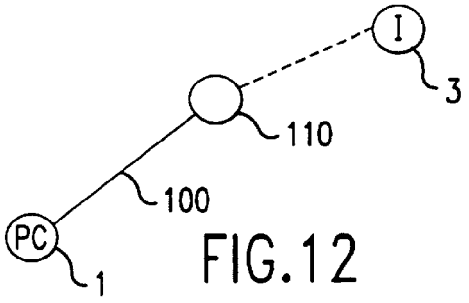

FIG.12

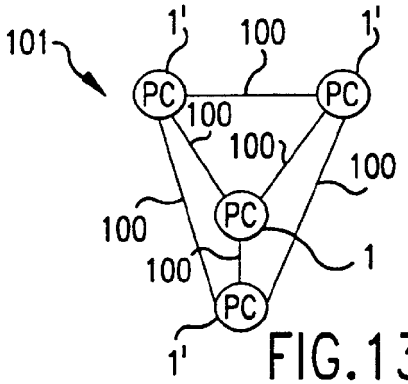

FIG.13

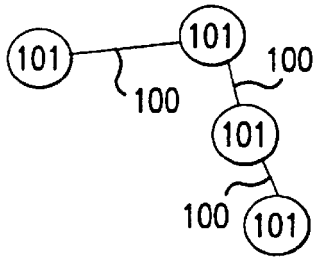

FIG.14B

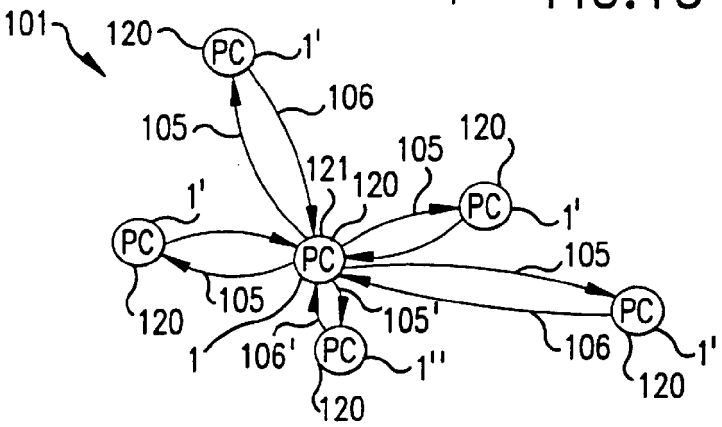

FIG.14A

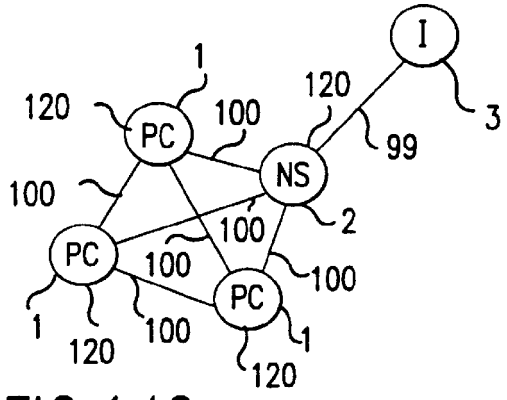

FIG.14C

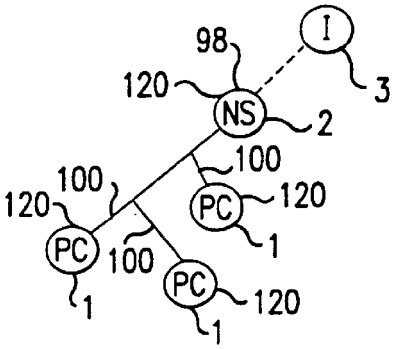

FIG.14D

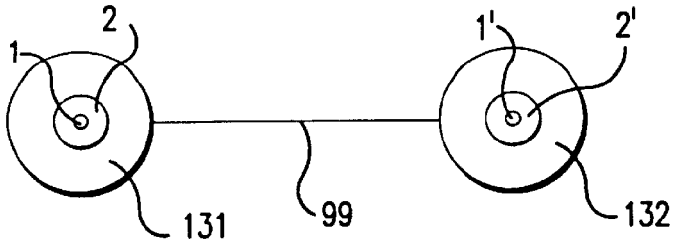

FIG.15

PERSONAL COMPUTER MICROPROCESSOR FIREWALLS FOR INTERNET DISTRIBUTED PROCESSING

This application is a CIP of U.S. application No. 08/980,058 filed Nov. 26, 1997 and is a continuation of PCT/US97/2182 filed Nov. 28, 1997. This application claims benefit of provisional applications 60/031855, filed Nov. 29, 1996, 60/032207, filed Dec. 2, 1996, 60/033871, filed Dec. 20, 1996, 60/066313, filed Nov. 21, 1997, and 60/066415, filed Nov. 24, 1997.

BACKGROUND OF THE INVENTION

This invention generally relates to one or more computer networks having computers like personal computers or network computers such as servers with microprocessors preferably linked by broadband transmission means and having hardware, software, firmware, and other means such that at least two parallel processing operations occur that involve at least two sets of computers in the network or in networks connected together, a form of metacomputing. More particularly, this invention relates to one or more large networks composed of smaller networks and large numbers of computers connected, like the Internet, wherein more than one separate parallel or massively parallel processing operation involving more than one different set of computers occurs simultaneously. Even more particularly, this invention relates to one or more such networks wherein more than one (or a very large number of) parallel or massively parallel microprocessing processing operations occur separately or in an interrelated fashion; and wherein ongoing network processing linkages can be established between virtually any microprocessors of separate computers connected to the network.

Still more particularly, this invention relates generally to a network structure or architecture that enables the shared used of network microprocessors for parallel processing, including massive parallel processing, and other shared processing such as multitasking, wherein personal computer owners provide microprocessor processing power to a network, preferably for parallel or massively parallel processing or multitasking, in exchange for network linkage to other personal and other computers supplied by network providers such as Internet Service Providers (ISP's), including linkage to other microprocessors for parallel or other processing such as multitasking. The financial basis of the shared use between owners and providers would be whatever terms to which the parties agree, subject to governing laws, regulations, or rules, including payment from either party to the other based on periodic measurement of net use or provision of processing power or preferably involving no payment, with the network system (software, hardware, etc) providing an essentially equivalent usage of computing resources by both users and providers (since any network computer operated by either entity can potentially be both a user and provider of computing resources alternately (or even simultaneously, assuming multitasking), with potentially an override option by a user (exercised on the basis, for example, of user profile or user's credit line or through relatively instant payment).

Finally, this invention relates to a network system architecture including hardware and software that will provide use of the Internet or its future equivalents or successors (and most other networks) without cost to most users of personal computers or most other computers, while also providing those users (and all other users, including of

supercomputers) with computer processing performance that will at least double every 18 months through metacomputing means. This metacomputing performance increase provided by the new MetaInternet (or Metanet for short) will be in addition to all other performance increases, such as those already anticipated by Moore's Law.

By way of background, the computer industry has been governed over the last 30 years by Moore's Law, which holds that the circuitry of computer chips has been shrunk by substantially each year, yielding a new generation of chips every 18 months with twice as many transistors, so that microprocessor computing power is effectively doubled every year and a half.

The long term trend in computer chip miniaturization is projected to continue unabated over the next few decades. For example, slightly more than a decade ago a 16 kilobit DRAM memory chip (storing 16,000 data bits) was typical; the current standard 16 megabit chip (16,000,000 data bits) was introduced in 1993; and industry projections are for 16 gigabit memory chips (16,000,000,000 data bits) to be introduced in 2008 and 64 gigabit chips in 2011, with 16 terabit chips (16,000,000,000,000 data bits) conceivable by the mid-to-late 2020's. This is a thousand-fold increase regularly every fifteen years. Hard drive speed and capacity are also growing at a spectacular rate.

Similarly regular and enormous improvements are anticipated to continue in microprocessor computing speeds, whether measured in simple clock speed or MIPS (millions of instructions for second) or numbers of transistors per chip. For example, performance has improved by four or five times every three years since Intel launched its X86 family of microprocessors used in the currently dominant "Wintel" standard personal computers. The initial Intel Pentium Pro microprocessor was introduced in 1995 and is a thousand times faster than the first IBM standard PC microprocessor, the Intel 8088, which was introduced in 1979. The fastest of current microprocessors like Digital Equipment Corp.'s Alpha chip is faster than the processor in the original Cray Y-MP supercomputer.

Both microprocessors and software (and firmware and other components) are also evolving from 8 bit and 16 bit systems into 32 bit systems that are becoming the standard today, with some 64 bit systems like the DEC Alpha already introduced and more coming, with future increases to 128 bit also likely.

A second major development trend in the past decade or so has been the rise of parallel processing, a computer architecture utilizing more than one CPU microprocessor (often many more, even thousands of relatively simple microprocessors, for massively parallel processing) linked together into a single computer with new operating systems having modifications that allow such an approach. The field of supercomputing has been taken over by this approach, including designs utilizing many identical standard personal computer microprocessors.

Hardware, firmware, software and other components specific to parallel processing are in a relatively early stage of development compared to that for single processor computing, and therefore much further design and development is expected in the future to better maximize the computing capacity made possible by parallel processing. One potential benefit that will likely be available soon is system architecture that does not rely on the multiple microprocessors having to share memory, thereby allowing more independent operation of those microprocessors, each with their own discrete memory, like current personal

computers, workstations and most other computer systems architecture; for unconstrained operation, each individual microprocessor must have rapid access to sufficient memory.

Several models of personal computers are now available with more than one microprocessor. It seems inevitable that in the future personal computers, broadly defined to include versions not currently in use, will also employ parallel computing utilizing multiple microprocessors or massively parallel computing with very large numbers of microprocessors. Future designs, such Intel's Merced chip, will have a significant number of parallel processors on a single microprocessor chip.

A form of parallel processing is also being employed within microprocessor design itself. The current generation of microprocessors such at the Intel Pentium have more than one data path within the microprocessor in which data can be processed, with two to three paths being typical.

The third major development trend is the increasing size of bandwidth, which is a measure of communications power between computers connected by a network. Before now, the local area networks and telephone lines typically linking computers including personal computers have operated at speeds much lower than the processing speeds of a personal computer. For example, a typical Intel Pentium operates at 100 MIPS (millions of instructions per second), whereas a typical Ethernet connecting the PC's is 100 times slower at 10 megabits per second (Mbps) and telephone lines are very much slower, the highest typical speed now being about 28.8 kilobits.

Now, however, the situation is expected to change dramatically, with bandwidth being anticipated to expand from 5 to 100 times as fast as the rise of microprocessor speeds, due to the use of coaxial cable, wireless, and fiber optic cable. Telecommunication providers are now making available fiber connections supporting bandwidth of 40 gigabits.

Technical improvements are expected in the near term which will make it possible to carry over 2 gigahertz (billions of cycles per second) on each of 700 wavelength stream, adding up to more Khan 1,700 gigahertz on every single fiber thread. Experts believe that the bandwidth of optical fiber has been utilized one million times less fully than the bandwidth of coaxial or twisted pair copper lines. Within a decade, 10,000 wavelength streams per fiber are expected and 20 wavelengths on a single fiber is already commercially available.

Other network connection developments such as asynchronous transfer mode (ATM) and digital signal processors, which are improving their price/performance tenfold every two years, are also supporting the rapid increase in bandwidth. The increase in bandwidth reduces the need for switching and switching speed will be greatly enhanced when practical optical switches are introduced in the fairly near future, potentially reducing costs substantially.

The result of this huge bandwidth increase will be extraordinary: within just a few years it will be technically possible to connect virtually any computer to a network at a speed that equals or exceeds the computer's own internal bus speed, even as that bus speed itself is increasing significantly. The bus of a computer is its internal network connecting its components such as microprocessor, random access memory (RAM), hard-drive, modem, floppy drive, and CD-ROM; for recent personal computers it has been only about 40 megabits per second, but is now up to a gigabit per second on Intel's Pentium PCI bus.

Despite these tremendous improvements anticipated in the future, the unfortunate present reality is that a typical personal computer (PC) is already so fast that its microprocessor is essentially idle during most of the time the PC is in actual use and that operating time itself is but a small fraction of those days the PC is even in any use at all. The reality is that nearly all PC's are essentially idle during roughly all of their useful life. A realistic estimate is that its microprocessor is in an idle state 99.9% of the time (disregarding current unnecessary microprocessor busywork like executing screen saver programs, which have been made essentially obsolete by power-saving CRT monitor technology, which is now standard in the PC industry).

Given the fact that the reliability of PC's is so exceptionally high now, with the mean time to failure of all components typically several hundred thousand hours or more, the huge idle time of PC's represents a total loss; given the high capital and operating costs of PC's, the economic loss is very high. PC idle time does not in effect store a PC, saving it for future use, since the principle limiting factor to continued use of today's PC's is obsolescence, not equipment failure from use.

Moreover, there is growing concern that Moore's Law, which as noted above holds that the constant miniaturization of circuits results in a doubling of computing power every 18 months, cannot continue to hold true much longer. Indeed, Moore's Law may now be nearing its limits for silicon-based devices, perhaps by as early as 2004, and no new technologies have yet emerged that currently seem with reasonable certainty to have the potential for development to a practical level by then.

SUMMARY OF THE INVENTION

However, the confluence of all three of the established major trends summarized above—supercomputer-like personal computers, the spread of parallel processing using personal computer microprocessors (particularly massively parallel processing), and the enormous increase in network communications bandwidth—will make possible in the near future a surprising solution to the hugely excessive idleness problem of personal computers (and to the problematic possible end of Moore's Law), with very high potential economic savings.

The solution is use those mostly idle PC's (or their equivalents or successors) to build a parallel or massively parallel processing computer utilizing a very large network like the Internet or, more specifically, like the World Wide Web (WWW), or their equivalents or eventual successors like the MetaInternet (and including Internet II, which is under development now and which will utilize much broader bandwidth and will coexist with the Internet, the structure of which is in ever constant hardware and software upgrade) with broad bandwidth connections. The prime characteristic of the Internet is of course the very large number of computers of all sorts already linked to it, with the future potential for effectively universal connection; it is a network of networks of computers that provides nearly unrestricted access (other than cost) worldwide. The soon-to-be available very broad bandwidth of network communications can be used to link personal computers externally in a manner equivalent to the internal buses of the personal computers, so that no processing constraint will be imposed on linked personal computers by data input or output, or throughput; the speed of the microprocessor itself will be the only processing constraint of the system.

This will make external parallel processing possible, including massively parallel processing, in a manner paralleling more conventional internal parallel processing.

Optimally, the World Wide Web (or its equivalents or successors) will be transformed into a huge virtual massively parallel processing computer or computers, with potential through its established hyperlinks connections to operate in a manner at least somewhat like a neural network or neural networks, since the speed of transmission in the linkages would be so great that any linkage between two microprocessors would be virtually equivalent to direct, physically close connections between those microprocessors.

With further development, digital signal processor-type microprocessors or even analogue microprocessors may be optimal for this approach. Networks with WWW-type hyperlinks incorporating digital signal processor-type microprocessor (or successors or equivalents) could operate separately from networks of conventional microprocessors (or successors or equivalents) or with one or more connections between such differing networks or with relatively complete integration between such differing networks. Simultaneous operation across the same network connection structure should be possible.

Such broad bandwidth networks of computers will enable every PC to be fully utilized or nearly so. Because of the extraordinary extent to which existing PC's are currently idle, at optimal performance this new system will potentially result in a thousand-fold increase in computer power available to each and every PC user (and any other user); and, on demand, almost any desired level of increased power, limited mostly by the increased cost, which however would be relatively far less that possible from any other conceivable computer network configuration. This revolutionary increase is on top of the extremely rapid, but evolutionary increases already occurring in the computer/network industry discussed above.

The metacomputing hardware and software means of the MetaInternet will provide performance increases that will likely at least double every eighteen months based on the doubling of personal computers shared in a typical parallel processing operation by a standard PC user, starting first with at least 2 PC's, then about 4, about 8, about 16, about 32, about 64, about 128, about 256, and about 512. After about fifteen years, each standard PC user will likely be able to use about 1024 personal computers for parallel processing or any other shared computing use, while generally using the Internet or its successors like the MetaInternet for free. At the other end of the performance spectrum, supercomputers will experience a similar performance increase generally, but ultimately the performance increase is limited primarily by cost of adding temporary network linkages to available PC's, so there is definite potential for a quantum leap in supercomputer performance.

Network computer systems as described above offer almost limitless flexibility due to the abundant supply of heretofore idle connected microprocessors. This advantage would allow "tightly coupled" computing problems (which normally are difficult to process in parallel) to be solved without knowing in advance (as is now necessary in relatively massively parallel processing) how many processors are available, what they are and their connection characteristics. A minimum number of equivalent processors (with equivalent other specs) can be easily found nearby in a massive network like the Internet and assigned within the network from those multitudes available nearby. Moreover, the number of microprocessors used can be almost completely flexible, depending on the complexity of the problem, and limited only by cost. The current problem of time delay will be solved largely by the widespread introduction of broad bandwidth connections between computers processing in parallel.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a meter means which measures flow of computing during a shared operation such as parallel processing between a typical PC user and a network provider.

FIG. **2** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of another meter means which measures the flow of network resources, including shared processing, being provided to a typical PC user and a network provider.

FIG. **3** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of another meter means which, prior to execution, estimates the level of network resources, and their cost, of a shared processing operation requested by a typical PC user from a network provider.

FIGS. **4A–4C** are simplified diagrams of a section of a computer network, such as the Internet, showing in a sequence of steps an embodiment of a selection means whereby a shared processing request by a PC is matched with a standard preset number of other PC's to execute shared operation.

FIG. **5** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a control means whereby the PC, when idled by its user, is made available to the network for shared processing operations.

FIG. **6** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a signal means whereby the PC, when idled by its user, signals its availability to the network for shared processing operations.

FIG. **7** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a receiver and/or interrogator means whereby the network receives and/or queries the availability for shared processing status of a PC within the network.

FIG. **8** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a selection and/or utilization means whereby the network locates available PC's in the network that are located closest to each other for shared processing.

FIG. **9** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a system architecture for conducting a request imitated by a PC for a search using parallel processing means that utilizes a number of networked PC's.

FIGS. **10A–10I** are simplified diagrams of a section of a computer network, such as the Internet, showing an embodiment of a system architecture utilizing a firewall to separate that part of a networked PC (including a system reduced in size to a microchip) that is accessible to the network for shared processing from a part that is kept accessible only to the PC user; also showing the alternating role that preferably each PC in the network can play as either a master or slave in a shared processing operation involving one or more slave PC's in the network; and showing a home or business network system.

FIG. **11** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a system architecture for connecting clusters of PC's to each

other by wireless means, to create the closest possible (and therefore fastest) connections.

FIG. **12** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a system architecture for connecting PC's to a satellite by wireless means.

FIG. **13** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a system architecture providing a cluster of networked PC's with complete interconnectivity by wireless means.

FIG. **14A** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a transponder means whereby a PC can identify one or more of the closest available PC's in a network cluster to designate for shared processing by wireless means. FIG. **14B** shows clusters connected wirelessly; FIG. **14C** shows a wireless cluster with transponders and with a network wired connection to Internet; FIG. **14D** shows a network client/server wired system with transponders.

FIG. **15** is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a routing means whereby a PC request for shared processing can be routed within a network using preferably broad bandwidth connection means to another area in a network with one or more idle PC's available.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The new network computer will utilize PC's as providers of computing power to the network, not just users of network services. These connections between network and personal computer are enabled by a new form of computer/network financial structure that is rooted on the fact that economic resources being provided the network by PC owners (or leaser) are similar in value to those being provided by the network provider providing connectivity.

Unlike existing one way functional relationships between network providers such as internet service providers (often currently utilizing telecommunications networks for connectivity) and PC users, wherein the network provider provides access to a network like the Internet for a fee (much like cable TV services), this new relationship would recognize that the PC user is also providing the network access to the user's PC for parallel computing use, which has a similar value. The PC thus both provides and uses services on the network, alternatively or potentially even virtually simultaneously, in a multitasking mode.

This new network would operate with a structural relationship that would be roughly like that which presently exists between an electrical power utility and a small independent power generator connected to the utility, wherein electrical power can flow in either direction depending on the operating decisions of both parties and at any particular point in time each party is in either a debt or credit position relative to the other based on the net direction of that flow for a given period, and is billed accordingly. In the increasingly deregulated electrical power industry, electrical power (both its creation and transmission) is becoming a commodity bought and sold in a competitive marketplace that crosses traditional borders. With the structural relationship proposed here for the new network, parallel free market structures should develop over time in a new computer power industry dominated by networks of personal computers in all their forms providing shared processing.

For this new network and its structural relationships, a network provider is defined in the broadest possible way as any entity (corporation or other business, government, not-for-profit, cooperative, consortium, committee, association, community, or other organization or individual) that provides personal computer users (very broadly defined below) with initial and continuing connection hardware and/or software and/or firmware and/or other components and/or services to any network, such as the Internet and Internet II or WWW or their present or future equivalents, coexistors or successors, like the MetaInternet, including any of the current types of Internet access providers (ISP's) including telecommunication companies, television cable or broadcast companies, electrical power companies, satellite communications companies, or their present or future equivalents, coexistors or successors. The connection means used in the networks of the network providers, including between personal computers or equivalents or successors, would preferably be very broad bandwidth, by such means as fiber optic cable or wireless for example, but not excluding any other means, including television coaxial cable and telephone twisted pair, as well as associated gateways, bridges, routers, and switches with all associated hardware and/or software and/or firmware and/or other components and their present or future equivalents or successors. The computers used by the providers include any computers, including mainframes, minicomputers, servers, and personal computers, and associated their associated hardware and/or software and/or firmware and/or other components, and their present or future equivalents or successors.

Other levels of network control beyond the network provider will also exist to control any aspect of the network structure and function, any one of which levels may or may not control and interact directly with the PC user. For example, at least one level of network control like the World Wide Web Consortium (W3C) or Internet Society (ISOC) or other ad hoc industry consortia) would establish and ensure compliance with any prescribed network standards and/or protocols and/or industry standard agreements for any hardware and/or software and/or firmware and/or other component connected to the network. Under the consensus control of these consortia/societies, other levels of network control would deal with administration and operation of the network. These other levels of network control might be constituted by any network entity, including those defined immediately above for network providers.

The principal defining characteristic of the network provided being communication connections (including hardware and/or software and/or firmware and/or other component) of any form, including electromagnetic (such as light and radio or microwaves) and electrochemical (and not excluding biochemical or biological), between PC users, optimally connecting (either directly or indirectly) the largest number of users possible, like the Internet (and Internet II) and WWW and equivalents and successors, like the MetaInternet. Multiple levels of such networks will likely coexist with different technical capabilities, like Internet and Internet II, but would have interconnection and therefore would communicate freely between levels, for such standard network functions as electronic mail.

And a personal computer (PC) user is defined in the broadest possible way as any individual or other entity using a personal computer, which is defined as any computer, digital or analog or neural, particularly including microprocessor-based personal computers having one or more microprocessors (each including one or more parallel processors) in their general current form (hardware and/or software and/or firmware and/or any other component) and their present and future equivalents or successors, such as

workstations, network computers, handheld personal digital assistants, personal communicators such as telephones and pagers, wearable computers, digital signal processors, neural-based computers (including PC's), entertainment devices such as televisions, video tape recorders, videocams, compact or digital video disk (CD or DVD) player/recorders, radios and cameras, other household electronic devices, business electronic devices such as printers, copiers, fax machines, automobile or other transportation equipment devices, and other current or successor devices incorporating one or more microprocessors (or functional or structural equivalents), especially those used directly by individuals, utilizing one or more microprocessors, made of inorganic compounds such as silicon and/or other inorganic or organic compounds; current and future forms of mainframe computers, minicomputers, microcomputers, and even supercomputers are also be included. Such personal computers as defined above have owners or leasers, which may or may not be the same as the computer users. Continuous connection of computers to the network, such as the Internet, WWW, or equivalents or successors, is preferred.

Parallel processing is defined as one form of shared processing as involving two or more microprocessors involved in solving the same computational problem or other task. Massively parallel microprocessor processing involves large numbers of microprocessors. In today's technology, massive parallel processing can probably be considered to be about 64 microprocessors (referred to in this context as nodes) and over 7,000 nodes have been successfully tested in an Intel supercomputer design using PC microprocessors (Pentium Pros). It is anticipated that continued software improvements will make possible a much larger number of nodes, very possibly limited only by the number of microprocessors available for use on a given network, even an extraordinarily large one like the Internet or its equivalents and/or successors, like the MetaInternet.

Broadband wavelength or broad bandwidth network transmission is defined here to mean a transmission speed (usually measured in bits per second) that is at least high enough (or roughly at least equivalent to the internal clock speed of the microprocessor or microprocessors times the number of microprocessor channels equaling instructions per second or operations per second or calculations per second) so that the processing input and output of the microprocessor is substantially unrestricted, particularly including at peak processing levels, by the bandwidth of the network connections between microprocessors that are performing some form of parallel processing, particularly including massive parallel processing. Since this definition is dependent on microprocessor speed, it will increase as microprocessor speeds increase. A rough example might be a current 100 MIPS (millions instructions per second) microprocessor, for which a broad bandwidth connection would be greater than 100 megabits per second (Mbps); this is a rough approximation. However, a preferred connection means referenced above is fiber optic cable, which currently already provides multiple gigabit bandwidth on single fiber thread and will improve significantly in the future, so the use of fiber optic cable virtually assures broad bandwidth for data transmission that is far greater than microprocessor speed to provide data to be transmitted. The connection means to provide broad bandwidth transmission can be either wired or wireless, with wireless generally preferred for mobile personal computers (or equivalents or successors) and as otherwise indicated below. Wireless connection bandwidth is also increasing rapidly and can be considered to offer essentially the same benefit as fiber optic cable: data transmission speed that far exceeds data processing speed.

The financial basis of the shared use between owners/leasers and providers would be whatever terms to which the parties agree, subject to governing laws, regulations, or rules, including payment from either party to the other based on periodic measurement of net use or provision of processing power.

In one embodiment, as shown in FIG. **1**, in order for this network structure to function effectively, there would be a meter device **5** (comprised of hardware and/or software and/or firmware and/or other component) to measure the flow of computing power between PC **1** user and network **2** provider, which might provide connection to the Internet and/or World Wide Web and/or Internet II and/or any present or future equivalent or successor **3**, like the MetaInternet. In one embodiment, the PC user should be measured by some net rating of the processing power being made available to the network, such as net score on one or more standard tests measuring speed or other performance characteristics of the overall system speed, such as PC Magazine's benchmark test program, ZD Winstone (potentially including hardware and/or software and/or firmware and/or other component testing) or specific individual scores for particularly important components like the microprocessor (such as MIPS or millions of instructions per second) that may be of application-specific importance, and by the elapsed time such resources were used by the network. In the simplest case, for example, such a meter need measure only the time the PC was made available to the network for processing **4**, which can be used to compare with time the PC used the network (which is already normally measured by the provider, as discussed below) to arrive at a net cost; potential locations of such a meter include at a network computer such as a server, at the PC, and at some point on the connection between the two. Throughput of data in any standard terms is another potential measure.

In another embodiment, as shown in FIG. **2**, there also would be a meter device **7** (comprised of hardware and/or software and/or firmware and/or other component) that measures the amount of network resources **6** that are being used by each individual PC **1** user and their associated cost. This would include, for example, time spent doing conventional downloading of data from sites in the network or broadcast from the network **6**. Such metering devices currently exist to support billing by the hour of service or type of service is common in the public industry, by providers such as America Online, Compurserve, and Prodigy. The capability of such existing devices would be enhanced to include a measure of parallel processing resources that are allocated by the Internet Service Provider or equivalent to an individual PC user from other PC users **6**, also measuring simply in time. The net difference in time **4** between the results of meter **5** and meter **7** for a given period would provide a reasonable billing basis.

Alternately, as shown in FIG. **3**, a meter **10** would also estimate to the individual PC user prospectively the amount of network resources needed to fulfill a processing request from the PC user to the network (provider or other level of network control) and associated projected cost, provide a means of approving the estimate by executing the request, and a realtime readout of the cost as it occurs (alternatively, this meter might be done only to alert **9** the PC user that a given processing request **8** falls outside normal, previously accepted parameters, such as level of cost). To take the example of an unusually deep search request, a priority or time limit and depth of search should optimally be criteria or limiting parameters that the user can determine or set with the device.

Preferably, the network would involve no payment between users and providers, with the network system (software, hardware, etc) providing an essentially equivalent usage of computing resources by both users and providers (since any network computer operated by either entity can potentially be both a user and provider of computing resources (even simultaneously, assuming multitasking), with potentially an override option by a user (exercised on the basis, for example, of user profile or user's credit line or through relatively instant payment).

Preferably, as shown in FIG. **4**, the priority and extent of use of PC and other users can be controlled on a default-to-standard-of-class-usage basis by the network (provider or other) and overridden by the user decision on a basis prescribed by the specific network provider (or by another level of network control). One obvious default basis would be to expend up to a PC's or other user's total credit balance with the provider described above and the network provider then to provide further prescribed service on an debt basis up to some set limit for the user; different users might have different limits based on resources and/or credit history.

A specific category of PC user based, for example, on specific microprocessor hardware owned or leased, might have access to a set maximum number of parallel PC's or microprocessors, with smaller or basic users generally having less access and vice versa. Specific categories of users might also have different priorities for the execution of their processing by the network. A very wide range of specific structural forms between user and provider are possible, both conventional and new, based on unique features of the new network computer system of shared processing resources.

For example, in the simplest case, in an initial system embodiment, as shown in FIG. **4A**, a standard PC **1** user request **11** for a use involving parallel processing might be defaulted by system software **13**, as shown in FIG. **4E**, to the use of only one other essentially identical PC $\mathbf{1}_2$ microprocessor for parallel processing or multitasking, as shown in FIG. **4**C; larger standard numbers of PC microprocessors, such as about three PC's at the next level, as shown in later FIG. **10**G (which could also illustrate a PC **1** user exercising an override option to use a level of services above the default standard of one PC microprocessor, presumably at extra cost), for a total of about four, then about 8, about 16, about 32, about 64 and so on, or virtually any number in between, would be made available as the network system is upgraded over time, as well as the addition of sophisticated override options. Eventually many more PC microprocessors would be made available to the standard PC user (virtually any number), preferably starting at about 128, then about 256, then about 512, then about 1024 and so on over time, as the network and all of its components are gradually upgraded to handle the increasing numbers. System scalability at even the standard user level is essentially unlimited over time.

Preferably, for most standard PC users (including present and future equivalents and successors), connection to the Internet (or present or future equivalents or successors like the MetaInternet) would be at no cost to PC users, since in exchange for such Internet access the PC users would generally make their PC, when idle, available to the network for shared processing. Preferably, then, competition between Internet Service Providers (including present and future equivalents and successors) for PC user customers would be over such factors as the convenience and quality of the access service provided and of shared processing provided at no addition cost to standard PC users, or on such factors as the level of shared processing in terms, for example of number of slave PC's assigned on a standard basis to a master PC. The ISP's would also compete for parallel processing operations, from inside or outside the ISP Networks, to conduct over their networks.

In addition, as shown in FIG. **5**, in another embodiment there would be a (hardware and/or software and/or firmware and/or other) controlling device to control access to the user's PC by the network. In its simplest form, such as a manually activated electromechanical switch, the PC user could set this controller device to make the PC available to the network when not in use by the PC user. Alternatively, the PC user could set the controller device to make the PC available to the network whenever in an idle state, however momentary, by making use of multitasking hardware and/or software and/or firmware and/or other component (broadcast or "push" applications from the Internet or other network could still run in the desktop background). Or, more simply, as shown in FIG. **5A**, whenever the state that all user applications are closed and the PC **1** is available to the network **14** (perhaps after a time delay set by the user, like that conventionally used on screensaver software) is detected by a software controller device **12** installed in the PC, the device **12** would signal **15** the network computer such as a server **2** that the PC available to the network, which could then control the PC **1** for parallel processing or multitasking by another PC. Such shared processing can continue until the device **12** detects the an application being opened **16** in the first PC (or at first use of keyboard, for quicker response, in a multitasking environment), when the device **12** would signal **17** the network computer such as a server **2** that the PC is no longer available to the network, as shown in FIG. **5B**, so the network would then terminate its use of the first PC.

In a preferred embodiment, as shown in FIG. **6**, there would be a (hardware and/or software and/or firmware and/or other component) signaling device **18** for the PC **1** to indicate or signal **15** to the network the user PC's availability **14** for network use (and whether full use or multitasking only) as well as its specific (hardware/software/firmware/other components) configuration **20** (from a status **19** provided by the PC) in sufficient detail for the network or network computer such as a server **2** to utilize its capability effectively. In one embodiment, the transponder device would be resident in the user PC and broadcast its idle state or other status (upon change or periodically, for example) or respond to a query signal from a network device.

Also, in another embodiment, as shown in FIG. **7**, there would be a (hardware/software and/or firmware and/or other component) transponder device **21** resident in a part of the network (such as network computer, switch, router, or another PC, for examples) that receives **22** the PC device status broadcast and/or queries **26** the PC for its status, as shown in FIG. **7**.

In one embodiment, as shown in FIG. **8**, the network would also have resident in a part of its hardware and/or software (and/or firmware and/or other components) a capacity such as to allow it to most effectively select and utilize the available user PC's to perform parallel processing initiated by PC users or the network providers or others. To do so, the network should have the (hardware and/or software and/or firmware and/or other component) capability of locating each PC accurately at the PC's position on the geographic grid lines/connection means **23** so that parallel processing occurs between PC's (PC **1** and PC $\mathbf{1}_2$) as close together as possible, which should not be difficult for PC's at fixed sites with a geographic location, customarily grouped together into cells **24**, as shown in FIG. **8**, but which

requires an active system for any wireless microprocessor to measure its distance from its network relay site, as discussed below in FIG. **14**.

One of the primary capabilities of the Internet (or Internet II or successor, like the MetaInternet) or WWW network computer would be to facilitate searches by the PC user or other user. As shown in FIG. **9**, searches are particularly suitable to multiple processing, since, for example, a typical search would be to find a specific Internet or WWW site with specific information. Such site searches can be broken up geographically, with a different PC processor **1**' allocated by the network communicating through a wired means **99** as shown (or wireless connections) to search each area, the overall area being divided into eight separate parts, as shown, which would preferably be about equal, so that the total search would be about ⅛ as long as if one processor did it alone (assuming the PC **1** microprocessor provides control only and not parallel processing, which may be preferable in some case).

As a typical example, a single PC user might need 1,000 minutes of search time to find what is requested, whereas the network computer, using multiple PC processors, might be able to complete the search in 100 minutes using 10 processors, or 10 minutes using 100 processors or 1 minute using 1,000 processors (or even 1 second using 60,000 processors); assuming performance transparency, which should be achievable, at least over time. The network's external parallel processing would optimally be completely scalable, with virtually no theoretical limit.

The above examples also illustrates a tremendous potential benefit of network parallel processing. The same amount of network resources, 60,000 processor seconds, was expended in each of the equivalent examples. But by using relatively large multiples of processors, the network can provide the user with relatively immediate response with no difference in cost (or relatively little difference)—a major benefit. In effect, each PC user linked to the network providing external parallel processing becomes, in effect, a virtual supercomputer! As discussed below, supercomputers would experience a similar quantum leap in performance by employing a thousand-fold (or more) increase in microprocessors above current levels.

Such power will likely be required for any effective searches in the World Wide Web (WWW). WWW is currently growing at a rate such that it is doubling every year, so that searching for information within the WWW will become geometrically more difficult in future years, particularly a decade hence, and it is already a very significant difficulty to find WWW sites of relevance to any given search and then to review and analyze the contents of the site.

So the capability to search with massive parallel processing will be required to be effective and will dramatically enhance the capabilities of scientific, technological and medical researchers.

Such enhanced capabilities for searching (and analysis) will also fundamentally alter the relationship of buyers and sellers of any items and/or services. For the buyer, massive parallel network processing will make it possible to find the best price, worldwide, for any product or the most highly rated product or service (for performance, reliability, etc.) within a category or the best combination of price/performance or the highest rated product for a given price point and so on. The best price for the product can include best price for shipping within specific delivery time parameters acceptable to the buyer.

For the seller, such parallel processing will drastically enhance the search, worldwide, for customers potentially interested in a given product or service, providing very specific targets for advertisement. Sellers, even producers, will be able to know their customers directly and interact with them directly for feedback on specific products and services to better assess customer satisfaction and survey for new product development.

Similarly, the vastly increased capability provided by the system's shared parallel processing will produce major improvements in complex simulations like modeling worldwide and local weather systems over time, as well as design and testing of any structure or product, from airliners and skyscrapers, to new drugs and to the use of much more sophisticated artificial intelligence (AI) in medical treatment and in sorting through and organizing the PC users voluminous input of electronic data from "push" technologies. Improvements in games would also be evident, especially in terms of realistic simulation and interactivity.

As is clear from the examples, the Internet or WWW network computer system like the MetaInternet would potentially put into the hands of the PC user an extraordinary new level of computer power vastly greater than the most powerful supercomputer existing today. The world's total of microchips is already about 350 billion, of which about 15 billion are microprocessors of some kind (most are fairly simple "appliance" type running wrist watches, Televisions, cameras, cars, telephones, etc). Assuming growth at its current rates, in a decade the Internet/Internet II/WWW could easily have a billion individual PC users, each providing a average total of at least 10 highly sophisticated microprocessors (assuming PC's with at least 4 microprocessors (or more, such as 16 microprocessors or 32, for example) and associated other handheld, home entertainment, and business devices with microprocessors or digital processing capability, like a digital signal processor or successor devices). That would be a global computer a decade from now made of at least 10 billion microprocessors, interconnected by electromagnetic wave means at speeds approaching the speed of light.

In addition, if the exceptionally numerous "appliance" microprocessors noted above, especially those that operate now intermittently like personal computers, are designed to the same basic consensus industry standard as parallel microprocessors for PC's (or equivalents or successors) or for PC "systems on a chip" discussed later in FIGS. **10**A–H, and if also connected by broad bandwidth means such as fiber optic cable or equivalent wireless, then the number of parallel processors potentially available would increase roughly about 10 times, for a net potential "standard" computing performance of up to 10,000 times current performance within fifteen years, exclusive of Moore's Law routine increases. Moreover, if all currently intermittently operating microprocessors followed the same basic design standards, then although the cost per microprocessor would rise somewhat, especially initially, the net cost of computing for all users would fall drastically due to the general performance increase due to the use of otherwise idle "appliance" microprocessors. Overall system costs will therefore compel such microprocessors, which are currently specialty devices, to become virtually all general microprocessors (like PC's) with software and firmware providing most of their distinguishing functionality.

To put this in context, a typical supercomputer today utilizing the latest PC microprocessors has less than a hundred. Using network linkage to all external parallel processing, a peak maximum of perhaps 1 billion micropro-

cessors could be made available for a network supercomputer user, providing it with the power 10,000,000 times greater than would be available using today's internal parallel processing supercomputers (assuming the same microprocessor technology). Because of it's virtually limitless scalability mentioned above, resources made available by the network to the supercomputer user or PC user would be capable of varying significantly during any computing function, so that peak computing loads would be met with effectively whatever level of resources are necessary.

In summary, regarding monitoring the net provision of power between PC and network, FIGS. **1–9** show embodiments of a system for a network of computers, including personal computers, comprising: means for network services including browsing functions, as well as shared computer processing such as parallel processing, to be provided to the personal computers within the network; at least two personal computers; means for at least one of the personal computers, when idled by a personal user, to be made available temporarily to provide the shared computer processing services to the network; and means for monitoring on a net basis the provision of the services to each the personal computer or to the personal computer user. In addition, FIGS. **1–9** show embodiments including where the system is scalar in that the system imposes no limit to the number of the personal computers, including at least 1024 personal computers; the system is scalar in that the system imposes no limit to the number of personal computers participating in a single shared computer processing operation, including at least 256 personal computers; the network is connected to the Internet and its equivalents and successors, so that the personal computers includes at least a million personal computers; the network is connected to the World Wide Web and its successors; the network includes at least one network server that participates in the shared computer processing.; the monitoring means includes a meter device to measure the flow of computing power between the personal computers and the network; the monitoring means includes a means by which the personal user of the personal computer is provided with a prospective estimate of cost for the network to execute an operation requested by the personal user prior to execution of the operation by the network; the system has a control means by which to permit and to deny access to the personal computers by the network for shared computer processing; access to the personal computers by the network is limited to those times when the personal computers are idle; and the personal computers having at least one microprocessor and communicating with the network through a connection means having a speed of data transmission that is at least greater than a peak data processing speed of the microprocessor.

Also, relative to maintaining a standard cost, FIGS. **1–9** show embodiments of a system for a network of computers, including personal computers, comprising: means for network services including browsing functions, as well as shared computer processing such as parallel processing, to be provided to the personal computers within the network; at least two personal computers; means for at least one of the personal computers, when idled by a personal user, to be made available temporarily to provide the shared computer processing services to the network; and means for maintaining a standard cost basis for the provision of the services to each personal computer or to the personal computer user. In addition, FIGS. **1–9** show embodiments including where the system is scalar in that the system imposes no limit to the number of personal computers, including at least 1,024 personal computers; the system is scalar in that the system imposes no limit to the number of the personal computers participating in a single shared computer processing operation, including at least 256 personal computers; the network is connected to the Internet and its equivalents and successors, so that the personal computers include at least a million personal computers; the standard cost is fixed; the fixed standard cost is zero; the means for maintaining a standard cost basis includes the use of making available a standard number of personal computers for shared processing by personal computers; the network is connected to the World Wide Web and its successors; the personal user can override the means for maintaining a standard cost basis so that the personal user can obtain additional network services; the system has a control means by which to permit and to deny access to the personal computers by the network for shared computer processing; the personal computers having at least one microprocessor and communicating with the network through a connection means having a speed of data transmission that is at least greater than a peak data processing speed of the microprocessor.

Browsing functions generally include functions like those standard functions provided by current Internet browsers, such as Microsoft Explorer 3.0 or 4.0 and Netscape Navigator 3.0 or 4.0, including at least searching World Wide Web or Internet sites, exchanging E-Mail worldwide, and worldwide conferencing; an intranet network uses the same browser software, but might not include access to the Internet or WWW. Shared processing includes parallel processing and multitasking processing involving more than two personal computers, as defined above. The network system is entirely scalar, with any number of PC microprocessors potentially possible.

As shown in FIGS. **10A–10I**, to deal with operational and security issues, it may be optimal for individual users to have one microprocessor or equivalent device that is designated, permanently or temporarily, to be a master **30** controlling device (comprised of hardware and/or software and/of firmware and/or other component) that remains unaccessible (preferably using a hardware and/or software and/or firmware and/or other component firewall **50**) directly by the network but which controls the functions of the other, slave microprocessors **40** when the network is not utilizing them.

For example, as shown in FIGS. **10A**, a typical PC **1** might have four or five microprocessors (even on a single microprocessor chip), with one master **30** and three or four slaves **40**, depending on whether the master **30** is a controller exclusively (through different design of any component part), requiring four slave microprocessors **40** preferably; or the master microprocessor **30** has the same or equivalent microprocessing capability as a slave **40** and multiprocesses in parallel with the slave microprocessors **40**, thereby requiring only three slave microprocessors **40**, preferably. The number of PC slave microprocessors **40** can be increased to virtually any other number, such as at least about eight, about 16, about 32, about 64, about 128, about 256, about 512, about 1024, and so on (these multiples are preferred; the PC master microprocessors **30** can also be increased. Also included is the preferred firewall **50** between master **30** and slave **40** microprocessors. As shown in preceding FIGS. **1–9**, the PC **1** in FIG. **10A** is preferably connected to a network computer **2** and to the Internet or WWW or present or future equivalent or successor **3**, like the MetaInternet.

Other typical PC hardware components such as hard drive **61**, floppy diskette **62**, CD-ROM **63**, DVD **64**, Flash memory **65**, RAM **66**, video or other display **67**, graphics card **68**, and sound card **69**, together with the software and/or firmware stored on or for them, can be located on

either side of the preferred firewall **50**, but such devices as the display **67**, graphics card **68** and sound card **69** and those devices that both read and write and have non-volatile memory (retain data without power and generally have to written over to erase), such as hard drive **62**, Flash memory **65**, floppy drive **62**, read/write CD-ROM **63** or DVD **64** are preferred to be located on the PC user side of the firewall **50**, where the master microprocessor is also located, as shown in FIG. **10**A, for security reasons primarily. Alternately, any or these devices that are duplicative (or for other exceptional needs) like a second hard drive **61** can be located on the network side of the firewall **50**. RAM **66** or equivalent memory, which typically is volatile (data is lost when power is interrupted), should generally be located on the network side of the firewall **50**. However, at least a portion of RAM is can be kept on the Master **30** microprocessor side of the firewall **50**, so that the PC user can use retain the ability to use a core of user PC **1** processing capability entirely separate from any network processing; if this capability is not desired, then the master **30** microprocessor can be moved to the network side of the firewall **50** and replaced with a simpler controller on the PC **1** user side.

And the master microprocessor **30** might also control the use of several or all other processors **60** owned or leased by the PC user, such as home entertainment digital signal processors **70**, especially if the design standards of such microprocessors in the future conforms to the requirements of network parallel processing as described above. In this general approach, the PC master processor would use the slave microprocessors or, if idle (or working on low priority, deferable processing), make them available to the network provider or others to use. Preferably, wireless connections **100** would be extensively used in home or business network systems, including use of a master remote controller **31** without (or with) microprocessing capability, with preferably broad bandwidth connections such as fiber optic cable connecting directly to at least one component such as a PC **1**, shown in a slave configuration, of the home or business personal network system; that preferred connection would link the home system to the network **2** such as the Internet **3**, as shown in FIG. **10**I.

In the simplest configuration, as shown in FIG. **10**B, the PC **1** would have a single master microprocessor **30** and a single slave microprocessor **40**, preferably separated by a firewall **50**, with both processors used in parallel or multitasking processing or with only the slave **40** so used, and preferably connected to a network computer **2** and Internet **3** (and successors like the MetaInternet). Virtually any number of slave microprocessors **40** is possible. The other non-microprocessor components shown in FIG. **10**A above might also be included in this simple FIG. **10**B configuration.

Preferably, as shown in FIG. **10**C, microprocessors **80** are expected to integrate most or all of the other necessary computer components (or their present or future equivalents or successors), like a PC's memory (RAM **66**, graphics **82**, sound **83**, power management **84**, network communications **85**, and video processing **86**, possibly including modem **87**, flash bios **88**, and other components or present or future equivalents or successors) and internal bus, on a single chip **90** (silicon, plastic, or other), known in the industry as "system on a chip". Such a PC micro chip **90** would preferably have the same architecture as that of the PC **1** shown above in FIG. **10**A: namely, a master control and/or processing unit **93** and one or more slave processing units **94** (for parallel or multitasking processing by either the PC **1** or the Network **2**), preferably separated by a firewall **50** and preferably connected to a network computer **3** and the Internet **3** and successors like the MetaInternet. In the simplest case, as shown in FIG. **10**D, the chip **90** would have a single master unit **93** and at least one slave unit **94** (with the master having a controlling function only or a processing function also), preferably separated by a firewall **50** and preferably connected to a network computer **3** and the Internet **3** (and successors like the MetaInternet).

As noted in the second paragraph of the introduction to the background of the invention, in the preferred network invention, any computer can potentially be both a user and provider, alternatively—a dual mode. Consequently, any PC **1** within the network **2**, preferably connected to the Internet **3** (and successors like the MetaInternet), can be temporarily a master PC **30** at one time initiating a parallel or multitasking processing request to the network **2** for execution by at least one slave PC **40**, as shown in FIG. **10**E. At another time the same PC **1** can become a slave PC **40** that executes a parallel or multitasking processing request by another PC **1**' that has temporarily assumed the function of master **30**, as shown in FIG. **10**F. The simplest approach to achieving this alternation is for both master and slave versions of the parallel processing software to be loaded in each or every PC **1** that is to share in the parallel processing, so each PC **1** has the necessary software means, together with minor operation modifications, such as a switching means by which a signal request for parallel processing initiated by one PC **1** user using master software is transmitted to at least a second PC **1**, triggering its slave software to respond to initiate parallel processing.

As shown in FIGS. **10**G and **10**H, which are parallel to FIGS. **10**E and **10**F, the number of PC slave processors **40** can be increased to any virtually other number, such as at least about 4; the processing system is completely scalar, so that further increases can occur to about eight, about 16, about 32, about 64, about 128, about 256, about 512, about 1024, and so on (these multiples indicated are preferred); the PC master microprocessors **30** can also be increased.

In summary, relative to the use of master/slave computers, FIGS. **10**A–**10**H show embodiments of a system for a network of computers, including personal computers, comprising: at least two the personal computers; means for at least one the personal computer, when directed by its personal user, to function temporarily as a master personal computer to initiate and control the execution of a computer processing operation shared with at least one other the personal computer in the network; means for at least one other the personal computer, when idled by its personal user, to be made available to function temporarily as at least one slave personal computer to participate in the execution of a shared computer processing operation controlled by the master personal computer; and means for the personal computers to alternate as directed between functioning as a master and functioning as a slave in the shared computer processing operations. In addition, FIGS. **10**A–**10**H show embodiments including wherein the system is scalar in that the system imposes no limit to the number of personal computers; the system includes at least 256 said personal computers; the system is scalar in that the system imposes no limit to the number of personal computers participating in a single shared computer processing operation, including at least 256 said personal computers; the system is scalar in that the system imposes no limit to the number of personal computers participating in a single shared computer processing operation, including at least 256 said personal computers; the network is connected to the Internet and its equivalents and successors, so that personal computers

include at least a million personal computers; the shared computer processing is parallel processing; the network is connected to the World Wide Web and its successors; a means for network services, including browsing and broadcast functions, as well as shared computer processing such as parallel processing, are provided to said personal computers within said network; the network includes at least one network server that participates in the shared computer processing; the personal computers include a transponder means so that a master personal computer can determine the closest available slave personal computers; the closest available slave personal computer is compatible with the master personal computer to execute said shared computer processing operation; the personal computers having at least one microprocessor and communicating with the network through a connection means having a speed of data transmission that is at least greater than a peak data processing speed of the microprocessor.

The preferred use of the firewall **50**, as described above in FIGS. **10**A–**10**II, provides a solution to an important security problem by preferably completely isolating host PC's **1** that are providing slave microprocessors to the network for parallel or other shared processing functions from any capability to access or retain information about any element about that shared processing. In addition, of course, the firewall **50** provides security for the host PC against intrusion by outside hackers; by reducing the need for encryption and authentication, the use of firewalls **50** will provide a relative increase in computing speed and efficiency. In addition to computers such as personal computers, the firewall **50** described above could be used in any device with "appliance"-type microprocessors, such as telephones, televisions or cars, as discussed above.

In summary, regarding the use of firewalls, FIGS. **10**A–**10**H show embodiments of a system architecture for computers, including personal computers, to function within a network of computers, comprising: a computer with at least two microprocessors and having a connection means with a network of computers; the architecture for the computers including a firewall means for personal computers to limit access by the network to only a portion of the hardware, software, firmware, and other components of the personal computers; the firewall means will not permit access by the network to at least a one microprocessor having a means to function as a master microprocessor to initiate and control the execution of a computer processing operation shared with at least one other microprocessor having a means to function as a slave microprocessor; and the firewall means permitting access by the network to the slave microprocessor. In addition, the system architecture explicitly includes embodiments of, for example, the computer is a personal computer; the personal computer is a microchip; the computer have a control means by which to permit and to deny access to the computer by the network for shared computer processing; the system is scalar in that the system imposes no limit to the number of personal computers, including at least 256 said personal computers; the network is connected to the Internet and its equivalents and successors, so that the personal computers include at least a million personal computers; the system is scalar in that the system imposes no limit to the number of personal computers participating in a single shared computer processing operation, including at least 256 said personal computers; the personal computers having at least one microprocessor and communicating with the network through a connection means having a speed of data transmission that is at least greater than a peak data processing speed of the microprocessor. of the computer being a personal computer; the personal computer being a microchip; the computer have a control means by which to permit and to deny access to the computer by the network for shared computer processing; and the network being connected to the Internet and its successors.

If the PC **1** microprocessors noted above are designed to the same basic consensus industry standard as parallel microprocessors for PC's (or equivalents or successors) as in FIGS. **10**A–**10**B or for PC "systems on a chip" discussed in FIGS. **10**C–**10**D, then although the cost per microprocessor could rise somewhat, especially initially, the net cost of computing for all users would fall drastically almost instantly due to the general performance increase due to the use of otherwise idle "appliance" microprocessors. The potential very substantial benefit to all users should provide a powerful force to reach consensus on important industry hardware, software, and other standards on a continuing basis for such basic parallel network processing designs. If such basic industry standards are adopted at the outset and for the least number of shared microprocessors initially, and if design improvements incorporating greater complexity and more shared microprocessors are phased in gradually overtime on a step by step basis, then conversion to a MetaInternet architecture at all component levels should be relatively easy and inexpensive (whereas an attempt at sudden, massive conversion would be hugely difficult and prohibitively expensive). The scalability of the MetaInternet system architecture (both vertically and horizontally) as described herein would make this sensible approach possible.

By 1998, manufacturing technology improvements will allow 20 million transistors to fit on a single chip (with circuits as thin as 0.25 microns) and, in the next cycle, 50 million transistors using 0.18 micron circuits. Preferably, that entire computer on a chip would be linked, preferably directly, by fiber optic or other broad bandwidth connection means so that the limiting factor on data throughput in the network system, or any part, is the speed of the linked microprocessors themselves.

For computers that are not reduced to a single chip, it is also preferred that the internal bus of any such PC's have a transmission speed that is at least high enough that the all processing operations of the PC microprocessor or microprocessors is unrestricted and that the microprocessor chip or chips are directly linked by fiber optic or other broad bandwidth connection, as with the system chip described above.

The individual user PC's can be connected to the Internet (via an Intranet)/Internet II/WWW or successor, like the MetaInternet (or other) network by any electromagnetic means, with the speed of fiber optic cable being preferred, but hybrid systems using fiber optic cable for trunk lines and coaxial cable to individual users may be more cost effective initially, but much less preferred unless cable can be made (through hardware and/or software and/or firmware and/or other component means) to provide sufficiently broad bandwidth connections to provide unrestricted throughput by connected microprocessors. Given the speed and bandwidth of transmission of fiber optic or equivalent connections, conventional network architecture and structures should be acceptable for good system performance, making possible a virtual complete interconnection network between users.

However, the best speed for any parallel processing operation should be obtained, all other things being equal, by utilizing the available microprocessors that are physically

the closest together. Consequently, as shown previously in FIG. **8**, the network needs have the means (through hardware and/or software and/or firmware and/or other component) to provide on a continually ongoing basis the capability for each PC to know the addresses of the nearest available PC's, perhaps sequentially, from closest to farthest, for the area or cell immediately proximate to that PC and then those cells of adjacent areas.

Network architecture that clusters PC's together should therefore be preferred and can be constructed by wired means. However, as shown in FIG. **11**, it would probably be optimal to construct local network clusters **101** (or cells) of personal computers **1**' by wireless **100** means, since physical proximity of any PC **1** to its closest other PC 1' should be easier to access directly that way, as discussed further below. Besides, it is economically preferable for at least several network providers to serve any given geographic area to provide competitive service and prices.

Optimally, then, those wireless PC connections should be PC resident and capable of communicating by wireless or wired means with all available PC's in the cluster or cell geographic area, both proximal and potentially out to the practical limits of the wireless transmission.

As shown in FIG. **12**, wireless PC connections **100** can be made to existing non-PC network components, such as one or more satellites **110**, or present or future equivalent or successor components and the wireless transmissions can be conventional radio waves, such as infrared or microwave, or any other part of the electromagnetic wave spectrum.

Moreover, as shown in FIG. **13**, such a wireless or wired approach would also make it easily possible in the future to develop network clusters **101** of available PC's **1**' with complete interconnectivity; i.e., each available PC 1 in the cluster **101** is directly connected (preferably wirelessly **100**) to every other available PC **1** in the cluster **101**, constantly adjusting to individual PC's becoming available or unavailable. Given the speed of some wired broad bandwidth connections, like fiber optic cable, such clusters **101** with complete interconnectivity is certainly a possible embodiment.

As shown in FIG. **14**A–**14**D, such wireless systems would optimally include a wireless device **120** comprised of hardware and/or software and/or firmware and/or other component, like the PC 1 availability device described above preferably resident in the PC, but also with a network-like capability of measuring the distance from each PC **1** in its cluster **101** by that PC's signal transmission by transponder or its functional equivalent and/or other means to the nearest other PC's **1**' in the cluster **101**. As shown in FIG. **14**A, this distance measurement could be accomplished in a conventional manner between transponder devices **120** connected to each PC in the cluster **101**; for example, by measuring in effect the time delay from wireless transmission by the transponder device **120** of an interrogating signal **105** to request initiation of shared processing by a master PC **1** to the reception of a wireless transmission response **106** signaling availability to function as a slave PC from each of the idle PC's **1**' in the cluster **101** that has received the interrogation signal **105**. The first response signal **106**' received by the master PC **1** would be from the closest available slave PC 1" (assuming the simplest shared processing case of one slave PC and one master PC), which would be selected for the shared processing operation by the requesting master PC **1**, since the closer the shared microprocessor, the faster the speed of the wireless connections **100** would be between sharing PC's (assuming equivalence of the connection means and other components among each of the PC's 1'). The interrogation signal **105** might specify other selection criteria also, for example, for the closest compatible (initially perhaps defined by a functional requirement of the system to be an identical microprocessor) slave PC 1", with the first response signal **106**' being selected as above.

This same transponder approach also can be used between PC's 1" connected by a wired **99** means, despite the fact that connection distances would generally be greater (since not line of sight, as is wireless), as shown in FIG. **14**A, since the speed of transmission by the preferred broad bandwidth transmission means such as fiber optic cable is so high as to offset that greater distance. From a cost basis, this wired approach might be preferable for such PC's already connected by broad bandwidth transmission means, since additional wireless components like hardware and software would not be necessary. In that case, the same transponder device **120** would preferably be operated in wired clusters **101** in generally the same manner as described above for PC's connected in wireless clusters **101**. Networks incorporating PC's **1** connected by both wireless and wired means are anticipated, like the home or business network mentioned in FIG. **10**I, with mobile PC's or other computing devices preferably using wireless connections. Depending on distances between PC's and other factors, a local cluster **101** of a network **2** might connect wirelessly between PC's and with the network **2** through transponding means linked to wired broad bandwidth transmission means, as shown in FIG. **14**C.

As shown in FIG. **14**D, the same general transponder device means **120** can also be used in a wired **100** network system **2** employing network servers **98** operated, for example, by an ISP, or in other network system architectures (including client/server or peer to peer) or topologies (including ring, bus, and star) well known in the art or their future equivalents or successors.

The FIG. **14** approach to establishing local PC clusters **101** for parallel or other shared processing has major advantage in that it avoids using network computers such as servers (and, if wireless, other network components including even connection means), so that the entire local system of PC's within a cluster **101** would operate independently of network servers, routers, etc. Moreover, particularly if connected by wireless means, the size of the cluster **101** could be quite large, being limited generally by PC transmission power, PC reception sensitivity, and local conditions. Additionally, one cluster **101** could communicate by wireless **100** means with an adjacent or other clusters **101**, as shown in FIG. **14**B, which could include those beyond its direct transmission range.

To improve response speed in shared processing involving a significant number of slave PC's **1**, a virtual potential parallel processing network for PC's **1** in a cluster **101** would preferably be established before a processing request begins. This would be accomplished by the transponder device **120** in each idle PC **1**, a potential slave, broadcasting by transponder **120** its available state when it becomes idle and/or periodically afterwards, so that each potential master PC **1** in the local cluster **101** would be able to maintain relatively constantly its own directory **121** of the idle PC's **1** closest to it that are available to function as slaves. The directory **121** would contain, for example, a list of about the standard use number of slave PC's **1** for the master PC (which initially would probably be just one other PC 1") or a higher number, preferably listed sequentially from the closest available PC to the farthest. The directory of avail-

able slave PC's **1** would be preferably updated on a relatively up to date basis, either when a change occurs in the idle state of a potential slave PC in the directory **121** or periodically.

Such ad hoc clusters **101** should be more effective by being less arbitrary geographically, since each individual PC would be effectively in the center of its own ad hoc cluster. Scaling up or down the number of microprocessors required by each PC at any given time would also be more seamless.

The complete interconnection potentially provided, optimally by such ad hoc wireless clusters is also remarkable because such clusters mimics the neural network structure of the animal brain, wherein each nerve cell, called a neuron, interconnects in a very complicated way with the neurons around it. By way of comparison, the global network computer described above that is expected in a decade will have at least about 10 times as many PC's as a human brain has neurons and they will be connected by electromagnetic waves traveling at close to the speed of light, which is about 300,000 times faster than the transmission speed of human neurons (which, however, will be much closer together).

An added note: in the next decade, as individual PC's become much more sophisticated and more network oriented, compatibility issues may recede to unimportance, as all major types of PC's will be able to emulate each other and most software, particularly relative to parallel processing, will no longer be hardware specific. Nearer term it will be important to set compatible hardware, software, firmware, and other component standards to achieve optimal performance by the components of the global network computer.

Until that compatibility is designed into the essential components of network system, the existing incompatibility of current components dramatically increase the difficulty involved in parallel processing across large networks. Programming languages like Java is one approach that will provide a partial means for dealing with this interim problem. In addition, using similar configurations of existing standards, like using PC's with a specific Intel Pentium chip with other identical or nearly identical components is probably the best way in the current technology to eliminate many of the serious existing problems that could easily be designed around in the future by adopting reasonable consensus standards for system components. The potential gains to all parties with an interest far outweigh the potential costs.

The above described global network computer system has an added benefit of reducing the serious and growing problem of nearly the immediate obsolescence of computer hardware, software, firmware, and other components. Since the preferred system above is the sum of its constituent parts used in parallel processing, each specific PC component becomes less critical. As long as access to the network utilizing sufficient bandwidth is possible, then all other technical inadequacies of the user's own PC will be completely compensated for by the network's access to a multitude of technically able PC's of which the user will have temporary use.

Although the global network computer will clearly cross the geographical boundaries of nations, its operation should not be unduly bounded by inconsistent or arbitrary laws within those states. There will be considerable pressure on all nations to conform to reasonable system architecture and operational standards generally agreed upon, since the penalty of not participating in the global network computer is potentially so high as to not be politically possible anywhere.

As shown in FIG. **15**, because the largest number of user PC's will be completely idle, or nearly so, during the night, it would be optimal for the most complicated large scale parallel processing, involving the largest numbers of processors with uninterrupted availability as close together as possible, to be routed by the network to geographic areas of the globe undergoing night and to keep them there even as the Earth rotates by shifting computing resources as the world turns. As shown in FIG. **15**, during the day, at least one parallel processing request by at least one PC **1** in a network **2** in the Earth's western hemisphere **131** are transmitted by very broad bandwidth connection wired **99** means such as fiber optic cable to the Earth's eastern hemisphere **132** for execution by at least one PC **1'** of a network **2'**, which is idle during the night and the results are transmitted back by the same means to network **2** and the requesting at least one PC **1**. Individual PC's within local networks like that operated by an ISP would likely be grouped into clusters or cells, as is typical in the practice of network industries. As is common in operating electrical power grids and telecommunications and computer networks, many such processing requests from many PC's and many networks could be so routed for remote processing, with the complexity of the system growing substantially over time in a natural progression.

This application encompasses all new apparatus and methods required to operate the above described network computer system or systems, including any associated computer or network hardware, software, or firmware (or other component), both apparatus and methods. Specifically included, but not limited to, are (in their present or future forms, equivalents, or successors): all enabling PC and network software and firmware operating systems, user interfaces and application programs; all enabling PC and network hardware design and system architecture, including all PC and other computers, network computers such as servers, microprocessors, nodes, gateways, bridges, routers, switches, and all other components; all enabling financial and legal transactions, arrangements and entities for network providers, PC users, and/or others, including purchase and sale of any items or services on the network or any other interactions or transactions between any such buyers and sellers; and all services by third parties, including to select, procure, set up, implement, integrate, operate and perform maintenance, for any or all parts of the foregoing for PC users, network providers, and/or others.

The forgoing embodiments meet the objectives of this invention as stated above. However, it will be clearly understood by those skilled in the art that the foregoing description has been made in terms of the preferred embodiments and that various changes and modifications may be made without departing from the scope of the present invention, which is to be defined by the appended claims.

In the claims:

1. A system architecture for computers, including personal computers, to function within a network of computers, comprising:

at least one of said computers including at least two microprocessors having a connection with said network of computers;

a firewall for said personal computers to limit access by said network to only a portion of hardware, software, firmware, and other components of said personal computers, wherein:

said firewall denies access by said network to at least a one of said microprocessors, which includes means for

functioning as a master microprocessor to initiate and control execution of a computer processing operation shared with at least one other microprocessor, including means for functioning as a slave microprocessor, and

said firewall permitting access by said network to said slave microprocessor.

2. A system for a network of computers, comprising:

at least two personal computers;

means for providing network services including shared computer processing including parallel processing, to be provided to said at least two personal computers within said network;

means for at least one of said at least two personal computers, when idled by a personal user, to be made available temporarily to provide said shared computer processing to said network;

a monitor, constructed and arranged to monitor on a net basis, a provision of said network services to each of said at least two personal computers or to said personal user;

means for maintaining a standard cost basis for a provision of said network services to each of said at least two personal computers or to said personal user;

means for at least one of said at least two personal computers, when directed by a corresponding personal user, to function temporarily as a master personal computer to initiate and control execution of a computer processing operation shared with at least one other of said at least two personal computers in said network;

means for said at least one other of said at least two personal computers, when idled by a corresponding personal user, to be made available to function temporarily as at least one slave personal computer to participate in an execution of a shared computer processing operation controlled by said master personal computer; and

means for said at least two personal computers to alternate as directed between functioning as a master and functioning as a slave in said shared computer processing operations;

at least one of said computers including at least two microprocessors and having a connection with said network of computers;

a firewall for said at least two personal computers to limit access by said network to only a portion of hardware, software, firmware, and other components of said at least two personal computers, wherein:

said firewall denying access by said network to at least one of said microprocessors, which include means for functioning as a master microprocessor to initiate and control execution of a computer processing operation shared with at least one other microprocessor, including means for functioning as a slave microprocessor, and

said firewall permitting access by said network to said slave microprocessor.

3. A system for a network of computers, comprising:

at least two personal computers;

means for at least one of said at least two personal computers, when directed by a corresponding personal user, to function temporarily as a master personal computer to initiate and control execution of a computer processing operation shared with at least one other of said at least two personal computers in said network;

means for said at least one other of said at least two personal computers, when idled by a corresponding personal user, to be made available to function temporarily as at least one slave personal computer to participate in an execution of a shared computer processing operation controlled by said master personal computer;

means for said at least two personal computers to alternate as directed between functioning as a master and functioning as a slave in said shared computer processing operations;

a firewall for said at least two personal computers to limit access by said network to only a portion of hardware, software, firmware, and other components of said at least two personal computers, wherein:

at least one of said personal computers includes at least two microprocessors and has a connection with said network of computers,

said firewall denies access by said network to at least one of said microprocessors, which includes means for functioning as a master microprocessor to initiate and control execution of a computer processing operation shared with at least one other microprocessor, including means for functioning as a slave microprocessor, and

said firewall permits access by said network to said slave microprocessor.

4. A system for a network of computers, comprising:

at least two personal computers;

at least one of said at least two personal computers, when directed by a personal user, functioning temporarily as a master personal computer to initiate and control execution of a computer processing operation shared with at least one other of said at least two personal computers in said network, said shared computer processing operation including at least one of parallel processing and multitasking processing;

at least one other of said at least two personal computers, when idled by another personal user, functioning temporarily as at least one slave personal computer to participate in the execution of said shared computer processing operation controlled by said master personal computer;

any of said at least two personal computers alternating as directed by said personal users between functioning as a master and functioning as a slave in a number of said shared computer processing operations;

a firewall, at least for said temporary slave personal computer, allowing access, at least temporarily, to a microprocessor of said temporary slave personal computer by said network during said shared computer processing operation; and

said firewall denying access by said network, during said shared computer processing operation, to a master controller mechanism of said temporary slave personal computer functioning to control said at least one microprocessor of said temporary slave personal computer when said temporary slave personal computer is not idled by said another personal user.

5. The system of claim 4, wherein said system is scalar in that a number of said personal computers participating in multiple, separate, non-related shared computer processing operations is limited only by a number of said personal computers that are connected to the network.

6. The system of claim 5, wherein at least one of said personal computers is substantially contained in a respective single microchip.

7. The system of claim 6, wherein said at least one of said personal computers substantially contained on said respective single microchip has a direct optical fiber connection with said network.

8. The system of claim 4, wherein said system is scalar in that a number of said personal computers participating as masters in multiple, separate, non-related shared computer processing operations is limited only by a number of said personal computers that are connected to the network.

9. The system of claim 4, wherein at least one of said personal computers is substantially contained in a single respective microchip having more than one microprocessor.

10. The system of claim 9, wherein said at least one personal computer substantially contained on said respective single microchip personal computers having more than one microprocessor has a direct optical fiber connection with said network.

11. The system of claim 4, wherein said network is connected to an Internet, which is utilized to provide shared computer processing services.

12. The system of claim 4, wherein said other personal computer of said at least two personal computers defaults automatically to functioning as a slave when idled by said another personal user.

13. The system of claim 4, wherein said network is connected to a World Wide Web, which is utilized to provide said shared computer processing services.

14. The system of claim 13, wherein said network includes at least one network server being configured to provide network services to said at least two personal computers that participate in shared computer processing.

15. The system of claim 4, further comprising a provider of network services, said network services including broadcast functions and shared computer processing services.

16. The system of claim 17 wherein a selection of said closest available slave personal computer is limited to one of the slave personal computers being compatible with a master personal computer in order to simplify execution of said shared computer processing operation.

17. The system of claim 4, wherein said personal computers include a transponder so that, when functioning as a master, a personal computer of said at least two personal computers can determine a closest available one of a plurality of slave personal computers.

18. The system of claim 4, wherein said at least two personal computers include at least one microprocessor and are configured to communicate with said network through a connection having a minimum speed of data transmission that is greater than a peak data processing speed of said personal computers.

19. The system of claim 4, wherein said at least two personal computers are configured to communicate with said network through a connection including a direct connection to said at least two personal computers by an optical fiber connection.

20. The system of claim 4, wherein said firewall denies access by said network during said shared processing operation to at least part of a non-volatile, writable memory of at least one of said personal computers.

21. The system architecture of claim 20, wherein said non-volatile, writable memory includes a flash bios.

22. The system of claim 4, wherein when said temporary slave personal computer is used by said another personal user, said use thereby ending the temporary slave functioning of said personal computer, said master controller mechanism of the former said temporary slave personal computer is used by said another personal user to control at least one microprocessor of a different computer in said network during a different shared computer processing operation.

23. The system of claim 22, wherein said master controller mechanism is wirelessly connected to said temporary slave personal computer.

24. The system of claim 4, wherein said master controller mechanism is located remotely from said temporary slave personal computer.

25. The system of claim 4, wherein said master controller mechanism is not a general purpose microprocessor capable of processing in said shared computer processing operation.

26. The system of claim 4, wherein at least one of said at least two personal computers is a special purpose appliance device.

27. A system architecture for computers, to function within a network of computers, said architecture comprising:

at least two personal computers, each having at least two microprocessors and a connection to a network of personal computers;

firewall means for at least some of said personal computers to limit access by said network to only a portion of at least one of hardware, software and firmware of each of said at least some of said personal computers;

each said firewall means arranged to deny access by said network to at least a first of said at least two microprocessors of said at least some of said personal computers, said first of said microprocessors arranged to function as a master microprocessor to initiate and control execution of a computer processing operation shared with at least one other microprocessor of said personal computers arranged to function as a slave microprocessor and connected to said network; and

each said firewall means arranged to permit at least temporary access by said network to at least a second of said at least two microprocessors of said at least some of said personal computers, said second of said microprocessors arranged to function as a slave microprocessor during a shared computer processing operation, said shared computer processing operation including at least one of parallel and multitasking processing.

28. The system architecture of claim 27, wherein said network is connected to a World Wide Web, which is utilized to provide shared computer processing services.

29. The system architecture of claim 28, wherein said system is scalar in that a number of said personal computers participating in multiple, separate, non-related shared computer processing operations is limited only by a number of said personal computers that are connected to the network.

30. The system architecture of claim 29, wherein at least one of said personal computers is substantially contained in a respective single microchip.

31. The system architecture of claim 30, wherein said personal computers have at least one microprocessor and are configured to communicate with said network through a connection having a minimum speed of data transmission that is greater than a peak data processing speed of said at least one personal computer.

32. The system of claim 30, wherein said at least one of said personal computers substantially contained on said respective single microchip has a direct optical fiber connection with said network.

33. The system architecture of claim 28, wherein said network is connected to an Internet, which is utilized to provide said shared computer processing services.

34. The system architecture of claim 28, wherein said system is scalar in that a number of said personal computers

participating in single shared computer processing operation is limited only by a number of said personal computers that are connected to the network.

35. The system architecture of claim **34**, wherein at least one of said personal computers is substantially contained in a single respective microchip having more than one microprocessor.

36. The system of claim **35**, wherein said at least one personal computer substantially contained on said respective single microchip personal computers having more than one microprocessor has a direct optical fiber connection with said network.

37. The system architecture of claim **27**, wherein said firewall means denies access by said network during said shared processing operation to at least part of a non-volatile, writable memory of at least one of said personal computers.

38. The system architecture of claim **37**, wherein said non-volatile, writable memory includes a flash bios.

39. The system architecture of claim **37**, wherein said non-volatile, writable memory includes a hard disk.

40. The system architecture of claim **27**, wherein said system further comprises control means for permitting and denying access to said personal computer by said network for shared computer processing.

41. The system architecture of claim **27**, wherein said at least two personal computers are configured to communicate with said network through a connection including a direct connection to said at least two personal computers by an optical fiber connection.

42. A system architecture for computers, to function within a network of computers, said architecture comprising:

at least two personal computers, each having at least two microprocessors and a connection to a network of personal computers;

a firewall for at least some of said personal computers to limit access by said network to only a portion of at least one of hardware, software and firmware of each of said at least some of said personal computers;

each said firewall arranged to deny access by said network to at least a first of said at least two microprocessors of said at least some of said personal computers, said first of said microprocessors arranged to function as a master microprocessor to initiate and control execution of a computer processing operation shared with at least one other microprocessor of said personal computers arranged to function as a slave microprocessor and connected to said network; and

each said firewall arranged to permit at least temporary access by said network to at least a second of said at least two microprocessors of said at least some of said personal computers, said second of said microprocessors arranged to function as a slave microprocessor during a shared computer processing operation, said shared computer processing operation including at least one of parallel and multitasking processing.

43. The system architecture of claim **42**, wherein said network is connected to a World Wide Web, which is utilized to provide shared computer processing services.

44. The system architecture of claim **42**, wherein said firewall denies access by said network during said shared processing operation to at least part of a non-volatile, writable memory of at least one of said personal computers.

45. The system architecture of claim **42**, wherein said system has a control mechanism by which to permit and to deny access to said personal computer by said network for shared computer processing.

46. The system architecture of claim **43**, wherein said system is scalar in that a number of said personal computers participating in multiple, separate, non-related shared computer processing operations is limited only by a number of said personal computers that are connected to the network.

47. The system architecture of claim **46**, wherein at least one of said personal computers is substantially contained in a respective single microchip.

48. The system architecture of claim **43**, wherein said network is connected to an Internet, which is utilized to provide said shared computer processing services.

49. The system architecture claim **43**, wherein said system is scalar in that a number of said personal computers participating in single shared computer processing operation is limited only by a number of said personal computers that are connected to the network.

50. The system architecture of claim **49**, wherein at least one of said personal computers is substantially contained in a single respective microchip having more than one microprocessor.

51. The system architecture of claim **47**, wherein said personal computers have at least one microprocessor and are configured to communicate with said network through a connection having a minimum speed of data transmission that is greater than a peak data processing speed of said at least one personal computer.

52. The system architecture of claim **42**, wherein at least some of said personal computers include a digital signal processor.

53. The system architecture of claim **42**, wherein said at least two personal computers are configured to communicate with said network through a connection including a direct connection to said at least two personal computers by an optical fiber connection.

54. The system architecture of claim **47**, wherein said at least one of said personal computers substantially contained on said respective single microchip has a direct optical fiber connection with said network.

55. The system architecture of claim **50**, wherein said at least one personal computer substantially contained on said respective single microchip personal computers having more than one microprocessor has a direct optical fiber connection with said network.

56. The system architecture of claim **44**, wherein said non-volatile, writable memory includes a flash bios.

57. The system of claim **20**, wherein said non-volatile, writable memory includes a hard disk.

58. The system architecture of claim **44**, wherein said non-volatile, writable memory includes a hard disk.

59. The system architecture of claim **42**, wherein at least one of said at least two personal computers is a special purpose appliance device.

60. A system for a network of computers, comprising:

at least two personal computers;

means for at least one of said at least two personal computers, when directed by a personal user, to function temporarily as a master personal computer to initiate and control execution of a computer processing operation shared with at least one other of said at least two personal computers in said network, said shared computer processing operation including at least one of parallel processing and multitasking processing;

means for at least one other of said at least two personal computers, when idled by another personal user, to function temporarily as at least one slave personal computer to participate in the execution of said shared computer processing operation controlled by said master personal computer;

means for any of said at least two personal computers to alternate as directed by said personal users between functioning as a master and functioning as a slave in a number of said shared computer processing operations;

firewall means, at least for said temporary slave personal computer, for allowing access, at least temporarily, to a microprocessor of said temporary slave personal computer by said network during said shared computer processing operation; and

said firewall means denying access by said network, during said shared computer processing operation, to a master controller mechanism of said temporary slave personal computer functioning to control said at least one microprocessor of said temporary slave personal computer when said temporary slave personal computer is not idled by said another personal user.

61. The system of claim **60**, wherein said at least two personal computers are configured to communicate with said network through a connection including a direct connection to said at least two personal computers by an optical fiber connection.

62. The system of claim **61**, wherein at least some of said personal computers include a digital signal processor.

63. The system of claim **60**, wherein said firewall means denies access by said network during said shared processing operation to at least part of a non-volatile, writable memory of at least one of said personal computers.

64. The system of claim **63**, wherein said non-volatile, writable memory includes a flash bios.

65. The system architecture of claim **63**, wherein said non-volatile, writable memory includes a hard disk.

66. The system of claim **60**, wherein said master controller mechanism is located remotely from said temporary slave personal computer.

67. The system of claim **66**, wherein said master controller mechanism is wirelessly connected to said temporary slave personal computer.

68. The system of claim **60**, wherein said system is scalar in that a number of said personal computers participating in multiple, separate, non-related shared computer processing operations is limited only by a number of said personal computers that are connected to the network.

69. The system of claim **68**, wherein at least one of said personal computers is substantially contained in a respective single microchip.

70. The system of claim **69**, wherein said at least one of said personal computers substantially contained on said respective single microchip has a direct optical fiber connection with said network.

71. The system of claim **60**, wherein at least one of said personal computers is substantially contained in a single respective microchip having more than one microprocessor.

72. The system of claim **71**, wherein said at least one personal computer substantially contained on said respective single microchip personal computers having more than one microprocessor has a direct optical fiber connection with said network.

73. The system of claim **60**, wherein said other personal computer of said at least two personal computers defaults automatically to functioning as a slave when idled by said another personal user.

74. The system of claim **60**, wherein said network is connected to a World Wide Web, which is utilized to provide said shared computer processing services.

75. The system of claim **60**, further comprising means for providing network services, said network services including broadcast functions and shared computer processing services.

76. The system of claim **74**, wherein said network includes at least one network server being configured to provide network services to said at least two personal computers that participate in shared computer processing.

77. The system of claim **60**, wherein said personal computers include a transponder so that, when functioning as a master, a personal computer of said at least two personal computers can determine a closest available one of a plurality of slave personal computers.

78. The system of claim **77**, wherein a selection of said closest available slave personal computer is limited to one of the slave personal computers being compatible with a master personal computer in order to simplify execution of said shared computer processing operation.

79. The system of claim **60**, wherein said at least two personal computers include at least one microprocessor and are configured to communicate with said network through a connection means having a minimum speed of data transmission that is at least greater than a peak data processing speed of said microprocessor personal computers.

80. The system of claim **60**, wherein said system is scalar in that a number of said personal computers participating as masters in multiple, separate, non-related shared computer processing operations is limited only by a number of said personal computers that are connected to the network.

81. The system of claim **60**, wherein said network is connected to an Internet, which is utilized to provide shared computer processing services.

82. The system of claim **60**, wherein when said temporary slave personal computer is used by said another personal user, said use thereby ending the temporary slave functioning of said personal computer, said master controller mechanism of the former temporary slave personal computer is used by said another personal user to control at least one microprocessor of a different computer in said network during a different shared computer processing operation.

83. The system of claim **60**, wherein said master controller mechanism is not a general purpose microprocessor capable of processing in said shared computer processing operation.

* * * * *

04-22-05

2141

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Jed Margolin
Serial No.: 09/947,801 — Examiner: Chirag R. Patel
Filed: 09/06/2001 — Art Unit: 2141
For: DISTRIBUTED COMPUTING SYSTEM

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE

Dear Sir:

In response to the Office Action mailed January 26, 2005, please consider the following remarks.

Section 1. General Summary

Claims 1 - 5 were rejected solely under 35 U.S.C. §102(e) as being anticipated by Ellis (US 6,167,428). Applicant will show that the elements "server" and "network server" used by Ellis are distinctly different from the term "home network server" used by Applicant and this difference makes Applicant's invention distinctly different from Ellis's. Applicant will show:

1. The definition of *Server* as would have been commonly understood at the time Ellis's invention was made.
2. Ellis uses the terms *Server* and *Network Server* to mean the same thing.

3. Ellis makes a clear distinction between the *PC User* and the *Network Provider* (also called *Internet Service Provider*).
4. Ellis's financial arrangement requires that the *PC User* and the *Network Provider* be different entities.
5. Ellis's *Server* is part of the *Network Provider*, not the *PC User.*
6. Ellis has drawn a distinction between the *Network Provider* and the *Internet*. The Applicant has not drawn such a distinction.
7. Applicant acted as his own lexicographer to define *Home Network Server.*
8. Applicant's *Home Network Server* is distinctly different from Ellis's *Server (Network Server*).
9. Ellis's preference for a network architecture that physically clusters PCs together teaches away from Applicant's invention which teaches the value of having Home Network Servers located in widely different geographic areas in order to distribute the load on electric utility companies.

Section 2 - Detailed Response

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Ellis (US 6,167,428).

As per claims 1 and 3, Ellis discloses a distributed computing system comprising:

(a) a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

Summary of Applicant's Response:

- The server taught by Ellis is part of the Network Provider's equipment.
- Ellis draws a sharp dividing line between network providers such as internet service providers (ISPs) and PC users.
- Ellis's financial arrangement requires that the PC User and the Network Provider be different entities.
- Ellis's network server's computing resources are not the resources being traded by the PC User for something of value such as Internet access. Instead, it is the resources of PC User which are being traded.
- Applicant's Home Network Server is part of the subscriber's system and is located on the Subscriber's premises. It is the resources of the Home Network Server that are being traded for something of value, like subsidized or free Internet access.

Response - Part 1. The definition of *Server* as would have been commonly understood at the time Ellis's invention was made.

Since Ellis has not served as his own lexicographer, the term must be defined as it was commonly used at the time Ellis's invention was made.

A good, commonly used, current definition of server can be found at Wikipedia (http://en.wikipedia.org/wiki/Server):

In computing, a **server** is:

- A computer software application that carries out some task on behalf of users. This is usually divided into file serving, allowing users to store and access files on a common computer; and application serving, where the software runs a computer program to carry out some task for the users. This is the original meaning of the term. Web, mail, and database servers are what most people access when using the internet.

- The term is now also used to mean the physical computer on which the software runs. Originally server software would be located on a mainframe computer or minicomputer. These have largely been replaced by computers built using a more robust version of the microprocessor technology than is used in personal computers, and the term "server" was adopted to describe microprocessor-based machines designed for this purpose. In a general sense, server machines have high-capacity (and sometimes redundant) power supplies, a motherboard built for durability in 24x7 operations, large quantities of ECC RAM, and fast I/O subsystem employing technologies such as SCSI, RAID, and PCI-X or PCI-Express.

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Usage

Sometimes this dual usage can lead to confusion, for example in the case of a web server. This term could refer to the machine which stores and operates the websites, and it is used in this sense by companies offering commercial hosting facilities. Alternatively, *web server* could refer to the software, such as the Apache HTTP server, which runs on such a machine and manages the delivery of web page components in response to requests from web browser clients.

Although Ellis traces its parentage to at least U.S. Application No. 08/980,058 filed Nov. 26, 1997, and possibly even further to provisional application 60/031855, filed Nov. 29, 1996, Applicant believes the Wikipedia definition correctly represents the term as it would have been commonly understood at that time. The full Wikipedia entry for *Server* is reproduced in Appendix A.

Response - Part 2. Ellis uses the terms *Server* and *Network Server* to mean the same thing.

In Column 12 lines 26-33, Ellis refers to Reference Number 2 as ***server 2.***

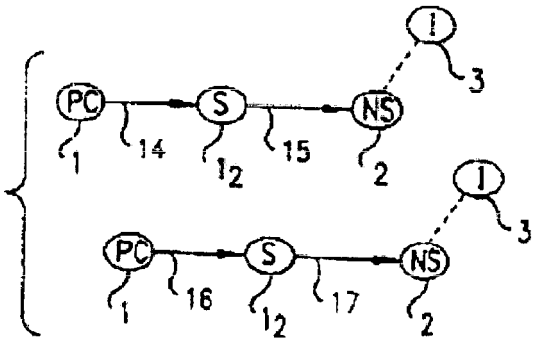

FIG.5

Such shared processing can continue until the device 12 detects the an application being opened 16 in the first PC (or at first use of keyboard, for quicker response, in a multitasking environment), when the device 12 would signal 17 the network computer such as a ***server 2*** that the PC is no longer available to the network, as shown in FIG. 5B, so the network would then terminate its use of the first PC.

In Column 17 lines 32-41, Ellis refers to Reference Number 2 as ***network 2***.

Preferably, wireless connections 100 would be extensively used in home or business network systems, including use of a master remote controller 31 without (or with) microprocessing capability, with preferably broad bandwidth connections such as fiber optic cable connecting directly to at least one component such as a PC 1, shown in a slave configuration, of the home or business personal network system; that preferred connection would link the home system to the ***network 2*** such as the Internet 3, as shown in FIG. 10I.

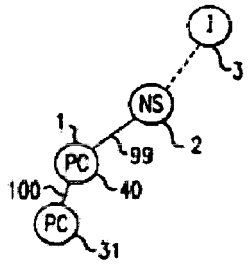

FIG. 10I

Moreover, in the Abstract, Ellis refers to ***network servers (2)*** in a list of items that are clearly being referred to by the reference numbers used in the drawings.

Abstract

This invention relates to computer networks having computers like personal computers (1) or ***network servers (2)*** with microprocessors linked (5) by transmission means (4, 14) and having hardware, and other means such that at least one parallel processing operation occurs that involve at least two computers in the network. This invention also relates to large networks composed of smaller networks, like the Internet (3), wherein more than one separate parallel processing operation involving more than one set of computers occurs simultaneously and wherein ongoing processing linkages can be established between microprocessors of separate computers connected to the network. This invention further relates to business arrangements enabling the shared used of network microprocessors for parallel and other processing wherein personal computer owners provide microprocessor processing power to a network, in exchange for linkage to other computers including linkage to other microprocessors; the basis of the exchange between owners and providers being whatever terms to which the parties agree.

Indeed, Ellis's choice of labels used in the drawings showing Reference Number 2 is **NS**, which would be an entirely reasonably abbreviation for ***Network Server***.

Response - Part 3. Ellis makes a clear distinction between the *PC User* and the *Network Provider* (also called *Internet Service Provider*).

Ellis draws a sharp dividing line between network providers such as internet service providers (ISPs) and PC users. From Column 7 lines 37-47:

> Unlike existing one way functional relationships between ***network providers such as internet service providers*** (often currently utilizing telecommunications networks for connectivity) and ***PC users***, wherein the ***network provider*** provides access to a network like the Internet for a fee (much like cable TV services), this new relationship would recognize that the ***PC user*** is also providing the ***network*** access to the ***user's PC*** for parallel computing use, which has a similar value. The PC thus both provides and uses services on the network, alternatively or potentially even virtually simultaneously, in a multitasking mode.

Column 7 Line 66 – Column 8 line 28:

> For this new network and its structural relationships, ***a network provider*** is defined in the broadest possible way as any entity (corporation or other business, government, not-for-profit, cooperative, consortium, committee, association, community, or other organization or individual) that provides personal computer users (very broadly defined below) with initial and continuing connection hardware and/or software and/or firmware and/or other components and/or services to any network, such as the Internet and Internet II or WWW or their present or future equivalents, coexistors or successors, like the MetaInternet, ***including any of the current types of Internet access providers (ISP's)*** including telecommunication companies, television cable or broadcast companies, electrical power companies, satellite communications companies, or their present or future equivalents, coexistors or successors. The connection means used in the networks of the network providers, including between personal computers or equivalents or successors, would preferably be very broad bandwidth, by such means as fiber optic cable or wireless for example, but not excluding any other means, including television coaxial cable and telephone twisted pair, as well as associated gateways, bridges, routers, and switches with all associated hardware and/or software and/or firmware and/or other components and their present or future equivalents or successors. ***The computers used by the providers include any computers, including*** mainframes, minicomputers, ***servers***, and personal computers, and associated their associated hardware and/or software and/or firmware and/or other components, and their present or future equivalents or successors.

Column 12 lines 34-46:

> In a preferred embodiment, as shown in FIG. 6, there would be a (hardware and/or software and/or firmware and/or other component) signaling device 18 for the ***PC 1*** to indicate or signal 15 to the network the ***user PC's*** availability 14 for network use (and whether full use or multitasking only) as well as its specific hardware/software/firmware/other components) configuration 20 (from a status 19 provided by the PC) in sufficient detail for the ***network or network computer such as a server 2*** to utilize its capability effectively. In one embodiment, the transponder device would be resident in the user PC and broadcast its idle state or other status (upon change or periodically, for example) or respond to a query signal from a network device.

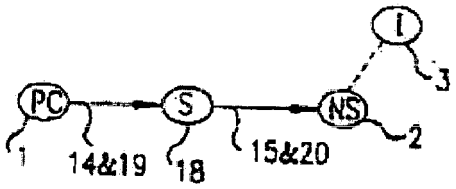

FIG. 6

Ellis's financial arrangement is between the PC User and the Network Provider.

Column 10 lines 1-6:

> The ***financial basis*** of the shared use ***between owners/leasers and providers*** would be whatever terms to which the ***parties*** agree, subject to governing laws, regulations, or rules, including payment from ***either party*** to the other based on periodic measurement of net use or provision of processing power.

If the PC User and the Network Provider were the same entity, Ellis's financial arrangement would be only with himself. As a result, Ellis's invention would not be useful, thereby failing to meet the requirements of 35 U.S.C. 101, rendering the Ellis patent invalid.

35 U.S.C. 101 Inventions patentable.

> Whoever invents or discovers any new and ***useful*** process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

However, since issued U.S. patents are presumed valid under 35 U.S.C. 282, Ellis's PC User and Network Provider must be understood as being separate entities.

35 U.S.C. 282 Presumption of validity; defenses. - Patent Laws (First Paragraph):

> A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. Notwithstanding the preceding sentence, if a claim to a composition of matter is held invalid and that claim was the basis of a determination of nonobviousness under section 103(b)(1), the process shall no longer be

considered nonobvious solely on the basis of section 103(b)(1). The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

Response - Part 4. Ellis's *Server 2* is part of the *Network Provider*, not the *PC User*.

The Servers (also referred to in Ellis as Network Servers) are on the ISP side of the line.

Column 6 lines 5-9:

> FIG. 1 is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a meter means which measures flow of computing during a shared operation such as parallel processing ***between a typical PC user and a network provider***.

Column 10 lines 7-14:

> In one embodiment, as shown in FIG. 1, in order for this network structure to function effectively, there would be a meter device 5 (comprised of hardware and/or software and/or firmware and/or other component) to measure the flow of computing power ***between PC 1 user and network 2 provider***, which might provide connection to the Internet and/or World Wide Web and/or Internet II and/or any present or future equivalent or successor 3, like the MetaInternet.

In the second reproduction of Ellis Figure 1 (below) a line has been added to emphasize Ellis's division between Meter 5 and Network Server 2. Network Server 2 is not in the subscriber's home.

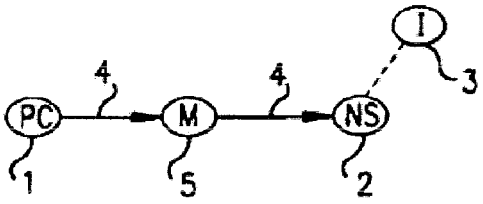

FIG. 1

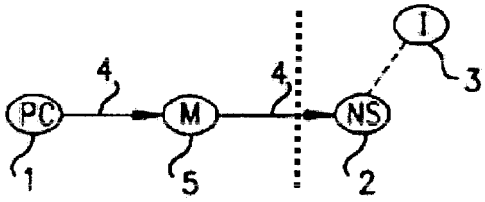

FIG. 1

Response - Part 5. Ellis has drawn a distinction between the Network Provider and the Internet. The Applicant has not drawn such a distinction.

Ellis Figure 1 shows Network Provider 2 as separate from Internet 3.

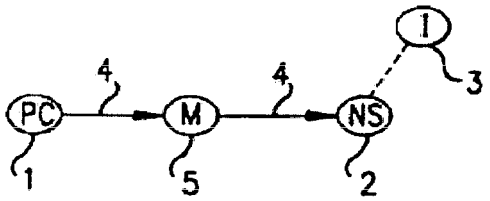

FIG.1

In Applicant's Figure 1, Modem 103 is shown as connecting to the Internet. There is no distinction made between the Internet Service Provider and the Internet. Applicant states, in Paragraph 0002 of the present Application:

> **[0002]** This invention relates to a distributed computing system. For the purposes of this application the term "distributed computing" includes "distributed storage." **The term "Internet" refers to the current world wide packet data communication network and whatever system may replace it regardless of what name it may be given or what communications protocol it may use. It also includes on-line services which, although they may not consider themselves the "Internet", provide a gateway for their subscribers to the Internet.**

Most people consider their Internet connection to start at the point where they connect to their Internet Service Provider, which is probably why it's called an ***Internet Service Provider***. Applicant has followed this convention, Ellis has not.

Response - Part 6. Applicant acted as his own lexicographer to define *Home Network Server.*

From the application of the present Applicant:

SUMMARY OF THE INVENTION

> **[0014]** A Home Network Server is used in a home to network various clients such as PCs, sensors, actuators, and other devices. It also provides the Internet connection to the various client devices in the Home Network. The Home Network Server also provides a firewall to prevent unauthorized access to the Home Network from the Internet. The use of a Home Network Server, as opposed to the use of peer-to-peer networking, allows a

> robust operating system to be used. It also allows the users on the Home Network to add additional applications to their PCs without fear of jeopardizing the proper functioning of their Internet security program (firewall) or the distributed computing software. (Although a firewall is not strictly necessary, prudence dictates its use.)

Response - Part 7. Applicant's *Home Network Server* is distinctly different from Ellis's *Server (Network Server)*.

As has been shown, Ellis's ***server 2*** is part of his Network Provider's equipment. As such, its computing resources are not the resources being traded by the PC User for something of value such as Internet access. Instead, it is the resources of ***PC 1*** which are being traded.

In the Applicant's invention, ***Home Network Server 101*** is part of the subscriber's system and is located on the Subscriber's premises. It is the resources of ***Home Network Server 101*** that are being traded for something of value, like subsidized or free Internet access.

Home Network Server 101 has a number of other, important functions, in addition to acting as a proxy server for the Subscriber's Internet access. It provides the computing resources to operate the systems in the Subscriber's home. See Applicant's Application Paragraph 0026:

> **[0026]** Router, Switch, or Hub 102 connects to one or more clients such as PC_1 104 or Sensor/Actuator_1 106. More than one client PC may be used, such as PC_n 105, and more than one Sensor/Actuator may be used, such as Sensor/Actuator_n 107. ***Sensor/Actuators are used to control and/or monitor the home's systems such as HVAC and Security and appliances such as refrigerators, washers, and dryers.***

Another of the advantages of Applicant's ***Home Network Server 101*** is that it can run a robust, stable operating system without requiring the Subscriber to replace his software. At the time Ellis's invention was made, as well as the time the invention of the present Applicant was made, the vast majority of PCs used some version of the Microsoft Windows Operating System, and most PC Applications were available only for such systems. Thus, one advantage of Applicant's uses of ***Home Network Server 101*** is that the Subscriber can continue to use Microsoft Windows on his PCs without jeopardizing the safety of his home's systems.

In Ellis's response to the First Office Action for his application 09/320,660 he made clear the importance of being able to run applications on his ***PC 1*** which were not available to the operating systems typically used by servers. (The First Office Action was mailed October 14, 1999, Ellis's Response is dated April 14, 2000, and the application was eventually issued as U.S. Patent 6,167,428 .)

From Ellis's Response, Page 24 Second Paragraph:

> The Examiner appears to have rejected claims 27-41 because of a belief that UNIX and NT servers can be run on personal computers and can be made to function temporarily as a master personal computer or as a slave personal computer, as similarly recited in claims 27-41. However, a UNIX or an NT server functions as a server, not as a master personal computer or as a slave personal computer, which require applications not found in UNIX or NT operating systems. Therefore, Applicant submits that neither Seti@home nor a UNIX or an NT server running on personal computers discloses, teaches or suggests: .....

Ellis then discusses how this relates to his claims. However, the importance of being able to run standard PC applications on Ellis's ***PC 1*** has been established.

In contrast, the value of Applicant's ***Home Network Server 101*** is precisely its ability to use a stable, reliable Operating System. As was previously noted, at the time Ellis's invention was made, as well as the time the invention of the present Applicant was made, the vast majority of PCs used some version of the Microsoft Windows Operating System, and most PC Applications were available only for such systems. Hence the value of having ***Home Network Server 101*** being able to run a stable, reliable Operating System.

Thus, Ellis's clarification of his invention made in his Response teaches away from the invention of the present Applicant and further shows how Applicant's ***Home Network Server 101*** is distinctly different from Ellis's ***Server (Network Server) 2*** as well as Ellis's ***PC 1*** personal computer.

(b) one or more home network client devices; (Col 13 lines 8-29, Figure 9)

The PCs shown in Ellis Figure 9 are not home network client devices. They are networked PCs participating in parallel processing. According to Ellis Column 6 lines 49-53:

> FIG. 9 is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a system architecture for conducting a request imitated by a PC for a search using parallel processing means that utilizes a number of networked PC's.

(Presumably, Ellis meant "a request ***initiated*** by a PC" and not "a request ***imitated*** by a PC.")

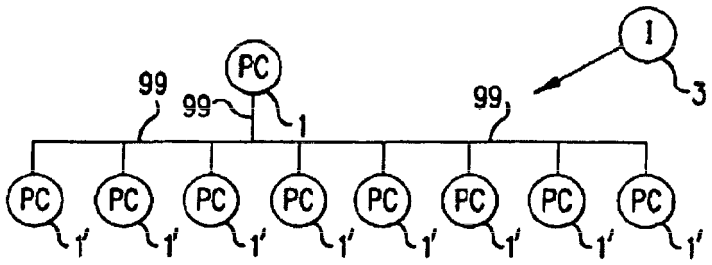

FIG.9

Applicant's invention does not use the resources of the Home Network clients for its distributed computing agreement. It uses the unused resources of ***Home Network Server 101***.

(c) an Internet connection; (Col 8 lines 7-10, Col 13 lines 4-7, Figure 1 item 3)

Ellis Figure 1 Item 3

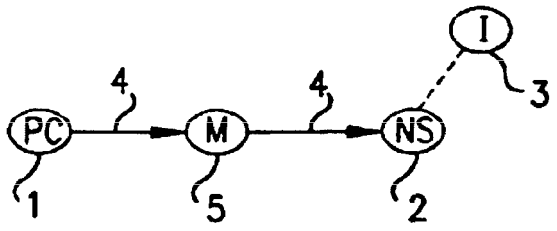

FIG.1

Both Ellis and present Applicant use the Internet. However, as detailed in Response - Part 5, Ellis's **Network Server 2** is part of the Network Provider, not Subscriber's **PC 1**. In addition, most people consider their Internet connection to start at the point where they connect to their Internet Service Provider, which is probably why it's called an ***Internet Service Provider***. Applicant has followed this convention, Ellis has not.

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whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused. (Col 7 lines 38-48, Col 10 lines 1-6)

Both Ellis and present Applicant receive something of value for the use of otherwise-unused computing resources. However, Ellis's computing resources are provided by the Subscriber's ***PC 1*** while present Applicant provides the otherwise-unused computing resources of Subscriber's Home ***Network Server 101***, which Ellis lacks. The advantage of Applicant's system has been discussed in Response - Part 7 above.

To summarize Applicant's response to Examiner's rejection of Claims 1 and 3:

1. Ellis does not show a Home Network Server. Ellis's ***server 2*** is part of the Internet Service Provider's equipment and is not in the Subscriber's home.
2. As such, its computing resources are not the resources being traded by the PC User for something of value such as Internet access. Instead, it is the resources of ***PC 1*** which are being traded.
3. Ellis's financial arrangement requires that the PC User and the Network Provider be different entities.
4. The PCs shown in Ellis Figure 9 are not home network client devices. They are networked PCs participating in parallel processing. Applicant's invention does not use the resources of the Home Network clients for its distributed computing agreement. It uses the resources of ***Home Network Server 101***.

As per claims 2 and 4, Ellis discloses a distributed computing system further comprising:

(a) a first firewall between said Internet connection and said home network server; Ellis teaches the concept of supporting the structure of inserting a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

(b) a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network server. (Col 16 lines 33-42, Col 19 lines 19-25)

While both Ellis and Applicant recognize the value of firewalls, Ellis does not use a home network server. Column 19 lines 25-32, Column 16 lines 33-42, and Column 19 lines 25-32 refer to Ellis Figure 10A – Figure 10I, all of which show ***Server 2*** and ***Internet 3***, which as has been previously discussed, is part of the Network Provider, not Subscriber's ***PC 1***.

Furthermore, Claim 2 is dependent on Claim 1 and Claim 4 is dependent on Claim 3. Applicant believes Examiner's rejection of Claim 1 and Claim 3 has been traversed, so that Examiner's rejection of Claim 2 and Claim 4 has likewise been traversed.

Applicant wishes to note the following:

Part 8. Ellis's preference for a network architecture that physically clusters PCs together teaches away from Applicant's invention which teaches the value of having Home Network Servers located in widely different geographic areas in order to distribute the load on electric utility companies.

Column 20 line 50 to Column 21 line 18:

The individual user PC's can be connected to the Internet (via an Intranet)/Internet II/WWW or successor, like the MetaInternet (or other) network by any electromagnetic means, with the speed of fiber optic cable being preferred, but hybrid systems using fiber optic cable for trunk lines and coaxial cable to individual users may be more cost effective initially, but much less preferred unless cable can be made (through hardware and/or software and/or firmware and/or other component means) to provide sufficiently broad bandwidth connections to provide unrestricted throughput by connected microprocessors. Given the speed and bandwidth of transmission of fiber optic or equivalent connections, conventional network architecture and structures should be acceptable for good system performance, making possible a virtual complete interconnection network between users.

However, the best speed for any parallel processing operation should be obtained, all other things being equal, by utilizing the available microprocessors that are physically the closest together. Consequently, as shown previously in FIG. 8, the network needs have the means (through hardware and/or software and/or firmware and/or other component) to provide on a continually ongoing basis the capability for each PC to know the addresses of the nearest available PC's, perhaps sequentially, from closest to farthest, for the area or cell immediately proximate to that PC and then those cells of adjacent areas.

Network architecture that clusters PC's together should therefore be preferred and can be constructed by wired means. However, as shown in FIG. 11, it would probably be optimal to construct local network clusters 101 (or cells) of personal computers 1' by wireless 100 means, since physical proximity of any PC 1 to its closest other PC 1' should be easier to access directly that way, as discussed further below. Besides, it is economically preferable for at least several network providers to serve any given geographic area to provide competitive service and prices.

Column 22 lines 38-51:

The FIG. 14 approach to establishing local PC clusters 101 for parallel or other shared processing has major advantage in that it avoids using network computers such as servers (and, if wireless, other network components including even connection means), ***so that the entire local system of PC's within a cluster 101 would operate independently of network servers***, routers, etc. Moreover, particularly if connected by wireless means, ***the size of the cluster 101 could be quite large***, being limited generally

> by PC transmission power, PC reception sensitivity, and local conditions. Additionally, one cluster 101 could communicate by wireless 100 means with an adjacent or other clusters 101, as shown in FIG. 14B, which could include those beyond its direct transmission range.

According to the article listed by Applicant on the Information Disclosure Statement filed with the Application, entitled "**Internet data gain is a major power drain on local utilities**", Tuesday, September 5, 2000 By John Cook. Seattle Post-Intelligencer Reporter, the demand for electric power by large server farms was already beginning to be a problem for electric utilities.

Power-hungry server farms were mentioned in the article *U.S. Power Grid Faces Grim Summer* by James Jelter, Reuters, March 30, 2001 (The complete article can be found at **http://www.bluefish.org/facegrim.htm** and is reproduced in **Appendix B.**)

> In California, severe energy shortages have dragged the state's 34 million residents through four days of rolling blackouts so far this year, and state officials warn there are more to come. .....
>
> But that growth rate is much higher in the West, South and parts of the Northeast, the regions experiencing the fastest population growth and hosting the strongest local economies.
>
> Supporting those economies are a fleet of corporate and home computers and "server farms" — vast warehouses crammed with the computers that run the Internet.
>
> The biggest of these farms use a whopping 120 megawatts around the clock, equal to the energy use of 120,000 homes and enough to merit a new mid-sized plant to serve each facility.

As noted by Applicant in Paragraph 17 in the present Application:

> **[0017]** Since Home Network Servers may be located in widely different geographic areas, the use of Home Network Servers for distributed computing also distributes the load on electric utility companies.

Thus, Ellis's preference for a network architecture that physically clusters PCs together teaches away from Applicant's invention which teaches the value of having Home Network Servers located in widely different geographic areas in order to distribute the load on electric utility companies.

Furthermore, Ellis emphasizes the use of his distributed processing system for performing parallel processing, especially for computational tasks and for performing searches.

Column 9 lines 22-25:

> Parallel processing is defined as one form of shared processing as involving two or more microprocessors involved in solving the same computational problem or other task.

Column 13 lines 4-10

> One of the primary capabilities of the Internet (or Internet II or successor, like the MetaInternet) or WWW network computer would be to facilitate searches by the PC user or other user. As shown in FIG. 9, searches are particularly suitable to multiple processing, since, for example, a typical search would be to find a specific Internet or WWW site with specific information.

In paragraph 0002 of the present Application, Applicant includes distributed storage as a function of distributed computing.

> **[0002]** This invention relates to a distributed computing system. For the purposes of this application the term "distributed computing" includes "distributed storage."

In paragraph 0018 of the present Application, Applicant further includes the use of distributed computing as a distributed server system, making large server farms unnecessary.

> **[0018]** In addition, as CPUs become faster and storage devices such as hard drives and optical storage devices become larger, and fast Internet connections become more widespread, the distributed computing system can also be used as a distributed server system, making large server farms (with their attendant demands on electric utilities) unnecessary.

Both of these applications, taught by Applicant and not by Ellis, reduce the demands on electric utilities made by larger server farms and further distinguish Applicant's invention from Ellis's, and show that Ellis teaches away from Applicant's invention.

As per claim 5, Ellis discloses A method for providing a distributed computing system comprising the steps of:

(a) providing a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

Summary of Applicant's Response:

- The server taught by Ellis is part of the Network Provider's equipment.
- Ellis draws a sharp dividing line between network providers such as internet service providers (ISPs) and PC users.
- Ellis's financial arrangement requires that the PC User and the Network Provider be different entities.
- Ellis's network server's computing resources are not the resources being traded by the PC User for something of value such as Internet access. Instead, it is the resources of PC User which are being traded.

Applicant's Home Network Server is part of the subscriber's system and is located on the Subscriber's premises. It is the resources of the Home Network Server that are being traded for something of value, like subsidized or free Internet access.

Response - Part 1. The definition of *Server* as would have been commonly understood at the time Ellis's invention was made.

Since Ellis has not served as his own lexicographer, the term must be defined as it was commonly used at the time Ellis's invention was made.

A good, commonly used, current definition of server can be found at Wikipedia (http://en.wikipedia.org/wiki/Server):

In computing, a **server** is:

- A computer software application that carries out some task on behalf of users. This is usually divided into file serving, allowing users to store and access files on a common computer; and application serving, where the software runs a computer program to carry out some task for the users. This is the original meaning of the term. Web, mail, and database servers are what most people access when using the internet.

- The term is now also used to mean the physical computer on which the software runs. Originally server software would be located on a mainframe computer or minicomputer. These have largely been replaced by computers built using a more robust version of the microprocessor technology than is used in personal computers, and the term "server" was adopted to describe microprocessor-based machines designed for this purpose. In a general sense, server machines have high-capacity (and sometimes redundant) power supplies, a motherboard built for durability in 24x7 operations, large quantities of ECC RAM, and fast I/O subsystem employing technologies such as SCSI, RAID, and PCI-X or PCI-Express.

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Usage

Sometimes this dual usage can lead to confusion, for example in the case of a web server. This term could refer to the machine which stores and operates the websites, and it is used in this sense by companies offering commercial hosting facilities. Alternatively, *web server* could refer to the software, such as the Apache HTTP server, which runs on such a machine and manages the delivery of web page components in response to requests from web browser clients.

Although Ellis traces its parentage to at least U.S. Application No. 08/980,058 filed Nov. 26, 1997, and possibly even further to provisional application 60/031855, filed Nov. 29, 1996, Applicant believes the Wikipedia definition correctly represents the term as it would have been commonly understood at that time. The full Wikipedia entry for *Server* is reproduced in Appendix A.

Response - Part 2. Ellis uses the terms *Server* and *Network Server* to mean the same thing.

In Column 12 lines 26-33, Ellis refers to Reference Number 2 as ***server 2.***

Such shared processing can continue until the device 12 detects the an application being opened 16 in the first PC (or at first use of keyboard, for quicker response, in a multitasking environment), when the device 12 would signal 17 the network computer such as a ***server 2*** that the PC is no longer available to the network, as shown in FIG. 5B, so the network would then terminate its use of the first PC.

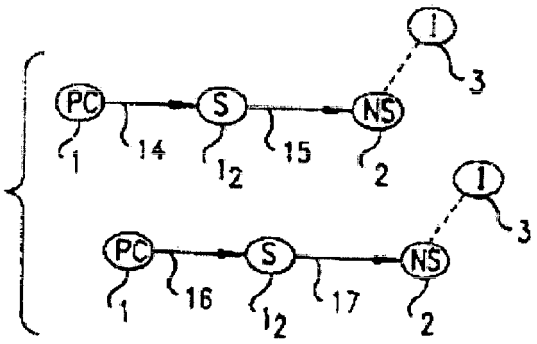

FIG.5

In Column 17 lines 32-41, Ellis refers to Reference Number 2 as ***network 2***.

> Preferably, wireless connections 100 would be extensively used in home or business network systems, including use of a master remote controller 31 without (or with) microprocessing capability, with preferably broad bandwidth connections such as fiber optic cable connecting directly to at least one component such as a PC 1, shown in a slave configuration, of the home or business personal network system; that preferred connection would link the home system to the ***network 2*** such as the Internet 3, as shown in FIG. 10I.

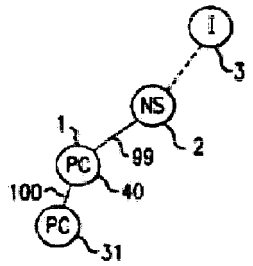

FIG. 10I

Moreover, in the Abstract, Ellis refers to ***network servers (2)*** in a list of items that are clearly being referred to by the reference numbers used in the drawings.

Abstract

> This invention relates to computer networks having computers like personal computers (1) or ***network servers (2)*** with microprocessors linked (5) by transmission means (4, 14) and having hardware, and other means such that at least one parallel processing operation occurs that involve at least two computers in the network. This invention also relates to large networks composed of smaller networks, like the Internet (3), wherein more than one separate parallel processing operation involving more than one set of computers occurs simultaneously and wherein ongoing processing linkages can be established between microprocessors of separate computers connected to the network. This invention further relates to business arrangements enabling the shared used of network microprocessors for parallel and other processing wherein personal computer owners provide microprocessor processing power to a network, in exchange for linkage to other computers including linkage to other microprocessors; the basis of the exchange between owners and providers being whatever terms to which the parties agree.

Indeed, Ellis's choice of labels used in the drawings showing Reference Number 2 is **NS**, which would be an entirely reasonably abbreviation for ***Network Server***.

Response - Part 3. Ellis makes a clear distinction between the *PC User* and the *Network Provider* (also called *Internet Service Provider*).

Ellis draws a sharp dividing line between network providers such as internet service providers (ISPs) and PC users. From Column 7 lines 37-47:

> Unlike existing one way functional relationships between ***network providers such as internet service providers*** (often currently utilizing telecommunications networks for connectivity) and ***PC users***, wherein the ***network provider*** provides access to a network like the Internet for a fee (much like cable TV services), this new relationship would recognize that the ***PC user*** is also providing the ***network*** access to the ***user's PC*** for parallel computing use, which has a similar value. The PC thus both provides and uses services on the network, alternatively or potentially even virtually simultaneously, in a multitasking mode.

Column 7 Line 66 – Column 8 line 28:

> For this new network and its structural relationships, ***a network provider*** is defined in the broadest possible way as any entity (corporation or other business, government, not-for-profit, cooperative, consortium, committee, association, community, or other organization or individual) that provides personal computer users (very broadly defined below) with initial and continuing connection hardware and/or software and/or firmware and/or other components and/or services to any network, such as the Internet and Internet II or WWW or their present or future equivalents, coexistors or successors, like the MetaInternet, ***including any of the current types of Internet access providers (ISP's)*** including telecommunication companies, television cable or broadcast companies, electrical power companies, satellite communications companies, or their present or future equivalents, coexistors or successors. The connection means used in the networks of the network providers, including between personal computers or equivalents or successors, would preferably be very broad bandwidth, by such means as fiber optic cable or wireless for example, but not excluding any other means, including television coaxial cable and telephone twisted pair, as well as associated gateways, bridges, routers, and switches with all associated hardware and/or software and/or firmware and/or other components and their present or future equivalents or successors. ***The computers used by the providers include any computers, including*** mainframes, minicomputers, ***servers***, and personal computers, and associated their associated hardware and/or software and/or firmware and/or other components, and their present or future equivalents or successors.

Column 12 lines 34-46:

> In a preferred embodiment, as shown in FIG. 6, there would be a (hardware and/or software and/or firmware and/or other component) signaling device 18 for the ***PC 1*** to indicate or signal 15 to the network the ***user PC's*** availability 14 for network use (and whether full use or multitasking only) as well as its specific hardware/software/firmware/other components) configuration 20 (from a status 19 provided by the PC) in sufficient detail for the ***network or network computer such as a server 2*** to utilize its capability effectively. In one embodiment, the transponder device would be resident in the user PC and broadcast its idle state or other status (upon change or periodically, for example) or respond to a query signal from a network device.

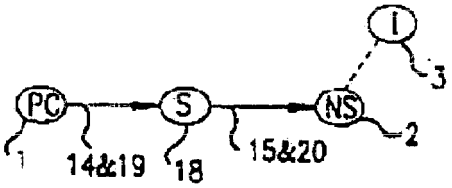

FIG.6

Ellis's financial arrangement is between the PC User and the Network Provider.

Column 10 lines 1-6:

> The ***financial basis*** of the shared use ***between owners/leasers and providers*** would be whatever terms to which the ***parties*** agree, subject to governing laws, regulations, or rules, including payment from ***either party*** to the other based on periodic measurement of net use or provision of processing power.

If the PC User and the Network Provider were the same entity, Ellis's financial arrangement would be only with himself. As a result, Ellis's invention would not be useful, thereby failing to meet the requirements of 35 U.S.C. 101, rendering the Ellis patent invalid.

35 U.S.C. 101 Inventions patentable.

> Whoever invents or discovers any new and ***useful*** process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

However, since issued U.S. patents are presumed valid under 35 U.S.C. 282, Ellis's PC User and Network Provider must be understood as being separate entities.

35 U.S.C. 282 Presumption of validity; defenses. - Patent Laws (First Paragraph):

> A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims; dependent or multiple dependent claims shall be presumed valid even though dependent upon an invalid claim. Notwithstanding the preceding sentence, if a

claim to a composition of matter is held invalid and that claim was the basis of a determination of nonobviousness under section 103(b)(1), the process shall no longer be considered nonobvious solely on the basis of section 103(b)(1). The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting such invalidity.

Response - Part 4. Ellis's *Server 2* is part of the *Network Provider*, not the *PC User*.

The Servers (also referred to in Ellis as Network Servers) are on the ISP side of the line.

Column 6 lines 5-9:

> FIG. 1 is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a meter means which measures flow of computing during a shared operation such as parallel processing ***between a typical PC user and a network provider.***

Column 10 lines 7-14:

> In one embodiment, as shown in FIG. 1, in order for this network structure to function effectively, there would be a meter device 5 (comprised of hardware and/or software and/or firmware and/or other component) to measure the flow of computing power ***between PC 1 user and network 2 provider,*** which might provide connection to the Internet and/or World Wide Web and/or Internet II and/or any present or future equivalent or successor 3, like the MetaInternet.

In the second reproduction of Ellis Figure 1 (below) a line has been added to emphasize Ellis's division between Meter 5 and Network Server 2. Network Server 2 is not in the subscriber's home.

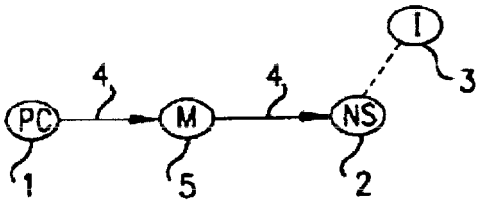

FIG. 1

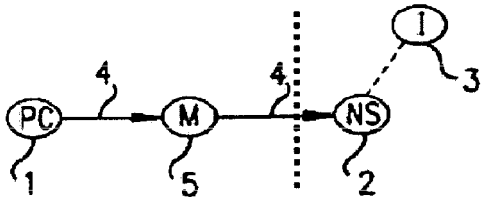

FIG. 1

Response - Part 5. Ellis has drawn a distinction between the Network Provider and the Internet. The Applicant has not drawn such a distinction.

Ellis Figure 1 shows Network Provider 2 as separate from Internet 3.

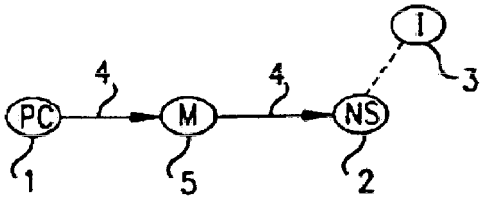

FIG. 1

In Applicant's Figure 1, Modem 103 is shown as connecting to the Internet. There is no distinction made between the Internet Service Provider and the Internet. Applicant states, in Paragraph 0002 of the present Application:

> **[0002]** This invention relates to a distributed computing system. For the purposes of this application the term "distributed computing" includes "distributed storage." **The term "Internet" refers to the current world wide packet data communication network and whatever system may replace it regardless of what name it may be given or what communications protocol it may use. It also includes on-line services which, although they may not consider themselves the "Internet", provide a gateway for their subscribers to the Internet.**

Most people consider their Internet connection to start at the point where they connect to their Internet Service Provider, which is probably why it's called an ***Internet Service Provider***. Applicant has followed this convention, Ellis has not.

Response - Part 6. Applicant acted as his own lexicographer to define *Home Network Server.*

From the application of the present Applicant:

SUMMARY OF THE INVENTION

> **[0014]** A Home Network Server is used in a home to network various clients such as PCs, sensors, actuators, and other devices. It also provides the Internet connection to the various client devices in the Home Network. The Home Network Server also provides a firewall to prevent unauthorized access to the Home Network from the Internet. The use of a Home Network Server, as opposed to the use of peer-to-peer networking, allows a

> robust operating system to be used. It also allows the users on the Home Network to add additional applications to their PCs without fear of jeopardizing the proper functioning of their Internet security program (firewall) or the distributed computing software. (Although a firewall is not strictly necessary, prudence dictates its use.)

Response - Part 7. Applicant's *Home Network Server* is distinctly different from Ellis's *Server (Network Server)*.

As has been shown, Ellis's ***server 2*** is part of his Network Provider's equipment. As such, its computing resources are not the resources being traded by the PC User for something of value such as Internet access. Instead, it is the resources of ***PC 1*** which are being traded.

In the Applicant's invention, ***Home Network Server 101*** is part of the subscriber's system and is located on the Subscriber's premises. It is the resources of ***Home Network Server 101*** that are being traded for something of value, like subsidized or free Internet access.

Home Network Server 101 has a number of other, important functions, in addition to acting as a proxy server for the Subscriber's Internet access. It provides the computing resources to operate the systems in the Subscriber's home. See Applicant's Application Paragraph 0026:

> **[0026]** Router, Switch, or Hub 102 connects to one or more clients such as PC_1 104 or Sensor/Actuator_1 106. More than one client PC may be used, such as PC_n 105, and more than one Sensor/Actuator may be used, such as Sensor/Actuator_n 107. ***Sensor/Actuators are used to control and/or monitor the home's systems such as HVAC and Security and appliances such as refrigerators, washers, and dryers.***

Another of the advantages of Applicant's ***Home Network Server 101*** is that it can run a robust, stable operating system without requiring the Subscriber to replace his software. At the time Ellis's invention was made, as well as the time the invention of the present Applicant was made, the vast majority of PCs used some version of the Microsoft Windows Operating System, and most PC Applications were available only for such systems. Thus, one advantage of Applicant's uses of ***Home Network Server 101*** is that the Subscriber can continue to use Microsoft Windows on his PCs without jeopardizing the safety of his home's systems.

In Ellis's response to the First Office Action for his application 09/320,660 he made clear the importance of being able to run applications on his ***PC 1*** which were not available to the operating systems typically used by servers. (The First Office Action was mailed October 14, 1999, Ellis's Response is dated April 14, 2000, and the application was eventually issued as U.S. Patent 6,167,428 .)

From Ellis's Response, Page 24 Second Paragraph:

> The Examiner appears to have rejected claims 27-41 because of a belief that UNIX and NT servers can be run on personal computers and can be made to function temporarily as a master personal computer or as a slave personal computer, as similarly recited in claims 27-41. However, a UNIX or an NT server functions as a server, not as a master personal computer or as a slave personal computer, which require applications not found in UNIX or NT operating systems. Therefore, Applicant submits that neither Seti@home nor a UNIX or an NT server running on personal computers discloses, teaches or suggests: .....

Ellis then discusses how this relates to his claims. However, the importance of being able to run standard PC applications on Ellis's ***PC 1*** has been established.

In contrast, the value of Applicant's ***Home Network Server 101*** is precisely its ability to use a stable, reliable Operating System. As was previously noted, at the time Ellis's invention was made, as well as the time the invention of the present Applicant was made, the vast majority of PCs used some version of the Microsoft Windows Operating System, and most PC Applications were available only for such systems. Hence the value of having ***Home Network Server 101*** being able to run a stable, reliable Operating System.

Thus, Ellis's clarification of his invention made in his Response teaches away from the invention of the present Applicant and further shows how Applicant's ***Home Network Server 101*** is distinctly different from Ellis's ***Server (Network Server) 2*** as well as Ellis's ***PC 1*** personal computer.

(b) providing one or more home network client devices; (Col 13 lines 8-29, Figure 9)

The PCs shown in Ellis Figure 9 are not home network client devices. They are networked PCs participating in parallel processing. According to Ellis Column 6 lines 49-53:

> FIG. 9 is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a system architecture for conducting a request imitated by a PC for a search using parallel processing means that utilizes a number of networked PC's.

(Presumably, Ellis meant "a request ***initiated*** by a PC" and not "a request ***imitated*** by a PC.")

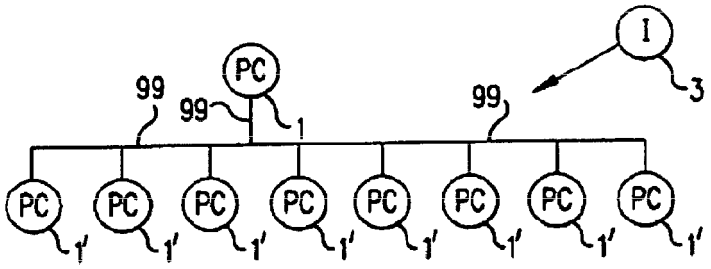

FIG.9

Applicant's invention does not use the resources of the Home Network clients for its distributed computing agreement. It uses the unused resources of ***Home Network Server 101***.

(c) providing an Internet connection; (Col 8 lines 7-10, Col 13 lines 4-7, Figure 1 item 3)

Ellis Figure 1 Item 3

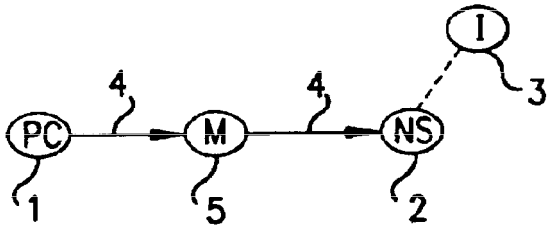

FIG. 1

Both Ellis and present Applicant use the Internet. However, as detailed in Response - Part 5, Ellis's **Network Server 2** is part of the Network Provider, not Subscriber's **PC 1**. In addition, most people consider their Internet connection to start at the point where they connect to their Internet Service Provider, which is probably why it's called an ***Internet Service Provider***. Applicant has followed this convention, Ellis has not.

(d) providing access to the resources of said home network server that would otherwise be unused; (Col 11 lines 55-61, Col 12 lines 17-26, Figure 5)

Both Ellis and present Applicant receive something of value for the use of otherwise-unused computing resources. However, Ellis's computing resources are provided by the Subscriber's ***PC 1*** while present Applicant provides the otherwise-unused computing resources of Subscriber's Home ***Network Server 101***, which Ellis lacks. The advantage of Applicant's system has been discussed in Response - Part 7 above.

(e) providing a first firewall between said Internet connection and said home network Server; Ellis teaches the concept of supporting the structure of inserting a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

While both Ellis and Applicant recognize the value of firewalls, Ellis does not use a home network server. Column 19 lines 25-32 refer to Ellis Figure 10A – Figure 10I, all of which

show ***Server 2*** and ***Internet 3***, which as has been previously discussed, is part of the Network Provider, not Subscriber's ***PC 1***.

(f) providing a second firewall to prevent unwanted interactions between said access to the resources of said home network that would otherwise be unused and said home network server; (Col 16 lines 33-42, Col 19 lines 19-25)

While both Ellis and Applicant recognize the value of firewalls, Ellis does not use a home network server. Column 16 lines 33-42 and Column 19 lines 25-32 refer to Ellis Figure 10A – Figure 10I, all of which show ***Server 2*** and ***Internet 3***, which as has been previously discussed, is part of the Network Provider, not Subscriber's ***PC 1***.

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whereby the subscriber receives something of value in return for said access to the resources of said home network server that would otherwise be unused. (Col 7 lines 38- 48, Col 10 lines 1-6)

Both Ellis and present Applicant receive something of value for the use of otherwise-unused computing resources. However, Ellis's computing resources are provided by the Subscriber's ***PC 1*** while present Applicant provides the otherwise-unused computing resources of Subscriber's Home ***Network Server 101***, which Ellis lacks. The advantage of Applicant's system has been discussed in Response - Part 7 above.

To summarize Applicant's response to Examiner's rejection of Claim 5:

1. Ellis does not show a Home Network Server. Ellis's ***server 2*** is part of the Internet Service Provider's equipment and is not in the Subscriber's home.

2. As such, its computing resources are not the resources being traded by the PC User for something of value such as Internet access. Instead, it is the resources of ***PC 1*** which are being traded.

3. Ellis's financial arrangement requires that the PC User and the Network Provider be different entities.

4. The PCs shown in Ellis Figure 9 are not home network client devices. They are networked PCs participating in parallel processing. Applicant's invention does not use the

resources of the Home Network clients for its distributed computing agreement. It uses the resources of ***Home Network Server 101***.

5. While both Ellis and Applicant recognize the value of firewalls, since Ellis does not use a Home Network Server, his firewall must run in Subscriber's PC (***PC 1***).

Section 3.

For the foregoing reasons, Applicant submits that all objections and rejections have been overcome. Applicant requests that the rejection of pending claims 1-5 be withdrawn and that the application be allowed as filed.

Respectfully submitted,

Jed Margolin
pro se inventor

Jed Margolin Date: April 21, 2005

Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
(408) 238-4564

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Alexandria, VA 22313-1450

on the date below.

Date: April 21, 2005

Inventor's Signature: Jed Margolin

Appendix A – Definition of *Server*

Server

From Wikipedia, the free encyclopedia.

This article is about computer servers. For the food service use, see waiter.

In computing, a **server** is:

- A computer software application that carries out some task on behalf of users. This is usually divided into file serving, allowing users to store and access files on a common computer; and application serving, where the software runs a computer program to carry out some task for the users. This is the original meaning of the term. Web, mail, and database servers are what most people access when using the internet.

- The term is now also used to mean the physical computer on which the software runs. Originally server software would be located on a mainframe computer or minicomputer. These have largely been replaced by computers built using a more robust version of the microprocessor technology than is used in personal computers, and the term "server" was adopted to describe microprocessor-based machines designed for this purpose. In a general sense, server machines have high-capacity (and sometimes redundant) power supplies, a motherboard built for durability in 24x7 operations, large quantities of ECC RAM, and fast I/O subsystem employing technologies such as SCSI, RAID, and PCI-X or PCI-Express.

Contents [hide]

[edit]

Usage

Sometimes this dual usage can lead to confusion, for example in the case of a web server. This term could refer to the machine which stores and operates the websites, and it is used in this sense by companies offering commercial hosting facilities. Alternatively, *web server* could refer to the software, such as the Apache HTTP server, which runs on such a machine and manages the delivery of web page components in response to requests from web browser clients.

[edit]

Server hardware

A server computer shares its resources, such as peripherals and file storage, with the users' computers, called clients, on a network. It is possible for a computer to be a client and a server simultaneously, by connecting to itself in the same way a separate computer would.

Many new devices now come with server capabilities. The X-Internet, Web Services, and Microsoft's .NET initiative all work to make even the smallest system a server.

Many large enterprises employ numerous servers to support their needs. A collection of servers in one location is often referred to as a server farm. It is possible to configure the machines to distribute tasks so that no single machine is overwhelmed by the demands placed upon it (called *load balancing*), and this is often done for hosts that expect tremendous amounts of activity. The terminology can be even more confusing in this case because the client (or user) will connect to a remote host to access the server application, and that server application may need to access other server software and/or another server machine.

Due to the continual demand for ever more powerful servers in ever decreasing spaces, companies such as IBM have developed higher density configurations, the most notable of which is known as the blade server. Blade servers incorporate a number of server computers - sometimes as many as nine - each housed inside a high-density module known as a "blade", within the space typically occupied by a single computer.

[edit]

Server operating systems

The rise of the microprocessor-based server was facilitated by the development of several versions of the Unix operating system to run on the Intel microprocessor architecture, including Solaris, Linux and FreeBSD. The Microsoft Windows series of operating systems also now includes server versions that support multitasking and other features required for servers, beginning with Windows NT. The current Windows Server version is Windows Server 2003.

[edit]

X Window server

The X Window System can cause some confusion in the definition of servers and clients. One might expect that the "server" in X would be the computer in which individual programs are running. In reality, an X server provides access to computer input and output devices, such as monitors, keyboards, and mice. Programs that are running in an X environment connect to the server to gain access to the hardware. In most situations, both the X server, and the X clients (programs) reside on the same computer, but X allows for situations where clients can be running on multiple computers that are miles away.

[edit]

Historical note

Mainframes and minicomputers were originally accessed using dumb terminals, which were unable to carry out any significant processing. This largely ended with the widespread use of personal computers by users.

[edit]

See also

- Mail server
- Web server
- FTP server
- image server
- Central_ad_server
- server log
- streaming media server
- sound server
- peer-to-peer
- client-server model
- History of computing hardware (1960s-present)
- CORBA
- Dedicated server

[edit]

External links

- System support for scalable network servers (*http://www.cs.rice.edu/CS/Systems/ScalaServer/*)
- The C10K problem (*http://www.kegel.com/c10k.html*)
- Discussion "Writing a scalable server" (*http://groups.google.de/groups?group=comp.programming.threads&threadm=580fae16.0312210310.1410bf2b%40posting.google.com*)

Retrieved from "http://en.wikipedia.org/wiki/Server"

Views

- Article
- Discussion
- Edit this page

- History

Personal tools

- Create account / log in

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- Main Page
- Community portal
- Current events
- Recent changes
- Random page
- Help
- Donations

Search

Go Search

Toolbox

- What links here
- Related changes
- Special pages

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Appendix B – Reuters Article on Power Grid

From: http://www.bluefish.org/facegrim.htm

U.S. Power Grid Faces Grim Summer

by James Jelter
Reuters, March 30, 2001

The electricity system supporting the world's biggest economy is old, tired, and in danger of falling apart.

While U.S. regulators, power companies and the public all share blame for the system's neglect, it has taken a major energy crisis in California — the high-tech darling of the U.S. economy — to drive home just how bad things have become.

Former Energy Secretary Bill Richardson summed it up last May, when strong demand and scant supplies triggered a tenfold explosion in Western wholesale power prices: "We are a superpower economically, but we've got a grid that's almost a Third World grid."

California's economically disruptive energy woes highlight a national shortcoming exposed by 11 percent growth in the nation's population this past decade, an explosion of electrical gadgets Americans use at home and the heavy demand for power from the Internet-driven New Economy.

And an expected increase of 15 percent or more in new generation won't come fully online for another two years, leaving much of the nation extremely vulnerable to outages in what promises to be a long — and costly — summer.

Beyond California, there is a growing threat of severe energy shortages across the Western half of the country this summer.

The populous Northeast, though facing less dire shortages than the West, is also grappling with thin supplies, prompting a rush to build new power plants in New York City.

Meanwhile, constraints on the transmission grid continue to hamper the flow of energy in parts of the South.

In California, severe energy shortages have dragged the state's 34 million residents through four days of rolling blackouts so far this year, and state officials warn there are more to come.

The California Independent System Operator, which manages most of the state's grid, predicts shortfalls this summer of up to 6,800 megawatts — enough to power 6.8 million homes — when air conditioning pushes power demand to its annual peak.

That translates into up to 200 hours — nearly three work weeks — of power outages statewide and possibly more if the Golden State suffers an unusually hot summer.

President Bush earlier this month told reporters "The energy crisis we're in is a supply-and-demand issue, and we need to reduce demand and increase supply."

Simply put: the United States has outgrown its power system.

The Energy Information Administration, the U.S. Department of Energy's statistical arm, estimates demand for electricity is growing nationwide at 2.1 percent a year.

But that growth rate is much higher in the West, South and parts of the Northeast, the regions experiencing the fastest population growth and hosting the strongest local economies.

Supporting those economies are a fleet of corporate and home computers and "server farms" — vast warehouses crammed with the computers that run the Internet.

The biggest of these farms use a whopping 120 megawatts around the clock, equal to the energy use of 120,000 homes and enough to merit a new mid-sized plant to serve each facility.

Also contributing to the surge in demand is the flood of electronic appliances filling American homes.

Central air conditioning, VCRs, microwave ovens, automatic garage door openers, programmable lighting and watering systems were novelties in most homes 25 years ago, if they existed at all. Many homeowners today cannot imagine life without them.

The Northwest Power Planning Council, an agency of the states of Idaho, Oregon, Montana and Washington, reported last month that the demand for electricity has grown 24 percent in the past decade while new generation has grown only 4 percent.

"When California is factored in, the gap between demand and supply is even greater," the report said.

Adding to the Northwest's energy worries is a severe drought, shrinking reservoirs behind some of the world's biggest hydroelectric dams to their lowest levels in 25 years and cutting deeply into available supplies.

During years with normal rainfall, hydro-power accounts for about 70 percent of Washington state's electricity.

Natural gas, used to generate about 20 percent of the nation's electricity — and up to 35 percent in California --is also in short supply, the result of several years of mild winters, low demand, and flagging drilling activity.

On top of these fuel shortages, the country is now coming to grips with its failure to build new power plants.

A decade ago, the United States enjoyed a healthy surplus of electricity, prompting a move toward deregulating the electric utility sector by introducing competition to produce a more efficient marketplace and, ultimately, cheaper energy prices.

But uncertainties tied to deregulation discouraged utilities from investing in new generating assets.

At the same time, few regulators could foresee the boom in energy demand unleashed by the technology-driven economy of the 1990s.

Add to this mix widespread public resistance to placing electrical gear anywhere near their neighborhood, and there were not many incentives left to spark power plant construction.

In the Western states, for example, it has been 10 years since a major power plant was brought on line.

Years of neglect also dog the nation's transmission grid, the 203,600-mile high voltage network linking power plants to neighborhood distribution lines.

The grid has seen few changes in 50 years. Designed to serve local utilities, deregulation has encouraged energy marketers to "wheel" their electrons ever greater distances to reach more lucrative markets.

This is putting a huge strain on the system, leading to bottlenecks that often create shortages rather than ease them.

Upgrades to the system have been slow in coming mainly because the transmission rates grid operators can charge are still tightly regulated, leaving them little financial incentive to invest in their aging lines.

Generators, on the other hand, are bombarded by price signals, with soaring wholesale prices screaming a clear, albeit belated, message to build more power plants.

Given the stream of cash being pumped into new power plants, the North American Electric Reliability Council (NERC) predicts between 109,000 and 193,000 megawatts of new generation will be in place by 2004.

James Jelter
U.S. Power Grid Faces Grim Summer
Reuters, March 30, 2001

Seti@home is a project by which a PC user could loan his or her PC to be used to process radio signals received from space. A home computer's CPU cycles are borrowed by an automatic program for the processing of the radio signals. The program that runs on each client computer looks and behaves like a screen saver. It runs only when the machine is idle, at which time the computer's CPU is borrowed to process the radio signals.

The Examiner appears to have rejected claims 27-41 because of a belief that UNIX and NT servers can be run on personal computers and can be made to function temporarily as a master personal computer or as a slave personal computer, as similarly recited in claims 27-41. However, a UNIX or an NT server functions as a server, not as a master personal computer or as a slave personal computer, which require applications not found in UNIX or NT operating systems. Therefore, Applicant submits that neither Seti@home nor a UNIX or an NT server running on personal computers discloses, teaches or suggests:

> at least one of at least two personal computers, when directed by a personal user, functioning temporarily as a master personal computer to initiate and control execution of a computer processing shared operation with at least one other of the at least two personal computers in a network, the shared processing operation including one of parallel processing and multi-tasking processing;
>
> or
>
> at least one other of the at least two personal computers, when idled by the personal user, functioning temporarily as at least one slave personal computer to participate in the execution of a shared computer processing

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/947,801	09/06/2001	Jed Margolin		7358

23497 7590 06/15/2005

JED MARGOLIN
3570 PLEASANT ECHO DRIVE
SAN JOSE, CA 951481916

EXAMINER	
PATEL, CHIRAG R	

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 06/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	09/947,801	MARGOLIN, JED	
	Examiner	Art Unit	
	Chirag R. Patel	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 April 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Arguments

Applicant's arguments filed for claims 1-5 have been fully considered but they are not persuasive.

As per arguments per claims 1 and 3, applicant argues:

1. Ellis does not show a Home Network Server. Ellis's server 2 is part of the Internet Service Provider's equipment and is not in the Subscriber's home.

As per section [0014] in the application, applicant states: A Home Network Server is used in a home to network various clients such as PCs, sensors, actuators, and other devices. It also provides the Internet connection to the various client devices in the Home Network. Ellis does show a Home network server (Figure 2 item 2) and it does provide a Internet connection to various client devices (Figure 2 item 3) As far as the subscriber's home, the Home network server receives the service from the PC. (Col 7 lines 46-47) When a device receives a service, is interpreted by the examiner to mean "subscribing" to a service.

2. As such, its computing resources are not the resources being traded by the PC User for something of value such as Internet access. Instead, it is the resources of PC 1 which are being traded.

The Home Network Server (2) provides the services to the client, which is interpreted as something of value. Per the claim, "something is value" in claims 1 and 3

is interpreted by the examiner as very broad and a variety of subject matter can read on this limitation. Applicant needs to be clear as claiming what the invention is.

3. Ellis's financial arrangement requires that the PC User and the Network Provider be different entities.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., financial arrangement and PC User and network provider being separate entities) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). As described above in section 1 of claims 1 and 3, PC user and network provider are separate entities.

4. The PCs shown in Ellis Figure 9 are not home network client devices. They are networked PCs participating in parallel processing. Applicant's invention does not use the resources of the Home Network clients for its distributed computing agreement. It uses the resources of Home Network Server 101.

The networked PC uses the services provided by the network, wherein network includes the Home Network Server (Col 8 lines 46-47, Figure 2 item 2)

As per claims 2 and 4, applicant argues:

As per claims 2 and 4, Ellis discloses a distributed computing system further comprising:

a first firewall between said Internet connection and said home network server; Ellis teaches the concept of supporting the structure of inse4ing a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

(b) a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network sewer. (Col 16 lines 33-42, Col 19 lines 19-25)

While both Ellis and Applicant recognize the value of firewalls, Ellis does not use a home network server. Column 19 lines 25-32, Column 16 lines 33-42, and Column 19 lines 25-32 refer to Ellis Figure 10A - Figure 10I, all of which show Server 2 and Internet 3, which as been previously discussed, is part of the Network Provider, not Subscriber's PC 1 .

Furthermore, Claim 2 is dependent on Claim 1 and Claim 4 is dependent on Claim 3. Applicant believes Examiner's rejection of Claim 1 and Claim 3 has been traversed, so that Examiner's rejection of Claim 2 and Claim 4 has likewise been traversed.

As mentioned above, Ellis discloses a home server. (Figure 2 item 2) As far as the subscriber's home, the Home network server receives the service from the PC. (Col

7 lines 46-47) When a device receives a service, is interpreted by the examiner to mean "subscribing" to a service.

Per the discussions above, Ellis disclosure meet the limitations as specified in claims 1-4.

As per claim 5: Claim 5 includes the same subject matter as claims 1-4, and the above discussion is applied to claim 5.

As per part 1, applicant argues: The definition of Server as would have been commonly understood at the time Ellis's invention was made. As per part 2, applicant argues: Ellis uses the terms Server and Network Server to mean the same thing. As per part 3, Ellis makes a clear distinction between the PC User and the Network Provider (also called Internet Service Provider) As per part 4: Ellis Server 2 is part of the Network Provider, not the PC user. As per part 5: Ellis has drawn a distinction between the Network Provider and the Internet. The applicant has not drawn such a distinction.

As per parts 1-5, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Part 6: Applicant acted as his own lexicographer to define Home Network Server. Part 7: Applicant's Home Network Server is distinctly different from Ellis's Server (Network Server).

As per parts 6 and 7, As per section [0014] in the application, applicant states: A Home Network Server is used in a home to network various clients such as PCs, sensors, actuators, and other devices. It also provides the Internet connection to the various client devices in the Home Network. Ellis does show a Home network server (Figure 2 item 2) and it does provide a Internet connection to various client devices (Figure 2 item 3) As far as the subscriber's home, the Home network server receives the service from the PC. (Col 7 lines 46-47) When a device receives a service, is interpreted by the examiner to mean "subscribing" to a service.

As per part 8, applicant argues: Ellis's preference for a network architecture that physically clusters PCs together teaches away from Applicant's invention which teaches the value of having Home Network Servers located in widely different geographic areas in order to distribute the load on electric utility companies.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., distributing load on electric utility companies, different geographic regions) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Ellis (US 6,167,428).

As per claims 1 and 3, Ellis discloses a distributed computing system comprising:

(a) a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

(b) one or more home network client devices; (Col 13 lines 8-29, Figure 9)

(c) an Internet connection; (Col 8 lines 7-10, Col 13 lines 4-7, Figure 1 item 3)

whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused. (Col 7 lines 38-48, Col 10 lines 1-6)

As per claims 2 and 4, Ellis discloses a distributed computing system further comprising:

(a) a first firewall between said Internet connection and said home network server; Ellis teaches the concept of supporting the structure of inserting a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

(b) a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network server. (Col 16 lines 33-42, Col 19 lines 19-25)

As per claim 5, Ellis discloses A method for providing a distributed computing system comprising the steps of:

(a) providing a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

(b) providing one or more home network client devices; (Col 13 lines 8-29, Figure 9)

(c) providing an Internet connection; (Col 8 lines 7-10, Col 13 lines 4-7, Figure 1 item 3)

(d) providing access to the resources of said home network server that would otherwise be unused; (Col 11 lines 55-61, Col 12 lines 17-26, Figure 5)

(e) providing a first firewall between said Internet connection and said home network Server; Ellis teaches the concept of supporting the structure of inserting a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

(f) providing a second firewall to prevent unwanted interactions between said access to the resources of said home network that would otherwise be unused and said home

network server; (Col 16 lines 33-42, Col 19 lines 19-25)

wbereby the subscriber receives something of value in return for said access to the resources of said home network server that would otherwise be unused. (Col 7 lines 38-48, Col 10 lines 1-6)

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kraft et al. (US 6,112,225) discloses a system for processing a computer executable task by dividing it into subtasks and distributing the subtasks to remote computer on a network. Crosetto (US 5,590,284) discloses a parallel processing data network of master and slave transputers controlled by a serial control network. Ellis (US 2001/0011294 and US 2001/0013049) discloses a distributed

processing system that performs parallel processing among various computers across a network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag R. Patel whose telephone number is (571)272-7966. The examiner can normally be reached on Monday to Friday from 7:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia, can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Telephone Interview Summary

Application Serial No. 09/947,801

Filed: 09/06/2001

For: DISTRIBUTED COMPUTING SYSTEM

Examiner: Chirag R. Patel Art Unit: 2141

In re Application of Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
Phone: 408-238-4564

Telephone Interview Date: 8/5/2005

Participants: Examiner Chirag R. Patel, pro se Applicant Jed Margolin

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir,

The following Interview Summary is submitted as required by Rule 713.04 ***Substance of Interview Must Be Made of Record [R-2] - 700 Examination of Applications*** paragraph (b)

Background

Application 09/947,801 ***Distributed Computing System*** filed September 6, 2001.

The application was docketed to five Examiners. The last one (Examiner Chirag R. Patel) issued the First Office Action on January 26, 2005.

The Examiner rejected all the claims solely under 35 U.S.C. §102(e) as being anticipated by Ellis (US 6,167,428). It was clear that the Examiner did not understand my invention and had misinterpreted Ellis.

I filed a response on April 21, 2005 where I respectfully pointed out the Examiner's errors.

The Second Office Action was issued June 15, 2005.

The Examiner mistakenly insisted (again) that Ellis's ***Network Server 2*** is a ***Home Network Server*** as defined in my application and rejected all the claims again.

He made the rejection Final.

The Examiner stated, " Applicant's arguments filed for claims 1-5 have been fully considered but they are not persuasive."

While he may have considered them, he did not respond to them in his rejection.

Among other things, he came up with a new rejection that was not based on my having amended the claims (I didn't amend the claims) and was not based on new prior art. The Patent Rules say the Examiner is supposed to give the Applicant the opportunity to respond to new rejections under these circumstances.

He also came up with a novel definition of the term ***subscribing*** that is not supported by the way I used it in my application. I clearly used the common meaning of the term.

I called the Examiner on Monday, July 25, 2005. He refused to conduct or schedule a telephone interview. He refused to withdraw making the Second Office Action final. He refused to discuss the case at all. He said he did things only in writing. He said to file an After Final Response. I pointed out that an After Final Responses costs $395 and I would not do that since he had improperly made the Second Office Action final. He said I could send him a fax and he gave me what he said was his personal fax number (571-273-7963). He said that sending him the fax would not trigger the $395 fee for filing a submission after final rejection.

I said I would send him the fax he had requested and call him the next week to discuss it.

The next day (Tuesday, July 26, 2005) I called him to make sure he had gotten the fax. He said he hadn't. It turned out he had given me the wrong fax number. His correct fax number is 571-273-7966. (The last four digits are the same as his voice number.) He also, for the first time, characterized the fax as "talking points."

I called him on Wednesday, August 3, 2005 to talk about it.

He refused to talk about it again. He said to file an After-Final Response. When I protested his refusal to talk about it, especially after he had characterized the fax that he had asked for as *Talking Points*, he terminated the conversation.

An After-Final Response costs $395, which is the same as filing an RCE (Request for Continued Examination). Given his blatant unfairness and his refusal to follow the Rules, this is unacceptable especially in view of Rule 408 which strongly encourages Examiners hold telephone interviews with Attorneys. I assume this applies to pro se Applicants as well. If I am wrong, please correct me. I am sure other Independent Inventors will want to know.

Afterwards (also Wednesday, August 3) I called his supervisor, SPE Rupal Dharia (571-272-3880), got his voicemail, and left a message. It has been my experience that SPE Dharia does not answer his phone and does not return messages.

I called SPE Dharia's supervisor, Group Supervisor Jack B. Harvey (571-272-3896), with the same result. I called Group Director Peter Wong's office (571-272-2100), and spoke to one of his administrative assistants.

I explained that, among other things, Examiner Patel had issued a new rejection in the Second Office Action that was not based on my having amended the claims and was not based on new prior art. By making the Office Action Final he had unfairly deprived me of the opportunity to respond to the new rejection. I also explained that he had come up with his own definition of a term that was not supported by my application.

I told her that my attempts to contact his supervisor (SPE Dharia) had been unsuccessful because SPE Dharia does not answer his phone and does not return phone calls.

She promised to have SPE Dharia return my phone call. He never called me.

The next day I called the usual suspects again. Again, neither SPE Dharia nor Group Supervisor Harvey were answering their phones or returning their calls.

When I called Group Director's office I spoke to another administrative assistant (Janine), who also promised to have SPE Dharia call me.

She did better than that. She had Examiner Patel call me.

The Telephone Interview with Examiner Chirag R. Patel Friday 8/5/2005

I started by discussing the points I had raised in my Informal Response to the Second Office Action. Since Examiner Patel has refused to enter this material into the File Wrapper I am including it in this summary for the following reasons:

1. This material is relevant to the advancement of the case.
2. It was discussed and referenced extensively in our telephone discussion, especially regarding the Examiner's novel definition of the term ***subscribing*** and his having issued a rejection not based on my having amended the claims or on new prior art and improperly making the Second Office Action final.

After getting off to a somewhat rocky start, we had what seemed to be a productive conversation.

I explained in simpler terms what my invention was and how it was different from Ellis. He asked questions that suggested he finally understood my invention and in particular, that my Home Network Server is distinctly different from Ellis's Network Server NS2.

We discussed how my invention is different from Ellis.

1. My Home Network Server is a server in a subscriber's home. The Home Network Server has clients in the home such as sensors used in running the home (fire and burglar alarm functions, furnace control, etc.) and PCs. The Home Network Server also acts as a Proxy Server for access to the Internet.

Ellis's Server (NS 2) is part of the ISP's equipment. If you have Dial-up service you are connected to the ISP's Dial-up server, so NS2 would be a Dial-up Server. If you have DSL, then your DSL line would be the ISP's DSL Server, and NS2 would be a DSL Server. For those with

High Speed Internet over Cable, the subscriber's Cable Modem would be talking to a server operated by the Cable TV system which would be the ISP.

2. In my invention, it is the otherwise unused resources (CPU cycles and storage) of the Home Network Server that are traded for something of value in an arrangement with a contracting company which may or may not also be the ISP. The subscriber is nominally the home owner and owns the Home Network Server.

In Ellis, the distributed computing is done in the User's PC, not in the ISP's Server (NS2).

3. In my invention, the Home Network server is controlling the Home so it is essential that it use a robust and reliable Operating System, which rules out the operating systems currently used by most PCs. By using only the Home Network Server for distributing computing, the User's PCs can continue to use the current operating systems thereby preserving his investment in the software that requires those operating systems.

Ellis stresses the need for the system performing distributed computing to use the standard operating systems used by most PCs.

4. My Home Network Server acts as a typical server as opposed to the method used in Peer-to-Peer Networking where the PCs may, at times, swap the roles of Server and Client.

5. The otherwise unused computing resources of my Home Network Server that can be used for distributed computing include CPU cycles and storage. Using the Home Network Server's storage capabilities makes it possible to create Web sites whose pages are redundantly stored on several Home Network Servers for increased reliability and which makes it unnecessary to use the large Server Farms currently in use whose power demands pose a problem for electric utilities.

As long as the Home Network Servers are uniformly distributed geographically the demand on electric utilities will also be uniformly distributed.

Whether the Home Network Servers are uniformly distributed or not comes under the category of the Statistics of Large Numbers.

Statistically, it is possible that all the Oxygen molecules in a room will end up in one corner of the room and the room's occupants will suffocate. Although the chance of this happening is very small, it is not zero. However, as far as I know, this has never happened because the number of Oxygen molecules in a room is generally extremely large.

Similarly, for a large number of Home Network Servers, it is likely that they will be uniformly distributed (unless Marketing screws up).

Ellis discusses only CPU cycles to be used for distributed computing and expresses a preference for clusters of PCs located near each other.

6. Ellis's Specification is ridiculously broad. For example, Ellis wants to own Distributed Computing using organic computers. The Human brain is frequently considered an organic computer.

Consider the case where people form a team to work together on a task. Each person performs a part of that task. They are paid for performing that task. The team must determine the identity and reliability of the customer whose task they are performing. (Is it a lawful task? Will they get paid?) If they have more than one customer they must make sure not to breach the confidentiality of each customer. In other words, the team members must use a mental Firewall {also known as good business judgment }.

Therefore, anyone forming such as team is infringing on the Ellis patent. {That includes the Patent Office whose many departments perform different tasks in order to process each Patent Application.}

My invention is limited to Home Network Servers. It does not apply to cell phones, TVs, video games, or your own brain.

7. I proposed to amend the phrase in Claim 1, Claim 3, and Claim 5 "***something of value***" to "***something of value from a contracting company***" if it would result in the application being allowed. He seemed receptive to my offer to amend the claims but said he did not have the authority to negotiate the deposition of the application.

8. I asked him if he had ever had a pro se Applicant before, and he said, "no." He also said that he had never talked to an Applicant's attorney.

9. The Examiner thanked me for clarifying my invention and distinguishing it from Ellis, and agreed to talk to his supervisor who has the authority to negotiate the disposition of the application. The Examiner stated he would do an additional search to see if there is other Prior Art relevant to my invention.

10. A conference telephone interview with SPE Dharia was subsequently arranged for Tuesday, August 9, 2005 for 2:00 pm (Eastern).

As noted, my Informal Response of July 25, 2005, is to be incorporated in this Summary for the reasons stated and follows the customary boiler plate.

Respectfully submitted,

Jed Margolin
pro se inventor
August 12, 2005

Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
(408) 238-4564

I hereby certify that this correspondence is being faxed to the Central Fax Number 571-273-8300.

Date: August 12, 2005

Inventor's Signature: Jed Margolin

Duplicate
Fax: 571-273-7966

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Chirag R. Patel Art Unit: 2141 Fax: 571-273-7963

In re Application of Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
Phone: 408-238-4564

Serial No. 09/947,801 Confirmation No. 7358
Filed: 09/06/2001
For: DISTRIBUTED COMPUTING SYSTEM

INFORMAL RESPONSE

Dear Sir:

In response to the Office Action mailed June 15, 2005, please consider the following remarks.

First, Applicant wishes to express his disappointment at the Examiner's refusal to conduct or schedule a telephone interview.

Rejection 1:

The Examiner restated that Ellis uses a Home Network Server and failed to respond to Applicant's argument that such an interpretation is not only incorrect but is impermissible because it would invalidate the Ellis patent.

The Examiner also makes the statement (page 2, Section 1 last line), "***When a device receives a service, is interpreted by the examiner to mean "subscribing" to a service.***" This interpretation is not supported by Applicant's use of the term. Applicant used the common meaning of the term.

Aside from deciding exactly what constitutes a service (is it a digital packet?), what does is mean to subscribe to something?

A good, concise definition of Subscribe can be found at the Compact Oxford English Dictionary at http://www.askoxford.com/concise_oed/subscribe?view=uk

subscribe

• verb 1 (often subscribe to) arrange to receive something, especially a periodical regularly by paying in advance. 2 (subscribe to) contribute (a sum of money) to a project or cause. 3 apply to participate in. 4 (subscribe to) express agreement with (an idea or proposal).

— DERIVATIVES subscriber noun.
— ORIGIN Latin subscribere 'write below'.

From the online version of the American Heritage ® Dictionary of the English Language, Fourth Edition at http://www.yourdictionary.com/ahd/s/s0850100.html:

sub· scribe Listen: [sb-skrb]
v. sub· scribed, sub· scrib· ing, sub· scribes
v. tr.
1. To pledge or contribute (a sum of money).
2. To sign (one's name) at the end of a document.
3. To sign one's name to in attestation, testimony, or consent: subscribe a will.
4. To authorize (someone) to receive or access electronic texts or services, especially over the Internet.

v. intr.
1. a. To contract to receive and pay for a certain number of issues of a publication, for tickets to a series of events or performances, or for a utility service, for example. b. To receive or be allowed to access electronic texts or services by subscription.
2. To promise to pay or contribute money: subscribe to a charity.
3. To feel or express hearty approval: I subscribe to your opinion. See Synonyms at assent.
4. To sign one's name.
5. To affix one's signature to a document as a witness or to show consent.

[Middle English subscriben, to sign, from Latin subscrbere : sub-, sub- + scrbere, to write; see skrbh- in Indo-European roots.] sub· scriber n.

A recent extension of the term ***subscribe*** is where a person subscribes to an Internet mailing list or to a USENET newsgroup for which there is no charge.

From: http://foldoc.doc.ic.ac.uk/foldoc/foldoc.cgi?query=subscribe&action=Search

subscribe
<messaging> To request to receive messages posted to a mailing list or newsgroup. In contrast to the mundane use of the word this is often free of charge.
(1997-03-27)

All of these definitions imply that the subscriber is a person. In all of the instances in the present application it is clear from the context that the subscriber is a person, nominally the owner of the Home Network.

For example, from paragraph 0016 of the present Application:

> [0016] In exchange for the use of the otherwise unused capacity of the Home Network Server for distributed computing, the contracting company provides the subscriber (***nominally the owner of the Home Network***) something of value such as reduced cost of Internet service, free Internet service, or a net payment.

Devices do not subscribe to services (whatever they are) and are therefore, not subscribers.

The current Applicant is entitled to be his own lexicographer. The Examiner is not.

Rejection 2:

The Examiner continues to mischaracterize Ellis's ***NS2*** as a Home Network Server even to the point of calling it ***Home Network Server (2)***, a term which Ellis himself never uses.

In the Examiner's rejection he misquotes Applicant's claims as using the phrase "***something is value***" and not "***something of value***."

> The Home Network Server (2) provides the services to the client, which is interpreted as something of value. Per the claim, "***something is value***" in claims 1 and 3 is interpreted by the examiner as very broad and a variety of subject matter can read on this limitation. Applicant needs to be clear as claiming what the invention is.

The phrase ***"something is value"*** does not appear in Applicant's claims and not even in the Specification. This raises the possibility that the Examiner has not read the application closely enough to give it a fair examination.

In addition, the rejection "Applicant needs to be clear as claiming what the invention is" is, itself, not clear. Presumably, the Examiner is saying "Applicant needs to be clear in claiming what the invention is."

This is a new rejection and is not based on any new references. The Examiner should have raised this rejection in the First Office Action to give Applicant the opportunity to respond to it. In making this rejection final the Examiner has issued a hasty and ill-considered final rejection as described in MPEP 706.07 Final Rejection [R-2]. Indeed, MPEP 706.07(a) specifically says:

> Under present practice, second or any subsequent actions on the merits shall be final, except where the examiner introduces a new ground of rejection that is neither necessitated by applicant's amendment of the claims nor based on information submitted in an information disclosure statement filed during the period set forth in 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p).

Applicant did not amend the claims or submit an additional IDS. The Examiner erred in making the second office action final.

Rejection 3:

If the Examiner is suggesting the claims would be allowed if modified to explicitly state the PC User and ISP are separate entities, Applicant is amenable to amending the phrase in Claim 1, Claim 3, and Claim 5 "***something of value***" to "***something of value from a contracting company***."

Rejection 4:

In rejecting Applicant's argument that:

> the PCs shown in Ellis Figure 9 are not home network client devices. They are networked PCs participating in parallel processing. Applicant's invention does not use the resources of the Home Network clients for its distributed computing agreement. It uses the resources of Home Network Server 101.

the Examined stated:

> ***The networked PC uses the services provided by the network, wherein network includes the Home Network Server (Col 8 lines 46-47, Figure 2 item 2)***

Col 8 lines 46-47 in Ellis are apparently contained in the paragraph Col 8 lines 45-50 which states:

> The principal defining characteristic of the network provided being communication connections (including hardware and/or software and/or firmware and/or other component) of any form, including electromagnetic (such as light and radio or microwaves) and electrochemical (and not excluding biochemical or biological),

> between PC users, optimally connecting (either directly or indirectly) the largest number of users possible, like the Internet (and Internet II) and WWW and equivalents and successors, like the MetaInternet. Multiple levels of such networks will likely coexist with different technical capabilities, like Internet and Internet II, but would have interconnection and therefore would communicate freely between levels, for such standard network functions as electronic mail.

Applicant requests the Examiner explain the relevance of this paragraph to the rejection. There is no mention of a Network Server in the paragraph, much less a Home Network Server.

In addition, Ellis Figure 2 item 2 clearly shows that ***NS(2)*** is part of the Network Provider. Otherwise, Meter ***M(7)*** would serve no useful purpose. According to Ellis Col 10 lines 36-40:

> In another embodiment, as shown in FIG. 2, there also would be a meter device 7 (comprised of hardware and/or software and/or firmware and/or other component) that measures the amount of network resources 6 that are being used by each individual PC 1 user and their associated cost.

Meter ***M(7)*** measures the amount of a Network Server ***NS(2)*** 's resources used by Ellis's PCs. Ellis clearly means to have these resources provided by the Network and not his own Server (if he had one).

On page 5 of the Second Office Action, the Examiner states:

> ***As per parts 1-5, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.***

37 CFR 1.111(b) states:

> (b) In order to be entitled to reconsideration or further examination, the applicant or patent owner must reply to the Office action. The reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action. The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. If the reply is with respect to an application, a request may be made that objections or requirements as to form not necessary to further consideration of the claims be held in abeyance until allowable subject matter is indicated. The applicant's or patent owner's reply must appear throughout to be a *bona*

fide attempt to advance the application or the reexamination proceeding to final action. A general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section.

1) Applicant replied to the Office Action.
2) Applicant's reply was reduced to writing and distinctly and specifically pointed out the Examiner's errors and replied to every ground of objection and rejection in the Office Action. (The Examiner's biggest error was in asserting that Ellis showed a Home Network Server.)
3) Applicant's reply pointed out the specific distinctions that rendered the claims patentable over Ellis. (Applicant uses a Home Network Server, Ellis does not.)
4) Applicant made a *bona fide* attempt to advance the application.

Summary of differences

Ellis teaches a distributed computing system where the Owner of a PC receives something of value from a Network Provider in return for providing the Network Provider access to the unused computing capacity of the Owner's PC. To that end, the task performed by the distributed computer must run under the Operating System used by the Owner's PC. (In Ellis's response to the First Office Action for his application 09/320,660 he made clear the importance of being able to run applications on his ***PC 1*** which were not available to the operating systems typically used by servers.)

Applicant teaches a distributed computing system where the Owner of a Home Network Server receives something of value from a contracting company in return for providing the Contracting Company access to the otherwise unused computing and storage capacity of the Owner's Home Network Server. The Owner's Home Network Server is used in a home to network various clients such as PCs, sensors, actuators, and other devices. To that end, the Operating System used by the Owner's Home Network Servers can use a robust operating system in order to allow the Owner to preserve his investment in the existing software currently used in most PCs whose Operating Sytems are not robust, not reliable, and not secure.

Using Claim 1 as an example:

Applicant	Ellis
1. A distributed computing system comprising: (a) a home network server in a subscriber's home; (b) one or more home network client devices; (c) an Internet connection;	No Home Network Server is Shown. The Network Servers that are shown belong to the Internet Service Provider.
whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused.	The subscriber receives something of value in return for access to the computing resources of User's PC. The network clients (including PCs) of present Applicant's invention are not used for distributed computing by the Internet Service Provider.

Examiner's additional Blanket Rejection:

In replying to Applicant's observation that:

> As per part 8, applicant argues: Ellis's preference for a network architecture that physically clusters PCs together teaches away from Applicant's invention which teaches the value of having Home Network Servers located in widely different geographic areas in order to distribute the load on electric utility companies.

Examiner responded:

> *In response to applicant's argument that the references fall to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., distributing load on electric utility companies, different geographic regions) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).*

Applicant does not believe Examiner's suggestion that Applicant's claims should include a limitation specifying the exact method by which Applicant's invention distributes the load on electric utility companies is a bona fide attempt to advance the application.

Respectfully submitted,

Jed Margolin
pro se inventor
July 25, 2005

Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
(408) 238-4564

I hereby certify that this correspondence is being faxed to the fax number (571-273-7963) provided by the Examiner in a telephone conversation on 7/25/05 on the date below.

Date: July 25, 2005

Inventor's Signature: Jed Margolin

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Telephone Interview Summary

Application Serial No. 09/947,801

Filed: 09/06/2001

For: DISTRIBUTED COMPUTING SYSTEM

Examiner: Chirag R. Patel Art Unit: 2141

In re Application of Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
Phone: 408-238-4564

Telephone Interview Date: 8/9/2005

Participants: Examiner Chirag R. Patel,
Primary Examiner Frantz Jean, Group 2151,
pro se Applicant Jed Margolin

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir,

The following Interview Summary is submitted as required by Rule 713.04 ***Substance of Interview Must Be Made of Record [R-2] - 700 Examination of Applications*** paragraph (b)

Background

In a telephone interview with Examiner Patel on 8/5/2005, Examiner Patel appeared to understand how my invention is different from prior art and, in particular, how my Home Network Server is different from the Network Server NS2 in Ellis. Examiner Patel scheduled the present conference interview to include his supervisor SPE Dharia because SPE Dharia has the authority to negotiate the disposition of the case. My summary of the 8/5/2005 interview was filed 8/12/2005. As of this day, Examiner Patel's Summary of the interview has not appeared in the File Wrapper as accessed by Private PAIR.

The present interview was scheduled for Tuesday August 9, 2005, at 2:00pm . Since I am in California, to prevent confusion all times are Eastern.

The Telephone Interview with Examiner Chirag R. Patel and Primary Examiner Frantz Jean Tuesday 8/9/2005

On Tuesday, August 9, 2005, Examiner Patel called at approximately 1:00pm to tell me the interview had been moved to 3:00pm . (I wasn't expecting anyone to call me at that time and my phones were still turned off. I found Examiner Patel's messages on my answering machine.)

3:00pm came and went and they did not call. They finally called at 3:30pm. That's when I learned that this conference interview would not be with SPE Dharia. It was to be with Primary Examiner Frantz Jean, who is not a SPE. He is a Primary Examiner in another group (Group 2151, Phone number 571-272-3937). He assured me that he had the authority to negotiate. I didn't ask when and why the switch was made or how much time PE Jean had spent reading the File Wrapper but my impression was that he was doing this interview cold, with no preparation.

That's when Examiner Patel turned into his Evil Twin. Perhaps he had talked to his friend, Examiner El Hady, again. (See FW Search Notes 6/15/2005 "**EL HADY NABIL - discussed how to respond to applican'ts arguments 6/9/2005.**")

Examiner Patel said that he had only listened to me on Friday and had not changed his opinion about my invention. Basically, he had only pretended to have a serious interview.

He again informed me that he would consider my arguments only if I filed a Formal After Final Response ($395). He also refused to enter my Informal Response into the File Wrapper.

At one point PE Jean said that we were just going around in circles because he wanted to talk only about claims and I wanted to talk about Examiner Patel's insistence that my Home Network Server was identical to the Ellis Network Server NS2.

Examiner Patel kept insisting they were the same and I kept explaining how they were different and he steadfastly kept refusing to respond to my arguments.

He seems to think that saying, "No, they are the same," without giving any reasons is a valid response.

PE Jean was no help. It is clear that the only reason he was there was to agree with Examiner Patel on the technical matters that he had not read. He advised me to either file a Formal After Final Response ($395) or an RCE (also $395).

I explained that as long as Examiner Patel insisted that my Home Network Server and Ellis's Network Server NS2 were the same there was no point discussing the claims. PE Jean eventually agreed with my assessment.

He said he would work with Examiner Patel in writing the Examiner's Summary of the Interview. I said I would file my own Summary as required by 713.04(b).

I don't know how PE Jean was persuaded to be a party to this sham. He seems like a decent guy.

Examiner Patel and SPE Dharia have made a mockery of the Examination process and are a disgrace to all Examiners and their SPEs.

My patent activities go back to 1977. I have 15 U.S. patents. I have successfully prosecuted my last several patents entirely pro se. I have never before been treated by an Examiner with such a disregard for the Patent Office's own rules, not to mention the discourtesy and duplicitous behavior exhibited by Examiner Patel.

I suspect Examiner Patel's behavior may be due to SPE Dharia's lack of supervision and help. Otherwise, why would Examiner Patel have to turn to Examiners in other groups for help? In addition to PE Jean, Examiner Patel asked Mr. Nabil El Hady for help in responding to the arguments I filed in my response to the First Office Action. (See FW Search Notes 6/15/2005 **"EL HADY NABIL - discussed how to respond to applican'ts arguments 6/9/2005**.")

My numerous attempts to contact SPE Dharia were unsuccessful. He never answered the telephone or returned my messages.

Examiner Patel should be asked why he scheduled a conference telephone interview specifically to include an Examiner with the authority to negotiate the disposition of the case if he had already decided there was nothing to negotiate.

Respectfully submitted,

Jed Margolin
pro se inventor
August 19, 2005

Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
(408) 238-4564

I hereby certify that this correspondence is being faxed to the Central Fax Number 571-273-8300.

Date: August 19, 2005

Inventor's Signature: Jed Margolin

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/947,801	09/06/2001	Jed Margolin		7358

23497 7590 08/29/2005

JED MARGOLIN
3570 PLEASANT ECHO DRIVE
SAN JOSE, CA 951481916

EXAMINER	
PATEL, CHIRAG R	
ART UNIT	**PAPER NUMBER**
2141	

DATE MAILED: 08/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Interview Summary	Application No.	Applicant(s)	
	09/947,801	MARGOLIN, JED	
	Examiner	Art Unit	
	Chirag R. Patel	2141	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Chirag R. Patel*. (3)*Frantz Jean*.

(2) *Jed Margolin*. (4)_____.

Date of Interview: *09 August 2005*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *1-5*.

Identification of prior art discussed: *See Continuation Sheet*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: _____.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)
In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Identification of prior art discussed:

The following was discussed of claims 1-5 in light of the applicant's disclosure (09/947801) vs. disclosure of Ellis (US 6,167,428):

a) Applicant argued that home network server of Ellis is different from his invention.

Examiner pointed out Ellis's home network server is the same as applicant's invention in that it provides a connection to the internet and one or more home network client devices that participates in the shared computer processing.

b) Applicant agued that home network server does contain a robust reliable operating system and is a proxy server, and network servers are located in widely different geographic areas to distribute load on electric companies, wherein server stays as a server and does not swap roles between being a client a server. Applicant also proposed an amendment to from "something of value" to "something of value from a contracting company"

Examiner pointed out that these limitations that applicant are arguing about are not recited in the claimed language .

c) The applicant stated the examiner has not responded to ALL of the arguments.

Examiner pointed out that he responded to ALL of the arguments and kept the same prior art Ellis (US 6,167,428) during the prosecution of the application.

d) agreement with respect to the claims 1-5 was not reached.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Telephone Interview Summary

Application Serial No. 09/947,801

Filed: 09/06/2001

For: DISTRIBUTED COMPUTING SYSTEM

Examiner: Chirag R. Patel Art Unit: 2141

In re Application of Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
Phone: 408-238-4564

Telephone Interview Date: 8/25/2005

Participants: SPE Rupal Dharia,
Examiner Chirag R. Patel,
Primary Examiner Frantz Jean, Group 2151,
pro se Applicant Jed Margolin

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir,

The following Interview Summary is submitted as required by Rule 713.04 ***Substance of Interview Must Be Made of Record [R-2] - 700 Examination of Applications*** paragraph (b).

Telephone Interview with SPE Rupal Dharia,
Examiner Chirag R. Patel, and
Primary Examiner Frantz Jean
Thursday 8/25/2005

The main issues to be discussed were:

1. What is a Subscriber?

2. Whether my Home Network Server 101 is the same as Ellis' Network Server NS2.

What Is a Subscriber

I explained that my application clearly shows that a *Subscriber* is a person, nominally the owner of the Home Network Server, and that common usage of the term *Subscriber* indicates that a *Subscriber* is a person. I read from the dictionary definitions of ***Subscribe*** as provided in my Informal AF Response July 25, 2005 which is incorporated in my ***Summary of Telephone Interview Date: 8/5/2005*** and which is listed in the File Wrapper as ***8/12/2005 Miscellaneous Incoming Letter***.

SPE Dharia insisted that a *Subscriber* can be a device such as a computer, and claims that his computer regularly *subscribes* to different newsletters. I asked if his computer did this on its own or if he had instructed it to do this but I did not get an answer.

That brought up the subject of defining other words, such as ***home***. SPE Dharia asserts that his office at the Patent Office is his *home* even though he owns a house.

I explained that when words can be defined as being anything the user wishes, then words have no meaning at all.

Whether my Home Network Server 101 is the same as Ellis' Network Server NS2

I pointed out that in Ellis Figure 1, Meter M5 is located between PC1 and Network Server NS2 and that in Ellis Figure 2 Meter M7 is located between PC1 and Network Server NS2.

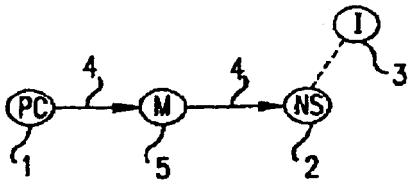

FIG.1

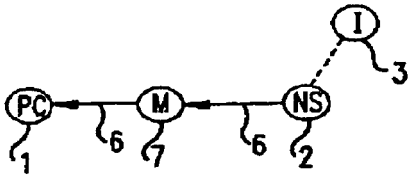

FIG.2

I explained that, according to Ellis, it is the computing resources of PC1 that are used for distributed computing for which Ellis receives payment of one kind or another. Network Server NS2 is part of the ISP's equipment and is therefore not a Home Network Server 101 as taught in my application.

I asked SPE Dharia several times which device's computing resources were used in Ellis for distributed computing for which Ellis received payment of one kind or another. SPE Dharia consistently gave evasive answers and finally announced he had already answered my question. I asked SPE Dharia why Ellis would put a meter for measuring the flow of network resources between PC1 and Server NS2 if NS2 was Ellis' own server. SPE Dharia said, "I don't know."

If Ellis' Network Server NS2 were the same as my Home Network Server 101, then Ellis's financial arrangement would be with himself. If Ellis' Network Server NS2 was part of the ISP equipment, then Ellis would have persuaded the ISP to pay him for using their own equipment. Either interpretation would render Ellis' patent invalid.

I also pointed out that Ellis' specification can be interpreted as including Distributed Computing using organic computers.

1. The human brain is frequently considered an organic computer.

2. The three Examiners participating in this Interview were working together on a task.

3. They are paid for performing that task.

4. They were using their knowledge and experience to determine the validity of the information being discussed (Ellis' Firewall).

Therefore, they were infringing Ellis' patent.

SPE Dharia agreed!

I informed him that such human activities had been going on for quite some time, long before Ellis filed his Application, and therefore constituted prior art to invalidate Ellis's patent.

However, since issued patents are presumed to be valid, such an interpretation is not permissible, along with the other overly broad interpretations he had given to Ellis.

SPE Jean brought up the subject of my Claims, but since SPE Dharia insisted that my Home Network Server was the same as Ellis' Network Server NS2 there was obviously no point in discussing the claims.

Examiner Patel was silent except for the beginning ("Hello") and the end ("Bye") of the Interview.

Conclusion

Since SPE Dharia insists on defining all words as he sees fit no agreement on any issue was reached nor was any agreement possible because a home network server in a subscriber's home may comprise:

said SPE Dharia (an organic *computer*);

a PC (a *subscriber*) that selects at its own discretion newsletters for said SPE Dharia to read;

SPE Dharia's office at the Patent Office (which he considers his *home*);

whereas when said SPE Dharia is not reading said newsletters he is infringing on the Ellis patent by:

conferring with colleagues on cases (*distributed computing*);

deciding on the relevance of the information being discussed (*firewall*); and

getting paid for it (*financial arrangement*).

While it is commendable for a Boss to support an employee even when he has made a mistake, this is ridiculous.

Respectfully submitted,

Jed Margolin
pro se inventor
August 25, 2005

Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
(408) 238-4564

I hereby certify that this correspondence is being faxed to the Central Fax Number 571-273-8300.

Date: August 25, 2005

Inventor's Signature: Jed Margolin

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/947,801	09/06/2001	Jed Margolin		7358

23497 7590 08/30/2005

JED MARGOLIN
3570 PLEASANT ECHO DRIVE
SAN JOSE, CA 951481916

EXAMINER	
PATEL, CHIRAG R	
ART UNIT	**PAPER NUMBER**
2141	

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Interview Summary	Application No.	Applicant(s)	
	09/947,801	MARGOLIN, JED	
	Examiner	Art Unit	
	Chirag R. Patel	2141	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Chirag R. Patel / Examiner*.

(2) *Rupal Dharia / SPE*.

(3)*Frantz Jean / Primary Examiner*.

(4)*Jed Margolin / Pro-se Applicant*.

Date of Interview: *25 August 2005*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☐ No.
If Yes, brief description: _____.

Claim(s) discussed: *1-5*.

Identification of prior art discussed: Ellis (6167428)

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation Sheet*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record
A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)
In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.
All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:
- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:
1) A brief description of the nature of any exhibit shown or any demonstration conducted,
2) an identification of the claims discussed,
3) an identification of the specific prior art discussed,
4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
5) a brief identification of the general thrust of the principal arguments presented to the examiner,
   (The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
6) a general indication of any other pertinent matters discussed, and
7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments:

a) Mr. Margolin discussed that his definition of "home network server", "home", and "subscribe" was different than Ellis's. Mr. Margolin discussed that an individual, not the device is doing the subscribing.

It was discussed that Ellis's network server is the same as disclosure. It was discussed that Ellis discloses a network provider in the broadest possible way as any entity, which included an invididual, that provides personal computer users with initial and continuing connection hardware and/or software and/or firmware and/or other components and/or services to any network. It was discussed that "home" can be very broadly defined and can be interpreted in many different contexts. It was discussed that Ellis's definition of network provider included an individual and thus the definition of subscribe is the same as disclosure. It was also discussed the features of "distributed processing" in figures 1 and 2 of Ellis.

b) Agreement with respect to claims 1-5 was NOT reached.

c) *** After a lengthy discussion, SPE Dharia informed Mr. Margolin the USPTO has granted three (3) telephonic interviews to address his concerns, even though the request was after a final rejection. (MPEP 713.09) SPE Dharia suggested to Mr. Margolin to submit a formal response to the final rejection in writing (i.e. after final, notice of appeal, RCE, etc.)***

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner: Chirag R. Patel Art Unit: 2141

In re Application of Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916
Phone: 408-238-4564

Serial No. 09/947,801 Filed: 09/06/2001

For: DISTRIBUTED COMPUTING SYSTEM

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

Please consider the following remarks.

Pre-Appeal Brief Request for Review

Claims 1 - 5 were rejected solely under 35 U.S.C. §102(e) as being anticipated by Ellis (US 6,167,428 **Personal computer microprocessor firewalls for internet distributed processing.**

Applicant's Invention

Applicant's invention performs distributed computing using the otherwise unused resources of a Home Network Server in a subscriber's home. The Home Network Server has Home Network client devices such as PCs as well as sensors and actuators used for Home Automation. An Internet connection allows the otherwise unused resources of the Home Network Server to be used for distributed computing by a contracting company. In return, the subscriber receives something of value such as reduced cost of Internet service, free Internet service, or a net payment. The advantage of using the Home Network Server for distributed computing is that it allows the distributed computing to be performed in a computer with a stable, robust operating system while allowing Users to continue to use the existing operating systems and software in their PCs. The Home Network Server's clients are not used for distributed computing.

Ellis' Invention

Ellis describes his invention in Column 7 lines 27 – 36 as follows:

> DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS
>
> The new network computer will utilize PC's as providers of computing power to the network, not just users of network services. These connections between network and personal computer are enabled by a new form of computer/network financial structure that is rooted on the fact that economic resources being provided the network by PC owners (or leaser) are similar in value to those being provided by the network provider providing connectivity.

Issues

The main issues in dispute are:

1. The Examiner erroneously asserts that the Network Server (2) shown in Ellis is the same as the Home Network Server (101) used by Applicant and performs the same function.
2. The Examiner erroneously defines the term ***subscriber*** in a way that is not consistent with Applicant's use of the term, denying Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term.
3. The Examiner's supervisor erroneously denies Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term ***home***.

Since these errors made by the Examiners show a lack of understanding of the essence of Ellis' invention and/or Applicant's invention no discussion of Applicant's claims was possible.

Detailed Discussion

1. The Examiner erroneously asserts that the Network Server (2) shown in Ellis is the same as the Home Network Server (101) used by Applicant and performs the same function.

Applicant believes Applicant's Home Network Server has already been sufficiently characterized above in ***Applicant's Invention.***

The Network Server NS2 shown by Ellis in numerous figures is part of the ISP's equipment. In the interests of brevity two will be discussed. From Ellis Column 6 BRIEF DESCRIPTION OF THE DRAWINGS:

> FIG. 1 is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a meter means which measures flow of computing during a shared operation such as parallel processing between a typical PC user and a network provider.

FIG. 2 is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of another meter means which measures the flow of network resources, including shared processing, being provided to a typical PC user and a network provider.

Ellis Figures 1 and 2 are reproduced below:

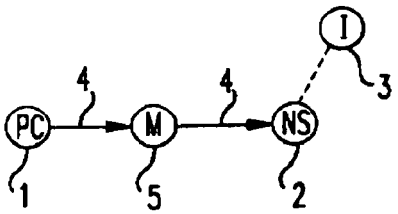

FIG.1

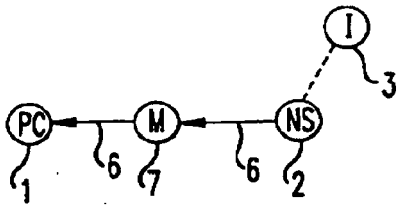

FIG.2

In Ellis Figure 1, Meter M5 is located between PC1 and Network Server NS2 and in Ellis Figure 2 Meter M7 is located between PC1 and Network Server NS2. According to Ellis, it is the computing resources of PC1 that are used for distributed computing for which Ellis receives payment of one kind or another. Network Server NS2 is part of the ISP's equipment and is therefore not a Home Network Server 101 as taught by Applicant. If Ellis' Network Server NS2 were the same as Applicant's Home Network Server 101, then Ellis's financial arrangement would be with himself. This interpretation would render Ellis' patent invalid for lack of usefulness. Since issued patents are presumed valid such an interpretation is impermissible. However, it is clear that Ellis intends his financial arrangement to be with a separate party. From Column 10 lines 1-6:

> The financial basis of the shared use between owners/leasers and providers would be whatever terms to which the parties agree, subject to governing laws, regulations, or rules, including payment from either party to the other based on periodic measurement of net use or provision of processing power

Also, since Ellis' Network Server NS2 is part of the ISP's equipment, if the resources of NS2 were used for distributed computing then Ellis' ISP would be paying him for using their own equipment.

The Examiner's insistence that Ellis shows a Home Network Server extends to erroneously referring to Ellis' Network Server (NS2) as ***Home Network Server (2),*** a term that Ellis himself never uses. See Second Office Action of 6/15/2005 page 2, Rejection 2, and Examiner's Summary of Telephone Interview held 08/09/2005 where the Examiner states (page 3, top of page): ***Examiner pointed out Ellis's home network server is the same as applicant's invention in that it provides a connection to the internet and one or more home network client devices that participates in the shared computer processing.*** In addition to erroneously referring to Ellis' Network Server (2) as a

home network server, the Examiner makes the statement that Applicant's home network server's client devices participate in the shared computer processing. Applicant has always asserted that his distributed computing arrangement is for the use of the Home Network Server's resources, and that one of the advantages of this arrangement is that the client devices are not used for distributed computing. (Note: Applicant does not believe the Examiner actually made this statement during the interview as reported in Examiner's Summary.)

2. The Examiner erroneously defines the term subscriber in a way that is not consistent with Applicant's use of the term, denying Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term.

In the Second Office Action of 6/15/2005 (page 2, Section 1 last line), The Examiner states "***When a device receives a service, is interpreted by the examiner to mean "subscribing" to a service.***" This interpretation is not supported by Applicant's use of the term. Applicant used the common meaning of the term. From the online version of the American Heritage ® Dictionary of the English Language, Fourth Edition at http://www.yourdictionary.com/ahd/s/s0850100.html :

> sub·scribe Listen: [sb-skrb]
> v. sub·scribed, sub·scrib·ing, sub·scribes
> v. tr.
> 1. To pledge or contribute (a sum of money).
> 2. To sign (one's name) at the end of a document.
> 3. To sign one's name to in attestation, testimony, or consent: subscribe a will.
> 4. To authorize (someone) to receive or access electronic texts or services, especially over the Internet.
>
> v. intr.
> 1. a. To contract to receive and pay for a certain number of issues of a publication, for tickets to a series of events or performances, or for a utility service, for example. b. To receive or be allowed to access electronic texts or services by subscription.
> 2. To promise to pay or contribute money: subscribe to a charity.
> 3. To feel or express hearty approval: I subscribe to your opinion. See Synonyms at assent.
> 4. To sign one's name.
> 5. To affix one's signature to a document as a witness or to show consent.
>
> [Middle English subscriben, to sign, from Latin subscrbere : sub-, sub- + scrbere, to write; see skrbh- in Indo-European roots.] sub·scriber n.

All of these definitions imply that the subscriber is a person. In all of the instances in the present application it is clear from the context that the subscriber is a person, nominally the owner of the Home Network. For example, from paragraph 0016 of the present Application:

[0016] In exchange for the use of the otherwise unused capacity of the Home Network Server for distributed computing, the contracting company provides the subscriber (***nominally the owner of the Home Network***) something of value such as reduced cost of Internet service, free Internet service, or a net payment.

The subscriber is a person. Applicant's devices are not persons and are therefore not subscribers.

3. The Examiner's supervisor erroneously denies Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term home.

During the Telephone Interview of August 25, 2005, in an attempt to discuss the everyday meaning of common terms, Applicant thought the word ***home*** would be good place to start. Applicant was wrong. The Examiner's supervisor asserted that he considers his office at the Patent Office his ***home*** even though he owns a house. Realizing that the Examiner's supervisor was being ironic, disingenuous, or was literally living in his office at the Patent Office, Applicant determined that the Examiner's supervisor was not serious about advancing the case.

Therefore, since Ellis does not teach a Home Network Server in a subscriber's home and since the otherwise unused resources of Ellis' Network Server 2 are not used for distributed computing in return for something of value from a contracting company, as well as for other good reasons omitted for the purpose of brevity, Applicant believes all rejections have been traversed and requests the Application be allowed as filed.

Respectfully submitted,

Jed Margolin

Jed Margolin
pro se inventor
September 6, 2005

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450 on the date shown below.

Date: September 6, 2005

Inventor's Signature: Jed Margolin

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 09/947,801

Filed: 09/06/2001

For: DISTRIBUTED COMPUTING SYSTEM

Examiner: Chirag R. Patel Art Unit: 2141

In re Application of: Jed Margolin

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir,

Appeal Brief

As required under the new rules for the Pre-Appeal Conference, this brief is filed within one month of mailing of the decision of the Pre-Appeal Brief Conference Panel and is in furtherance of the Notice of Appeal filed in this case on September 6, 2005.

A check for the fees required under § 41 .20(b)(2) for filing this brief as a small entity in the amount of $250 is attached.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1206:

I	Real Party In Interest
II	Related Appeals and Interferences
III	Status of Claims
IV	Status of Amendments
V	Summary of Claimed Subject Matter
VI	Grounds of Rejection to be Reviewed on Appeal
VII	Argument
VIII	Claims
ix	Evidence
x	Related Proceedings
Appendix A	Claims

I. REAL PARTY IN INTEREST

The real party in interest for this appeal is:

Jed Margolin
3570 Pleasant Echo Dr.
San Jose, CA 95148-1916

II. RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

The Application as filed included claims 1-5.

Claims 1-5 have been finally rejected in the Office Action of June 15, 2005. Claims 1-5 are being appealed.

IV. STATUS OF AMENDMENTS

In response to the Final Office Action of June 15, 2005, a Notice of Appeal was filed on September 6, 2005. No formal amendments were filed subsequent to the issuance of the Final Office Action.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Applicant's invention performs distributed computing using the otherwise unused resources of a Home Network Server in a subscriber's home. The Home Network Server has Home Network client devices such as PCs as well as sensors and actuators used for Home Automation. An Internet connection allows

the otherwise unused resources of the Home Network Server to be used for distributed computing by a contracting company. In return, the subscriber receives something of value such as reduced cost of Internet service, free Internet service, or a net payment. The advantage of using the Home Network Server for distributed computing is that it allows the distributed computing to be performed in a computer with a stable, robust operating system while allowing Users to continue to use the existing operating systems and software in their PCs. The Home Network Server's clients are not used for distributed computing. As in claim 1 the present invention is for a distributed computing system where the otherwise unused resources of a home network server are used for distributed computing. The home network server is in a subscriber's home and has one or more home network client devices. Access to the resources of the home network server is provided by an Internet connection. The subscriber receives something of value for the use of the home network server for distributed computing. File Wrapper estoppel has already established that the arrangement by which the owner of the home network server receives something of value for the use of the home network server for distributed computing is with a contracting company. As in claim 3 the present invention is described as a method instead of an apparatus. As in Claim 5 the present invention described in claim 3 further includes two firewalls. One firewall prevents unwanted interactions between the Internet and the home network server. The other firewall prevents unwanted interactions between the resources of the home network server that are used for distributed computing and the resources of the home network server that are used by the home network clients. Claim 2 further limits claim 1 and claim 4 further limits claim 3.

VI. GROUNDS OF OBJECTION TO BE REVIEWED ON APPEAL

Whether the Examiner has established that claims 1-5 are obvious over U.S. Patent Number 6,167,428 to Ellis.

1. The Examiner erroneously asserts that the Network Server (2) shown in Ellis is the same as the Home Network Server (101) used by Applicant and performs the same function.

2. The Examiner erroneously defines the term ***subscriber*** in a way that is not consistent with Applicant's use of the term, denying Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term.

3. The Examiner's supervisor erroneously denies Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term ***home***.

4. The Examiner's supervisor introduced a new argument in his Examiner's Interview Summary for the telephone interview held August 25, 2005. This argument appears only in the Interview Summary. It was not discussed during the Interview. It does not appear in either the First or Second Office Actions.

VII. ARGUMENT

1. The Examiner erroneously asserts that the Network Server (2) shown in Ellis is the same as the Home Network Server (101) used by Applicant and performs the same function.

Applicant believes Applicant's Home Network Server has already been sufficiently characterized above in **V. SUMMARY OF CLAIMED SUBJECT MATTER.**

The Network Server NS2 shown by Ellis in numerous figures is part of the ISP's equipment. In the interests of brevity two will be discussed. From Ellis Column 6 BRIEF DESCRIPTION OF THE DRAWINGS:

> FIG. 1 is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of a meter means which measures flow of computing during a shared operation such as parallel processing between a typical PC user and a network provider.
>
> FIG. 2 is a simplified diagram of a section of a computer network, such as the Internet, showing an embodiment of another meter means which measures the flow of network resources, including shared processing, being provided to a typical PC user and a network provider.

Ellis Figures 1 and 2 are reproduced on the following page.

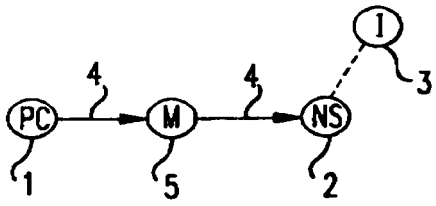

FIG.1

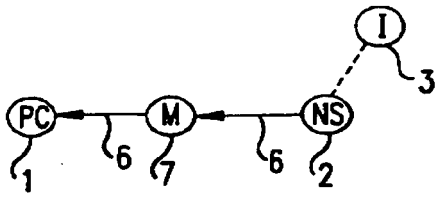

FIG.2

In Ellis Figure 1, Meter M5 is located between PC1 and Network Server NS2 and in Ellis Figure 2 Meter M7 is located between PC1 and Network Server NS2. According to Ellis, it is the computing resources of PC1 that are used for distributed computing for which Ellis receives payment of one kind or another. Network Server NS2 is part of the ISP's equipment and is therefore not a Home Network Server 101 as taught by Applicant. If Ellis' Network Server NS2 were the same as Applicant's Home Network Server 101, then Ellis's financial arrangement would be with himself. This interpretation would render Ellis' patent invalid for lack of usefulness. Since issued patents are presumed valid such an interpretation is impermissible. However, it is clear that Ellis intends his financial arrangement to be with a separate party. From Column 10 lines 1-6:

> The financial basis of the shared use between owners/leasers and providers would be whatever terms to which the parties agree, subject to governing laws, regulations, or rules, including payment from either party to the other based on periodic measurement of net use or provision of processing power

Also, since Ellis' Network Server NS2 is part of the ISP's equipment, if the resources of NS2 were used for distributed computing then Ellis' ISP would be paying him for using their own equipment.

The Examiner's insistence that Ellis shows a Home Network Server extends to erroneously referring to Ellis' Network Server (NS2) as ***Home Network Server (2),*** a term that Ellis himself never uses. See Second Office Action of 6/15/2005 page 2, Rejection 2, and Examiner's Summary of Telephone Interview held 08/09/2005 where the Examiner states (page 3, top of page): ***Examiner pointed out Ellis's home network server is the same as applicant's invention in that it provides a connection to the internet and one or more home network client devices that participates in the shared computer processing.*** In addition to erroneously referring to Ellis' Network Server (2) as a home network server, the Examiner makes the statement that Applicant's home network server's client devices participate in the shared computer processing. Applicant has always asserted that his distributed computing arrangement is for the use of the Home Network Server's resources, and that one of the advantages of this arrangement is that the client devices are not used for

distributed computing. (Note: Applicant does not believe the Examiner actually made this statement during the interview as reported in Examiner's Summary.)

2. The Examiner erroneously defines the term subscriber in a way that is not consistent with Applicant's use of the term, denying Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term.

In the Second Office Action of 6/15/2005 (page 2, Section 1 last line), The Examiner states "***When a device receives a service, is interpreted by the examiner to mean "subscribing" to a service.***" This interpretation is not supported by Applicant's use of the term. Applicant used the common meaning of the term. From the online version of the American Heritage ® Dictionary of the English Language, Fourth Edition at http://www.yourdictionary.com/ahd/s/s0850100.html :

sub·scribe Listen: [sb-skrb]
v. sub·scribed, sub·scrib·ing, sub·scribes
v. tr.
1. To pledge or contribute (a sum of money).
2. To sign (one's name) at the end of a document.
3. To sign one's name to in attestation, testimony, or consent: subscribe a will.
4. To authorize (someone) to receive or access electronic texts or services, especially over the Internet.

v. intr.
1. a. To contract to receive and pay for a certain number of issues of a publication, for tickets to a series of events or performances, or for a utility service, for example. b. To receive or be allowed to access electronic texts or services by subscription.
2. To promise to pay or contribute money: subscribe to a charity.
3. To feel or express hearty approval: I subscribe to your opinion. See Synonyms at assent.
4. To sign one's name.
5. To affix one's signature to a document as a witness or to show consent.

[Middle English subscriben, to sign, from Latin subscrbere : sub-, sub- + scrbere, to write; see skrbh- in Indo-European roots.] sub·scriber n.

All of these definitions imply that the subscriber is a person. In all of the instances in the present application it is clear from the context that the subscriber is a person, nominally the owner of the Home Network. For example, from paragraph 0016 of the present Application:

> [0016] In exchange for the use of the otherwise unused capacity of the Home Network Server for distributed computing, the contracting company provides the subscriber (***nominally the owner of the Home Network***) something of value such as reduced cost of Internet service, free Internet service, or a net payment.

The subscriber is a person. Applicant's devices are not persons and are therefore not subscribers.

3. The Examiner's supervisor erroneously denies Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term home.

During the Telephone Interview of August 25, 2005, in an attempt to discuss the everyday meaning of common terms, Applicant thought the word ***home*** would be good place to start. Applicant was wrong. The Examiner's supervisor asserted that he considers his office at the Patent Office his ***home*** even though he owns a house. Realizing that the Examiner's supervisor was being ironic, disingenuous, or was literally living in his office at the Patent Office, Applicant determined that the Examiner's supervisor was not serious about advancing the case.

4. The Examiner's supervisor introduced a new argument in his Examiner's Interview Summary for the telephone interview held August 25, 2005.

This new argument states:

> ***It was discussed that Ellis's definition of network provider included an individual and thus the definition of subscribe is the same as disclosure.***

This argument appears only in the Interview Summary. It was not discussed during the Interview. It does not appear in either the First or Second Office Actions. It was **not** discussed that Ellis's definition of network provider included an individual. If the issue had been brought up Applicant would have pointed out that the individual/network provider still had to be different from the individual/PC owner in order for Ellis to be useful. Otherwise, Ellis's financial arrangement would be with himself and would render Ellis' patent invalid for lack of usefulness.

Applicant also wishes to point out that Ellis' definition of ***network provider*** has nothing to do with the definition of ***subscribe***. The Examiner's supervisor has used a non sequitur in an attempt to support an unsupportable argument.

Therefore, since Ellis does not teach a Home Network Server in a subscriber's home and since the otherwise unused resources of Ellis' Network Server 2 are not used for distributed computing in return for something of value from a contracting company, Applicant believes all rejections have been traversed and requests the Board direct the Examiner to withdraw all rejections and allow the present application as filed.

VIII. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A.

IX. EVIDENCE

There has been no evidence pursuant to §§ 1.130, 1.131, or 1.132 or other evidence submitted in this application.

X. RELATED PROCEEDiNGS

There are no decisions rendered by a court or by BPAI in this application. There was a decision issued by the Pre-Appeal Conference Panel mailed 10/27/2005 in which the Panel ruled, without comment, that Applicant should proceed to BPAI. Applicant wishes to note that the Pre-Appeal Conference Panel consisted of Examiner Chirag Patel, SPE Rupal Dharia, and SPE John Follansbee. Examiner Patel and SPE Dharia had already made it very clear through the various Office Actions and Telephone Interviews that they are committed to their erroneous interpretation of Ellis. It should also be noted that SPE Follansbee is listed on a number of issued patents as the Primary Examiner along with Assistant Examiner Nabil EL Hady. Examiner El Hady is listed in the File Wrapper Search Notes 6/15/2005 "**EL HADY NABIL - discussed how to respond to applican'ts** {sic} **arguments 6/9/2005.**" As a result of being Examiner El-Hady's supervisor and mentor, SPE Follansbee's objectivity is open to question as he may have had knowledge of the case and formed an opinion of it before the Pre-Appeal Conference was held. Therefore, Applicant requests that BPAI give no weight to the Pre-Appeal Conference Panel's rejection.

Respectfully submitted,

Jed Margolin

Jed Margolin
pro se inventor
November 17, 2005
(408) 238-4564

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commission for Patents, P.O. Box 1450 Alexandria, VA 22313-1450 on the date shown below.

Date: November 17, 2005 Inventor's Signature: Jed Margolin

Appendix A

Claims involved in the Appeal of Application Serial Number 09/947,801

Claim 1. A distributed computing system comprising:

(a) a home network server in a subscriber's home;

(b) one or more home network client devices;

(c) an Internet connection;

whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused.

Claim 2. The distributed computing system of claim 1 further comprising:

(a) a first firewall between said Internet connection and said home network server;

(b) a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network server.

Claim 3. A method for providing a distributed computing system comprising the steps of:

(a) providing a home network server in a subscriber's home;

(b) providing one or more home network client devices;

(c) providing an Internet connection;

whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused.

Claim 4. The method of claim 3 further comprising the steps of:

(a) providing a first firewall between said Internet connection and said home network server;

(b) providing a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network server.

Claim 5. A method for providing a distributed computing system comprising the steps of:

(a) providing a home network server in a subscriber's home;

(b) providing one or more home network client devices;

(c) providing an Internet connection;

(d) providing access to the resources of said home network server that would otherwise be unused;

(e) providing a first firewall between said Internet connection and said home network server;

(f) providing a second firewall to prevent unwanted interactions between said access to the resources of said home network that would otherwise be unused and said home network server;

whereby the subscriber receives something of value in return for said access to the resources of said home network server that would otherwise be unused.

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09/947,801	09/06/2001	Jed Margolin		7358

23497 7590 01/24/2006

JED MARGOLIN
1981 EMPIRE ROAD
RENO, NV 89521-7430

EXAMINER	
PATEL, CHIRAG R	

ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 01/24/2006

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/947,801
Filing Date: September 06, 2001
Appellant(s): MARGOLIN, JED

Jed Margolin
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 17, 2005 appealing from the Office action mailed June 13, 2005.

(1) Real Party in Interest

Examiner agrees with the statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

Examiner agrees with the statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

Examiner agrees with the statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments

Examiner agrees with the appellant's statement of the status of amendments contained in the brief is correct.

(5) Summary of Claimed Subject Matter

Examiner agrees with the summary of invention contained in the brief is correct.

(6) Grounds of Rejections to be Reviewed on appeal

Examiner agrees with the appellant's statement of the grounds of objection to be reviewed on appeal in the brief is correct.

(7) Grouping of Claims

Examiner agrees with the appellant's grouping of the claims.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

Reference	Author	Filing Date
US 6,167,428	Ellis	May 27, 1999

(10) Grounds of Rejection

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Ellis (US 6,167,428).

As per claims 1 and 3, Ellis discloses a distributed computing system comprising:

(a) a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

(b) one or more home network client devices; (Col 13 lines 8-29, Figure 9)

(c) an Internet connection; (Col 8 lines 7-10, Col 13 lines 4-7, Figure 1 item 3)

whereby the subscriber receives something of value in return for access to the resources of said home network server that would otherwise be unused. (Col 7 lines 38-48, Col 10 lines 1-6)

As per claims 2 and 4, Ellis discloses a distributed computing system further comprising:

(a) a first firewall between said Internet connection and said home network server; Ellis teaches the concept of supporting the structure of inserting a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

(b) a second firewall to prevent unwanted interactions between said access to the resources of said home network server that would otherwise be unused and said home network server. (Col 16 lines 33-42, Col 19 lines 19-25)

As per claim 5, Ellis discloses A method for providing a distributed computing system comprising the steps of:

(a) providing a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

(b) providing one or more home network client devices; (Col 13 lines 8-29, Figure 9)

(c) providing an Internet connection; (Col 8 lines 7-10, Col 13 lines 4-7, Figure 1 item 3)

(d) providing access to the resources of said home network server that would otherwise be unused; (Col 11 lines 55-61, Col 12 lines 17-26, Figure 5)

(e) providing a first firewall between said Internet connection and said home network Server; Ellis teaches the concept of supporting the structure of inserting a firewall between the internet and home network server to provide security for the host PC against instruction by outside hackers. (Col 19 lines 25-32)

(f) providing a second firewall to prevent unwanted interactions between said access to the resources of said home network that would otherwise be unused and said home network server; (Col 16 lines 33-42, Col 19 lines 19-25)

wbereby the subscriber receives something of value in return for said access to the resources of said home network server that would otherwise be unused. (Col 7 lines 38-48, Col 10 lines 1-6)

(11) Response to Argument

A) *Applicant argues "The Examiner erroneously asserts that the Network Server (2) shown in Ellis is the same as the Home Network Server (1 01) used by Applicant and performs the same function."*

Response to A) The examiner has taken the word server in light of the specification, using the common meaning of server. "Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993)." In accordance with Microsoft Computer Dictionary 3rd edition definition, page 430, Microsoft Press – copyrighted @1997 by Microsoft Corporation. It defines a server as *"On the internet or other network, a computer or program that responds to commands from a client. For example, a file server may contain an archive of data or program files, when a client submits a request for a file, the server transfer a copy of the file to the client"* PC(1) and NS(2) can be a server or client depending on its functions according to its definition described above. That definition of server was valid at the time of invention and it was still valid in the Microsoft Computer Dictionary 5th edition copyrighted @2002, page 474. This proves that definition of server that was interpreted by the examiner was reasonable at the time of invention. A review of the disclosure and

the claimed language failed to show the applicant had a specific meaning of server that was different from the common definition as discussed above.

i. *Applicant argues since Ellis' Network Server NS2 is part of the ISP'S equipment, if the resources of NS2 were used for distributed computing then Ellis' ISP would be paying him for using their own equipment."*

Response to i. A description of Figure 1 does show a meter measuring the flow between the PC user and the network provider. The examiner interpretation that the PC user was acting as a server was in accordance with the definition above because it was providing a resource to the network provider, (i.e. access to the user's PC for parallel computing use.) Ellis disclosed per col 7 lines 38-48, "Unlike existing one way functional relationships between network providers such as internet service providers (often currently utilizing telecommunications networks for connectivity) and PC users, wherein the network provider provides access to a network like the Internet for a fee (much like cable TV services), this new relationship would recognize that the PC user is also providing the network access to the user's PC for parallel computing use, which has a similar value. The PC thus both provides and uses services on the network, alternatively or potentially even virtually simultaneously, in a multitasking mode."

Ellis disclosed per Col 10 lines 1-6 states, "The financial basis of the shared use between owners/leasers and providers would be whatever terms to which the parties agree, subject to governing laws, regulations, or rules, including payment from either

party to the other based on periodic measurement of net use or provision of processing Power."

ii. *Applicant argues "Examiner pointed out Ellis's home network server is the same as applicant's invention in that it provides a connection 'to the internet and one or more home network client devices that participates in the shared computer processing. In addition to erroneously referring to Ellis' Network Server (2) as a home network server, the Examiner makes the statement that Applicant's home network server's client devices participate in the shared computer processing. Applicant has always asserted that his distributed computing arrangement is for the use of the Home Network Server's resources, and that one of the advantages of this arrangement is that the client devices are not used for distributed computing."*

Response to ii. The examiner interpretation that the PC user was acting as a server was in accordance with the definition above because it was providing a resource to the network provider, (i.e. access to the user's PC for parallel computing use.)

Table 1 listed below clearly shows that Ellis's home network server is the same as applicant's invention.

Table 1

Applicant discloses:	Ellis (US 6,167,428)
a home network server in a subscriber's home, providing one or more home network client devices, providing an Internet connection	Ellis does show a Home network server, home network client devices, and an internet connection, (Figure 2) As stated above, the PC1 and NS2 can interchangeably change roles.
Applicant defines a home network server in his application in the disclosure per [0014],	Ellis definition of a network provider, per Col 7 lines 65 - Col 8 line 14,
"A Home Network Server is used in a home to network various clients such as PCs, sensors, actuators, and other devices. It also provides the Internet connection to the various client devices in the Home Network. The Home Network Server also provides a firewall to prevent unauthorized access to the Home Network from the Internet. The use of a Home Network Server, as opposed to the use of peer-to-peer networking, allows a robust operating system to be used. It also allows the users on the Home Network to add additional applications to their Pcs without fear of jeopardizing the proper mentioning of their Internet security program (firewall) or the distributed computing software. (Although a firewall is not strictly necessary, prudence dictates its use.)"	"For this new network and its structural relationships, a network provider is defined in the broadest possible way as any entity (corporation or other business, government, not-for-profit, cooperative, consortium, committee, association, community, or other organization or ***individual***) that provides personal computer users (very broadly defined below) with initial and continuing connection hardware and/or software and/or firmware and/or other components and/or services to any network, such as the Internet and Internet II or WWW or their present or future equivalents, coexistors or successors, like the MetaInternet, including any of the current types of Internet access providers (ISP's) including telecommunication companies, television cable or broadcast companies, electrical power companies, satellite communications companies, or their present or future equivalents, coexistors or successors."

B) Applicant argues *"The Examiner erroneously defines the term "subscriber" in a way that is not consistent with Applicant's use of the term, denying Applicant the right to act as his own lexicographer even if it is to use the ordinary meaning of the term.*

Response to B) When a device receives a service, it is mean "subscribing" to a service". The examiner interpreted the term "device" in light of the cited passage Ellis (US 6,167,428) Col 7 line 65 – Col 8 line 14 which listed below was cited to mean an entity can be defined as an individual. This was interpreted by the examiner in light of applicant's disclosure per [0016] pages 4-5 which describe the "subscriber (nominally the owner of the Home Network)" and examiner referred it as in individual per Ellis (Col 7 line 65 – Col 8 line 14) Per (Col 7 line 65 – Col 8 line 14) Ellis states "For this new network and its structural relationships, a network provider is defined in the broadest possible way as any entity (corporation or other business, government, not-for-profit, cooperative, consortium, committee, association, community, or other organization or individual) that provides personal computer users (very broadly defined below) with initial and continuing connection hardware and/or software and/or firmware and/or other components and/or services to any network, such as the Internet and Internet II or WWW or their present or future equivalents, coexistors or successors, like the MetaInternet, including any of the current types of Internet access providers (ISP's) including telecommunication companies, television cable or broadcast companies, electrical power companies, satellite communications companies, or their present or future equivalents, coexistors or successors."

C) Applicant argument #3: "The Examiner's supervisor erroneously denies the applicant the right act as his own lexicographer even if it is to use the ordinary meaning of the term "home"

Response to C) The examiner and the supervisor has read and interpreted "home" in light of the specifications that 'home" can be very broadly defined and can be interpreted in many different contexts. A thorough review of the disclosure did not disclose any specific definition of "home".

D) *Applicant argues "The Examiner's supervisor introduced a new argument in his Examiner's Interview Summary for the telephone interview held August 25, 2005. This argument appears only in the Interview Summary. It was not discussed during the Interview. It does not appear in either the First or Second Office Actions. The Examiner's supervisor introduced a new argument in his Examiner's Interview Summary for the telephone interview held August 25, 2005. It was discussed that Ellis's definition of network provider included an individual and thus the definition of subscribe is the same as disclosure"*

Response to D) It was discussed in the first and second office actions, because that paragraph was quoted in Ellis (US 6,167,428) as listed below in the ground of rejections under Col 7 line 66 – Col 8 line 14) was cited in both office actions under claim 1 that cited the portion that disclosed that the individual as the subscriber. This passage was presented by the examiner in the first, non-final office and final action and can be referenced under the ground of rejections under section 10.

(12) Conclusion

In conclusion, thus, the prior art, as applied, fully suggest and teaches the limitations disclosed and claimed by the Appellant and Appellant's arguments cannot be held persuasive regarding patentability with regard to these limitations. For at least the above reasons, it is believed that the rejections should be sustained.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Chirag Patel, Patent Examiner

Art Unit 2141

1/20/2006

Conferees:

Rupal Dharia

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

John Follansbee

JOHN FOLLANSBEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application Serial No. 09/947,801

Filed: 09/06/2001

For: DISTRIBUTED COMPUTING SYSTEM

Examiner: Chirag R. Patel Art Unit: 2141

In re Application of: Jed Margolin

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P.O. Box 1450
Alexandria, VA 22313-1450

Sir,

Appellant's Response to Examiner's Answer filed 1/24/2006 to Appellant's Appeal Brief

As required under 37 CFR 41.41 (a)(1) this Response to Examiner's Answer to Appellant's Appeal Brief is filed within two months of mailing of Examiner's Answer to Appellant's Appeal Brief and is in furtherance of the Notice of Appeal filed in this case on September 6, 2005.

Summary

1. The Examiner has misquoted Appellant on an issue of merit.

2. In using the Microsoft Press Computer Dictionary, Third Edition, ©1997 Microsoft Corporation to define the term ***server***, Examiner failed to note that he was using definition #2 or even that the reference provides another definition. Where there are multiple definitions of a word or different shadings of the definition of a word, dictionaries list them in the order in which they are most commonly used. Therefore, Examiner failed to cite the most commonly used definition of ***server***.

3. The Examiner's citation of *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993) is misleading in view of *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

Detailed Response

1. The Examiner has misquoted Appellant on an issue of merit.

On Examiner Response, Page 11, third paragraph Examiner quotes from Appellant's Appeal Brief:

> **D)** *Applicant argues "The Examiner's supervisor introduced a new argument in his Examiner's Interview Summary for the telephone interview held August 25, 2005. This argument appears only in the Interview Summary. It was not discussed during the Interview. It does not appear in either the First or Second Office Actions. The Examiner's supervisor introduced a new argument in his Examiner's Interview Summary for the telephone interview held August 25, 2005. It was discussed that Ellis's definition of network provider included an individual and thus the definition of subscribe is the same as disclosure"*

Examiner's misquote came either from Appellant's Appeal Brief Page 4:

> 4. The Examiner's supervisor introduced a new argument in his Examiner's Interview Summary for the telephone interview held August 25, 2005. This argument appears only in the Interview Summary. It was not discussed during the Interview. It does not appear in either the First or Second Office Actions.

or from Page 7.

> ***4. The Examiner's supervisor introduced a new argument in his Examiner's Interview Summary for the telephone interview held August 25, 2005.***
>
> This new argument states:
> ***It was discussed that Ellis's definition of network provider included an individual and thus the definition of subscribe is the same as disclosure.***
>
> This argument appears only in the Interview Summary. It was not discussed during the Interview. It does not appear in either the First or Second Office Actions. It was **not** discussed that Ellis's definition of network provider included an individual. If the issue had been brought up Applicant would have pointed out that the individual/network provider still had to be different from the individual/PC owner in order for Ellis to be useful. Otherwise, Ellis's financial arrangement would be with himself and would render Ellis' patent invalid for lack of usefulness.

Examiner's misquote has the Appellant agreeing that "*It was discussed that Ellis's definition of network provider included an individual and thus the definition of subscribe is the same as disclosure*" which is the opposite of what Appellant actually said. The Examiner has either been incredibly careless or is attempting to deceive BPAI.

The Examiner then goes on to state on Page 12 first paragraph:

> **Response to D)** It was discussed in the first and second office actions, because that paragraph was quoted in Ellis (US 6,167,428) as listed below in the ground of rejections under Col 7 line 66 — Col 8 line 14) was cited in both office actions under claim 1 that cited the portion that disclosed that the individual as the subscriber. This passage was presented by the examiner in the first, non-final office and final action and can be referenced under the ground of rejections under section 10.

The Ellis paragraph cited by the Examiner says:

> For this new network and its structural relationships, a network provider is defined in the broadest possible way as any entity (corporation or other business, government, not-for-profit, cooperative, consortium, committee, association, community, or other organization or individual) that provides personal computer users (very broadly defined below) with initial and continuing connection hardware and/or software and/or firmware and/or other components and/or services to any network, such as the Internet and Internet II or WWW or their present or future equivalents, coexistors or successors, like the MetaInternet, including any of the current types of Internet access providers (ISP's) including telecommunication companies, television cable or broadcast companies, electrical power companies, satellite communications companies, or their present or future equivalents, coexistors or successors. The connection means used in the networks of the network providers, including between personal computers or equivalents or successors, would preferably be very broad bandwidth, by such means as fiber optic cable or wireless for example, but not excluding any other means, including television coaxial cable and telephone twisted pair, as well as associated gateways, bridges, routers, and switches with all associated hardware and/or software and/or firmware and/or other components and their present or future equivalents or successors. The computers used by the providers include any computers, including mainframes, minicomputers, servers, and personal computers, and associated their associated hardware and/or software and/or firmware and/or other components, and their present or future equivalents or successors.

In the First Office Action, the Examiner's reference to the Ellis paragraph states:

> As per claims 1 and 3, Ellis discloses a distributed computing system comprising:
>
> (a) a home network server in a subscriber's home; (Col 7 lines 66-67, Col 8 lines 1-14 and 23-28)

Examiner did not state how the Ellis reference constituted a home network server in a subscriber's home. Since the Ellis paragraph does not contain the terms *home*, *home network,* or *subscriber* Examiner's rejection was indistinct, and continues to be indistinct.

In the Second Office Action the Examiner merely repeated this rejection, again without pointing out how anything in the quoted Ellis paragraph constituted a home network server or a subscriber as defined in Appellant's Application.

The very first time the Examiner made the statement:

> *"It was discussed that Ellis's definition of network provider included an individual and thus the definition of subscribe is the same as disclosure."*

was in Examiner's Interview Summary for the telephone interview held August 25, 2005. It was not made in the First Office Action, the Second Office Action, or in any telephone interview including the telephone interview of August 5, 2005. Appellant notes that the Examiner failed to file an Examiner's Interview Summary for this telephone interview. Appellant's summary of the telephone interview of August 5, 2005 appears in the File Wrapper as **8/12/2005 Miscellaneous Incoming Letter**.

Appellant also wishes to point out that regardless of whether Ellis' definition of network provider includes an individual:

1. The individual/network provider still had to be different from the individual/PC owner in order for Ellis to be useful and, therefore, valid.

2. The Examiner's statement, *" and thus the definition of subscribe is the same as disclosure"* is a non sequitur and has no relevance to the definition of network provider.

2. In using the Microsoft Press Computer Dictionary, Third Edition, ©1997 Microsoft Corporation to define the term server, Examiner failed to note that he was using definition #2 or even that the reference provides another definition.

The complete definition from Microsoft Press Computer Dictionary, Third Edition, ©1997 Microsoft Corporation for the term ***server*** is (leaving out the pronunciation guide), from page 430:

> **server** *n.* **1.** On a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network. **2.** On the Internet or other network, a computer or program that responds to commands from a client. For example, a file server may contain an archive of data or program files; when a client submits a request for a file, the server transfers a copy of the file to the client. *See also* client/server architecture. *Compare* client (definition 3).

Where there are multiple definitions of a word or different shadings of the definition of a word, dictionaries list them in the order in which they are most commonly used. Therefore, the Examiner failed to cite the most commonly used definition of ***server***.

Since the Examiner has chosen Microsoft as the final arbiter of what terms mean, the correct definition to use would be the first one:

> **1.** On a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network.

Under this definition, Ellis' ***PC 1*** is clearly not a server. In Ellis' response to the First Office Action for his application 09/320,660 he made clear the importance of being able to run applications on his ***PC 1*** which were not available to the operating systems typically used by servers. (The First Office Action was mailed October 14, 1999, Ellis' Response is dated April 14, 2000, and the application was eventually issued as U.S. Patent 6,167,428 .)

From Ellis' Response, Page 24 Second Paragraph:

> The Examiner appears to have rejected claims 27-41 because of a belief that UNIX and NT servers can be run on personal computers and can be made to function temporarily as a master personal computer or as a slave personal computer, as similarly recited in claims 27-41. However, a UNIX or an NT server functions as a server, not as a master personal computer or as a slave personal computer, which require applications not found in UNIX or NT operating systems. Therefore, Applicant submits that neither Seti@home nor a UNIX or an NT server running on personal computers discloses, teaches or suggests: .....

Ellis then discusses how this relates to his claims. However, the importance of being able to run standard PC applications on Ellis' ***PC 1*** has been established and, under Microsoft's primary definition of server, ***PC 1*** lacks the administrative software required to be a server.

Contrast this to Appellant's definition of Home Network Server. From Appellant's application:

> **SUMMARY OF THE INVENTION**
>
> **[0014]** A Home Network Server is used in a home to network various clients such as PCs, sensors, actuators, and other devices. It also provides the Internet connection to the various client devices in the Home Network. The Home Network Server also provides a firewall to prevent unauthorized access to the Home Network from the Internet. The use of a Home Network Server, as opposed to the use of peer-to-peer networking, allows a robust operating system to be used. It also allows the users on the Home Network to add additional applications to their PCs without fear of jeopardizing the proper functioning of their Internet security program (firewall) or the distributed computing software. (Although a firewall is not strictly necessary, prudence dictates its use.)

In terms of the Microsoft definition Appellant's Home Network Server is:

> On a local area network (LAN), a computer running administrative software *[robust operating system]* that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations *[various clients such as PCs, sensors, actuators, and other devices]* on the network.

Since the Examiner has chosen the Microsoft Dictionary as his reference it is instructive to see how Microsoft has defined other terms:

On Page 329
network server *n. See* server.

home network – not defined

On Page 235
home *n.* A beginning position, such as the top left corner of a character-based display, the left end of a line of text, cell A1 of a spreadsheet, or the top of a document.

Oops.

This suggests that a ***Home Network Server*** is a Server whose purpose is limited to something having to do with a beginning position of a document.

There are two choices in interpreting this result.

1. The Microsoft Dictionary is internally inconsistent and should not have been used as a reference.

2. Microsoft felt that the common meaning of home is so obvious that it did not have to be defined.

A more appropriate reference would have been the Microsoft Computer Dictionary, Fourth Edition, ©1999 Microsoft Corporation since Appellant's Application claims priority of U.S. Provisional Application No. 60/249,830 filed on November 17, 2000.

Unfortunately the Fourth Edition provides the same definitions for the terms under discussion except that it leaves out the pronunciation keys for the words.

However, since the Examiner has also used the Microsoft Computer Dictionary, Fifth Edition, ©2002 Microsoft Corporation as a reference it will be instructive to see how it defines the terms under discussion.

The term ***server*** is substantially the same. On page 474:

server *n.* **1.** On a local area network (LAN), a computer running administrative software that controls access to the network and its resources, such as printers and disk drives, and provides resources to computers functioning as workstations on the network. **2.** On the Internet or other network, a computer or program that responds to commands from a client. For example, a file server may contain an archive of data or program files; when a client submits a request for a file, the server transfers a copy of the file to the client. *See also* application server (definitions 1 and 2), client/server architecture. *Compare* client (definition 3).

(The section which is different from the Third and Fourth Editions is underlined.)

The definition for **Network Server** is the same. On page 364:

network server *n. See* server.

The definition for **Home** is the same. On page 255:

home *n.* A beginning position, such as the top left corner of a character-based display, the left end of a line of text, cell A1 of a spreadsheet, or the top of a document.

However, the Fifth Edition does contain a definition for **Home Network**. On Page 255:

home network n. 1. A communications network in a home or building used for home automation. Home networks can use wiring (existing or new) or wireless connections. See also home automation, home controller. 2. Two or more computers in a home that are interconnected to form a local area network (LAN).

Appellant is pleased that Microsoft's 2002 edition adapted substantially the same definition for **Home Network** as Appellant used in the year 2000 even though Microsoft also failed to define the term **home**. It is clear that, like Appellant, Microsoft felt that the common meaning of **home** is so obvious that it did not have to be defined.

Contrast this to the Examiner and his Supervisor who have taken the position that since the term **home** has so many common meanings (which they fail to list or even cite their reference) and Appellant failed to explicitly define the term, the word **home** has no meaning at all.

From Examiner's Response, Page 11 second paragraph:

> **Response to C)** The examiner and the supervisor has *{sic}* read and interpreted "home" in light of the specifications that 'home" can be very broadly defined and can be interpreted in many different contexts. A thorough review of the disclosure did not disclose any specific definition of "home".

The Examiner and his supervisor have gone from ***allowing*** an Applicant to be his own lexicographer to ***requiring*** the Applicant to be his own lexicographer especially if the Applicant uses a commonly used term whose meaning is understood to most of the English-speaking world.

Examiner and his Supervisor have failed to see the consequences of their actions. Consider the following scenario.

1. BPAI affirms Examiner.
2. Appellant appeals to the Court of Appeals for the Federal Circuit.
3. The Court of Appeals for the Federal Circuit affirms BPAI, thereby setting a precedent for all patents including those already issued.

Appellant wishes to note that as of this date there are 29 U.S. Patents assigned to Microsoft which use the term ***home network***. Not one of these 29 patents appears to define the term ***home***. In the event these patents were challenged, Microsoft's position would be considerably weakened by the precedent that the Examiner and his Supervisor wish to set. The Patent Database lists a total of 1407 issued patents which use the term "home network." Appellant will leave it to the Examiner to determine which, if any, of the remaining 1378 patents define the term ***home***.

The Examiner and his Supervisor have already opened this door. It is up to BPAI to decide whether or not to go through it.

3. The Examiner's citation of *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993) is misleading in view of *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997).

In *In re Morris*, in holding that the PTO is not required, in the course of prosecution, to interpret claims in applications in the same manner as a court would interpret claims in an infringement suit, the Court ruled:

> The Solicitor is correct, and we reject appellants' invitation to construe either of the cases cited by appellants so as to overrule, sub silentio, decades old case law. Some cases state the standard as "the broadest reasonable interpretation," see, e.g., In re Van Geuns, 988 F.2d 1181, 1184, 26 USPQ2d 1057, 1059 (Fed. Cir. 1993), others include the qualifier "consistent with the specification" or similar language, see, e.g., In re Bond, 910 F.2d 831, 833, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). Since it would be unreasonable for the PTO to ignore any interpretive guidance afforded by the applicant's written description, either phrasing connotes the same notion: as an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification.

The Examiner is invited to pay attention to this part.

> **Since it would be unreasonable for the PTO to ignore any interpretive guidance afforded by the applicant's written description, either phrasing connotes the same notion: as an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification.**

Conclusion

The purpose of a language like English is to allow people to communicate with each other. Communications is already difficult enough because the meanings that people give to words depends on their life experiences as well as their education (formal or not). Communications also requires that people act in good faith, that they actually want to communicate. It is clear from the record that the Examiner and his Supervisor are not acting in good faith, that they have no intention of having meaningful communications.

The word ***home*** is a very good word. It is also a very old word whose roots stretch back through Middle English to Old English (also called Anglo-Saxon because it was the Germanic dialect spoken by the Angles and Saxons when they invaded Britain in the Fifth Century), and all the way back to Indo-European. Everybody knows what a home is (even people who don't have one) with the exception of the Examiner and his Supervisor.

The Examiner has misquoted Appellant's Appeal Brief on an issue of merit, deliberately used a less-common definition of ***server*** in order to serve his purposes, and misused *In re Van Geuns*. In their determination to deny Appellant the patent rights to his invention the Examiner and his Supervisor have failed to see that they are setting a precedent that threatens the patent system itself by requiring that an Applicant define every commonly-used word. Words must be defined by using other words, so there is no end to this. Eventually they will be arguing what the meaning of "is" is.

For these and other good reasons Appellant respectfully demands that this case be forwarded to BPAI without further delay.

Respectfully submitted,

Jed Margolin

Jed Margolin
pro se inventor
March 16, 2006
(775) 847-7845

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JED MARGOLIN
1981 EMPIRE ROAD
RENO, NV 89521-7430

EXAMINER	
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Commissioner for Patents

Reply Brief Noted

The reply brief filed March 16, 2006 has been entered and considered. The application has been forwarded to the Board of Patent Appeals and Interferences for decision on the appeal.

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

PTO-90C (Rev.04-03)

Go to **MPEP - Table of Contents**

browse before

2173.05(a) New Terminology [R-3] - 2100 Patentability

2173.05(a) New Terminology [R-3]

I. THE MEANING OF EVERY TERM SHOULD BE APPARENT

The meaning of every term used in a claim should be apparent from the prior art or from the specification and drawings at the time the application is filed. Applicants need not confine themselves to the terminology used in the prior art, but are required to make clear and precise the terms that are used to define the invention whereby the metes and bounds of the claimed invention can be ascertained. During patent examination, the pending claims must be given the broadest reasonable interpretation consistent with the specification. *In re Morris*, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Prater*, 415 F.2d 1393, 162 USPQ 541 (CCPA 1969). See also **MPEP § 2111 - § 2111.01**. When the specification states the meaning that a term in the claim is intended to have, the claim is examined using that meaning, in order to achieve a complete exploration of the applicant's invention and its relation to the prior art. *In re Zletz*, 893 F.2d 319, 13 USPQ2d 1320 (Fed. Cir. 1989).

II. THE REQUIREMENT FOR CLARITY AND PRECISION MUST BE BALANCED WITH THE LIMITATIONS OF THE LANGUAGE

Courts have recognized that it is not only permissible, but often desirable, to use new terms that are frequently more precise in describing and defining the new invention. *In re Fisher*, 427 F.2d 833, 166 USPQ 18 (CCPA 1970). Although it is difficult to compare the claimed invention with the prior art when new terms are used that do not appear in the prior art, this does not make the new terms indefinite.

New terms are often used when a new technology is in its infancy or is rapidly evolving. The requirements for clarity and precision must be balanced with the limitations of the language and the science. If the claims, read in light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the statute (**35 U.S.C. 112**, second paragraph) demands no more. *Shatterproof Glass Corp. v. Libbey Owens Ford Co.*, 758 F.2d 613, 225 USPQ 634 (Fed. Cir. 1985) (interpretation of "freely supporting" in method claims directed to treatment of a glass sheet); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986) (interpretation of a limitation specifying a numerical value for antibody affinity where the method of calculation was known in the art at the time of filing to be

imprecise). This does not mean that the examiner must accept the best effort of applicant. If the proposed language is not considered as precise as the subject matter permits, the examiner should provide reasons to support the conclusion of indefiniteness and is encouraged to suggest alternatives that are free from objection.

III. TERMS USED CONTRARY TO THEIR ORDINARY MEANING MUST BE CLEARLY REDEFINED IN THE WRITTEN DESCRIPTION

Consistent with the well-established axiom in patent law that a patentee or applicant is free to be his or her own lexicographer, a patentee or applicant may use terms in a manner contrary to or inconsistent with one or more of their ordinary meanings if the written description clearly redefines the terms. See, e.g., *Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999) ("While we have held many times that a patentee can act as his own lexicographer to specifically define terms of a claim contrary to their ordinary meaning," in such a situation the written description must clearly redefine a claim term "so as to put a reasonable competitor or one reasonably skilled in the art on notice that the patentee intended to so redefine that claim term."); *Hormone Research Foundation Inc. v. Genentech Inc.,* 904 F.2d 1558, 15 USPQ2d 1039 (Fed. Cir. 1990). Accordingly, when there is more than one definition for a term, it is incumbent upon applicant to make clear which definition is being relied upon to claim the invention. Until the meaning of a term or phrase used in a claim is clear, a rejection under **35 U.S.C. 112**, second paragraph is appropriate. In applying the prior art, the claims should be construed to encompass all definitions that are consistent with applicant's use of the term. See *Tex. Digital Sys., Inc. v. Telegenix, Inc.*, 308 F.3d 1193, 1202, 64 USPQ2d 1812, 1818 (Fed. Cir. 2002). It is appropriate to compare the meaning of terms given in technical dictionaries in order to ascertain the accepted meaning of a term in the art. *In re Barr*, 444 F.2d 588, 170 USPQ 330 (CCPA 1971). >See also MPEP § **2111.01**.<

browse after

Go to **MPEP - Table of Contents**

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2144.03 Reliance on Common Knowledge in the Art or "Well Known" Prior Art [R-1] - 2100 Patentability

2144.03 Reliance on Common Knowledge in the Art or "Well Known" Prior Art [R-1]

**>In limited circumstances, it is appropriate for an examiner to take official notice of facts not in the record or to rely on "common knowledge" in making a rejection, however such rejections should be judiciously applied.

PROCEDURE FOR RELYING ON COMMON KNOWLEDGE OR TAKING OFFICIAL NOTICE

The standard of review applied to findings of fact is the "substantial evidence" standard under the Administrative Procedure Act (APA). See *In re Gartside*, 203 F.3d 1305, 1315, 53 USPQ2d 1769, 1775 (Fed. Cir. 2000). See also MPEP § **1216.01**. In light of recent Federal Circuit decisions as discussed below and the substantial evidence standard of review now applied to USPTO Board decisions, the following guidance is provided in order to assist the examiners in determining when it is appropriate to take official notice of facts without supporting documentary evidence or to rely on common knowledge in the art in making a rejection, and if such official notice is taken, what evidence is necessary to support the examiner's conclusion of common knowledge in the art.

A. Determine When It Is Appropriate To Take Official Notice Without Documentary Evidence To Support The Examiner' s Conclusion

Official notice without documentary evidence to support an examiner's conclusion is permissible only in some circumstances. While "official notice" may be relied on, these circumstances should be rare when an application is under final rejection or action under 37 CFR **1.113**. Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. As noted by the court in *In re Ahlert*, 424 F.2d 1088, 1091, 165 USPQ 418, 420 (CCPA 1970), the notice of facts beyond the record which may be taken by the examiner must be "capable of such instant and unquestionable demonstration as to defy dispute" (citing *In re Knapp Monarch Co.*, 296 F.2d 230, 132 USPQ 6 (CCPA 1961)). In *Ahlert*, the court held that the Board properly took judicial notice that "it is old to adjust intensity of a flame in accordance with the heat requirement." See also *In re Fox*, 471 F.2d 1405, 1407, 176 USPQ 340, 341 (CCPA 1973) (the court took "judicial

notice of the fact that tape recorders commonly erase tape automatically when new 'audio information' is recorded on a tape which already has a recording on it"). In appropriate circumstances, it might not be unreasonable to take official notice of the fact that it is desirable to make something faster, cheaper, better, or stronger without the specific support of documentary evidence. Furthermore, it might not be unreasonable for the examiner in a first Office action to take official notice of facts by asserting that certain limitations in a dependent claim are old and well known expedients in the art without the support of documentary evidence provided the facts so noticed are of notorious character and serve only to "fill in the gaps" which might exist in the evidentiary showing made by the examiner to support a particular ground of rejection. *In re Zurko*, 258 F.3d 1379, 1385, 59 USPQ2d 1693, 1697 (Fed. Cir. 2001); *Ahlert*, 424 F.2d at 1092, 165 USPQ at 421.

It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. *In re Ahlert*, 424 F.2d at 1091, 165 USPQ at 420-21. See also *In re Grose*, 592 F.2d 1161, 1167-68, 201 USPQ 57, 63 (CCPA 1979) ("[W]hen the PTO seeks to rely upon a chemical theory, in establishing a prima facie case of obviousness, it must provide evidentiary support for the existence and meaning of that theory."); *In re Eynde,* 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973) ("[W]e reject the notion that judicial or administrative notice may be taken of the state of the art. The facts constituting the state of the art are normally subject to the possibility of rational disagreement among reasonable men and are not amenable to the taking of such notice.").

It is never appropriate to rely solely on "common knowledge" in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697 ("[T]he Board cannot simply reach conclusions based on its own understanding or experience-or on its assessment of what would be basic knowledge or common sense. Rather, the Board must point to some concrete evidence in the record in support of these findings."). While the court explained that, "as an administrative tribunal the Board clearly has expertise in the subject matter over which it exercises jurisdiction," it made clear that such "expertise may provide sufficient support for conclusions [only] as to peripheral issues." *Id.* at 1385-86, 59 USPQ2d at 1697. As the court held in *Zurko*, an assessment of basic knowledge and common sense that is not based on any evidence in the record lacks substantial evidence support. *Id.* at 1385, 59 USPQ2d at 1697. See also *In re Lee*, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed. Cir. 2002) (In reversing the Board's decision, the court stated "'common knowledge and common sense' on which the Board relied in rejecting Lee's application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. Conclusory statements such as those here provided do not fulfill the agency's obligation..The board cannot rely on conclusory statements when dealing with particular combinations of prior art and specific claims, but must set forth the rationale on which it relies.").

B. If Official Notice Is Taken of a Fact, Unsupported by Documentary Evidence, the Technical Line Of Reasoning Underlying a Decision To Take Such Notice Must Be Clear and Unmistakable

Ordinarily, there must be some form of evidence in the record to support an assertion of common knowledge. See *Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002); *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697 (holding that general conclusions concerning what is "basic knowledge" or "common sense" to one of ordinary skill in the art without specific factual findings and some concrete evidence in the record to support these findings will not support an obviousness rejection). In certain older cases, official notice has been taken of a fact that is asserted to be "common knowledge" without specific reliance on documentary evidence where the fact noticed was readily verifiable, such as when other references of record supported the noticed fact, or where there was nothing of record to contradict it. See *In re Soli*, 317 F.2d 941, 945-46, 137 USPQ 797, 800 (CCPA 1963) (accepting the examiner's assertion that the use of "a control is standard procedure throughout the entire field of bacteriology" because it was readily verifiable and disclosed in references of record not cited by the Office); *In re Chevenard*, 139 F.2d 711, 713, 60 USPQ 239, 241 (CCPA 1943) (accepting the examiner's finding that a brief heating at a higher temperature was the equivalent of a longer heating at a lower temperature where there was nothing in the record to indicate the contrary and where the applicant never demanded that the examiner produce evidence to support his statement). If such notice is taken, the basis for such reasoning must be set forth explicitly. The examiner must provide specific factual findings predicated on sound technical and scientific reasoning to support his or her conclusion of common knowledge. See *Soli*, 317 F.2d at 946, 37 USPQ at 801; *Chevenard*, 139 F.2d at 713, 60 USPQ at 241. The applicant should be presented with the explicit basis on which the examiner regards the matter as subject to official notice and be allowed to challenge the assertion in the next reply after the Office action in which the common knowledge statement was made.

C. If Applicant Challenges a Factual Assertion as Not Properly Officially Noticed or not Properly Based Upon Common Knowledge, the Examiner Must Support the Finding With Adequate Evidence

To adequately traverse such a finding, an applicant must specifically point out the supposed errors in the examiner's action, which would include stating why the noticed fact is not considered to be common knowledge or well-known in the art. See 37 CFR **1.111**(b). See also *Chevenard,* 139 F.2d at 713, 60 USPQ at 241 ("[I]n the absence of any demand by appellant for the examiner to produce authority for his statement, we will not consider this contention."). A general allegation that the claims define a patentable invention without any reference to the examiner's assertion of official notice would be inadequate. If applicant adequately traverses the examiner's assertion of official notice, the examiner must provide documentary evidence in the next Office action if the rejection is to be maintained. See 37 CFR **1.104**(c)(2). See also *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697 ("[T]he Board [or examiner] must point to some concrete evidence in the record in support of these findings" to satisfy the substantial evidence test). If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding. See 37 CFR **1.104**(d)(2).

If applicant does not traverse the examiner's assertion of official notice or applicant's traverse is not adequate, the examiner should clearly indicate in the next Office action that the common knowledge or well-known in the art statement is taken to be admitted prior art because applicant either failed to traverse the examiner's assertion of official

notice or that the traverse was inadequate. If the traverse was inadequate, the examiner should include an explanation as to why it was inadequate.

D. Determine Whether the Next Office Action Should Be Made Final

If the examiner adds a reference in the next Office action after applicant's rebuttal, and the newly added reference is added only as directly corresponding evidence to support the prior common knowledge finding, and it does not result in a new issue or constitute a new ground of rejection, the Office action may be made final. If no amendments are made to the claims, the examiner must not rely on any other teachings in the reference if the rejection is made final. If the newly cited reference is added for reasons other than to support the prior common knowledge statement and a new ground of rejection is introduced by the examiner that is not necessitated by applicant's amendment of the claims, the rejection may not be made final. See MPEP § **706.07(a)**.

E. Summary

Any rejection based on assertions that a fact is well-known or is common knowledge in the art without documentary evidence to support the examiner's conclusion should be judiciously applied. Furthermore, as noted by the court in *Ahlert*, any facts so noticed should be of notorious character and serve only to "fill in the gaps" in an insubstantial manner which might exist in the evidentiary showing made by the examiner to support a particular ground for rejection. It is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record as the principal evidence upon which a rejection was based. See *Zurko*, 258 F.3d at 1386, 59 USPQ2d at 1697; *Ahlert*, 424 F.2d at 1092, 165 USPQ 421.<

browse after

Go to **MPEP - Table of Contents**

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713.04 Substance of Interview Must Be Made of Record [R-3] - 700 Examination of Applications

713.04 Substance of Interview Must Be Made of Record [R-3]

A complete written statement as to the substance of any face-to-face, video conference, electronic mail or telephone interview with regard to the merits of an application must be made of record in the application, whether or not an agreement with the examiner was reached at the interview. See **37 CFR 1.133(b)**, MPEP § **502.03** and § **713.01**.

37 CFR 1.133 Interviews.

*****

(b) In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office actions as specified in §§ 1.111 and 1.135.

37 CFR 1.2 Business to be transacted in writing.

All business with the Patent and Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the U.S. Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview

of record in the application file, except where the interview was initiated by the examiner and the examiner indicated on the "Examiner Initiated Interview Summary" form (PTOL-413B) that the examiner will provide a written summary. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary form PTOL-413 for each interview where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. If applicant initiated the interview, a copy of the completed "Applicant Initiated Interview Request" form, PTOL-413A (if available), should be attached to the Interview Summary form, PTOL-413 and a copy be given to the applicant (or applicant's attorney or agent), upon completion of the interview. If the examiner initiates an interview, the examiner should complete part I of the "Examiner Initiated Interview Summary" form, PTOL-413B, in advance of the interview identifying the rejections, claims and prior art documents to be discussed with applicant. The examiner should complete parts II and III of the "Examiner Initiated Interview Summary" form at the conclusion of the interview. The completed PTOL-413B form will be considered a proper interview summary record and it will not be necessary for the examiner to complete a PTOL-413 form. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in **MPEP § 812.01**, or pointing out typographical errors in Office actions or the like, are excluded from the interview recordation procedures below. Where a complete record of the interview has been incorporated in an examiner's amendment, it will not be necessary for the examiner to complete an Interview Summary form.

The Interview Summary form PTOL 413 shall be given an appropriate paper number, placed in the right hand portion of the file, and listed on the "Contents" list on the file wrapper. For Image File Wrapper (IFW) processing, see IFW Manual. In a personal interview, the duplicate copy of the Interview Summary form along with any attachment(s) is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephonic, electronic mail or video conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. In addition, a copy of the form may be faxed to applicant (or applicant's attorney or agent) at the conclusion of the interview. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Interview Summary form should be mailed promptly after the telephonic, electronic mail or video conference interview rather than with the next official communication.

The PTOL-413 form provides for recordation of the following information:

(A) application number;

(B) name of applicant;

(C) name of examiner;

(D) date of interview;

(E) type of interview (personal, telephonic, electronic mail or video conference);

(F) name of participant(s) (applicant, attorney, or agent, etc.);

(G) an indication whether or not an exhibit was shown or a demonstration conducted;

(H) an identification of the claims discussed;

(I) an identification of the specific prior art discussed;

(J) an indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). (Agreements as to allowability are tentative and do not restrict further action by the examiner to the contrary.);

(K) the signature of the examiner who conducted the interview;

(L) names of other U.S. Patent and Trademark Office personnel present.

The PTOL-413 form also contains a statement reminding the applicant of his or her responsibility to record the substance of the interview.

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview in each case unless the interview was initiated by the examiner and the examiner indicated on the "Examiner Initiated Interview Summary" form, PTOL-413B, that the examiner will provide a written summary. Where an interview initiated by the applicant results in the allowance of the application, the applicant is advised to file a written record of the substance of the interview as soon as possible to prevent any possible delays in the issuance of a patent. Where an examiner initiated interview directly results in the allowance of the application, the examiner may check the appropriate box on the "Examiner Initiated Interview Summary" form, PTOL-413B, to indicate that the examiner will provide a written record of the substance of the interview with the Notice of Allowability.

It should be noted, however, that the Interview Summary form will not be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant, or the examiner to include, all of the applicable items required below concerning the substance of the interview.

The complete and proper recordation of the substance of any interview should include at least the following applicable items:

(A) a brief description of the nature of any exhibit shown or any demonstration conducted;

(B) identification of the claims discussed;

(C) identification of specific prior art discussed;

(D) identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary form completed by the examiner;

(E) the general thrust of the principal arguments of the applicant and the examiner should also be identified, even where the interview is initiated by the examiner. The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner;

(F) a general indication of any other pertinent matters discussed;

(G) if appropriate, the general results or outcome of the interview; and

(H) in the case of an interview via electronic mail, a paper copy of the Internet e-mail contents MUST be made and placed in the patent application file as required by the Federal Records Act in the same manner as an Examiner Interview Summary Form, PTOL 413, is entered.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete or accurate, the examiner may give the applicant a 1-month time period to complete the reply under **37 CFR 1.135(c)** where the record of the substance of the interview is in a reply to a nonfinal Office action.

¶ 7.84 Amendment Is Non-Responsive to Interview

The reply filed on **[1]** is not fully responsive to the prior Office action because it fails to include a complete or accurate record of the substance of the **[2]** interview. **[3]** Since the above-mentioned reply appears to be *bona fide*, applicant is given a TIME PERIOD of **ONE (1) MONTH or THIRTY (30) DAYS** from the mailing date of this notice, whichever is longer, within which to supply the omission or correction in order to avoid abandonment. EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER **37 CFR 1.136(a)**.

Examiner Note

1. In bracket 2, insert the date of the interview.

2. In bracket 3, explain the deficiencies.

EXAMINER TO CHECK FOR ACCURACY

Applicant's summary of what took place at the interview should be carefully checked to determine the accuracy of any argument or statement attributed to the examiner during the interview. If there is an inaccuracy and it bears directly on the question of patentability, it should be pointed out in the next Office letter. If the claims are allowable for other reasons of record, the examiner should send a letter setting forth his or her version of the statement attributed to him or her.

If the record is complete and accurate, the examiner should place the indication "Interview record OK" on the paper recording the substance of the interview along with the date and the examiner's initials. For Image File Wrapper (IFW) processing, see IFW Manual.

**>

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/947,801	09/06/2001	Jed Margolin		7358

23497 7590 10/12/2006

JED MARGOLIN
1981 EMPIRE ROAD
RENO, NV 89521-7430

EXAMINER	
PATEL, CHIRAG R	
ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Interview Summary	Application No.	Applicant(s)	
	09/947,801	MARGOLIN, JED	
	Examiner	Art Unit	
	Chirag R. Patel	2141	

All participants (applicant, applicant's representative, PTO personnel):

(1) *Chirag R. Patel*. (3)_____.

(2) *Jed Margolin*. (4)_____.

Date of Interview: *5 August 2005*.

Type: a)☒ Telephonic b)☐ Video Conference
c)☐ Personal [copy given to: 1)☐ applicant 2)☐ applicant's representative]

Exhibit shown or demonstration conducted: d)☐ Yes e)☒ No.
If Yes, brief description: _____.

Claim(s) discussed: *Claims 1-5*.

Identification of prior art discussed: *Ellis (6,167,428)*.

Agreement with respect to the claims f)☐ was reached. g)☒ was not reached. h)☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: *See Continuation page*.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

_____
Examiner's signature, if required

Upon review of the history of this application, it became apparent that an interview summary was inadvertently not prepared. A summary is provided below to make the record complete for the August 5th interview to the best of the examiner's recollection. A discussion of the prior art of Ellis (US 6,167,428) vs. interpretation of claim language 1-5 took place.

Applicant argued that his "home network server" and the definition of "subscribe" was different from Ellis.

Applicant argued the examiner improperly made the second office action final and introduced a new grounds of rejection. Applicant requested the examiner to withdraw the rejection. Examiner responded to all of the arguments and used the same prior art , Ellis (US 6,167,428), thus making a proper final rejection.

Applicant proposed changing the claims only if the examiner was willing to allow the application. Examiner explained that any amendment would require further search and consideration by the examiner. Examiner repeatedly asked applicant to send a formal response in writing. Applicant repeatedly refused as applicant did not wish to pay the extra fees of $395.

Applicant was extremely insistent and wished to speak to someone with negotiation authority. Out of courtesy by the examiner, another interview was scheduled for August 9th with someone of negotiation authority.

No agreements were reached with respect to both the limitations of claims 1-5 and proposed claim amendments.

RUPAL DHARIA
SUPERVISORY PATENT EXAMINER

2001), claims can only be construed to preserve their validity where the proposed claim construction is practicable, is based on sound claim construction principles, and does not revise or ignore the explicit language of the claims.

Finally, if a disputed term lacks a customary meaning, and was essentially created by the patentee (but not defined in the specification or prosecution history), its meaning should be derived from the context of the patent, but construed narrowly against the patent drafter, in view of the patentee s failure in his obligation to clearly define the term. See J.T. Eaton & Co. v. Atl. Paste & Glue Co., 106 F.3d 1563, 1568 (Fed. Cir. 1997). As this Court has stated, [w]here there is an equal choice between a broader and a narrower meaning of a claim, and there is an enabling disclosure that indicates that the applicant is at least entitled to the narrower meaning, we consider the notice function of the claim to be best served by adopting the narrower meaning. See Athletic Alternatives, Inc. v. Prince Mfg., Inc., 73 F.3d 1573, 1581 (Fed. Cir. 1996).

III. The Tension Between Proper Use of the Specification and Improper Reading in of Limitations

Our second issue how the specification should properly be used to interpret claims without impermissibly importing limitations into the claims relates to this Court s question (3). As this Court noted in Markman, [t]he written

description part of the specification itself does not delimit the right to exclude. That is the function and purpose of claims. 52 F.3d at 980. The Texas Digital court s motivation for advocating starting with dictionaries rather than the intrinsic evidence was the frequent mistake of impermissibly importing limitations from the specification. See Texas Digital, 308 F.3d at 1204. Despite the government s recommendation to scale back the use of dictionaries as the baseline for claim meaning, the government, like Texas Digital, recognizes that courts conducting claim construction face a great challenge navigating the shoals between properly relying on the specification and going too far and improperly importing limitations from it. Fairness and the public notice function of the patent law require courts to afford patentees the full breadth of clear claim language, and bind them to it as well. Tate Access Floors, Inc. v. Interface Architectural, 279 F.3d 1357, 1367 (Fed. Cir. 2002). Typically, these competing policy concerns form the tension behind a determination whether to limit or broaden a claim term in view of the specification, even where the specification has not explicitly defined the term.

Recently, in Liebel-Flarsheim, 358 F.3d at 904, Judge Bryson described the fine line between the competing axioms that claims be read in view of the specification, and that limitations not be imported from the specification into the claims. He aptly observed that [a]lthough parties frequently cite one or the other

of these axioms to us as if the axiom were sufficient, standing alone, to resolve the claim construction issues we are called upon to decide, the axioms themselves seldom provide an answer, but instead merely frame the question to be resolved. Id.

Additional guidance by this Court on the issue could assist the district courts in resolving this tension. As a general matter, courts should be less inclined to infer a more narrow definition of a disputed claim term from the specification if a person of ordinary skill in the art would consider the feature relied on from the specification exemplary or insignificant to the essence or primary purpose of the invention. As this Court in Alloc phrased it, the balance between construing in light of the specification and impermissibly importing limitations, turns on how the specification characterizes the claimed invention. 342 F.3d at 1370. This Court has attempted to interpret claims to encompass a feature that the specification describes as essential to the invention, or that the specification used to distinguish the prior art. For example, in SciMed Life Systems, Inc. v. Advanced Cardiovascular Systems, Inc., 242 F.3d 1337, 1344 (Fed. Cir. 2000) and in Wang Labs. v. America Online, Inc., 197 F.3d 1377, 1384 (Fed. Cir. 1999), this Court held that claims cannot be construed as encompassing prior art that was distinguished in the specification and disclaimed during prosecution. Toro Co. v.

White Consolidated Indus., 199 F.3d 1295, 1301 (Fed. Cir. 1999) illustrates a claim interpretation consistent with a feature emphasized in the specification as important to the invention.

A merely exemplary feature, because of its *exemplary* status, should not be read into claims whose words do not include that feature. By way of illustration, where the specification describes a feature, not found in the words of the claims, only to fulfill the statutory best mode requirement, the feature should be considered exemplary, and the patentee should not be unfairly penalized by the importation of that feature into the claims. A person of ordinary skill may also consider a feature merely exemplary where nothing in the written description indicates that the invention is exclusively directed toward the feature or suggests that embodiments without it are outside the scope of the invention. Sunrace Roots Enter. Co. v. SRAM Corp., 336 F.3d 1297, 1305 (Fed. Cir. 2003). However, if the specification as a whole suggests that the very character of the invention requires the limitation be a part of every embodiment, then defining a claim term in accordance with that limitation would be appropriate. Alloc, 342 F.3d at 1370.

Form PTO 55 (12-80)

U.S. DEPARTMENT OF COMMERCE
United States Patent and Trademark Office

November 24, 2006

(Date)

THIS IS TO CERTIFY that the annexed is a list of the contents comprised from the electronic file of the Patent Application identified below, said contents list being a list of the papers comprising the record before the United States Court of Appeals for the Federal Circuit for the Patent Application of:

Applicant(s): Jed Margolin

Date Filed: September 6, 2001

Serial No: 09/947,801

Title: DISTRIBUTED COMPUTER SYSTEM

By authority of the
DIRECTOR OF THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Kyla Abraham

Certifying Officer

Date	Description
10/12/2006	MAIL EXAMINER INTERVIEW SUMMARY (PTOL - 413)
10/06/2006	APPEAL TO COURT OF APPEALS
08/24/2006	BPAI DECISION - EXAMINER AFFIRMED
05/17/2006	ASSIGNMENT OF APPEAL NUMBER
04/13/2006	MAIL REPLY BRIEF NOTED BY EXAMINER
03/16/2006	REPLY BRIEF FILED
11/24/2006	MAIL EXAMINER'S ANSWER
11/17/2005	APPEAL BRIEF FILED
10/27/2005	NOTICE OF PANEL DECISION FROM PRE-APPEAL BRIEF REVIEW
10/26/2005	APPEALS CONF. PROCEED TO BPAI,
09/06/2005	PRE-APPEAL BRIEF REQUEST FOR REVIEW
09/06/2005	NOTICE OF APPEAL FILED
08/30/2005	MAIL EXAMINER INTERVIEW SUMMARY (PTOL - 413)
08/30/2005	MAIL EXAMINER INTERVIEW SUMMARY (PTOL - 413)
08/29/2005	MAIL EXAMINER INTERVIEW SUMMARY (PTOL - 413)
08/25/2005	MISCELLANEOUS INCOMING – TELEPHONE INTERVIEW SUMMARY
08/19/2005	MISCELLANEOUS INCOMING – TELEPHONE INTERVIEW SUMMARY
08/12/2005	MISCELLANEOUS INCOMING – TELEPHONE INTERVIEW SUMMARY
08/04/2005	RESCIND NONPUBLICATION REQUEST FOR PRE GRANT PUBLICATION
06/15/2005	MAIL FINAL REJECTION (PTOL - 326)
04/21/2005	RESPONSE AFTER NON-FINAL ACTION
01/26/2005	MAIL NON-FINAL REJECTION
12/09/2004	MISCELLANEOUS INCOMING LETTER
09/06/2001	NONPUBLICATION REQUEST
09/06/2001	INFORMATION DISCLOSURE STATEMENT (IDS) FILED
09/06/2001	APPLICATION FILED

[Image File Wrapper - from USPTO PAIR web site]

Search results as of: 12-27-2006::16:52:44 E.T.

This application is officially maintained in electronic form. To View: Click the desired Document Description. To Download and Print: Check the desired document(s) and click StartDownload.

Mail Room Date	Document Description	Page Count
10-12-2006	Examiner Interview Summary Record (PTOL - 413)	3
10-06-2006	Appeal to CAFC	10
08-24-2006	BPAI Decision - Examiner Affirmed	8
05-19-2006	Appeal Docketing Notice	1
04-13-2006	Reply Brief Noted - BPAI	2
03-16-2006	Reply Brief Filed	11
03-16-2006	Status Letter Mailed to Applicant	2
01-24-2006	Examiner's Answer to Appeal Brief	13
11-17-2005	Appeal Brief Filed	11
10-27-2005	Pre-Brief Appeal Conference decision	2
09-06-2005	Pre-Brief Conference request	6
09-06-2005	Notice of Appeal Filed	2
09-06-2005	Transmittal to TC	1
08-31-2005	Fee Worksheet (PTO-06)	1
08-30-2005	Examiner Interview Summary Record (PTOL - 413)	4
08-30-2005	Examiner Interview Summary Record (PTOL - 413)	3
08-29-2005	Examiner Interview Summary Record (PTOL - 413)	4
08-25-2005	Applicant summary of interview with examiner	4
08-19-2005	Applicant summary of interview with examiner	3
08-12-2005	Applicant summary of interview with examiner	14
08-04-2005	Miscellaneous Action with SSP	1
08-04-2005	Rescind Nonpublication Request for Pre Grant Pub	1
06-15-2005	Final Rejection	11
06-15-2005	List of references cited by examiner	1
06-15-2005	Search information including classification, databases and other search related notes	1
06-15-2005	Index of Claims	1

06-09-2005	Examiner's search strategy and results	2
05-27-2005	Fee Worksheet (PTO-06)	1
04-21-2005	Amendment - After Non-Final Rejection	1
04-21-2005	Applicant Arguments/Remarks Made in an Amendment	38
01-26-2005	Non-Final Rejection	6
01-26-2005	List of references cited by examiner	1
01-26-2005	List of References cited by applicant and considered by examiner	2
01-26-2005	Index of Claims	1
01-26-2005	Bibliographic Data Sheet	2
01-26-2005	Search information including classification, databases and other search related notes	1
01-21-2005	Examiner's search strategy and results	1
12-09-2004	Miscellaneous Incoming Letter	1
09-06-2001	Fee Worksheet (PTO-06)	1
09-06-2001	Fee Worksheet (PTO-06)	1
09-06-2001	Fee Worksheet (PTO-06)	1
09-06-2001	Claims Worksheet (PTO-2022)	1
09-06-2001	Information Disclosure Statement (IDS) Filed	2
09-06-2001	NPL Documents	1
09-06-2001	NPL Documents	2
09-06-2001	NPL Documents	3
09-06-2001	Transmittal of New Application	3
09-06-2001	Nonpublication request from applicant.	3
09-06-2001	Specification	7
09-06-2001	Claims	2
09-06-2001	Abstract	1
09-06-2001	Drawings	3
09-06-2001	Oath or Declaration filed	2

Close Window

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Day : Wednesday
Date: 12/13/2006
Time: 11:22:01

Content Information for 09/947801

Search Another: Application# Search or Patent# Search

PCT / / Search or PG PUBS # Search

Attorney Docket # Search

Bar Code # Search

Appln Info | Contents | Petition Info | Atty/Agent Info | Continuity/Reexam | Foreign Data

Date	Status	Code	Description
10/06/2006	195	J502	APPEAL TO COURT OF APPEALS
10/12/2006		MEXIN	MAIL EXAMINER INTERVIEW SUMMARY (PTOL - 413)
10/03/2006		EXIN	EXAMINER INTERVIEW SUMMARY RECORD (PTOL - 413)
08/24/2006		MAPDA	MAIL BPAI DECISION ON APPEAL - AFFIRMED
08/24/2006	135	APDA	BPAI DECISION - EXAMINER AFFIRMED
05/17/2006	124	APAS	ASSIGNMENT OF APPEAL NUMBER
05/02/2006	132	APWD	APPEAL AWAITING BPAI DOCKETING
04/13/2006		MRBNE	MAIL REPLY BRIEF NOTED BY EXAMINER
04/11/2006	133	RBNE	REPLY BRIEF NOTED BY EXAMINER
03/24/2006		FWDX	DATE FORWARDED TO EXAMINER
03/16/2006	128	APRB	REPLY BRIEF FILED
01/24/2006	123	MAPEA	MAIL EXAMINER'S ANSWER
01/20/2006	122	APEA	EXAMINER'S ANSWER TO APPEAL BRIEF
12/20/2005		FWDX	DATE FORWARDED TO EXAMINER
11/17/2005	121	AP.B	APPEAL BRIEF FILED
10/27/2005		MAPCP	MAIL APPEALS CONF. PROCEED TO BPAI
10/26/2005		APCP	APPEALS CONF. PROCEED TO BPAI,
09/06/2005		AP.C	REQUEST FOR APPEAL CONFERENCE FILED
09/06/2005	120	N/AP	NOTICE OF APPEAL FILED
08/25/2005		M865	LETTER REQUESTING INTERVIEW WITH EXAMINER
08/25/2005		LET.	MISCELLANEOUS INCOMING LETTER
08/25/2005		EXIN	EXAMINER INTERVIEW SUMMARY RECORD (PTOL - 413)
08/30/2005		MEXIN	MAIL EXAMINER INTERVIEW SUMMARY (PTOL - 413)
08/10/2005		EXIN	EXAMINER INTERVIEW SUMMARY RECORD (PTOL - 413)
08/29/2005		MEXIN	MAIL EXAMINER INTERVIEW SUMMARY (PTOL - 413)
08/19/2005		LET.	MISCELLANEOUS INCOMING LETTER
08/09/2005		EXIN	EXAMINER INTERVIEW SUMMARY RECORD (PTOL - 413)
08/12/2005		LET.	MISCELLANEOUS INCOMING LETTER
08/04/2005		RESC	RESCIND NONPUBLICATION REQUEST FOR PRE GRANT PUBLICATI
06/15/2005	61	MCTFR	MAIL FINAL REJECTION (PTOL - 326)
06/13/2005	60	CTFR	FINAL REJECTION
05/26/2005		FWDX	DATE FORWARDED TO EXAMINER
04/21/2005	71	A...	RESPONSE AFTER NON-FINAL ACTION
12/09/2004		LET.	MISCELLANEOUS INCOMING LETTER

01/26/2005	41	MCTNF	MAIL NON-FINAL REJECTION
01/24/2005	40	CTNF	NON-FINAL REJECTION
11/18/2004		DOCK	CASE DOCKETED TO EXAMINER IN GAU
06/16/2004		DOCK	CASE DOCKETED TO EXAMINER IN GAU
05/26/2004		TSSCOMP	IFW TSS PROCESSING BY TECH CENTER COMPLETE
09/06/2001		RCAP	REFERENCE CAPTURE ON IDS
11/12/2002		DOCK	CASE DOCKETED TO EXAMINER IN GAU
10/04/2002		DOCK	CASE DOCKETED TO EXAMINER IN GAU
09/06/2001		M844	INFORMATION DISCLOSURE STATEMENT (IDS) FILED
10/23/2001	30	DOCK	CASE DOCKETED TO EXAMINER IN GAU
10/11/2001	20	OIPE	APPLICATION DISPATCHED FROM OIPE
10/05/2001		C.AD	CORRESPONDENCE ADDRESS CHANGE
09/14/2001		SCAN	IFW SCAN & PACR AUTO SECURITY REVIEW
09/06/2001	19	IEXX	INITIAL EXAM TEAM NN

Appln Info | Contents | Petition Info | Atty/Agent Info | Continuity/Reexam | Foreign Data

To go back use Back button on your browser toolbar.

Back to PALM | ASSIGNMENT | OASIS | Home page

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The undersigned hereby certifies that a true and correct copy of the above foregoing and Attachments has been served on the Office of the Solicitor for the United States Patent and Trademark Office by United States Postal Service Express Mail Service to the address shown below:

Dated: January 4, 2007

_____

Jed Margolin

Office of the Solicitor
Post Office Box 15667
Arlington, VA 22215