IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TV GUIDE ONLINE, INC. and TV GUIDE ONLINE, LLC, Plaintiffs,	)	
v.	)	C.A. No. 05-725 KAJ
TRIBUNE MEDIA SERVICES, INC., Defendant.	)	**PUBLIC VERSION**

REBUTTAL EXPERT REPORT OF DR. GARY S. TJADEN REGARDING NON-INFRINGEMENT OF U.S. PATENT NO. 5,988,078

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TV GUIDE ONLINE, INC. AND TV GUIDE ONLINE, LLC,	)	
Plaintiffs,	)	**Civil Action No.: 05-CV-725-KAJ**
vs.	)	
TRIBUNE MEDIA SERVICES, INC.,	)	
Defendant.	)	

REBUTTAL EXPERT REPORT OF DR. GARY S. TJADEN REGARDING NON-INFRINGEMENT OF U.S. PATENT NO. 5,988,078

1. My name is Gary S. Tjaden. I currently reside at 2820 GlenEagles Pointe, Alpharetta, Georgia 30005.

2. I have been retained by TRIBUNE MEDIA SERVICES, Inc. ("TMS") as an expert witness in this action to provide my technical assessment and opinions regarding U.S. Patent No. 5,988,078 ("the '078 Patent"), titled "Method And Apparatus For Receiving Customized Television Programming Information By Transmitting Geographic Location To A Service Provider Through A Wide-Area Network." Specifically, I have reviewed the workings of TMS' services and systems relating to www.zap2it.com and compared the asserted claims of the '078 patent with these services and systems. I also have reviewed the December 15, 2006 report submitted by J. Tipton Cole, TV Guide's expert witness on infringement issues. Based on my analysis, I have concluded that TMS' www.zap2it.com services and systems, and use thereof, do not infringe the asserted claims of the '078 patent. I have summarized my opinions below.

3. Although I have expended considerable time and effort on this matter to date, I reserve the right to update, supplement or amend this Report in view of other information that might become available between now and trial that is relevant either to the opinions set forth herein or my analysis, including the Court's claim construction ruling.

4. I am being compensated for my time at my normal hourly rate, which is $400. No part of my compensation depends on the outcome of this litigation, the opinions I express, or my testimony.

I. Background and Qualifications

5. I am currently Founder and President of COCOMO ID, LLC, a developer of technology for mobilized speech-audio publishing. From 1993 through 2004 I was a Principal Research Engineer and Director of the Center for Enterprise Systems at the Georgia Institute of Technology. Before coming to the Georgia Institute of Technology I held numerous executive positions with NYNEX Corporation (1987-92), a regional telecommunication service provider, and with Burroughs/Unisys (1984-87), a manufacturer of computer systems and provider of information technology services. I also was Senior Vice President of Engineering and Technology for Cox Cable Communications from 1979 to 1984, where I was involved in various company activities and ventures, including supervising development and implementation of the company's interactive cable-based videotext system known as INDAX. Prior to joining Cox, I held research and development posts with Sperry Corporation in both the Sperry Research Center located in Sudbury, Massachusetts (1975-76) and the Univac Division located in Bluebell, Pennsylvania (1976-79), and with the Bell Telephone Laboratories Electronic Switching Systems Division located in Naperville, Illinois (1966-70 and 1972-75).

6. I am a named inventor of eight issued U.S. patents.

7. I hold a Bachelor of Science degree in Electrical Engineering (B.S.E.E.), which I received from the University of Utah in 1966. I received a Master of Science degree in Electrical Engineering (M.S.E.E.) in 1969 from Northwestern University. In 1973, I received a Doctor of Philosophy (Ph.D.) degree in Computer Science from The Johns Hopkins University.

8. My detailed educational and professional background and a list of my technical publications for the preceding ten years are described in my curriculum vitae, attached hereto as EXHIBIT 1. My curriculum vitae also lists the cases in which I have testified as an expert at trial or by deposition during the last five years.

II. Subject Matter of This Report

9. I understand that TV Guide Online, Inc. and TV Guide Online, LLC (collectively, "TV Guide") allege that the local television listings look-up feature of TMS' Zap2it.com website, and use thereof, infringe claims 1, 2, 3, 4, 5, 6, 7, 8 and 10 of the '078 Patent. It is the infringement or non-infringement of these asserted claims with which this Report deals.

10. In making my analyses I have been informed that the Court has not yet construed claim terms. Thus, where indicated in my Report, I have used certain assumed claim constructions, stated and justified below, in forming my opinions. I reserve the right to revise my opinions in light of other constructions given to me in the future by the Court or others.

11. I understand that TV Guide asserts a priority filing date for the '078 Patent of March 9, 1992. In formulating my opinion I have assumed that the date of invention is no earlier than

March 9, 1992 for all asserted claims. I have seen nothing to indicate an earlier invention date is warranted.

12. I have reviewed the '078 patent, the history of the patent's prosecution before the U.S. Patent & Trademark Office ("USPTO"), references identified on the front pages of the '078 patent, the Expert Report Of Mr. J. Tipton Cole dated December 15, 2006 detailing the alleged infringement by Zap2it.com (hereinafter "Cole"), and the materials listed in EXHIBIT 2 to my Expert Report regarding invalidity of the '078 patent dated December 15, 2006 (hereinafter "Invalidity Report"). The enumerated exhibits listed in EXHIBIT 2 attached to this report are a list of additional materials I have considered in reaching the opinions set forth in this Report. In addition to these materials, I have personally visited the Zap2it.com web site using several different personal computers. Based upon these materials reviewed, product examinations, and the thirty (30) years of experience I have in the field of electronic communications and television broadcasting, it is my opinion that the Zap2it.com services and systems, and use thereof, do not infringe any of the asserted claims of the '078 patent literally or under the doctrine of equivalents.

13. I have not yet prepared the exhibits that I ultimately intend to rely on at the trial in this case. I do know, however, that such exhibits will likely be comprised of the claim language taken from the '078 patent, the construction of such language, and the exhibits cited by Mr. Cole in his report on infringement. I also believe I will likely rely on demonstrations of the accused services and system, as well as the evidence I cite herein. As trial approaches, and as I finalize the exhibits on which I ultimately intend to rely, I reserve the right to supplement this report.

III. The Perspective of One of Ordinary Skill in the Art

14. I understand that the person of ordinary skill is a hypothetical person who is presumed to be aware of and understand all the pertinent prior art at the time of the invention. The skill of the actual inventor is not determinative of the level of ordinary skill in the art. I understand that multiple factors may be considered in determining the level of ordinary skill in the art, including: the type of problems encountered in the prior art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field. No one factor is determinative, one or more factor may predominate, and not all factors may be present in every case.

15. I disagree with Mr. Cole's characterization of a skilled artisan. (Cole at ¶30.) During my thirty years in the fields of computer systems, electronic communications and television broadcasting, I have often worked with engineers and other technical personnel in the field of interactive information distribution systems. Based on this experience, I conclude that the level of ordinary skill in the relevant art in 1990-92 would best be defined as a combination of education and experience. For example, I would consider an engineer with a bachelor of science degree in electrical engineering (including classes in computer systems and software engineering) or computer science (with classes in electronics and data communications) and three to five years of experience in electronic communications (including computer systems and software engineering) in the pertinent relevant time period to possesses an "ordinary level of skill" in the field. The more formal education one possesses, the less industry experience needed to attain an "ordinary level of skill." For example, an engineer with a master of science degree in electrical engineering or computer science would need only two to three years of experience to attain an "ordinary level of skill" in the field of data communications. Similarly, the more

industry experience one possesses, the less formal education needed to attain this "ordinary level of skill."

16. In expressing my opinions below, I will use the term "skilled artisan" to refer to a person who, in the relevant time period, possessed the level of ordinary skill described above in the field of electronic information distribution systems.

IV. Technology Background

17. It will be useful to have in mind certain fundamental concepts of data and computer communication technology when analyzing the '078 Patent with respect to alleged infringement. I take much of the conceptual information discussed in this section from a textbook for advanced undergraduate or first-year graduate level university students published in 1991 in its third addition and authored by William Stallings, Ph.D., entitled *Data and Computer Communications* (published by Macmillan Publishing, New York), hereinafter "Stallings". The author of this textbook was, and is, well known and well respected in the fields of data and computer communications. I am using it because it was published the year before the alleged invention date and effective filing date of the '078 Patent, it fairly describes the data and computer communications technologies taught to computer science and engineering students in the early 1990's, and it would have been known to and understood by skilled artisans at the time. I note also that the contents of a textbook do not reflect the "state of the art" at the time the book was published. Rather, several years and much peer review are required before new technologies appear in textbooks.

18. The first issue of importance to interpreting the '078 Patent that I will use Stallings to shed light upon is that of what is a "modem" as that term was understood as of the priority date of the '078 patent.

19. Stallings opens his book by presenting a "simple model of communications." In conjunction with a block diagram of this simplified model, reproduced below (captioned as Figure 1-1 in the book), Stallings illustrates with an example how a data communications system operates, saying: "For the case of electronic mail, consider that that [*sic*] input device and transmitter are components of a personal computer. The agent is a user who wishes to send a

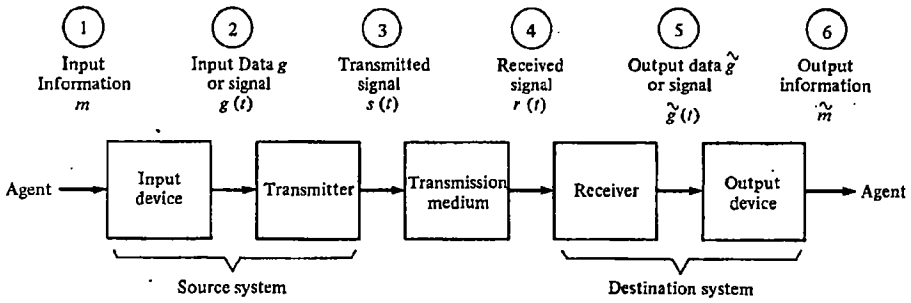


FIGURE 1-1. Simplified communications block diagram.

message to another user, for example, 'The meeting scheduled for March 25 is canceled' (*m*). This string of characters is the information. The user activates the electronic mail package on the personal computer and enters the message via the keyboard (input device). The character string is briefly buffered in main memory. We can view it as a sequence of characters (*g*) or, more literally, a sequence of bits (*g*) in memory. The personal computer is connected to some transmission medium, such as a local network or a telephone line, by an I/O device (transmitter), such as a local network transceiver or a modem. The input data are transferred to the transmitter as a sequence of bits [*g(t)*] or, more literally, a sequence of voltage shifts [*g(t)*] on some

communications bus or cable. The transmitter is connected directly to the medium and converts the incoming bits [*g(t)*] into a signal [*s(t)*] suitable for transmission; specific alternatives will be described in Chapter 3." (Stallings at 3:1 and 2:Figure 1-1, underlining added.)

20. In the above Stallings clearly shows that in a communications system the device that interfaces the personal computer in Stallings' example to the "Transmission medium," called in Figure 1-1 the "Transmitter," is not necessarily a modem. As we shall see, the "Transmitter" can be any of a number of significantly different devices, depending on the nature of the "Transmission medium."

21. Basic concepts of data transmission are dealt with by Stallings in his Chapter 2, entitled "Data Transmission." In a subsection of this chapter entitled "Data and Signals," Stallings says: "As Figure 2-13 [reproduced below] illustrates, these are not the only possibilities. Digital data can also be represented by analog signals by use of a modem (modulator-demodulator). The modem converts a series of binary (two-valued) voltage pulses into an analog signal by encoding the digital data onto a carrier frequency. The resulting signal occupies a certain spectrum of frequency centered about the carrier and may be propagated across a medium suitable for that carrier. The most common modems represent digital data in the voice spectrum and hence allow those data to be propagated over ordinary voice grade telephone lines. At the other end of the line, the modem demodulates the signal to recover the original data." (Stallings at 49:2, and 49:Figure 2-13, underlining added.)

22. Chapter 3 of Stallings is entitled "Data Encoding." The opening sentence of the chapter puts this topic into context, saying: "In Chapter 2 a distinction was made between analog and

digital data and analog and digital signals. Figure 2-12 suggested that either form of data could be encoded into either form of signal." (Stallings at 84:1.)

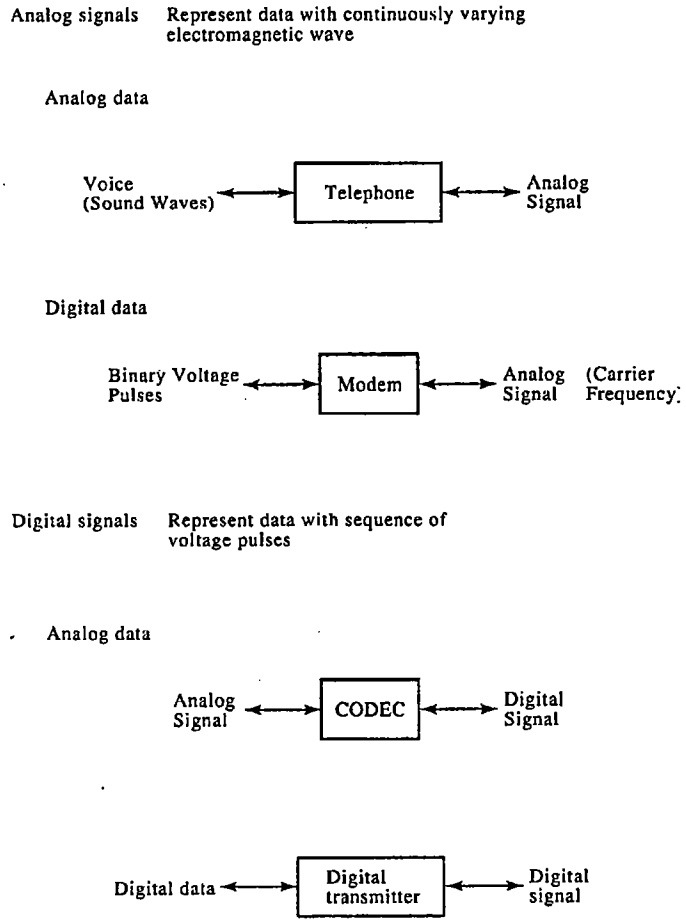


FIGURE 2-13. Analog and digital signaling of analog and digital data.

23. Of special relevance here are the opening remarks of Section 3-2, entitled "Digital Data, Analog Signals." Stallings says: "We turn now to the case of transmitting digital data using analog signals. The most familiar use of this transformation is for transmitting digital data through the public telephone network. The telephone network was designed to receive, switch, and transmit analog signals in the voice-frequency range of about 300 to 3400 Hz. It is not at

present suitable for handling digital signals from the subscriber locations (although this is beginning to change). Thus digital devices are attached to the network via a modem (modulator-demodulator), which converts digital data to analog signals, and vice versa." (Stallings at 94:5, underlining added.)

24. "For the telephone network, modems are used which produce signals in the voice frequency range. The same basic techniques are used for modems that produce signals at higher frequencies (e.g., microwave)." (*Id.* at 94:6.)

25. Thus, Stallings clearly shows that a modem is a device for attaching a digital device (e.g., a personal computer) to a communications network by converting digital data to analog signals, and vice versa.

26. Stallings' Chapter 4 is entitled "Digital Data Communication Techniques." The opening paragraph of subsection 4-3, entitled "Interfacing," sheds further light on the technology and nomenclature for devices that connect a source of digital information (e.g., a personal computer) to a communication medium. Stallings says here: "Most digital data processing devices are possessed of limited data transmission capability. Typically, they generate only digital signals, and these are usually NRZ-L or a variant. The distance across which they can transmit data is also limited. Consequently it is rare for such a device to attach directly to a transmission medium. The more common situation is depicted in Figure 4-7 [reproduced below]. The devices we are discussing, which include terminals and computers, are generically referred to as *data terminal equipment* (DTE). A DTE makes use of the transmission system through the

mediation of *data circuit-terminating equipment* (DCE). An example of the latter is a modem (a good description of a variety of DCEs can be found in [HELD86][1]).” (Stallings at 132:6.)

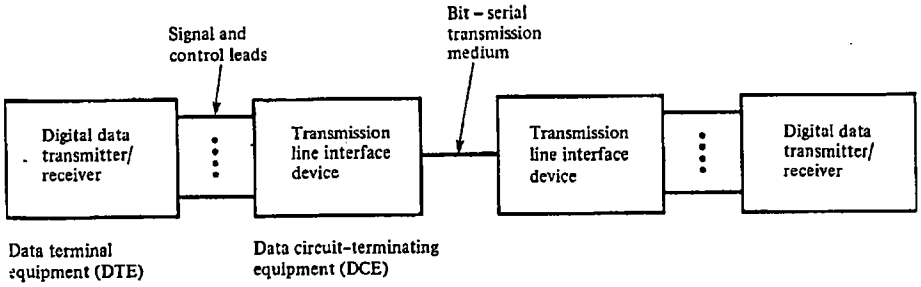


FIGURE 4-7. Generic interface to transmission medium.

27. I also refer to another technical book in the area, *Protocols & Techniques For Data Communication Networks*, edited by Franklin F. Kuo (Prentice-Hall, Englewood Cliffs, NJ, 1981) (hereinafter “Kuo,” excerpts of which have been attached to this Report as EXHIBIT 3), for insight into data circuit-terminating (data communication) equipment (DCE) devices other than modems. Kuo says: “This level of protocol is used to move blocks of data reliably from data termination equipment (DTE) to date [*sic*] communication equipment (DCE). For our purposes, we can think of host computers as DTEs and packet switches as DCEs. … For example, a DTE (host) may be physically attached to a DCE (packet switch) via a shared local loop, so it has a unique link address.” (Kuo at 21:7-23:3 and Figure 1-9, underlining added.) Thus we see that in addition to modems, packet switches may also serve as devices that directly connect a digital data source (e.g., computer) to a transmission medium. The term “DCE” is a generic term referring to *any* device that connects a data terminal device (DTE) to a transmission medium.

[1] Held, G. *Data Communications Networking Devices*. New York: Wiley, 1986. (Stallings at 793:26.)

28. Next I turn to the issue raised by the '078 Patent of what is, or is not, a "wide-area network" as that term was understood as of the priority date of the '078 patent.

29. Stallings says: " ... The solution to the problem is to attach the devices to a *communication network.* ... We have a collection of devices that wish to communicate; we will refer to them generically as *stations*. The stations may be computers, terminals, telephones, or other communicating devices. Each station attaches to a *network node.* The set of nodes to which stations attach is the boundary of the communication network, which is capable of transferring data between pairs of attached stations. The communication network is not concerned with the content of the data exchanged between stations; its purpose is simply to move that data from source to destination." (Stallings at 214:3-215:1.)

30. "Thus a communication network is a shared resource that addresses the problems cited earlier in this section. The network provides for the sharing of transmission facilities, among many stations, which reduces the cost incurred by any pair of stations. Also, a single I/O port is needed by each station, rather than N - 1 ports." (*Id.* at 215:2.)

31. "Communications networks may be categorized based on the architecture and techniques used to transfer data. The following types of networks are in common use:

- Switched communication network.
  - Circuit-switched network.
  - Message-switched network.
  - Packet-switched network.
- Broadcast communication network.
  - Packet radio network.
  - Satellite network.
  - Local network."

(*Id.* at 215:3.)

32. "A *switched communication network* consists of an interconnected collection of nodes, in which data are transmitted from source to destination by being routed through the network of nodes. ... The nodes are connected by transmission paths. Data entering the network from a station are routed to the destination by being switched from node to node." (*Id.* at 215:4-216:1.)

33. "With a *broadcast communication network*, there are no intermediate switching nodes. Each station is attached to a transmitter/receiver that communicates over a medium shared by other stations. In its simplest form, a transmission from any one station is broadcast to and received by all other stations." (*Id.* at 217:2.)

34. Stallings dedicates an entire chapter (Chapter 11) to the type of broadcast communication network he refers to above as "local network." About such networks he says: "The principal technology alternatives that determine the nature of a local area network are the topology and transmission medium of the network. Together they in large measure determine the type of data that may be transmitted, the speed and efficiency of communications, and even the kinds of applications that a network may support. ... The discussion in this section is organized around the common topologies used for local area networks: ring, bus, tree, and star ... ." (Stallings at 377:3-4.)

35. Stallings distinguishes yet another type of communication network, saying: "A more extreme case is a situation in which two entities do not even share the same switched network, but are indirectly connected through two or more networks. A set of such interconnected networks is termed an *internet*." (Stallings at 434:7.) Stallings illustrates these four types of communication networks in his Figure 12-1, shown below. (Stallings at 435:Fig. 12-1.)

Nowhere in his textbook does Stallings distinguish or discuss a type of communication network called a "wide-area network."

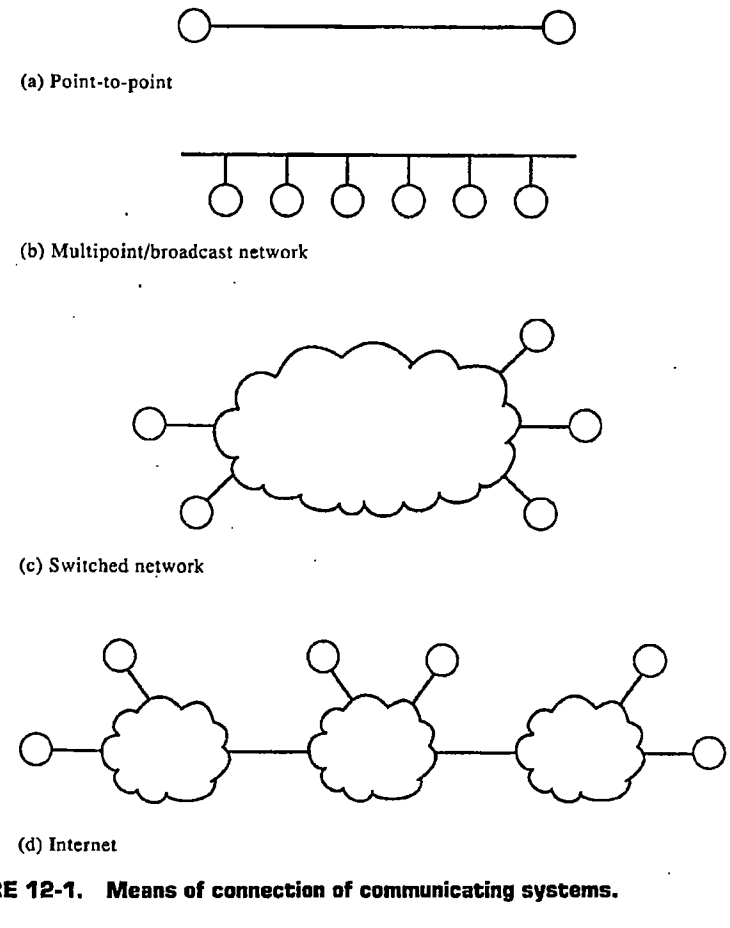


FIGURE 12-1. Means of connection of communicating systems.

36. The IEEE Standard Dictionary of Electrical And Electronics Terms, Fifth Edition published in 1993, which Mr. Cole cites in his Infringement Report (but regarding the term "modem"), defines, on page 735, a *local area network* as: "A non-public data network in which serial transmission is used without store and forward techniques for direct data communication among data stations located on the user's premises." This definition is entirely consistent with Stallings' use of the term. This dictionary does not include a definition for the term *wide-area*

network. This term, wide-area network, was not in common use among data communications engineers in 1992. It would not have had a clear and precise meaning to a skilled artisan in this time-frame, in my opinion. About all a skilled artisan could have concluded without an expanded description is that a wide-area network was not a local area network, the only other kind of "area network" commonly known at the time. The '078 patent does not define "wide area network." The term "wide area network" does not appear in the '078 patent outside of the claims.

V. The TMS Zap2it.com Service And System

37. Zap2it.com is an Internet world wide web site located at URL www.zap2it.com. The Internet is an international collection of interconnected packet-switched data communication networks using the international standard data communications protocol called IP as the network interconnection protocol, and the transport protocol called TCP for delivering packets between stations having access (logically connected) to the Internet. Stations can include computers serving as web site hosts (information provider stations), such as Zap2it.com, and end-user stations comprised of personal computers running special application programs called Internet browsers used to send messages to and receive messages from web sites. Other types of application programs that are not Internet browsers can also be used to communicate between stations logically connected to the Internet. Communication between Zap2it.com and end-user stations requires an Internet browser. Internet browser applications are not provided by TMS or Zap2it.com. Rather, the users of end-user stations must obtain Internet browser applications from other sources. Nowadays Internet browsers are usually preinstalled on personal computers when users purchase them.

38. There are several ways in which end-user stations can become logically connected to the Internet. In all cases the end-user must first make arrangements with an independent entity called an Internet Service Provider (ISP). Neither TMS nor Zap2it.com are ISPs. ISPs provide end-users with the means and permissions to establish a local connection between the end-user's station and the ISP's multiplexer (called a Point Of Presence) that is, in turn, connected directly to a node of one of the packet-switched networks of which the Internet is comprised. Most ISPs currently provide two basic types of connections that end-user stations can use: dial-up telephone and broadband.

39. With a dial-up telephone connection, the end-user station uses a modem to which it is directly connected to cause the end-user's standard voice-grade telephone line to be connected at the telephone central office to the ISP's Point Of Presence multiplexer. Communication is then between the end-user station and the modem, which in turn communicates over the telephone line with the ISP's equipment, which in turn communicates with the actual Internet network.

40. At the time of the priority date of the '078 Patent, and still today, personal computers could be connected to telephone modems in multiple ways. One is to use a serial input-output ("I/O") port of the personal computer to connect to a short (several feet long at most) cable that connects to an *external modem* mounted in a stand-alone enclosure. Data is carried between the two over the cable using a standard data link protocol called RS-232. A second way a personal computer can be connected to a modem is to install a modem circuit board into an expansion slot (or other equivalent mechanism) of the personal computer. Then this *internal modem* is connected directly to the personal computer over the computer's internal data bus. Data communication takes place with the internal modem using one of the standard personal computer internal bus protocols, such as PCI or SCSI. Still another way a personal computer can be

connected to a modem is through the use of a high-speed I/O port available on many personal computers today, called a Universal Serial Bus ("USB") port. Such a port provides much higher data rates than the standard RS-232 serial port. In this case the modem is contained in an enclosure external to the personal computer. Neither TMS nor Zap2it.com provide personal computers or modems or other hardware devices.

41. Dial-up telephone Internet connections suffer from the fact that only relatively slow data rates are possible over a standard voice-grade telephone line. Broadband connections provide much higher data rates. Early on in the life of the Internet, and for most of the 1990s, broadband connections to the Internet were used only by businesses or institutions to connect a local area network on the institution's premises to an Internet Point Of Presence. The local area network itself was a broadband network, often 10 Mbs Ethernet. In the same way that stations on the local area network shared the bandwidth of it to achieve high speed communications between each other, they could share a single broadband connection to the Internet, achieving also high speed Internet access. At the time broadband connections were relatively expensive, so economics demanded that the connections be shared.

42. Because of the broadband speeds involved, personal computers cannot use the standard RS-232 serial I/O port to establish a broadband connection with a local area network. Instead, either a local area network interface card (NIC) is installed internal to the personal computer so the high data rates available on the internal data bus can be utilized, or an external "network adapter" is connected to the USB port of the computer (or a PC card slot equivalent found on most laptop computers). However, advances in technology have brought the cost of broadband local connections low enough that smaller business and individual home users can now afford them.

43. There are two basic technologies in use for low-cost broadband local data communications. One is called digital subscriber line (DSL). With DSL technology specially conditioned local-loop telephone lines are used to carry high rate data signals at frequencies above the low frequencies used for standard voice telephone communications. Both standard voice signals and DSL signals can be carried simultaneously on a DSL loop. The DSL loops are definitely not standard voice grade telephone lines. The maximum distance a DSL loop can be from the telephone central office is significantly less than the maximum distance for standard voice-grade lines, and loading coils and taps found on standard lines must be removed. So, not every location that is served with standard telephone service is able to utilize DSL broadband communications.

44. The other low cost broadband technology for local data communications is that of cable television ("cable"). In this technology cable television systems that have been configured for two-way (both downstream and upstream) communication set aside blocks of spectrum for carrying data. Because modern cable television systems support large bandwidths in their distribution plant, relatively large blocks of spectrum can be set aside for data, leading to high data rates. Any premises served by the cable system can have access to such a broadband link. However, as usually implemented, all residences must share the data spectrum available on the trunk of the cable system to which they are connected. The cable broadband communication link on each cable plant trunk is itself a local area network, although it can serve quite a large area. The data carried on each of these links is collected at the cable system head end and multiplexed onto another broadband communication facility that, in turn, connects to an ISP's Internet Point of Presence.

45. Located at each end-user's premises having either DSL or cable broadband service is a special device for connecting the local area network of the premises to the broadband link. In the case of DSL these devices are called DSL modems, and in the case of cable they are called cable modems. These devices convert digital baseband input signals to analog output signals and vice versa, but they do not interface directly with a personal computer on one side and with a standard voice-grade telephone line on the other. The input to these devices is a standard Ethernet input signal carried on a standard Ethernet cable. This Ethernet cable is connected to either an Ethernet adapter of a personal computer or to an Ethernet router. That is, a DSL modem or cable modem is never connected directly to a personal computer in a way equivalent to a voice grade modem, but instead is connected on the input side to an Ethernet local area network interface device.

46. Neither TMS nor Zap2it.com provide broadband local data communication services, including DSL or cable.

47. Many, if not most, personal computers today are equipped to connect to data communication facilities in three ways. They will be equipped with a traditional telephone modem, an Ethernet adapter, and a wireless network adapter for connection to a wireless 802.11 local area network. I personally have accessed the Zap2it.com web site over the last several months using each of these connection techniques, and from multiple Windows-based personal computers.

48. When accessing the Zap2it.com web site I have examined its contents and functions and observed the following:

1. Upon first accessing the web site's home page by entering the site's URL into the address entry field of an Internet browser, the user is presented with information

regarding television programming and movies, and with multiple choices for accessing further information about television programming and movies.

2. Also on the home page is a portion of the page labeled "Find It Fast!" under which is a data entry field labeled within it "Enter Zip." Under this field are three selection buttons labeled TV Listings, Movie Showtimes and On Demand.

3. The choices currently listed across the top of the home page are TV, MOVIES, NEWS, DAILY BLOG, ON DEMAND, PHOTOS and FORUMS.

4. The choices TV, MOVIES and NEWS have sub-choices visible when the cursor is placed over the top-level choice.

5. All of these choices and sub-choices can be selected without entering a zip code in the zip code entry field on the home page, and, if so selected, information is returned to the browser and displayed by it.

6. The TV Listings, Movie Showtimes and On Demand selection buttons under the "Enter Zip" field can each be selected without entering a zip code and, if so selected, information relevant to the button label is returned to the browser and displayed by it.

7. Upon entering a valid zip code in the Enter Zip field and clicking on the On Demand selection button, information regarding television programs and movies that is not specific to a geographical location is returned to the browser and displayed by it.

8. Upon entering a valid zip code in the Enter Zip field and clicking on the Movie Showtimes selection button, a listing of the titles of movies that are currently showing at cinemas within a 5-mile radius of the zip code and a list of cinemas within this area is returned to the browser and displayed by it. Clicking on a movie title returns information giving the specific cinemas and showtimes of the movie, as well as the opportunity to purchase tickets to the movie by linking to a ticket purchase website (not provided by TMS or Zap2it.com).

9. Upon returning to the Zap2it.com home page after performing the above (Item 8) Movie Showtimes selection and then clicking on the TV Listings selection button (the previously entered zip code from Item 8 is already in the zip code field), a grid showing "National Television Listings" being broadcast by national program providers (e.g., ABC, Fox, HBO, etc.) at the current time that is not specific to a geographical location is returned to the browser and displayed by it. A field at the top of the page labeled within it "Enter Zip for local listings" is displayed next to a selection button labeled "Go".

10. Upon entering a valid zip code in the above (Item 9) "Enter Zip for local listings" field a list of television service providers for the zip code area grouped under the categories "CABLE," "SATELLITE" and "LOCAL BROADCAST" is returned to the browser and displayed by it.

11. Upon entering a valid zip code in the Enter Zip field on the Zap2it.com home page and clicking on the TV Listings selection button prior to clicking on the Movie Showtimes selection button described above (Item 8), a list of television service providers for the zip code area grouped under the categories "CABLE,"

"SATELLITE" and "LOCAL BROADCAST" is returned to the browser and displayed by it.

12. Upon clicking on one of the television service providers displayed in the list of such described above in Items 10 or 11, a grid showing the television programs being broadcast by the provider at the current time together with the channel number and program provider is returned to the browser and displayed by it.

13. After performing Item 12 and leaving the Zap2it.com web site, upon then returning to the web site from the same personal computer the previously entered zip code will appear in the field on the home page that would otherwise be labeled "Enter Zip." Upon then clicking on the TV Listings selection button the television programming information grid returned in Item 12 is again returned to the browser and displayed by it without requiring Item 12 to be performed.

14. At the bottom of every web page returned from the Zap2it.com web site I observed a link called "About Us." Clicking on this link returns to the browser, which displays it, information about TMS and Zap2it.com that says, in part, "What to Watch. Where to Watch It. Zap2it is a fresh and lively guide for millions of Americans who love TV and movies. Each day, we connect a large, engaged community of viewers to an expanding world of on-screen entertainment choices. We cover what's on TV, what's playing in movie theaters, and what's available in on-demand and mobile formats. We cover these areas through lively articles, bold photos and our recommended "best bets"--as well as schedules and grids. We have our own writing and photo staff covering Hollywood, and also utilize the great entertainment coverage resources of our parent Tribune Company. We've called ourselves Zap2it since May 2000, but our online roots date back to 1995 when our pioneering predecessor ultimatetv.com was launched."

49. During the deposition by TV Guide of TMS employee Kevin W. McFall, Mr. McFall was asked about a TMS document entitled "Zap2it.com Product Profile." His testimony appears on about pages 62-68 of Volume 1 of his deposition transcript. The document was identified as Exhibit 11 and has Bates Nos. TMS0001846-0001848. Each page of the document contains the phrase "Revised 2/8/01". I assume therefore that the document was written on or about February 8, 2001. I include excerpts from this document below:

- REDACTED
-

- REDACTED

50. I find the description of the Zap2it.com product contained in the Product Profile represented by Exhibit 11 to be consistent with what I have seen when visiting the Zap2it.com web site and described in Items 1-14 above. Of special significance here is that the Zap2it.com service provides as much information about and attention to non-television information (e.g., movies and entertainment related Internet events) as it does to television information. Therefore, in my opinion, Zap2it.com has substantial uses that clearly fall outside of the scope of the '078 Patent's claims because they do not involve television programming information as required by the claims, and such uses have existed since at least February 2001.

VI. Legal Standards For Determining Infringement

51. I understand that determining whether a patent is infringed involves a two-step process. First, the Court must construe the language of the patent claims. Second, the claims as construed are applied to the accused product, methods or systems to determine whether the accused product, methods or systems meet each and every limitation of the asserted claims.

52. With respect to the first step, I understand that the Court in this matter has not yet construed the claims of the '078 patent, but that the parties have exchanged various preliminary constructions. I understand that claims are not interpreted in a vacuum, but are construed within the context of the surrounding words, other claim language, the specification, and the prosecution history. I understand that claim terms are presumed to carry their ordinary and

accustomed meaning to one of skill in the art at the time of the invention, unless the inventor specifically indicated otherwise in the specification or prosecution history.

53. As a layperson with respect to patent law, I understand that there are two types of infringement — literal infringement and infringement under the doctrine of equivalents. I understand that an accused method or product literally infringes a patent claim when all of the limitations of the claim are present in the accused method or product. I understand that this analysis is performed by comparing the claimed and accused methods or products on a limitation-by-limitation basis, not by comparing them as a whole. I understand that a claim is not literally infringed if even a single claim limitation is missing from the accused method or product.

54. I also understand that if a claim is not literally infringed, it may be infringed under the doctrine of equivalents if, for each claim limitation not literally present in the accused method or product, an equivalent of that limitation is present in the accused method or product. I understand that a step or element of an accused method or product is equivalent to a claim limitation when it has "insubstantial differences" from the claim limitation. I understand that one way to determine whether the difference between a claim limitation and an accused step or element is "insubstantial" is whether the step or element in the accused method or product performs substantially the same function, in substantially the same way, to achieve substantially the same result as the claim step or element.

55. I understand that the doctrine of equivalents is limited in several ways. For example, I understand that an applicant's arguments to the U.S. Patent & Trademark Office distinguishing other art or disclaiming subject matter to establish patentability of its invention may preclude the

party enforcing the patent from recapturing the subject matter distinguished and/or disclaimed. I have also been informed that the doctrine of equivalents cannot be applied to a claim limitation in a manner that would effectively read that limitation out of the claim.

56. I understand that to infringe a dependent claim, the accused method or product must include each and every limitation of that dependent claim, and each and every limitation of the claim(s) from which it depends. Thus, a dependent claim cannot be infringed if the independent claim from which it depends is not infringed.

57. I further understand that infringement, whether literal infringement or infringement under the doctrine of equivalents, may be direct or indirect. I understand that direct infringement of a method claim requires the performance of all of the steps of the method by the accused method or product, and that direct infringement of a product claim requires all of the limitations of the claim to be present in the accused product. I understand that there must be an instance of direct infringement before there can be found any indirect infringement.

58. I understand that there are two forms of indirect infringement, inducement of infringement and contributory infringement. I understand that a person may induce infringement of a patent by actively encouraging or instructing another person to make or use a product covered by the patent, or perform a method covered by the patent, with the affirmative intent to cause direct infringement. I understand that a person may contribute to the infringement of a patent by supplying a part used to make an infringing product, or perform an infringing method, where the part is especially made or adapted for a use that infringes the claimed invention and has no substantial uses that do not infringe the claimed invention.

VII. Analysis Of The '078 Patent Regarding Non-infringement By TMS

59. The USPTO issued the '078 Patent on November 23, 1999, based on multiple patent application continuations by the named inventor, Michael R. Levine, dating back to a filing on March 9, 1992. Claims 1, 2, 3, 4, 5, 6, 7, 8 and 10 are asserted by TV Guide in this matter, and are the subject of my non-infringement analysis discussed below.

60. I have reviewed the '078 patent and performed an element-by element comparison of the asserted claims of the '078 patent with the Zap2it.com services and systems. For at least the reasons given below, I conclude that TMS' Zap2it.com services and systems do not directly infringe the asserted claims of the '078 patent because these services and systems do not perform each step of the claimed methods or include each element of the claimed systems, either literally or under the doctrine of equivalents. Neither do TMS' accused service and systems indirectly infringe the asserted claims because users of Zap2it.com do not directly infringe the asserted claims. And, in my opinion, Zap2it.com does not induce or contribute to the infringement of the asserted claims of the '078 patent.

a. Zap2it.com Does Not Directly Infringe The Claims Of The '078 Patent

61. As stated above, I understand that to directly infringe a method claim the accused product or service must perform each step recited in the claim, and to directly infringe an apparatus or system claim the accused product or service must include each claim limitation.

62. The fact that TMS' Zap2it.com web site does not directly infringe the asserted claims of the '078 Patent is straightforward to show, and does not involve issues of claim construction. Claim constructions are discussed extensively in the next subsection dealing with alleged direct

infringement by users. For now I merely point out that the claim constructions I will be using for this report are listed in EXHIBIT 4 attached to this Report for easy reference.

63. Independent claims 1 and 6 of the '078 patent are method claims.

- Claim 1 states: In a television distribution arrangement wherein a plurality of geographically dispersed television viewing locations receive television programming from a source of such programming, a method of receiving information specific to the type of programming available to a particular one of the viewing locations, the method comprising the steps of:

  1. providing a computerized unit at the particular viewing location, the unit including an operator input and a modem;

  2. establishing a connection to a wide-area network through the modem;

  3. transmitting, from the computerized unit, information to a service provider through the wide-area network regarding the geographical location of the particular viewing location; and

  4. receiving, from the service provider, information specific to the type of programming available to the particular viewing location.

- Claim 6 states: A method of receiving customized television programming schedule information, comprising the steps of:

  1. providing, at a television viewing location, a controller interfaced to a bidirectional modem and display device;

  2. establishing a connection to a wide-area network through the modem;

  3. transmitting, from the television viewing location, information to a service provider through the wide-area network regarding the geographical area of the viewing location;

  4. receiving, from the service provider, television programming schedule information specific to the viewing location; and

  5. viewing the information on the display device.

64. Claim limitation 1.1 requires *"providing a computerized unit at the particular viewing location, the unit including an operator input and a modem."* Claim limitation 6.1 requires

much the same, namely, *"providing, at a television viewing location, a controller interfaced to a bidirectional modem and display device."* Zap2it.com is just an Internet web site. In no way does Zap2it.com provide a "computerized unit," a "controller," an "operator input," a "modem," or a "display device." Any users of the Zap2it.com web site would necessarily have to provide for themselves, in some fashion over which neither TMS nor Zap2it.com has any influence or control, the devices required by these claim limitations in order to perform these steps of claims 1 and 6.

65. Claim limitations 1.2 and 6.2 both require *"establishing a connection to a wide-area network through the modem."* Again, Zap2it.com provides only an Internet web site. In no way does TMS or Zap2it.com provide a "wide area network" or "a connection to a wide-area network through the modem." Any users of the Zap2it.com web site would necessarily have to provide for themselves, in some fashion over which neither TMS nor Zap2it.com has any influence or control, the access to the wide area network through a modem required by these claim limitations in order to perform these steps of claims 1 and 6.

66. Claim limitation 1.4 requires *"receiving, from the service provider, information specific to the type of programming available to the particular viewing location."* Claim limitation 6.4 requires much the same, namely, *"receiving, from the service provider, television programming schedule information specific to the viewing location."* Zap2it.com provides only an Internet web site. Zap2it.com does not "receive" information *from* the service provider as required by these claim limitations — Zap2it.com itself is the alleged service provider.

67. Claim limitation 6.5 requires *"viewing the information on the display device."* Again, Zap2it.com provides only an Internet web site. In no way does Zap2it.com provide a "display

device" or "view information" on the display device attached to a "controller" that it also does not provide. It would be the users of the Zap2it.com web site who would view information on their display device, not TMS or Zap2it.com. Therefore, TMS and Zap2it.com do not perform this step of claim 6.

68. In summary, TMS' Zap2it.com web site does not perform at least steps 1, 2 and 4 of claim 1, nor does it perform at least steps 1, 2, 4 and 5 of claim 6. Therefore, because TMS' Zap2it.com web site does not perform each and every required step of these claims, TMS does not directly infringe claims 1 and 6 of the '078 Patent. And, since these are independent claims, TMS does not directly infringe the claims depending from them, namely claims 2, 3, 4, 5 and 7.

69. Independent claim 8 of the '078 patent is a system claim, stating:

- A system enabling a viewer of a television receiver to download information specific to the type of television programming available to the receiver, the system comprising:

  1. an electronic terminal unit including an operator input, a bidirectional modem, and a controller in communication with the operator input and the modem, the controller being programmed to perform the following functions:

  2. a) establish a connection to a service provider through the modem,

  3. b) receive information through the operator input pertaining to the geographic location of the television receiver,

  4. c) transmit the information pertaining to the geographic location of the television receiver to the service provider, and

  5. d) receive, from the service provider, the information specific to the type of television programming available to the receiver.

70. Claim limitation 8.1 requires *"an electronic terminal unit including an operator input, a bidirectional modem, and a controller in communication with the operator input and the modem, the controller being programmed to perform the following functions:*." Zap2it.com is just an

Internet web site. It does not include a "bi-directional modem" or "a controller in communication with the operator input and the modem" that is "programmed to perform" the functions specified in the claim. Therefore, Zap2it.com does not include this limitation of claim 8.

71. Claim limitation 8.2 requires *"a) establish a connection to a service provider through the modem, . . ."* Zap2it.com is just an Internet web site. It does not establish a connection to a service provider through a modem. Zap2it.com is the alleged service provider and, because it is a web site residing on a web hosting server, it utilizes a continuous broadband connection to an Internet Point Of Presence. Therefore, Zap2it.com's system does not include this limitation of claim 8.

72. Claim limitation 8.3 requires *"b) receive information through the operator input pertaining to the geographic location of the television receiver."* Zap2it.com is an Internet web site. In no way does Zap2it.com include a controller that is part of a "terminal unit" of a user of its web site, and that receives information through an "operator input" device connected to the user's controller. As explained above in the Technology Background section (¶¶29-35 and Stallings' Fig. 12-1) communications between stations on a switched communication network, such as the Internet, is only performed by transmitting the information between the switching nodes of the network. Because Zap2it.com is a web site residing on a web hosting server (a station on the network), the only information it receives from user's network stations is received over its continuous broadband connection to an Internet Point Of Presence. Therefore, Zap2it.com lacks this limitation of claim 8.

73. Claim limitation 8.5 requires *"d) receive, from the service provider, the information specific to the type of television programming available to the receiver."* Zap2it.com is an Internet web site. Because Zap2it.com is itself the alleged "service provider," it in no way receives information from itself, and does not receive information at a user's terminal unit that was preprogrammed to receive information from Zap2it.com. Therefore, Zap2it.com lacks this limitation of claim 8.

74. In summary, TMS' Zap2it.com website lacks at least limitations 1, 2, 3 and 5 of claim 8. Therefore, because TMS does not include each and every limitation of this claim, TMS does not directly infringe claim 8 of the '078 Patent. And, since claim 8 is an independent claim, TMS does not directly infringe the asserted claim depending from it, namely claim 10.

75. Mr. Cole alleges in his Report that TMS directly and literally infringes the asserted claims of the '078 Patent. In summarizing his allegation he says, "TMS provides the website, instructs the user, requires the user to use a computer to access the website, and programs the user's computer to interact with the website, including transmitting geographical information and receiving television schedule information generated by TMS. In my opinion this is direct infringement by TMS." (Cole at ¶124.)

76. It appears to me that either Mr. Cole fails to understand the difference between direct and indirect infringement, or he is distorting his own arguments and findings regarding what TMS' Zap2it.com website does. To state, for example, that TMS "instructs the user" to perform a method of an asserted claim is to allege *indirect* infringement, since *direct* infringement would require that TMS itself must perform the method. Similarly, if a user uses "a computer to access

the website," and doing so is a requirement of a claim limitation, then, should any direct infringement occur as a result, it would be the user who commits the direct infringement.

77. In fact, in Mr. Cole's long analysis of TMS' Zap2it.com service and system (Cole at ¶40-123), he admits that Zap2it.com does not perform all the steps of the claimed methods or provide all parts of the claimed systems. For example, the first step of the method claimed by claim 1 is: *"providing a computerized unit at the particular viewing location, the unit including an operator input and a modem."* Mr. Cole's findings regarding this requirement are: "Therefore, TMS requires its user to have a computer in order to access its service and instructs the public that they may obtain their 'local listings' (i.e., where they and their computer and their television are located) through TMS's zap2it service. In my opinion, use of TMS's zap2it web site includes practice of this claim element." (Cole at ¶43, underlining added.) That is, Mr. Cole finds that it is the "use of TMS's zap2it web site" that "includes the practice of this claim element." Therefore it can only be the case that the *user*, not TMS, could perform this limitation.

78. As another example, Mr. Cole admits that Zap2it.com does not "receive" television programming information, as required by all of the asserted claims of the '078 patent, but rather generates HTML code and sends that HTML code to a Zap2it.com user's computer. (Cole at ¶¶69, 97, 120.) Therefore, under Mr. Cole's own findings of fact, TMS does not directly infringe the asserted claims of the '078 patent.

79. For the reasons given above, it is my opinion that TMS' Zap2it.com service and systems do not directly infringe the asserted claims of the '078 Patent. It is also my opinion that Mr. Cole's allegation that TMS does directly so infringe is not supported by his own findings.

b. Zap2it.com Users Do Not Directly Infringe The Asserted Claims.

80. I understand that on October 16, 2006, TV Guide and TMS exchanged preliminary constructions of certain claim terms. I understand that TMS has subsequently issued a revised and supplemented set of proposed claim term constructions.[2] A copy of these revised claim constructions is included in EXHIBIT 4 attached to this Report. In this report I am assuming this updated set of TMS' proposed constructions. Mr. Cole referred to TV Guide's and TMS' preliminary constructions in rendering his opinions regarding infringement.

81. All of the independent claims of the '078 patent require that a user of the claimed system or method receive, from the service provider, information specific to the television programming information available to the television viewing location. Users of Zap2it.com do not meet this limitation, as I show below, and thus they do not directly infringe the asserted claims of the '078 patent.

82. The term "receiving/receive" appears in claims 1, 3, 6 and 8. TV Guide has proposed a preliminary construction of this term of "receiving/receive electronically." It is undisputed, I believe, that the methods and systems of the '078 Patent's claims are all referring to data manipulated by computer circuitry of one type or another. Therefore "reception" of data is inherently "electronic." To propose a construction of "receiving/receive" that merely construes it to be "electronic," as TV Guide does, is trivial, bordering on specious. Whether the claim limitations require receiving data from a keyboard or modem, the data is always (inherently) represented with an electrical signal. Rather, the important issue is the *form of the information* received through the modem from the service provider. Therefore it is the meaning of the phrase

[2] The revised claim constructions were included in my invalidity report dated December 15, 2006.

"[receiving/receive] information specific to the type of programming available to the particular [viewing location/television receiver]" that needs determination.[3]

83. I turn to the patent specification for insight into the form of the information received through the modem from the service provider. The following excerpts from the specification are relevant:

- "Future programming schedule information may be provided to the personal computer from a remote database by telephonic communication, by broadcast, or by subscription provision of disposable memories. The schedule information may be displayed on the monitor of the personal computer under control of a database program allowing chronological, alphabetical or topical selection and the operator may move a cursor on the display screen to point to a particular program to select it for future recording." ('078 at 1:65-2:6.)
- "The application program is loaded into the personal computer via a diskette or the like. The program requires as data the schedule of future programming available to the system 10 from a programming source 38, such as a cable or the like, for a particular period of time such as a week or month." ('078 at 3:40-45.)
- "In the preferred embodiment of the invention the schedule information is provided to the personal computer 18 from a remote database 40, which may constitute a database provider such as "COMPUSERVE," "PRODIGY" or the like. ... As another alternative, diskettes could mailed out to the personal computer on a subscription basis or the schedule information could be provided to the personal computer via cablecast or broadcast. Through use of a database program employing menus, submenus and the like, the operator may obtain a display of programming for a particular period of time, such as that illustrated at 46 in FIG. 1." ('078 at 3:46-4:4.)
- "In such a case, then, with the present invention storing a large database of programs in the personal computer, the VCRPlus.TM. code alone may be delivered to the remote unit 26 to bring about the desired programming sequence." ('078 at 5:59-63.)

84. It is clear from these excerpts that the '078 patent specification teaches methods and systems in which the information regarding television programming is transferred into the memory of a personal computer or equivalent device, and that running on that personal computer

[3] I note that this claim term was identified as "receive/receiving" in TMS' October 16, 2006 Proposed Constructions and in my invalidity report, dated December 15, 2006. However, in both this report and in my invalidity report, it is the usage of "receive/receiving" in the context of the claim limitation "[receiving/receive] information specific to the type of programming available to the particular [viewing location/television receiver]" that was construed. Therefore, the claim term construed has been modified to reflect this.

is a "database program" which a user uses to manipulate the stored information. One of the ways this information may be transferred into the memory is via "telephonic communication." The '078 Patent's asserted claims all require that this telephonic communication use a modem connected directly to the personal computer or like device.

85. Turning to the '078 Patent's file history also for insight, I note that in response to a PTO office action dated August 13, 1993, the patentee made the following statement to overcome the examiner's disallowance of claims in view of the prior art:

- "In contrast, the present invention maintains a database including information relating to programming available to the VCR during a future period, including program identification, start time and so forth. This information may be derived from a remote database via telephonic communication, by broadcast, or by subscription provision of disposable memories. In all cases, however, an entire block of schedule information for a given period of time is transferred to the personal computer in accordance with the present invention, thereby enabling an operator to perform database-type manipulations directly on this information, including its use to immediately schedule a particular video program for future recording." (TG 000779-000780, underlining added.)

86. Thus, if there is any doubt at all from the patent specification it is surely dispelled by this excerpt from the file history that the term **"[receiving/receive] information specific to the type of programming available to the particular [viewing location/television receiver]"** means "having data transferred to a computer such that a user can perform database-type manipulations directly on the transferred data without being connected to the original source of the data," as TMS proposes.

87. Users of Zap2it.com request information from the web site with a message sent from the Internet browser (e.g., Microsoft Internet Explorer) running on the user's personal computer to the Zap2it.com web site via the Internet. Whenever an Internet web site, including Zap2it.com, returns information to an end-user's Internet browser in response to such a request, the

information is contained in a specially formatted file called an HTML file. The acronym HTML means HyperText Markup Language. The contents of such a file are the text to be displayed by the Internet browser, along with special "tags" (also textual) embedded with the text that the browser interprets to determine what information to display, and how to format it for display. Other files may also be returned to the browser, such as files containing graphics images to be displayed by the browser along with the text in the HTML file.

88. The information that is returned to a user's Internet browser by Zap2it.com is not information that is, or can be, manipulated on the user's personal computer by a database program. For example, a "search" of the information cannot be performed by a commercially available database manipulation program running on the user's personal computer to identify or select a particular television program based on some property of the program such as time, title, subject or provider. Therefore users do not "receive information specific to the type of programming available to the particular television viewing location," as this term is properly construed in my opinion, and thus users cannot perform this step or function, which is required by all of the asserted claims.

89. Although users viewing a Zap2it.com television program listing grid returned to the user's Internet Browser may request that the information displayed be for a different block of time, or for programs having only a particular subject or provider, such requests always result in a request message being sent to the Zap2it.com web site host computer, which performs a search of its database and then returns the requested information in the form of an HTML file to the browser. No searching or database type manipulation of the television programming information returned from Zap2it.com to the user's Internet browser takes place on the user's personal computer. This new television programming information is not produced in the same way as

claimed (search is not done locally) and does not have the same result as the claims specify (delays are incurred for the request message to be sent and the response to be received). Thus, users also do not "receive information specific to the type of programming available to the particular television viewing location," as this term is properly construed in my opinion, under the doctrine of equivalents, and thus users cannot perform this step or function, which is required by all of the asserted claims.

90. Claim 8 of the '078 Patent states:

- 8. A system enabling a viewer of a television receiver to download information specific to the type of television programming available to the receiver, the system comprising:

  an electronic terminal unit including an operator input, a bidirectional modem, and a controller in communication with the operator input and the modem, the controller being programmed to perform the following functions:

  a) establish a connection to a service provider through the modem,

  b) receive information through the operator input pertaining to the geographic location of the television receiver,

  c) transmit the information pertaining to the geographic location of the television receiver to the service provider, and

  d) receive, from the service provider, the information specific to the type of television programming available to the receiver.

91. Users of Zap2it.com do not use a "controller programmed to perform" the functions required by claim 8, and thus they do not directly infringe this claim of the '078 patent.

92. Both TV Guide and TMS have proposed preliminary constructions of the term "controller." TV Guide proposes that "controller" means "a programmable electronic device." TMS proposes that "controller" means "an electronic device for manipulating information including at least memory for storing and executing computer programs and I/O ports for

connecting to peripheral devices, such peripheral devices including modems and display devices." It is clear, I believe, from the patent specification that the "controller" of the patent's claims is the device labeled block **18** in Figure 1 of the patent, labeled "Personal Computer" in Figure 2 and described in the patent specification as a "conventional personal computer ... [the term] used broadly to incorporate work stations, minicomputers and portable units." ('078 at 3:16-21.)

93. In my opinion TV Guide's proposed construction of the term "controller" is insufficient. Since a "programmable electronic device," as TV Guide proposes, could be many things, including, for example, an automatic coffee maker or a furnace thermostat, which are in no way comparable to a personal computer as this term is used in the '078 Patent, TV Guide's construction is not useful. Thus, TMS construes, and I agree, **"controller"** to mean "an electronic device for manipulating information including at least memory for storing and executing computer programs and I/O ports for connecting to peripheral devices, such peripheral devices including modems and display devices."

94. The issue of importance to non-infringement is the meaning of the phrase **"controller being programmed to perform"** as it is used in claim 8 of the '078 Patent. The patent specification provides the following insight into this question, with underlining added:

- "The infrared signals are preferably generated by a transmitter connected to an output port of the personal computer and are driven by signals generated by an application program run by the personal computer. ('078 at 1:58-62.)
- "The schedule information may be displayed on the monitor of the personal computer under control of a database program allowing chronological, alphabetical or topical selection and the operator may move a cursor on the display screen to point to a particular program to select it for future recording." ('078 at 2:1-5.)
- "The computer program thus learns and stores the required remote codes." ('078 at 2:21-23.)

- "The personal computer program can also store and display an index of programming that has been recorded by the system." ('078 at 2:25-27.)
- "The personal computer 18 is conventional but is provided with a special application program to implement the present invention. The organization of this application program is well within the skill of a programmer using the functional description of the program provided herein." ('078 at 3:22-26.)
- "The application program is loaded into the personal computer via a diskette or the like. The program requires as data the schedule of future programming available to the system 10 from a programming source 38, such as a cable or the like, for a particular period of time such as a week or month." ('078 at 3:40-45.)
- "Alternatively, the personal computer could employ a program in which the system automatically communicates with the schedule source 40 at predetermined periods, such as each morning at 4:00 a.m. or the like, to update the schedule stored in the personal computer 18." ('078 at 3:58-63.)
- "Through use of a database program employing menus, submenus and the like, the operator may obtain a display of programming for a particular period of time, such as that illustrated at 46 in FIG. 1." ('078 at 4:1-4.)
- "Alternatively, to acquire this information, the application program for the personal computer may go through an initialization routine using screens of the type illustrated at 50 in FIG. 5." ('078 at 4:57-60.)

95. It is clear from these excerpts from the '078 patent specification that the functions performed by the "controller" are embodied in a computer application that runs on the controller (or personal computer-like device). At the priority date of the '078 patent, personal computer application programs were completely installed on the personal computer before they began executing. The concept of downloading during the execution of the application program incremental functionality for it to perform was not used or commonly known to skilled artisans. Only several years after the introduction of the first widely available Internet browser, a time subsequent to the '078 Patent's priority date, was this concept commonly known and in use. Thus, I conclude that all of the functions embodied in the '078 controller's programming must exist as one or more software executable files (computer application programs) within the controller prior to its use by a user to perform those functions.

96. TMS construes, and I agree, that the term **"controller being programmed to perform"** means "computer application programs are installed on the controller prior to its use by a user to perform."

97. Users of Zap2it.com access the site through an Internet browser running on a personal computer. A personal computer is a "controller" as that term is defined by both TV Guide and TMS. The function required by element c), namely "transmit the information pertaining to the geographic location of the television receiver to the service provider," is not performed by an application program installed on the controller prior to its use by the user to perform this function (to the extent this function is performed by Zap2it.com). Rather, the transmission of information to zap2it.com is implemented by a program embedded in the HTML file returned to the browser from the Zap2it.com web site as a response to a request initiated by the user through the browser. Mr. Cole describes this functionality in his Report saying (underlining added):



98. Since this HTML program is not running on the controller prior to being returned to the browser from Zap2it.com, users do not have a system that includes a "controller being programmed to perform" under the proper construction of this term, and thus their "controller" does not include limitation c) of claim 8. Therefore, users of Zap2it.com do not directly infringe claim 8, nor do they directly infringe claim 10, which depends from claim 8.

99. Installing a program on a personal computer prior to running the program requires that a time delay is incurred while the program is installed. Running such a program that is first installed on a personal computer is substantially different from running a program that is merely downloaded to the personal computer within a text file without first installing it on the computer, because the installation time delay is avoided. Therefore, users of the Zap2it.com web site do not infringe claim 8 under the doctrine of equivalents, nor do they infringe claim 10, which depends from claim 8, under the doctrine of equivalents.

100. Because users of Zap2it.com do not perform either directly or equivalently, each step of the claimed methods, nor do they have a system including each claim limitation, they do not directly infringe the asserted claims of the '078 patent. It is my understanding that in the absence of any instance of direct infringement, there cannot be any instance of indirect infringement. Thus, it is my opinion that Zap2it.com does not indirectly infringe the asserted claims of the '078 patent.

c. Other Ways In Which Zap2it.com May Be Used Where Zap2it.com Does Not Indirectly Infringe The '078 Patent.

101. The claim term **"[television/particular] viewing location"** appears in claims 1-7. I understand that TV Guide proposes a preliminary construction of this term to be "a residence or other building at which a television signal can be received." Mr. Cole argues that this is a correct construction (Cole at ¶¶41-46). TMS' construction for [television/particular] viewing location is "the specific room within a building where a television set is positioned and watched by a user." As explained below, I concur with the TMS construction, and have used it in forming the opinions expressed in this Report.

102. TMS' proposed construction for [television/particular] viewing location, "the specific room within a building where a television set is positioned and watched by a user," acknowledges that the methods and systems claimed by the '078 Patent are all focused on the problem it purports to solve: "A personal computer is used to assist in the selection of television programs to be recorded at future times and to control a video tape recorder to implement the selected recordings." ('078 at Abstract.) Thus, part of the context for interpreting all of the claim terms is that a user wishes to record television programs for watching on his television set at some future time. The "television viewing location" then can be none other than the location at which he *actually* (as opposed to could possibly) watches television, which is where his television set/receiver is located.

103. In further justification of this term construction I note that in order for the personal computer to control a VCR it must be located "nearby" the VCR. Figure 2 of the patent shows that the personal computer (**18**) is located such that an infrared transmitter receiver (**26**) connected directly (**30**) to it can send infrared signals to infrared receivers connected directly to either a Cable Box (**16**) or a VCR (**14**) which are, in turn, connected directly to the television receiver. Infrared signals are only usable for "line-of-sight" communication, *i.e.*, communication within a room or short distance having no intervening physical objects. Although the specification also says: "The embodiment of the invention illustrated in FIG. 7 is utilized in systems where the cassette recorder **14** is located *a large distance from the personal computer* **18**, such as *in another room* of the house. In this system the remote I/R transmitter **26** is replaced by a radio transmitter **60**." ('078 at 6:13-17, emphasis added), such embodiments are obviously excluded by the '078 Patent's claim limitations and prosecution history, which require

the computer to be at the television viewing location, not in a different room. ('078 Patent and TG002253.)

104. My objection to the TV Guide/Cole term construction of "[television/particular] viewing location" to be "a residence or other building at which a television signal can be received" can be dealt with quickly. At the priority date of the '078 Patent, March 9, 1992, there was virtually no residence or building in the United States at which a television signal could not have been received. By that time the entire United States was served by multiple broadcast satellites transmitting television programming to every square meter of the surface. Only a residence or building located underground and not served by some sort of cable television system would not have been able to receive a television signal. There could not have been many of these. Thus, the TV Guide/Cole term construction is vacuous. It imparts no information to a skilled artisan.

105. Thus "**[television/particular] viewing location**" is properly construed to mean "the specific room within a building where a television set is positioned and watched by a user."

106. Claims 1 and 6 of the '078 patent, and thus the claims that depend therefrom, require that the computerized unit or controller be provided at the particular/television viewing location. Although claim 8 of the '078 patent does not itself specify the location of the electronic terminal unit claimed, during prosecution the applicant distinguished the '078 patent from the prior art by stating: "In particular, all of Applicant's independent claims include the step or apparatus associated with transmitting, from a viewing location, information to a service provider through a wide area network regarding the geographical location of the particular viewing location." (TG002253, underlining added.) The step of transmitting in claim 8 is

performed by the electronic terminal unit, and thus I understand from this statement in the prosecution history that claim 8 also requires that the electronic terminal unit be located at the particular television viewing location.

107. Users of Zap2it.com may use the service from anywhere their personal computer can access the Internet, certainly not only at the "particular viewing location." For example, users may access Zap2it.com from their office in order to see what they may wish to watch on television that evening at home (home being their particular television viewing location). In my opinion, use of Zap2it.com from a location other than the "particular viewing location" would not infringe claims 1, 6 and 8, and the claims depending therefrom, of the '078 Patent.

108. The term "**wide-area network**" appears in claims 1, 6 and 7 of the '078 Patent (and thus also appears in claims 2-5, which depend from claim 1). The term "wide-area network" does not appear at all in the '078 Patent's specification, nor is its meaning discussed in the prosecution history. From the specification we know only that data communication between the personal computer and the service provider occurs over standard telephone lines. We know that an example of such communication is that used with service providers at the time of filing, "'COMPUSERVE,' 'PRODIGY' or the like." ('078 Patent at 3:49.) My Invalidity Report shows clearly that, as of the claimed March 9, 1992 priority date, the CompuServe and Prodigy services were only accessed through the use of modems connected on one side to a personal computer and on the other to standard dial-up telephone lines. As shown in the Technology Background section above (¶28-36), the term "wide-area network" was not a common term of art as of the priority date. The IEEE Standard Dictionary published in 1993 does not define this term.

109. After now having studied the issue relative to non-infringement, it is my opinion that the term "wide-area network" as used in the '078 Patent's claims is indefinite, and therefore claims 1-7 are invalid due to indefiniteness. However, should the validity of these claims be upheld by the Court, for purposes of rendering my opinions regarding non-infringement of the '078 Patent I concur with TMS' proposal that: "**wide-area network**" means "a data communication network that is not a local area network."

110. The 1993 IEEE Dictionary defines the term "local area network (LAN)" to mean "A non-public data network in which serial transmission is used without store and forward techniques for direct data communication among data stations located on the user's premises." EXHIBIT 5. And Stallings classifies "local networks" as a sub-class of a type of network he calls "broadcast networks." About broadcast networks Stallings says: "With a *broadcast communication network*, there are no intermediate switching nodes. Each station is attached to a transmitter/receiver that communicates over a medium shared by other stations. In its simplest form, a transmission from any one station is broadcast to and received by all other stations." (Stallings at 377:3-4.) Combining Stallings with the IEEE Dictionary, I define the term "local area network" to mean "a data communication network in which broadcast transmission is used without intermediate switching nodes such that each station is attached to a transmitter/receiver that communicates over a medium shared by other stations located within a mile of the user's premises."

111. Users of Zap2it.com need not access the internet by connecting to a wide-area network. Such access can easily be accomplished by connecting to a local area network, which in turn connects in some way to the Zap2it.com web site. For example, the several personal computers in my home are each connected to a local area network (some to Ethernet, others to

802.11 wireless). These local area networks are interconnected with each other through a local area network router/wireless access point. This router is also connected to a DSL modem, which is in turn connected to a DSL line which connects to the Internet. Thus, all of these personal computers access the Internet through a connection to a local area network, And, by definition, local area networks are not equivalent to wide area networks. In my opinion, such use (accessing Zap2it.com through a local area network connected to the Internet) would not infringe claims 1-7 of the '078 Patent, either literally or under the doctrine of equivalents.

112. The term "modem" appears in all of the independent claims of the '078 Patent, claims 1, 6 and 8. TV Guide has proposed a preliminary construction of the term **"modem"** to mean a "data signal conversion device that connects data terminal equipment to a communication line." Mr. Cole agrees with this construction. (Cole at ¶¶47-52.) TMS' proposed preliminary construction is that **"modem"** means "a data signal conversion device that converts digital signals to analog signals (and vice versa) and allows a computer to exchange data over a standard dial-up telephone line."

113. In his discussion of this term's construction, Mr. Cole refers to a definition for "modem" given in the IEEE Standard Dictionary of Electrical and Electronics Terms, 1993, which says: **"modem (1) (data transmission).** A contraction of Modulator-DEModulator, an equipment that connects data terminal equipment to a communication line." This definition is essentially the same as TV Guide's proposed preliminary construction. However, this is only one definition from the IEEE Dictionary and tells us only a property that a modem has, not all of the properties it has, and does not provide sufficient description of a modem's properties to distinguish a modem from other devices that also have that property. As I discussed above in the Technology Background section (¶18-27), a skilled artisan would have known that a modem is

only one type of device that connects data terminal equipment to a communication line (transmission medium). Such devices are called generically data circuit-terminating equipment (DCE). Another such device that connects data terminal equipment to a communication line is a packet switch. (See ¶27 above.) A skilled artisan would have known that a packet switch is surely not a modem, nor is it substantially equivalent to a modem. Thus, it is clearly **not** the case that a skilled artisan would have understood the term "modem" to mean any device "that connects data terminal equipment to a communication line," as TV Guide and Mr. Cole propose that it should.

114. Mr. Cole argues in his report that a "modem" does not necessarily need to convert digital signals to analog signals (Cole at ¶¶49-50). While the technical literature at the time of filing clearly shows otherwise, as discussed in the Technology Background section above, one needs only turn to the IEEE Dictionary definition Mr. Cole quoted to see that Mr. Cole is incorrect. The IEEE definition says that the word "modem" is "a contraction of MOdulator-DEModulator." That is because a modem, in performing its functions, modulates a signal for transmission and demodulates a signal upon reception. The third definition of "modem" in this IEEE Dictionary says: "(3) (broadband local area networks). A modulator-demodulator device. The modulator encodes digital information onto an analog carrier signal by varying the amplitude, frequency, or phase of that carrier. The demodulator extracts digital information from a similarly modified carrier. A modem transforms digital signals into a form suitable for transmission over an analog medium." Mr. Cole did not cite this definition of "modem" from his own source in rendering his opinion as to the word's meaning. In my opinion, a skilled artisan would have known that "modulation" is inherently an electronic process that produces an analog

signal as its output, and "demodulation" is an electronic process that takes an analog signal as input.

115. At the time of filing, modems were indeed used to connect to transmission media other than standard telephone lines (see ¶23-24 above). However, the '078 patent specification does not teach doing so, or even imply that such a thing could be done or was known to the patentee. Such other types of modems were not used in data communication networks available to homes in 1992. Rather, the '078 Patent in Figure 2 clearly shows the modem (**44**) connected to a telephone line (**42**). The patent specification uses the term "modem" only once, in the following passage: "The head end database uses this information to provide the computer 18 with the schedule of programming for that service. The operator of the personal computer system 18 may communicate with the schedule source over phone lines 42 using modems 44 at each end. Alternatively, the personal computer could employ a program in which the system automatically communicates with the schedule source 40 at predetermined periods, such as each morning at 4:00 a.m. or the like, to update the schedule stored in the personal computer 18." ('078 Patent at 3:54-63, underline added.) The only other way described in the specification for updating the programming information follows immediately after the above quoted passage: "As another alternative, diskettes could mailed out to the personal computer on a subscription basis or the schedule information could be provided to the personal computer via cablecast or broadcast." (*Id.* at 3:63-67.) I understand the terms "cablecast or broadcast" to refer to one-way transmission of information, known generically to a skilled artisan as "teletext."

116. Therefore I conclude that the correct construction of the term "modem" to be used in interpreting the claims of the '078 Patent is that proposed by TMS, namely: "**modem**" means

"a data signal conversion device that converts digital signals to analog signals (and vice versa) and allows a computer to exchange data over a standard dial-up telephone line."

117. Connection to the Zap2it.com web site need not be accomplished by a computerized unit/controller/electronic terminal unit having a "modem" for users to use Zap2it.com, since internet access can also easily be accomplished by a personal computer having an Ethernet or 802.11 wireless adapter, which is in turn connected to a device or local area network which connects in some way to the Zap2it.com web site. And, neither DSL nor cable modems are equivalent to the "modem" of the '078 Patent's claims. DSL and cable modems are "external" to a personal computer, requiring the personal computer first to be directly connected to an Ethernet adapter in order to transmit signals to the DSL or cable modem over an Ethernet local area network. Thus DSL and cable modems do not perform the same functions in the same way as a dial-up telephone modem. The results are significantly different also, in that DSL and cable modem based Internet access is some ten times faster than with dial-up telephone modems. That is why users pay extra for DSL and cable modem service in addition to their standard telephone or cable service. In my opinion, connecting to Zap2it.com using an Ethernet adaptor, 802.11 wireless adaptor, DSL modem, cable modem, or other device that does not directly connect to a wide-area network using a modem (as that term is construed in this Report) would not infringe, literally or under the doctrine of equivalents, the asserted claims of the '078 Patent.

118. Users of Zap2it.com may have television programming information returned to their Internet browser from the Zap2it.com web site without sending any geographical information to the web site. Without entering his or her zip code or any other geographical information, a Zap2it.com user can view national television listings. These national listings include information regarding programming available at the user's television viewing location.

Such a use of Zap2it.com would not infringe claims 1, 6 and 8, and the claims depending therefrom, of the '078 Patent.

119. Users of Zap2it.com may have information returned to their Internet browser from the Zap2it.com web site that is not television programming information, but rather is information regarding other topics, such as movies or Internet videos. In fact, the Zap2it.com web site places at least as much emphasis and provides at least as much access to non-television programming information as it does to television programming information. As described above in ¶48(3), in addition to TV, Zap2it.com offers information regarding movies, news, blogs, on demand programming, photos and forums. Even within the TV section of Zap2it.com, there is information other than television programming information. Such use of Zap2it.com to return non-television programming information to the user's browser would not infringe claims 1, 6 and 8, and the claims depending therefrom, of the '078 Patent.

120. In summary, I have shown that there are at least the following non-infringing uses of the Zap2it.com service or system:

- Users of Zap2it.com may access and use the web site from anywhere their personal computer can access the Internet, not only at the "particular viewing location".
- Users of Zap2it.com need not access the internet by connecting to a "wide-area network."
- Connection to the Zap2it.com web site need not be accomplished by a computerized unit/controller having a "modem" for the users to access and use Zap2it.com.
- Users of Zap2it.com may have information returned to their Internet browser from the Zap2it.com web site regarding television programming specific to their location without sending any geographical information to the web site.
- Users of Zap2it.com may have information returned to their Internet browser from the Zap2it.com web site that is not television programming information, but rather is information regarding other topics such as movies or Internet videos.

121. In addition, Mr. Cole opines that using a cookie to access Zap2it.com infringes the '078 patent (e.g., Cole at ¶59). Mr. Cole's opinion regarding cookies further confirms the opinion I expressed in my Invalidity Report that the prior art Personal Entertainment Guide (which stored the information used to view television listings) anticipates the '078 patent claims.

122. In his Report Mr. Cole says regarding Zap2it.com, "Access of the website by users not at their home or office where their television is located is not substantial, being one quarter or less of those accessing the Zap2it website for television program schedule information. There is, therefore, no substantial non-infringing use." (Cole at ¶130.) In my experience in business, 25% of a market or of a user-base would never be considered insignificant. Most businesses would fight very hard to please and retain 25% of their customers. So, I must respectfully disagree with Mr. Cole's above assertion. Furthermore, usage statistics for Zap2it.com measuring home and work access show that up to 61% of users in any given month may be accessing the site from work. From May 2005 through February 2006, page views by users accessing Zap2it.com from work averaged 51% of the total Zap2it.com page views. (TMS 0001583-1621.)

123. I note that such usage of the Zap2it.com service via broadband DSL or cable (and therefore, non-modem) access to the Internet would seem to be quite significant. As early as December 2000, . REDACTED REDACTED (TMS 0001667.) According to the Pew Internet & American Life Project, "As of March 2006, 42% of all American adults had a high-speed internet connection at home. In March 2005, 30% of all adults had high-speed internet at home."[4] Thus, currently

[4] "Home Broadband Adoption 2006," Pew Internet & American Life Project, 1615 L St., NW—Suite 700, Washington, D.C. 20036, http://www.pewinternet.org/, Summary Of Findings, p. i.

more than 40% of the potential users of Zap2it.com who might access the site from home are not using Zap2it.com in a way that could directly infringe the '078 Patent, because (among other reasons) they are not using the "modem" required by the '078 patent claims. Additionally, it would be less likely that someone desiring to use Zap2it.com would do so over a dial-up modem Internet connection rather than with broadband access because of the relatively lengthy connection process required to first even gain access to the Internet, in my opinion.

124. Therefore, the total percentage of non-infringing usage of Zap2it.com could be as high as 70% (.5 + (.40)(.5) = .7). Such amount of non-infringing usage could hardly be considered insignificant by anyone, in my opinion.

125. Mr. Cole states in his Report, "It is my opinion that, in order to provide television programming information for particular viewing locations, a provider of such service must rely on receiving geographical information that identifies the viewing location with some specificity (such as a ZIP code, or a street address, or longitude-latitude coordinates). (Cole at ¶138.) Mr. Cole's statement is just plain false. To see its falseness all Mr. Cole would need do is access the Zap2it.com website and select the "TV Listings" button on the home page without entering a zip code (delete the browser's Zap2it.com cookie first if you've previously entered a zip code, then restart the browser). Returned to Mr. Cole's browser and displayed on his monitor will be information regarding television shows that are or soon will be broadcast in his local area, sorted by program provider (e.g., ABC, Fox, etc.). These are called by Zap2it.com "National TV Listings." Any location in the country at which off-air, cable, or direct broadcast satellite signals can be received, will be able to receive these television programs.

126. And Mr. Cole states in his Report, "It is also my opinion that, in a feasible implementation of the claimed invention, the geographical information should be input by the user (whether by typing it, speaking it, etc.). Other systems, e.g., selecting a ZIP code from a drop-down list of the tens of thousands of possible national ZIP codes, would be too cumbersome for the users to be a commercially viable implementation of a system to provide television programming information specific to a particular location." (Cole at ¶138.) I disagree with Mr. Cole's assertion that "Other systems ... would be too cumbersome..." Examples of such other systems one sees used quite successfully on numerous web sites are

- A drop-down list of countries. Selecting an item from the list displays a list of states. Selecting a state could then display a list cities, etc. (e.g., www.batchmates.com).
- A map, such that clicking on a state or province displays another map of the cities or counties, selecting one of which displays another map, etc. (e.g., www.traffic.com).

127. Finally, as I believe I have clearly shown above in great detail, Mr. Cole's assertion is not correct that "Therefore, among the major providers, there are no non-infringing alternatives to TMS's zap2it web site." (Cole at ¶139.)

d. Zap2it.com Does Not Induce Infringement Of The '078 Patent.

128. I understand that a person may induce infringement of a patent by actively encouraging or instructing another person to make or use a product covered by the patent, or perform a method covered by the patent, *with the affirmative intent to cause direct infringement.* I understand that inducement is a form of indirect infringement, and that for there to be indirect infringement, there must first by direct infringement by someone. My subsection b. above shows in considerable detail why it is my opinion that users of Zap2it.com do not directly infringe the asserted claims of the '078 Patent, and, therefore, why TMS does not indirectly infringe these claims.

129. However, Mr. Cole in his report specifically accuses TMS of inducing Zap2it.com users to infringe the asserted claims of the '078 Patent. (Cole at ¶125-131.) I wish to address here the flaws I see in Mr. Cole's justification of his accusations of inducement to infringe.

130. Mr. Cole states in his Report: "I understand that TMS has known about the '078 patent and that discussions concerning the '078 patent and zap2it web site were held as early as April 2005. TMS induces users to participate in the infringement and contributes to their infringement by making its website and its affiliate-related websites available to users, by instructing them how to use the website and programming their computers to use the website in an infringing manner. Historically, TMS has maintained a listing of 'Frequently Asked Questions,' which provided the following: 'How do I get local cable, broadcast or satellite listings? Enter your 5 digit ZIP code and click on Continue. ...'" (Cole at ¶126-127.)

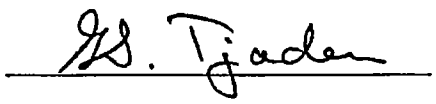
131. In the above excerpt from his Report, Mr. Cole acknowledges that TMS was not aware of the '078 Patent until April 2005. And he acknowledges that long before then (i.e., "historically"), the Zap2it.com service was "making its website and its affiliate-related websites available to users," ... "instructing them how to use the website and programming their computers to use the website in an infringing manner". In fact, dating back to mid-1995, prior to the launch of Zap2it.com, TMS marketed and licensed several websites that allowed users to look up local television listings using geographical information over the Internet, including TV Week Interactive, tvquest.com, ultimatetv.com and clicktv.com. (TMS' Response to TV Guide's Interrogatory No. 5.) But inducement requires "*the affirmative intent to cause direct infringement.*" There could have been no affirmative intent to cause direct infringement if there was not even knowledge of the patent that was allegedly infringed upon. And, since Zap2it.com merely continued to do after becoming aware of the existence of the '078 Patent what it had

always done before it even knew of the patent, its actions since April 2005 can hardly be characterized as "affirmative." Mr. Cole's conclusion of inducement is contradicted by the facts he cites to justify it.

132. Additionally, TMS does not encourage users of Zap2it.com to directly infringe the '078 patent. For example, I have not seen any evidence that TMS requires a user access Zap2it.com by directly connecting to a wide-area network using a modem. Nor have I seen any evidence that TMS requires a user enter geographical information to access television listings in order to use the Zap2it.com web site. TMS does not encourage Zap2it.com users to access the web site from a television viewing location; in fact, TMS assists users who access Zap2it.com away from their television viewing location. Realizing that users may wish to access Zap2it.com from a location other than the television viewing location (for example, their office), yet still have access to this information when at the television viewing location, Zap2it.com provides a selection button labeled "print" on the television listings grid page so that users can print the information and take it with them.

133. In my opinion, Mr. Cole's statements and findings do not support a conclusion that TMS has "*the affirmative intent to cause direct infringement*," and thus do not support a conclusion that TMS induces infringement of the asserted claims of the '078 patent.

Dated: February 9, 2007



Gary S. Tjaden, Ph.D.

EXHIBIT 1

BIOGRAPHICAL SKETCH

Dr. GARY S. TJADEN

Education

Doctor of Philosophy, Computer Science	
The Johns Hopkins University	1973
Master of Science, Electrical Engineering	
Northwestern University	1969
Bachelor of Science, Electrical Engineering	
University of Utah	1966

Employment History

COCOMO ID, LLC	
Founder/President	1996-Present
Georgia Institute of Technology	
Principal Research Engineer	1993-2004
Polytechnic University	
Industry Professor of Computer Science	1992-1993
NYNEX Corp.	
President, NYNEX ALLINK Co.	1989-1992
Director, Information Systems & Services Lab.	1987-1989
Burroughs/Unisys Corp.	
V.P. & Gen. Mgr., Third Party Programs	1985-1987
V.P. Systems Architecture	1984-1985
Cox Cable Communications	
Senior V.P., Engineering & Technology	1979-1984
Sperry Corp.	
Director, Hardware Tech., Univac Division	1976-1979
Member Tech. Staff, Sperry Research Center	1975-1976
Bell Telephone Labs	
Member Tech. Staff, Advanced Tech. Lab.	1972-1975
Member Tech. Staff, Electronic Switching Systems Division	1966-1970

Experience Summary

Founder, President of COCOMO ID, LLC, a company that develops and markets technology for mobilized speech-audio publishing. Technology based on patents awarded to founder.

During eleven years at Georgia Institute of Technology responsible for directing the activities of a Georgia Tech interdisciplinary research center, called the Center for Enterprise Systems. The mission of the Center was to help commercial enterprises to use information technology to support business strategy. Retired from Georgia Tech November, 2004.

Background of some twenty-five years of experience in the computer and communications industries. Specific activities and responsibilities include:

- Founder and general manager of NYNEX subsidiary company which develops and markets turnkey real-time decision support systems to improve the management of large heterogeneous corporate networks and distributed systems.
- Established and managed applied research laboratory responsible for development and transfer of new technologies and product concepts in the area of data communications-based information systems and services.
- Led the development and commercial production of a distributed information system based on off-the-shelf components including UNIX workstations and servers, an expert system, a relational database management system, and an object-oriented graphical user interface.
- Responsible for Burroughs' corporate third party software strategy, general management of cross-industry application software Line Of Business, and use of third party technologies to satisfy product needs in all product areas.
- Responsible for technology strategy, R&D of interactive CATV information systems, cable system design, and for construction and technical operation standards and quality control for an operator of some 60 cable television systems serving more than 1.3 million subscribers.
- Responsible for management of all advanced hardware technology activities for major supplier of mainframe computer systems. Technologies included VLSI design and fabrication, disk and optical memories, and mainframe architectures.
- Member of a 3-person team that developed a new, patented architecture for designing mainframe central processors from off-the-shelf LSI chip sets at research arm of major supplier of mainframe computer systems. Technology commercialized as Univac 1160 mainframe computer.
- Member of advanced technology development group in the Electronic Switching Systems (computer-based telephone central office switches) for AT&T Bell Laboratories. Worked on advanced operating system for telephone switching systems, and new switched services such as centralized voice-mail and e-mail.
- Member of group developing telephone switching system peripheral components. Inventor of new technology for using LSI to detect on-hook/off-hook state changes on telephone lines.

Fields of Interest

Complex adaptive systems, business process engineering, impact of information technology on business strategy, management of information technology and information systems, distributed systems architecture and management; computer communication and networking; and distributed application software architectures.

Special Honors and Awards

Samuel N. Alexander award from Washington D.C. regional ACM chapter for outstanding student of Computer Science in 1971-72
Elected to Sigma Xi

Elected to Eta Kappa Nu
M.S. studies supported under Bell Labs Graduate Study Program
Graduated Cum Laude from U. of Utah under Honors Program
Distinguished Lecturer award from Stanford University Computer Forum

Professional Affiliations

Session Chair, IEEE International Workshop on Systems Management, April 1993
Member IEEE Computer Society 1972 - 1973
Vice Chairman of 1979 Computer Architecture Symposium
Member of Program Committee, 1978 Computer Architecture Symposium
Chairman of Panel Session on Implications of VLSI on Computer Design, 1979 ACM National Conference
Member of NSF Committee on the National Telecommunications Network, representing CATV industry, 1983
Two term Chairman of CATV trade Association Engineering Committee, 1982-84

Patents

1. "Supervisory Circuit for Telephone Lines," No. 3,622,709, assigned to Bell Labs
2. "Bus Coupler Protection Circuit," No. 3,654,517, assigned to Bell Labs
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Gemstar Development Corporation MDL Patent Litigation. Opined on invalidity and non-infringement for defendant Scientific Atlanta. Deposed multiple times with respect to two groups of patents.

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EXHIBIT 2

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TMS 0001622-0001695

Expert Report of J. Tipton Cole Concerning Infringement and attached exhibits

EXHIBIT 3

PROTOCOLS AND TECHNIQUES FOR DATA COMMUNICATION NETWORKS

FRANKLIN F. KUO, *Editor*

PRENTICE-HALL, INC., *Englewood Cliffs, New Jersey 07632*

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information to or among the packet switches before conditions have changed and have made the information obsolete.

The various points of view on this subject sometimes reflect specific costs in particular networks for propagating the routing information around the network. Regardless of whether centralized or distributed control is used, there is a cost in time, bandwidth, buffer space, and other network resources to move routing information from the locations where routing policies are selected to the locations where the policies are enforced.

Routing mechanisms can adversely interact with the flow and congestion control objectives, so these mechanisms and strategies cannot be designed independently of each other. For example, a routing algorithm that causes loops to be formed can lead to network congestion. Inefficient routing algorithms that require substantial network resources for their implementation and operation can render the network useless for carrying any "paying" traffic. If there is a message here, it may be that the old "divide-and-conquer" adage is misapplied in network design if one tries to design and build independent techniques for flow and congestion control and routing which do not take their interrelation into account.

1.2.2.7 Protocol Layering

In spite of the cautionary words in the preceding section regarding the "divide-and-conquer" approach to network organization, there is a certain amount of decomposition which can help. For instance, it is helpful to consider a horizontally partitioned layering of functions which must be performed to realize any particular application running on a computer attached to a store-and-forward network.

In a networking environment, the term *protocol* has come to mean both a format and a set of procedures that are commonly agreed to for the purpose of achieving communication. Layering of protocols is the result of a stratification of function among parts of the system.

One of the more comprehensive attempts to use layering to define a communication systems architecture can be found in the notes of the International Standards Organization (ISO), Technical Committee 97, subcommittee 16 on Open Systems Architecture. The objective of TC97/SC16 is to define the function and layering of a set of protocols so as to permit the interoperation of systems which are built independently but to the same architectural standard.

The protocol layers proposed by SC16 are illustrated in Fig. 1.8. The layers are representative of the software and hardware needed to obtain service from a packet-switching network. At the lowest level is the physical or electrical standard—the type of connector, the voltage levels, the meaning of each connector lead, and so on. The link level is representative of a procedure like that described in Secs. 1.2.2.3 and 1.2.2.4 (HDLC). This layer of protocol is

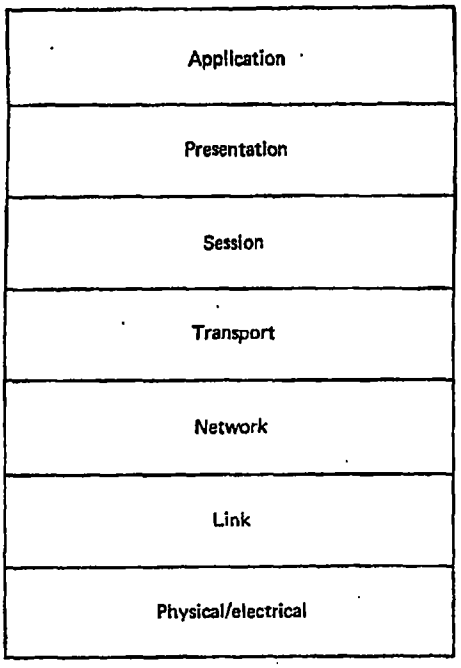


FIGURE 1-8 Open systems architecture.

used to move blocks of data reliably from data termination equipment (DTE) to date communication equipment (DCE). For our purposes, we can think of host computers as DTEs and packet switches as DCEs. The protocol hierarchy shown in Fig. 1.8 is in the DTE, some of it is reflected in the DCE, as shown in Fig. 1.9.

The network protocol is the set of procedures that permits the host to send and receive packets on the network. It typically includes provisions for addressing, network control messages, setting up of virtual circuits (if such services are available), and so on. Depending on the communication medium and network implementation, the services provided by any particular network may vary considerably.

Transport layer is intended to provide DTE-to-DTE services such as flow control, end-to-end error control, sequencing, duplicate detection, multiplexing, and so forth. Depending on the ultimate applications, the services required at this layer may range from virtual-circuit service to pure datagram service.

The session layer of protocol is intended to model the notion of controlled access to host services. This is the layer that implements user "LOGIN" to a system, for example. The presentation layer provides mechanisms for mapping between specific user terminals to generic or "virtual" terminal characteristics,

for example. Finally, the application layer deals with specific applications such as text editing, message handling, query/response, and so on.

It would be a mistake to think that all store-and-forward networks can, should, or do provide exactly the same set of functions in the same set of protocol layers. At best, the open systems architecture provides a model against which to compare a network design, and this can be very helpful indeed when trying to determine opportunities for making different networks interoperate.

1.2.2.8 Addressing

At each protocol layer there is usually a need to identify at least the destination of a unit of data. This destination identification is needed because at nearly all layers except, perhaps, the physical layer, there may be more than one potential destination. The most common approach to addressing in systems with a layered architecture is to create a hierarchical address space. For example, a DTE (host) may be physically attached to a DCE (packet switch) via a shared local loop, so it has a unique link address. The interface between the packet

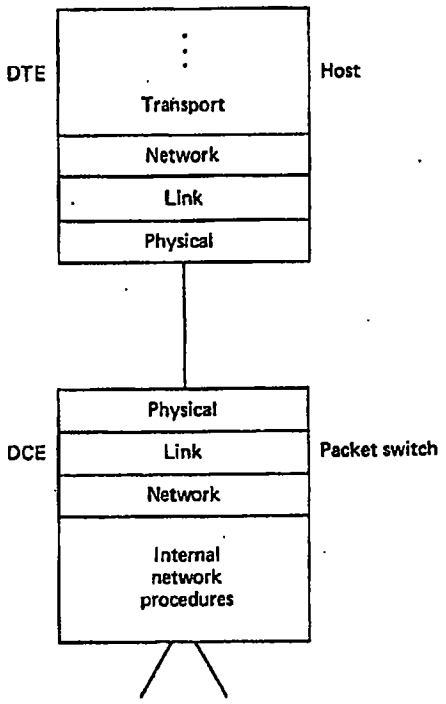


FIGURE 1-9 DTE/DCE protocols.

EXHIBIT 4

TMS' Revised Proposed Constructions of Disputed Claim Terms
January 18, 2007

Claim Term	TMS' Proposed Construction
Television viewing location/particular viewing location	The specific room within a building where a television set is positioned and watched by a user
Operator input	A keyboard or other device for manually entering data into a computer.
Modem	A data signal conversion device that converts digital signals to analog signals (and vice versa) and allows a computer to exchange data over a standard dial-up telephone line
[Receiving/receive] information specific to the type of programming available to the particular [viewing location/television receiver][1]	Having data transferred to a computer such that a user can perform database-type manipulations directly on the transferred data without being connected to the original source of the data.
Controller	An electronic device for manipulating information including at least memory for storing and executing computer programs and I/O ports for connecting to peripheral devices, such peripheral devices including modems and display devices.
Controller being programmed to perform	Computer application programs are installed on the "controller," as defined above, prior to its use by a user to perform.
Available to a particular one of the viewing locations	Deliverable from a programming source to a specific "television viewing location," as defined above.
Wide-area network	A data communication network that is not a local area network.
Information regarding the geographical location of a particular viewing location	Any information, irrespective of how the information is encoded, that expressly indicates in geographic language (e.g., name of a continent, country, province, state, city, town region, street address, zip code, area code, etc.) the approximate portion of the planet in which a particular "television viewing location," as defined above, is located.
Schedule of the television programming	A list, not necessarily ordered in any way, containing at least one item of television programming.

[1] This claim term was previously identified as "receive/receiving," both in TMS' Proposed Constructions, exchanged October 16, 2006, and in the Expert Report of Dr. Gary S. Tjaden Regarding Invalidity of United States Patent No. 5, 988,078. TMS' proposed construction remains the same, and this revision to the disputed claim term does not change Dr. Tjaden's opinions regarding invalidity.

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TMS' Revised Proposed Constructions of Disputed Claim Terms
January 18, 2007

Claim Term	TMS' Proposed Construction
Memory for storing the information	A device that can retain computerized information for retrieval later.
Receive information through the operator input	Signals produced by the operator input in response to user actions and transferred to the controller in the electronic terminal unit.

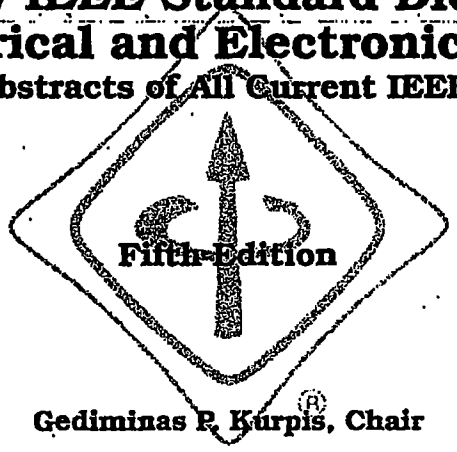
Case 1:05-cv-00725-SLR-LPS Document 175 Filed 02/16/2007 Page 72 of 77

EXHIBIT 5

IEEE Std 100-1992

The New IEEE Standard Dictionary of Electrical and Electronics Terms

[Including Abstracts of All Current IEEE Standards]



Fifth Edition

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SH15594

January 15, 1993

ital computer commands a digital-to-analog converter or a digital-to-analog multiplier "load." 166-1977

load transfer switch. A switch used to connect a generator or power source optionally to one or another load circuit. *See:* **dielectric heating; induction heating.** 54-1955w

load, transition. The load at which a thyristor converter changes from one mode of operation to another. *Note:* The load current corresponding to a transition load is determined by the intersection of extensions of successive portions of the direct-voltage regulation curve where the curve changes shape or slope. 444-1973

load variation (power operations). Maximum system load over a time interval minus the integrated load over the same time interval. 858-1987

load variation within the hour (electric power utilization). The short-time (three minutes) net peak demand minus the net 60-minute clock-hour integrated peak demand of a supplying system. *See:* **generating station.** [54]

load voltage (1) (arc-welding apparatus). The voltage between the output terminals of the welding power supply when current is flowing in the welding circuit. [91]
(2) (thyristor). The voltage across the load. 428-1981

load voltage unbalance (thyristor). If the voltages measured between the pairs of load terminals are not equal, a voltage unbalance exists. 428-1981

load, work, or heater coil (induction heating). An electric conductor that, when energized with alternating current, is adapted to deliver energy by induction to a charge to be heated. *See:* **induction heating.** 54-1955w

lobe (directional lobe) (radiation lobe) (antenna lobe) (data transmission). A lobe is a portion of the directional pattern bounded by one or two cones of nulls. 599-1985w

lobe switching (radar). A means of direction finding in which a directive radiation pattern is periodically shifted in position so as to produce a variation of the signal at the target. The signal variation provides information on the amount and direction of displacement of the target from the pattern mean position. *Syn:* **sequential lobing.** 686-1982

local. Relating to a bounded part of an ATLAS test procedure. 771-1989

local area network (LAN). A non-public data network in which serial transmission is used without store and forward techniques for direct data communication among data stations located on the user's premises. 802.6-1990

local backup (power switchgear). A form of backup protection in which the backup protective relays are at the same station as the primary protective relays. C37.100-1981

local broadcast (FASTBUS acquisition and control). A broadcast which is effective only on the originating segment. 960-1986

local channel (data transmission). A channel connecting a communications subscriber to a central office. 599-1985w

local compaction. In microprogramming, compaction in which microoperations are not moved beyond the boundaries of the single entry, single exit sequential blocks in which they occur. *Contrast with:* **global compaction.** 610.12-1990

local control (programmable instrumentation). A method whereby a device is programmable by means of its local (front or rear panel) controls in order to enable the device to perform different tasks. (Also referred to as manual control.) 488.1-1987

local control/alarm (1) (electric pipe heating systems). The locations where control, alarm, or both signal or function take place. With respect to electric pipe heating systems, these are usually mounted in close proximity to the individual heating circuits that they operate. 622A-1984
(2) (electric heat tracing systems). The locations where control, alarm, or both signal or function take place. With respect to electric heat tracing systems, these are usually mounted in close proximity to the individual heating circuits that they operate. 622B-1988

local data. Data that can be accessed by only one module or set of nested modules in a computer program. *Contrast with:* **global data.** 610.12-1990

local exchange. A switching entity in the public telephone network to which subscribers are connected. Evolving practice in North America defines this entity as "end office." *See also:* **subscriber's line.** Evolving practice in North America defines this entity as "end office." *See also:* **subscriber's line.** 823-1989

local exchange access line. *See:* **subscriber's (telephone) line; subscriber loop (USA) (in telephony).** 823-1989

localized general lighting (illuminating engineering). Lighting utilizing luminaires above the visual task and also contributing to the illuminance of the surround. [126]

local lighting (illuminating engineering). Lighting providing illuminance over a relatively small area or confined space without providing any significant general surrounding lighting. [126]

local loop (data transmission). That part of a communication circuit between the subscrib-

CERTIFICATE OF SERVICE

I hereby certify that on the 16th day of February, 2007, I electronically filed the foregoing document, **PUBLIC VERSION OF REBUTTAL EXPERT REPORT OF DR. GARY S. TJADEN REGARDING NON-INFRINGEMENT OF U.S. PATENT NO. 5,988,078**, with the Clerk of the Court using CM/ECF which will send notification of such filing to the following:

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Jeffrey L. Moyer
Steven J. Fineman
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Wilmington, Delaware 19801

Additionally, I hereby certify that on the 16th day of February 2007, the foregoing document was served by email on the above-referenced attorneys and on the following non-registered participants:

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