UNITED STATES DISTRICT COURT
MIDDLE DISTRICT OF FLORIDA
TAMPA DIVISION

ADVANCED MEDIA NETWORKS, LLC, Plaintiff. v. EMERGING MARKETS COMMUNICATIONS, LLC, MARITIME TELECOMMUNICATIONS NETWORK, INC. d/b/a MTN SATELLITE COMMUNICATIONS, Defendants	**Case No. _____** **JURY TRIAL DEMANDED**

COMPLAINT

Plaintiff Advanced Media Networks, LLC, formerly NeTune Communications, Inc., ("AMN") brings this action against defendant Emerging Markets Communications, LLC ("EMC") and Maritime Telecommunications Network, Inc. d/b/a MTN Satellite Communications ("MTN") (collectively, "Defendants"), and hereby alleges as follows:

THE PARTIES

1. AMN is a limited liability company organized and existing under the laws of California having a principal place of business at 5900 Wilshire Boulevard, Suite 2600, Los Angeles, California 90036. AMN is a supplier of communication products and services, including portable and wireless videoconferencing and mobile wireless broadband network systems for use at remote locations.

2. AMN was formed in the mid-1990s by inventor Curtis Clark and others to develop wireless mobile systems that enable the streaming of video and other data from remote locations. One of these mobile systems is the "ShowRunner" system which provides access to secure

broadband satellite and microwave networks and services at remote locations. Among other things, the ShowRunner system allows for the use of high-bandwidth, web-based applications (e.g., videoconferencing) in locations where traditional broadband service is unavailable. AMN's development efforts are reflected in the eleven (11) US and European patents, including the Patents-in-Suit, that it owns and practices today.

3. Using its ShowRunner system and service, AMN has worked with Hollywood studios to provide mobile Wi-Fi networks on location for productions such as Blackhawk Down, Spider-man, the Harry Potter series of motion pictures, and other motion picture and television productions. AMN continues to offer these services to the motion picture and other industries. Additionally, AMN has licensed the Patents-in-Suit to multiple mobile wireless network equipment and service providers, including some for which AMN is currently a global certified reseller of such equipment and services.

4. EMC is a limited liability corporation organized and existing under the laws of Delaware having a principal place of business at 3044 N. Commerce Pkwy., Miramar, Florida 33025. Upon information and belief, EMC does business in the State of Florida and this District, contracts to supply goods or services within the State of Florida and this District, has continuous and systematic business contacts within the State of Florida and this District, derives substantial revenue from interstate commerce from goods used or services rendered in the State of Florida and this District, and commits and has committed acts of patent infringement either within the State of Florida and this District, or outside the State of Florida and this District with a reasonable expectation that such acts would have consequences within the State of Florida and this District.

5. MTN is a corporation organized and existing under the laws of Florida having a principal place of business at 3044 N. Commerce Pkwy., Miramar, Florida 33025. Upon information and belief, MTN does business in the State of Florida and this District, contracts to supply goods or services within the State of Florida and this District, has continuous and systematic business contacts within the State of Florida and this District, derives substantial revenue from interstate commerce from goods used or services rendered in the State of Florida and this District and commits and has committed acts of patent infringement either within the State of Florida and this District, or outside the State of Florida and this District with a reasonable expectation that such acts would have consequences within the State of Florida and this District. Upon information and belief, EMC acquired MTN on or about April 2015.

JURISDICTION AND VENUE

6. This action arises under the Patent Laws of the United States, 35 U.S.C. § 1, *et seq.* This Court accordingly has jurisdiction pursuant to 28 U.S.C. §§ 1331, 1338(a), and 2202.

7. Venue is proper in this judicial district pursuant to 28 U.S.C. §§ 1391(b), 1391(c), 1400(b), and 1404(a).

FACTS COMMON TO ALL COUNTS

The Patents-In-Suit

8. On September 28, 1999, U.S. Patent No. 5,960,074 (the "'074 Patent"), entitled "Mobile Tele-Computer Network For Motion Picture, Television and Advertising Production," a copy of which is attached hereto as **Exhibit A**, was duly and legally issued by the United States Patent and Trademark Office ("USPTO") to Curtis Clark as inventor.

9. On September 3, 2002, U.S. Patent No. 6,445,777 (the "'777 Patent"), entitled "Mobile Tele-Computer Network," a copy of which is attached hereto as **Exhibit B**, was duly and legally issued by the USPTO to Curtis Clark, *et al.* as inventors.

10. AMN is the owner by assignment of the Patents-in-Suit.

11. In addition to being examined by the USPTO before being issued, the '074 Patent and '777 Patent have each been reexamined by the USPTO multiple times. During these reexaminations, initiated at the request of several different parties, the USPTO considered dozens of prior art references it had not previously considered and confirmed the validity of the original claims (some as amended) as well as many new claims added during the reexaminations.

12. The '074 Patent was subject to a first reexamination before the USPTO, resulting in the USPTO issuing an Ex Parte Reexamination Certificate on November 22, 2011 confirming original claims 1 through 40 (some as amended) and adding new claims 41 through 127. A copy of this Reexamination Certificate is attached hereto as **Exhibit C**. Similarly, the '777 Patent was subject to a first reexamination before the USPTO, resulting in the USPTO issuing an *Ex Parte* Reexamination Certificate on November 15, 2011 confirming original claims 1 through 28 (some as amended) and adding new claims 29 through 109. A copy of this Reexamination Certificate is attached hereto as **Exhibit D**.

13. The '074 Patent and '777 Patent underwent a second round of ex parte reexaminations by the USPTO which again resulted in the original claims being confirmed and new claims being added. For the '074 Patent, the USPTO issued an Ex Parte Reexamination Certificate on April 23, 2014 confirming claims 1 through 127 (some as amended) and adding new claims 128 through 147. A copy of this Reexamination Certificate is attached hereto as **Exhibit E**. For the '777 Patent, the USPTO issued an Ex Parte Reexamination Certificate on

April 8, 2014 confirming original claims 1 through 109 (some as amended) and adding new claim 110. A copy of this Reexamination Certificate is attached hereto as **Exhibit F.**

14. The '074 Patent underwent a third round of ex parte reexamination by the USPTO. For the '074 Patent, the USPTO issued an Ex Parte Reexamination Certificate on November 13, 2015 confirming claims 1 through 147 and adding new claims 148 through 171. A copy of this Reexamination Certificate is attached hereto as **Exhibit G.**

Licensing History of the Patents-in-Suit

15. The Patents-in-Suit have been licensed to several companies offering products and services providing mobile wireless Internet access, including products and services similar to and operating in the same field of use as those described herein offered by Defendants and covered by the Patents-in-Suit.

16. On January 11, 2010, AMN commenced an action in the Southern District of New York against Inmarsat Inc., Inmarsat Global Limited, Stratos Mobile Networks, Inc. and Vizada Inc. (Case No. 1:10-cv-00194-KBF) alleging infringement of the '074 Patent and '777 Patent by, among things, the SwiftBroadband in-flight broadband wireless Internet access service and the BGAN portable satellite access terminals. On July 26, 2012, this case was dismissed with prejudice following settlement and licensing agreements between the parties.

17. On December 19, 2011, AMN commenced an action in the Central District of California against Gogo LLC ("Gogo") and Aircell Business Aviation Services LLC ("Aircell") (Case No. 2:11-cv-10474-GAF-JCG) alleging infringement of the '074 Patent by broadband products and services installed and operating on aircraft to provide Wi-Fi service to passengers. On April 9, 2012, AMN filed an amended complaint adding defendants Bombardier Aerospace Corporation, Delta Air Lines, Learjet, Inc., NetJets, Inc., United Air Lines Inc., and XOJET, Inc.

On August 5, 2013, this case was dismissed with prejudice following a settlement agreement between parties involved in the case.

18. On December 28, 2012, AMN commenced an action in the Central District of California against Row 44, Inc. and Southwest Airlines Co. (Case No. 2:12-cv-11018-GAF-JCG) alleging infringement of the '074 Patent and '777 Patent by broadband products and services installed and operating on commercial aircraft to provide Wi-Fi service to passengers. On August 5, 2014, AMN filed an amended complaint adding defendant Global Eagle Entertainment, Inc. On January 5, 2015 an order of dismissal was entered in this case following a settlement and licensing agreement between parties in the case.

19. On June 23, 2014, AMN entered into a licensing agreement with Panasonic Avionics Corporation ("PAC"), providing PAC with a non-exclusive license to practice the Patents-in-Suit, without litigation. On information and belief, PAC is one of the largest providers of mobile wireless network services practicing in the same field of use as Defendants.

20. On March 3, 2015, AMN commenced an action in the District of Rhode Island against KVH Industries, Inc. (Case No. 1:15-cv-00084) alleging infringement of the '074 Patent and '777 Patent by broadband products and services installed and operating on maritime vessels and other vehicles to provide Wi-Fi service to passengers. On January 27, 2016 an order of dismissal was entered in this case following a settlement and licensing agreement between parties in the case.

21. On May 19, 2015, AMN commenced an action in the District of Delaware against General Motors Co., General Motors LLC, and OnStar, LLC. (Case No. 1:15-cv-00403) alleging infringement of the '074 Patent by broadband products and services installed and operating in

vehicles to provide Wi-Fi service to passengers. On December 11 2015 this case was dismissed following a settlement and licensing agreement between parties in the case.

The Defendants' Infringing Products and Services

22. Defendants design and sell broadband wireless communications systems that utilize satellites and mobile Wi-Fi hotspots ("EMC Systems") to provide wireless broadband Internet access and services to customers ("EMC Services") (collectively, "EMC Systems and Services") under the brand names "MTN Nexus," "MTN Maestro," and "Connect@Sea" as well as EMC's "Connectivity" platform.

23. Defendants market the EMC Systems and Services to, without limitation, cruise operators, commercial shipping operators, energy/mining operators, and aviation customers.

24. Defendants market, sell, and offer to sell the EMC Services to, without limitation, various customers in the cruise, yacht, ferry, oil & gas, and aviation industries.

25. The EMC Services provide mobile Wi-Fi hotspots primarily for maritime vehicles, including, but not limited to, cruise ships operated by customers such as Windstar Cruises LLC, Pearl Seas Cruises Holdco LLC, and Lindblad Maritime Ventures, Inc. ("Customers").

26. The EMC Systems include very-small-aperture terminal ("VSAT") devices and networking hardware such as modem devices, router devices, wireless router devices, and/or other communications hardware.

27. The EMC Systems and Services allow customers to communicate via satellites orbiting the Earth with the VSAT devices and networking hardware.

28. The EMC Systems and Services allow for high bandwidth, microwave communications via the orbiting satellites in satellite bands including, but not limited to, the C-, Ku- and/or X-bands.

29. Communications are relayed by the satellites to ground stations located throughout the world. These ground stations facilitate communications and connect transmissions from satellites (and the mobile communications products) to terrestrial networks such as the public Internet, private intranets, and/or private networks.

30. Upon information and belief, the EMC Systems and Services utilize standard protocols such as IEEE 802.11, TCP, and/or Internet Protocol.

31. Upon information and belief, communications from the EMC Systems and Services use standard protocols such as TCP and/or Internet Protocol.

32. A detailed description of how the EMC Systems and Services infringe an exemplary claim of the Patents-in-Suit is attached **Exhibit H** and is incorporated by reference herein in its entirety.

The Defendants' Knowledge of AMN and the Patents-in-Suit

33. On May 5, 2015, AMN through its counsel formally notified MTN General Counsel Ian Thompson, via letter, that products and services made, used, sold, or offered for sale by Defendants infringed the '074 and '777 Patents including the EMC Services. In a letter dated May 15, 2015, Defendants acknowledged receipt of the May 5, 2015 letter from AMN.

34. Upon information and belief, Defendants were already aware of the '074 and '777 Patents prior to receipt of the formal notice from AMN by virtue of, among other things, the prior litigation of such patents in its industry including against Defendants' direct competitors including Inmarsat and Vizada, and its potential customers in the maritime and VSAT industries.

35. Since becoming aware of the Patents-in-Suit at least as early as May 5, 2015, Defendants continued to make, use, sell and offer to sell EMC Systems and Services to customers, thereby willfully infringing AMN's Patents-in-Suit.

COUNT I

Infringement of United States Patent No. 5,960,074

36. AMN repeats the allegations contained in the preceding paragraphs as though fully set forth herein.

37. Upon information and belief, Defendants have been infringing and continue to infringe the '074 Patent, directly and/or by contributory infringement and/or by inducement of infringement, by making, using, selling and/or offering to sell, in this judicial district and elsewhere, EMC Systems and Services which embody the patented invention of the '074 Patent.

38. Pursuant to 35 U.S.C. § 271(a), Defendants are liable for direct infringement of the '074 Patent by having made, used, offered to sell, or sold and continuing to make, use, sell and/or offer to sell the EMC Systems and Services. Defendants' infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of EMC Systems and Services which embody the patented invention of the '074 Patent. Defendants have contracted to sell and have sold both the EMC Systems and Services (in configurations generally similar to the allegations previously made herein) to, *inter alia*, Customers. Defendants continue to make, use, sell, offer to sell, and/or import EMC Systems and Services despite having actual knowledge of the infringement of the '074 Patent communicated by AMN as discussed *supra*.

39. Pursuant to 35 U.S.C. § 271(b), Defendants are liable for inducement of infringement by having, and continuing to, knowingly cause (or intend to cause) the direct infringement of the '074 Patent by users of the EMC Systems and Services including, but not limited to, Customers.

40. Pursuant to 35 U.S.C. § 271(c), Defendants are liable for contributory infringement of the '074 Patent by having sold or offered to sell and continuing to sell or offer to sell the EMC Systems and Services, and the components thereof, which comprise a material component of the

invention embodied in the '074 Patent, which is especially made or adapted for use in infringing the '074 Patent, and which is not suitable for any substantial non-infringing use, in order to provide the EMC Services to users and having knowledge that the '074 Patent was/is being directly infringed by users.

41. Pursuant to 35 U.S.C. § 271(f), Defendants are liable for infringement of the '074 Patent by knowingly supplying customers outside of the United States with components of the EMC Systems and Services, the components having no other substantial non-infringing use and not being staple articles or commodities of commerce. Further, the combination of components supplied by Defendants to foreign entities would infringe the patent if such combination occurred within the United States.

42. Upon information and belief, Defendants' infringement of the '074 Patent is willful, deliberate, and intentional by continuing its acts of infringement with knowledge of the '074 Patent and thus acting in reckless disregard of AMN's patent rights.

43. As a result of Defendants' acts of infringement of the '074 Patent, AMN has suffered injury to its business and property in an amount to be determined as damages, and will continue to suffer damages in the future.

44. Unless an injunction is issued enjoining Defendants and their officers, agents, servants, employees and attorneys, and all those persons in active concert or participation with them from infringing the '074 Patent, AMN will be irreparably harmed.

COUNT II

Infringement of United States Patent No. 6,445,777

45. AMN repeats the allegations contained in the preceding paragraphs as though fully set forth herein.

46. Upon information and belief, Defendants have been infringing and continue to infringe the '777 Patent, directly and/or by contributory infringement and/or by inducement of infringement, by making, using, selling and/or offering to sell, in this judicial district and elsewhere, EMC Systems and Services which embody the patented invention of the '777 Patent.

47. Pursuant to 35 U.S.C. § 271(a), Defendants are liable for direct infringement of the '777 Patent by having made, used, offered to sell, or sold and continuing to make, use, sell and/or offer to sell the EMC Systems and Services. Defendants' infringement includes, but is not limited to, the manufacture, use, sale, importation and/or offer for sale of EMC Systems and Services which embody the patented invention of the '777 Patent. Defendants have contracted to sell and have sold both the EMC Systems and Services (in configurations generally similar to the allegations previously made herein) to, *inter alia*, Customers. Defendants continue to make, use, sell, offer to sell, and/or import EMC Systems and Services despite having actual knowledge of the infringement of the '777 Patent communicated by AMN as discussed *supra*.

48. Pursuant to 35 U.S.C. § 271(b), Defendants are liable for inducement of infringement by having, and continuing to, knowingly cause (or intend to cause) the direct infringement of the '777 Patent by users of the EMC Systems and Services including, but not limited to, Customers.

49. Pursuant to 35 U.S.C. § 271(c), Defendants are liable for contributory infringement of the '777 Patent by having sold or offered to sell and continuing to sell or offer to sell the EMC Systems and Services, and the components thereof, which comprise a material component of the invention embodied in the '777 Patent, which is especially made or adapted for use in infringing the '777 Patent, and which is not suitable for any substantial non-infringing use, in order to provide the EMC Services to users and having knowledge that the '777 Patent was/is being directly infringed by users.

50. Pursuant to 35 U.S.C. § 271(f), Defendants are liable for infringement of the '777 Patent by knowingly supplying customers outside of the United States with components of the EMC Systems and Services, the components having no other substantial non-infringing use and not being staple articles or commodities of commerce. Further, the combination of components supplied by Defendants to foreign entities would infringe the patent if such combination occurred within the United States.

51. Upon information and belief, Defendants' infringement of the '777 Patent is willful, deliberate, and intentional by continuing its acts of infringement with knowledge of the '777 Patent and thus acting in reckless disregard of AMN's patent rights.

52. As a result of Defendants' acts of infringement of the '777 Patent, AMN has suffered injury to its business and property in an amount to be determined as damages, and will continue to suffer damages in the future.

53. Unless an injunction is issued enjoining Defendants and their officers, agents, servants, employees and attorneys, and all those persons in active concert or participation with them from infringing the '777 Patent, AMN will be irreparably harmed.

PRAYER FOR RELIEF

WHEREFORE, AMN prays for judgment and relief as follows:

A. A declaration that Defendants have infringed, are infringing, have induced and are inducing, have contributed and are contributing to the infringement of the '074 and '777 Patents;

B. A permanent injunction enjoining Defendants, their officers, agents, servants, employees, affiliates and attorneys, and all those in active concert or participation with them, from

further infringing, inducing infringement, and contributing to the infringement of the '074 and '777 Patents;

C. An award of damages adequate to compensate AMN for the infringement of the '074 and '777 Patents by Defendants;

D. A declaration that Defendants' continuing infringement of the '074 and '777 Patents was and is willful, justifying a trebling of the award of damages under 35 U.S.C. § 284, or such other enhancement of the award of damages that the Court deems appropriate;

E. An award of pre-judgment and post-judgment interest on the damages caused by reason of Defendants' infringement of the '074 and '777 Patents;

F. A declaration that this an exceptional case and that AMN be granted its reasonable attorneys' fees in accordance with 35 U.S.C. § 285;

G. An award of costs to AMN; and

H. A grant to AMN of such other and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

AMN demands trial by jury on all claims and issues so triable.

[SIGNATURE ON NEXT PAGE]

Dated: March 3, 2016

Respectfully submitted,

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Attorneys/trial counsel for Plaintiff Advanced Media Networks, LLC

Exhibit A

US005960074A

United States Patent [19]

Clark

[11] Patent Number: 5,960,074

[45] Date of Patent: Sep. 28, 1999

[54] **MOBILE TELE-COMPUTER NETWORK FOR MOTION PICTURE, TELEVISION AND TV ADVERTISING PRODUCTION**

[75] Inventor: **Curtis Clark**, 9636 Heather Rd., Beverly Hills, Calif. 90210

[73] Assignee: **Curtis Clark**, Beverly Hills, Calif.

[21] Appl. No.: **08/718,748**

[22] Filed: **Sep. 23, 1996**

[51] **Int. Cl.**[6] **H04M 7/10**; H04M 11/00; H04Q 11/04; H04J 1/00; H04J 3/02

[52] **U.S. Cl.** **379/310**; 370/310; 370/352; 370/353; 370/380; 370/389; 370/392; 370/396; 370/401; 370/404; 370/427; 370/435; 370/450; 370/465; 370/485; 379/90.01; 379/93.01; 379/93.05; 379/93.09; 379/100.15; 379/100.16

[58] **Field of Search** 370/310, 352, 370/353, 380, 389, 392, 396, 401, 404, 427, 435, 450, 465, 485; 379/90.01, 93.01, 93.05, 93.09, 100.15, 100.16

[56] **References Cited**

U.S. PATENT DOCUMENTS

5,095,480	3/1992	Fenner	370/94.1
5,327,486	7/1994	Wolff et al.	379/96
5,410,737	4/1995	Jones	455/56.1
5,570,354	10/1996	Simon	370/26

Primary Examiner—Wellington Chin
Assistant Examiner—Allan Hoosain
Attorney, Agent, or Firm—Blakely, Sokoloff, Taylor & Zafman LLP

[57] **ABSTRACT**

A telecomputer network is described. The network comprises a redundant digital microwave communication system, at least one mobile vehicle, and a wireless local area network (LAN). In one embodiment, the microwave communication system transfers information using ethernet packet switching. In one embodiment, the wireless LAN transfers information using the TCP/IP protocol. The mobile vehicle is configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.

40 Claims, 1 Drawing Sheet

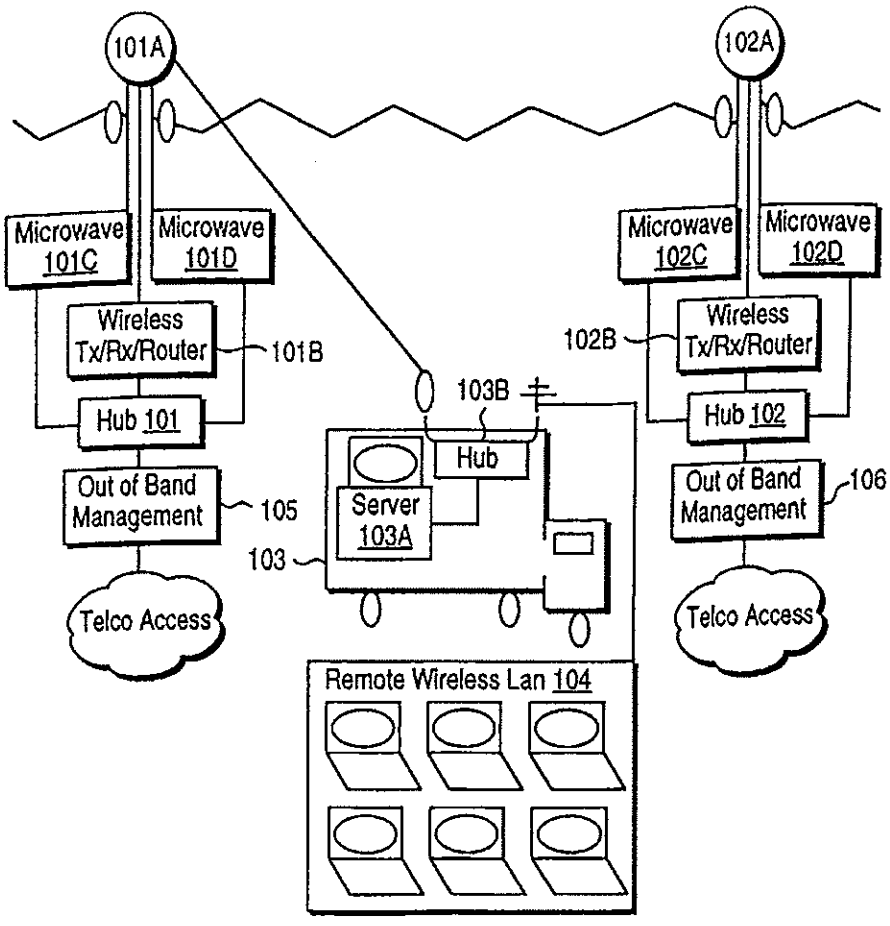
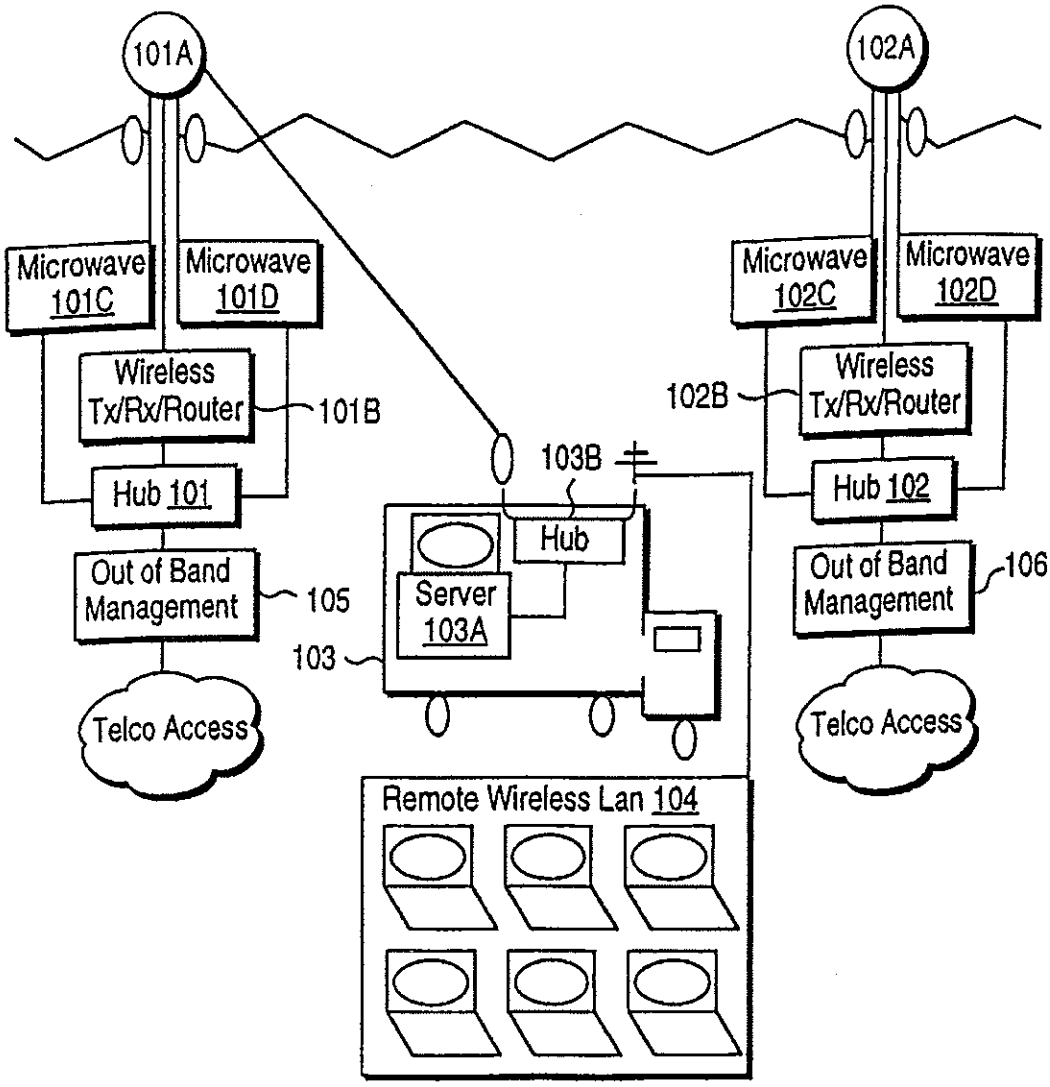


FIG. 1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102A
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Microwave 102C
Microwave 102D
Wireless Tx/Rx/Router
101B
102B
Wireless Tx/Rx/Router
103B
Hub 101
Hub 102
Hub
Server 103A
Out of Band Management
105
Out of Band Management
106
103
Telco Access
Telco Access
Remote Wireless Lan 104

MOBILE TELE-COMPUTER NETWORK FOR MOTION PICTURE, TELEVISION AND TV ADVERTISING PRODUCTION

FIELD OF THE INVENTION

The present invention relates to the field of communications systems; more particularly, the present invention relates to mobile communications designed for advantageous use with motion picture, television and TV advertising production.

BACKGROUND OF THE INVENTION

Most area of corporate enterprise are rapidly advancing their productivity via the use of computer networking. Computer networking is the connecting of multiple computers into a common communication system so that information may be exchanged between them. Computer network technology is redefining the way corporate America works. Computers and networking are being converged, spawning a synergistic fusion between the two that is reshaping current understanding of computer functionality. The advent of mobile computing employing high powered full-featured laptop and notebook computers as replacements for conventional desktop computer systems has enabled the "virtual office" to become the fastest growing area of business "real estate".

Intranets have recently begun to replace traditional client-server private networks as the chosen preference for network-centric (group) tele-computing. An Intranet is a private computer network using public Internet TCP/IP protocols and designed to be the most efficient and easy to use network for sharing information and data, including text, image and audio. Intranets are relatively cheap, they can exploit Internet features including the ability to establish Web sites to disseminate information, and they use available browsers (e.g., Netscape) to search for information.

The creative and commercial success of Motion Picture, Television and TV Advertising film production is dependent on the ability of the parties to communicate with their audiences. Likewise, the professionals engaged in the making of these films and TV shows would greatly enhance their efficiency and thereby reduce their production costs computer network technology into their work environment. Such technology may also improve prospects for more effective creative collaboration. However, there is currently no integrated and coherent mobile network computing technology that satisfies the needs of motion picture, television, and TV advertising production.

Although historically slow in embracing new electronic techniques, film and TV production personnel have recently been awakening to the incredible benefits that accrue from incorporating networked computing into their work and lifestyles. Fueled by the escalating need for ever greater efficiency to reduce production costs, what is needed is to incorporate telecomputing into film and TV production.

Furthermore, the realities of Motion Picture, Television, and Advertising film production demand a fail-safe reliability to any of the service areas that it depends on. Therefore, any solution that reduces production cost and increase efficiency cannot be implemented at the expense of reliability.

The present invention provides a telecomputer network that satisfies the needs of the Motion Picture, Television and TV Advertising industry. The network may be used to increase efficiency, reduce production costs and enhance creative collaboration, while maintaining reliability.

SUMMARY OF THE INVENTION

A telecomputer network is described. The network of the present invention includes a wireless wide area network (WAN) comprised of a redundant digital microwave communication system. The network also comprises at least one mobile communication hub and a wireless local area network (LAN). In one embodiment, the microwave communication system and the wireless LAN transfers information using an ethernet packet switching protocol, such as an Internet protocol (e.g., the TCP/IP protocol). The mobile hub may be in the form of a mobile vehicle (e.g., van) configured to transfer information as a single nomadic transmission/reception point between the microwave communication system (i.e., the wireless WAN) and the wireless LAN.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood more fully from the detailed description given below and from the accompanying drawings of various embodiments of the invention, which, however, should not be taken to limit the invention to the specific embodiments, but are for explanation and understanding only.

FIG. 1 is a block diagram of one embodiment of the system of the present invention.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

A mobile network for use is described. In the following description, numerous details are set forth, such as bit rates, distances, etc. It will be apparent, however, to one skilled in the art, that the present invention may be practiced without these specific details. In other instances, well-known structures and devices are shown in block diagram form, rather than in detail, in order to avoid obscuring the present invention.

Overview of the Present Invention

A tele-computing network architecture is described. The network comprises a wireless local area network (LAN), at least one mobile hub, and a wireless wide area network (WAN) that includes a redundant digital microwave communication system. The mobile hub is in the form of a mobile vehicle (e.g., a van) and is configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.

In one embodiment, the microwave communication system transfers information using multiple relay stations via an ethernet packet switching protocol such as the IEEE 802.10 protocol or the TCP/IP protocol used on the World Wide Web. By using the ethernet packet communication, multiple applications may access the microwave links at any one time. The wireless LAN also utilizes the ethernet protocol to transfer information.

In one embodiment, the wireless WAN of the present invention operates as a private Intranet using the TCP/IP protocols of the Internet. Its user operation may be based on the platform independent, Graphical User Interface (GUI) of the World Wide Web (e.g., Netscape Navigator). By using Web browser software (HTML, VRML, Java language, and numerous audiovisual "plug-ins" developed for Netscape), the present invention may create an effective, efficient, and easy to use Web based graphical multimedia environment for the dissemination of information and data on a private intranet, such as one used by media production industries.

Although the present invention is described with use of the TCP/IP Internet protocol, other protocols may be used. For instance, other protocols which may be employed by the present invention include asynchronous transfer mode (ATM), Internet Packet Exchange (IPX) protocol, Lotus Notes, SMNP, NNP, Multiple Internet Mail Exchange (MIME), IP (Internet protocol)—ATM, Web Network File System (WNFS), File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI), Reliable Multi-cast Transfer Protocol (RMTP), and Multiprotocol OVER ATM (MPOA).

The wireless WAN is preferably a secure network. In such a case, software programs provide a secure "fire wall" to bar unauthorized entry from the public Internet. The present invention uses access codes and passwords to control access to data available through the network. In one embodiment, encryption is used on all data traffic between designated locations and our secured intranet servers and the high speed wireless digital network. Such security in the form of software is well-known in the art.

In one embodiment, the existing Internet backbone may be employed, where necessary, for relaying data between the servers of system users and intranet servers that provide the gateway to the wireless network of the present invention.

The integration wireless LAN ethernet technology with digital microwave relay stations provides broadband, high speed wireless connections between locations and fixed sites, which supports, for example, industries such as the Motion Picture, Television, and TV Advertising industries. The high bandwidth and fast data rate wireless mobility also enable a custom designed, fully integrated mobile computer network system.

The present invention provides a unique telecommunication system that is a comprehensive full-featured mobile Web-based intranet information management and communication system supported by a broadband microwave network infrastructure.

Exemplary Network System Embodiments

FIG. **1** illustrates the network system of the present invention. Referring to FIG. **1**, the system **100** of the present invention comprises a private digital microwave network ring having multiple relay stations (hubs), such as exemplary hubs **101** and **102**. Hub **101** includes a wireless transmit/receive router **101**B with its associated antenna **101**A and two transmit/receive relay components **101**C and **101**B. The system also includes one or more mobile hubs, such as mobile hub **103**, and one or more wireless local area network (LAN) **104**. Note that in one embodiment, there is a mobile hub station supporting every wireless LAN.

In one embodiment, each of the hubs are separated by 6 to 10 miles and operate at 40–60 MHz, which is much higher than fiber optics. In an alternative embodiment, the distance between hubs may vary to such distances as 25 miles. In one embodiment, each of the segments comprises a 20 Mbps bandwidth segment running in an 11 GHz frequency band. Three such channels of 20 Mbps each can be combined to provide 60 Mbps of available bandwidth. In another embodiment, a single channel 100 Mbps bandwidth segments (single antenna) are used. By using data rates of 60 to 100 Mbps, the microwave ring accommodates transmission of high resolution video images directly from a digital post production house to a shooting location.

The microwave ring employs system redundancy so that if one link is not functional, data may be routed in the opposite direction to arrive at its designated location. Using a spanning tree protocol, the system of the present invention determines the best route to send information on the fly to transfer information in the most efficient manner. This redundancy avoids the use of point to point parallel redundancy such as used by telcos to achieve the same affect. Thus, by using the microwave ring, the present invention provides telco independence.

In one embodiment, for locations outside the coverage area of the wireless WAN, transmissions are relayed via a satellite communications like to the WAN. Note that the present invention may utilize fiber optic cable connections to connect signals to the nearest digital microwave relay station. In one embodiment, relay stations of the digital microwave system are connected to a fiberoptic SONET ring which provides additional bandwidth of up to 1 Gbps. In one embodiment, each of hubs **101** and **102** also includes out of band management **105** and **106**, respectively, which coordinates telco access when the microwave ring cannot support all of the transmissions because of limited bandwidth.

Wireless LANs at individual locations are linked to the wireless wide area network (wireless WAN) of the present invention and the Internet backbone via multipoint wireless routers, such as routers **101**B and **102**B. In one embodiment, these routers, each capable of 10 Mbps data transmission operating at 2.4 Ghz with an omni-directional radius of ⅝ miles and up to 25 miles with directional focus, will in turn be connected to a series of strategically placed digital microwave relay stations of the wireless WAN. In one embodiment, a 10–100 Mbts ethernet switch is located at each microwave site to serve as a bridge between the wireless downlink to the remote location and the microwave backbone.

In one embodiment, the LAN **104** is a wireless ethernet LAN connecting multiple remote personal computers (PCs) as nodes. In one embodiment, the LAN **104** covers an "on site" radius of up to ½ mile at 2 Mbps from a mobile hub station, strategically placed at the designated location, such as mobile vehicle **103**. For instance, the LAN **104** may be at the production's location LAN to service the location telecomputing communication needs of a film or TV production unit, even when shooting on a stage or studio lot.

In one embodiment the LAN is secure. The LAN may employ standard encryption or logging on security. In an alternate embodiment, the LAN includes video conferencing capabilities.

In one embodiment, the LAN **104** transfers data to megabits per second to a single point, which is the mobile hub station such as the mobile vehicle **103** described below. In one embodiment, the mobile hub station is housed in a custom fitted motor home (e.g., vehicle, van) that not only links the location LAN **104** to the Internet backbone via the microwave ring (i.e., the wireless WAN).

One or more hubs of the microwave ring are equipped with microwave antennas configured to communicate with one or more of the mobile hub stations. At each hub, down linking to sites is possible via wireless communication without the use of telco. In one embodiment, the speed of the up link and down link of information is at 10 megabits per second. For instance, microwave antenna **101**A communicates with mobile vehicle **103**.

When the mobile hub station has reached its location, its antenna is calibrated. In one embodiment, the calibration process is a line of sight process. In an alternate embodiment, the calibration process is not necessary where the mobile hub station includes an omni-directional antenna and is able to transfer information from a non-stationary position. In one embodiment, the mobile hub station only

transfers data from a stationary position. However, even though the transfer of data only occurs from a stationary position, the mobile hub station is in fact a nomadic vehicle that may be driven any where and can still gain access to the wireless WAN of the present invention. Thus, the mobile vehicle receives high bandwidth at a mobile location, avoiding reliance on existing cable sites.

In one embodiment, the mobile hub station of the present invention includes a file server which accesses a proxy server. The server, such as server **103**A, in each hub station is used to coordinate communication with a microwave antenna of a relay station, such as the microwave antenna **101**A. The server updates the server back at a home office (not shown) and operates in synchronization with the home office. The file server also employs file sharing and routes mail. The home office would have access to these records.

In one embodiment, the mobile hub station also comprises a workstation viewing environment for broadband high resolution video location. The present invention provide a conduit infrastructure for internet information system management interactive relay of broadband video in real-time and at full workstation resolution. In one embodiment, the workstation includes a high resolution progressive scan monitor.

Note that the home office may coordinate all communication over the telecomputing network of the present invention. The home office includes a server to control communication with the entire system. In one embodiment, the home office comprises a single master location. However, as bandwidth requirements increase, additional master locations may be included in order to reduce overloading of segments on the microwave ring. These additional master locations may be interconnected by terrestrial-based high-band width fiber optic links to the master location.

Software

The present invention uses Web-based software applications designed to facilitate information/data base organization and communication for the various areas of production specialization: directors; producers; cinematographers; editors; script supervisors; art directors; assistant directors; production managers; location managers; casting directors, etc.

In one embodiment, incorporated within its Web-based software applications, the service provides e-mail, downloading or uploading files from the FTP sites and Internet Relay Chat (IRC), as well as video conferencing. The system of the present invention may also offer the latest developments in "Web phone" voice communications and switch telephony from with the LAN to any phone using microcells in the LAN. This replaces conventional cellular phone connections and is seemlessly integrated with the Intranet's multi-media environment.

Acting as a "gateway" onto the full range of public Internet services, clients access any part of the Internet from their remote location nodes connected through one of a wireless LANs of the present invention, as well as from any conventional or cellular phone connection.

In one embodiment, the Intranet database management may be implemented using an inter/intranet standard such as IIOP (Internet Inter Operable-ORB) based on COBRA (Common Object Request Broker Architecture) and DCOM (Distributed Common Object Model) using active X framework.

As the digital processing of film images becomes increasingly germane to film production, creative collaboration by the Digital Artist in the filmmaking process will become as routine and valued as that of the Cinematographer or Production Designer. The ability to do real time wireless relay of High Resolution digital film images from a graphics workstation direct to a shooting location will, for the first time ever, offer new dynamic possibilities for the Digital Artist to participate as an active crew member in location filming. A skilled Digital Artist, working along side the Special FX Supervisor, may help shape the way Directors, Cinematographers, Production Designers and Producers are able to integrate their ideas with ever expanding possibilities of digital technology. Having remote mobile access during the shoot to digital image processing via the broadband wireless relay network of the present invention combine traditionally separated production from postproduction.

In one embodiment, X Windows running on a PC is used at a shooting location to enable remote user manipulation of an SGI workstation. CGI work in progress, designed as composite components for live action images, can be relayed in real time to the shooting location, thereby making CGI truly interactive with filming process. Virtual Sets that will eventually be composited with the final film image can be integrated as reference components into camera compositions during live action shooting utilizing a high quality video assist.

Digital animated multimedia storyboards that are capable of incorporating 3D spatial renderings can become valuable interactive tolls both for conceptual fine tuning and shot planning. Input from a variety of image sources, including photographic, graphic and CGI, both still and/or full motion, can be incorporated to generate a fertile environment facilitating the creative process. These animated multimedia storyboards will be able function as evolving organic "documents" during the entire production process helping to fine tune ideas and concepts between the director and his/her key collaborators.

Any information or data relevant to production administration, e.g., story boards, scripts or script changes, production schedules, budgets, maps and directions, location photos, call sheets, casting information, payroll information, accounting reports, bulletins, personnel directories, vendor catalogues, etc., incorporating text, audio, image, video can be uploaded to the production company's private intranet Web server resident at a central office(s) and accessed on demand by any authorized personnel regardless of their location. Even if a production member is outside the wireless LAN/WAN Service Area, access to the private intranet may be made via any conventional public Internet connection from anywhere in the world via a modem or ISDN terminal adapter.

In one embodiment, the present invention allows a camera generated time code to link to the Web and network application servers of the present invention. This allows for productions to cross-reference and access to all relevant data (e.g., script supervisor notes and camera data) to specific scenes and takes via this frame accurate time code.

Whereas many alterations and modifications of the present invention will no doubt become apparent to a person of ordinary skill in the art after having read the foregoing description, it is to be understood that the particular embodiment shown and described by way of illustration is in no way intended to be considered limiting. Therefore, references to details of the various embodiment are not intended to limit the scope of the claims.

Thus, a mobile tele-computer network has been described.

We claim:

1. A telecomputer network system comprising:

a redundant digital microwave communication system;

a wireless local area network (LAN); and

a mobile hub station configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN using an ethernet packet switching protocol.

2. The network defined claim 1 wherein the microwave communication system operates as a secured private intranet.

3. The network defined claim 1 wherein the information is transferred using the TCP/IP protocol.

4. The network defined claim 1 wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

5. The network defined claim 1 wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

6. The network defined claim 1 wherein the mobile hub station comprises an uplink to the microwave communication system.

7. The network defined claim 1 wherein the mobile hub station is configured to relay information between the wireless LAN and the microwave communication system, and comprises a server to control the relaying of information.

8. The network defined claim 1 wherein the mobile hub station comprises a workstation viewing environment.

9. The network defined claim 1 wherein the mobile hub station comprises an omni-directional antenna.

10. The network defined in claim 1 wherein the mobile hub station comprises a vehicle.

11. The system defined in claim 1 wherein the information comprises broadband information.

12. The system defined in claim 11 wherein the broadband information comprises data.

13. The system defined in claim 11 wherein the broadband information comprises audio and image data, such that the microwave communication system, wireless LAN, and mobile hub station transfer broadband audio and image data.

14. A telecomputer network comprising:

a wireless wide area network (WAN) comprising a redundant digital microwave communication system configured to operate as a intranet;

a wireless local area network (LAN), wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a mobile vehicle configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN using the TCP/IP protocol.

15. The network defined claim 14 wherein the wireless WAN operates as a private intranet.

16. The network defined claim 14 wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

17. The network defined claim 14 wherein the mobile vehicle comprises an uplink to the microwave communication system.

18. The network defined claim 14 wherein the mobile vehicle is configured to relay information between the wireless LAN and the microwave communication system, and comprises a server to control the relaying of information.

19. The network defined claim 14 wherein the mobile vehicle comprises a workstation viewing environment.

20. The network defined claim 14 wherein the mobile vehicle comprises an omni-directional antenna.

21. The system defined in claim 14 wherein the information comprises broadband information.

22. The system defined in claim 21 wherein the broadband information comprises data.

23. The system defined in claim 21 wherein the broadband information comprises audio and image data, such that the microwave communication system, wireless LAN, and mobile vehicle transfer broadband audio and image data.

24. A telecomputer network comprising:

a redundant digital microwave communication system configured to operate as a secured private intranet to transfer information using a ethernet packet switching protocol;

a wireless local area network (LAN) configured to transfer information using the ethernet packet protocol, wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a plurality of mobile vehicles, wherein each mobile vehicle is configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.

25. The system defined in claim 24 wherein the information comprises broadband information.

26. The system defined in claim 25 wherein the broadband information comprises data.

27. The system defined in claim 25 wherein the broadband information comprises audio and image data, such that the microwave communication system, wireless LAN, and a mobile hub vehicle transfer broadband audio and image data.

28. A system comprising:

a communication subsystem;

a wireless local area network (LAN) that includes at least one computer; and

a mobile hub configured to transfer broadband information as a single nomadic transmission/reception point between the communication subsystem and the wireless LAN using an ethernet packet switching protocol.

29. The system defined claim 28 wherein the broadband information comprises data.

30. The system defined claim 28 wherein the broadband information comprises audio and image data, such that the subsystem, wireless LAN and mobile hub transfer broadband audio and image data.

31. The system defined claim 28 wherein the information is transferred using the TCP/IP protocol.

32. The system defined claim 28 wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

33. The system defined claim 28 wherein the mobile hub comprises an uplink to the communication subsystem.

34. The system defined claim 28 wherein the mobile hub comprises a server to control the relaying of information.

35. The system defined claim 28 wherein the mobile hub comprises a workstation viewing environment.

36. The system defined claim 28 wherein the mobile hub comprises an omni-directional antenna.

37. The system defined in claim 28 wherein the mobile hub comprises a vehicle.

38. A system comprising:

a communication subsystem to operate as a secured private intranet to transfer broadband information using a ethernet packet switching protocol;

a wireless local area network (LAN) to transfer information using the ethernet packet protocol, wherein the wireless LAN comprises a plurality of nodes with an individual computer at each of the plurality of nodes; and

a mobile hub to transfer broadband information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.

39. The system defined claim 38 wherein the broadband information comprises data.

40. The system defined claim 38 wherein the broadband information comprises audio and image data, such that the subsystem, wireless LAN and mobile hub transform broadband audio and image data.

* * * * *

Exhibit B

US006445777B1

(12) **United States Patent**
Clark

(10) **Patent No.: US 6,445,777 B1**
(45) **Date of Patent: Sep. 3, 2002**

(54) **MOBILE TELE-COMPUTER NETWORK**

(75) Inventor: **Curtis Clark**, Beverly Hills, CA (US)

(73) Assignee: **NeTune Communications, Inc.**, Culver City, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/217,682**

(22) Filed: **Dec. 21, 1998**

Related U.S. Application Data

(63) Continuation-in-part of application No. 08/718,748, filed on Sep. 23, 1996, now Pat. No. 5,960,074.

(51) **Int. Cl.**[7] **H04M 1/64**; H04M 11/00; H04M 3/42

(52) **U.S. Cl.** **379/88.13**; 379/88.17; 379/101.01; 379/102.01; 379/142.15; 379/201.01; 379/201.05

(58) **Field of Search** 379/88.13, 88.17, 379/93.09, 93.14, 100.12, 100.15, 112.09, 142.16, 185, 224, 225, 310, 101.01, 102.01, 102.03, 142.15, 201.01, 201.05, 265.09, 258, 268, 269; 370/401, 465, 466, 353, 316; 455/3.2, 9, 14, 54.1, 447, 12.1, 427, 428, 456

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,095,480	A		3/1992	Fenner	370/94.1
5,327,486	A		7/1994	Wolff et al.	379/96
5,410,737	A		4/1995	Jones	455/56.1
5,570,354	A	*	10/1996	Simon	370/26
5,857,201	A	*	1/1999	Wright, Jr. et al.	707/104
5,915,207	A	*	6/1999	Dao et al.	455/9
6,115,384	A	*	9/2000	Parzych	370/401
6,175,717	B1	*	1/2001	Rebec et al.	455/3.2

* cited by examiner

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(74) *Attorney, Agent, or Firm*—Brown Rayman Millstein Felder & Steiner, LLP

(57) **ABSTRACT**

A telecomputer network is described. The network comprises a satellite communication system, at least one mobile vehicle, and a wireless local area network (LAN). In one embodiment, the satellite communication system transfers information using ethernet packet switching. In one embodiment, the wireless LAN transfers information using the TCP/IP protocol. The mobile vehicle or portable field unit is configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.

28 Claims, 1 Drawing Sheet

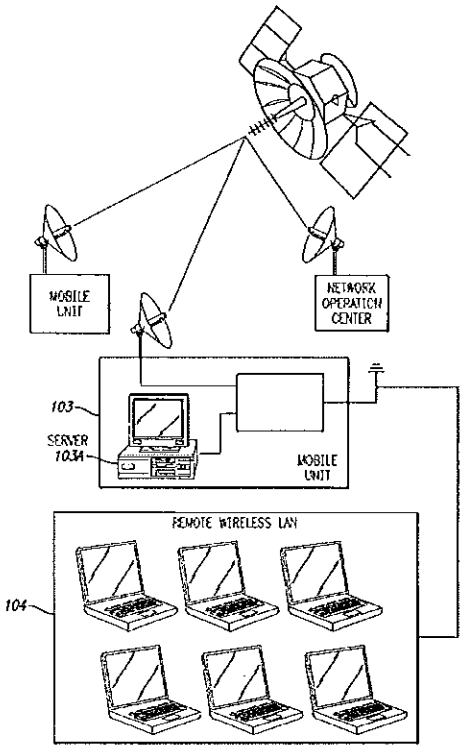
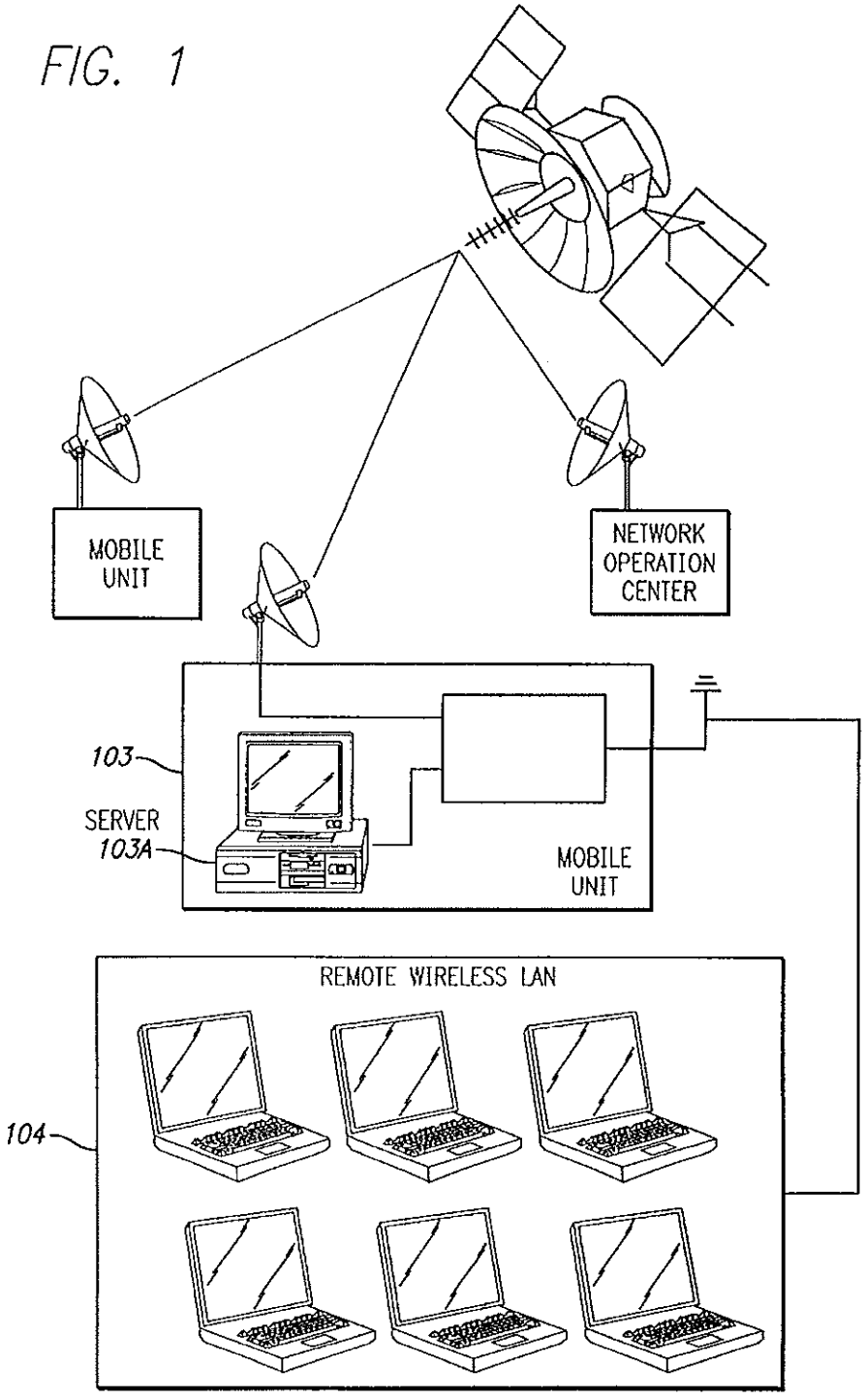


FIG. 1


MOBILE UNIT
NETWORK OPERATION CENTER
103
SERVER
103A
MOBILE UNIT
REMOTE WIRELESS LAN
104

MOBILE TELE-COMPUTER NETWORK

This application is a continuation-in-part of application Ser. No. 08/718,748, entitled Mobile Tele-Computer Network for Motion Picture, Television and TV Advertising Production, filed Sep. 23, 1996, now U.S. Pat. No. 5,960,074.

FIELD OF THE INVENTION

The present invention relates to the field of communications systems; more particularly, the present invention relates to mobile communications designed for advantageous use with motion picture, television and TV advertising production.

BACKGROUND OF THE INVENTION

Most areas of corporate enterprise are rapidly advancing their productivity via the use of computer networking. Computer networking is the connecting of multiple computers into a common communication system so that information may be exchanged between them. Computer network technology is redefining the way corporate America works. Computers and networking are being converged, spawning a synergistic fusion between the two that is reshaping current understanding of computer functionality. The advent of mobile computing employing high powered full-featured laptop and notebook computers as replacements for conventional desktop computer systems has enabled the "virtual office" to become the fastest growing area of business "real estate".

Intranets have recently begun to replace traditional client-server private networks as the chosen preference for network-centric (group) tele-computing. An Intranet is a private computer network using public Internet TCP/IP protocols and designed to be the most efficient and easy to use network for sharing information and data, including text, image and audio. Intranets are relatively cheap, they can exploit Internet features including the ability to establish Web sites to disseminate information, and they use available browsers (e.g., Netscape) to search for information.

The creative and commercial success of Motion Picture, Television and TV Advertising film production is dependent on the ability of the parties to communicate with their audiences. Likewise, the professionals engaged in the making of these films and TV shows would greatly enhance their efficiency and thereby reduce their production costs by incorporating computer network technology into their highly mobile work environment. Such technology may also improve prospects for more effective creative collaboration. However, there is currently no integrated and coherent mobile network computing technology that satisfies the needs of motion picture, television, and TV advertising production.

Although historically slow in embracing new electronic techniques, film and TV production personnel have recently been awakening to the incredible benefits that accrue from incorporating networked computing into their work and lifestyles. Fueled by the escalating need for ever greater efficiency to reduce production costs, a system to incorporate telecomputing into film and TV production is needed.

Furthermore, the realities of Motion Picture, Television, and Advertising film production demand a fail-safe reliability to any of the service areas that it depends on. Therefore, any solution that reduces production cost and increase efficiency cannot be implemented at the expense of reliability.

The present invention provides a telecomputer network that satisfies the needs of the Motion Picture, Television and TV Advertising industry. The network may be used to increase efficiency, reduce production costs and enhance creative collaboration, while maintaining reliability.

SUMMARY OF THE INVENTION

A telecomputer network is described. The network of the present invention includes a wireless voice and data wide area network (WAN) comprises a digital satellite communications system with a network operations center that controls voice and data traffic. The network also comprises at least one mobile communication hub and a wireless local area network (LAN). In one embodiment, the network uses a mesh topology to allow transmission and reception from one mobile communications hub to another mobile communications hub or transmission reception from a mobile communications hub to the network operations center. Point-to-point digital microwave links may be used to allow transmission and reception from fixed locations to the network operations center. In one embodiment, the satellite communication system and the wireless LAN transfer information using an ethernet packet switching protocol, such as an Internet protocol (e.g., the TCP/IP protocol). The mobile hub may be in the form of a mobile vehicle (e.g., van) configured to transfer information as a single nomadic transmission/reception point between the satellite communication system (i.e., the wireless WAN) and the wireless LAN.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be understood more fully from the detailed description given below and from the accompanying drawings of various embodiments of the invention, which, however, should not be taken to limit the invention to the specific embodiments, but are for explanation and understanding only.

FIG. 1 is a block diagram of one embodiment of the system of the present invention.

DETAILED DESCRIPTION OF THE PRESENT INVENTION

A mobile network for use is described. In the following description, numerous details are set forth, such as bit rates, distances, etc. It will be apparent, however, to one skilled in the art, that the present invention may be practiced without these specific details. In other instances, well-known structures and devices are shown in block diagram form, rather than in detail, in order to avoid obscuring the present invention.

Overview of the Present Invention

A tele-computing network architecture is described. In one embodiment, the network comprises a wireless local area network (LAN), at least one mobile hub, and a wireless wide area network (WAN) that includes a satellite communication system with a network operations center to control voice and data traffic. In one embodiment, the satellite communication system is a digital satellite system, although it may be analog. The mobile hub may be in the form of a mobile vehicle (e.g., a van) or a portable field unit and is configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.

In one embodiment, the architecture includes a point-to-point microwave communication system to relay data from the fixed locations to the network operations center.

In one embodiment, the satellite and terrestrial microwave communication system transfers information using a satellite transponder or fixed terrestrial microwave radio via an ethernet packet switching protocol such as, for example, the IEEE 802 series of protocols or any proprietary protocols the TCP/IP protocol used on the World Wide Web. By using the ethernet packet communication, multiple applications may access the satellite communications network or terrestrial communications network. The wireless LAN also utilizes the ethernet protocol to transfer information.

In one embodiment, the wireless WAN of the present invention operates as a private Intranet using the TCP/IP protocols of the Internet. Its user operation may be based on the platform independent, Graphical User Interface (GUI) of the World Wide Web (e.g., Netscape Navigator) CGI (Common Gateway Interface), DHTML (Dynamic Hyper-Text Markup Language), XML (extensible Markup Language) and SGML (Standard Generalized Markup Language). By using Web browser software (HTML, VRML, Java language, and numerous audiovisual "plug-ins" developed for Netscape), the present invention may create an effective, efficient, and easy to use Web based graphical multimedia environment for the dissemination of information and data on a private intranet, such as one used by media production industries.

Although the architecture is described with use of the TCP/IP Internet protocol, other protocols may be used. For instance, other protocols which may be employed by the architecture include asynchronous transfer mode (ATM), Internet Packet Exchange (IPX) protocol, Lotus Notes, SNMP (Simple Network Management Protocol), NNP, Multiple Internet Mail Exchange (MIME), IP (Internet protocol) ATM, Web Network File System (WNFS), File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI), Reliable Multi-cast Transfer Protocol (RMTP), and Multi-protocol Over ATM (MPOA).

The wireless WAN is preferably a secure network. In such a case, software programs provide a secure "fire wall" to bar unauthorized entry from the public Internet. In one embodiment, access codes and passwords are used to control access to data available through the network. In one embodiment, encryption is used on all data traffic between designated locations and our secured intranet servers and the high speed wireless digital network. Such security in the form of software is well-known in the art.

In one embodiment, the existing Internet backbone may be employed, where necessary, for relaying data between the servers of system users and intranet servers that provide the gateway to the wireless network of the present invention.

The integration of wireless LAN ethernet technology with a satellite voice and data communications system provides broadband, high speed wireless connections between locations and fixed sites, which supports, for example, industries such as the Motion Picture, Television, and TV Advertising industries. The high bandwidth and fast data rate wireless mobility also enable a custom designed, fully integrated mobile computer network system. The use of point-to-point digital terrestrial microwave links provides transmission reception between fixed sites and the master network operations center at high data rates.

Thus, a unique telecommunication system is provided that is a comprehensive full-featured mobile Web-based intranet information management and communication system supported by a broadband digital microwave terrestrial and/or satellite-based microwave network infrastructure.

Exemplary Network System Embodiments

FIG. 1 illustrates the network system of the present invention. Referring to FIG. 1, the system **100** of the present invention comprises a satellite communications subsystem that communicates with one or more mobile units, such as mobile unit **103**, and one or more wireless local area network (LAN) **104**. Note that in one embodiment, there is a mobile unit supporting every wireless LAN. The mobile unit may be a mobile vehicle. In the following description, a vehicle unit is referred to as a mobile hub station.

Wireless LANs at individual locations are linked to the satellite communications system of the present invention. In one embodiment, the LAN **104** is a wireless ethernet LAN connecting multiple remote personal computers (PCs) as nodes. In one embodiment, the LAN **104** covers an "on site" radius of up to ½ mile at 2 Mbps from a mobile hub station, strategically placed at the designated location, such as mobile vehicle **103**. For instance, the LAN **104** may be at the production's location LAN to service the location telecomputing communication needs of a film or TV production unit, even when shooting on a stage or studio lot.

In one embodiment the LAN is secure. The LAN may employ standard encryption or logging on security. In an alternate embodiment, the LAN includes video conferencing capabilities.

In one embodiment, the LAN **104** transfers data at 1 to 100 megabits per second to single or multiple points in the network infrastructure, which is the mobile hub station such as the mobile unit **103** described below. In one embodiment, the mobile hub station is housed in a custom fitted motor home (e.g., vehicle, van) that not only links the location LAN **104** to the Internet backbone via the satellite communications system (i.e., the wireless WAN) but also to single or multiple points in the network infrastructure.

In one embodiment, the mobile hub station includes a file server which accesses a proxy server. The server, such as server **103A**, in each hub station is used to coordinate communication with a satellite transmission/reception system. The server updates the server back at a master network operations center and operates in synchronization with the master network operations center. The file server may also employ file sharing and routes mail. The master network operations center would have access to these records.

In one embodiment, the mobile hub station also comprises a separate workstation viewing environment for broadband high resolution video or data. In one embodiment, a communications infrastructure is included for interactive relay of broadband real time video or large image and graphic data files. The video and large image and graphic image and data files can be transmitted and received at full workstation resolution. In one embodiment, the workstation includes a high resolution progressive scan monitor.

Note that the master network operations center may coordinate all communication over the telecomputing network of the present invention. The network operations center includes a server to control communications with the entire system. In one embodiment, the network operations center comprises a single master location. As the network operations center grows in size additional network operations centers may be added at other locations. These additional network operation centers may be interconnected by terrestrial-based high bandwidth fiber optic links to the master location. Other communication techniques such as, for example, satellite or other wireless techniques may be used. As bandwidth requirements increase, additional satellite communications equipment and transponder capacity may be included in order to reduce overloading of the space segment.

Software

The present invention uses Web-based software applications designed to facilitate information/data base organiza-

tion and communication for the various areas of production specialization: directors; producers; cinematographers; editors; script supervisors; art directors; assistant directors; production managers; location managers; casting directors, etc.

In one embodiment, incorporated within its Web-based software applications, the service provides e-mail, downloading or uploading files from the FTP sites and Internet Relay Chat (IRC), as well as video conferencing. The system of the present invention may also offer the latest developments in "Web phone" voice communications and switched telephony from within the LAN to any telephones covered by local microcells outside the range of the LAN. This replaces conventional cellular phone connections and is seamlessly integrated with the Intranet's multi-media environment.

Acting as a "gateway" onto the full range of public Internet services, clients access any part of the Internet from their remote location nodes connected through one of a wireless LANs of the present invention, as well as from any conventional or cellular phone connection.

In one embodiment, the Intranet database management may be implemented using an inter/intranet standard such as IIOP (Internet Inter Operable-ORB) based on COBRA (Common Object Request Broker Architecture) and DCOM (Distributed Common Object Model) using active X framework.

The practical use of the mobile telecomputing network in the filmmaking process will become as routine and valued as that of the Cinematographer or Production Designer. The ability to do real time wireless relay of High Resolution digital film images from a graphics workstation directly to a shooting location offers new dynamic possibilities for the Digital Artist to participate as an active crew member in location filming. A skilled Digital Artist, working along side the Special FX Supervisor, may help shape the way Directors, Cinematographers, Production Designers and Producers are able to integrate their ideas with ever expanding possibilities of digital technology. Having remote mobile access during the shoot to digital image processing via the broadband wireless relay network of the present invention combine traditionally separated production from post-production.

CGI (Computer Graphics Imaging) work in progress, designed as composite components for live action images, can be relayed for viewing and manipulation by members of the shooting crew. The CGI work can be evaluated and altered from the location and transmitted to digital effects house or any specified location. An additional two-way collaborative video-conferencing link can be established, thereby making CGI truly interactive with the live-action filming process. Virtual Sets that will eventually be composited with the final film image can be integrated as reference components into camera compositions during live action shooting utilizing a high quality video assist. Video assist images can be captured from the camera view finder and relayed over the mobile tele-computing network to specified locations.

Digital animated multimedia storyboards that are capable of incorporating 3D spatial renderings can become valuable interactive tools both for conceptual fine tuning and shot planning. Input from a variety of image sources, including photographic, graphic and CGI, both still and/or full motion, can be incorporated to generate a fertile environment facilitating the creative process. These animated multimedia storyboards will be able to function as evolving organic "documents" during the entire production process helping to fine tune ideas and concepts between the director and his/her key collaborators.

Any information or data relevant to production administration, e.g., story boards, scripts or script changes, production schedules, budgets, maps and directions, location photos, call sheets, casting information, payroll information, accounting reports, bulletins, personnel directories, vendor catalogues, etc., incorporating text, audio, image, video can be uploaded to the production company's private intranet Web server resident at a central office(s) and accessed on demand by any authorized personnel regardless of their location. Even if a production member is outside the wireless LAN/WAN Service Area, access to the private intranet may be made via any conventional public Internet connection from anywhere in the world via a modem or ISDN terminal adapter.

In one embodiment, the system uses a camera generated time code to link to the Web and network application servers. This allows for productions to cross-reference and access to all relevant data (e.g., script supervisor notes and camera data) to specific scenes and takes via this frame accurate time code.

Content that may be carried as traffic on the mobile telecomputing network on motion picture and television productions and TV advertising productions includes, but is not limited to, the following:

- production logistics data such as accounting data, budget data, scheduling data for production personnel, camera reports, production reports, costume and prop data;
- telephony and fax services (using IP transport mechanisms or wireless telephony systems);
- video teleconferencing and collaborative software, such as, for example electronic white board conferencing;
- high-bandwidth motion picture audio and visual materials such as computer graphics imaging, composited digital film images, digital special effects, digitized motion picture film, telecined digital video, digital audio sequences, non-linear editing files, multimedia data for still and compressed image and video materials;
- Internet, Extranet and electronic commerce information and data, such as access to vendor sites for camera rental, lighting rental, props, etc.; and
- e-mail and integrated messaging services.

The system may be used in oil and gas exploration. Content that may be carried as traffic on the mobile telecomputing network oil and gas exploration, construction and any other industries requiring nomadic communications systems includes, but is not limited to, the following:

- business engineering logistics data such as accounting data, payroll, timesheets, meeting reports and memorandum, budget data, scheduling data, project management reports;
- telephony and fax services (using IP transport mechanisms or wireless telephony systems);
- video tele conferencing and collaborative software, such as electronic white board conferencing;
- e-mail and integrated messaging services;
- high-bandwidth engineering data such as CAD files, seismic and oil exploration imaging data, mapping and geographic data, architectural and construction drawings, site surveys and associated imaging and video data; and
- Internet, Extranet and electronic commerce information and data, such as access to vendor sites for equipment, services and materials that will be leased, rented or

purchased. For example, drilling rigs, heavy construction equipment such as earthmovers, fittings, pipeline sections, helicopters, etc.

In one embodiment, some equipment may be designed as modular, portable and ruggedized packages that need little, if any, setup times and use small footprint designs.

In one embodiment, one such package offers an entire range of services in a portable, ruggedized field unit designed to provide both image delivery and production Intranet services in one package. In one embodiment, it may be used for sending and receiving large image and data files or non-linear editing sequences from post-production or digital effects facilities. A ruggedized, workstation-class computer with large RAID arrays (e.g., 45–80 GB) for local disk storage and local tape or optical backup may be integrated into the portable unit as a "receive and store" system to ensure faster local access to data and complete data integrity. A production Intranet service may be provided for continuous Intranet and Extranet connectivity and complete communications services for IP telephony and fax services. Wireless local LAN connectivity and wireless phone systems may be provided for personal mobility. It may be equipped with two fully automated antenna systems for image delivery and production Intranet services. Other functionalities, as described below, may be included for full wireless connectivity. Optional items include:

Portable NT Graphics Workstation and/or

Portable SGI Graphics Workstation

Collaborative Videoconferencing (High Quality System)

Real-time 4:2:2 NTSC/PAL digital video and audio

Portable Digital Video Assist Recorder

Additional Notebooks

In an alternate embodiment, another package is a medium-sized portable field unit in a ruggedized case designed to deliver image delivery services such as digital effects sequences, non-linear editing sequences and other large image or data files. A ruggedized, workstation-class computer with large RAID arrays (e.g., 45–80 GB) for local disk storage and local tape and optical backup may be integrated into the portable unit as a "receive and store" system to ensure faster local access to data and complete data integrity. It may be used at sites that may have existing graphics workstations, digital video workstations or non-linear editing stations. It may also support an optional real-time 4:2:2 NTSC/PAL digital video and audio.

In still another embodiment, a package is a smaller portable field unit in a ruggedized case designed to provide continuous Intranet and Extranet connectivity and IP satellite telephony and IP fax services. Wireless local LAN connectivity and wireless phone systems may be provided for personal mobility A small workstation may be included as a local server to provide faster local connectivity and ensure data integrity. A separate automated antenna kit may also be included in a ruggedized case. The NOC provides connectivity to the wired infrastructure and Internet.

In one embodiment, a portable NT graphics workstation may provide an optional, lower cost graphics viewing package as a portable field unit in a ruggedized case designed to complement the full location and image delivery packages. It may be capable of viewing and playback of digital effects and non-linear editing sequences, using various imaging file formats such as Cineon, Alias and SoftImage up to D-1 resolution. It may have a color-corrected monitor to provide uniform viewing environments. It may also have a "hot-swappable" drive to allow field playback of video assist sequences captured using the digital video assist recorder. It may also include a remote color calibration system to ensure precise matching of colorimetry and the Cineon system to ensure accurate previews of digitally-composited material and CGI elements.

In on embodiment, a portable SGI graphics workstation may be an optional, high-powered graphics viewing package based on the SGI Octane is a portable field unit in a ruggedized case designed as a complement to the full location and image delivery packages. It may be capable of viewing and playback of longer digital effects and non-linear editing sequences, using various imaging file formats such as Cineon, Alias and SoftImage at higher resolutions than the NT model. This workstation may provide image resolutions than the NT model. This workstation may provide image resolutions from d-1 to 3k×4k and will be designed for field viewing conditions. It may include a remote color calibration system for precise matching of colorimetry and the Cineon system to ensure accurate previews of digitally composited material and CGI elements.

In one embodiment, a portable digital video assist recorder, based on NT workstation in a ruggedized portable field case, may be used to capture images directly from video assist feeds on Panavision cameras at D-1 resolutions. It may have a "hot-swappable" drive to allow direct transfer of captured sequences to the Image Delivery server for transmission to other locations or to view sequences on the Portable NT Graphics Workstation. Simple and ruggedized operator control may be installed to make the recorder function like a video cassette

In one embodiment, a portale location scout and pre-production package is included, which is a smaller version of the Portable Production Intranet Package scaled-down to fit inside a car trunk or small van. It may be light enough for one person to carry and have a small automatically aligning antenna system. It may deliver data from remote locations at speeds up to 1.5 megabits per second. A notebook computer with a wireless LAN connection may be included in the package along with a small satellite phone. With this package, a pre-production person can scout location sites and capture images with a digital still camera using the Kodak PREview system, then transmit the images in a matter of seconds or minutes to any NeTune-enabled location.

Whereas many alterations and modifications of the present invention will no doubt become apparent to a person of ordinary skill in the art after having read the foregoing description, it is to be understood that the particular embodiment shown and described by way of illustration is in no way intended to be considered limiting. Therefore, references to details of the various embodiment are not intended to limit the scope of the claims.

Thus, a mobile tele-computer network has been described.

I claim:

1. A system comprising:

a satellite communication subsystem;

a wireless local area network (LAN) that includes at least one computer; and

a mobile unit configured to transfer broadband information as a single nomadic transmission/reception point between the satellite communication subsystem and the wireless LAN using an ethernet packet switching protocol.

2. The system defined claim 1 wherein the broadband information comprises data.

3. The system defined claim 1 wherein the broadband information comprises audio and image data, such that the subsystem, wireless LAN and mobile hub transfer broadband audio and image data.

4. The system defined claim 1 wherein the information is transferred using the TCP/IP protocol.

5. The system defined claim 1 wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

6. The system defined claim 1 wherein the mobile unit comprises an uplink to the satellite communication subsystem.

7. The system defined claim 1 wherein the mobile hub comprises a server to control the relaying of information.

8. The system defined claim 1 wherein the mobile unit comprises a workstation viewing environment.

9. The system defined in claim 1 wherein the mobile unit comprises a vehicle.

10. A system comprising:

a satellite communication subsystem to operate as a secured private intranet to transfer broadband information using a ethernet packet switching protocol;

a wireless local area network (LAN) to transfer information using the ethernet packet protocol, wherein the wireless LAN comprises a plurality of nodes with an individual computer at each of the plurality of nodes; and

a mobile unit to transfer broadband information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.

11. The system defined claim 10 wherein the broadband information comprises data.

12. The system defined claim 10 wherein the broadband information comprises audio and image data, such that the subsystem, wireless LAN and mobile hub transform broadband audio and image data.

13. A telecomputer network system comprising:

a satellite communications system;

a wireless local area network (LAN); and

a mobile hub station configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN, such that information is transferred over the network using ethernet packet switching protocol.

14. The network defined claim 13 wherein the satellite communication system operates as a secured private intranet.

15. The network defined claim 13 wherein the information is transferred using the TCP/IP protocol.

16. The network defined claim 13 wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

17. The network defined claim 13 wherein the satellite communication system comprises a network operations center, a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

18. The network defined claim 13 wherein the mobile hub station comprises an uplink to the satellite communication system.

19. The network defined claim 13 wherein the mobile hub station is configured to relay information between the wireless LAN and the satellite communication system, and comprises a server to control the relaying of information.

20. The network defined claim 13 wherein the mobile hub station comprises a workstation viewing environment.

21. The network defined in claim 13 wherein the mobile hub station comprises a vehicle or a portable field unit.

22. A telecomputer network comprising:

a wireless wide area network (WAN) comprising a redundant satellite communication system configured to operate as a intranet;

a wireless local area network (LAN), wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a mobile vehicle or portable field unit configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN, wherein transfers of information over the network using the TCP/IP protocol.

23. The network defined claim 22 wherein the wireless WAN operates as a private intranet.

24. The network defined claim 22 wherein the satellite communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a satellite transmission/reception system to relay information between hubs.

25. The network defined claim 22 wherein the mobile vehicle comprises an uplink to the satellite communication system.

26. The network defined claim 22 wherein the mobile vehicle is configured to relay information between the wireless LAN and the satellite communication system, and comprises a server to control the relaying of information.

27. The network defined claim 22 wherein the mobile vehicle comprises a workstation viewing environment.

28. A telecomputer network comprising:

a satellite communication system configured to operate as a secured private intranet to transfer information using a ethernet packet switching protocol;

a wireless local area network (LAN) configured to transfer information using the ethernet packet protocol, wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a plurality of mobile vehicles, or portable field units wherein each mobile vehicle or portable field unit is configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 6,445,777 B1
DATED : September 3, 2002
INVENTOR(S) : Curtis Clark, James Pat Block and Raman Nagarajan

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Title page,
Item [12], **United States Patent**, change "**Clark**" to -- **Clark et al.** --

Item [75], Inventor, change "Inventor" to -- Inventors --.
Add the names -- **James Pat Block**, Los Angeles, CA (US), **Raman Nagarajan**, Los Angeles, CA (US) --.

Column 3,
Line 16, change the word "(extensible" to -- (eXtensible --.
Line 31, after the word "protocol)" add -- - --.

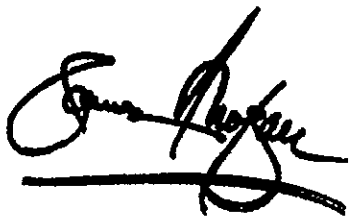
Column 6,
Line 33, after the word "example" add -- , --.

Column 7,
Line 52, after the word "mobility" add -- . --.

Column 8,
Line 5, change the word "on" to -- one --.
Line 7, after the word "Octane" add the word -- which --.
Line 13, after the word "provide" add the word -- greater --.
Line 28, after the word "cassette" add -- . --.

Signed and Sealed this

Seventh Day of January, 2003



JAMES E. ROGAN
Director of the United States Patent and Trademark Office

Exhibit C

US005960074C1

(12) EX PARTE REEXAMINATION CERTIFICATE (8675th)

United States Patent

Clark

(10) Number: US 5,960,074 C1
(45) Certificate Issued: Nov. 22, 2011

(54) **MOBILE TELE-COMPUTER NETWORK FOR MOTION PICTURE, TELEVISION AND TV ADVERTISING PRODUCTION**

(75) Inventor: **Curtis Clark**, Beverly Hills, CA (US)

(73) Assignee: **Advanced Media Networks, LLC**, Los Angeles, CA (US)

Reexamination Request:
No. 90/010,992, May 11, 2010

Reexamination Certificate for:
Patent No.: **5,960,074**
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Appl. No.: **08/718,748**
Filed: **Sep. 23, 1996**

(51) **Int. Cl.**
H04L 29/06 (2006.01)
H04L 12/28 (2006.01)

(52) **U.S. Cl.** **379/310**; 370/310; 370/352; 370/353; 370/380; 370/389; 370/392; 370/396; 370/401; 370/404; 370/427; 370/435; 370/450; 370/465; 370/485; 379/90.01; 379/93.01; 379/93.05; 379/93.09; 379/100.15; 379/100.16

(58) **Field of Classification Search** ..... None
See application file for complete search history.

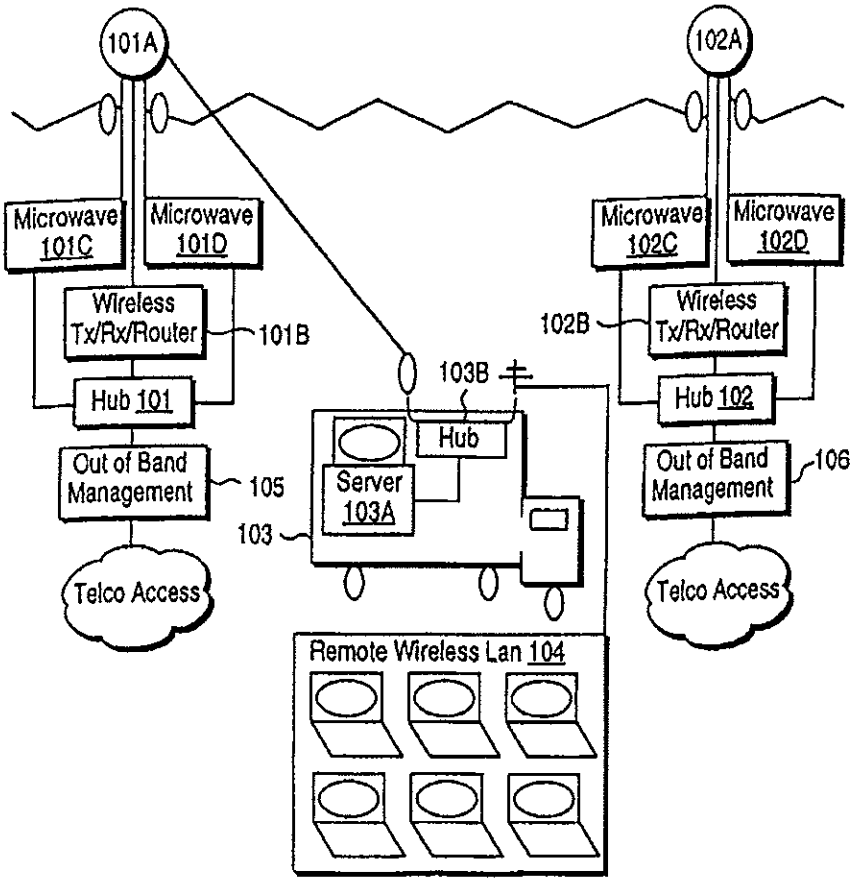
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/010,992, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner—Minh Dieu Nguyen

(57) **ABSTRACT**

A telecomputer network is described. The network comprises a redundant digital microwave communication system, at least one mobile vehicle, and a wireless local area network (LAN). In one embodiment, the microwave communication system transfers information using ethernet packet switching. In one embodiment, the wireless LAN transfers information using the TCP/IP protocol. The mobile vehicle is configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.



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

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

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

The patentability of claims **1**, **10-14**, **21-28** and **37-38** is confirmed.

Claims **2-9**, **15-20**, **29-36** and **39-40** are determined to be patentable as amended.

New claims **41-127** are added and determined to be patentable.

2. The network defined *in* claim **1** wherein the microwave communication system operates as a secured private intranet.

3. The network defined *in* claim **1** wherein the information is transferred using the TCP/IP protocol.

4. The network defined *in* claim **1** wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

5. The network defined *in* claim **1** wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

6. The network defined *in* claim **1** wherein the mobile hub station comprises an uplink to the microwave communication system.

7. The network defined *in* claim **1** wherein the mobile hub station is configured to relay information between the wireless LAN and the microwave communication system, and comprises a server to control the relaying of information.

8. The network defined *in* claim **1** wherein the mobile hub station comprises a workstation viewing environment.

9. The network defined *in* claim **1** wherein the mobile hub station comprises an omni-directional antenna.

15. The network defined *in* claim **14** wherein the wireless WAN operates as a private intranet.

16. The network defined *in* claim **14** wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

17. The network defined *in* claim **14** wherein the mobile vehicle comprises an uplink to the microwave communication system.

18. The network defined *in* claim **14** wherein the mobile vehicle is configured to relay information between the wireless LAN and the microwave communication system, and comprises a server to control the relaying of information.

19. The network defined *in* claim **14** wherein the mobile vehicle comprises a workstation viewing environment.

20. The network defined *in* claim **14** wherein the mobile vehicle comprises an omni-directional antenna.

29. The system defined *in* claim **28** wherein the broadband information comprises data.

30. The system defined *in* claim **28** wherein the broadband information comprises audio and image data, such that the subsystem, wireless LAN and mobile hub transfer broadband audio and image data.

31. The system defined *in* claim **28** wherein the information is transferred using the TCP/IP protocol.

32. The system defined *in* claim **28** wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

33. The system defined *in* claim **28** wherein the mobile hub comprises an uplink to the communication subsystem.

34. The system defined *in* claim **28** wherein the mobile hub comprises a server to control the relaying of information.

35. The system defined *in* claim **28** wherein the mobile hub comprises a workstation viewing environment.

36. The system defined *in* claim **28** wherein the mobile hub comprises an omni-directional antenna.

39. The system defined *in* claim **38** wherein the broadband information comprises data.

40. The system defined *in* claim **38** wherein the broadband information comprises audio and image data, such that the subsystem, wireless LAN and mobile hub transform broadband audio and image data.

41. The telecomputer network system of claim 1 wherein the mobile hub station is configured to transfer information using protocols selected from the group consisting of Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

42. The telecomputer network system of claim 1 wherein the mobile hub station is configured to transfer information as encrypted information.

43. The telecomputer network system of claim 1 wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs, wherein the relay station of each of the plurality of microwave communication system hubs are connected by fiberoptic cable.

44. The telecomputer network system of claim 1 wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication system hubs are separated by a distance of six (6) to ten (10) miles and are connected in a ring architecture.

45. The telecomputer network system of claim 1 wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication system hubs are separated by a distance of up to twenty-five (25) miles and are connected in a ring architecture.

46. The telecomputer network system of claim 5, wherein the relay station of each of the plurality of microwave communication system hubs comprises out of band management.

47. The telecomputer network system of claim 1, wherein the wireless LAN operates as a secured private intranet and is capable of transferring encrypted information.

48. The telecomputer network system of claim 2, wherein the microwave communication system transfers encrypted information and comprises secure firewall software programs.

49. The telecomputer network system of claim 1, wherein the microwave communication system allows for user access to the World Wide Web through one or more web-based software applications.

50. The telecomputer network system of claim 49, wherein the one or more web-based software applications comprises an electronic mail application.

51. The telecomputer network system of claim 49, wherein the one or more web-based software applications allows for the transfer of information through File Transfer Protocol (FTP).

52. The telecomputer network system of claim 49, wherein the one or more web-based software applications comprises an Internet Relay Chat (IRC) application.

53. The telecomputer network system of claim 49, wherein the one or more web-based software applications comprises a voice communication application.

54. The telecomputer network system of claim 49, wherein the one or more web-based software applications comprises a database management application.

55. The telecomputer network system of claim 4, wherein at least one of the personal computers allows for the display of web browser software.

56. The telecomputer network system of claim 1, wherein the microwave communication system uses a spanning tree protocol to route information.

57. The telecomputer network system of claim 1, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at 2 Mbps.

58. The telecomputer network system of claim 1, wherein the mobile hub station comprises an omni-directional antenna, wherein the omni-directional antenna allows for the transfer of information from a non-stationary position.

59. The telecomputer network system of claim 1, wherein the mobile hub station transfers information from a stationary position using an antenna that is calibrated through a line of sight process.

60. The telecomputer network system of claim 1, wherein the wireless LAN has video conferencing capabilities.

61. The telecomputer network system of claim 1, wherein the microwave communication system comprises a downlink to the mobile hub station operating at 10 Mbps and the mobile hub station comprises an uplink to the microwave communication system operating at 10 Mbps.

62. The telecomputer network of claim 14 wherein the mobile vehicle is further configured to transfer information using protocols selected from the group consisting of IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

63. The telecomputer network of claim 14 wherein the vehicle is configured to transfer information as encrypted information.

64. The telecomputer network of claim 14, wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs, wherein the relay station of each of the plurality of microwave communication system hubs are connected by fiberoptic cable.

65. The network defined claim 14 wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication subsystems are separated by a distance of six (6) to ten (10) miles and are connected in a ring architecture.

66. The network defined claim 14 wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication subsystems are separated by a distance of up to twenty-five (25) miles and are connected in a ring architecture.

67. The telecomputer network of claim 14, wherein the wireless LAN operates as a secured private intranet and is capable of transferring encrypted information.

68. The telecomputer network of claim 14, wherein the wireless WAN transfers encrypted information and comprises secure firewall software programs.

69. The telecomputer network system of claim 14, wherein the microwave communication system allows for user access to the World Wide Web through one or more web-based software applications.

70. The telecomputer network of claim 69, wherein the one or more web-based software applications comprises one or more applications selected from the group consisting of web browser software, an electronic mail application, an Internet Relay Chat application, a voice communication application, and a database management application.

71. The telecomputer network of claim 14, wherein the wireless WAN uses a spanning tree protocol to route information to route information.

72. The telecomputer network of claim 14, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at 2 Mbps.

73. The telecomputer network of claim 14, wherein the mobile vehicle comprises an omni-directional antenna, wherein the omni-directional antenna allows for the transfer of information from a non-stationary position.

74. The telecomputer network system of claim 14, wherein the mobile vehicle transfers information from a stationary position using an antenna is calibrated through a line of sight process.

75. The telecomputer network of claim 14, wherein the wireless LAN has video conferencing capabilities.

76. The telecomputer network of claim 14, wherein the microwave communication system comprises a downlink to the mobile vehicle operating at 10 Mbps and the mobile vehicle comprises an uplink to the microwave communication system operating at 10 Mbps.

77. The telecomputer network of claim 24 wherein each mobile vehicle is configured to transfer information using multiple protocols including TCP/IP protocol, IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Multiple Internet Mail Exchange (MIME) protocol, and File Transfer Protocol (FTP).

78. The telecomputer network of claim 24, wherein each mobile vehicle is configured to transfer information as encrypted information.

79. The telecomputer network of claim 24, wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs, wherein the relay station of each of the plurality of microwave communication system hubs are connected by fiberoptic cable.

80. The telecomputer network of claim 24, wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication system hubs are separated by a distance of up to twenty-five (25) miles and are connected in a ring architecture.

81. The telecomputer network of claim 24, wherein the wireless LAN operates the secured private intranet and transfers encrypted information.

82. The telecomputer network of claim 24, wherein at least one of the individual personal computers allows for the display of web browser software.

83. The telecomputer network of claim 24, wherein the microwave communication system uses a spanning tree protocol to route information.

84. The telecomputer network of claim 24, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at 2 Mbps.

85. The telecomputer network of claim 24, wherein each mobile vehicle comprises an omni-directional antenna, wherein the omni-directional antenna allows for the transfer of information from a non-stationary position.

86. The telecomputer network of claim 24, wherein each mobile vehicle transfers information from a stationary position using an antenna that is calibrated through a line of sight process.

87. The telecomputer network of claim 24, wherein the wireless LAN has video conferencing capabilities.

88. The telecomputer network of claim 24, wherein each mobile vehicle comprises an uplink to the microwave communication system operating at 10 Mbps and the microwave communication system comprises a downlink to each mobile vehicle operating at 10 Mbp.

89. The telecomputer network of claim 24, wherein the telecomputer network system allows for user access to the World Wide Web through one or more web-based software applications.

90. The telecomputer network of claim 89, wherein the individual personal computer at each of the plurality of nodes allows for the use of the one or more web-based software applications, the one or more applications selected from the group consisting of web browser software, an electronic mail application, an Internet Relay Chat application, a voice communication application, and a database management application.

91. The system of claim 28, wherein the mobile hub is configured to transfer information using protocols selected from the group consisting of IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

92. The system of claim 28 wherein the mobile hub is configured to transfer information using multiple protocols including TCP/IP protocol, Internet Packet Exchange (IPX) protocol, Multiple Internet Mail Exchange (MIME) protocol, and File Transfer Protocol (FTP).

93. The system of claim 28, wherein the mobile hub is configured to transfer information as encrypted information.

94. The system of claim 28, wherein the communication subsystem comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs, wherein the relay station of each of the plurality of communication subsystem hubs is connected by fiberoptic cable and comprises out of band management.

95. The system of claim 28, wherein the communication subsystem comprises a plurality of hubs, wherein one or more of the communication subsystem hubs are separated by a distance of six (6) to ten (10) miles and are connected in a ring architecture.

96. The system of claim 28, wherein the communication subsystem comprises a plurality of hubs, wherein one or more of the communication subsystem hubs are separated by a distance of up to twenty-five (25) miles and are connected in a ring architecture.

97. The system of claim 28, wherein the wireless LAN operates as a secured private intranet and transfers encrypted information.

98. The system of claim 28, wherein the communication subsystem comprises secure firewall software programs.

99. The system of claim 28, wherein the system allows for user access to the World Wide Web through one or more software applications.

100. The system of claim 99, wherein the at least one of the computer allows for the display of web browser software.

101. The system of claim 28, wherein the communication subsystem uses a spanning tree protocol to route information.

102. The system of claim 28, wherein the wireless LAN covers an onsite radius of up to 0.5 miles and operates at 2 Mbps.

103. The system of claim 28, wherein the mobile hub comprises an omni-directional antenna, wherein the omni-directional antenna allows for the transfer of information from a non-stationary position.

104. The system of claim 1, wherein the mobile hub transfers information from a stationary position using an antenna that is calibrated through a line of sight process.

105. The system of claim 28, wherein the wireless LAN has video conferencing capabilities.

106. The system of claim 28, wherein the communication subsystem comprises a downlink to the mobile hub operating at 10 Mbps and the mobile hub comprises an uplink to the communication subsystem operating at 10 Mbps.

107. The system of claim 32, wherein at least one of the personal computers allows for the use of the one or more web-based software applications, the one or more applications selected from the group consisting of web browser software, an electronic mail application, an Internet Relay Chat application, a voice communication application, and a database management application.

108. The system of claim 38, wherein the mobile hub is configured to transfer information using protocols selected from the group consisting of IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

109. The system of claim 38 wherein the communication subsystem comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs, wherein the relay station of each of the plurality of communication subsystem hubs is connected by fiberoptic cable and comprises out of band management.

110. The system of claim 38 wherein the mobile hub station is configured to transfer information as encrypted information.

111. The system of claim 38 wherein the communication subsystem comprises a plurality of hubs, wherein one or more of the communication subsystem hubs are separated by a distance of six (6) to ten (10) miles and are connected in a ring architecture.

112. The system of claim 38 wherein the communication subsystem comprises a plurality of hubs, wherein one or more of the communication subsystem hubs are separated by a distance of up to twenty-five (25) miles.

113. The system of claim 38, wherein the wireless LAN operates the secured private intranet and transfers encrypted information.

114. The system of claim 38, wherein the communication subsystem transfers encrypted information and comprises secure firewall software programs.

115. The system of claim 38, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at 2 Mbps.

116. The system of claim 38, wherein the mobile hub is housed in a custom fitted motor home.

117. The system of claim 38, wherein the mobile hub comprises an omni-directional antenna and transfers information from a non-stationary position.

118. The system of claim 38, wherein the mobile hub transfers information from a stationary position using an antenna that is calibrated through a line of sight process.

119. The system of claim 38, wherein the wireless LAN has video conferencing capabilities.

120. The system of claim 38, wherein the communication subsystem comprises a downlink to the mobile hub station operating at 10 Mbps and the mobile hub comprises an uplink to the communication subsystem operating at 10 Mbps.

121. The system of claim 38, wherein the microwave communication system allows for user access to the World Wide Web through one or more web-based software applications.

122. The system of claim 121, wherein the individual computer at each of the plurality of nodes allows for the use of the one or more web-based software applications, the one or more applications selected from the group consisting of web browser software, an electronic mail application, an Internet Relay Chat application, a voice communication application, and a database management application.

123. The telecomputer network system of claim 1, wherein the wireless LAN is within an on-site radius of the mobile hub station.

124. The telecomputer network of claim 14, wherein the wireless LAN is within an on-site radius of the mobile vehicle.

125. The telecomputer network of claim 24, wherein the wireless LAN is within an on-site radius of the plurality of mobile vehicles.

126. The system of claim 28, wherein the wireless LAN is within an on-site radius of the mobile hub.

127. The system of claim 38, wherein the wireless LAN is within an on-site radius of the mobile hub.

* * * * *

Exhibit D

US006445777C1

(12) EX PARTE REEXAMINATION CERTIFICATE (8661st)

United States Patent

Clark et al.

(10) Number: US 6,445,777 C1
(45) Certificate Issued: Nov. 15, 2011

(54) MOBILE TELE-COMPUTER NETWORK

(75) Inventors: **Curtis Clark**, Beverly Hills, CA (US); **James Pat Block**, Los Angeles, CA (US); **Raman Nagarajan**, Los Angeles, CA (US)

(73) Assignee: **Advanced Media Networks, LLC**, Los Angeles, CA (US)

Reexamination Request:
No. 90/010,991, May 11, 2010

Reexamination Certificate for:

Patent No.:	**6,445,777**
Issued:	**Sep. 3, 2002**
Appl. No.:	**09/217,682**
Filed:	**Dec. 21, 1998**

Certificate of Correction issued Jan. 7, 2003.

Related U.S. Application Data

(63) Continuation-in-part of application No. 08/718,748, filed on Sep. 23, 1996, now Pat. No. 5,960,074.

(51) **Int. Cl.**

H04M 01/64	(2006.01)
H04M 11/00	(2006.01)
H04M 03/42	(2006.01)

(52) **U.S. Cl.** **379/88.13**; 379/88.17; 379/101.01; 379/102.01; 379/142.15; 379/201.01; 379/201.05

(58) **Field of Classification Search** ..... None
See application file for complete search history.

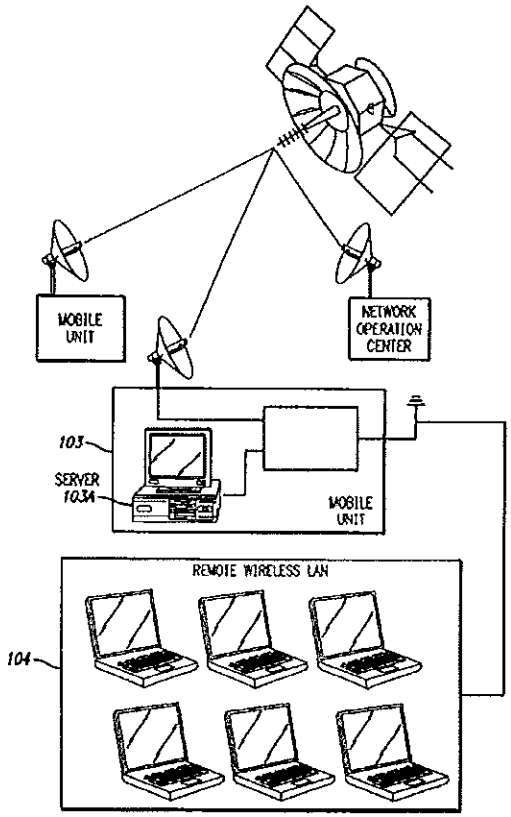
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/010,991, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner—Minh Dieu Nguyen

(57) **ABSTRACT**

A telecomputer network is described. The network comprises a satellite communication system, at least one mobile vehicle, and a wireless local area network (LAN). In one embodiment, the satellite communication system transfers information using ethernet packet switching. In one embodiment, the wireless LAN transfers information using the TCP/IP protocol. The mobile vehicle or portable field unit is configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.



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

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

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

The patentability of claims **1**, **10**, **13**, **21-22** and **28** is confirmed.

Claims **2-9**, **11-12**, **14-20** and **23-27** are determined to be patentable as amended.

New claims **29-109** are added and determined to be patentable.

2. The system defined *in* claim **1** wherein the broadband information comprises data.

3. The system defined *in* claim **1** wherein the broadband information comprises audio and image data, such that the subsystem, wireless LAN and mobile hub transfer broadband audio and image data.

4. The system defined *in* claim **1** wherein the information is transferred using the TCP/IP protocol.

5. The system defined *in* claim **1** wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

6. The system defined *in* claim **1** wherein the mobile unit comprises an uplink to the satellite communication subsystem.

7. The system defined *in* claim **1** wherein the mobile hub comprises a server to control the relaying of information.

8. The system defined *in* claim **1** wherein the mobile unit comprises a workstation viewing environment.

9. The system defined *in* claim **1** wherein the mobile unit comprises a vehicle.

11. The system defined *in* claim **10** wherein the broadband information comprises data.

12. The system defined *in* claim **10** wherein the broadband information comprises audio and image data, such that the subsystem, wireless LAN and mobile hub transform broadband audio and image data.

14. The network defined *in* claim **13** wherein the satellite communication system operates as a secured private intranet.

15. The network defined *in* claim **13** wherein the information is transferred using the TCP/IP protocol.

16. The network defined *in* claim **13** wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

17. The network defined *in* claim **13** wherein the satellite communication system comprises a network operations center, a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

18. The network defined *in* claim **13** wherein the mobile hub station comprises an uplink to the satellite communication system.

19. The network defined *in* claim **13** where the mobile hub station is configured to relay information between the wireless LAN and the satellite communication system, and comprises a server to control the relaying of information.

20. The network defined *in* claim **13** wherein the mobile hub station comprises a workstation viewing environment.

23. The network defined *in* claim **22** wherein the wireless WAN operates as a private intranet.

24. The network defined *in* claim **22** wherein the satellite communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a satellite transmission/reception system to relay information between hubs.

25. The network defined *in* claim **22** wherein the mobile vehicle comprises an uplink to the satellite communication system.

26. The network defined *in* claim **22** wherein the mobile vehicle is configured to relay information between the wireless LAN and the satellite communication system, and comprises a server to control the relaying of information.

27. The network defined *in* claim **22** wherein the mobile vehicle comprises a workstation viewing environment.

29. The system of claim 1 wherein the mobile unit is configured to transfer information using protocols selected from the group consisting of IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

30. The system of claim 1, wherein the mobile unit is configured to transfer information as encrypted information.

31. The system of claim 1, wherein the wireless LAN operates as a secured private intranet and transfers encrypted information.

32. The system of claim 1, wherein the satellite communication subsystem transfers encrypted information and comprises secure firewall software programs.

33. The system of claim 1, wherein the satellite communication subsystem allows for user access to the World Wide Web through one or more web-based software applications.

34. The system of claim 33, wherein the one or more web-based software applications comprises an electronic mail application.

35. The system of claim 33, wherein the one or more web-based software applications allows for the transfer of information through File Transfer Protocol (FTP).

36. The system of claim 33, wherein the one or more web-based software applications comprises an Internet Relay Chat (IRC) application.

37. The system of claim 33, wherein the one or more web-based software applications comprises voice communication application.

38. The system of claim 33, wherein the one or more web-based software applications comprises a database management application.

39. The system of claim 1, wherein the satellite communication subsystem allows for user operation through Common Gateway Interface (CGI).

40. The system of claim 1, wherein the satellite communication subsystem allows for user operation through Dynamic HyperText Markup Language (DHTML).

41. The system of claim 1, wherein the satellite communication subsystem allows for user operation through extensible Markup Language (XML).

42. The system of claim 1, wherein the satellite communication subsystem allows for user operation through extensible Standard Generalized Markup Language (SGML).

43. The system of claim 5, wherein the at least one personal computer at each of the plurality of nodes allows for the display of web browser software.

44. The system of claim 1, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at a range between 1 to 100 Mbps.

45. The system of claim 1, wherein the mobile unit is housed in a custom fitted motor home.

46. The system of claim 1, wherein the wireless LAN has video conferencing capabilities.

47. The system of claim 1, wherein the mobile unit is housed in a vehicle and links the wireless LAN to the Internet through the satellite communication subsystem.

48. The system of claim 1, wherein the mobile unit comprises a portable field unit.

49. The system of claim 1, wherein the mobile unit comprises a portable field unit, the portable field unit comprising a computer with RAID arrays and one or more antenna systems, wherein one or more antenna systems are for Intranet services and one or more antenna systems for image delivery.

50. The system of claim 1, further comprising one or more network operations centers, the one or more network operations centers operative to control the relay of information.

51. The system of claim 10 wherein the mobile unit is configured to transfer information using protocols selected from the group consisting of TCP/IP protocol, IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

52. The system of claim 10, wherein the mobile unit is configured to transfer information as encrypted information.

53. The system of claim 10, wherein the wireless LAN operates as a secured private intranet and transfers encrypted information.

54. The system of claim 10, wherein the satellite communication system transfers encrypted information and comprises secure firewall software programs.

55. The system of claim 10, wherein the satellite communication system allows for user access to the World Wide Web through one or more web-based software applications.

56. The system of claim 10, wherein the individual computer at each of the plurality of nodes allows for the use of one or more web-based applications selected from the group consisting of a web browser application, an electronic mail application, an Internet Relay Chat (IRC) application, a voice communication application and a database management application.

57. The system of claim 10, wherein the satellite communication system allows for user operation through Common Gateway Interface (CGI).

58. The system of claim 10, wherein the satellite communication subsystem allows for user operation through Dynamic HyperText Markup Language (DHTML).

59. The system of claim 10, wherein the satellite communication system allows for user operation through extensible Markup Language (XML).

60. The system of claim 10, wherein the satellite communication system allows for user operation through extensible Standard Generalized Markup Language (SGML).

61. The system of claim 10, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at a range between 1 to 100 Mbps.

62. The system of claim 10, wherein the mobile unit is housed in a custom fitted motor home.

63. The system of claim 10, wherein the wireless LAN has video conferencing capabilities.

64. The system of claim 10, wherein the mobile unit comprises a portable field unit.

65. The system of claim 10, wherein the mobile unit comprises a portable field unit, the portable field unit comprising a computer with RAID arrays and one or more antenna systems, wherein one or more antenna systems are for Intranet services and one or more antenna systems for image delivery.

66. The system of claim 10, further comprising one or more network operations centers, the one or more network operations centers operative to control the relay of information.

67. The system of claim 13, wherein the mobile hub station is configured to transfer information using multiple protocols selected from the group consisting of IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Mutli-cast Transfer Protocol (RMTP).

68. The system of claim 13, wherein the mobile hub station is configured to transfer information as encrypted information.

69. The system of claim 13, wherein the wireless LAN operates as a secured private intranet and transfers encrypted information.

70. The system of claim of claim 13, wherein the satellite communication system transfers encrypted information and comprises secure firewall software programs.

71. The system of claim 13, wherein the satellite communication system allows for user access to the World Wide Web through one or more web-based applications.

72. The system of claim 13, wherein the or more web-based applications comprises one or more applications selected from the group consisting of a web browser application, an electronic mail application, an Internet Relay Chat (IRC) application, a voice communication application and a database management application.

73. The system of claim 13, wherein the satellite communication system allows for user operation through Common Gateway Interface (CGI).

74. The system of claim 13, wherein the satellite communication system allows for user operation through Dynamic HyperText Markup Language (DHTML).

75. The system of claim 13, wherein the satellite communication system allows for user operation through extensible Markup Language (XML).

76. The system of claim 13, wherein the satellite communication system allows for user operation through extensible Standard Generalized Markup Language (SGML).

77. The system of claim 16, wherein the at least one personal computer at each of the plurality of nodes allows for the display of web browser software.

78. The system of claim 13, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at a range between 1 to 100 Mbps.

79. The system of claim 13, wherein the mobile hub station is housed in a custom fitted motor home.

80. The system of claim 13, wherein the wireless LAN has video conferencing capabilities.

81. The system of claim 13, wherein the mobile hub station is housed in a vehicle and links the wireless LAN to the Internet through the satellite communication system.

82. The system of claim 13, wherein the mobile hub station comprises a portable field unit, the portable field unit com-

prising a computer with RAID arrays and one or more antenna systems, wherein one or more antenna systems are for Intranet services and one or more antenna systems for image delivery.

83. The system of claim 22 wherein the mobile vehicle or portable field unit is configured to transfer information using protocols selected from the group consisting of IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

84. The system of claim 22, wherein the mobile vehicle or portable field unit is configured to transfer information as encrypted information.

85. The system of claim 22, wherein the wireless LAN operates as a secured private intranet and transfers encrypted information.

86. The system of claim 22, wherein the wireless WAN transfers encrypted information and comprises secure firewall software programs.

87. The system of claim 22, wherein the individual personal computer at each of the plurality of nodes allows for the display of web browser software.

88. The system of claim 22, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at a range between 1 to 100 Mbps.

89. The system of claim 22, wherein the wireless LAN has video conferencing capabilities.

90. The system of claim 22, wherein the mobile vehicle or portable field unit links the wireless LAN to the Internet through wireless WAN.

91. The system of claim 22, wherein the portable field unit comprises a computer with RAID arrays and one or more antenna systems, wherein one or more antenna systems are for Intranet services and one or more antenna systems for image delivery.

92. The system of claim 22, further comprising one or more network operations centers, the one or more network operations centers operative to control the relay of information.

93. The system of claim 28, wherein each mobile vehicle or portable field unit is configured to transfer information using protocols selected from the group consisting of TCP/IP protocol, IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol and File Transfer Protocol (FTP).

94. The system of claim 28, wherein each mobile vehicle or portable field unit is configured to transfer information as encrypted information.

95. The system of claim 28, wherein the wireless LAN operates as a secured private intranet and transfers encrypted information.

96. The system of claim 28, wherein the satellite communication system transfers encrypted information and comprises secured firewall software programs.

97. The system of claim 28, wherein the satellite communication system allows for user operation through a graphical user interface (GUI) of the World Wide Web.

98. The system of claim 28, wherein the satellite communication system allows for user operation through Common Gateway Interface (CGI).

99. The system of claim 28, wherein the satellite communication system allows for user operation through Dynamic HyperText Markup Language (DHTML).

100. The system of claim 28, wherein the satellite communication system allows for user operation through extensible Markup Language (XML).

101. The system of claim 28, wherein the satellite communication system allows for user operation through extensible Standard Generalized Markup Language (SGML).

102. The system of claim 28, wherein the individual computer at each of the plurality of nodes allows for the display of web browser software.

103. The system of claim 28, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at a range between 1 to 100 Mbps.

104. The system of claim 1, wherein each portable field unit comprises a computer with RAID arrays and one or more antenna systems, wherein one or more antenna systems are for Intranet services and one or more antenna systems for image delivery.

105. The system of claim 1, wherein the wireless LAN is within an on-site radius of the mobile unit.

106. The system of claim 10, wherein the wireless LAN is within an on-site radius of the mobile unit.

107. The telecomputer network system of claim 13, wherein the wireless LAN is within an on-site radius of the mobile hub station.

108. The telecomputer network system of claim 22, wherein the wireless LAN is within an on-site radius of the mobile vehicle or portable field unit.

109. The telecomputer network system of claim 28, wherein the wireless LAN is within an on-site radius of each mobile vehicle or portable field unit.

* * * * *

Exhibit E

US005960074C2

(12) **EX PARTE REEXAMINATION CERTIFICATE** (10129th)

United States Patent
Clark

(10) **Number: US 5,960,074 C2**
(45) **Certificate Issued: Apr. 23, 2014**

(54) **MOBILE TELE-COMPUTER NETWORK FOR MOTION PICTURE, TELEVISION AND TV ADVERTISING PRODUCTION**

(75) Inventor: **Curtis Clark**, Beverly Hills, CA (US)

(73) Assignee: **Palm Finance Corporation**, Santa Monica, CA (US)

Reexamination Request:
No. 90/012,728, Nov. 29, 2012

No. 90/012,789, Feb. 6, 2013

Reexamination Certificate for:
Patent No.: **5,960,074**
Issued: **Sep. 28, 1999**
Appl. No.: **08/718,748**
Filed: **Sep. 23, 1996**

Reexamination Certificate C1 5,960,074 issued Nov. 22, 2011

(51) **Int. Cl.**
H04L 29/06 (2006.01)
H04L 12/28 (2006.01)

(52) **U.S. Cl.**
USPC **379/310**; 370/310; 370/352; 370/353; 370/380; 370/389; 370/392; 370/396; 370/401; 370/404; 370/427; 370/435; 370/450; 370/465; 370/485; 379/90.01; 379/93.01; 379/93.05; 379/93.09; 379/100.15; 379/100.16

(58) **Field of Classification Search**
None
See application file for complete search history.

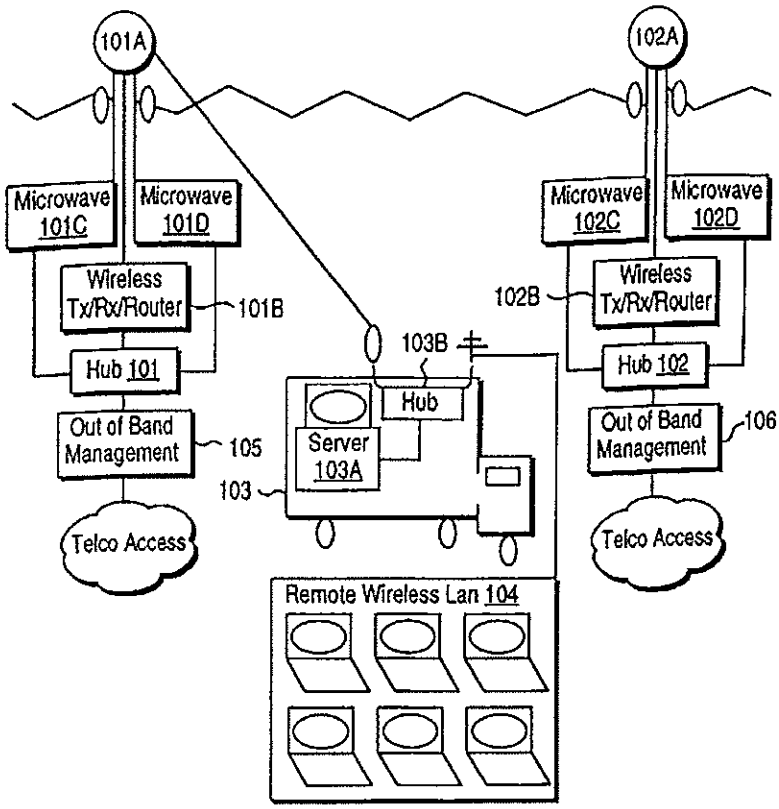
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceedings for Reexamination Control Numbers 90/012,728 and 90/012,789, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Eron J Sorrell

(57) **ABSTRACT**

A telecomputer network is described. The network comprises a redundant digital microwave communication system, at least one mobile vehicle, and a wireless local area network (LAN). In one embodiment, the microwave communication system transfers information using ethernet packet switching. In one embodiment, the wireless LAN transfers information using the TCP/IP protocol. The mobile vehicle is configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.



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

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

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

The patentability of claims **1-23, 28-37, 41, 42, 44-63, 67-70, 72, 73, 75, 76, 91-99, 101-107, 123, 124** and **126** is confirmed.

Claims **24, 38, 43, 64-66, 71, 74, 79, 88** and **100** are determined to be patentable as amended.

Claims **25-27, 39, 40, 77, 78, 80-87, 89, 90, 108-122, 125** and **127**, dependent on an amended claim, are determined to be patentable.

New claims **128-147** are added and determined to be patentable.

24. A telecomputer network comprising:

a redundant digital microwave communication system configured to operate as a secured private intranet to transfer information using a ethernet packet switching protocol;

a wireless local area network (LAN) configured to transfer information using the ethernet packet *switching* protocol, wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a plurality of mobile vehicles, wherein each mobile vehicle is configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.

38. A system comprising:

a communication subsystem to operate as a secured private intranet to transfer broadband information using a ethernet packet switching protocol;

a wireless local area network (LAN) to transfer information using the ethernet packet *switching* protocol, wherein the wireless LAN comprises a plurality of nodes with an individual computer at each of the plurality of nodes; and

a mobile hub to transfer broadband information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.

43. The telecomputer network system of claim **1** wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs, wherein the relay station of each of the plurality of microwave communication system hubs **[**are**]** *is* connected by fiberoptic cable.

64. The telecomputer network of claim **14**, wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs, wherein the relay station of each of the plurality of microwave communication system hubs **[**are**]** *is* connected by fiberoptic cable.

65. The network defined *in* claim **14** wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication subsystems are separated by a distance of six (6) to ten (10) miles and are connected in a ring architecture.

66. The network defined *in* claim **14** wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication subsystems are separated by a distance of up to twenty-five (25) miles and are connected in a ring architecture.

71. The telecomputer network of claim **14**, wherein the wireless WAN uses a spanning tree protocol to route information **[**to route information**]**.

74. The telecomputer network system of claim **14**, wherein the mobile vehicle transfers information from a stationary position using an antenna *that* is calibrated through a line of sight process.

79. The telecomputer network of claim **24**, wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs, wherein the relay station of each of the plurality of microwave communication system hubs **[**are**]** *is* connected by fiberoptic cable.

88. The telecomputer network of claim **24**, wherein each mobile vehicle comprises an uplink to the microwave communication system operating at 10 Mbps and the microwave communication system comprises a downlink to each mobile vehicle operating at 10 **[**Mbp**]** *Mbps*.

100. The system of claim **99**, wherein the at least one of the **[**computer**]** *computers* allows for the display of web browser software.

128. A telecomputer network system comprising:

a redundant digital microwave communication system;

a wireless local area network (LAN); and

a mobile hub station configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN using an Internet protocol.

129. The network defined in claim 128 wherein the information is transferred using the TCP/IP protocol.

130. The network defined in claim 128 wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

131. The network defined in claim 128 wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

132. The network defined in claim 128 wherein the mobile hub station comprises an uplink to the microwave communication system.

133. The network defined in claim 128 wherein the mobile hub station is configured to relay information between the wireless LAN and the microwave communication system, and comprises a server to control the relaying of information.

134. The network defined in claim 128 wherein the mobile hub station comprises a workstation viewing environment.

135. The network defined in claim 128 wherein the mobile hub station comprises an omni-directional antenna.

136. The network defined in claim 128 wherein the mobile hub station comprises a vehicle.

137. The telecomputer network system of claim 128 wherein the mobile hub station is configured to transfer information as encrypted information.

138. The telecomputer network system of claim 128 wherein the microwave communication system comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs,

wherein the relay station of each of the plurality of microwave communication system hubs is connected by fiberoptic cable.

139. The telecomputer network system of claim 128 wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication system hubs are separated by a distance of six (6) to ten (10) miles and are connected in a ring architecture.

140. The telecomputer network system of claim 128 wherein the microwave communication system comprises a plurality of hubs, wherein one or more of the microwave communication system hubs are separated by a distance of up to twenty-five (25) miles and are connected in a ring architecture.

141. The telecomputer network system of claim 131, wherein the relay station of each of the plurality of microwave communication system hubs comprises out of band management.

142. The telecomputer network system of claim 129, wherein the microwave communication system transfers encrypted information and comprises secure firewall software programs.

143. The telecomputer network system of claim 128, wherein the microwave communication system allows for user access to the World Wide Web through one or more web-based software applications.

144. The telecomputer network system of claim 128, wherein the microwave communication system uses a spanning tree protocol to route information.

145. The telecomputer network system of claim 128, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at 2 Mbps.

146. The telecomputer network system of claim 128, wherein the mobile hub station comprises an omni-directional antenna, wherein the omni-directional antenna allows for the transfer of information from a non-stationary position.

147. The telecomputer network system of claim 128, wherein the microwave communication system comprises a downlink to the mobile hub station operating at 10 Mbps and the mobile hub station comprises an uplink to the microwave communication system operating at 10 Mbps.

* * * * *

Exhibit F

US006445777C2

(12) EX PARTE REEXAMINATION CERTIFICATE (10103rd)

United States Patent
Clark et al.

(10) **Number: US 6,445,777 C2**
(45) **Certificate Issued: Apr. 8, 2014**

(54) **MOBILE TELE-COMPUTER NETWORK**

(75) Inventors: **Curtis Clark**, Beverly Hills, CA (US); **James Pat Block**, Los Angeles, CA (US); **Raman Nagarajan**, Los Angeles, CA (US)

(73) Assignee: **Palm Finance Corporation**, Santa Monica, CA (US)

Reexamination Request:
No. 90/012,729, Nov. 29, 2012
No. 90/012,790, Feb. 6, 2013

Reexamination Certificate for:
Patent No.: **6,445,777**
Issued: **Sep. 3, 2002**
Appl. No.: **09/217,682**
Filed: **Dec. 21, 1998**

Reexamination Certificate C1 6,445,777 issued Nov. 15, 2011

Certificate of Correction issued Jan. 7, 2003

Related U.S. Application Data

(63) Continuation-in-part of application No. 08/718,748, filed on Sep. 23, 1996, now Pat. No. 5,960,074.

(51) **Int. Cl.**
H04L 29/06 (2006.01)
H04L 12/28 (2006.01)

(52) **U.S. Cl.**
USPC **379/88.13**; 379/101.01; 379/102.01; 379/142.15; 379/201.01; 379/201.05; 379/88.17

(58) **Field of Classification Search**
None
See application file for complete search history.

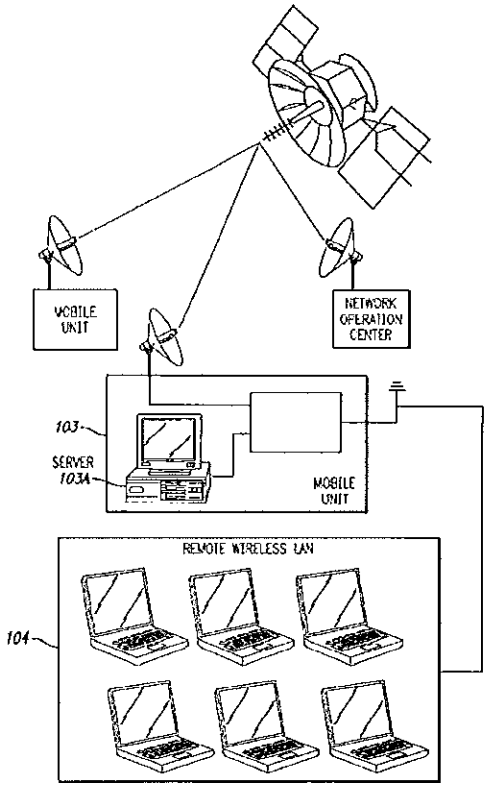
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceedings for Reexamination Control Numbers 90/012,729 and 90/012,790, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Ovidio Escalante

(57) **ABSTRACT**

A telecomputer network is described. The network comprises a satellite communication system, at least one mobile vehicle, and a wireless local area network (LAN). In one embodiment, the satellite communication system transfers information using ethernet packet switching. In one embodiment, the wireless LAN transfers information using the TCP/IP protocol. The mobile vehicle or portable field unit is configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.



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

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

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

The patentability of claims **1-21, 29-36, 38-82** and **104-106** is confirmed.

Claims **22, 28, 37, 83-92** and **107-109** are determined to be patentable as amended.

Claims **23-27** and **93-103**, dependent on an amended claim, are determined to be patentable.

New claim **110** is added and determined to be patentable.

22. A telecomputer network comprising:

a wireless wide area network (WAN) comprising a redundant satellite communication system configured to operate as a intranet;

a wireless local area network (LAN), wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a mobile vehicle or portable field unit configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN, wherein transfers of information over the network **[**using**]** *use* the TCP/IP protocol.

28. A telecomputer network comprising:

a satellite communication system configured to operate as a secured private intranet to transfer information using **[**a**]** *an* ethernet packet switching protocol;

a wireless local area network (LAN) configured to transfer information using the ethernet packet protocol, wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a plurality of mobile vehicles, or portable field units wherein each mobile vehicle or portable field unit is configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.

37. The system of claim 33, wherein the one or more web-based software applications comprises *a* voice communication application.

83. The **[**system**]** *network* of claim **22** wherein the mobile vehicle or portable field unit is configured to transfer information using protocols selected from the group consisting of IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

84. The **[**system**]** *network* of claim **22**, wherein the mobile vehicle or portable field unit is configured to transfer information as encrypted information.

85. The **[**system**]** *network* of claim **22**, wherein the wireless LAN operates as a secured private intranet and transfers encrypted information.

86. The **[**system**]** *network* of claim **22**, wherein the wireless WAN transfers encrypted information and comprises secure firewall software programs.

87. The **[**system**]** *network* of claim **22**, wherein the individual personal computer at each of the plurality of nodes allows for the display of web browser software.

88. The **[**system**]** *network* of claim **22**, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at a range between 1 to 100 Mbps.

89. The **[**system**]** *network* of claim **22**, wherein the wireless LAN has video conferencing capabilities.

90. The **[**system**]** *network* of claim **22**, wherein the mobile vehicle or portable field unit links the wireless LAN to the Internet through *a* wireless WAN.

91. The **[**system**]** *network* of claim **22**, wherein the portable field unit comprises a computer with RAID arrays and one or more antenna systems, wherein one or more antenna systems are for Intranet services and one or more antenna systems for image delivery.

92. The **[**system**]** *network* of claim **22**, further comprising one or more network operations centers, the one or more network operations centers operative to control the relay of information.

107. The **[**telecomputer network**]** system of claim 13, wherein the wireless LAN is within an on-site radius of the mobile hub station.

108. The **[**telecomputer**]** network **[**system**]** of claim **22**, wherein the wireless LAN is within an on-site radius of the mobile vehicle or portable field unit.

109. The **[**telecomputer**]** network **[**system**]** of claim **28**, wherein the wireless LAN is within an on-site radius of the mobile vehicle or portable field unit.

110. A system comprising:

a satellite communication subsystem;

a wireless local area network (LAN) that includes at least one computer; and

a mobile unit configured to transfer broadband information as a single nomadic transmission/reception point between the satellite communication subsystem and the wireless LAN using an Internet protocol.

* * * * *

Exhibit F

US006445777C2

(12) EX PARTE REEXAMINATION CERTIFICATE (10103rd)

United States Patent
Clark et al.

(10) **Number: US 6,445,777 C2**
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(75) Inventors: **Curtis Clark**, Beverly Hills, CA (US); **James Pat Block**, Los Angeles, CA (US); **Raman Nagarajan**, Los Angeles, CA (US)

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No. 90/012,729, Nov. 29, 2012
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Related U.S. Application Data

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(51) **Int. Cl.**
H04L 29/06 (2006.01)
H04L 12/28 (2006.01)

(52) **U.S. Cl.**
USPC **379/88.13**; 379/101.01; 379/102.01; 379/142.15; 379/201.01; 379/201.05; 379/88.17

(58) **Field of Classification Search**
None
See application file for complete search history.

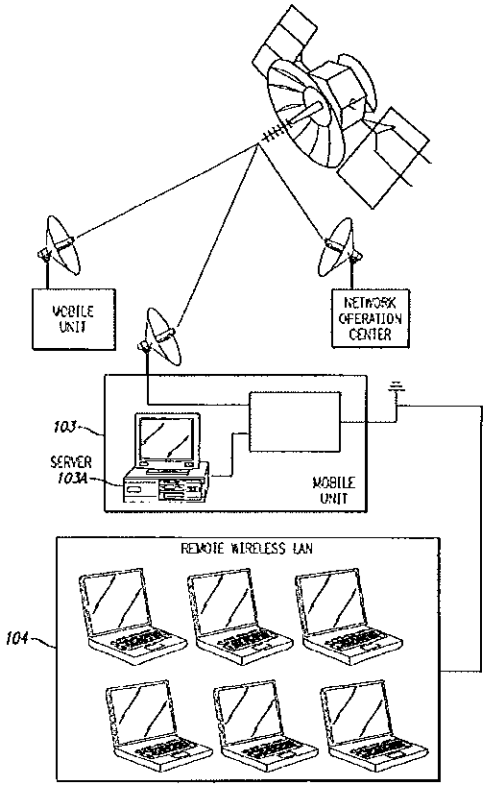
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceedings for Reexamination Control Numbers 90/012,729 and 90/012,790, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Ovidio Escalante

(57) **ABSTRACT**

A telecomputer network is described. The network comprises a satellite communication system, at least one mobile vehicle, and a wireless local area network (LAN). In one embodiment, the satellite communication system transfers information using ethernet packet switching. In one embodiment, the wireless LAN transfers information using the TCP/IP protocol. The mobile vehicle or portable field unit is configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.



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

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Claims **22, 28, 37, 83-92** and **107-109** are determined to be patentable as amended.

Claims **23-27** and **93-103**, dependent on an amended claim, are determined to be patentable.

New claim **110** is added and determined to be patentable.

22. A telecomputer network comprising:

a wireless wide area network (WAN) comprising a redundant satellite communication system configured to operate as a intranet;

a wireless local area network (LAN), wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a mobile vehicle or portable field unit configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN, wherein transfers of information over the network [using] *use* the TCP/IP protocol.

28. A telecomputer network comprising:

a satellite communication system configured to operate as a secured private intranet to transfer information using [a] *an* ethernet packet switching protocol;

a wireless local area network (LAN) configured to transfer information using the ethernet packet protocol, wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and

a plurality of mobile vehicles, or portable field units wherein each mobile vehicle or portable field unit is configured to transfer information as a single nomadic transmission/reception point between the satellite communication system and the wireless LAN.

37. The system of claim 33, wherein the one or more web-based software applications comprises *a* voice communication application.

83. The [system] *network* of claim **22** wherein the mobile vehicle or portable field unit is configured to transfer information using protocols selected from the group consisting of IEEE 802.10 protocol, Internet Packet Exchange (IPX) protocol, Lotus Notes, simple network management protocol (SNMP), Multiple Internet Mail Exchange (MIME) protocol, Web Network File System (WFNS) protocol, File Transfer Protocol (FTP), Fiber Distributed Data Interface (FDDI) and Reliable, Multi-cast Transfer Protocol (RMTP).

84. The [system] *network* of claim **22**, wherein the mobile vehicle or portable field unit is configured to transfer information as encrypted information.

85. The [system] *network* of claim **22**, wherein the wireless LAN operates as a secured private intranet and transfers encrypted information.

86. The [system] *network* of claim **22**, wherein the wireless WAN transfers encrypted information and comprises secure firewall software programs.

87. The [system] *network* of claim **22**, wherein the individual personal computer at each of the plurality of nodes allows for the display of web browser software.

88. The [system] *network* of claim **22**, wherein the wireless LAN covers an on-site radius of up to 0.5 miles and operates at a range between 1 to 100 Mbps.

89. The [system] *network* of claim **22**, wherein the wireless LAN has video conferencing capabilities.

90. The [system] *network* of claim **22**, wherein the mobile vehicle or portable field unit links the wireless LAN to the Internet through *a* wireless WAN.

91. The [system] *network* of claim **22**, wherein the portable field unit comprises a computer with RAID arrays and one or more antenna systems, wherein one or more antenna systems are for Intranet services and one or more antenna systems for image delivery.

92. The [system] *network* of claim **22**, further comprising one or more network operations centers, the one or more network operations centers operative to control the relay of information.

107. The [telecomputer network] system of claim 13, wherein the wireless LAN is within an on-site radius of the mobile hub station.

108. The [telecomputer] network [system] of claim **22**, wherein the wireless LAN is within an on-site radius of the mobile vehicle or portable field unit.

109. The [telecomputer] network [system] of claim **28**, wherein the wireless LAN is within an on-site radius of the mobile vehicle or portable field unit.

110. A system comprising:

a satellite communication subsystem;

a wireless local area network (LAN) that includes at least one computer; and

a mobile unit configured to transfer broadband information as a single nomadic transmission/reception point between the satellite communication subsystem and the wireless LAN using an Internet protocol.

* * * * *

Exhibit G

US005960074C3

(12) EX PARTE REEXAMINATION CERTIFICATE (10765th)

United States Patent
Clark

(10) **Number: US 5,960,074 C3**
(45) **Certificate Issued: Nov. 13, 2015**

(54) **MOBILE TELE-COMPUTER NETWORK FOR MOTION PICTURE, TELEVISION AND TV ADVERTISING PRODUCTION**

(75) Inventor: **Curtis Clark**, Beverly Hills, CA (US)

(73) Assignee: **ADVANCED MEDIA NETWORKS, LLC**

Reexamination Request:
No. 90/013,383, Nov. 12, 2014

Reexamination Certificate for:
Patent No.: **5,960,074**
Issued: **Sep. 28, 1999**
Appl. No.: **08/718,748**
Filed: **Sep. 23, 1996**

Reexamination Certificate C1 5,960,074 issued Nov. 22, 2011

Reexamination Certificate C2 5,960,074 issued Apr. 23, 2014

Certificate of Correction issued May 27, 2014

(51) **Int. Cl.**

H04M 7/10	(2006.01)
H04M 11/00	(2006.01)
H04Q 11/04	(2006.01)
H04J 1/00	(2006.01)
H04J 3/02	(2006.01)
H04M 5/06	(2006.01)

(52) **U.S. Cl.**
CPC ***H04M 5/06*** (2013.01)

(58) **Field of Classification Search**
CPC H04L 2012/2845; H04L 12/2803; H04L 29/06; H04L 29/06027; H04L 45/00; H04L 49/101; H04L 12/42; H04L 12/56; H04L 12/417; H04L 12/433; H04L 12/2801; H04L 47/10; H04M 11/06; H04M 11/062; H04M 11/066; H04M 7/006; H04N 1/32704; H04N 1/32708; H04N 1/32719; H04Q 11/04
USPC 379/90.1, 93.01, 93.05, 93.09, 100.15, 379/100.16; 370/310, 352, 353, 380, 389, 370/392, 396, 401, 404, 427, 435, 450, 465, 370/485
See application file for complete search history.

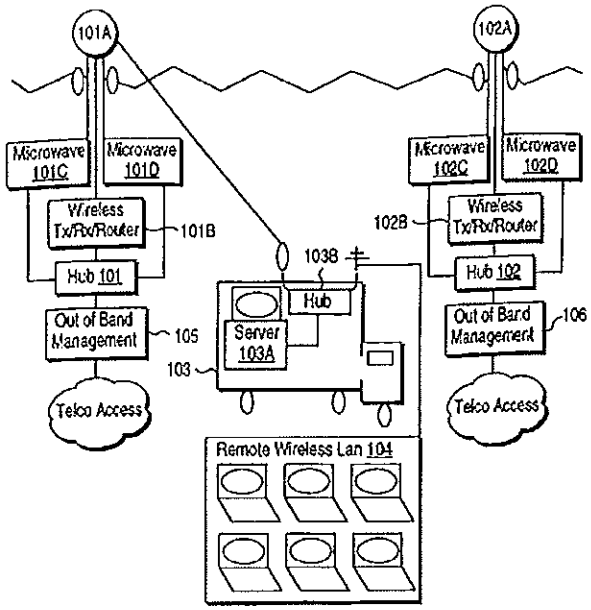
(56) **References Cited**

To view the complete listing of prior art documents cited during the proceeding for Reexamination Control Number 90/013,383, please refer to the USPTO's public Patent Application Information Retrieval (PAIR) system under the Display References tab.

Primary Examiner — Henry Tran

(57) **ABSTRACT**

A telecomputer network is described. The network comprises a redundant digital microwave communication system, at least one mobile vehicle, and a wireless local area network (LAN). In one embodiment, the microwave communication system transfers information using ethernet packet switching. In one embodiment, the wireless LAN transfers information using the TCP/IP protocol. The mobile vehicle is configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.



EX PARTE REEXAMINATION CERTIFICATE

THE PATENT IS HEREBY AMENDED AS INDICATED BELOW.

Matter enclosed in heavy brackets [ ] appeared in the patent, but has been deleted and is no longer a part of the patent; matter printed in italics indicates additions made to the patent.

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

The patentability of claims **1-147** is confirmed.

New claims **148-171** are added and determined to be patentable.

148. A system comprising: a communication subsystem; a wireless local area network (LAN) that includes at least one computer; and a mobile hub configured to transfer broadband information as a single nomadic transmission/reception point between the communication subsystem and the wireless LAN using an Internet protocol.

149. The system of claim 148 wherein the Internet Protocol is TCP/IP protocol.

150. The system of claim 148 wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

151. The system of claim 148 wherein the communication subsystem comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

152. The system of claim 148 wherein the mobile hub station comprises a workstation viewing environment.

153. The system of claim 148 wherein the mobile hub station comprises an omni-directional antenna.

154. The system of claim 148 wherein the mobile hub station comprises a vehicle.

155. The system of claim 148 wherein the communication subsystem comprises a microwave communication system that comprises a plurality of hubs, wherein two or more of the microwave communication system hubs are separated from one another by a distance of up to twenty-five (25) miles.

156. The system of claim 155, wherein the relay station of each of the plurality of microwave communication system hubs comprises out of band management.

157. The system of claim 148, wherein the mobile hub station comprises an omni-directional antenna, wherein the omni-directional antenna allows for the transfer of information from a non-stationary position.

158. A telecomputer network comprising: a redundant digital microwave communication system configured to operate as a secured private intranet to transfer information using an Internet protocol; a wireless local area network (LAN) configured to transfer information using the Internet protocol, wherein the wireless LAN comprises a plurality of nodes with an individual personal computer at each of the plurality of nodes; and a plurality of mobile vehicles, wherein each mobile vehicle is configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.

159. A system comprising: a communication subsystem to operate as a secured private intranet to transfer broadband information using an Internet protocol; a wireless local area network (LAN) to transfer information using the Internet protocol, wherein the wireless LAN comprises a plurality of nodes with an individual computer at each of the plurality of nodes; and a mobile hub to transfer broadband information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN.

160. A telecomputer network system comprising: a redundant digital microwave communication system; a wireless local area network (LAN) operable to connect to at least one computer; and a mobile hub station configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN using an Internet protocol.

161. The system of claim 160 wherein the Internet Protocol is TCP/IP protocol.

162. The system of claim 160 wherein the wireless LAN comprises a plurality of nodes with at least one personal computer at each of the plurality of nodes.

163. The system of claim 160 wherein the communication subsystem comprises a plurality of hubs, wherein each hub comprises a wireless router and a relay station to relay information between hubs.

164. The system of claim 160 wherein the mobile hub station comprises a workstation viewing environment.

165. The system of claim 160 wherein the mobile hub station comprises an omni-directional antenna.

166. The telecomputer network system of claim 1, the wireless local area network (LAN) operable to connect to at least one computer.

167. The network defined in claim 3 wherein the mobile hub station comprises an omni-directional antenna.

168. The telecomputer network of claim 85, wherein the information is transferred using the TCP/IP protocol.

169. The system defined in claim 31 wherein the mobile hub comprises an omni-directional antenna.

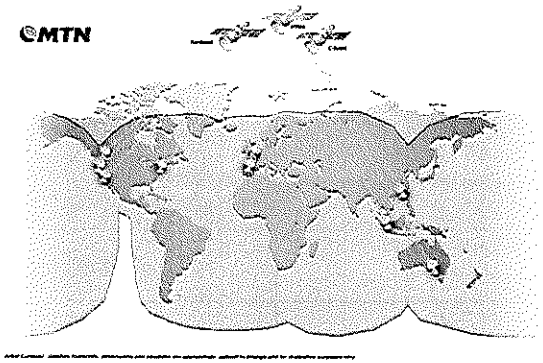
170. The system of claim 117, wherein the information is transferred using the TCP/IP protocol.

171. The network defined in claim 129 wherein the mobile hub station comprises an omni-directional antenna.

* * * * *

Exhibit H

EXHIBIT H

U.S. Pat. No. 5,960,074	EMC Systems and Services
Claim 1	
A telecomputer network system comprising:	EMC and MTN provide mobile broadband connectivity using a combination of a redundant satellite network, satellite terminals installed on vehicles (such as cruise ships), and a plurality of on-board electronics (e.g., routers, modems, and Wi-Fi access points) to provide a fully managed mobile broadband network ("EMC Systems and Services").
a redundant digital microwave communication system;	EMC Systems and Services provide "global VSAT satellite capacity and solutions via C-, Ku- and X-bands" which provide "voice, video and data" capabilities.[1] MTN utilizes multiple satellites to "[o]verlap C- and Ku-bands for seamless transitions and uninterrupted connectivity."[2] EMC Systems and Services provide "Redundant On-Board VSAT Configurations" including "dual antenna" and "dual modems configurations "for extra high availability."[3] The network used in the EMC Systems and Services is "[s]upported by one of the world's most *secure and redundant networks*, covering 99 percent of the world's populated regions and the majority of all ocean regions."[4]  [5]
a wireless local area	The EMC Systems and Services include a wireless local area network in the form of at least one Wi-Fi "hotspot" onboard ships,

[1] http://aws.mtnsat.com/mtn-network/satellite-services
[2] *See e.g.*, http://aws.mtnsat.com/mtn-markets/oil-and-gas
[3] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=4
[4] http://aws.mtnsat.com/about-mtn/about-us (emphasis added).
[5] http://aws.mtnsat.com/mtn-network/global-network?quicktabs_global_network=1

U.S. Pat. No. 5,960,074	EMC Systems and Services
network (LAN); and	yachts, and other vessels.[6] EMC Systems and Services provide "remotely-managed on-board Wi-Fi Hot Spots" providing Internet and intranet access.[7]
a mobile hub station configured to transfer information as a single nomadic transmission/reception point between the microwave communication system and the wireless LAN using an ethernet packet switching protocol.	The EMC Systems and Services include a mobile hub comprises a plurality of hardware devices including at least one satellite antenna, modems, routers, switches, and out-of-band management modems to manage satellite connectivity.[8] EMC Systems and Services additionally include Wi-Fi routers, video servers, and controllers.[9] By utilizing stabilized VSAT terminals, the EMC Systems and Services are operable to transmit and receive broadband data while vehicles (e.g. ships) are in motion and at rest.[10] Additionally, the EMC Systems and Services utilize automatic beam switching to "simultaneously track two different satellites" which allows a vessel to "to transition seamlessly from one satellite footprint to another with no disruption of service."[11] The EMC Systems and Services utilize an ethernet packet switching protocol by providing "full-featured voice services over IP (including selected onboard Wi-Fi Hot Spot)" utilizing its "IP network."[12]

[6] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=3; *see also* http://brochures.emcconnected.com/books/igpd/#p=3 ("Internet and Wi-Fi"); http://emcconnected.com/commercial-shipping/ ("Vessel Wi-Fi"); http://emcconnected.com/cruise-ferry/ ("onboard Wi-Fi")

[7] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=3

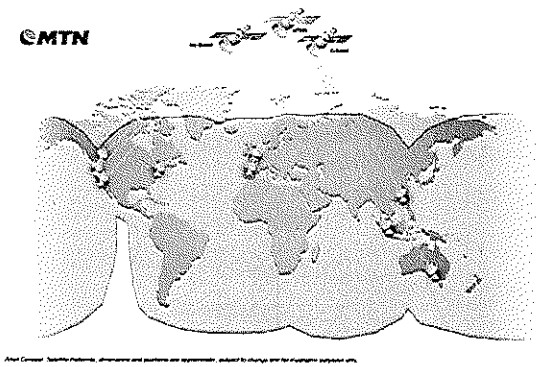
[8] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=4 ("Stabilized Ku Band Antenna, Controller & RF (with a choice of type, power, aperture)"); *see also* http://emcconnected.com/equipment/.

[9] *Id.*

[10] *See* http://aws.mtnsat.com/sites/mtnsat.com/files/JAN%202010_MTN.pdf.

[11] http://aws.mtnsat.com/mtn-news/no-small-mattersatcom-worlds-largest-cruise-ship

[12] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=3

U.S Patent No. 6,445,777	EMC Systems and Services
Claim 1	
A system comprising:	EMC and MTN provide mobile broadband connectivity using a combination of a redundant satellite network, satellite terminals installed on vehicles (such as cruise ships), and a plurality of on-board electronics (e.g., routers, modems, and Wi-Fi access points) to provide a fully managed mobile broadband network ("EMC Systems and Services").
a satellite communication subsystem;	EMC Systems and Services provide "global VSAT satellite capacity and solutions via C-, Ku- and X-bands" which provide "voice, video and data" capabilities.[13] MTN utilizes multiple satellites to "[o]verlap C- and Ku-bands for seamless transitions and uninterrupted connectivity."[14] EMC Systems and Services provide "Redundant On-Board VSAT Configurations" including "dual antenna" and "dual modems configurations "for extra high availability."[15] The network used in the EMC Systems and Services is "[s]upported by one of the world's most *secure and redundant networks*, covering 99 percent of the world's populated regions and the majority of all ocean regions."[16]  [17]
a wireless local area network (LAN) that includes at least one	The EMC Systems and Services include a wireless local area network in the form of at least one Wi-Fi "hotspot" onboard ships, yachts, and other vessels.[18] EMC Systems and Services provide "remotely-managed on-board Wi-Fi Hot Spots" providing Internet and intranet access.[19]

[13] http://aws.mtnsat.com/mtn-network/satellite-services
[14] *See e.g.*, http://aws.mtnsat.com/mtn-markets/oil-and-gas
[15] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=4
[16] http://aws.mtnsat.com/about-mtn/about-us (emphasis added).
[17] http://aws.mtnsat.com/mtn-network/global-network?quicktabs_global_network=1

U.S Patent No. 6,445,777	EMC Systems and Services
computer; and	
a mobile unit configured to transfer broadband information as a single nomadic transmission/reception point between the satellite communication subsystem and the wireless LAN using an ethernet packet switching protocol.	The EMC Systems and Services include a mobile hub comprises a plurality of hardware devices including at least one satellite antenna, modems, routers, switches, and out-of-band management modems to manage satellite connectivity.[20] EMC Systems and Services additionally include Wi-Fi routers, video servers, and controllers.[21] By utilizing stabilized VSAT terminals, the EMC Systems and Services are operable to transmit and receive broadband data while vehicles (e.g. ships) are in motion and at rest.[22] Additionally, the EMC Systems and Services utilize automatic beam switching to "simultaneously track two different satellites" which allows a vessel to "to transition seamlessly from one satellite footprint to another with no disruption of service."[23] The EMC Systems and Services utilize an ethernet packet switching protocol by providing "full-featured voice services over IP (including selected onboard Wi-Fi Hot Spot)" utilizing its "IP network."[24]

[18] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=3; *see also* http://brochures.emcconnected.com/books/igpd/#p=3 ("Internet and Wi-Fi"); http://emcconnected.com/commercial-shipping/ ("Vessel Wi-Fi"); http://emcconnected.com/cruise-ferry/ ("onboard Wi-Fi")

[19] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=3

[20] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=4 ("Stabilized Ku Band Antenna, Controller & RF (with a choice of type, power, aperture)"); *see also* http://emcconnected.com/equipment/.

[21] *Id.*

[22] *See* http://aws.mtnsat.com/sites/mtnsat.com/files/JAN%202010_MTN.pdf.

[23] http://aws.mtnsat.com/mtn-news/no-small-mattersatcom-worlds-largest-cruise-ship

[24] *See e.g.*, http://brochures.emcconnected.com/books/mgpv/#p=3