US007324635B2

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

(10) **Patent No.: US 7,324,635 B2**
(45) **Date of Patent: Jan. 29, 2008**

(54) **BRANCH CALLING AND CALLER ID BASED CALL ROUTING TELEPHONE FEATURES**

(75) Inventors: **Samuel F. Wood**, Los Altos, CA (US); **Jerry A. Klein**, Los Altos, CA (US); **Margaret Susan Asprey**, Los Altos, CA (US)

(73) Assignee: **Telemaze LLC**, Los Altos, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 722 days.

(21) Appl. No.: **10/426,279**

(22) Filed: **Apr. 30, 2003**

(65) **Prior Publication Data**

US 2003/0194078 A1 Oct. 16, 2003

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/565,565, filed on May 4, 2000, now Pat. No. 6,574,328.

(51) **Int. Cl.**
H04M 1/56 (2006.01)

(52) **U.S. Cl.** **379/142.02**; 379/142.06

(58) **Field of Classification Search** 379/88.2, 379/88.26, 127.01, 142.02, 142.03, 142.06, 379/201.11, 207.15, 210.02, 210.03, 211.02
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,100,377 A 7/1978 Flanagan

(Continued)

FOREIGN PATENT DOCUMENTS

EP 0 738 093 10/1996

(Continued)

OTHER PUBLICATIONS

ADC Telecommunications; SS7 New Net SS7 Tutorial; © Copyright 1999.

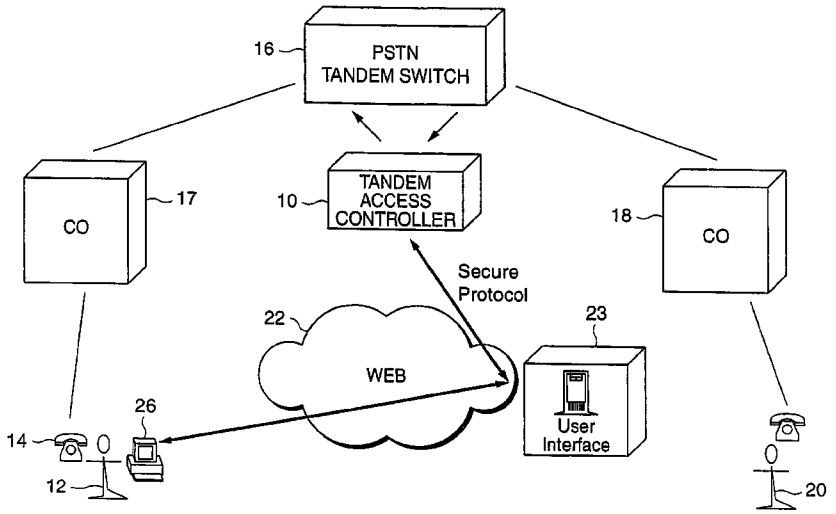
(Continued)

Primary Examiner—Creighton Smith
(74) *Attorney, Agent, or Firm*—Patent Law Group LLP; Brian D. Ogonowsky

(57) **ABSTRACT**

A caller ID based call routing feature is described for blocked and non-blocked caller ID's. A processing system in the public switched telephone network (PSTN) receives first identifying information for identify the source of a telephone call and associates additional information stored in a memory with the first identifying information. The additional information may be information about the calling party initially downloaded to the memory by a subscriber. Once retrieved from the memory by the processing system, the additional information may then be transmitted to the subscriber via the Internet for display on a monitor or to the subscriber's telephone for display on a telephone display. Another feature described is a branch calling feature where the subscriber may program a processing system within the PSTN to forward an incoming call to two or more end units (e.g., telephones) simultaneously. If the call at an end unit is answered, answer supervision signaling is transmitted back to the processing system which then terminates all other calls. The processing system then connects the calling party to the subscriber. The branch calling may be made for any combination of local, long distance, and cellular telephone numbers.

31 Claims, 11 Drawing Sheets



U.S. PATENT DOCUMENTS

4,238,851	A	12/1980	Takahashi et al.
4,569,041	A	2/1986	Takeuchi et al.
4,608,685	A	8/1986	Jain et al.
4,630,260	A	12/1986	Toy et al.
4,630,262	A	12/1986	Callens et al.
4,661,947	A	4/1987	Lea et al.
4,674,082	A	6/1987	Flanagin et al.
4,679,190	A	7/1987	Dias et al.
4,679,191	A	7/1987	Nelson et al.
4,707,831	A	11/1987	Weir et al.
4,715,026	A	12/1987	Eberspaecher
4,723,238	A	2/1988	Isreal et al.
4,757,497	A	7/1988	Beierle et al.
4,761,779	A	8/1988	Nara et al.
4,771,425	A	9/1988	Baran et al.
4,815,071	A	3/1989	Shimizu
4,819,228	A	4/1989	Baran et al.
4,862,451	A	8/1989	Closs et al.
4,866,704	A	9/1989	Bergman
4,872,159	A	10/1989	Hemmady et al.
4,872,160	A	10/1989	Hemmady et al.
4,885,739	A	12/1989	Read et al.
4,903,261	A	2/1990	Baran et al.
4,926,416	A	5/1990	Weik
4,932,022	A	6/1990	Keeney et al.
4,933,931	A	6/1990	Kokubo
4,953,158	A	8/1990	Schreur
4,958,341	A	9/1990	Hemmady et al.
4,962,497	A	10/1990	Ferenc et al.
4,969,184	A	11/1990	Gordon et al.
4,970,721	A	11/1990	Aczel et al.
4,975,695	A	12/1990	Almond et al.
4,996,685	A	2/1991	Farese et al.
5,008,929	A	4/1991	Olsen et al.
5,014,266	A	5/1991	Bales et al.
5,018,136	A	5/1991	Gollub
5,020,058	A	5/1991	Holden et al.
5,022,071	A	6/1991	Mozer et al.
5,048,081	A	9/1991	Gavaras et al.
5,051,983	A	9/1991	Kammerl
5,093,827	A	3/1992	Franklin et al.
5,115,431	A	5/1992	Williams et al.
5,150,357	A	9/1992	Hopner et al.
5,157,662	A	10/1992	Tadamura et al.
5,197,067	A	3/1993	Fujimoto et al.
5,208,806	A	5/1993	Hasegawa
5,218,602	A	6/1993	Grant et al.
5,231,633	A	7/1993	Hluchyj et al.
5,241,588	A	8/1993	Babson, III et al.
5,247,571	A	9/1993	Kay et al.
5,268,900	A	12/1993	Hluchyj et al.
5,274,635	A	12/1993	Rahman et al.
5,291,489	A	3/1994	Morgan et al.
5,301,189	A	4/1994	Schmidt et al.
5,305,308	A	4/1994	English et al.
5,327,428	A	7/1994	Van As et al.
5,341,374	A	8/1994	Lewen et al.
5,351,276	A	9/1994	Doll, Jr. et al.
5,351,286	A	9/1994	Nici
5,353,283	A	10/1994	Tsuchiya
5,359,598	A	10/1994	Steagall et al.
5,365,521	A	11/1994	Ohnishi et al.
5,379,293	A	1/1995	Kanno et al.
5,381,405	A	1/1995	Daugherty et al.
5,381,466	A	1/1995	Shibayama et al.
5,383,183	A	1/1995	Yoshida
5,384,840	A	1/1995	Blatchford et al.
5,390,184	A	2/1995	Morris
5,396,491	A	3/1995	Newman
5,423,003	A	6/1995	Berteau
5,426,636	A	6/1995	Hiller et al.
5,428,607	A	6/1995	Hiller et al.
5,428,616	A	6/1995	Field et al.
5,430,719	A	7/1995	Weisser, Jr.
5,434,913	A	7/1995	Tung et al.
5,436,898	A	7/1995	Bowen et al.
5,438,614	A	8/1995	Rozman et al.
5,444,709	A	8/1995	Riddle
5,452,289	A	9/1995	Sharma et al.
5,453,986	A	9/1995	Davis et al.
5,457,684	A	10/1995	Bharucha et al.
5,471,470	A	11/1995	Sharma et al.
5,479,411	A	12/1995	Klein
5,485,457	A	1/1996	Aramaki
5,521,914	A	5/1996	Mavraganis et al.
5,526,353	A	6/1996	Henley et al.
5,537,403	A	7/1996	Cloonan et al.
5,541,917	A	7/1996	Farris
5,544,161	A	8/1996	Bigham et al.
5,544,163	A	8/1996	Madonna
5,544,164	A	8/1996	Baran
5,544,168	A	8/1996	Jeffrey et al.
5,553,063	A	9/1996	Dickson
5,566,236	A	10/1996	MeLampy et al. 379/201
5,568,475	A	10/1996	Doshi et al.
5,570,355	A	10/1996	Dail et al.
5,572,583	A	11/1996	Wheeler, Jr. et al.
5,577,038	A	11/1996	Miyahara
5,577,041	A	11/1996	Sharma et al.
5,579,308	A	11/1996	Humpleman
5,590,181	A	12/1996	Hogan et al.
5,592,477	A	1/1997	Farris et al.
5,592,538	A	1/1997	Kosowsky et al.
5,594,732	A	1/1997	Bell et al.
5,600,643	A	2/1997	Robrock, II
5,600,649	A	2/1997	Sharma et al.
5,602,991	A	2/1997	Berteau
5,604,737	A	2/1997	Iwami et al.
5,608,786	A	3/1997	Gordon
5,613,069	A	3/1997	Walker
H1641	H	4/1997	Sharman
5,621,727	A	4/1997	Vaudreuil
5,625,677	A	4/1997	Feiertag et al.
5,631,897	A	5/1997	Pacheco et al.
5,640,446	A	6/1997	Everett et al.
5,650,999	A	7/1997	Dickson
5,654,957	A	8/1997	Koyama
5,659,541	A	8/1997	Chan
5,659,542	A	8/1997	Bell et al.
5,680,437	A	10/1997	Segal
5,684,799	A	11/1997	Bigham et al.
5,689,553	A	11/1997	Ahuja et al.
5,692,126	A	11/1997	Templeton et al.
5,701,301	A	12/1997	Weisser, Jr.
5,706,286	A	1/1998	Reiman et al.
5,710,769	A	1/1998	Anderson et al.
5,712,903	A	1/1998	Bartholomew et al.
5,712,908	A	1/1998	Brinkman et al.
5,724,412	A	3/1998	Srinivasan
5,729,544	A	3/1998	Lev et al.
5,732,078	A	3/1998	Arango
5,737,320	A	4/1998	Madonna
5,737,331	A	4/1998	Hoppal et al.
5,737,333	A	4/1998	Civanlar et al.
5,740,164	A	4/1998	Liron
5,740,231	A	4/1998	Cohn et al.
5,742,596	A	4/1998	Baratz et al.
5,751,706	A	5/1998	Land et al.
5,751,968	A	5/1998	Cohen
5,754,641	A	5/1998	Voit et al.

5,764,750	A	6/1998	Chau et al.	
5,764,756	A	6/1998	Onweller	
5,777,991	A	7/1998	Adachi et al.	
5,790,538	A	8/1998	Sugar	
5,793,762	A	8/1998	Penners et al.	
5,793,771	A	8/1998	Darland et al.	
5,799,072	A	8/1998	Vulcan et al.	
5,799,154	A	8/1998	Kuriyan	
5,805,587	A	9/1998	Norris et al.	
5,805,588	A	9/1998	Petersen	
5,809,022	A	9/1998	Byers et al.	
5,809,128	A	9/1998	McMullin	
5,812,534	A	9/1998	Davis et al.	
5,815,505	A	9/1998	Mills	
5,818,912	A	10/1998	Hammond	
5,825,771	A	10/1998	Cohen et al.	
5,828,666	A	10/1998	Focsaneanu et al.	
5,838,665	A	11/1998	Kahn et al.	
5,867,494	A	2/1999	Krishnaswamy et al.	
5,867,495	A	2/1999	Elliott et al.	
5,878,113	A *	3/1999	Bhusri	379/13
5,881,060	A	3/1999	Morrow et al.	
5,881,131	A	3/1999	Farris et al.	
5,889,774	A	3/1999	Mirashrafi et al.	
5,915,008	A	6/1999	Dulman	
5,922,047	A	7/1999	Newlin et al.	
5,933,490	A	8/1999	White et al.	
5,946,386	A	8/1999	Rogers et al.	
5,946,684	A	8/1999	Lund	
5,953,392	A	9/1999	Rhie et al.	379/88.13
5,954,799	A	9/1999	Goheen et al.	
5,958,016	A	9/1999	Chang et al.	709/229
5,963,551	A	10/1999	Minko	
5,974,449	A	10/1999	Chang et al.	709/206
5,982,866	A *	11/1999	Kowalski	379/127.06
5,991,291	A	11/1999	Asai et al.	
5,999,525	A	12/1999	Krishnaswamy et al.	
6,005,870	A	12/1999	Leung et al.	
6,009,469	A	12/1999	Mattaway et al.	
6,012,088	A	1/2000	Li et al.	709/219
6,014,437	A	1/2000	Acker et al.	379/219
6,026,083	A	2/2000	Albrow et al.	
6,028,917	A	2/2000	Creamer et al.	379/100.01
6,031,836	A	2/2000	Haserodt	370/389
6,069,890	A	5/2000	White et al.	
6,078,581	A	6/2000	Shtivelman et al.	370/352
6,094,478	A	7/2000	Shepherd et al.	
6,104,800	A	8/2000	Benson	379/215
6,134,235	A	10/2000	Goldman et al.	
6,161,128	A	12/2000	Smyk	
6,259,692	B1	7/2001	Shtivelman et al.	370/355
6,278,707	B1	8/2001	MacMillan et al.	
6,324,183	B1	11/2001	Miller et al.	
6,327,258	B1	12/2001	Deschaine et al.	
6,339,594	B1	1/2002	Civanlar et al.	
6,359,892	B1 *	3/2002	Szlam	370/401
6,459,780	B1 *	10/2002	Wurster et al.	379/142.02
6,614,781	B1	9/2003	Elliott et al.	
6,697,461	B1 *	2/2004	Middleswarth et al.	379/88.24
6,788,775	B1 *	9/2004	Simpson	379/207.13
6,956,941	B1 *	10/2005	Duncan et al.	379/265.01
2003/0026403	A1 *	2/2003	Clapper	379/142.06
2003/0040325	A1 *	2/2003	Clark	455/461
2003/0095650	A1 *	5/2003	Mize	379/142.17
2003/0133553	A1 *	7/2003	Khakoo et al.	379/142.01
2003/0156693	A1 *	8/2003	Goldman	379/142.01
2004/0029568	A1 *	2/2004	DeLuca et al.	455/412.1
2005/0041526	A1 *	2/2005	Esmersoy et al.	367/27
2005/0141500	A1 *	6/2005	Bhandari et al.	370/389
2005/0169445	A1 *	8/2005	Harris	379/88.19
2005/0207557	A1 *	9/2005	Dolan et al.	379/210.02

FOREIGN PATENT DOCUMENTS

EP	0 789 470		8/1997
EP	0 794 650		9/1997
EP	0 797 373		9/1997
EP	0 824 298		2/1998
EP	0 829 995		3/1998
EP	0 841 831		5/1998
EP	0 847 176		6/1998
EP	0 898 431		2/1999
JP	10-51453		2/1998
JP	10-164135		6/1998
JP	10-164257		6/1998
WO	WO 96/08935		3/1996
WO	WO 96/15598		5/1996
WO	WO 97/14234	A2	4/1997
WO	WO 97/14238		4/1997
WO	WO 97/16007		5/1997
WO	WO 97/22216		6/1997
WO	WO 97/23078		6/1997
WO	WO 97/27692		7/1997
WO	WO 97/28628		8/1997
WO	WO 97/29581		8/1997
WO	WO 97/31492		8/1997
WO	WO 97/33412		9/1997
WO	WO 97/38511	A2	10/1997
WO	WO 97/38551		10/1997
WO	WO 97/39560		10/1997
WO	WO 97/46073	A2	12/1997
WO	WO 97/47118		12/1997
WO	WO 97/50217		12/1997
WO	WO 97/50271		12/1997
WO	WO 97/50277	A2	12/1997
WO	WO 98/04989		2/1998
WO	WO 98/11704		3/1998
WO	WO 98/12860		3/1998
WO	WO 98/13974		4/1998
WO	WO 98/18238		4/1998
WO	WO 98/18289		4/1998
WO	WO 98/19425		5/1998
WO	WO 98/19445		5/1998
WO	WO 98/20701		5/1998
WO	WO 98/23067		5/1998
WO	WO 98/23080		5/1998
WO	WO 98/26543		6/1998
WO	WO 0 851 653		7/1998
WO	WO 0 853 411	A2	7/1998
WO	WO 98/28885		7/1998
WO	WO 98/30007		7/1998
WO	WO 98/30008		7/1998
WO	WO 98/34391		8/1998
WO	WO 98/34399		8/1998
WO	WO 98/36543		8/1998
WO	WO 98/37665		8/1998
WO	WO 98/37688	A2	8/1998
WO	WO 98/39897		9/1998
WO	WO 98/42104		9/1998
WO	WO 98/42107		9/1998
WO	WO 98/42146		9/1998
WO	WO 98/47256	A2	10/1998
WO	WO 98/51063		11/1998
WO	WO 01/84859	A2	11/2001

OTHER PUBLICATIONS

Mary Carmichael, "Calls That Follow you Anywhere", Newsweek, Apr. 28, 2003, p. 43.
European Search Report, 3 pages.

* cited by examiner

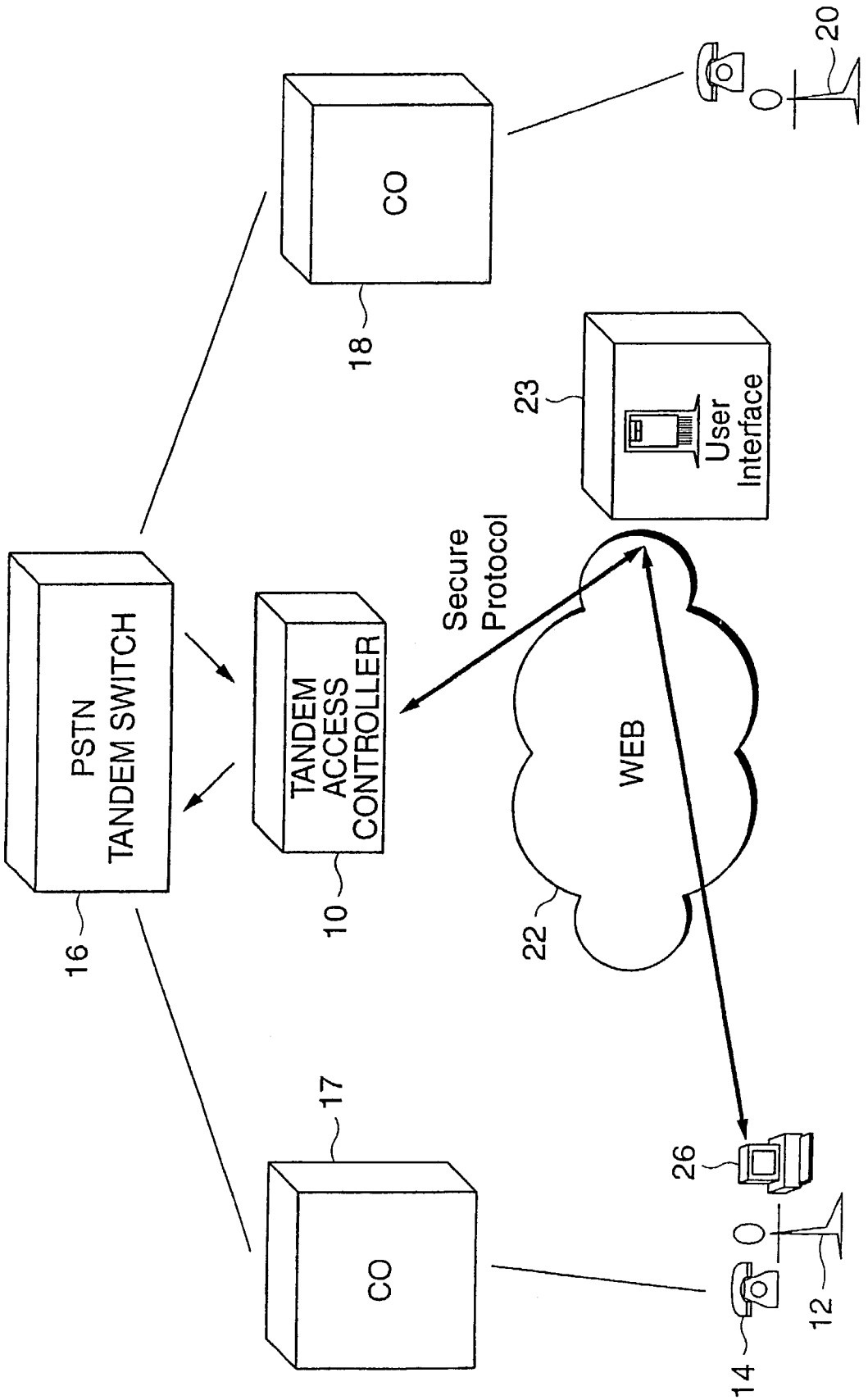


FIG. 1

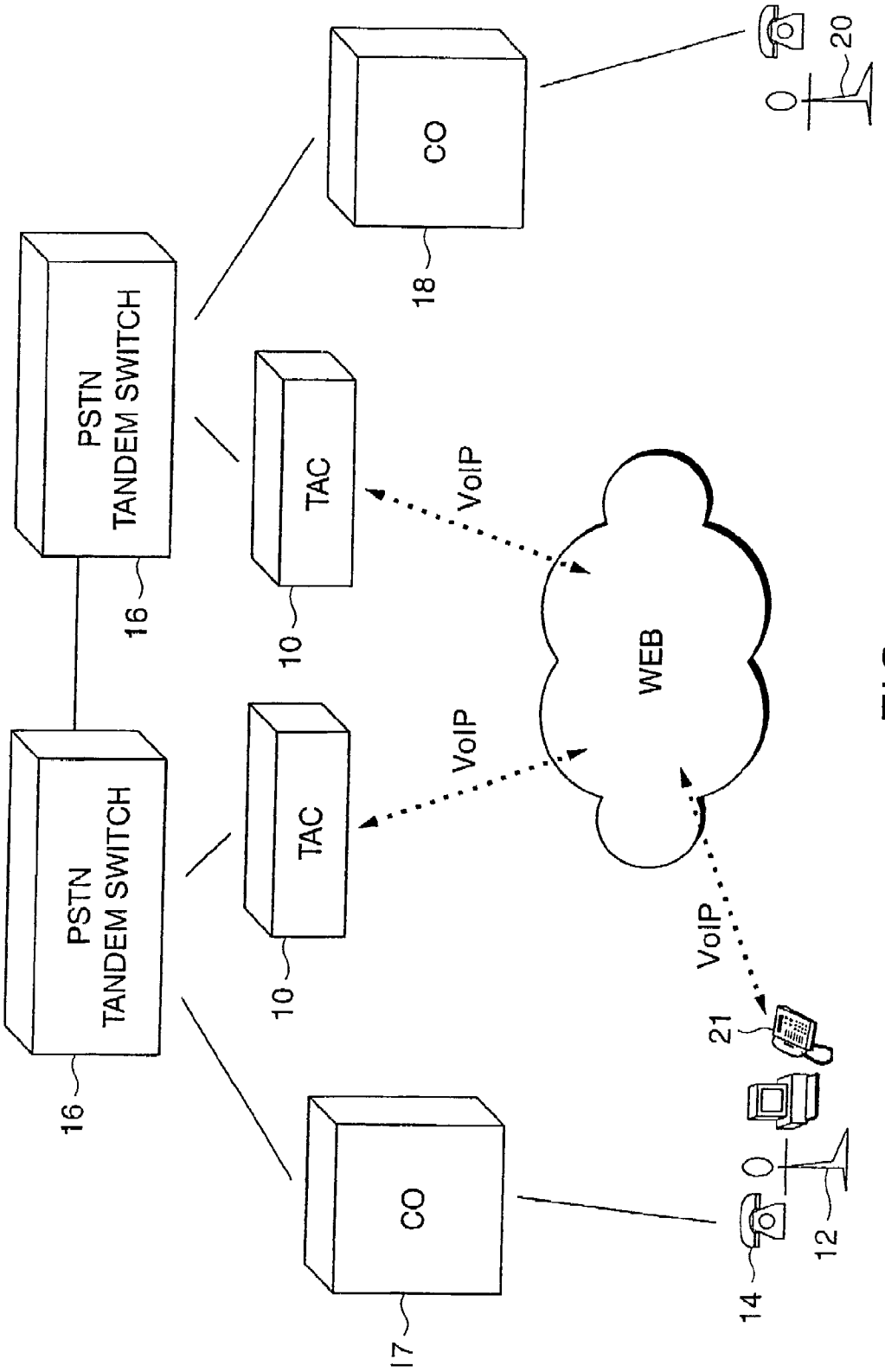


FIG. 2

DOCKET ALARM

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS
Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS
Sync your system to PACER to automate legal marketing.