



US008457228B2

(12) **United States Patent**  
**Bremer**

(10) **Patent No.:** **US 8,457,228 B2**  
(45) **Date of Patent:** **\*Jun. 4, 2013**

(54) **SYSTEM AND METHOD OF COMMUNICATION USING AT LEAST TWO MODULATION METHODS**

375/305, 308; 455/102, 110; 332/108, 119, 332/120, 151

See application file for complete search history.

(76) Inventor: **Gordon F. Bremer**, Clearwater, FL (US)

(56) **References Cited**

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

This patent is subject to a terminal disclaimer.

U.S. PATENT DOCUMENTS

3,736,528 A	5/1973	Acker et al.
3,761,840 A	9/1973	Bremer
3,970,926 A	7/1976	Rigby et al.
4,091,422 A	5/1978	Amster
4,335,464 A	6/1982	Armstrong et al.
4,381,546 A	4/1983	Armstrong

(Continued)

OTHER PUBLICATIONS

“Conelrad Emergency Radio Notification System Born in 1951”, [www.modestoradiomuseum.org](http://www.modestoradiomuseum.org), Accessed on Dec. 5, 2010, 2 pages.

(Continued)

(21) Appl. No.: **13/198,568**

(22) Filed: **Aug. 4, 2011**

(65) **Prior Publication Data**

US 2012/0106604 A1 May 3, 2012

**Related U.S. Application Data**

(63) Continuation of application No. 12/543,910, filed on Aug. 19, 2009, now Pat. No. 8,023,580, which is a continuation of application No. 11/774,803, filed on Jul. 9, 2007, now Pat. No. 7,675,965, which is a continuation of application No. 10/412,878, filed on Apr. 14, 2003, now Pat. No. 7,248,626, which is a continuation-in-part of application No. 09/205,205, filed on Dec. 4, 1998, now Pat. No. 6,614,838.

(60) Provisional application No. 60/067,562, filed on Dec. 5, 1997.

(51) **Int. Cl.**  
**H04L 5/12** (2006.01)

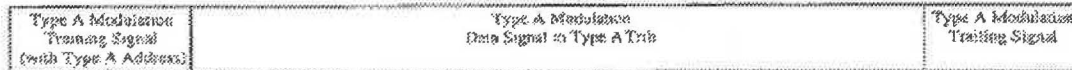
(52) **U.S. Cl.**  
USPC ..... **375/261; 375/295; 455/102; 332/108; 332/119; 332/151**

(58) **Field of Classification Search**  
USPC ..... **375/261, 269, 285, 222, 298, 302,**

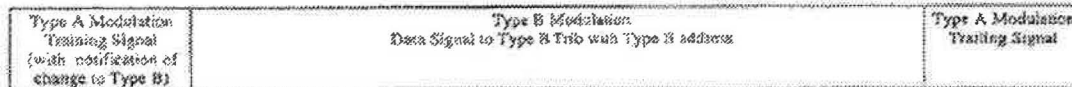
(57) **ABSTRACT**

A device may be capable of communicating using at least two type types of modulation methods. Methods and systems are provided for communication of data according to a communications method in which a master transceiver communicates with one or more slave transceivers according to a master/slave relationship. A first data message may include first information and second information that are modulated according to a first modulation method. The second information may include lower data rate data. A second data message may include third information that may be modulated according to the first modulation method and that may indicate an impending change to a second modulation method. The second modulation method may be used for transmitting fourth information, and the fourth information may be included in the second message. The fourth information may include higher data rate data, for example Internet access data.

**52 Claims, 8 Drawing Sheets**



**170**



**172**

Samsung Ex. 1223  
Samsung v. Rembrandt  
IPR2014-00518

**EXHIBIT 1223**

U.S. PATENT DOCUMENTS

4,464,767 A	8/1984	Bremer	5,805,755 A	9/1998	Amersfoort et al.
4,503,545 A	3/1985	Bremer et al.	5,812,537 A	9/1998	Betts et al.
4,509,171 A	4/1985	Bremer et al.	5,825,517 A	10/1998	Antoniades et al.
4,516,216 A	5/1985	Armstrong	5,828,657 A	10/1998	Betts et al.
4,525,846 A	6/1985	Bremer et al.	5,841,500 A	11/1998	Patel
4,525,847 A	6/1985	Bremer	5,844,944 A	12/1998	Betts et al.
4,532,640 A	7/1985	Bremer et al.	5,859,877 A	1/1999	Betts et al.
4,630,286 A	12/1986	Betts	5,881,047 A	3/1999	Bremer et al.
4,645,871 A	2/1987	Bremer et al.	5,881,142 A	3/1999	Frankel et al.
4,654,807 A	3/1987	Bremer	5,901,205 A	5/1999	Smith et al.
4,663,766 A	5/1987	Bremer	5,915,003 A	6/1999	Bremer et al.
4,677,625 A	6/1987	Betts et al.	5,936,949 A	8/1999	Pasternak et al.
4,782,498 A	11/1988	Copeland, III	5,940,438 A	8/1999	Poon et al.
4,811,357 A	3/1989	Betts et al.	5,960,400 A	9/1999	Bremer
4,862,464 A	8/1989	Betts et al.	5,963,620 A	10/1999	Frankel et al.
4,924,516 A	5/1990	Bremer et al.	5,999,563 A	12/1999	Polley et al.
4,926,448 A	5/1990	Kraul et al.	6,011,814 A	1/2000	Martinez et al.
4,939,748 A	7/1990	Betts et al.	6,021,158 A	2/2000	Schurr et al.
5,008,903 A	4/1991	Betts et al.	6,031,897 A	2/2000	Bremer et al.
5,050,536 A	9/1991	Baker	6,061,392 A	5/2000	Bremer et al.
5,070,536 A	12/1991	Mahany et al.	6,067,297 A	5/2000	Beach
5,081,647 A	1/1992	Bremer	6,072,779 A	6/2000	Tzannes et al.
5,099,478 A	3/1992	Bremer et al.	6,075,512 A	6/2000	Patel et al.
5,168,535 A	12/1992	Laor	6,097,858 A	8/2000	Laor
5,206,854 A	4/1993	Betts et al.	6,097,860 A	8/2000	Laor
5,230,010 A	7/1993	Betts et al.	6,101,299 A	8/2000	Laor
5,239,306 A	8/1993	Siwiak et al.	6,108,347 A	8/2000	Holmquist
5,239,607 A	8/1993	da Silva et al.	6,111,936 A	8/2000	Bremer
5,251,236 A	10/1993	Brehmer et al.	6,125,148 A	9/2000	Frodigh et al.
5,251,328 A	10/1993	Shaw	6,134,245 A	10/2000	Scarmalis
5,257,396 A	10/1993	Auld, Jr. et al.	6,154,524 A	11/2000	Bremer
5,280,503 A	1/1994	Betts et al.	6,157,680 A	12/2000	Betts et al.
5,311,557 A	5/1994	Betts et al.	6,160,790 A	12/2000	Bremer
5,311,578 A	5/1994	Bremer et al.	6,175,436 B1	1/2001	Jackel
5,345,332 A	9/1994	daSilva et al.	6,185,083 B1	2/2001	Mathieu et al.
5,355,362 A	10/1994	Gorshe et al.	6,208,663 B1 *	3/2001	Schramm et al. .... 370/465
5,373,149 A	12/1994	Rasmussen	6,212,227 B1	4/2001	Ko et al.
5,392,154 A	2/1995	Chang et al.	6,236,481 B1	5/2001	Laor
5,412,651 A	5/1995	Gorshe	6,236,717 B1	5/2001	Bremer et al.
5,414,540 A	5/1995	Patel et al.	6,243,391 B1	6/2001	Holmquist
5,436,930 A	7/1995	Bremer et al.	6,252,644 B1	6/2001	Patel
5,444,704 A	8/1995	Henderson et al.	6,272,108 B1	8/2001	Chapman
5,448,555 A	9/1995	Bremer et al.	6,272,154 B1	8/2001	Bala et al.
5,450,456 A	9/1995	Mueller	6,292,281 B1	9/2001	Bala et al.
5,473,675 A	12/1995	Chapman et al.	6,307,653 B1	10/2001	Bala et al.
5,475,713 A	12/1995	Bremer et al.	6,307,893 B1	10/2001	Bremer et al.
5,506,866 A	4/1996	Bremer et al.	6,307,923 B1	10/2001	Bremer et al.
5,513,212 A	4/1996	Bremer	6,320,879 B1	11/2001	Bremer
5,513,213 A	4/1996	Patel et al.	6,320,993 B1	11/2001	Laor
5,521,942 A	5/1996	Betts et al.	6,330,275 B1	12/2001	Bremer
5,530,718 A	6/1996	Gradeler et al.	6,335,992 B1	1/2002	Bala et al.
5,537,398 A *	7/1996	Siwiak ..... 370/204	6,347,008 B1	2/2002	Vodhanel
5,537,411 A	7/1996	Plas	6,348,986 B1	2/2002	Doucet et al.
5,537,436 A	7/1996	Bottoms et al.	6,408,056 B1	6/2002	Bremer et al.
5,540,456 A	7/1996	Meier-Burkamp et al.	6,445,733 B1	9/2002	Zuranski et al.
5,548,222 A	8/1996	Jensen et al.	6,470,110 B1	10/2002	Lin
5,550,881 A	8/1996	Sridhar et al.	6,480,645 B1	11/2002	Peale et al.
5,559,791 A	9/1996	Bremer et al.	6,493,475 B1	12/2002	Lin
5,559,792 A	9/1996	Bottoms et al.	6,529,652 B1	3/2003	Brener
5,559,810 A	9/1996	Gilbert et al.	6,535,589 B1	3/2003	Nauman et al.
5,563,883 A	10/1996	Cheng	6,546,090 B1	4/2003	Bremer et al.
5,570,295 A	10/1996	Isenberg et al.	6,549,692 B1	4/2003	Harel et al.
5,577,087 A	11/1996	Furuya	6,556,540 B1	4/2003	Mawhinney et al.
5,602,869 A	2/1997	Scott	6,580,709 B1	6/2003	Gorshe et al.
5,629,992 A	5/1997	Amersfoort et al.	6,580,785 B2	6/2003	Bremer et al.
5,642,379 A	6/1997	Bremer	6,591,029 B1	7/2003	Lin et al.
5,651,114 A	7/1997	Davidson, Jr.	6,597,827 B1	7/2003	Brener et al.
5,661,718 A	8/1997	Bremer et al.	6,603,894 B1	8/2003	Pu
5,671,250 A	9/1997	Bremer et al.	6,614,838 B1 *	9/2003	Bremer ..... 375/220
5,684,825 A	11/1997	Ko	6,628,857 B1	9/2003	Bonadeo et al.
5,684,834 A	11/1997	Betts et al.	6,631,119 B1	10/2003	Mawhinney et al.
5,711,012 A	1/1998	Bottoms et al.	6,633,693 B1	10/2003	Peale et al.
5,719,922 A	2/1998	Bremer et al.	6,647,058 B1	11/2003	Bremer et al.
5,719,923 A	2/1998	Bremer et al.	6,658,096 B2	12/2003	Bremer et al.
5,748,811 A	5/1998	Amersfoort et al.	6,671,328 B1	12/2003	Poon et al.
5,764,699 A	6/1998	Needham et al.	6,690,644 B1	2/2004	Gorshe
5,793,800 A	8/1998	Jylha et al.	6,690,849 B1	2/2004	Dadap, Jr. et al.
5,805,669 A	9/1998	Bingel et al.	6,715,124 B1	3/2004	Betts
			6,744,883 B1	6/2004	Bingel et al.



6,771,740	B1	8/2004	Bingel	
6,775,355	B1	8/2004	Bingel et al.	
6,782,094	B1	8/2004	Venz et al.	
6,782,096	B1	8/2004	Bremer et al.	
6,885,730	B1	4/2005	Bremer	
6,922,415	B1	7/2005	Bremer et al.	
6,950,444	B1	9/2005	Holmquist et al.	
6,970,501	B1	11/2005	Bremer et al.	
7,006,445	B1	2/2006	Cole et al.	
7,013,421	B2	3/2006	Betts	
7,020,266	B2	3/2006	Bremer et al.	
7,023,829	B1	4/2006	Holmquist et al.	
7,035,380	B1	4/2006	Bingel et al.	
7,046,798	B2	5/2006	Betts et al.	
7,058,833	B1	6/2006	Bremer et al.	
7,065,205	B1	6/2006	Bingel et al.	
7,127,048	B2	10/2006	Bremer et al.	
7,130,338	B2	10/2006	Bremer et al.	
7,155,016	B1	12/2006	Betts et al.	
7,170,867	B2	1/2007	O'Toole et al.	
7,248,626	B2	7/2007	Bremer	
7,272,215	B2	9/2007	Bremer et al.	
7,289,604	B2	10/2007	Bremer	
7,289,610	B2	10/2007	Bremer et al.	
7,352,803	B2	4/2008	Bremer et al.	
7,471,777	B2	12/2008	Bremer et al.	
7,675,965	B2	3/2010	Bremer	
7,707,446	B2	4/2010	Bremer et al.	
7,711,109	B2	5/2010	Betts et al.	
7,747,000	B2	6/2010	Bremer et al.	
8,023,580	B2 *	9/2011	Bremer	375/261
2001/0022836	A1	9/2001	Bremer et al.	
2002/0041662	A1	4/2002	Bremer et al.	
2002/0167949	A1	11/2002	Bremer et al.	
2003/0039348	A1	2/2003	Bremer et al.	
2003/0210773	A1	11/2003	Bremer et al.	
2003/0210779	A1	11/2003	Bremer et al.	
2004/0013183	A1	1/2004	Bremer	
2004/0042510	A1	3/2004	Bremer et al.	
2004/0052361	A1	3/2004	Betts et al.	
2004/0066929	A1	4/2004	Bremer et al.	
2004/0081233	A1	4/2004	Bremer et al.	
2004/0179662	A1	9/2004	Bremer et al.	
2004/0213170	A1	10/2004	Bremer	
2004/0258236	A1	12/2004	Bremer et al.	
2005/0025153	A1	2/2005	Bremer et al.	
2005/0074057	A1	4/2005	Bremer et al.	
2005/0147158	A1	7/2005	Bremer et al.	
2005/0152404	A1	7/2005	Holmquist et al.	
2005/0163303	A1	7/2005	Bremer et al.	
2005/0180545	A1	8/2005	Bremer	
2006/0188088	A1	8/2006	Bingel et al.	
2006/0193465	A1	8/2006	Betts et al.	
2006/0195712	A1	8/2006	Bremer et al.	
2007/0047730	A1	3/2007	Bremer et al.	
2007/0047733	A1	3/2007	Bremer et al.	
2007/0286187	A1	12/2007	Bremer et al.	
2008/0013608	A1	1/2008	Bremer	
2008/0019432	A1	1/2008	Bremer et al.	
2009/0111422	A1	4/2009	Bremer et al.	
2009/0262911	A1	10/2009	Bremer et al.	
2009/0262912	A1	10/2009	Bremer et al.	
2010/0183055	A1	7/2010	Bremer	
2010/0246598	A1	9/2010	Bremer et al.	

OTHER PUBLICATIONS

Federal Communications Commission(FCC), "Emergency Alert System", Public Safety and Homeland Security Bureau, www.fcc.gov/pshs/services/eas, Accessed on Dec. 5, 2010, 2 pages.  
 "Specialized Communications Techniques for the Radio Amateur", The American Radio Relay League, Inc., 1975, 1st Edition, Chapter 4, 78-83.  
 "Specialized Communications Techniques for the Radio Amateur", The American Radio Relay League, Inc., 1975, 1st Edition, Chapter 5, 99-113.  
 Bates (Ed.), "Broadband Telecommunications Handbook", McGraw-Hill Publishing, NY, 2000, Chapter 9, 128, 129, 131, 132, 133 and 134.

Benson (Ed.), "Television Engineering Handbook", McGraw-Hill Publishers, NY, 1992, 4.14, 4.15, 4.24, 4.34 and 4.35.  
 Bluetooth®, "Specification of the Bluetooth System, Master Table of Contents & Compliance Requirements", Specification vol. 0, Nov. 4, 2004, V2.0, 1-1230.  
 Bluetooth®, "Specification of the Bluetooth System, Core", Dec. 1, 1999, V1.0B, 1-1082.  
 Bluetooth®, "Specification of the Bluetooth System, Profiles", Specification vol. 2, Dec. 1, 1999, V1.0B, 1-440.  
 Chorafas (Ed.), "Telephony: Today and Tomorrow", Prentice-Hall, Inc., NJ, 1984, Chapter 15, 191-197.  
 Erickson (Ed.), "Options for Presentation of Multilingual Text: Use of the Unicode Standard", Mar. 14, 1997, 20 pages.  
 Freeman (Ed.), "Telecommunications Systems Engineering: Analog and Digital Network Design", John Wiley and Sons, Inc., NY, 1980, 180.  
 Goodman (Ed.), "Radio Amateur's Handbook", The American Radio Relay League, Inc., CN, 1965, Chapter 10, 291-295.  
 Green (Ed.), "RTTY Handbook", Tab Books, 1972, Chapter 4, 266-273.  
 IEEE Information Technology, "Wireless LAN Medium Access Control (MAC) and Physical Layer (PHY) Specifications", 1997, 1-466.  
 Jorgen (Ed.), "Digital Consumer Electronics Handbook", McGraw-Hill Publications, NY, 1997, 27.7-27.10.  
 Kuecken (Ed.), "Talking Computers and Telecommunications", Van Nostrand Reinhold Company, Inc., NY, 1983, 32-36.  
 Margulies (Ed.), "SCSA Book", Telecom Library, Inc., NJ, 1993, Chapter 8, 250.  
 Martin (Ed.), "Telecommunications and the Computer", Prentice-Hall, Inc., NJ, 2nd Edition, 1976, Chapter 21, 410-423.  
 Mazda, (Ed.), "Electronics Engineer's Reference Book", 5.sup.th Edition, Butterworth and Company Publishers, London, 1983, 54.5-54.8.  
 Newton (Ed.), "Newton's Telecom Dictionary", Flatiron Publications, Inc., NY, Apr. 1994, 7th Edition, 9, 363, 364, 426, 427, 428, 429 and 430.  
 Pallott and Miller, "Implementing Message Priority Polices Over an 802.11 Based Mobile Ad Hoc Network", IEEE, Military Communications Conference, 2001, MILCOM 2001, Communications for Network-Centric Operations: Creating the Information Force, Oct. 28-31, 2001, 2, 860-864.  
 The National Association for Amateur Radio (ARRL), Radioteletype (RTTY), "Basic Principles and Machines", Chapter 2.1, Book or Journal Title Unknown, Date Unknown, pp. 13 and 14.  
 The National Association for Amateur Radio (ARRL), Radioteletype (RTTY), "Autostart", Chapter 3.4, "references", Chapter 8, Book or Journal Title Unknown, Date Unknown, pp. 107-111, 183, 185, 186 and 187.  
 Rzeszewski (Ed.), "Color Television", IEEE Press, John Wiley and Sons, Inc, NY, 1983, 3, 8 and 9.  
 Shrader (Ed.), "Electronic Communication", McGraw-Hill Publishers, NY, 1959, 551-555.  
 Shrader (Ed.), "Electronic Communication", McGraw-Hill Publishers, NY, 1959, 519.  
 Third Generation Partnership Project (3GPP)-Technologies Web Page, http://www.3gpp.org/technologies-, Accessed on Feb. 8, 2011, 2 pages.  
 Vilips (Ed.), "Data Modem: Selection and Evaluation Guide", Artech House, Inc, MA, 1972, Section 1, 3 pages.  
 Wilson et al (Ed.), "The ARRL Handbook for Radio Communications", 64th Edition, The American Radio Relay League, Inc., 1986, Chapter 19, 19-9-19-13.  
 Wilson et al. (Ed.), "The ARRL Handbook for Radio Communications", 85th Edition, The American Radio Relay League, 2008, Chapter 9, 9.32, 9.33 and 9.34.  
 Wilson et al. (Ed.), "The ARRL Handbook for Radio Communications", 64th Edition, The American Radio Relay League Inc., 1986, Chapter 14, 14-13 and 14-14.  
 International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T). Series T: Terminal Equipments and Protocols for Telematic Services, "Procedures for Document Facsimile Transmission in the General Switched Telephone Network". ITU-T Recommendation T.30. Jul. 1996. 176 pages.

International Telecommunications Union, The International Telegraph and Telephone Consultative Committee (CCITT), Data Communication Over the Telephone Network, "A 2-Wire Modem for Facsimile Applications with Rates Up to 14 400 bit/s", Recommendation V.17, Feb. 1991, 13 pages.

International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminal Equipments and Protocols for Telematic Services, "Standardization of Group 3 Facsimile Terminals for Document Transmission", ITU-T Recommendation T.4, Jul. 1996, 60 pages.

International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminal for Telematic Services, "Standardization of Group 3 Facsimile Terminals for Document Transmission", ITU-T Recommendation T.4-Amendment 1, Jul. 1997, 10 pages.

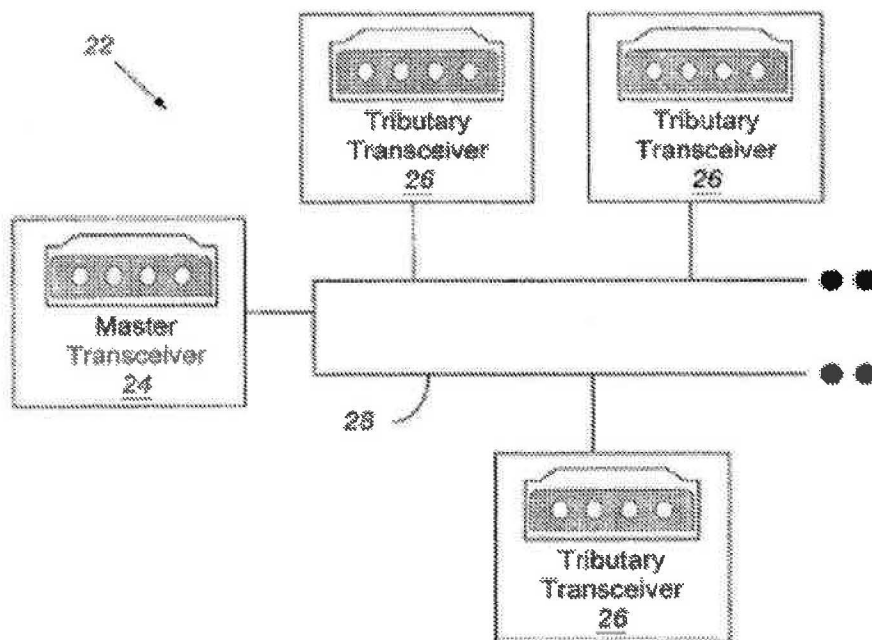
International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminal for Telematic

Services, "Standardization of Group 3 Facsimile Terminals for Document Transmission", ITU-T Recommendation T.4-Amendment 2, Oct. 1997, 14 pages.

International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminal for Telematic Services, "Procedures for Document Facsimile Transmission in the General Switched Telephone Network", ITU-T Recommendation T.30-Amendment 1, Jul. 1997, 110 pages.

International Telecommunications Union, Telecommunication Standardization Sector of ITU (ITU-T), Series T: Terminal for Telematic Services, "Procedures for Document Facsimile Transmission in the General Switched Telephone Network", ITU-T Recommendation T.30-Amendment 2, Oct. 1997, 18 pages.

\* cited by examiner



**FIG. 1**  
**Prior Art**

# 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.