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(54) **SYSTEMS AND METHODS FOR VIDEO AND AUDIO DATA STORAGE AND DISTRIBUTION**

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708/203

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See application file for complete search history.

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(56) **References Cited**

U.S. PATENT DOCUMENTS

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3,394,352 A 7/1968 Wernikoff et al.
3,490,690 A 1/1970 Apple et al.

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(Continued)

FOREIGN PATENT DOCUMENTS

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Realtime's Response in Opposition to the Defendants' Joint Objections to Report and Recommendation of Magistrate Regarding Motion for Partial Summary Judgment of Invalidity for Indefiniteness, in *Realtime Data, LLC d/b/a/IXO v. Packeteer, Inc. et al.*, Civil Action No. 6:08-cv-00144-LED; U.S. District Court for the Eastern District of Texas, dated Jul. 27, 2009, 15 pages.

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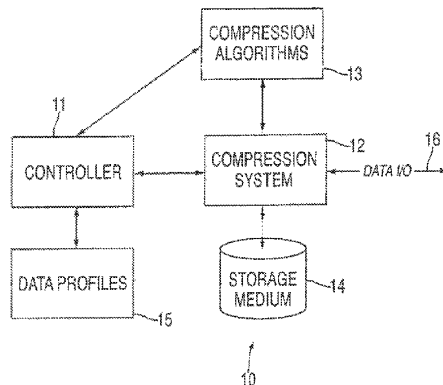
(52) **U.S. Cl.**
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(57) **ABSTRACT**

(58) **Field of Classification Search**
CPC . H03M 7/30; H03M 7/3084; G06F 17/30153; G06F 2212/40; G06F 12/0246; G06F 17/30501; G06F 3/0679; G06F 3/0688; H04L 69/04; Y10S 707/99931; Y10S 707/99942; H04W 28/06; H04N 1/00236; H04N 2201/3283; G11C 29/40

Data compression and decompression methods for compressing and decompressing data based on an actual or expected throughput (bandwidth) of a system. In one embodiment, a controller tracks and monitors the throughput (data storage and retrieval) of a data compression system and generates control signals to enable/disable different compression algorithms when, e.g., a bottleneck occurs so as to increase the throughput and eliminate the bottleneck.

30 Claims, 4 Drawing Sheets



Related U.S. Application Data

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References Cited

(56)

U.S. PATENT DOCUMENTS

4,021,782 A	5/1977	Hoerning	5,167,034 A	11/1992	MacLean, Jr. et al.
4,032,893 A	6/1977	Moran	5,175,543 A	12/1992	Lantz
4,054,951 A	10/1977	Jackson et al.	5,179,651 A	1/1993	Taaffe et al.
4,127,518 A	11/1978	Coy et al.	5,187,793 A	2/1993	Keith et al.
4,302,775 A	11/1981	Widergren et al.	5,191,431 A	3/1993	Hasegawa et al.
4,325,085 A	4/1982	Gooch	5,204,756 A	4/1993	Chevion et al.
4,360,840 A	11/1982	Wolfrum et al.	5,209,220 A	5/1993	Hiyama et al.
4,386,416 A	5/1983	Giltner et al.	5,212,742 A	5/1993	Normile et al.
4,394,774 A	7/1983	Widergren et al.	5,226,176 A	7/1993	Westaway et al.
4,464,650 A	8/1984	Eastman et al.	5,227,893 A	7/1993	Ett
4,494,108 A	1/1985	Langdon, Jr. et al.	5,231,492 A	7/1993	Dangi et al.
4,499,499 A	2/1985	Brickman et al.	5,237,460 A	8/1993	Miller et al.
4,574,351 A	3/1986	Dang et al.	5,237,675 A	8/1993	Hannon, Jr.
4,593,324 A	6/1986	Ohkubo et al.	5,243,341 A	9/1993	Seroussi et al.
4,626,829 A	12/1986	Hauck	5,243,348 A	9/1993	Jackson
4,646,061 A	2/1987	Bledsoe	5,247,638 A	9/1993	O'Brien et al.
4,682,150 A	7/1987	Mathes et al.	5,247,646 A	9/1993	Osterlund et al.
4,701,745 A	10/1987	Waterworth	5,249,053 A	9/1993	Jain
4,729,020 A	3/1988	Schaphorst et al.	5,263,168 A	11/1993	Toms et al.
4,730,348 A	3/1988	MacCrisken	5,267,333 A	11/1993	Aono
4,745,559 A	5/1988	Willis et al.	5,270,832 A	12/1993	Balkanski et al.
4,748,638 A	5/1988	Friedman et al.	5,280,600 A	1/1994	Van Maren et al.
4,750,135 A	6/1988	Boilen	5,287,420 A	2/1994	Barrett
4,754,351 A	6/1988	Wright	5,289,580 A	2/1994	Latif et al.
4,804,959 A	2/1989	Makansi et al.	5,293,379 A	3/1994	Carr
4,813,040 A	3/1989	Futato	5,293,576 A	3/1994	Mihm, Jr. et al.
4,814,746 A	3/1989	Miller et al.	5,307,497 A	4/1994	Feigenbaum et al.
4,862,167 A	8/1989	Copeland, III	5,309,555 A	5/1994	Akins et al.
4,866,601 A	9/1989	DuLac et al.	5,319,682 A	6/1994	Clark
4,870,415 A	9/1989	Van Maren et al.	5,331,425 A	7/1994	Ozaki et al.
4,872,009 A	10/1989	Tsukiyama et al.	5,341,440 A	8/1994	Earl et al.
4,876,541 A	10/1989	Storer	5,347,600 A	9/1994	Barnsley et al.
4,888,812 A	12/1989	Dinan et al.	5,353,132 A	10/1994	Katsuma
4,890,282 A	12/1989	Lambert et al.	5,354,315 A	10/1994	Armstrong
4,897,717 A	1/1990	Hamilton et al.	5,355,498 A	10/1994	Provino et al.
4,906,991 A	3/1990	Fiala et al.	5,357,614 A	10/1994	Pattisam et al.
4,906,995 A	3/1990	Swanson	5,367,629 A	11/1994	Chu et al.
4,929,946 A	5/1990	O'Brien et al.	5,373,290 A	12/1994	Lempel et al.
4,953,324 A	9/1990	Herrmann	5,374,916 A	12/1994	Chu
4,956,808 A	9/1990	Aakre et al.	5,379,036 A	1/1995	Storer
4,965,675 A	10/1990	Hori et al.	5,379,757 A	1/1995	Hiyama et al.
4,988,998 A	1/1991	O'Brien	5,381,145 A	1/1995	Allen et al.
5,003,307 A	3/1991	Whiting et al.	5,389,922 A	2/1995	Seroussi et al.
5,016,009 A	5/1991	Whiting et al.	5,394,534 A	2/1995	Kulakowski et al.
5,027,376 A	6/1991	Friedman et al.	5,396,228 A	3/1995	Garahi
5,028,922 A	7/1991	Huang	5,400,401 A	3/1995	Wasilewski et al.
5,045,848 A	9/1991	Fascenda	5,403,639 A	4/1995	Belsan et al.
5,045,852 A	9/1991	Mitchell et al.	5,406,278 A	4/1995	Graybill et al.
5,046,027 A	9/1991	Taaffe et al.	5,406,279 A	4/1995	Anderson et al.
5,049,881 A	9/1991	Gibson et al.	5,410,671 A	4/1995	Elgamal et al.
5,079,630 A	1/1992	Golin	5,412,384 A	5/1995	Chang et al.
5,091,782 A	2/1992	Krause et al.	5,414,850 A	5/1995	Whiting
5,097,261 A	3/1992	Langdon, Jr. et al.	5,420,639 A	5/1995	Perkins
5,103,306 A	4/1992	Weiman	5,434,983 A	7/1995	Yaso et al.
5,109,226 A	4/1992	MacLean, Jr. et al.	5,437,020 A	7/1995	Wells et al.
5,109,433 A	4/1992	Notenboom	5,452,287 A	9/1995	Dicecco et al.
5,109,451 A	4/1992	Aono et al.	5,454,079 A	9/1995	Roper et al.
5,113,522 A	5/1992	Dinwiddie, Jr. et al.	5,454,107 A	9/1995	Lehman et al.
5,115,309 A	5/1992	Hang	5,455,576 A	10/1995	Clark, II et al.
5,121,342 A	6/1992	Szymborski et al.	5,455,578 A	10/1995	Bhandari
5,126,739 A	6/1992	Whiting et al.	5,455,680 A	10/1995	Shin
5,128,963 A	7/1992	Akagiri	5,461,679 A	10/1995	Normile et al.
5,132,992 A	7/1992	Yurt et al.	5,463,390 A	10/1995	Whiting et al.
5,146,221 A	9/1992	Whiting et al.	5,467,087 A	11/1995	Chu
5,150,430 A	9/1992	Chu	5,471,206 A	11/1995	Allen et al.
5,155,484 A	10/1992	Chambers, IV	5,475,388 A	12/1995	Gormish et al.
5,159,336 A	10/1992	Rabin et al.	5,479,587 A	12/1995	Campbell et al.
			5,479,633 A	12/1995	Wells et al.
			5,483,470 A	1/1996	Alur et al.
			5,486,826 A	1/1996	Remillard
			5,488,364 A	1/1996	Cole
			5,488,365 A	1/1996	Seroussi et al.
			5,495,244 A	2/1996	Jeong et al.
			5,504,842 A	4/1996	Gentile
			5,506,844 A	4/1996	Rao
			5,506,872 A	4/1996	Mohler
			5,506,944 A	4/1996	Gentile
			5,521,940 A	5/1996	Lane et al.
			5,528,628 A	6/1996	Park et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

5,530,845 A	6/1996	Hiatt et al.	5,724,475 A	3/1998	Kirsten
5,533,051 A	7/1996	James	5,729,228 A	3/1998	Franaszek et al.
5,535,311 A	7/1996	Zimmerman	5,740,395 A	4/1998	Wells et al.
5,535,356 A	7/1996	Kim et al.	5,742,773 A	4/1998	Blomfield-Brown et al.
5,535,369 A	7/1996	Wells et al.	5,748,904 A	5/1998	Huang et al.
5,537,658 A	7/1996	Bakke et al.	5,757,852 A	5/1998	Jericevic et al.
5,539,865 A	7/1996	Gentile	5,764,774 A	6/1998	Liu
5,542,031 A	7/1996	Douglass et al.	5,765,027 A	6/1998	Wang et al.
5,544,290 A	8/1996	Gentile	5,767,898 A	6/1998	Urano et al.
5,546,395 A	8/1996	Sharma et al.	5,768,445 A	6/1998	Troeller et al.
5,546,475 A	8/1996	Bolle et al.	5,768,525 A	6/1998	Kralowetz et al.
5,553,160 A	9/1996	Dawson	5,771,340 A	6/1998	Nakazato et al.
5,557,551 A	9/1996	Craft	5,774,715 A	6/1998	Madany et al.
5,557,668 A	9/1996	Brady	5,778,411 A	7/1998	DeMoss et al.
5,557,749 A	9/1996	Norris	5,781,767 A	7/1998	Inoue et al.
5,561,421 A	10/1996	Smith et al.	5,784,572 A	7/1998	Rostoker et al.
5,561,824 A	10/1996	Carreiro et al.	5,784,631 A	7/1998	Wise
5,563,961 A	10/1996	Rynderman et al.	5,787,487 A	7/1998	Hashimoto et al.
5,574,952 A	11/1996	Brady et al.	5,794,229 A	8/1998	French et al.
5,574,953 A	11/1996	Rust et al.	5,796,864 A	8/1998	Callahan
5,576,953 A	11/1996	Hugentobler	5,799,110 A	8/1998	Israelsen et al.
5,577,248 A	11/1996	Chambers, IV	5,805,834 A	9/1998	McKinley et al.
5,581,715 A	12/1996	Verinsky et al.	5,805,932 A	9/1998	Kawashima et al.
5,583,500 A	12/1996	Allen et al.	5,807,036 A	9/1998	Lostlen
5,586,264 A	12/1996	Belknap et al.	5,808,660 A	9/1998	Sekine et al.
5,586,285 A	12/1996	Hasbun et al.	5,809,176 A	9/1998	Yajima
5,590,306 A	12/1996	Watanabe et al.	5,809,299 A	9/1998	Cloutier et al.
5,596,674 A	1/1997	Bhandari et al.	5,809,337 A	9/1998	Hannah et al.
5,598,388 A	1/1997	Van Maren et al.	5,812,195 A	9/1998	Zhang
5,604,824 A	2/1997	Chui et al.	5,812,789 A	9/1998	Diaz et al.
5,606,706 A	2/1997	Takamoto et al.	5,812,883 A *	9/1998	Rao 710/74
5,610,657 A	3/1997	Zhang	5,818,368 A	10/1998	Langley
5,611,024 A	3/1997	Campbell et al.	5,818,369 A	10/1998	Withers
5,612,788 A	3/1997	Stone	5,818,530 A	10/1998	Canfield et al.
5,613,069 A	3/1997	Walker	5,819,215 A	10/1998	Dobson et al.
5,615,017 A	3/1997	Choi	5,822,781 A	10/1998	Wells et al.
5,615,287 A	3/1997	Fu et al.	5,825,424 A	10/1998	Canfield et al.
5,619,995 A	4/1997	Lobodzinski	5,825,830 A	10/1998	Kopf
5,621,820 A	4/1997	Rynderman et al.	5,832,037 A	11/1998	Park
5,623,623 A	4/1997	Kim et al.	5,832,126 A	11/1998	Tanaka
5,623,701 A	4/1997	Bakke et al.	5,832,443 A	11/1998	Kolesnik et al.
5,627,534 A	5/1997	Craft	5,835,788 A	11/1998	Blumer et al.
5,627,995 A	5/1997	Miller et al.	5,836,003 A	11/1998	Sadeh
5,629,732 A	5/1997	Moskowitz et al.	5,838,821 A	11/1998	Matsubara et al.
5,630,092 A	5/1997	Carreiro et al.	5,838,927 A	11/1998	Gillon
5,635,632 A	6/1997	Fay et al.	5,838,996 A	11/1998	deCarmo
5,635,932 A	6/1997	Shinagawa et al.	5,839,100 A	11/1998	Wegener
5,638,498 A	6/1997	Tyler et al.	5,841,979 A	11/1998	Schulhof et al.
5,640,158 A	6/1997	Okayama et al.	5,847,762 A	12/1998	Canfield et al.
5,642,506 A	6/1997	Lee	5,850,565 A	12/1998	Wightman
5,649,032 A	7/1997	Burt et al.	5,856,797 A	1/1999	Kawauchi
5,652,795 A	7/1997	Dillon et al.	5,861,824 A	1/1999	Ryu et al.
5,652,857 A	7/1997	Shimoi et al.	5,861,920 A	1/1999	Mead et al.
5,652,917 A	7/1997	Maupin et al.	5,864,342 A	1/1999	Kajjija et al.
5,654,703 A	8/1997	Clark, II	5,864,678 A	1/1999	Riddle
5,655,138 A	8/1997	Kikinis	5,867,167 A	2/1999	Deering
5,666,560 A	9/1997	Moertl et al.	5,867,602 A	2/1999	Zandi et al.
5,668,737 A	9/1997	Iler	5,870,036 A	2/1999	Franaszek et al.
5,671,355 A	9/1997	Collins	5,870,087 A	2/1999	Chau
5,671,389 A	9/1997	Saliba	5,872,530 A	2/1999	Domyo et al.
5,671,413 A	9/1997	Shipman et al.	5,874,907 A	2/1999	Craft
5,673,370 A	9/1997	Laney	5,881,104 A	3/1999	Akahane
5,675,333 A	10/1997	Boursier et al.	5,883,975 A	3/1999	Narita et al.
5,675,789 A	10/1997	Ishii et al.	5,884,269 A	3/1999	Cellier et al.
5,686,916 A	11/1997	Bakhtmutsky	5,886,655 A	3/1999	Rust
5,692,159 A	11/1997	Shand	5,887,165 A	3/1999	Martel et al.
5,694,619 A	12/1997	Konno	5,889,961 A	3/1999	Dobbek
5,696,927 A	12/1997	MacDonald et al.	5,892,847 A	4/1999	Johnson
5,703,793 A	12/1997	Wise et al.	5,901,278 A *	5/1999	Kurihara et al. 358/1.15
5,708,511 A	1/1998	Gandhi et al.	5,907,801 A	5/1999	Albert et al.
5,715,477 A	2/1998	Kikinis	5,909,557 A	6/1999	Betker et al.
5,717,393 A	2/1998	Nakano et al.	5,909,559 A	6/1999	So
5,717,394 A	2/1998	Schwartz et al.	5,915,079 A	6/1999	Vondran, Jr. et al.
5,719,862 A	2/1998	Lee et al.	5,917,438 A	6/1999	Ando
5,721,958 A	2/1998	Kikinis	5,918,068 A	6/1999	Shafe
			5,918,225 A	6/1999	White et al.
			5,920,326 A	7/1999	Rentschler et al.
			5,923,860 A	7/1999	Olarig
			5,930,358 A	7/1999	Rao

(56)

References Cited

U.S. PATENT DOCUMENTS

5,936,616	A	8/1999	Torborg, Jr. et al.	6,192,082	B1	2/2001	Moriarty et al.
5,938,737	A	8/1999	Smallcomb et al.	6,192,155	B1	2/2001	Fan
5,943,692	A	8/1999	Marberg	6,195,024	B1	2/2001	Fallon
5,945,933	A	8/1999	Kalkstein	6,195,125	B1	2/2001	Udagawa et al.
5,949,355	A	9/1999	Panaoussis	6,195,391	B1	2/2001	Hancock et al.
5,949,968	A	9/1999	Gentile	6,195,465	B1	2/2001	Zandi et al.
5,951,623	A	9/1999	Reynar et al.	6,198,842	B1	3/2001	Yeo
5,955,976	A	9/1999	Heath	6,198,850	B1	3/2001	Banton
5,956,490	A	9/1999	Buchholz et al.	6,208,273	B1	3/2001	Dye et al.
5,960,465	A	9/1999	Adams	6,215,904	B1	4/2001	Lavallee
5,964,842	A	10/1999	Packard	6,216,157	B1 *	4/2001	Vishwanath et al. 709/208
5,968,149	A	10/1999	Jaquette et al.	6,219,754	B1	4/2001	Belt et al.
5,969,927	A	10/1999	Schirmer et al.	6,222,886	B1	4/2001	Yogeshwar
5,973,630	A	10/1999	Heath	6,225,922	B1	5/2001	Norton
5,974,235	A	10/1999	Nunally et al.	6,226,667	B1	5/2001	Matthews et al.
5,974,387	A	10/1999	Kageyama	6,226,740	B1	5/2001	Iga
5,974,471	A	10/1999	Belt	6,230,223	B1	5/2001	Olarig
5,978,483	A	11/1999	Thompson, Jr. et al.	6,237,054	B1	5/2001	Freitag, Jr.
5,982,360	A	11/1999	Wu et al.	6,243,829	B1	6/2001	Chan
5,982,723	A	11/1999	Kamatani	6,253,264	B1	6/2001	Sebastian
5,982,937	A	11/1999	Accad	6,257,693	B1 *	7/2001	Miller et al. 347/19
5,987,022	A	11/1999	Geiger et al.	6,272,178	B1	8/2001	Nieweglowski et al.
5,987,432	A	11/1999	Zusman et al.	6,272,627	B1	8/2001	Mann
5,987,590	A	11/1999	Wing So	6,272,628	B1	8/2001	Aguilar et al.
5,990,884	A	11/1999	Douma et al.	6,282,641	B1	8/2001	Christensen
5,991,515	A	11/1999	Fall et al.	6,285,458	B1	9/2001	Yada
5,996,033	A	11/1999	Chiu-Hao	6,298,408	B1	10/2001	Park
6,000,009	A	12/1999	Brady	6,308,311	B1	10/2001	Carmichael et al.
6,002,411	A	12/1999	Dye	6,309,424	B1	10/2001	Fallon
6,003,115	A	12/1999	Spear et al.	6,310,563	B1	10/2001	Har et al.
6,008,743	A	12/1999	Jaquette	6,317,714	B1	11/2001	Del Castillo et al.
6,009,491	A	12/1999	Roppel et al.	6,317,818	B1	11/2001	Zwieginzew et al.
6,011,901	A	1/2000	Kirsten	6,330,622	B1	12/2001	Schaefer
6,014,694	A	1/2000	Aharoni et al.	6,333,745	B1	12/2001	Shimomura et al.
6,021,433	A	2/2000	Payne	6,336,153	B1	1/2002	Izumida et al.
6,023,755	A	2/2000	Casselman	6,345,307	B1	2/2002	Booth
6,026,217	A	2/2000	Adiletta	6,356,589	B1	3/2002	Gebler et al.
6,028,725	A	2/2000	Blumenau	6,356,937	B1	3/2002	Montville et al.
6,031,939	A	2/2000	Gilbert et al.	6,374,353	B1	4/2002	Settsu et al.
6,032,148	A	2/2000	Wilkes	6,388,584	B1	5/2002	Dorward et al.
6,032,197	A	2/2000	Birdwell et al.	6,392,567	B2	5/2002	Satoh
6,038,346	A	3/2000	Ratnakar	6,404,931	B1	6/2002	Chen et al.
6,057,790	A	5/2000	Igata et al.	6,421,387	B1	7/2002	Rhee
6,058,459	A	5/2000	Owen et al.	6,434,168	B1	8/2002	Kari
6,061,398	A	5/2000	Satoh et al.	6,434,695	B1	8/2002	Esfahani et al.
6,061,473	A	5/2000	Chen et al.	6,442,659	B1	8/2002	Blumenau
6,070,179	A	5/2000	Craft	6,449,658	B1	9/2002	Lafe et al.
6,073,232	A	6/2000	Kroeker et al.	6,449,682	B1	9/2002	Toorians
6,075,470	A	6/2000	Little et al.	6,452,602	B1	9/2002	Morein
6,078,958	A	6/2000	Echeita et al.	6,452,933	B1	9/2002	Duffield et al.
6,091,777	A	7/2000	Guetz et al.	6,459,429	B1	10/2002	Deering
6,092,123	A	7/2000	Steffan et al.	6,463,509	B1	10/2002	Teoman et al.
6,094,634	A	7/2000	Yahagi et al.	6,487,640	B1	11/2002	Lipasti
6,097,520	A	8/2000	Kadnier	6,489,902	B2	12/2002	Heath
6,097,845	A	8/2000	Ng et al.	6,505,239	B1	1/2003	Kobata
6,098,114	A	8/2000	McDonald et al.	6,513,113	B1	1/2003	Kobayashi
6,104,389	A	8/2000	Ando	6,523,102	B1	2/2003	Dye et al.
6,105,130	A	8/2000	Wu et al.	6,526,174	B1	2/2003	Graffagnino
6,115,384	A	9/2000	Parzych	6,529,633	B1	3/2003	Easwar et al.
6,128,412	A	10/2000	Satoh	6,532,121	B1	3/2003	Rust et al.
6,134,631	A	10/2000	Jennings, III	6,539,438	B1	3/2003	Ledzius et al.
6,141,053	A	10/2000	Saukkonen	6,539,456	B2	3/2003	Stewart
6,145,020	A	11/2000	Barnett	6,542,644	B1	4/2003	Satoh
6,145,069	A	11/2000	Dye	6,577,254	B2	6/2003	Rasmussen
6,169,241	B1	1/2001	Shimizu	6,590,609	B1	7/2003	Kitade et al.
6,170,007	B1	1/2001	Venkatraman et al.	6,597,812	B1	7/2003	Fallon et al.
6,170,047	B1	1/2001	Dye	6,601,104	B1	7/2003	Fallon
6,170,049	B1	1/2001	So	6,604,040	B2	8/2003	Kawasaki et al.
6,172,936	B1	1/2001	Kitazaki	6,604,158	B1	8/2003	Fallon
6,173,381	B1	1/2001	Dye	6,606,040	B2	8/2003	Abdat
6,175,650	B1	1/2001	Sindhu et al.	6,606,413	B1	8/2003	Zeineh
6,175,856	B1	1/2001	Riddle	6,609,223	B1	8/2003	Wolfgang
6,182,125	B1	1/2001	Borella et al.	6,618,728	B1	9/2003	Rail
6,185,625	B1	2/2001	Tso et al.	6,624,761	B2	9/2003	Fallon
6,185,659	B1	2/2001	Milillo et al.	6,633,244	B2	10/2003	Avery
				6,633,968	B2	10/2003	Zwieginzew et al.
				6,650,261	B2	11/2003	Nelson et al.
				6,661,839	B1	12/2003	Ishida et al.
				6,661,845	B1	12/2003	Herath

(56)

References Cited

U.S. PATENT DOCUMENTS

6,704,840	B2	3/2004	Nalawadi et al.		8,867,610	B2	10/2014	Fallon et al.
6,708,220	B1	3/2004	Olin		8,880,862	B2	11/2014	Fallon et al.
6,711,709	B1	3/2004	York		2001/0019630	A1	9/2001	Johnson
6,717,534	B2	4/2004	Yokose		2001/0031092	A1	10/2001	Zeck et al.
6,723,225	B2*	4/2004	Scheps	205/687	2001/0032128	A1	10/2001	Kepecs
6,731,814	B2	5/2004	Zeck et al.		2001/0047473	A1	11/2001	Fallon
6,735,195	B1	5/2004	Mehta		2001/0052038	A1	12/2001	Fallon et al.
6,745,282	B2	6/2004	Okada et al.		2001/0054131	A1	12/2001	Alvarez, II et al.
6,748,457	B2	6/2004	Fallon et al.		2002/0037035	A1	3/2002	Singh
6,756,922	B2	6/2004	Ossia		2002/0069354	A1	6/2002	Fallon et al.
6,768,749	B1	7/2004	Osler et al.		2002/0078241	A1	6/2002	Vidal et al.
6,792,151	B1*	9/2004	Barnes et al.	382/239	2002/0080871	A1	6/2002	Fallon et al.
6,810,434	B2	10/2004	Muthujumaraswathy et al.		2002/0097172	A1	7/2002	Fallon
6,813,689	B2	11/2004	Baxter, III		2002/0101367	A1	8/2002	Geiger et al.
6,819,271	B2	11/2004	Geiger et al.		2002/0104891	A1	8/2002	Otto
6,822,589	B1	11/2004	Dye et al.		2002/0126755	A1	9/2002	Li et al.
6,856,651	B2	2/2005	Singh		2002/0169950	A1	11/2002	Esfahani et al.
6,862,278	B1	3/2005	Chang et al.		2002/0191692	A1	12/2002	Fallon et al.
6,879,266	B1	4/2005	Dye et al.		2003/0030575	A1	2/2003	Frachtenberg et al.
6,885,316	B2	4/2005	Mehring		2003/0034905	A1	2/2003	Anton et al.
6,885,319	B2	4/2005	Geiger et al.		2003/0058873	A1	3/2003	Geiger et al.
6,888,893	B2	5/2005	Li et al.		2003/0084238	A1	5/2003	Okada et al.
6,909,383	B2	6/2005	Shokrollahi et al.		2003/0090397	A1	5/2003	Rasmussen
6,909,745	B1	6/2005	Puri et al.		2003/0142874	A1	7/2003	Schwartz
6,938,073	B1*	8/2005	Mendhekar et al.	709/217	2003/0191876	A1	10/2003	Fallon
6,944,740	B2	9/2005	Abali et al.		2004/0042506	A1	3/2004	Fallon et al.
6,952,409	B2	10/2005	Jolitz		2004/0056783	A1	3/2004	Fallon
6,959,110	B1*	10/2005	Danskin et al.	382/166	2004/0073710	A1	4/2004	Fallon
6,959,359	B1	10/2005	Suzuki et al.		2004/0073746	A1	4/2004	Fallon
6,963,608	B1	11/2005	Wu		2006/0015650	A1	1/2006	Fallon
6,990,247	B2	1/2006	Schwartz		2006/0181441	A1	8/2006	Fallon
6,993,597	B2	1/2006	Nakagawa et al.		2006/0181442	A1	8/2006	Fallon
7,007,099	B1	2/2006	Donati et al.		2006/0184687	A1	8/2006	Fallon
7,024,460	B2	4/2006	Koopmas		2006/0184696	A1	8/2006	Fallon
7,050,639	B1	5/2006	Barnes et al.		2006/0190644	A1	8/2006	Fallon
7,054,493	B2	5/2006	Schwartz		2006/0195601	A1	8/2006	Fallon
7,069,342	B1	6/2006	Biederman		2007/0043939	A1	2/2007	Fallon et al.
7,089,391	B2	8/2006	Geiger et al.		2007/0050514	A1	3/2007	Fallon
7,102,544	B1	9/2006	Liu		2007/0050515	A1	3/2007	Fallon
7,127,518	B2	10/2006	Vange et al.		2007/0067483	A1	3/2007	Fallon
7,129,860	B2	10/2006	Alvarez, II		2007/0083746	A1	4/2007	Fallon et al.
7,130,913	B2	10/2006	Fallon		2007/0096954	A1*	5/2007	Boldt et al. 341/50
7,161,506	B2	1/2007	Fallon		2007/0109154	A1	5/2007	Fallon
7,181,608	B2	2/2007	Fallon et al.		2007/0109155	A1	5/2007	Fallon
7,190,284	B1	3/2007	Dye et al.		2007/0109156	A1	5/2007	Fallon
7,245,636	B1*	7/2007	Hans et al.	370/474	2007/0174209	A1	7/2007	Fallon
7,319,667	B1	1/2008	Biederman		2008/0232457	A1	9/2008	Fallon et al.
7,321,937	B2	1/2008	Fallon		2009/0125698	A1	5/2009	Dye
RE40,092	E	2/2008	Kang		2009/0154545	A1	6/2009	Fallon et al.
7,327,287	B2	2/2008	Martinian et al.		2009/0287839	A1	11/2009	Fallon et al.
7,330,912	B1	2/2008	Fox et al.		2010/0011012	A1*	1/2010	Rawson 707/101
7,352,300	B2	4/2008	Fallon		2010/0316114	A1	12/2010	Fallon et al.
7,358,867	B2	4/2008	Fallon		2010/0318684	A1	12/2010	Fallon
7,376,772	B2	5/2008	Fallon		2010/0332700	A1	12/2010	Fallon
7,378,992	B2	5/2008	Fallon		2011/0037626	A1	2/2011	Fallon
7,386,046	B2	6/2008	Fallon et al.		2011/0199243	A1	8/2011	Fallon et al.
7,395,345	B2	7/2008	Fallon		2011/0208833	A1	8/2011	Fallon
7,400,274	B2	7/2008	Fallon et al.		2011/0231642	A1	9/2011	Fallon et al.
7,415,530	B2	8/2008	Fallon		2011/0235697	A1	9/2011	Fallon et al.
7,417,568	B2	8/2008	Fallon et al.		2011/0285559	A1	11/2011	Fallon
7,548,657	B2*	6/2009	Deaven	382/243	2012/0194362	A1	8/2012	Fallon et al.
7,552,069	B2	6/2009	Kepecs		2012/0239921	A1	9/2012	Fallon
7,565,441	B2	7/2009	Romanik et al.					
7,711,938	B2	5/2010	Wise et al.					
7,714,747	B2	5/2010	Fallon					
7,777,651	B2	8/2010	Fallon et al.					
8,004,431	B2	8/2011	Reznik					
8,054,879	B2	11/2011	Fallon et al.					
8,073,047	B2	12/2011	Fallon et al.					
8,090,936	B2	1/2012	Fallon et al.					
8,112,619	B2	2/2012	Fallon et al.					
8,275,897	B2	9/2012	Fallon					
8,502,707	B2	8/2013	Fallon					
8,504,710	B2	8/2013	Fallon					
8,553,759	B2	10/2013	Fallon et al.					

FOREIGN PATENT DOCUMENTS

EP	0 185098	6/1986
EP	0283798	9/1988
EP	0405572	1/1991
EP	0493130	7/1992
EP	0587437	3/1994
EP	0595406	5/1994
EP	0718751	6/1996
EP	0 928 070	A2 7/1999
GB	2162025	1/1986
JP	04-241681	8/1992
JP	6051989	2/1994
JP	9188009	7/1997
JP	11149376	6/1999
WO	WO 9414273	6/1994

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