



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

(10) **Patent No.:** **US 7,606,226 B2**
(45) **Date of Patent:** **Oct. 20, 2009**

(54) **MULTIMEDIA SERVICE PROVIDING
METHOD AND RADIO MOBILE
COMMUNICATION SYSTEM**

(75) Inventors: **Seung-June Yi**, Seoul (KR); **Young-Dae Lee**, Gyunggi-Do (KR); **So-Young Lee**, Gyunggi-Do (KR)

(73) Assignee: **LG Electronics Inc.**, Seoul (KR)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 918 days.

(21) Appl. No.: **10/601,191**

(22) Filed: **Jun. 23, 2003**

(65) **Prior Publication Data**

US 2004/0057387 A1 Mar. 25, 2004

(30) **Foreign Application Priority Data**

Jun. 22, 2002 (KR) 10-2002-0035179

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

(52) **U.S. Cl.** 370/390; 370/392

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

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,457,808 A	10/1995	Osawa et al.
5,459,725 A	10/1995	Bodner et al.
6,097,949 A	8/2000	Jung et al.
6,104,709 A	8/2000	Rinchuso et al.
6,252,868 B1	6/2001	Diachina et al.
6,252,874 B1	6/2001	Lee

6,684,081 B2 *	1/2004	Sarkkinen et al.	455/515
6,701,155 B2	3/2004	Sarkkinen et al.	
6,751,227 B1	6/2004	Ahmavaara et al.	
6,804,528 B1 *	10/2004	Laroia et al.	455/503
6,839,348 B2 *	1/2005	Tang et al.	370/390
6,839,565 B2 *	1/2005	Sarkkinen et al.	455/503
6,965,579 B1	11/2005	Shin	
6,965,580 B1 *	11/2005	Takagi et al.	370/312
7,415,046 B2	8/2006	Beckmann, et al.	
2001/0002757 A1	6/2001	Honda et al.	
2002/0080737 A1	6/2002	Koo et al.	

(Continued)

FOREIGN PATENT DOCUMENTS

DE 10107700 8/2002

(Continued)

OTHER PUBLICATIONS

"Digital cellular telecommunications system (Phase 2+)", ETSI Standards, European Telecommunications Standards Institute, Sophia-Antipo, FR, vol. 3-T2; SMG4, No. V740, Sep. 2000.

(Continued)

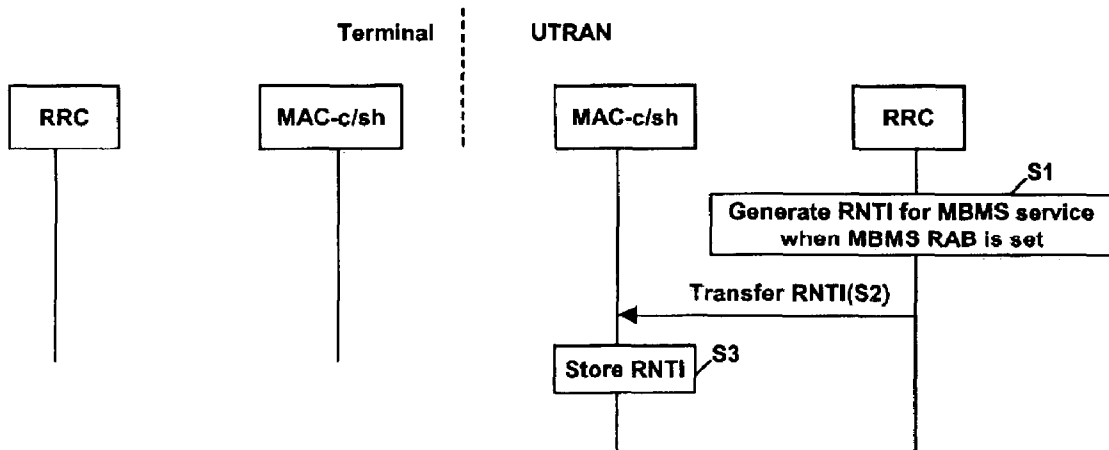
Primary Examiner—Michael J Moore, Jr.

(74) *Attorney, Agent, or Firm*—McKenna Long & Aldridge LLP

(57) **ABSTRACT**

A multimedia broadcast/multicast service (MBMS) in a universal mobile telecommunications system (UMTS) includes a UTRAN that provides an MBMS service. The MBMS service-related information is exchanged between the UTRAN and a terminal or between nodes in the UTRAN by using an MBMS identification so that a user group receiving MBMS data or a data of a specific MBMS service can be identified.

27 Claims, 8 Drawing Sheets



U.S. PATENT DOCUMENTS

2002/0124069	A1	9/2002	Hataikar
2003/0016698	A1	1/2003	Chang et al.
2003/0157949	A1	8/2003	Sarkkinen et al.
2003/0194992	A1	10/2003	Kim et al.
2003/0207696	A1	11/2003	Willenegger et al.
2004/0017809	A1	1/2004	Park
2004/0022218	A1	2/2004	Kim et al.
2004/0057387	A1	3/2004	Yi et al.
2004/0081192	A1	4/2004	Koulakiotis et al.
2004/0152473	A1	8/2004	Kuwano et al.
2004/0184471	A1	9/2004	Chuah et al.
2005/0076369	A1	4/2005	Cai et al.
2005/0193309	A1	9/2005	Grilli et al.
2006/0019641	A1	1/2006	Vayanos et al.
2006/0156370	A1	7/2006	Parantainen
2006/0168504	A1	7/2006	Meyer et al.
2006/0209870	A1	9/2006	Lee et al.

FOREIGN PATENT DOCUMENTS

EP	1 077 539	A1	2/2001
EP	1077539	A1	2/2001
EP	1148687		10/2001
IN	00548/KOLNP/2004	A	3/2006
IN	00911/KOLNP/2004	A	5/2006
IN	00546/KOLNP/2006	A	8/2007
JP	05-219056		8/1993
JP	07-283782		10/1995
JP	09-270790		10/1997
JP	11-252009		9/1999
JP	2000-138676		5/2000
JP	2000-358267		12/2000
JP	2001-053675		2/2001
JP	2001-128205		5/2001
JP	2001-298407		10/2001
JP	2001-308856		11/2001
JP	2002-064878		2/2002
JP	2002-539490		11/2002
JP	2003-060699		2/2003
JP	2005-512273		4/2005
KR	1019988024467		7/1998
KR	1019990037501		5/1999
KR	100224852		7/1999
KR	19990053163		7/1999
KR	100249503		12/1999
KR	1020000032645		6/2000
KR	1020000037821		7/2000
KR	1020000047263		7/2000
KR	1020010026301		4/2001
KR	1020020009282		2/2002
KR	1020020019314		3/2002
KR	1020020079453		10/2002

KR	1020030029310	4/2003
KR	2003-0069365 A	8/2003
KR	1020040064869	7/2004
KR	1020050014984	2/2005
WO	WO 99/44313	9/1999
WO	WO 00/54521	9/2000
WO	WO 2001/05158	1/2001
WO	WO 01/10146	2/2001
WO	WO 02/33937	4/2002
WO	WO 02/41531	5/2002
WO	WO 03/098871	11/2003
WO	WO 03/105353	12/2003
WO	WO 2004/017540	2/2004
WO	WO 2004/028041	4/2004
WO	WO 2004/028042	4/2004
WO	WO 2004/042964	5/2004
WO	WO 2005/013914	2/2005
WO	WO 2005/067194	7/2005

OTHER PUBLICATIONS

Harri Holma and Antti Toskala: "WCDMA for UMTS" WCDMA for UMTS: Radio Access for Third Generation Mobile Communications, Jun. 7, 2000, pp. 123-127.

"Multicasting in UMTS", Palat, S.K.; Weerasekera, I.N.; Casata, A., 3G Mobile Communication Technologies 2002 (Third International Conference on May 8-10, 2002, pp. 96-101.

LG Information & Communication, Ltd. Korea: "Definitions and Characteristics of Multicast Channels" TSG RAN Working Group 2 (Radio Layer 2 and Radio Layer 3), Mar. 8, 1999, -Mar. 11, 1999 XP002275698 Stockholm.

"3rd Generation Partnership Project, Technical Specification Group Services and System Aspects; Multimedia Broadcast/Multicast Service; Stage1 (Release 5); 3GPP Organizational Partners, published Mar. 2002, 3GPP TS 22.146 V5.2.0".

Holma, Harri, et al., "WCDMA for UMTS" WCDMA for UMTS: Radio Access for Third Generation Mobile Communications, p. 75-77, 123-127 and 135-151, Jun. 7, 2000.

LG Information & Communications, Ltd. Korea "Definitions and Characteristics of Multicast Channels Document for: Proposal of Multicast Channels" TSG-RAN Working Group 2 (Radio layer 2 and Radio layer 3); TSGR2#2(99)076; (Mar. 8-11, 1999 in Stockholm). 3rd Generation Partnership Project ; Technical Specification Group Services and System Aspects; Multimedia Broadcast/Multicast Service (MBMS); Architecture and Functional Description (Release 6), 3GPP TS 23.246 V6.1.0, Dec. 2003.

"Some Considerations on the L2 Design of the RB Carrying MBMS (update)," Phillips, 10.2.1, TSG-RAN Working Group 2 (Radio Layer 2 and Radio Layer 3), TSGR2#37(03)2146, Budapest, Hungary, Aug. 25-29, 2003.

WCDMA Technology and System Design, by Harri Holma & Antti Toskala, published by Mechanical Industry Press, Jan. 31, 2002.

* cited by examiner

FIG.1
BACKGROUND ART

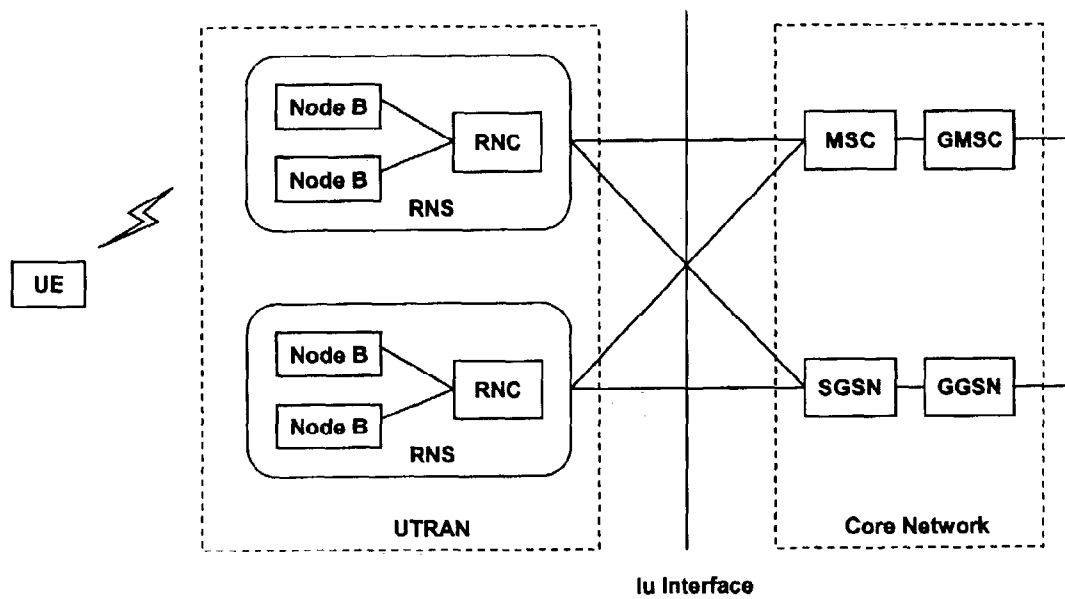


FIG.2
BACKGROUND ART

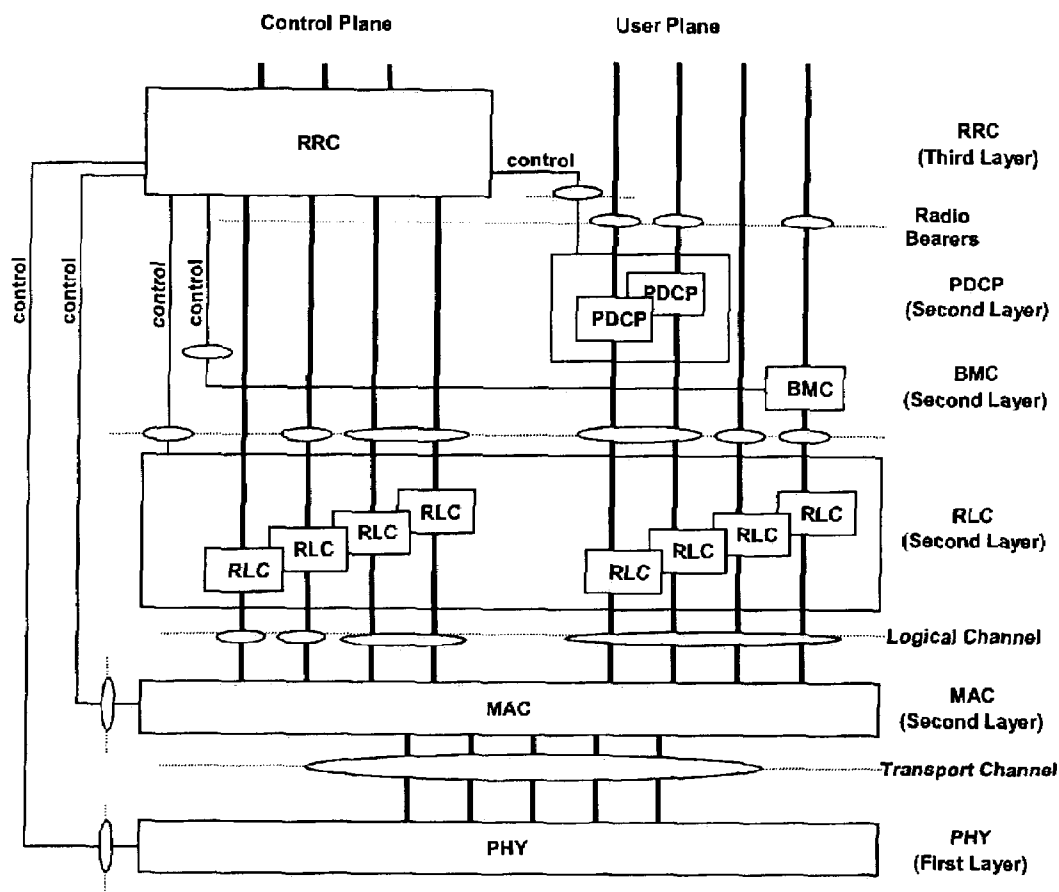


FIG.3

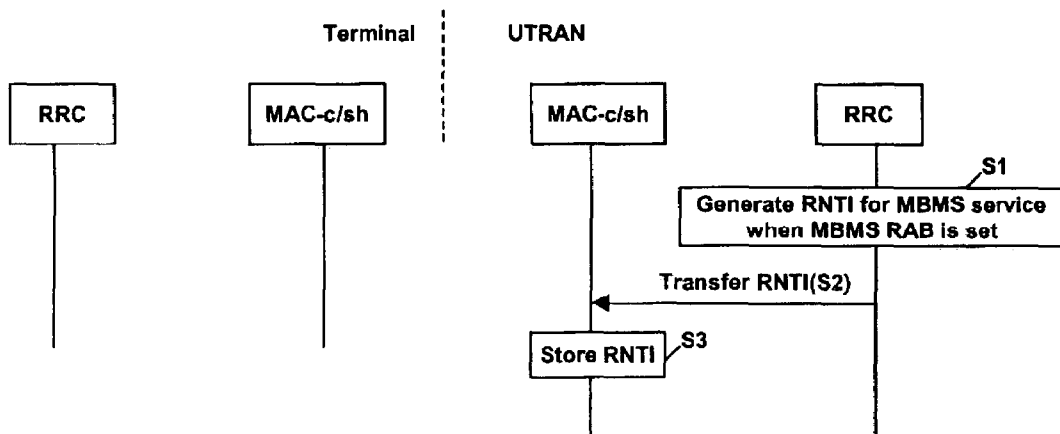
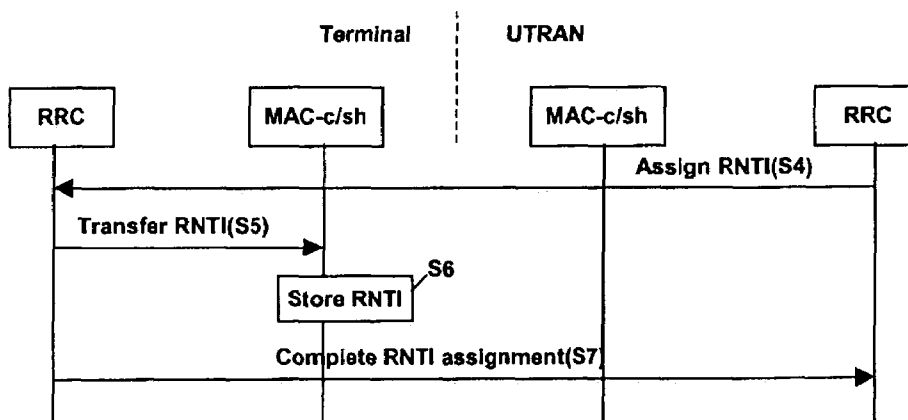


FIG.4



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.