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H04W 4/24 (2009.01) *H04M 7/00* (2006.01)
H04M 3/493 (2006.01) *H04M 7/12* (2006.01)
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- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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[Continued on next page]

(54) Title: METHOD AND APPARATUS FOR PROVIDING A USER WITH CHARGING-RELATED VOICE SERVICE

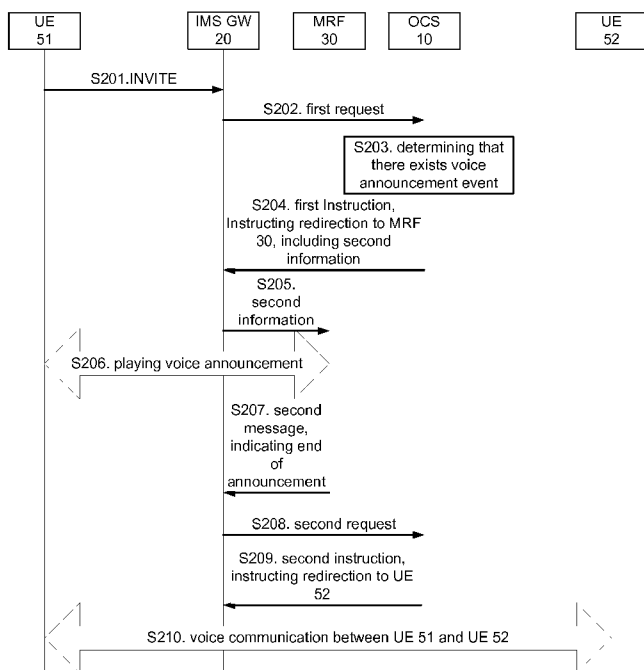


Fig.2

(57) Abstract: The present invention provides a ubiquitous solution for providing charge - related voice service such as voice announcement and interactive voice response in an IP multimedia subsystem. In particular, an online charging system (10) detects the subscriber account profile of a user terminal (51) to determine whether there is an event for providing an end user with voice announcement or interactive voice response (S203). If there is such voice announcement event or interactive voice response event, the online charging system (10) will enter "redirection state" and send an instruction (S204) to an online charging client (20) for instructing the online charging client (20) to redirect the user terminal to a first server (30) for providing voice announcement or interactive voice response such that the first server (30) provides the user terminal (51) with voice announcement or interactive voice response. The online charging client (20) may comprise network gateway, session initiation protocol application server or media resource function controller, etc.

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- *with international search report (Art. 21(3))*
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INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2012/000157

A. CLASSIFICATION OF SUBJECT MATTER
 INV. H04L12/14 H04W4/24
 ADD. H04M3/493 H04L29/06 H04M7/00 H04M7/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 H04L H04W

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2008/123603 A1 (CAI YIGANG [US] ET AL) 29 May 2008 (2008-05-29)	1,4-10
Y	the whole document	2,3,11, 12
X	----- CAI Y ET AL: "IP MULTIMEDIA SUBSYSTEM ONLINE SESSION CHARGING CALL CONTROL", BELL LABS TECHNICAL JOURNAL, WILEY, CA, US, vol. 4, no. 10, 1 January 2006 (2006-01-01), pages 117-132, XP001239291, ISSN: 1089-7089, DOI: 10.1002/BLTJ.20129	13
Y	the whole document	2,3
A	----- -/--	1,4-8

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search 12 September 2012	Date of mailing of the international search report 25/09/2012
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Fischer, Erik

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2012/000157

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	"Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; Telecommunication management; Charging management; IP Multimedia Subsystem (IMS) charging (3GPP TS 32.260 version 9.6.0 Release 9)", TECHNICAL SPECIFICATION, EUROPEAN TELECOMMUNICATIONS STANDARDS INSTITUTE (ETSI), 650, ROUTE DES LUCIOLES ; F-06921 SOPHIA-ANTIPOLIS ; FRANCE, vol. 3GPP SA 5, no. V9.6.0, 1 January 2011 (2011-01-01), XP014062044, cited in the application	1,6
Y	page 58, paragraph 5.3 IMS Online Charging	2,3
A	Scenarios - page 73, paragraph 5.3.2.3.2 Indication to UE of reason for IMS s. r.; figures 5.3.2.2.1.3.1-4	4,5,7,8

X	EP 1 780 939 A1 (HEWLETT PACKARD DEVELOPMENT CO [US]) 2 May 2007 (2007-05-02)	1-8,13
Y	page 3, paragraph 23 - page 4, paragraph 41; figure 1	2,3

Y	US 6 700 961 B1 (DACLOUSH ELIAS JOSEPH [US] ET AL) 2 March 2004 (2004-03-02)	2,3
A	column 2, line 43 - column 5, line 25; figures 1-3	1,4-8

X	US 2007/133575 A1 (CAI YIGANG [US] ET AL) 14 June 2007 (2007-06-14)	9-15
Y	page 1, paragraph 3 page 1, paragraph 15 - page 6, paragraph 69; figures 1-6	11,12

A	MELANCHUK T ET AL: "An Architectural Framework for Media Server Control; rfc5567.txt", AN ARCHITECTURAL FRAMEWORK FOR MEDIA SERVER CONTROL; RFC5567.TXT, INTERNET ENGINEERING TASK FORCE, IETF; STANDARD, INTERNET SOCIETY (ISOC) 4, RUE DES FALAISES CH- 1205 GENEVA, SWITZERLAND, 1 June 2009 (2009-06-01), XP015065599, [retrieved on 2009-06-10] page 3, paragraph 2. Terminology - page 11, paragraph 5.3. Advanced IVR Services; figures 1-3	9-11

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2012/000157

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2008123603	A1	29-05-2008	AT 506780 T 15-05-2011
			CN 101079832 A 28-11-2007
			EP 2030366 A1 04-03-2009
			JP 4958972 B2 20-06-2012
			JP 2009538569 A 05-11-2009
			KR 20090007764 A 20-01-2009
			US 2008123603 A1 29-05-2008

EP 1780939	A1	02-05-2007	NONE

US 6700961	B1	02-03-2004	NONE

US 2007133575	A1	14-06-2007	NONE

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2012/000157

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.

3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-8

Methods for an online charging system and an online charging client to provide a user with charging-related voice services in an IP multimedia subsystem. The online charging system detects an event of providing the user with the voice service and sends an instruction to the online charging client to redirect the user to a server (media resource function device or interactive voice response device) for providing the voice service.

2. claims: 9-12

Methods for a media resource function device of an IP multimedia subsystem, the media resource function device receiving an instruction to perform a voice announcement.

3. claims: 13-15

Methods for an interactive voice response device of an IP multimedia subsystem, the interactive voice response device receiving an instruction to perform an interactive voice response.
