

(43) International Publication Date
24 February 2005 (24.02.2005)

PCT

(10) International Publication Number
WO 2005/018241 A3(51) International Patent Classification⁷: **H04L 1/18**,
H04Q 7/38, H04L 12/56(DE). **PETROVIC, Dragan** [YU/DE]; Am Kaiserschlag
15, 64295 Darmstadt (DE).(21) International Application Number:
PCT/EP2004/006559(74) Agent: **KUHL, Dietmar**; Grünecker, Kinkeldey, Stock-
mair & Schwanhäusser, Maximilianstrasse 58, 80538
München (DE).

(22) International Filing Date: 17 June 2004 (17.06.2004)

(25) Filing Language: English

(26) Publication Language: English

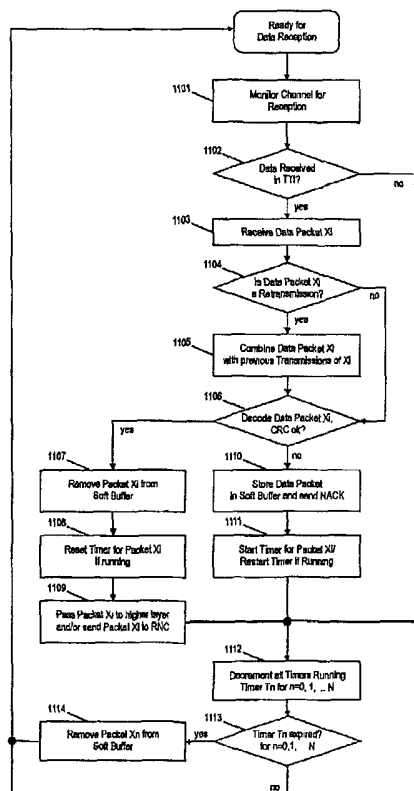
(30) Priority Data:
EP03018470.9 14 August 2003 (14.08.2003) EP(71) Applicant (for all designated States except US): **MAT-
SUSHITA ELECTRIC INDUSTRIAL CO., LTD.**
[JP/JP]; 1006, Oaza Kadoma,, Kadoma-shi,, Osaka
571-8501 (JP).(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SEIDEL, Eiko**
[DE/DE]; Moosbergstrasse 97 a-b, 64285 Darmstadt (DE).
LÖHR, Joachim [DE/DE]; Soderstr.90, 64287 Darmstadt(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

[Continued on next page]

(54) Title: TIME MONITORING OF PACKET RETRANSMISSIONS DURING SOFT HANDOVER



(57) Abstract: The present invention relates to a method for scheduling data retransmissions, a method for use in a data retransmission scheme and a method for updating a soft buffer of a base station in a mobile communication system during a soft-handover. The present invention relates to a base station executing the controlling and updating method, a communication terminal for executing the scheduling method and to a mobile communication system comprising at least one the base station and communication terminal. To prevent erroneous combining of data packets in a packet retransmission scheme at the receiver, the present invention provides a method that may flush the soft buffer region associated to a received data packet upon its correct reception. Further, a method is provided that monitors the time elapsed since the last storing of a data packet in a buffer region of a base station to be able to trigger the flush of the buffer region upon expiry of a threshold time period.



European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(88) Date of publication of the international search report:

14 July 2005

Published:

- *with international search report*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP2004/006559

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04L1/18 H04Q7/38 H04L12/56

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)

IPC 7 H04L H04Q

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 practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 02/37872 A (MOTOROLA INC) 10 May 2002 (2002-05-10) page 5, line 10 - line 12 page 6, line 21 - line 23 page 7, line 8 - line 11 page 7, line 15 - line 20 page 8, line 1 - line 15 page 9, line 8 - line 13 page 9, lines 19-21 page 10, line 16 - line 22 -----	1-5, 8, 9, 15-20, 26
A	US 2002/019965 A1 (GHIRNIKAR AVINASH ET AL) 14 February 2002 (2002-02-14) paragraph [0009] paragraph [0012] paragraph [0021] - paragraph [0022] paragraph [0026] paragraph [0053] paragraph [0061] -----	1-9, 15-20, 26

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in 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 document 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

26 January 2005

Date of mailing of the international search report

17.05.2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Bernedo Azpiri, P

INTERNATIONAL SEARCH REPORT

International application No.
PCT/EP2004/006559

Box 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 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 fee, this Authority did not invite payment of any additional fee.
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.:
1-9, 15-20, 26

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ 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: 1-9,15-20,26

Restarting the monitoring timer on reception of a new data packet

2. claims: 10-14,23-25

Configuration of the timer.

3. claims: 27-38

Timer controlled retransmission of data packets in a communications terminal.

4. claims: 21-22

Restarting the transmissions after the timer expires.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/006559

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
WO 0237872	A	10-05-2002	US 6678523 B1	13-01-2004
			AU 1306802 A	15-05-2002
			CN 1473410 A	04-02-2004
			EP 1336269 A2	20-08-2003
			JP 2004519122 T	24-06-2004
			WO 0237872 A2	10-05-2002

US 2002019965	A1	14-02-2002	NONE	
