PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) **International Patent Classification** 6 :
H04B 1/66, H04M 11/06

A3

(11) **International Publication Number:** **WO 99/13608**

(43) **International Publication Date:** 18 March 1999 (18.03.99)

(21) **International Application Number:** PCT/IB98/01242

(22) **International Filing Date:** 12 August 1998 (12.08.98)

(30) **Priority Data:**

97402107.3	10 September 1997 (10.09.97)	EP
97402172.7	18 September 1997 (18.09.97)	EP

(71) **Applicant:** KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL–5621 BA Eindhoven (NL).

(71) **Applicant** *(for SE only)*: PHILIPS AB [SE/SE]; Kottbygatan 7, Kista, S–164 85 Stockholm (SE).

(72) **Inventor:** RAPELI, Juha; Prof. Holstlaan 6, NL–5656 AA Eindhoven (NL).

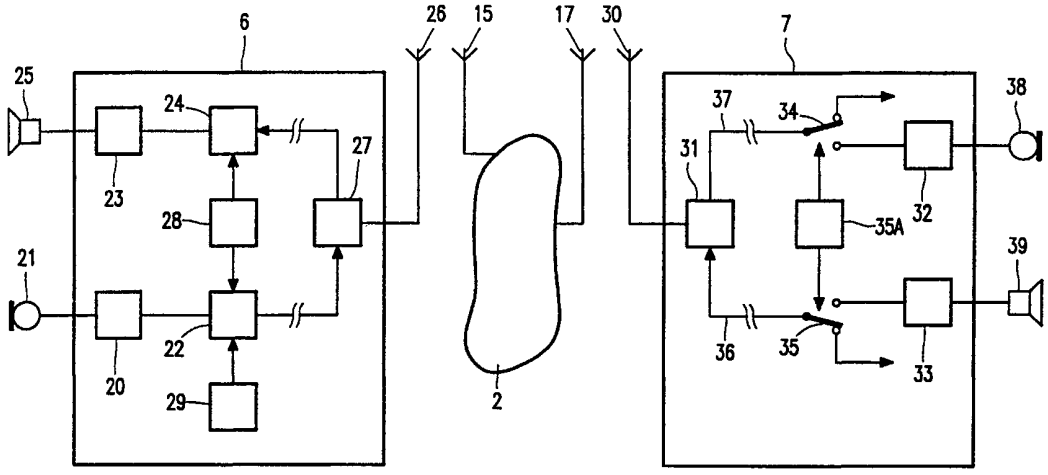
(74) **Agent:** MAK, Theodorus, N.; Internationaal Octrooibureau B.V., P.O. Box 220, NL–5600 AE Eindhoven (NL).

(81) **Designated States:** CN, JP, KR, SG, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

Published
With international search report.
Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(88) **Date of publication of the international search report:**
3 June 1999 (03.06.99)

(54) **Title:** A COMMUNICATION SYSTEM AND A TERMINAL HAVING SPEECH ENCODING AND DECODING MEANS



(57) **Abstract**

Known is a communication system such as a cellular mobile radio system comprising a cellar network and a plurality of terminals. The system can have multi–rate codecs. These days, apart from a basic service such as full duplex or semi–duplex speech communication, such systems offer services as voice mail, voice messaging, or the like. In order to make more efficient use of system resources, in particular radio resources, for one–way voice communication, it is proposed to set the multi–rate codecs at a lower bit rate than for a two–way voice communication. Establishing whether a communication is a one–way voice communication can either be done a priori or dynamically. Use is made of the insight that a longer terminal–to–terminal delay can be applied for such a one–way communication because no echo cancelling has to be done in that case. For full flexibility, an asymmetric encoding and decoding can be applied.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	**ES**	Spain	**LS**	Lesotho	**SI**	Slovenia
AM	Armenia	**FI**	Finland	**LT**	Lithuania	**SK**	Slovakia
AT	Austria	**FR**	France	**LU**	Luxembourg	**SN**	Senegal
AU	Australia	**GA**	Gabon	**LV**	Latvia	**SZ**	Swaziland
AZ	Azerbaijan	**GB**	United Kingdom	**MC**	Monaco	**TD**	Chad
BA	Bosnia and Herzegovina	**GE**	Georgia	**MD**	Republic of Moldova	**TG**	Togo
BB	Barbados	**GH**	Ghana	**MG**	Madagascar	**TJ**	Tajikistan
BE	Belgium	**GN**	Guinea	**MK**	The former Yugoslav Republic of Macedonia	**TM**	Turkmenistan
BF	Burkina Faso	**GR**	Greece			**TR**	Turkey
BG	Bulgaria	**HU**	Hungary	**ML**	Mali	**TT**	Trinidad and Tobago
BJ	Benin	**IE**	Ireland	**MN**	Mongolia	**UA**	Ukraine
BR	Brazil	**IL**	Israel	**MR**	Mauritania	**UG**	Uganda
BY	Belarus	**IS**	Iceland	**MW**	Malawi	**US**	United States of America
CA	Canada	**IT**	Italy	**MX**	Mexico	**UZ**	Uzbekistan
CF	Central African Republic	**JP**	Japan	**NE**	Niger	**VN**	Viet Nam
CG	Congo	**KE**	Kenya	**NL**	Netherlands	**YU**	Yugoslavia
CH	Switzerland	**KG**	Kyrgyzstan	**NO**	Norway	**ZW**	Zimbabwe
CI	Côte d'Ivoire	**KP**	Democratic People's Republic of Korea	**NZ**	New Zealand		
CM	Cameroon			**PL**	Poland		
CN	China	**KR**	Republic of Korea	**PT**	Portugal		
CU	Cuba	**KZ**	Kazakstan	**RO**	Romania		
CZ	Czech Republic	**LC**	Saint Lucia	**RU**	Russian Federation		
DE	Germany	**LI**	Liechtenstein	**SD**	Sudan		
DK	Denmark	**LK**	Sri Lanka	**SE**	Sweden		
EE	Estonia	**LR**	Liberia	**SG**	Singapore		

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 98/01242

A. CLASSIFICATION OF SUBJECT MATTER

IPC6: H04B 1/66, H04M 11/06
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)

IPC6: H04B, H04M, H04Q

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

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EDOC, WPIL, JAPIO

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	IEEE Transactions on Consumer Electronics, Volume 35, No 4, November 1989, Lovrich A. L. et al, "A MULTI-RATE TRANSCODER", page 715 - page 722, ISSN 0098-3063 --	1-13
A	EP 0464839 A2 (FUJITSU LIMITED), 8 January 1992 (08.01.92) --	1-13

☐ 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" erlier document but published on or after the international filing date
"L" document which may throw douhts 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	Date of mailing of the international search report
13 April 1999	14 -04- 1999
Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer Patrik Rydman Telephone No. +46 8 782 25 00

INTERNATIONAL SEARCH REPORT

Information on patent family members

02/03/99

International application No.
PCT/IB 98/01242

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0464839 A2	08/01/92	AU 650665 B	30/06/94
		AU 8022991 A	09/01/92
		CA 2046369 A,C	06/01/92
		JP 2062328 C	24/06/96
		JP 4356832 A	10/12/92
		JP 7101864 B	01/11/95
		US 5436899 A	25/07/95