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[Continued on next page]

(54) **Title:** SYSTEM AND METHOD OF AN IN-BAND MODEM FOR DATA COMMUNICATIONS OVER DIGITAL WIRELESS COMMUNICATION NETWORKS

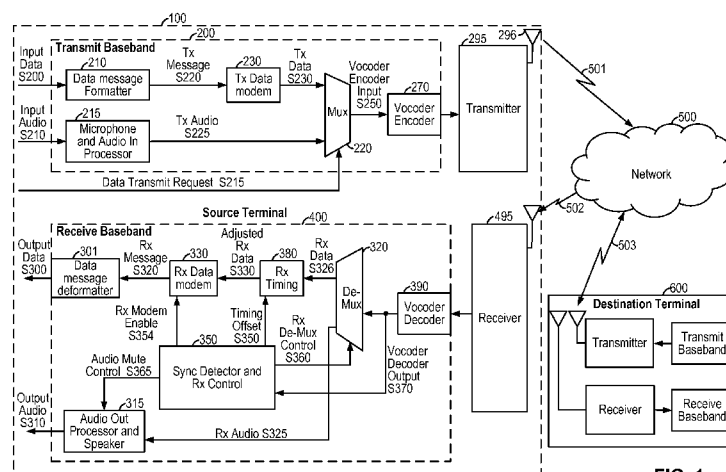


FIG. 1

(57) **Abstract:** A system is provided for transmitting information through a speech codec (inband) such as found in a wireless communication network. A modulator transforms the data into a spectrally noise-like signal based on the mapping of a shaped pulse to predetermined positions within a modulation frame, and the signal is efficiently encoded by a speech codec. A synchronization sequence provides modulation frame timing at the receiver and is detected based on analysis of a correlation peak pattern. A request/response protocol provides reliable transfer of data using message redundancy, retransmission, and/or robust modulation modes dependent on the communication channel conditions.

**Declarations under Rule 4.17:**

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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INTERNATIONAL SEARCH REPORT

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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

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, 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 6 690 681 B1 (PRESTON DAN A [US] ET AL) 10 February 2004 (2004-02-10) abstract figures 1,3,5,14 column 2, line 3 - line 5 column 3, line 9 - line 22 column 4, line 62 - line 67 column 5, line 27 - line 37 column 9, line 45 - line 54	1-14
A	WO 02/21757 A1 (NOKIA CORP [FI]; MALKAMAEKI ESA [FI]) 14 March 2002 (2002-03-14) abstract figures 2a,2b,2c page 8, line 16 - page 9, line 26 page 10, line 6 - line 25	1,7,13



Further documents are listed in the continuation of Box C.



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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

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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.

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INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6690681	B1	10-02-2004	NONE
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