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**Guy et al.**

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(54) **SYSTEM AND METHOD FOR RELIABILITY TRANSPORTING AURAL INFORMATION ACROSS A NETWORK**

(75) Inventors: **Kenneth R. Guy**, Thousand Oaks; **Jaswant R. Jain**, Chatsworth; **Ishwar V. Jajuja**, Simi Valley; **Michael W. Johnson**; **Albert Juandy**, both of Petaluma; **Simon S. Lam**, Agoura Hills; **Anthony Y. Lee**, Northridge; **David Misunas**, Thousand Oaks; **Jacques A. Roth**, San Rafael, all of CA (US)

(73) Assignee: **Nortel Networks Limited**, St. Laurent (CA)

(\* ) Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(52) **U.S. Cl.** ..... **370/389**; 370/466; 370/474; 714/746

(58) **Field of Search** ..... 370/359, 389, 370/401, 402, 403, 405, 419, 450, 466, 467, 473, 474, 477; 371/31, 30; 395/182.18; 348/466; 714/746, 747

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,630,262	*	12/1986	Callens et al.	370/435
4,726,019	*	2/1988	Adelmann et al.	370/474
4,866,704	*	9/1989	Bergmann	370/452
5,187,591		2/1993	Guy et al.	
5,341,374	*	8/1994	Lewen et al.	370/450

5,359,598	*	10/1994	Steagall et al.	370/359
5,394,407		2/1995	Coddington	371/37.1
5,426,652		6/1995	Heiman	371/30
5,459,741		10/1995	Iwamura	371/37.1
5,596,604		1/1997	Cioffi et al.	345/260
5,636,231		6/1997	Huang et al.	371/37.1
5,659,541	*	8/1997	Chan	370/236
5,699,485	*	12/1997	Shoham	395/2.32

**OTHER PUBLICATIONS**

Request for Comments (RFC) 2205, Resource ReSerVation Protocol—Version 1 Functional Specification, dated Sep. 1997.

\* cited by examiner

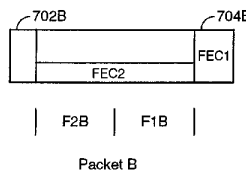
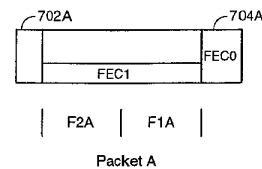
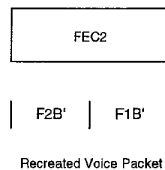
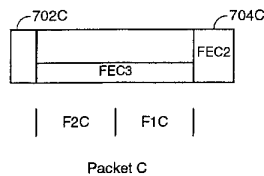
*Primary Examiner*—William Luther

(74) *Attorney, Agent, or Firm*—Trop, Pruner & Hu, P.C.

(57) **ABSTRACT**

A system and method for transparently transmitting aural signals across a wide area network (WAN). The system of present invention is connected to one or more of a private branch exchange, a key telephone system, a telephone, a facsimile machine, and a modem, for example. In the case of voice transmission, a user places a telephone call using the same procedure that is used when placing a telephone call over a conventional public switched network. The aural signals are translated into a format that is compatible with the local area network (LAN) and the translated signals are transmitted to a router or a switch that connects the LAN to the WAN. The data is transmitted across the WAN to a router or switch coupled to a second LAN. The data is then sent to a destination central site unit or PC which translates the signal into a format that is compatible with the telephone system connected thereto. The present invention provides a voice quality that approaches, equals, or exceeds the voice quality of conventional telephone switched networks. This high voice quality is achieved by utilizing a high quality voice digitization algorithm, by ensuring a low maximum network delay, by dynamically compensating for variations in network delay, and by using a forward error correction technique that can recreate lost or delayed signals in a manner that recreates the signal so the lost signal is typically not detectable by a user.

**36 Claims, 9 Drawing Sheets**



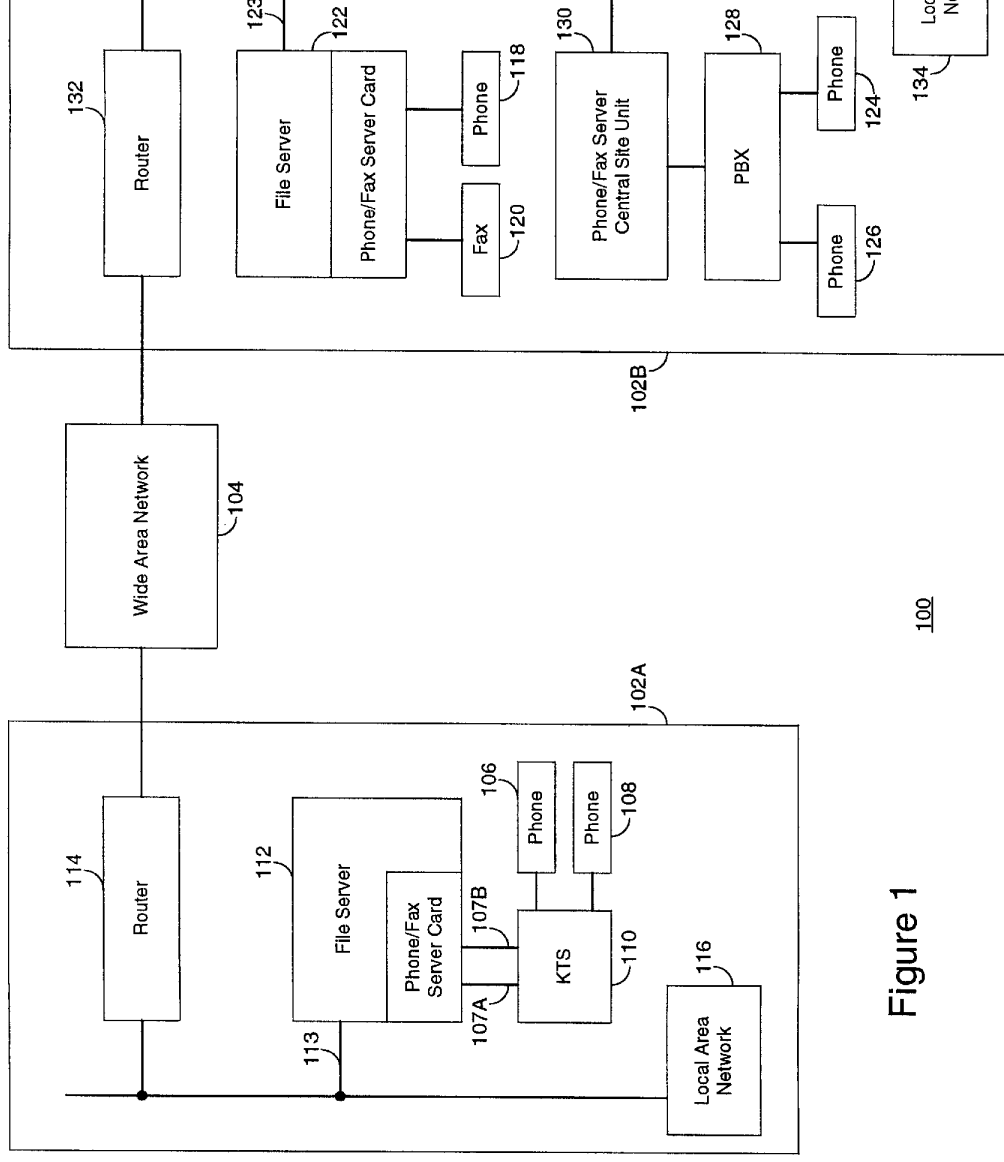


Figure 1

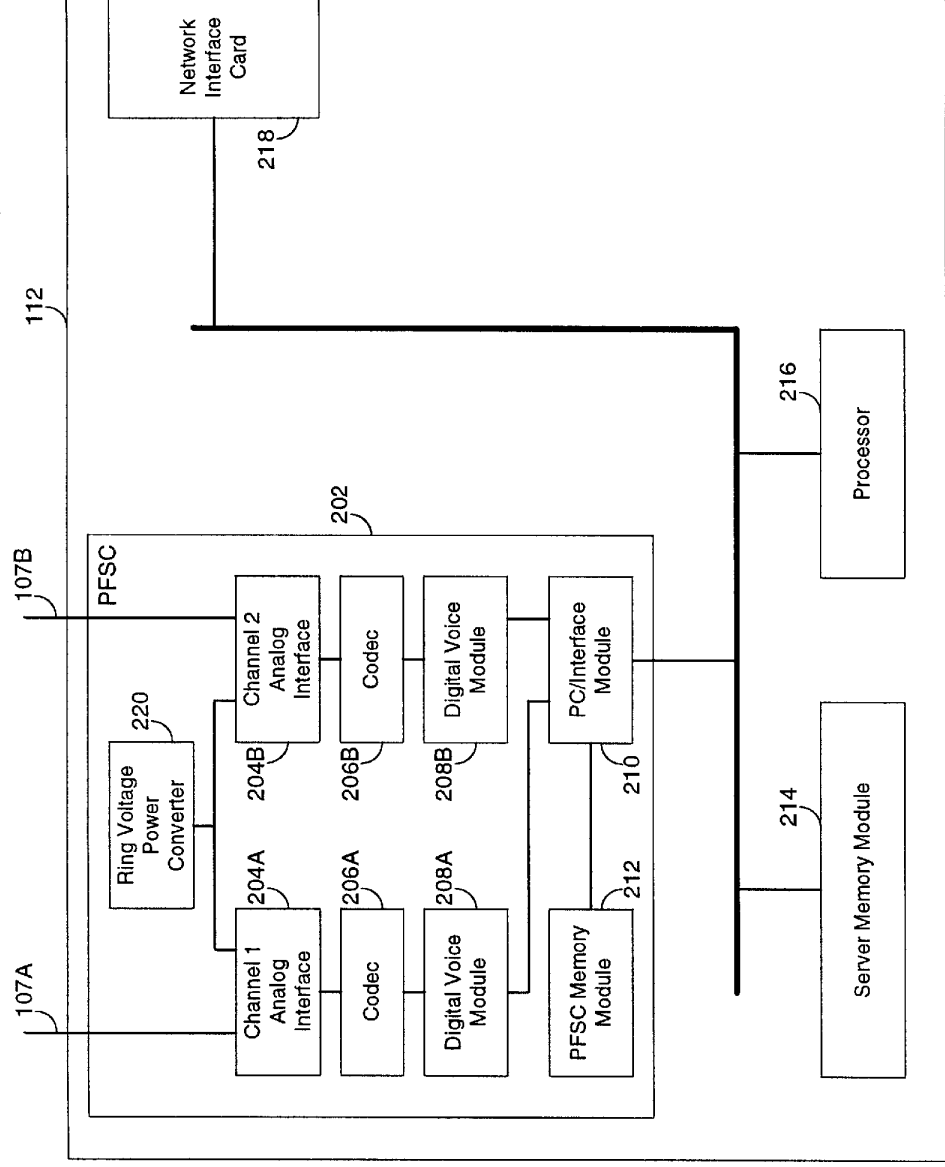


Figure 2

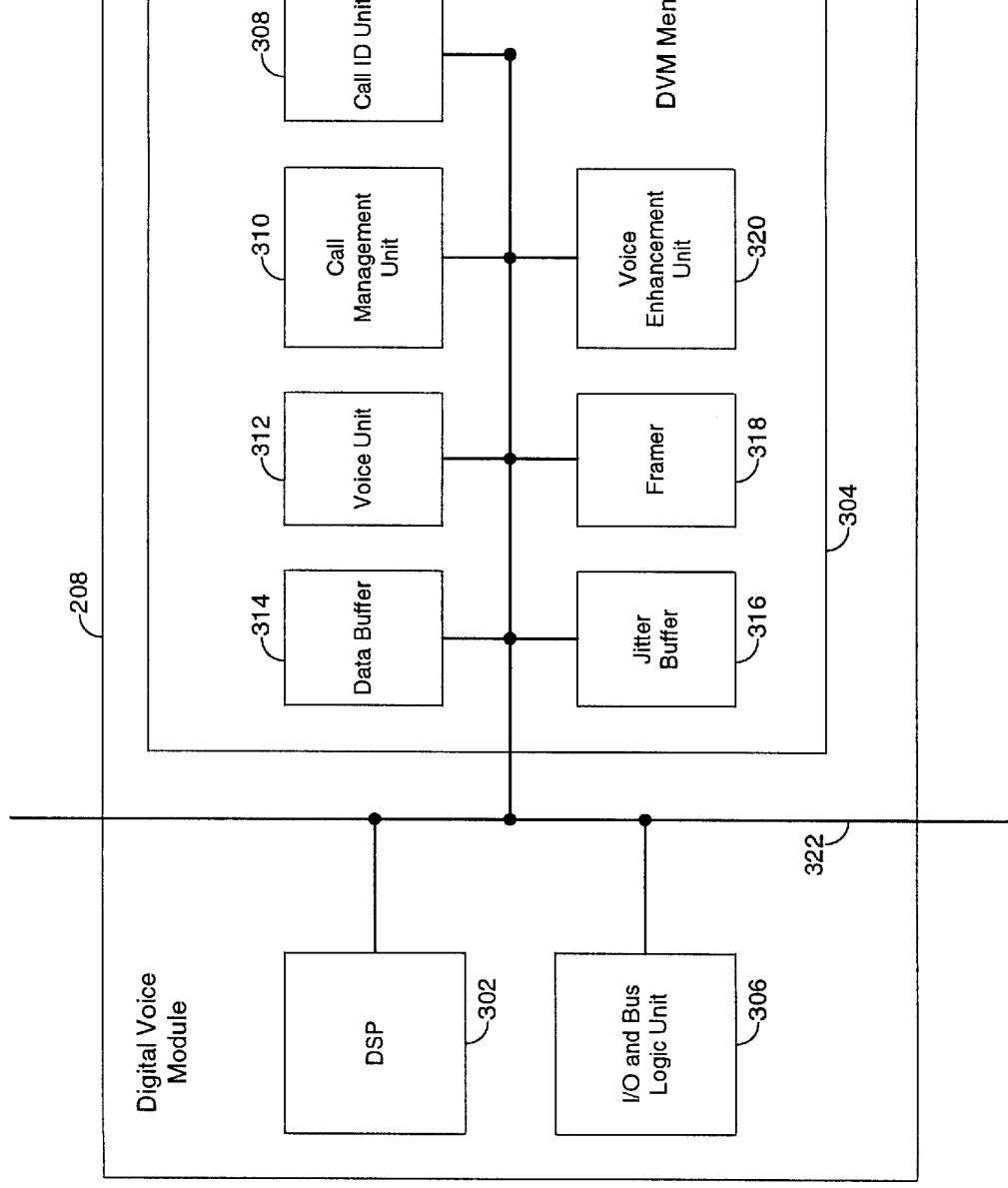


Figure 3

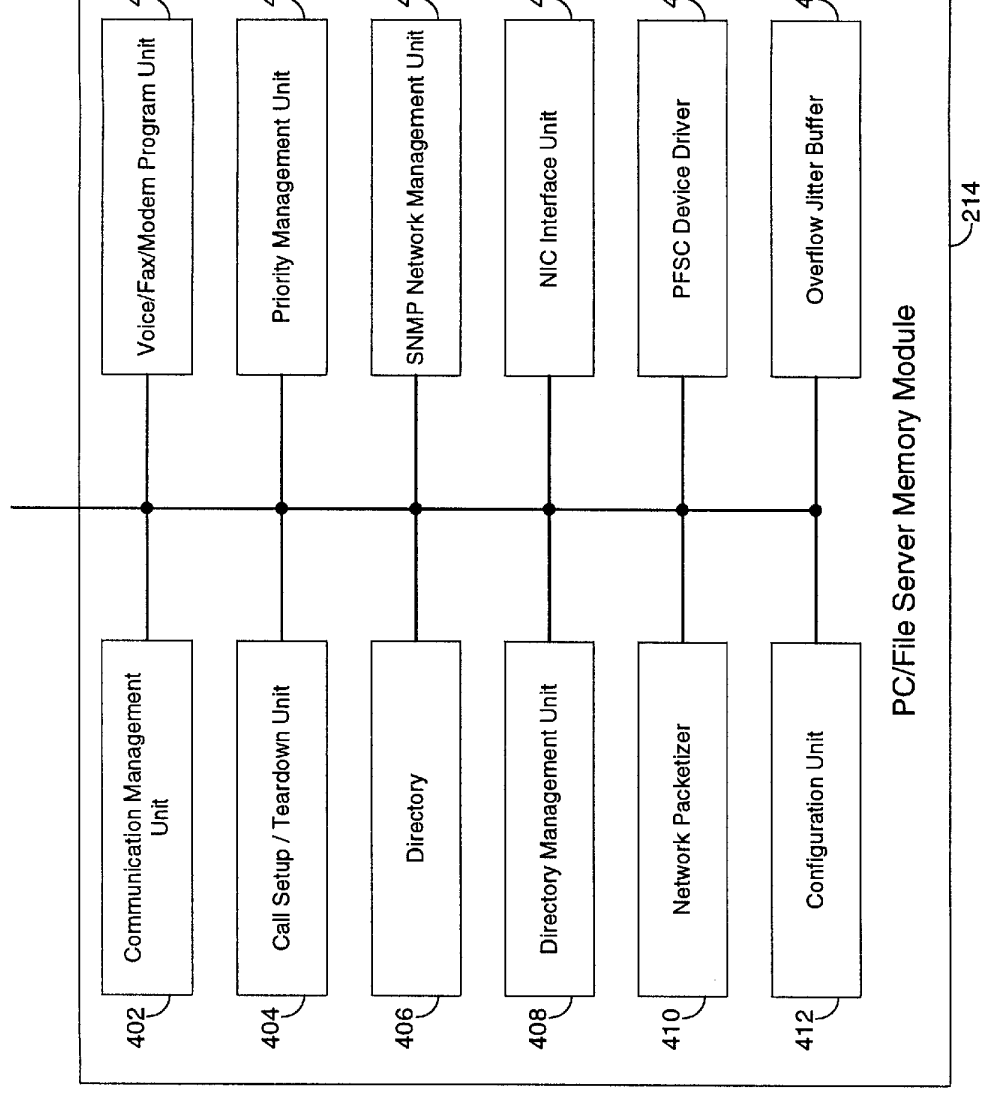


Figure 4

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