

(12) **United States Patent**
Johnson et al.

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(54) **PROMPT MANAGEMENT METHOD SUPPORTING MULTIPLE LANGUAGES IN A SYSTEM HAVING A MULTI-BUS STRUCTURE AND CONTROLLED BY REMOTELY GENERATED COMMANDS**

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(List continued on next page.)

Primary Examiner—Marsha D. Banks-Harold
Assistant Examiner—V. Paul Harper
(74) *Attorney, Agent, or Firm*—Loudermilk & Associates

(75) **Inventors:** **Christopher Sean Johnson**, San Jose, CA (US); **Scott K. Pickett**, Los Gatos, CA (US)

(57) **ABSTRACT**

(73) **Assignee:** **Vertical Networks, Inc.**, Sunnyvale, CA (US)

Systems and methods by which voice/data communications may occur in multiple modes/protocols are disclosed. In particular, systems and methods are provided for multiple native mode/protocol voice and data transmissions and receptions with a computing system having a multi-bus structure, including, for example, a TDM bus and a packet bus, and multi-protocol framing engines. Such systems preferably include subsystem functions such as PBX, voice mail and other telephony functions, LAN hub and data router. In preferred embodiments, a TDM bus and a packet bus are intelligently bridged and managed, thereby enabling such multiple mode/protocol voice and data transmissions to be intelligently managed and controlled with a single, integrated system. A computer or other processor includes a local area network controller, which provides routing and hub(s) for one or more packet networks. The computer also is coupled to a buffer/framer, which serves to frame/deframe data to/from the computer from TDM bus. The buffer/framer includes a plurality of framer/deframer engines, supporting, for example, ATM and HDLC framing/deframing. The buffer/framer is coupled to the TDM bus by way of a switch/multiplexer, which includes the capability to intelligently map data traffic between the buffer/framer and the TDM bus to various slots of the TDM frames. Preferably, a DSP pool is coupled to buffer/framer in a manner to provide various signal processing and telecommunications support, such as dial tone generation, DTMF detection and the like. The TDM bus is coupled to a various line/station cards, serving to interface the TDM bus with telephone, facsimiles and other telecommunication devices, and also with a various digital and/or analog WAN network services. Language support for such systems is accomplished by way of a program/data structure so that additional language support may be readily implemented, for example, by a non-software programmer using grammar and voice prompt files, which are preferably located in a predetermined directory in the system.

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

This patent is subject to a terminal disclaimer.

(21) **Appl. No.:** **09/369,038**

(22) **Filed:** **Aug. 4, 1999**

Related U.S. Application Data

(63) Continuation of application No. 10/325,763, filed on Dec. 18, 2002, which is a continuation of application No. 09/419,384, filed on Oct. 15, 1999, now Pat. No. 6,560,222, which is a continuation of application No. 09/167,408, filed on Oct. 6, 1998, now Pat. No. 6,154,465, which is a continuation-in-part of application No. 09/163,596, filed on Sep. 29, 1998, now Pat. No. 6,343,074, which is a continuation-in-part of application No. 09/161,550, filed on Sep. 25, 1998, now Pat. No. 6,208,658.

(51) **Int. Cl.⁷** **G10L 21/00; H04L 12/66**

(52) **U.S. Cl.** **704/277; 370/353**

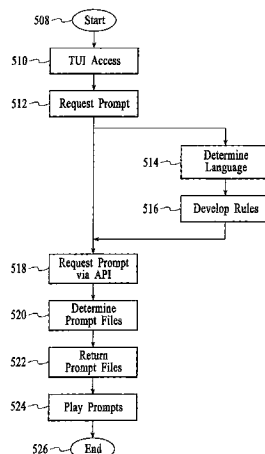
(58) **Field of Search** 379/88.05, 201.01, 379/266.07; 704/8, 275, 260, 256, 235, 2; 709/223, 206

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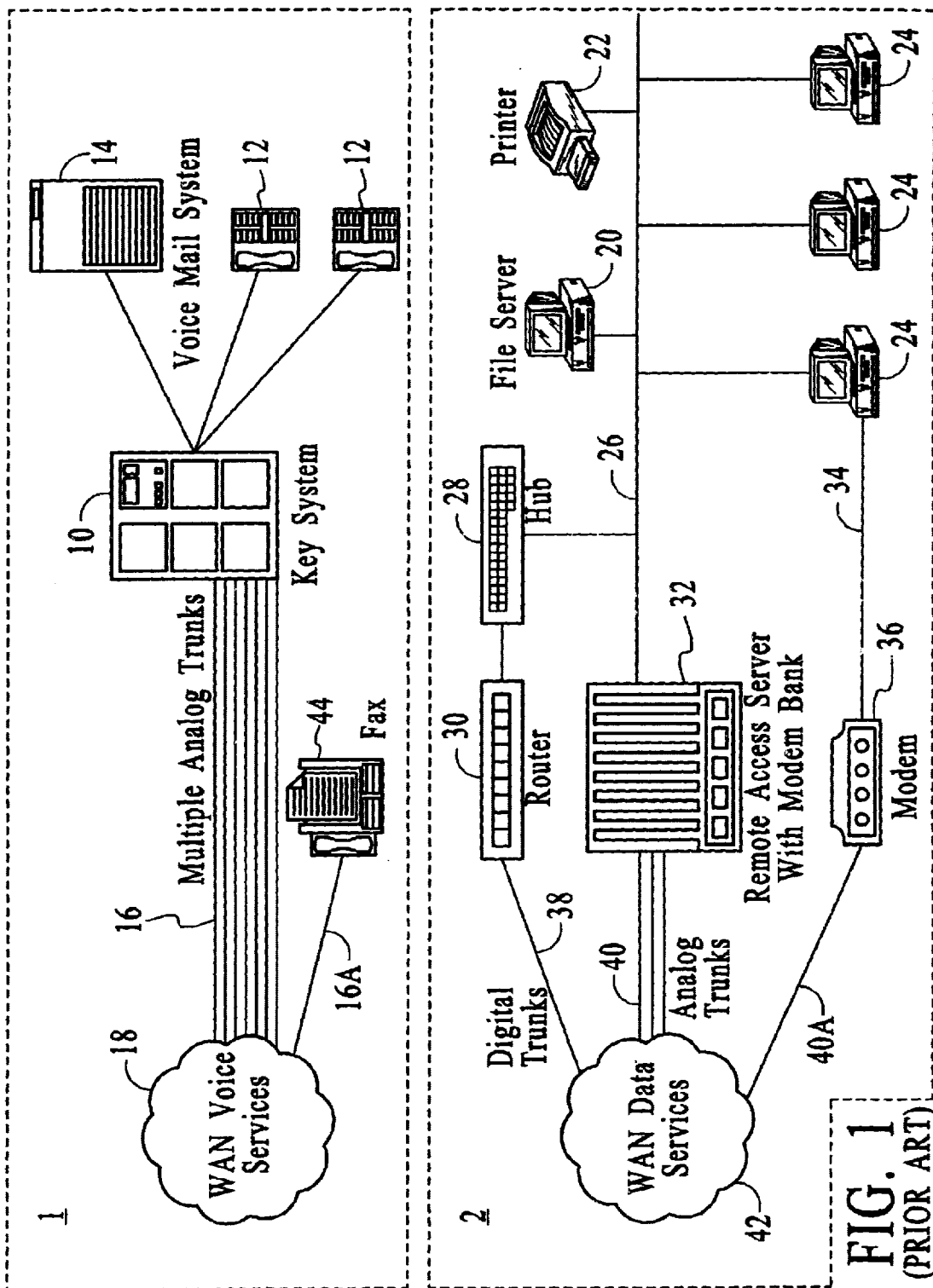
20 Claims, 46 Drawing Sheets



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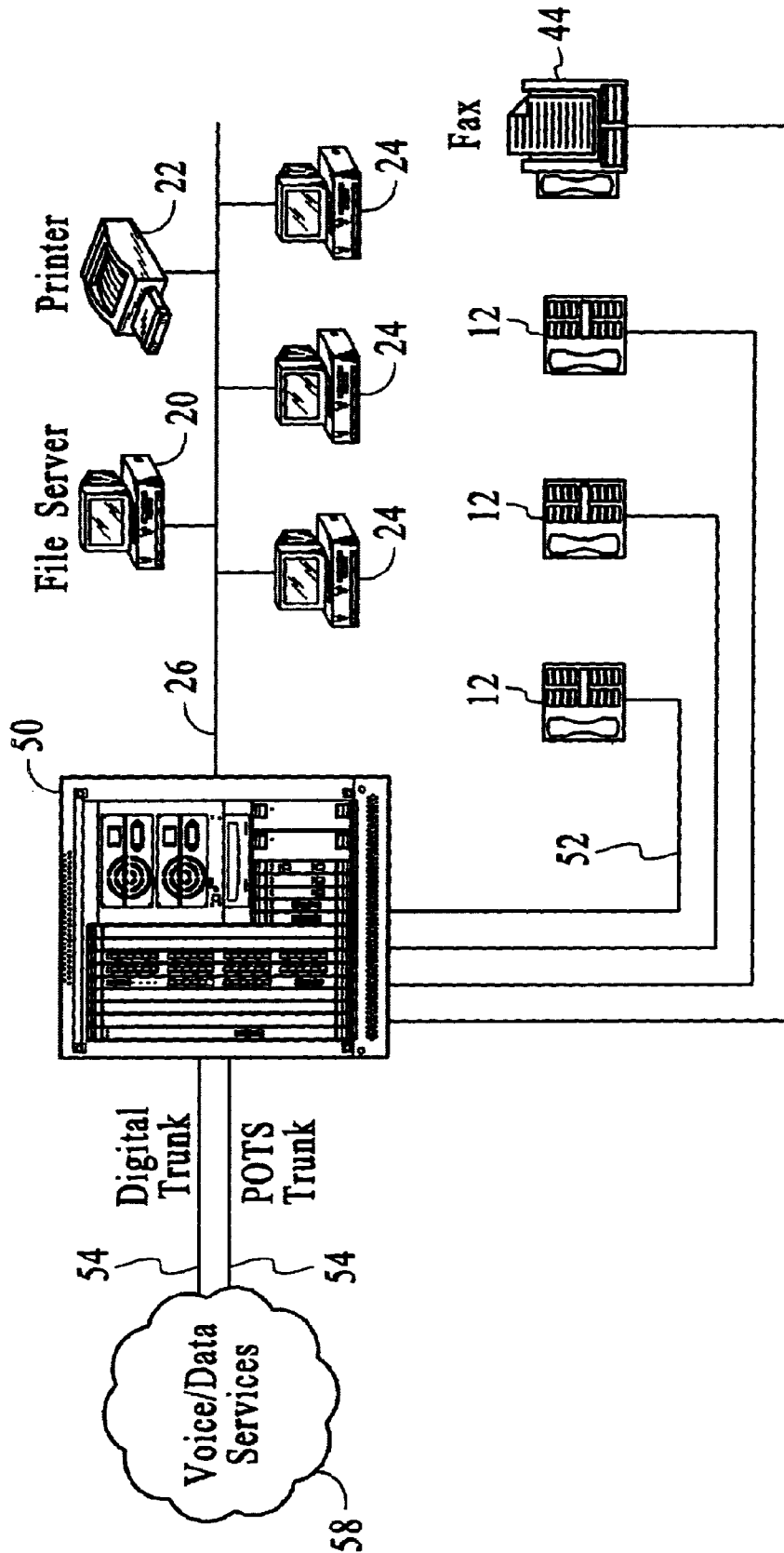
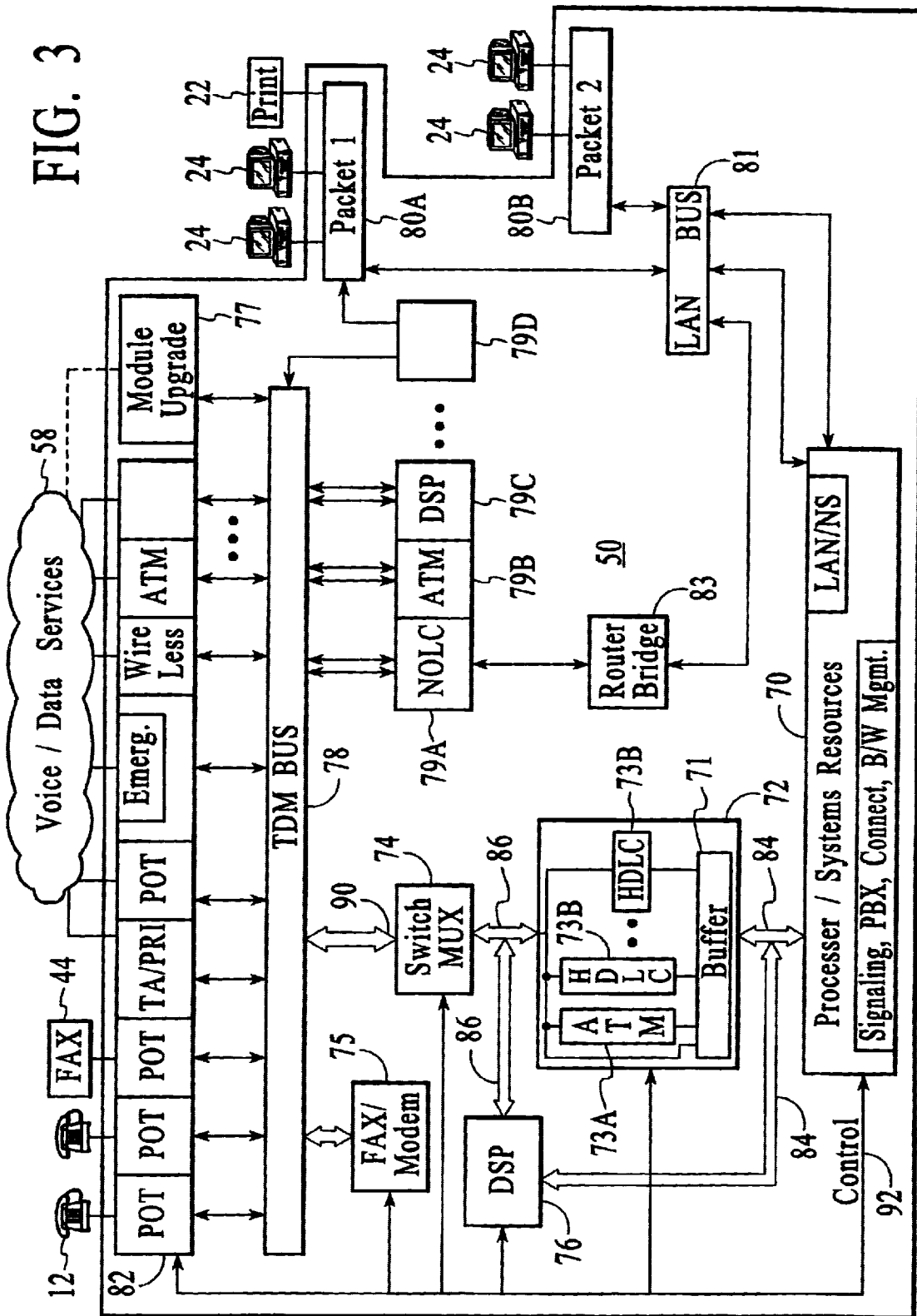


FIG. 2

FIG. 3



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