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Maes et al.

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(54) **UNIVERSAL IP-BASED AND SCALABLE ARCHITECTURES ACROSS CONVERSATIONAL APPLICATIONS USING WEB SERVICES FOR SPEECH AND AUDIO PROCESSING RESOURCES**

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(*) Notice: 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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(65) **Prior Publication Data**

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Related U.S. Application Data

(60) Provisional application No. 60/300,755, filed on Jun. 25, 2001.

(51) **Int. Cl.**⁷ **H04M 1/64**

(52) **U.S. Cl.** **379/88.17**; 379/88.16; 704/270.1; 709/203; 709/231

(58) **Field of Search** 379/88.01–88.04, 379/88.16, 88.17, 88.23–88.25; 704/270–275; 717/114, 116; 709/228–231, 201–203, 249, 250

(56) **References Cited**

U.S. PATENT DOCUMENTS

2002/0184373	A1	*	12/2002	Maes	709/228
2002/0194388	A1	*	12/2002	Boloker et al.	709/310
2003/0005174	A1	*	1/2003	Coffman et al.	709/318
2003/0088421	A1	*	5/2003	Maes et al.	704/270.1

* cited by examiner

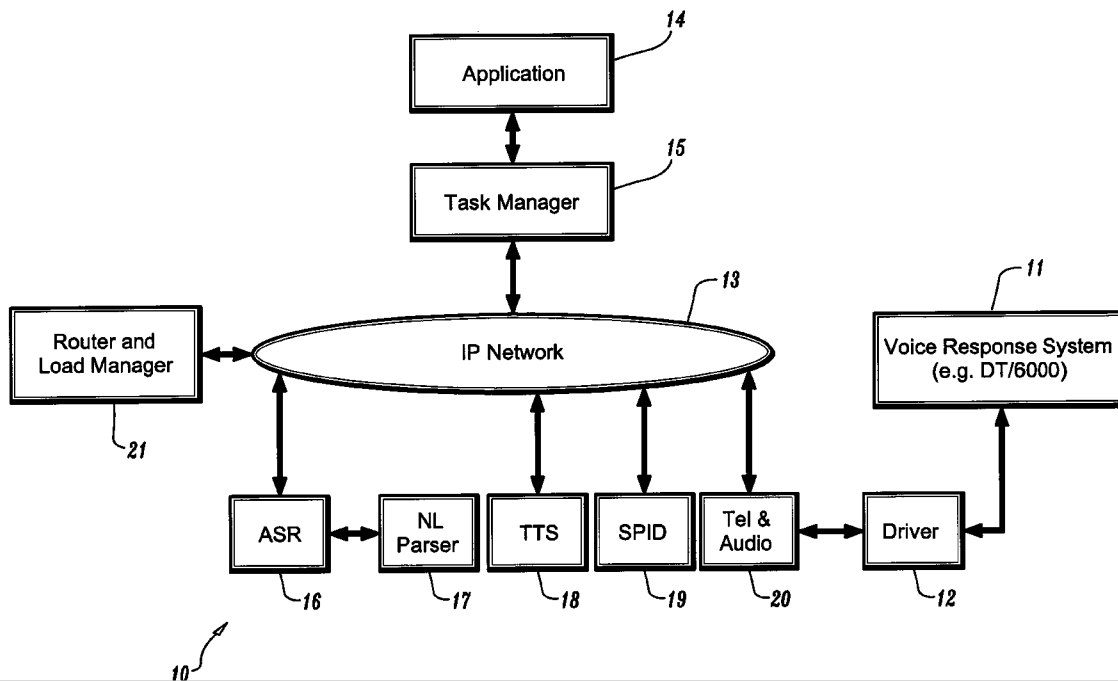
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(57) **ABSTRACT**

Systems and methods for conversational computing and, in particular, to systems and methods for building distributed conversational applications using a Web services-based model wherein speech engines (e.g., speech recognition) and audio I/O systems are programmable services that can be asynchronously programmed by an application using a standard, extensible SERCP (speech engine remote control protocol), to thereby provide scalable and flexible IP-based architectures that enable deployment of the same application or application development environment across a wide range of voice processing platforms and networks/gateways (e.g., PSTN (public switched telephone network), Wireless, Internet, and VoIP (voice over IP)). Systems and methods are further provided for dynamically allocating, assigning, configuring and controlling speech resources such as speech engines, speech pre/post processing systems, audio subsystems, and exchanges between speech engines using SERCP in a web service-based framework.

22 Claims, 17 Drawing Sheets



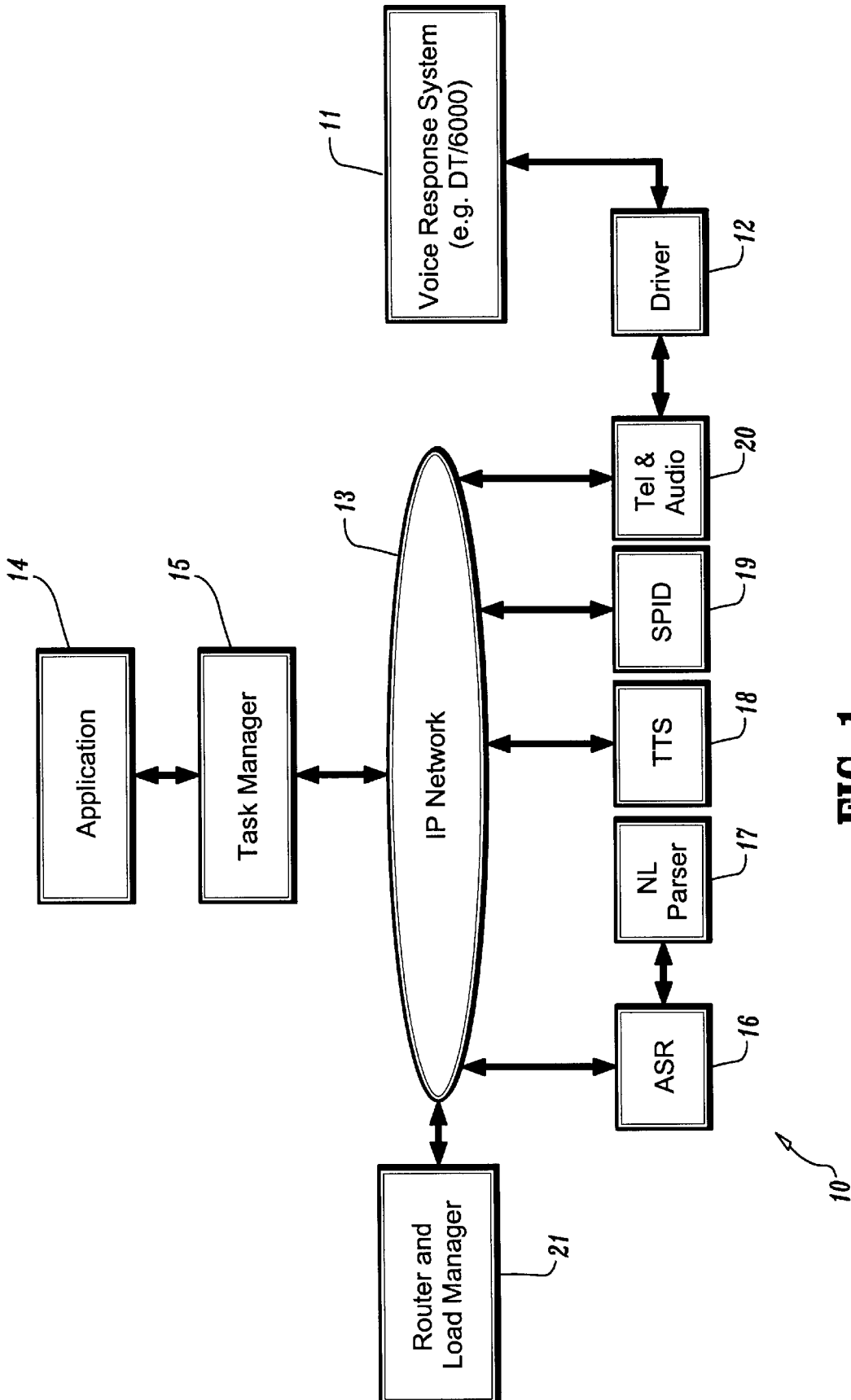


FIG. 1

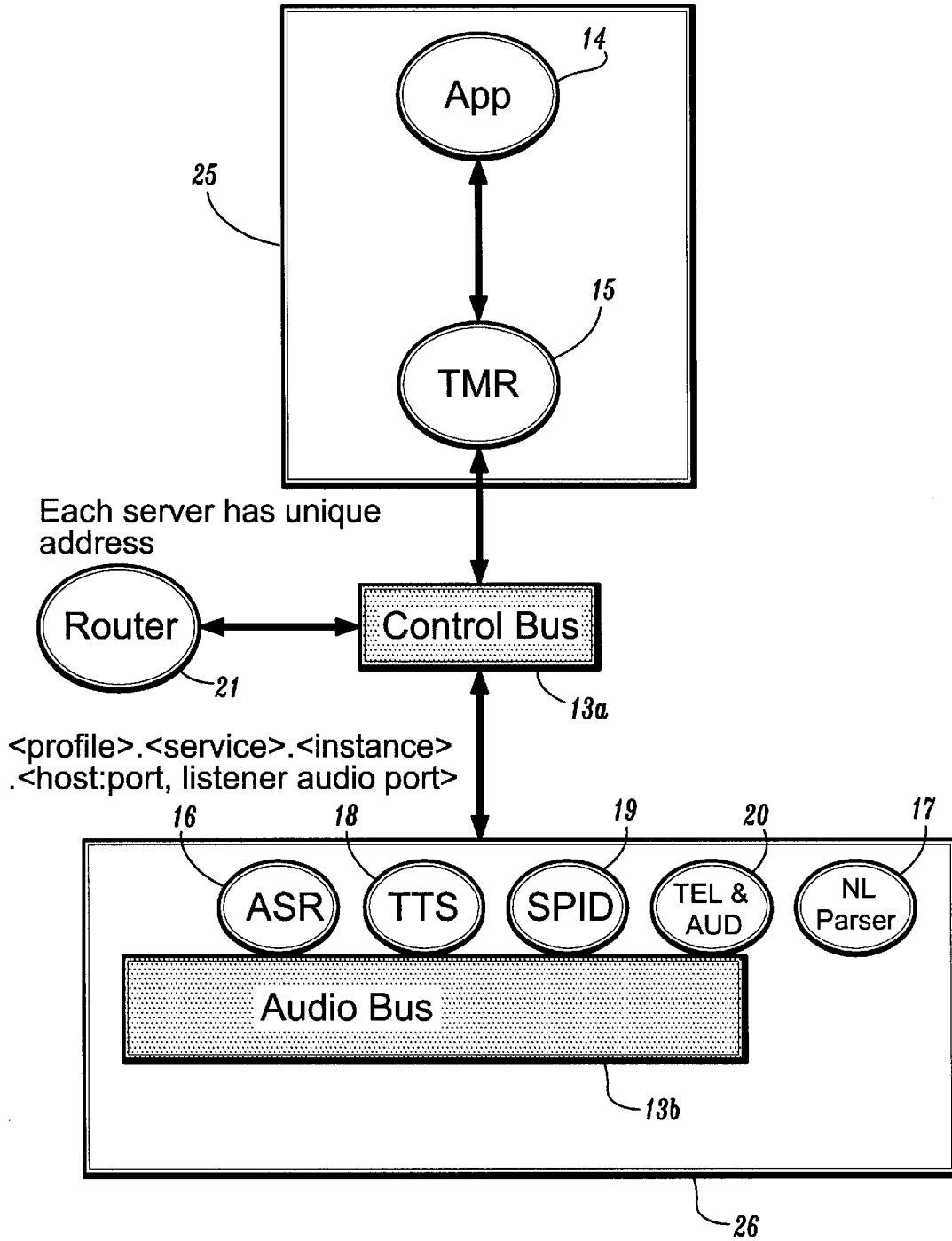
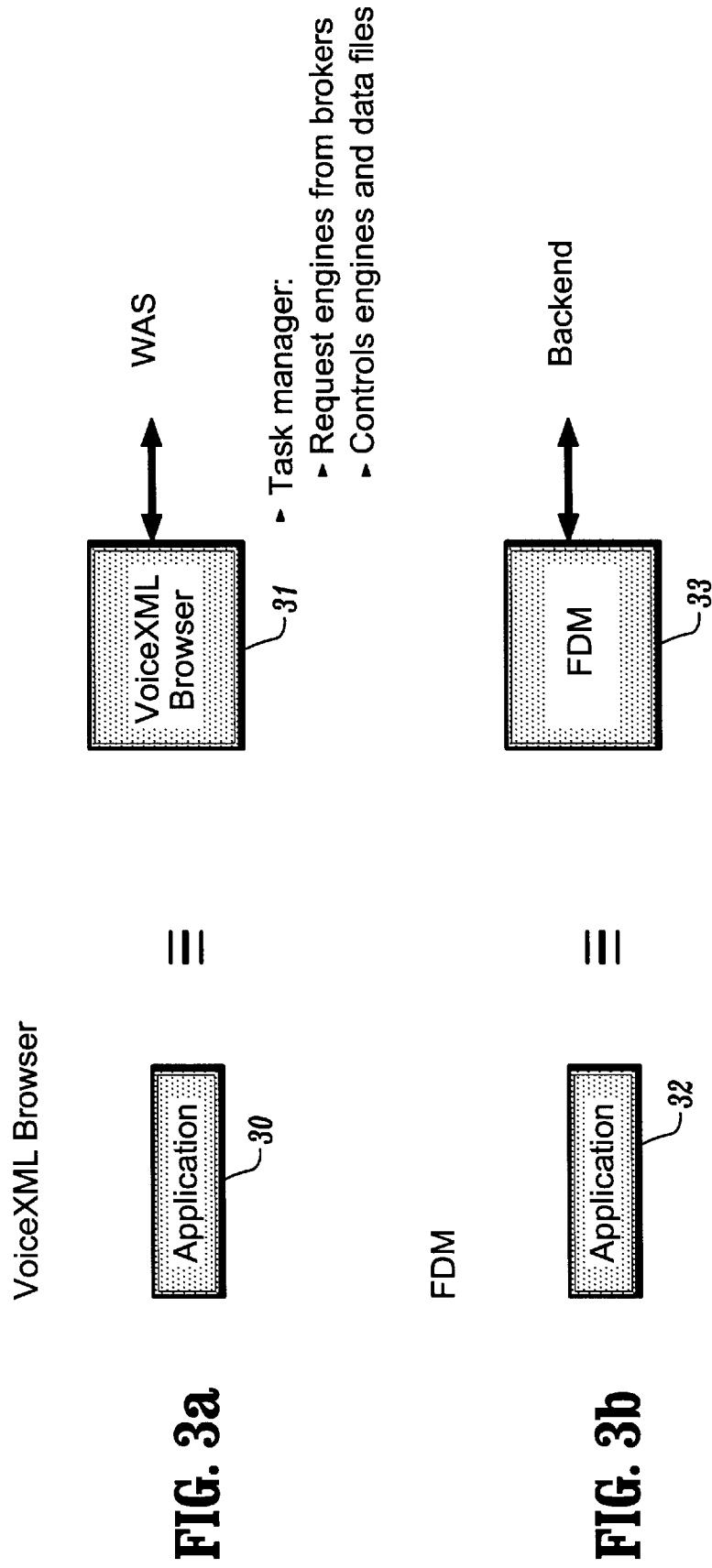


FIG. 2



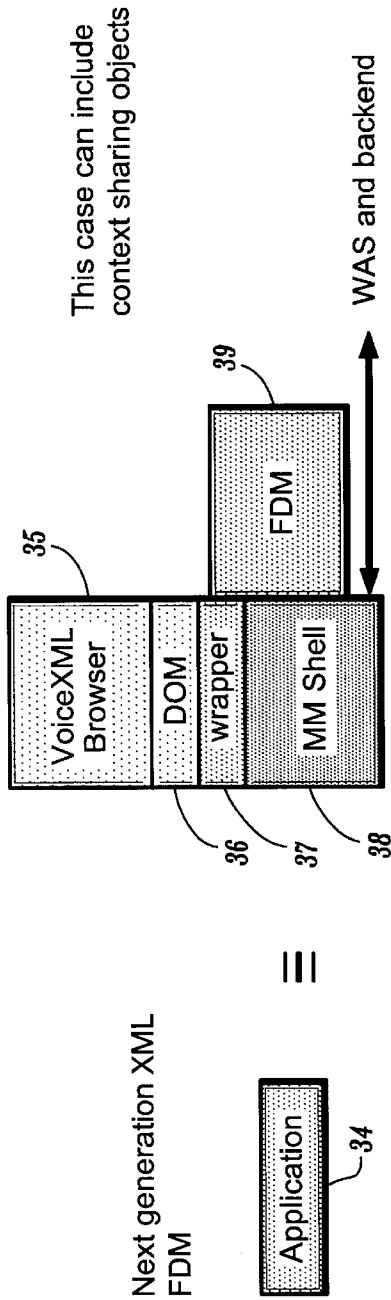


FIG. 3c

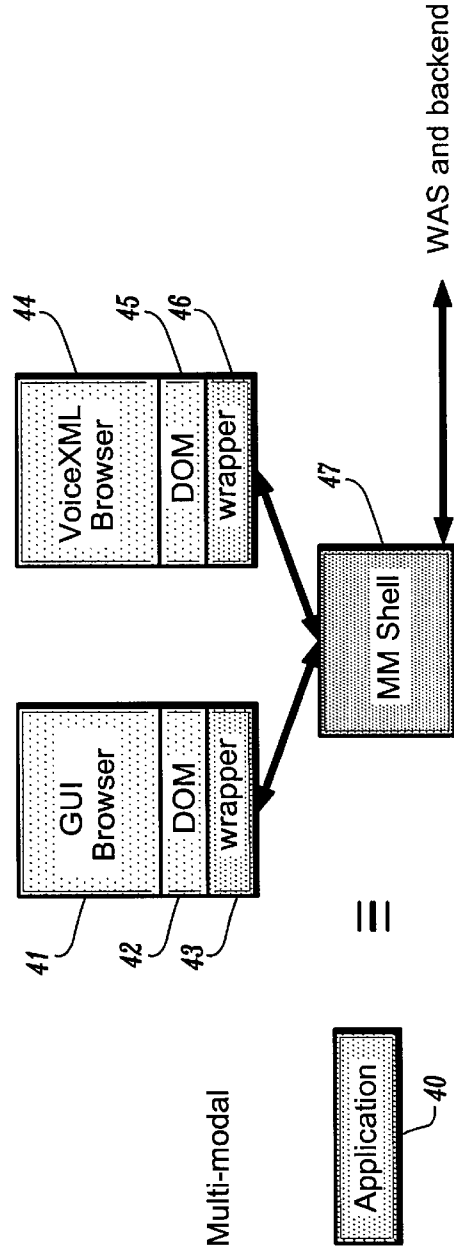


FIG. 3d

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