



US 20030076245A1

(19) **United States**

(12) **Patent Application Publication**
Gibson et al.

(10) **Pub. No.: US 2003/0076245 A1**

(43) **Pub. Date: Apr. 24, 2003**

(54) **TYPES-BASED, LOSSY DATA EMBEDDING**

Related U.S. Application Data

(75) Inventors: **Jerry Don Gibson**, Dallas, TX (US);
Mark Gavin Kokes, Dallas, TX (US);
Geoffrey Charles Orsak, Dallas, TX (US);
Victor James Stolpman, Dallas, TX (US)

(60) Provisional application No. 60/294,603, filed on Jun. 1, 2001. Provisional application No. 60/294,268, filed on May 31, 2001.

Publication Classification

(51) **Int. Cl.⁷** **H03M 7/00**
(52) **U.S. Cl.** **341/50**

Correspondence Address:
OBLON SPIVAK MCCLELLAND MAIER & NEUSTADT PC
FOURTH FLOOR
1755 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VA 22202 (US)

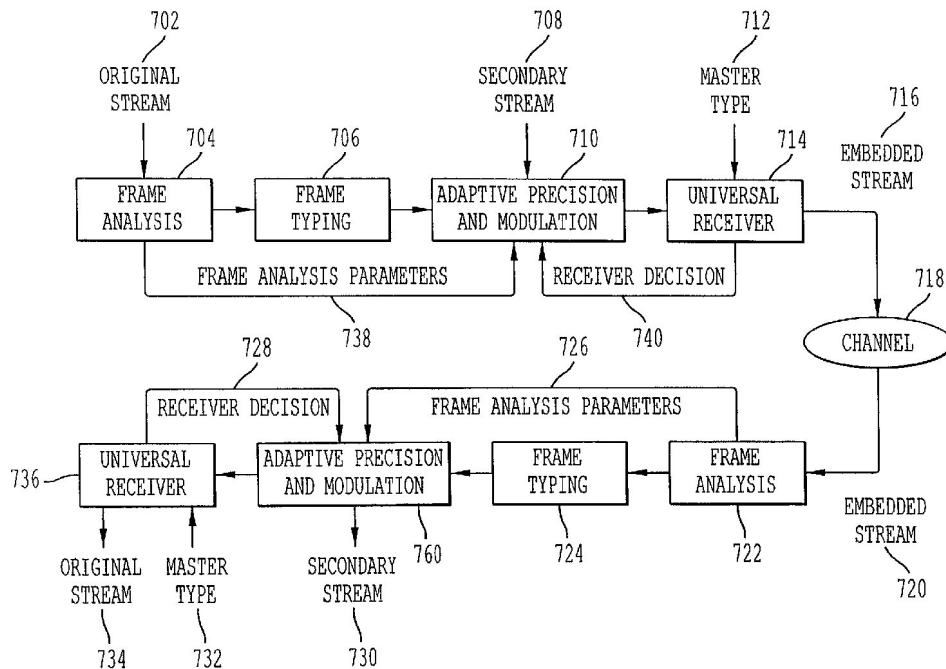
ABSTRACT

A new approach to data embedding within ITU G.722 and ITU G.711 based upon the method of types and universal classification is disclosed. A secondary data sequence is embedded in the original (host) data stream using the method of types. The embedded data is extracted using a type-based universal receiver, with or without the use of a key. The choice of type and rate for the embedded data is based upon an analysis of portions of the original ITU G.722 or ITU G.711 coded data stream. The universal receiver learns the type from the received data alone, and hence, there is no side information required as in previous data embedding techniques. The embedding process and the receiver may both be data adaptive, so the original data stream can be reconstructed at the decoder without error.

(73) Assignee: **Southern Methodist University**, Dallas, TX

(21) Appl. No.: **10/143,959**

(22) Filed: **May 14, 2002**



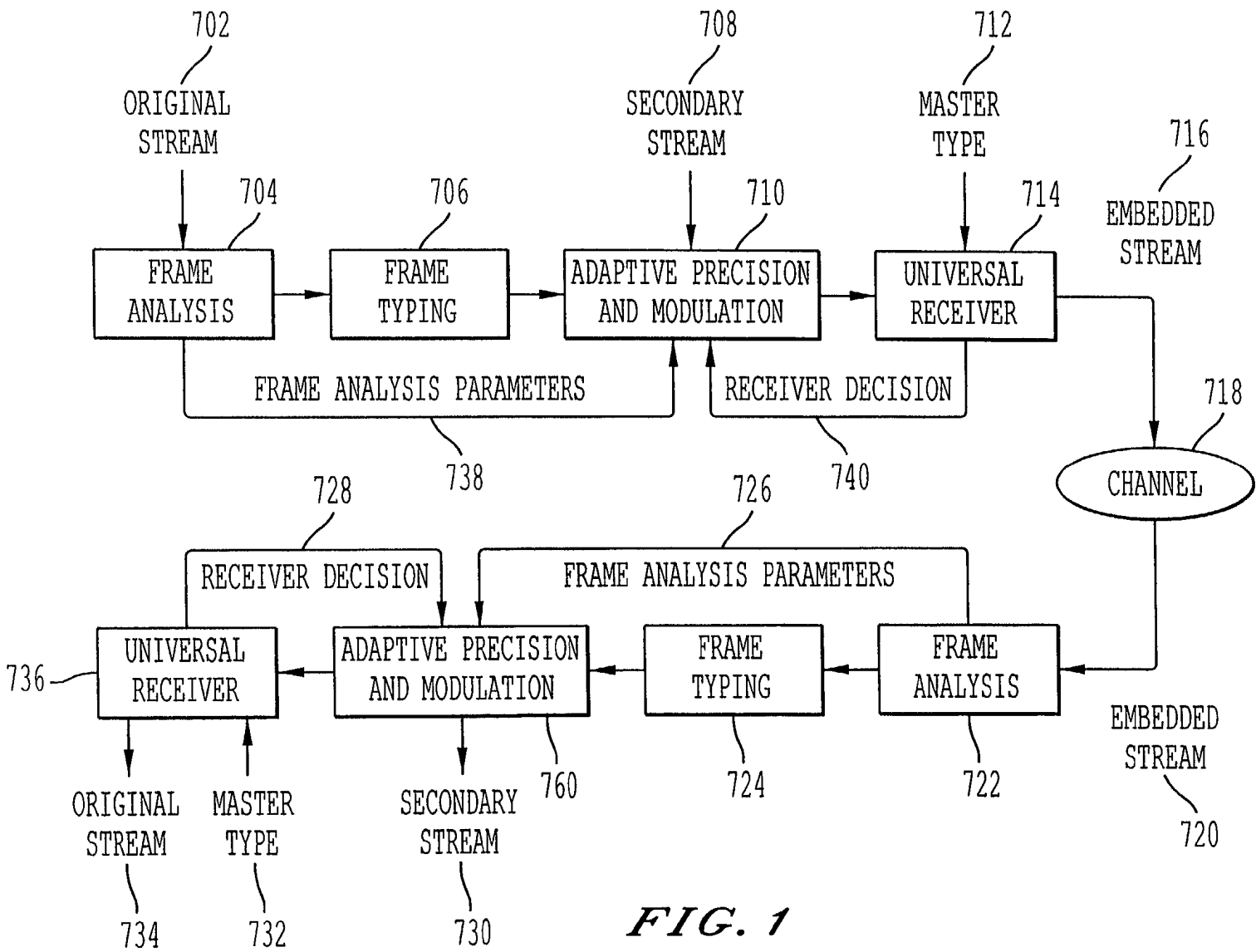


FIG. 1

HISTOGRAM OF ORIGINAL G.711 CODEWORD DATA

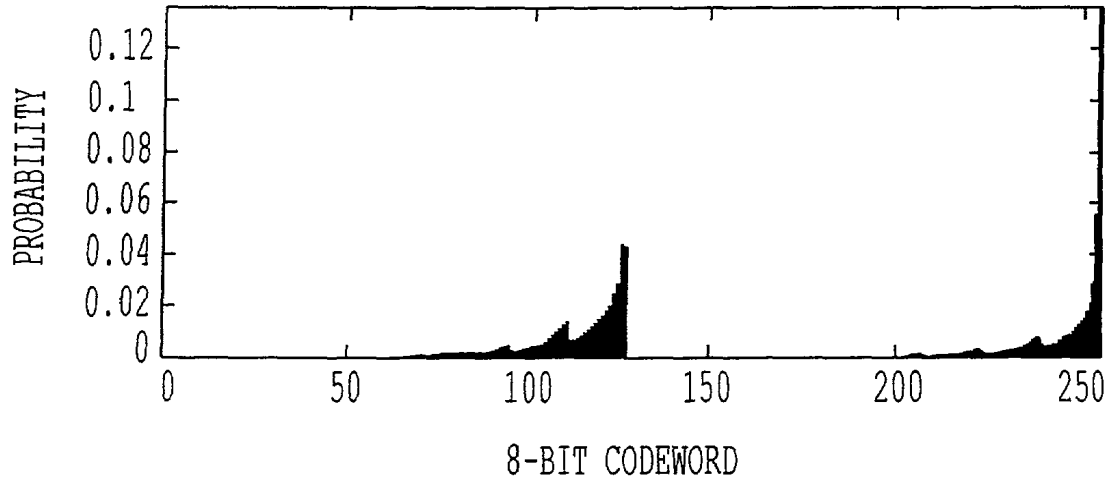


FIG. 2(a)

HISTOGRAM OF MAPPED G.711 CODEWORD DATA (i.e. MASTER TYPE)

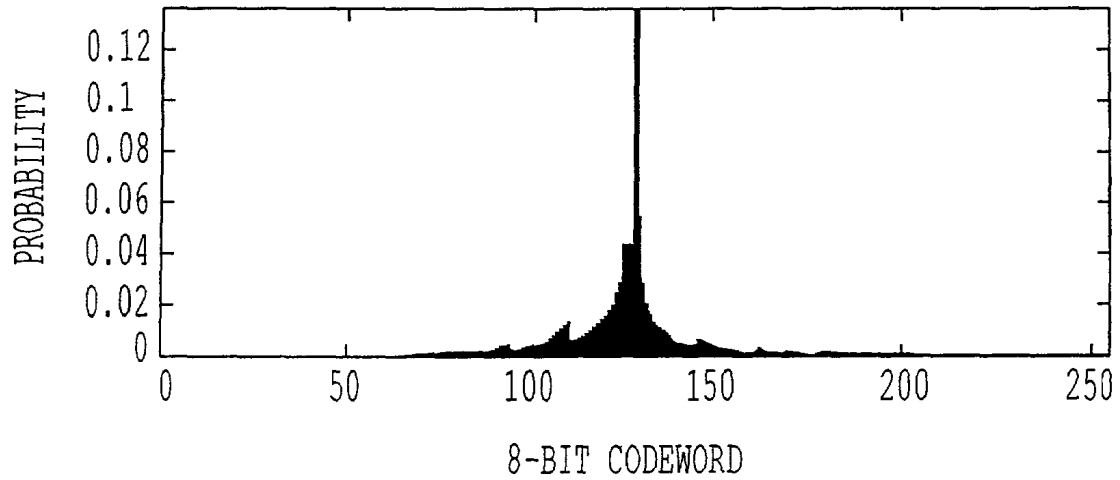


FIG. 2(b)

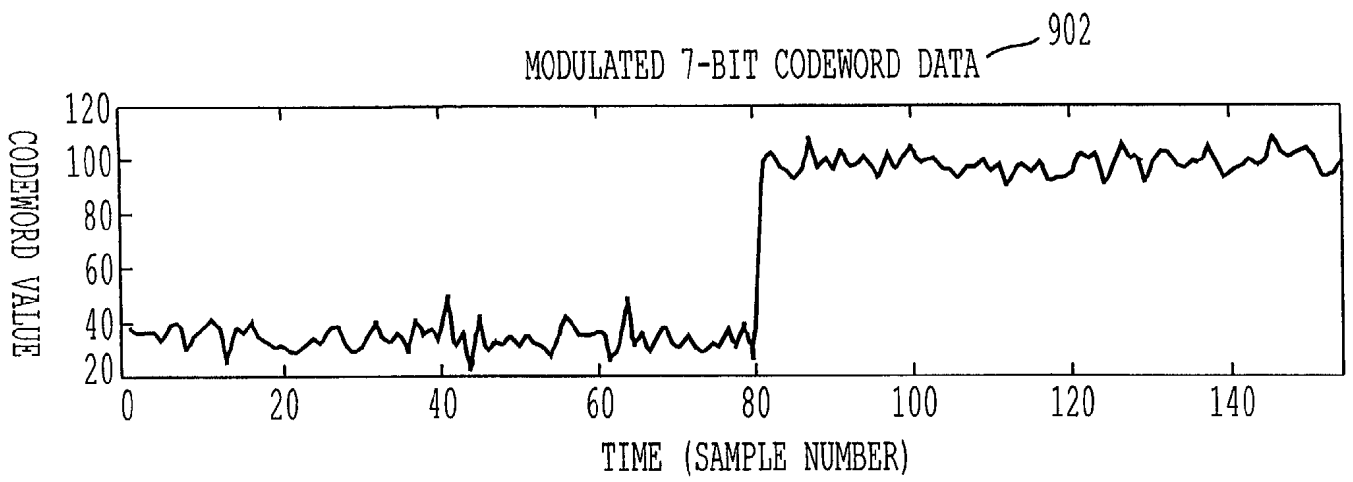


FIG. 3(a)

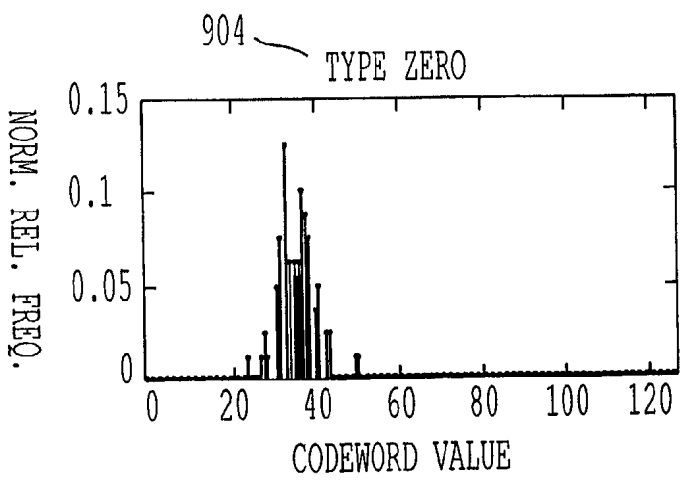


FIG. 3(b)

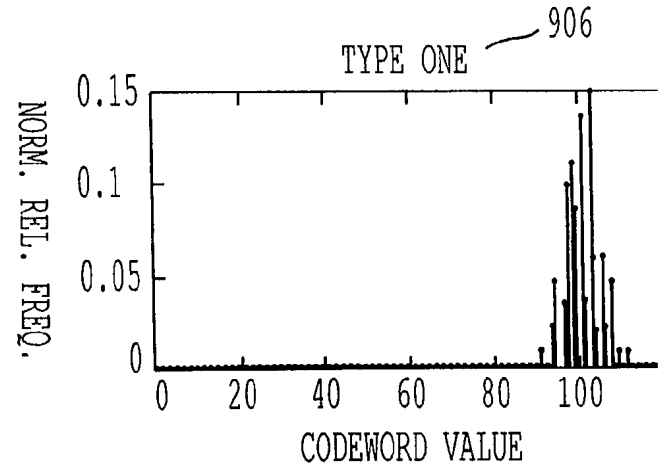


FIG. 3(c)

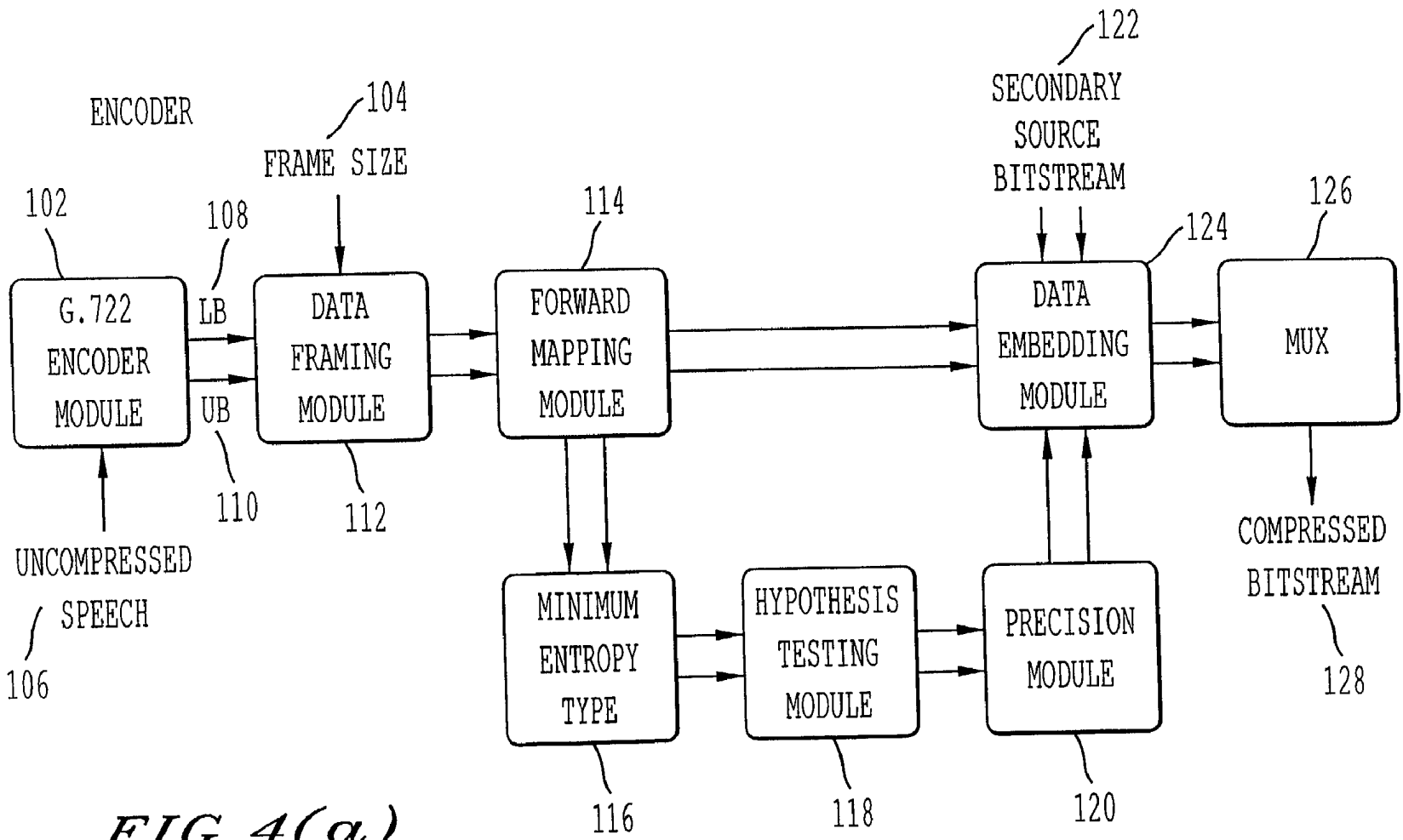


FIG. 4(a)

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.