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- **Suzuki, Masanao, c/o Fujitsu Limited**
Kawasaki-shi, Kanagawa 211-8588 (JP)
- **Tsuchinaga, Y., Fujitsu Kyushu Digital Tech. Ltd.**
Fukuoka-shi, Fukuoka 812-0011 (JP)
- **Tanaka, Masakiyo, c/o Fujitsu Limited**
Kawasaki-shi, Kanagawa 211-8588 (JP)
- **Sasaki, Shigeru, c/o Fujitsu Limited**
Kawasaki-shi, Kanagawa 211-8588 (JP)

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(71) Applicant: **FUJITSU LIMITED**
Kawasaki-shi, Kanagawa 211-8588 (JP)

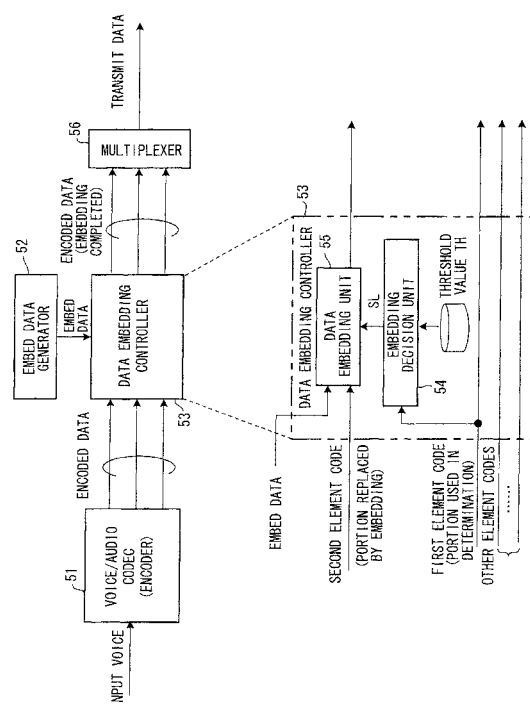
(74) Representative: **Williams, Michael Ian et al**
Haseltine Lake
Imperial House
15-19 Kingsway
London WC2B 6UD (GB)

(72) Inventors:
• **Ota, Yasuji, c/o Fujitsu Limited**
Kawasaki-shi, Kanagawa 211-8588 (JP)

(54) **Method, apparatus and system for embedding data in and extracting data from encoded voice code**

(57) When a voice encoding apparatus embeds any data in encoded voice code, the apparatus determines whether data embedding condition is satisfied using a first element code from among element codes constituting the encoded voice code, and a threshold value. If the data embedding condition is satisfied, the apparatus embeds optional data in the encoded voice code by replacing a second element code with the optional data. When a voice decoding apparatus extracts data that has been embedded in encoded voice code, the apparatus determines whether data embedding condition is satisfied using a first element code from among element codes constituting the encoded voice code, and a threshold value. If the data embedding condition is satisfied, the apparatus determines that optional data has been embedded in the second element code portion of the encoded voice code and extracts this embedded data.

FIG. 1





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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
X	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 01, 31 January 2000 (2000-01-31) - & JP 11 296200 A (M KEN:KK), 29 October 1999 (1999-10-29) * abstract *	33-39	G10L19/00 H04Q7/22 H04M3/50
A	-----	1-32	
A	EP 1 049 259 A (KOWA CO., LTD) 2 November 2000 (2000-11-02) * abstract; figure 3 * * page 9, line 10 - line 28 * * page 10, line 30 - page 11, line 1 *	1-39	
X	WO 01/67671 A (MEYER, THOMAS, W; MEYER, JOSSLYN, MOTHAS) 13 September 2001 (2001-09-13) * page 12, line 11 - page 14, line 15; figures 5,8 *	40	
X	EP 0 909 081 A (NORTEL NETWORKS LIMITED) 14 April 1999 (1999-04-14) * paragraph '0042! - paragraph '0052!; figures 1-4 *	41-44	TECHNICAL FIELDS SEARCHED (Int.Cl.7) G10L H04Q H04M
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 11 May 2005	Examiner Zimmermann, E
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

- ☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid, namely claim(s):
- ☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

- ☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.
- ☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.
- ☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:
- ☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:



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**LACK OF UNITY OF INVENTION
SHEET B**

Application Number
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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-39

Embedding data in coded voice, involving determination whether a data embedding condition is satisfied using a first element code and embedding data by replacing a second element code with optional data.

2. claim: 40

A digital voice communication system comprising a server device and a terminal device, the server device having means for embedding code in the voice data, the terminal device having means for extracting code from the voice data.

3. claims: 41-44

A digital voice storage system comprising means for embedding code in voice data, means for storing the voice data, and means for extracting the embedded code from the voice data.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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