Network Working Group
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VOICE FILE INTERCHANGE PROTOCOL (VFIP)

STATUS OF THIS MEMO

This memo describes a proposed voice file interchange format for use in the ARPA-Internet community. Suggestions for improvement are encouraged. Distribution of this memo is unlimited.

1. INTRODUCTION

The purpose of the Voice File Interchange Protocol (VFIP) is to permit the interchange of various types of speech files between different systems. Currently, there are many different types of voice implementations, but no specific standard has been set with an eye towards compatability between these systems. With the increasing interest and development of voice, specifically in Multimedia Mail, there is an increased need to include standardized speech into a common data structure.

The Voice File Interchange Protocol defines a header to describe the voice data. The 18-byte header contains the identifier, the header version number, the header length, a DTMF mask for Touch-Tones, the recording rate in bits per second, the total time in deci-seconds (tenths of a second), and the encoding/recording method (see Figure 1).

2. THE VOICE FILE INTERCHANGE PROTOCOL HEADER

The Voice File Interchange Protocol header is organized as follows:

2.1 The Header Version Number

The version number is 1-byte. This first version is number one.

2.2 The Header Length

The length is a 1-byte field indicating the length of the entire header in bytes. For this first version, the length is 18 (bytes).

2.3 The DTMF Mask

This field describes what is known about DTMF Touch-Tones in the data. The field consists of a 16 flag bits which indicate what is known about particular DTMF tones. The 16 possible DTMF tones, in order, are: 0 1 2 3 4 5 6 7 8 9 # * A B C D. The low order bit of the field is tone 0.

A 1-bit signifies that the corresponding tone is guaranteed NOT to be in the speech file. A 0-bit signifies that it may or may not be in the speech file. Therefore, a field of 16 zeros denotes that nothing is known about the tones. A field of 16 ones denotes that there are no tones in the file.

2.4 Recording Rate

The recording rate is a 32-bit field and is the approximate rate in bits/second of the method used to record the speech. For variable rate methods, this may be very approximate.

2.5 Total Time

A 32-bit number indicating the total time of the recording in deci-seconds. For example, 600 indicates 1 minute of speech.

2.6 Methods of Encoding/Recording

This 6-byte ASCII field indicates the method of encoding/recording. Names shorter than six characters are padded out to the right with blanks (the ASCII space character, code 32 decimal). For comparisons, the names are case insensitive.

Some known methods of Encoding/Recording are:

TI - The Texas Instruments card for the IBM PC [5].

IBM - PC Voice Communications Options.

NVP-1 and NVP-2 - Network Voice Protocol [1,2].

COMPUT - Computalker card for the IBM PC [4].

3. SUMMARY

This 18-byte header will permit interchange of speech files between different systems, as well as facilitate automatic conversion between formats. The header does not have to be prepended to the speech file proper; it may be in the form of a separate associated file, if that is more convenient.

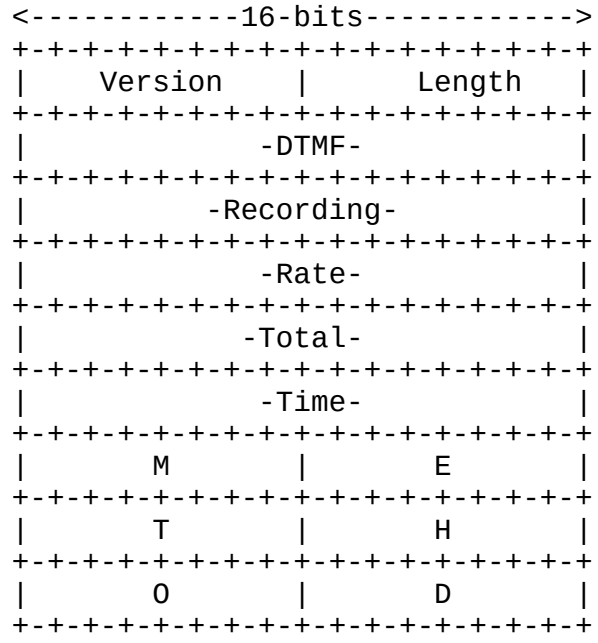
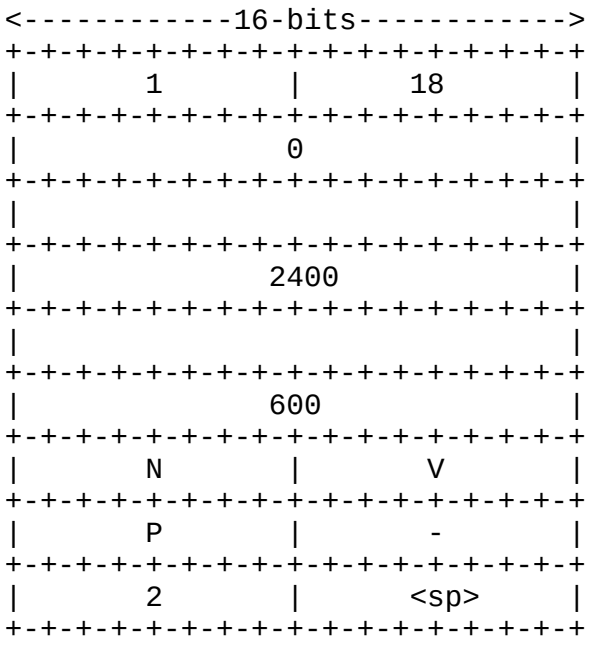


Figure 1

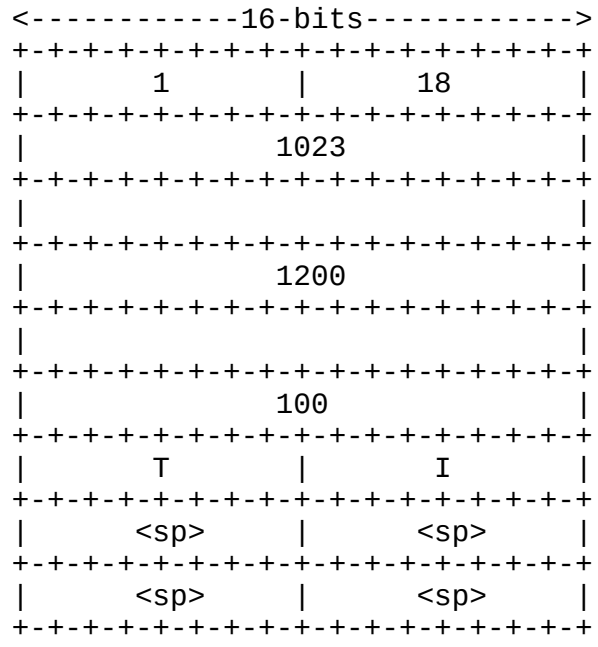
4. EXAMPLES

Example 1 is for one minute of 2400 bps NVP-2 speech. Nothing is known about DTMF tones in the data.



Example 1

Example 2 shows the header for 10 seconds of 1200 bps TI speech, with none of the DTMF tone 0-9 in the data, but no information about tones *, #, A-D.



Example 2

REFERENCES

[1] Cohen, Danny, "Specifications for the Network Voice Protocol (NVP)", RFC 741 (NIC 42444), USC/Information Sciences Institute, January 1976.

[2] Cohen, Danny, "A Network Voice Protocol (NVP-II)", USC/Information Sciences Institute, April 1981.

[3] O'Leary, G. C., "Local Access Area Facilities for Packet Voice", MIT/LL, October 1980.

[4] Computalker, "Compu Phone for the IBM PC/XT", Santa Monica, California, August 1985.

[5] Texas Instruments, Inc., "The TI Speech Application Tool Kit Guide", TI Part #2232384-1, May 1985.