



GAO Research Inc.
Voice Activity Detector (VAD)
Comfort Noise Generator (CNG)

GAO Research Inc.

#1 In Embedded Communications Software

<http://www.gaoresearch.com>

Features

- ▶ Implemented in assembly or C.
- ▶ User-callable functions.
- ▶ Works with all speech vocoders

Product Description

GAO's VAD & CNG software is used to reduce the transmission rate during silence periods of speech. Systems allowing discontinuous transmission are based on a Voice Activity Detection (VAD) algorithm and a Comfort Noise Generator (CNG) algorithm that allows the insertion of an artificial noise during silent intervals of speech. This feature is necessary to avoid noise modulation introduced when the transmission is switched off. If the background acoustic noise that was present during active periods abruptly disappears, this very unpleasant noise modulation may even reduce the intelligibility of the speech. The purpose of the VAD is to reliably detect the presence or absence of speech and to convey this information to the CNG algorithm. The purpose of the CNG algorithm is to create a noise that matches the actual background noise with a global transmission cost as low as possible.

Leadership in Embedded Communications Software

With nearly two decades of experience, GAO leads the embedded communications software market by providing comprehensive modem, fax, speech, and telephony technologies; broad technical expertise; and unsurpassed support to our world-class customers including electronics, communications, and semiconductor companies across the globe.

Rigorous Testing

GAO's testing facilities are equipped with state-of-the-art test equipment. Our modem and fax software is rigorously tested on TAS, Consultronics, Rochelle, Advent and Telegra equipment under various channel models according to the relevant ITU or TIA standards. All GAO's speech software has passed the test vectors specified by the ITU. Our telephony software meets all appropriate TIA, EIA, BellCore, and Mitel standards. GAO also adheres to stringent quality control procedures, which is reflected in our well structured code, detailed design documentation, and well-defined design and test plans. This ensures ease of integration into the customer's system, easy maintenance, and a smooth upgrade path for next-generation customer products.

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