circuit **111** is responsive to a signal from low energy detector **109** indicating that voice activity has been detected in the samples being transmitted from interface **101** to begin to transmit voice samples from history queue **108** to voice coder **106**. Voice coder **106** is responsive to the samples being received from control circuit **111** to packetize these samples and transmit them via IP switched network **107**. When low energy detector **109** **5** determines that the silence has been present in the speech samples for a first predefined amount of time, low energy detector **109** removes the signal being transmitted to control circuit **111** which ceases to transmit samples to voice coder **106**. Note, that the first predefined time utilized by low energy detector **109** is now the holdover time that is utilized by the system illustrated in FIG. **1**. Advantageously, this holdover time is shorter than what would normally have to be allowed.

FIG. **2** illustrates another embodiment of the invention. Elements **201**–**207** and **211** perform the same operations as those described with respect to FIG. **1** for elements **101**–**107** and **111**. Speech analyzer **212** is responsive to the speech samples being received from interface **201** to determine phonemes and words from the sample. Speech analyzer **212** utilizer well know voice recognition techniques to accomplish the detection of phonemes and words from the speech samples. Speech analyzer **212** than utilizer this information to adjust the length of the queue maintained by history queue **208** to be equal to the amount of time determined between the words actually being receiver in the voice sample from interface **201**. Speech analyzer **212** maintains a smoothing technique so as to average out the amount of time between words over a predefined period of time. In addition, speech analyzer **212** utilizer the information concerning phonemes and words to adjust an interval utilized by low energy detector **209** to indicate to control circuit **211** when it is to stop the communication of samples to voice controller **206**.

FIG. **3** illustrates, in block diagram form, a hardware implementation an embodiment of blocks **208**–**212** of FIG. **2**. One skilled in the art would readily realize that all of the elements of FIG. **2** could be combined and their functions be performed in one digital signal processor or multiple digital signal processors could be utilized. Digital signal (DSP) **301** executes a program stored in memory **302** to implement the operations illustrated in FIGS. **5** and **6**. One skilled in the art would readily recognize that DSP **301** could be any type of stored program controlled circuit and also could be a wired logic circuit such as a programmable logic array that simply stored data in memory **302**. The circuit of FIG. **3** could also implement the operations of blocks **108**–**111** of FIG. **1** to perform the operations illustrated in FIG. **4**.

FIG. **4** illustrates the operations to be performed by blocks **108**–**111** of FIG. **1** in implementing an embodiment of the invention. The operations of FIG. **4** could be performed by a circuit similar to that illustrated in FIG. **3**. Once started in block **401**, block **402** stores samples in the history queue before transferring control to decision block **403**. Decision block **403** is responsive to the energy in the samples that are being stored in queue **402** to determine if a silent interval greater than a predefined interval has occurred. If the answer is yes, block **404** sets the silence flag before transferring control to decision block **406**. If the answer in decision block **403** is no, control is transferred to decision block **406** which determines if the silence flag is set. If the answer is no in decision block **406**, control is transferred to block **409** which transmits a sample from the history queue to the voice coder before returning control back to block **402**. Returning to decision block **406**, if the answer is yes that the silence flag is set, decision block **407** determines if the low energy detector has detected any voice activity. If the answer is no, control is transferred back to block **402**. If the answer in decision block **407** is yes, control is transferred to block **408** which resets the silence flag before transferring control to block **409**.

FIGS. **5** and **6** illustrate, in flowchart form, the steps performed by speech analyzer **212**. After being started in block **501**, block **502** analyzes the incoming speech to determine the interval between words using well known techniques. After execution of block **502**, decision block **503** determines if the interval between the words has changed. If the answer is no, control is transferred to block **602** of FIG. **6**. If the answer is yes in decision block **503**, block **504** recalculates the silence interval, and block **506** adjusts the queue size before transferring control to block **602** of FIG. **6**.

One skilled in the art would readily realize that the analysis for speech and the recalculation of the silence interval and the adjustment of the queue size could be performed in a different order in FIGS. **5** and **6**. In addition, the decision made in decision block **503** may simply be that based on information received from block **502** that it is not possible to determine if a different interval now exists between words.

Once control is received from block **506** or decision block **503** of FIG. **5**, block **602** stores samples in the history queue before transferring control to decision block **603**. Decision block **603** is responsive to the energy in the samples that are being stored in queue **602** to determine if a silent interval greater than a predefined interval has occurred. If the answer is yes, block **604** sets the silence flag before transferring control to decision block **606**. If the answer in decision block **603** is no, control is transferred to decision block **606** which determines if the silence flag is set. If the answer is no in decision block **606**, control is transferred to block **609** which transmits a sample from the history queue to the voice coder before returning control back to block **502**. Returning to decision block **606**, if the answer is yes that the silence flag is set, decision block **607** determines if the low energy detector has detected any voice activity. If the answer is no, control is transferred back to block **502**. If the answer in decision block **607** is yes, control is transferred to block **608** which resets the silence flag before transferring control to block **609**.

Of course, various changes and modifications to the illustrative embodiment described above will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit and scope of the invention and without diminishing its intended advantages. It is therefore intended that such changes and modifications be covered by the following claims except in so far as limited by the prior art.

What is claimed is:

1. An apparatus for communicating samples from an interface to an encoder, comprising:

a queue for storing samples received from the interface;

an energy detector for identifying samples received from the interface that contain silence and for transmitting a signal to a control circuit identifying a silence interval upon a predefined number of silence samples being identified;

an analyzer responsive to the received samples for adjusting the number of samples stored in the queue and the number of silence samples identified by the energy