WIRELESS HEADSET AND TABLET SIGN LANGUAGE COMMUNICATION SYSTEM AND METHOD

BACKGROUND OF THE INVENTION

FIELD OF THE INVENTION

The present invention relates to the field of electricity and electric communication technique including wireless communication networks, more specifically, a direct mode connection management device. (H04W76/14)

SUMMARY OF INVENTION

The wireless headset and tablet sign language communication system is a private communication system. The wireless headset and tablet sign language communication system comprises a routing device, a plurality of communication stations, and a plurality of wireless communication links. The wireless headset and tablet sign language communication system supports audio and speech-based communication between the plurality of communication stations. Optionally, the sign language communication system may be used for a text-based communication system in lieu of the speech-based communication system. The wireless headset and tablet sign language communication system supports a broadcast model of communication. By broadcast is meant that: a) any first individual communication station selected from the plurality of communication stations receives any audio and speech-based message transmitted by any second individual communication station selected from the plurality of communication stations; and, b) any audio and speech-based message transmitted by any first individual communication station selected from the plurality of communication stations is received by all the unselected individual communication stations remaining in the plurality of communication stations. The routing device establishes a wireless communication link selected from the plurality of wireless communication link with each individual communication station contained in the plurality of communication stations. The routing device is a repeater that receives an audio or speech-based message from any first individual communication station selected from the plurality of communication stations and retransmits the received message to each individual communication station remaining in the plurality of communication stations.

These together with additional objects, features and advantages of the wireless headset and tablet sign language communication system will be readily apparent to those of ordinary

skill in the art upon reading the following detailed description of the presently preferred, but nonetheless illustrative, embodiments when taken in conjunction with the accompanying drawings.

In this respect, before explaining the current embodiments of the wireless headset and tablet sign language communication system in detail, it is to be understood that the wireless headset and tablet sign language communication system is not limited in its applications to the details of construction and arrangements of the components set forth in the following description or illustration. Those skilled in the art will appreciate that the concept of this disclosure may be readily utilized as a basis for the design of other structures, methods, and systems for carrying out the several purposes of the wireless headset and tablet sign language communication system.

It is therefore important that the claims be regarded as including such equivalent construction insofar as they do not depart from the spirit and scope of the wireless headset and tablet sign language communication system. It is also to be understood that the phraseology and terminology employed herein are for purposes of description and should not be regarded as limiting.

BRIEF DESCRIPTION OF DRAWINGS

The accompanying drawings, which are included to provide a further understanding of the invention are incorporated in and constitute a part of this specification, illustrate an embodiment of the invention and together with the description serve to explain the principles of the invention. They are meant to be exemplary illustrations provided to enable persons skilled in the art to practice the disclosure and are not intended to limit the scope of the appended claims.

Figure 1 is a perspective view of an embodiment of the disclosure.

Figure 2 is a detail view of an embodiment of the disclosure.

Figure 3 is a detail view of an embodiment of the disclosure.

Figure 4 is a schematic diagram of an embodiment of the disclosure.

Figure 5 is an in-use view of an embodiment of the disclosure.

Figure 6 is a detail view of an embodiment of the disclosure.

Figure 7 is a detail view of an embodiment of the disclosure.

Figure 8 is a detail view of an embodiment of the disclosure.

Figure 9 is a schematic view of an embodiment of the disclosure.

Figure 10 is a view of an embodiment with a pair of headsets.

DETAILED DESCRIPTION OF THE EMBODIMENT

The following detailed description is merely exemplary in nature and is not intended to limit the described embodiments of the application and uses of the described embodiments. As used herein, the word “exemplary” or “illustrative” means “serving as an example, instance, or illustration.” Any implementation described herein as “exemplary” or “illustrative” is not necessarily to be construed as preferred or advantageous over other implementations. All of the implementations described below are exemplary implementations provided to enable persons skilled in the art to practice the disclosure and are not intended to limit the scope of the appended claims. Furthermore, there is no intention to be bound by any expressed or implied theory presented in the preceding technical field, background, brief summary or the following detailed description.

Detailed reference will now be made to one or more potential embodiments of the disclosure, which are illustrated in Figures 1 through 10.

The wireless headset and tablet sign language communication system 100 (hereinafter invention) is a private communication system. The invention 100 comprises a routing device 101, a plurality of communication stations 102, and a plurality of wireless communication links 103. The plurality of wireless communication links 103 establishes communication links between the routing device 101 and each of the plurality of communication stations 102.

It shall be noted that the invention 100 may be used for a text-based communication system in lieu of the speech-based communication system. This would involve the same processes, but instead of speech would utilize a text-based system. The claims listed below will reflect both iterations.

The invention 100 supports audio and speech-based communication between the plurality of communication stations 102. The invention 100 supports a broadcast model of communication. By broadcast is meant that: a) any first individual communication station selected from the plurality of communication stations 102 receives any audio or speech-based message transmitted by any second individual communication station selected from the plurality of communication stations 102; and, b) any audio or speech-based message transmitted by any first individual communication station selected from the plurality of communication stations is received by all the unselected individual communication station remaining in the plurality of communication stations 102.

The applicant notes that the primary advantage of the invention 100 is that it allows a plurality of clients to communicate messages between themselves through a preferred mode. By preferred mode is meant that any first client selected from the plurality of clients can choose to exchange messages with any second client selected from the plurality of clients using a mode selected from the group consisting of: a) a speech based message; b) a speech based message; and, c) a sign language based message. Each client selected from the plurality of clients has the ability to select a preferred mode of message exchange. A consequence of allowing each client to select a preferred mode is that a duality must exist in the conversion technology that translates a message from any first selected preferred mode and any second selected preferred mode. Without this duality, two way communication between a first client using a first selected preferred mode and a second client using a second selected preferred mode would not be possible.

To make this duality more explicit, this disclosure assumes that the existence of a speech to speech conversion in an instantiation of the invention 100 implies the existence of a speech to speech conversion in the same instantiation of the invention 100. The disclosure also assumes that the existence of a sign language to speech conversion in an instantiation of the invention 100 implies the existence of a speech to sign language conversion in the same instantiation of the invention 100. The disclosure finally assumes that the existence of a sign language to speech conversion in an instantiation of the invention 100 implies the existence of a speech to sign language conversion in the same instantiation of the invention 100. The sign language to speech translation process may be a module.

The routing device 101 establishes a wireless communication link selected from the plurality of wireless communication links 103 with each individual communication station

contained in the plurality of communication stations 102. The routing device 101 is a repeater that receives an audio or speech-based message from any first individual communication station selected from the plurality of communication stations 102 and retransmits the audio or speech-based message to each unselected individual communication station remaining in the plurality of communication stations 102.

Each of the plurality of wireless communication links 103 is a structured data exchange mechanism that is established between the routing device 101 and an individual headset 121 selected from the plurality of headsets 104. Each of the plurality of wireless communication links 103 uses a wireless IEEE 802.11x communication protocol such that a physical electric connection between any individual headset 121 selected from the plurality of communication stations 102 and the routing device 101 is not required.

The routing device 101 is an electrical device. The routing device 101 acts as a repeater. The routing device 101 establishes a wireless communication link selected from the plurality of wireless communication links 103 with each individual communication station selected from the plurality of communication stations 102. The routing device 101 receives an audio message from any first individual communication station selected from the plurality of communication stations 102 and retransmits the audio message to each unselected individual communication station remaining in the plurality of communication stations 102. The routing device 101 terminates the plurality of wireless communication links 103. Each wireless communication link established by the routing device 101 uses an IEEE 802.11x communication protocol. The routing device 101 is a commercially available electric device commonly sold as a "WiFi™ router". The design and use of the routing device 101 described above are well-known and documented in the electrical arts.

The routing device 101 comprises a plurality of routing transceivers 111, a logical device 112, and a reset switch 113. The plurality of routing transceivers 111, the logical device 112, and the reset switch 113 are electrically interconnected.

Each of the plurality of routing transceivers 111 is an electrical device. The transceiver is defined elsewhere in this disclosure. Each of the plurality of routing transceivers 111 creates and maintains the plurality of wireless communication links 103 between the routing device 101 and the plurality of communication stations 102. Each of the plurality of routing transceivers 111 is a multichannel device. By multichannel device is meant that each of the

plurality of routing transceivers 111 simultaneously manages and maintains each of the multiple wireless communication links selected from the plurality of wireless communication links 103 formed between the plurality of communication stations 102 and the routing device 101.

The plurality of routing transceivers 111 comprises a headset routing transceiver 114 and a speech station routing transceiver 115.

The headset routing transceiver 114 is an electrical device. The transceiver is defined elsewhere in this disclosure. The headset routing transceiver 114 creates and maintains the plurality of wireless communication links 103 between the routing device 101 and the plurality of headsets 104. The headset routing transceiver 114 is a multichannel device. By multichannel device is meant that the headset routing transceiver 114 simultaneously manages and maintains each of the multiple wireless communication links selected from the plurality of wireless communication links 103 formed between the plurality of communication stations 102 and the routing device 101.

The speech station routing transceiver 115 is an electrical device. The transceiver is defined elsewhere in this disclosure. The speech station routing transceiver 115 creates and maintains the plurality of wireless communication links 103 between the routing device 101 and the plurality of speech stations 105. The speech station routing transceiver 115 is a multichannel device. By multichannel device is meant that the speech station routing transceiver 115 simultaneously manages and maintains each of the multiple wireless communication links selected from the plurality of wireless communication links 103 formed between the plurality of communication stations 102 and the routing device 101.

The logical device 112 is an electric circuit. The logical device 112 manages, regulates, and operates the routing device 101. The logical device 112 controls the operation of the plurality of routing transceivers 111. The logical device 112 monitors the reset switch 113. The logic module 112 operates: a) a speech to speech technology 701; and, b) a speech to speech technology 702. The speech to speech technology 701 and the speech to speech technology 702 are known technologies used in speech recognition systems. The logic module 112 processes audio messages received from the plurality of headset 104 through the speech to speech technology 701 such that the logic module 112 transmits a speech translation of the received audio message to the plurality of speech stations 105 through the speech station

routing transceiver 115. The logic module 112 processes speech-based messages received from the plurality of speech stations 105 through the speech to speech technology 102 such that the logic module 112 transmits an audio transcription of the received speech-based message to the plurality of headsets 104 through the headset routing transceiver 114.

The reset switch 113 is a momentary switch. The actuation of the reset switch 113 indicates to the logical device 112 that the plurality of routing transceivers 111 should terminate each individual wireless communication link selected from the plurality of wireless communication links 103 such that the communication network formed by the invention 100 is shut down. The communication network is then reestablished by reestablishing each individual wireless communication link selected from the plurality of wireless communication links 103.

The plurality of communication stations 102 comprises a plurality of headsets 104 and a plurality of speech stations 105.

Each of the plurality of headsets 104 is a hands-free communication device selected from the group consisting of earbuds and headphones. The term earbuds are defined elsewhere in this disclosure. The term headphones are defined elsewhere in this disclosure. Each of the plurality of headsets 104 forms a wireless communication link selected from the plurality of wireless communication links 103 with the routing device 101. Each wireless communication link uses an IEEE 802.11x communication protocol. The plurality of headsets 104 comprises a collection of individual headsets 121.

Each of the plurality of headsets 104 is a hands-free communication device selected from the group consisting of earbuds and headphones. The term earbuds are defined elsewhere in this disclosure. The term headphones are defined elsewhere in this disclosure. Each of the plurality of headsets 104 forms a wireless communication link selected from the plurality of wireless communication links 103 with the routing device 101. Each wireless communication link uses an IEEE 802.11x communication protocol. Each of the plurality of headsets 104 generates the audio message transmitted over the wireless communication link. Each of the plurality of headsets 104 announces any audio messages received over the wireless communication link.

Any first individual headset 121 selected from the plurality of headsets 104 transmits an audio message over the wireless communication link to the routing device 101. Any first

individual headset 121 selected from the plurality of headsets 104 receives any audio messages transmitted over the wireless communication link by the routing device 101 that were transmitted by any second individual headset 121 selected from the plurality of headsets 104.

The plurality of headsets 104 comprises a collection of individual headsets 121.

The individual headset 121 is a wireless communication device. The individual headset 121 is selected from the group consisting of headphones and earbuds. The individual headset 121 establishes a wireless communication link selected from the plurality of wireless communication links 103 with the routing device 101. The individual headset 121 generates and transmits an audio message to the routing device 101 over the wireless communication link. The individual headset 121 receives an audio message that is transmitted from the routing device 101 over the wireless communication link. Each individual headset 121 further comprises an individual headset 121 transceiver 122, an individual headset 121 speaker 123, an individual headset 121 microphone 124, and an individual headset 121 linking switch 125. The individual headset 121 transceiver 122, the individual headset 121 speaker 123, the individual headset 121 microphone 124, and the individual headset 121 linking switch 125 are electrically interconnected.

The individual headset 121 transceiver 122 is an electrical device. The transceiver is defined elsewhere in this disclosure. The individual headset 121 transceiver 122 creates and maintains the wireless communication link selected from the plurality of wireless communication links 103 between the routing device 101 and the individual headset 121 transceiver 122.

The individual headset 121 speaker 123 is a transducer. The individual headset 121 speaker 123 receives electrical signals from the individual headset 121 transceiver 122. The individual headset 121 speaker 123 converts the received electrical signals into acoustic energy that is used to announce the received audio message.

The individual headset 121 microphone 124 is a transducer. The individual headset 121 microphone 124 detects acoustic energy in the vicinity of the individual headset 121 and converts the detected acoustic energy into an electric signal. The individual headset 121 microphone 124 transmits the generated electric signal to the individual headset 121

transceiver 122. The individual headset 121 transceiver 122 transmits the received electric signals to the routing device 101 over the wireless communication link as an audio message.

The individual headset 121 transceiver 122 monitors the individual headset 121 linking switch 125. The individual headset 121 linking switch 125 is a momentary switch. The actuation of the individual headset 121 linking switch 125 indicates to the individual headset 121 transceiver 122 that the individual headset 121 should establish a wireless communication link selected from the plurality of wireless communication links 103 with the routing device 101 such that the individual headset 121 joins the communication network formed by the invention 100.

In the first potential embodiment of the disclosure, the plurality of headsets 104 comprises a first headset 131 and a second headset 141.

The first headset 131 further comprises a first headset 131 transceiver 132, a first headset 131 speaker 133, a first headset 131 microphone 134, and a first headset 131 linking switch 135. The first headset 131 transceiver 132, the first headset 131 speaker 133, the first headset 131 microphone 134, and the first headset 131 linking switch 135 are electrically interconnected.

The first headset 131 is a headset used to join the communication network formed by the invention 100. The first headset 131 transceiver 132 is the individual headset 121 transceiver 122 associated with the first headset 131. The first headset 131 speaker 133 is the individual headset 121 speaker 123 associated with the first headset 131. The first headset 131 microphone 134 is the individual headset 121 microphone 124 associated with the first headset 131. The first headset 131 linking switch 135 is the individual headset 121 linking switch 125 associated with the first headset 131.

The second headset 141 further comprises a second headset 141 transceiver 142, a second headset 141 speaker 143, a second headset 141 microphone 144, and a second headset 141 linking switch 145. The second headset 141 transceiver 142, the second headset 141 speaker 143, the second headset 141 microphone 144, and the second headset 141 linking switch 145 are electrically interconnected.

The second headset 141 is a headset used to join the communication network formed by the invention 100. The second headset 141 transceiver 142 is the individual headset 121

transceiver 122 associated with the second headset 141. The second headset 141 speaker 143 is the individual headset 121 speaker 123 associated with the second headset 141. The second headset 141 microphone 144 is the individual headset 121 microphone 124 associated with the second headset 141. The second headset 141 linking switch 145 is the individual headset 121 linking switch 125 associated with the second headset 141.

Each of the plurality of speech stations 105 is a speech-based communication device selected from the group consisting of earbuds and headphones. The term earbuds are defined elsewhere in this disclosure. The term headphones are defined elsewhere in this disclosure. Each of the plurality of speech stations 105 forms a wireless communication link selected from the plurality of wireless communication links 103 with the routing device 101. Each wireless communication link uses an IEEE 802.11x communication protocol. The plurality of speech stations 105 comprises a collection of individual speech stations 521.

The individual speech station 521 is a wireless communication device. The individual speech station 521 establishes a wireless communication link selected from the plurality of wireless communication links 103 with the routing device 101. The individual speech station 521 generates and transmits a speech-based message to the routing device 101 over the wireless communication link. The individual speech station 521 receives the speech-based message that is transmitted from the routing device 101 over the wireless communication link. The individual speech station 521 transceiver 522 creates and maintains the wireless communication link selected from the plurality of wireless communication links 103 between the speech station routing transceiver 115 and each individual speech station 521 transceiver 522.

Any first individual speech station 521 selected from the plurality of speech stations 105 transmits a speech-based message over the wireless communication link to the routing device 101. Any first individual speech station 521 selected from the plurality of speech stations 105 receives any speech-based messages transmitted over the wireless communication link by the routing device 101 that were transmitted by any second individual speech station 521. Each of the plurality of speech stations 105 generates the speech-based message transmitted over the wireless communication link. Each of the plurality of speech stations 105 displays the speech-based messages received over the wireless communication link. Each individual speech station 521 further comprises an individual speech station 521 transceiver

522, an individual speech station 521 logic module 523, an individual speech station 521 display 524, and an individual speech station 521 interface 525.

The individual speech station 521 transceiver 522, the individual speech station 521 logic module 523, the individual speech station 521 display 524 and the individual speech station 521 interface 525 are electrically interconnected.

The individual speech station 521 transceiver 522 is an electrical device. The transceiver is defined elsewhere in this disclosure. The individual speech station 521 transceiver 522 creates and maintains the wireless communications link selected from the plurality of wireless communication links 103 between the plurality of speech stations 105 and each individual speech station 521 transceiver 522.

The individual speech station 521 logic module 523 is a programmable electrical device. The individual speech station 521 logic module 523 receives a speech-based message from the individual speech station 521 transceiver 522. The individual speech station 521 logic module 523 converts the received electrical signals into a speech-based message that is displayed on the individual speech station 521 display 524.

The individual speech station 521 display 524 is an electrical device used to display the speech-based message transmitted from the individual speech station 521 logic module 523. The individual speech station 521 interface 525 receives a speech-based message from the user of the individual speech station 521 and transmits the speech-based message to the individual speech station 521 logic module 523 for transmission to the plurality of speech stations 105 by the individual speech station 521 transceiver 522.

In the first potential embodiment of the disclosure, the plurality of speech stations 105 further comprises a first speech station 531 and a second speech station 541.

The first speech station 531 further comprises a first speech station 531 transceiver 532, a first speech station 531 logic module 533, a first speech station 531 display 534, and a first speech station 531 interface 535. The first speech station 531 transceiver 532, the first speech station 531 logic module 533, the first speech station 531 display 534 and the first speech station 531 interface 535 are electrically interconnected.

The first speech station 531 is a headset used to join the communication network formed by the invention 100. The first speech station 531 transceiver 532 is the individual

speech station 521 transceiver 522 associated with the first speech station 531. The first speech station 531 logic module 533 is the individual speech station 521 logic module 523 associated with the first speech station 531. The first speech station 531 display 534 is the individual speech station 521 display 524 associated with the first speech station 531. The first speech station 531 interface 535 is the individual speech station 521 interface 525 associated with the first speech station 531.

The second speech station 541 further comprises a second speech station 541 transceiver 542, a second speech station 541 logic module 543, a second speech station 541 display 544, and a second speech station 541 interface 545. The second speech station 541 transceiver 542, the second speech station 541 logic module 543, the second speech station 541 display 544 and the second speech station 541 interface 545 are electrically interconnected.

The second speech station 541 is a headset used to join the communication network formed by the invention 100. The second speech station 541 transceiver 542 is the individual speech station 521 transceiver 522 associated with the second speech station 541. The second speech station 541 logic module 543 is the individual speech station 521 logic module 523 associated with the second speech station 541. The second speech station 541 display 544 is the individual speech station 521 display 524 associated with the second speech station 541. The second speech station 541 interface 545 is the individual speech station 521 interface 525 associated with the second speech station 541.

In a second potential embodiment of the disclosure, the logical device 112 further comprises a plurality of language modules 802. The plurality of language modules 802 further comprises a sign language to speech translation module 703 and a speech to sign language translation module 704. The logical device 112 forms the platform that supports the operation of the sign language to speech translation module 703 and the speech to sign language translation module 704.

Each language module selected from the plurality of language modules 802 forms a natural language processing structure. Each language module selected from the plurality of language modules 802 receives a first natural language communication. Each language module selected from the plurality of language modules 802 translates the intellectual content of the first natural language message into a second natural language. In the second potential

embodiment of the disclosure, sign language is chosen as the natural language communication for a natural language selected from the group consisting of the first natural language and the second natural language.

The sign language to speech translation module 703 is the natural language processing structure that translates sign language as the first natural language into the second natural language. The sign language to speech translation module 703 is an automated process. The sign language to speech translation module 703 comprises an image sensor 813, a pattern recognition module 821, an image to speech natural language module 822, and a speech generation module 824. The pattern recognition module 821 further comprises a first output 841 and a first input 851. The image to speech natural language module 822 further comprises a second output 842 and a second input 852. The speech generation module 824 further comprises a third output 844 and a third input 854.

The sign language to speech translation module 703 generates the translated second natural language communication into a speech based third output 844. The third output 844 is transmitted to the logical device 112. The logical device 112 processes the third output 844 as a message selected from the group consisting of: a) a speech based message that is displayed on an individual speech station 521; and, b) an audible message that is announced over an individual headset 121.

The image sensor 813 is an electric sensor. The image sensor 813 converts light into one or more electric signals. The image sensor 813 captures the images of the sign language communication that forms the first natural language communication. The image sensor 813 transmits the captured images of the first natural language communication to the pattern recognition module 821.

The pattern recognition module 821 receives the first input 851 from the image sensor 813. The pattern recognition module 821 generates the first output 841 that becomes the second input 852 of the image to speech natural language module 822. The image to speech natural language module 822 generates the second output 842 that becomes the third input 854 of the speech generation module 824. The speech generation module 824 generates the third output 844 that becomes an input into the logical device 112.

The pattern recognition module 821 receives the captured images of the sign language communication from the image sensor 813. The pattern recognition module 821 identifies

within the captured images of the sign language communication the signs and gestures that form the sign language communication. The pattern recognition module 821 identifies within the captured images of the sign language communication the order in which the signs and gestures occur. The pattern recognition module 821 transmits the identified order of the signs and gestures identified within the captured images of the sign language communication to the first output 841.

The image to speech natural language module 822 receives the identified order of the signs and gestures from the first output 841 as the second input 852. The image to speech natural language module 822 translates the identified order of the signs and gestures received from the pattern recognition module 821 into a sentiment expressed in the second natural language. The image to speech natural language module 822 transmits the translated sentiment to the second output 842.

The speech generation module 824 receives the translated sentiment from the second output 842 as the third input 854. The speech generation module 824 converts the translated sentiment into a speech based data file that is transmitted to the third output 844. The data file generated by the speech generation module 824 provides a speech version of the translated sentiment in the second language that is suitable for display on the individual speech station 521 display 524.

This paragraph and the following paragraph describe the operation of the logical device 112 in relation to the operation of the sign language to speech translation module 703. The logical device 112 receives the speech based third output 844 from the speech generation module 824 of the sign language to speech translation module 703. The logical device 112 determines the delivery requirement of the third output 844. The delivery requirement is selected from the group consisting of: a) an announcement of the third output 844 through an individual headset 121; and b) a visibly displayed speech message displayed on an individual speech station 521. The logical device 112 determines the delivery requirement from an externally provided input method.

If the logical device 112 is required to process the third output 844 through an announcement on the individual headset 121, the speech based message received as the third output 844 is initially processed through the speech to speech technology 701 and the subsequently transmitted to the individual headset 121. If the logical device 112 is required to

process the third output 844 through the visual display of speech, the logical device 112 transmits the third output 844 directly to the individual speech station 521.

The speech to sign language translation module 704 is the natural language processing structure that translates the first natural language into sign language as the second natural language. The speech to sign language translation module 704 is an automated process. The speech to sign language translation module 704 further comprises a speech to image natural language module 825 and an image generation module 826. The speech to image natural language module 825 further comprises a fourth output 845 and a fourth input 855. The image generation module 826 further comprises a fifth output 846 and a fifth input 856.

The logical device 112 transmits a speech message that becomes the fourth input 855 of the speech to image natural language module 825. The speech to image natural language module 825 generates the fourth output 845 that becomes an input into the fifth input 856 of the image generation module 826. The image generation module 826 generates the fifth output 846 that becomes an input into the logical device 112.

The speech to sign language translation module 704 generates the translated second natural language communication into a visually based fifth output 846 in the form of sign language. The third output 844 is transmitted to the logical device 112. The logical device 112 transmits the fifth output 846 as a video image that is displayed on the individual speech station 521 display 524 of the individual speech station 521.

The speech to image natural language module 825 receives a speech format communication in a first natural language. The speech to image natural language module 825 converts the received speech format communication into the order of a series of the signs and gestures of a sign language based second natural language. The speech to image natural language module 825 transmits the signs and gestures of the sign language based communication to the fourth output 845.

The image generation module 826 receives the identified order of the signs and gestures from the fourth output 845 as the fifth output 846. The image generation module 826 translates the identified order of the signs and gestures received from the speech to image natural language module 825 into a sentiment expressed in the in the visual images of the sign language that forms the second natural language. The image generation module 826 transmits

the sentiment of the speech based communication in the form of the generated images of the sign language used to from the second natural language.

This paragraph and the following paragraph describe the operation of the logical device 112 in relation to the operation of the speech to sign language translation module 704. The logical device 112 receives a communication from a message source selected from the group consisting of: a) a speech based message generated from an individual headset 121; and, b) a speech based message generated from an individual speech station 521.

If the speech to sign language translation module 704 is required to generate a sign language translation of a speech message, the logical device 112 transmits the received speech based message directly to the fourth input 855 of the speech to image natural language module 825. If the speech to sign language translation module 704 is required to generate a sign language translation of an audible message, the logical device 112 first processes the received audible message through the speech to speech technology 702 and then subsequently transmits the converted speech format message to the fourth input 855speech to image natural language module 825. The logical device 112 receives the visual images of the sign language translation of the message received from the message source through the fifth output 846 of the image generation module 826. The logical device 112 transmits the received sign language translation to the individual speech station 521.

The following six paragraphs describe the operating theory for the primary conversion processes implemented by the invention 100. Specifically, the following conversion processes are described: a) the speech to speech conversion process; b) the speech to speech conversion process; c) the sign language to speech conversion process; d) the speech to sign language conversion process; e) the sign language to speech conversion process; and, f) the speech to sign language conversion process.

This paragraph describes the operating theory for the speech to speech conversion process. The individual headset 121 receives a speech based message that is intended for delivery as a speech based message. The individual headset 121 transmits the speech based message to the headset routing transceiver 114. The headset routing transceiver 114 retransmits the speech based message to the logical device 112. The logical device 112 processes the received speech based message through the speech to speech technology 701 to generate the sentiment conveyed through the speech based message into a corresponding

speech based message. The logical device 112 transmits the corresponding speech based message to the speech station routing transceiver 115. The speech station routing transceiver 115 retransmits the corresponding speech based message to the individual speech station 521 display 524 designated to receive the originally generated message.

This paragraph describes the operating theory for the speech to speech conversion process. The individual speech station 521 receives a speech based message that is intended for delivery as a speech based message. The individual speech station 521 transmits the speech based message to the speech station routing transceiver 115. The speech station routing transceiver 115 retransmits the speech based message to the logical device 112. The logical device 112 processes the received speech based message through the speech to speech technology 702 to generate the sentiment conveyed through the speech based message into a corresponding speech based message. The logical device 112 transmits the corresponding speech based message to the headset routing transceiver 114. The headset routing transceiver 114 retransmits the corresponding speech based message to the individual headset 121 designated to receive the originally generated message.

This paragraph describes the operating theory for the sign language to speech conversion process. The image sensor 813 receives a sign language based message that is intended for delivery as a speech based message. The image sensor 813 transmits the captured sign language based message to the pattern recognition module 821. The pattern recognition module 821 analyzes the gesture pattern captured by the image sensor 813 to determine the words and syntax of the captured sign language based message. The pattern recognition module 821 transmits the words and syntax information to the image to speech natural language module 822. The image to speech natural language module 822 determines the sentiment of the words and syntax of the captured sign language based message. The image to speech natural language module 822 transmits the determined sentiment to the speech generation module 824 which generates the speech based message corresponding the sentiment expressed by the original sign language based message. The speech generation module 824 transmits the corresponding speech based message to the logical device 112. The logical device 112 retransmits the corresponding speech based message to the individual speech station 521 display 524 designated to receive the originally generated message.

This paragraph describes the operating theory for the speech to sign language conversion process. The logical device 112 receives a speech based message that is intended

for delivery as a sign language based message. The logical device 112 transmits the received speech based message to the speech to image natural language module 825. The speech to image natural language module 825 analyzes the received speech based message to determine the gestures required to convey the sentiment of the received speech based message into a sign language based message. The speech to image natural language module 825 transmits the required gestures to the image generation module 826. The image generation module 826 generates the images necessary to generate the visual display necessary for the presentation of the sign language based message. The image generation module 826 transmits the necessary visual display to the logical device 112. The logical device 112 retransmits the necessary visual display to the individual speech station 521 display 524 designated to receive the originally generated message. The individual speech station 521 display 524 visually displays the original message as a sign language based message.

This paragraph describes the operating theory for the sign language to speech conversion process. The image sensor 813 receives a sign language based message that is intended for delivery as a speech based message. The image sensor 813 transmits the captured sign language based message to the pattern recognition module 821. The pattern recognition module 821 analyzes the gesture pattern captured by the image sensor 813 to determine the words and syntax of the captured sign language based message. The pattern recognition module 821 transmits the words and syntax information to the image to speech natural language module 822. The image to speech natural language module 822 determines the sentiment of the words and syntax of the captured sign language based message. The image to speech natural language module 822 transmits the determined sentiment to the speech generation module 824 which generates the speech based message corresponding the sentiment expressed by the original sign language based message. The speech generation module 824 transmits the corresponding speech based message to the logical device 112. The logical device 112 processes the received speech based message through the speech to speech technology 702 to generate the sentiment conveyed through the speech based message into a corresponding speech based message. The logical device 112 transmits the corresponding speech based message to the headset routing transceiver 114. The logical device 112 retransmits the corresponding speech based message to the individual headset 121 designated to receive the originally generated message through the headset routing transceiver 114.

This paragraph describes the operating theory for the speech to sign language conversion process. The individual headset 121 receives a speech based message that is intended for delivery as a sign language based message. The individual headset 121 transmits the speech based message to the headset routing transceiver 114. The headset routing transceiver 114 retransmits the speech based message to the logical device 112. The logical device 112 processes the received speech based message through the speech to speech technology 701. The speech to speech technology 701 converts the speech based message into a speech based message. The logical device 112 receives the converted speech based message. The logical device 112 transmits the converted speech based message to the speech to image natural language module 825. The speech to image natural language module 825 analyzes the received speech based message to determine the gestures required to convey the sentiment of the received speech based message into a sign language based message. The speech to image natural language module 825 transmits the required gestures to the image generation module 826. The image generation module 826 generates the images necessary to generate the visual display necessary for the presentation of the sign language based message. The image generation module 826 transmits the necessary visual display to the logical device 112. The logical device 112 retransmits the necessary visual display to the individual speech station 521 display 524 designated to receive the originally generated message. The individual speech station 521 display 524 visually displays the original message as a sign language based message.

The following definitions were used in this disclosure:

Algorithm: As used in this disclosure, an algorithm is a previously defined procedure used to perform a specified task. A device that is capable of implementing an algorithm randomly selected from a plurality of algorithms is called a programmable device.

Announce: As used in this disclosure, to announce means to generate audible sounds over a transducer.

Application or App: As used in this disclosure, an application or app is a self-contained piece of software that is especially designed or downloaded for use with a personal data device.

Artificial Intelligence Device: As used in this disclosure, an artificial intelligence refers to a device (AI device) that is configured to perform tasks in a manner that simulates

human intelligence. By simulating human intelligence is meant that: a) the AI device is autonomous; b) is capable of receiving inputs from and generating outputs into an operating environment; c) that the received inputs are processed through a utility function; d) that the utility function generates the outputs; e) that the generated outputs of the utility function are optimized in some fashion (such as the use of a maximum likelihood function); and f) the utility function is modified over time through the use of a feedback mechanism (often referred to as training). Use Feedback. See pattern recognition software and error function.

Audio: As used in this disclosure, audio refers to the reproduction of a sound that simulates the sound that was originally created.

Audio Device: As used in this disclosure, an audio device is a device that generates audible sound waves.

Audio Source: As used in this disclosure, an audio source is a device that generates electrical signals that can be converted into audible sounds by an audio device such as a speaker.

Broadcast: As used in this disclosure, a broadcast refers to a radio frequency transmission intended to be received by a plurality of receivers.

Communication Link: As used in this disclosure, a communication link refers to the structured exchange of data between two objects.

Disability: As used in this disclosure, a disability refers a physiological induced limitation of the senses or of the movement of an individual.

Display: As used in this disclosure, a display is a surface upon which is presented an image, potentially including, but not limited to, graphic images and speech, that is interpretable by an individual viewing the projected image in a meaningful manner. A display device refers to an electrical device used to present these images.

Earphone: As used in this disclosure, an earphone refers to a device that converts electrical signals into audible sounds that are worn or listened to in contact with the ear.

Email: As used in this disclosure, email describes a communication between a sender and one or more receivers that is delivered through a network wherein the nodes of the

network comprise a plurality of logical devices. An email will generally comprise a speech based communication component.

Facial Recognition: As used in this disclosure, facial recognition refers to a series of algorithms used to identify an individual by comparing a captured image of the face of the individual with a database of one or more previously captured and stored images of the faces of people.

Feedback: As used in this disclosure, feedback refers to a system, including engineered systems, or a subsystem further comprising an "input" and an "output" wherein the difference between the output of the engineered system or subsystem and a reference is used as, or fed back into, a portion of the input of the system or subsystem. Examples of feedback in engineered systems include, but are not limited to, a fluid level control device such as those typically used in a toilet tank, a cruise control in an automobile, a fly ball governor, a thermostat, and almost any electronic device that comprises an amplifier. Feedback systems in nature include, but are not limited to, thermal regulation in animals and blood clotting in animals (wherein the platelets involved in blood clotting release chemical to attract other platelets).

Hands-Free: As used in this disclosure, hands-free refers to a design characteristic of a device that allows the device to be used or operated without the use of the hands.

Headphone: As used in this disclosure, a headphone is a device that comprises one or two earphones that are held to the ear, typically through the use of a band placed on top of the head. The headphone comprises one or more speakers and an optional microphone to allow for: 1) private access to an audio communication system; and, 2) hands free access to an audio communication system. Headset is a synonym for headphone.

IEEE: As used in this disclosure, the IEEE (pronounced "I triple E") is an acronym for the Institute of Electrical and Electronic Engineers.

Image: As used in this disclosure, an image is an optical representation or reproduction of an indicia or of the appearance of something or someone. See indicia sentiment optical character recognition. See Label.

Indicia: As used in this disclosure, the term indicia refers to a set of markings that identify a sentiment. See sentiment.

Instantiation: As used in this disclosure, an instantiation refers to a specific physical object or process that is created using a specification.

Interface: As used in this disclosure, an interface is a physical or virtual boundary that separates two different systems across which information is exchanged.

Language: As used in this disclosure, a language comprises a system of articulations, symbols, physical motions, and rules that are used to communication data and information between members of a community. A machine language, often called a programming language, refers to a system of symbols and rules used to exchange data and instructions between an individual and a logical device such as a logic module or a personal data device.

Logic Module: As used in this disclosure, a logic module is a readily and commercially available electrical device that accepts digital and analog inputs, processes the digital and analog inputs according to previously specified logical processes and provides the results of these previously specified logical processes as digital or analog outputs. The disclosure allows, but does not assume, that the logic module is programmable.

Logical Device: As used in this disclosure, a logical device is an electrical device that processes externally provided inputs to generate outputs that are determined from a previously determined logical functions. A logical device may or may not be programmable.

Messaging Facility: As used in this disclosure, a messaging facility a messaging facility is a previously determined formatting structure through which a speech or image (referred to in this definition as speech) based communication is transmitted for delivery. A messaging facility is selected from the group consisting of a traditional messaging facility, a direct messaging facility and a broadcast messaging facility. A traditional messaging facility includes the delivery of a physical object containing the speech based communication. The direct messaging facility includes communications that are addressed to a previously identified group of recipients. The broadcast messaging facility includes communications that are transmitted without the prior identification of the intended group of recipients. An example of a traditional messaging facility includes, but are not limited to, postal delivery. Examples of a direct messaging facilities include, but are not limited to, email and SMS messages. A social media service is an example of a broadcast messaging facility.

Microphone: As used in this disclosure, a microphone is a transducer that converts the energy from vibration into electrical energy. The sources of vibrations include, but are not limited to, acoustic energy.

Momentary Switch: As used in this disclosure, a momentary switch is a biased switch in the sense that the momentary switch has a baseline position that only changes when the momentary switch is actuated (for example, when a pushbutton switch is pushed or a relay coil is energized). The momentary switch then returns to the baseline position once the actuation is completed. This baseline position is called the "normal" position. For example, a "normally open" momentary switch interrupts (open) the electric circuit in the baseline position and completes (closes) the circuit when the momentary switch is activated. Similarly, a "normally closed" momentary switch will complete (close) an electric circuit in the baseline position and interrupt (open) the circuit when the momentary switch is activated.

Natural Language: As used in this disclosure, a natural language refers to a language used by individuals within a society to communicate directly with each other.

Natural Language Processing: As used in this disclosure, a natural language processing refers to a collection of algorithms that use one or more natural languages as an input. The elements of natural language processing include, but are not limited to: a) capturing a sample of a first natural language from spoken or speech (written) based sources; b) comprehending the captured sample of the first natural language; c) acting on the comprehension of the captured sample of the first natural language to generate an output; and, d) presenting the output as a natural language response. The natural language response is presented in a language selected from the group consisting of: e) the first natural language; or, f) a second natural language that is different from the first natural language. A device that processes a first natural language into a second natural language is called a translation device.

Network: As used in this disclosure, a network refers to a data communication or data exchange structure where data is electronically transferred between nodes, also known as terminals, which are electrically attached to the network. In common usage, the operator of the network is often used as an adjective to describe the network. For example, a telecommunication network would refer to a network run by a telecommunication organization while a banking network will refer to a network operated by an organization involved in banking.

Pattern Recognition Software: As used in this disclosure, pattern recognition software refers to a series of algorithms used to identify a pattern from a database of one or more previously captured and stored data structures. The captured data structure is assumed to be captured by a sensor. The pattern recognition software is often associated with artificial intelligence.

Repeater: As used in this disclosure, a repeater is an electrical device that receives a first signal from a first communication channel and transmits a duplicate second signal over a second communication channel. When a radio frequency wireless communication channel is used as both the first communication channel and the second communication channel the frequencies of operation of the first communication channel and the second communication channels may or may not be identical.

Sentiment: As used in this disclosure, a sentiment refers to a symbolic meaning or message that is communicated through the use of an image, potentially including a speech based image. See image and optical character recognition.

Sentiment: As used in this disclosure, a sentiment can also refer to a symbolic meaning or message that is communicated through the announcement of an audible sound.

Sign Language: As used in this disclosure, a sign language is a natural language that is based on visually distinct signs and gestures. The sign language is commonly used by individuals with hearing disabilities.

Speaker: As used in this disclosure, a speaker is an electrical transducer that converts an electrical signal into an audible sound.

Speech Recognition: As used in this disclosure, an speech recognition refers to a collection of commercially available algorithms that capture process a digital representation of an audible sound in a manner that allows an electronically operated device, such as a computer, to extract data from the digital representation of an audible sound and take a subsequent action based on the data extracted from the audible sound.

Switch: As used in this disclosure, a switch is an electrical device that starts and stops the flow of electricity through an electric circuit by completing or interrupting an electric circuit. The act of completing or breaking the electrical circuit is called actuation. Completing or interrupting an electric circuit with a switch is often referred to as closing or opening a

switch respectively. Completing or interrupting an electric circuit is also often referred to as making or breaking the circuit respectively.

Transceiver: As used in this disclosure, a transceiver is a device that is used to generate, transmit, and receive electromagnetic radiation such as radio signals.

Transducer: As used in this disclosure, a transducer is a device that converts a physical quantity, such as pressure or brightness into an electrical signal or a device that converts an electrical signal into a physical quantity.

Translate: As used in this disclosure, to translate means to convert data contained in a first organizational or operational structure into a second organizational or operation structure. The term translate often refers to the conversion of data existing in a first natural language into a second natural language.

WiFi™: As used in this disclosure, WiFi™ refers to the physical implementation of a collection of wireless electronic communication standards commonly referred to as IEEE 802.11x.

Wireless: As used in this disclosure, wireless is an adjective that is used to describe a communication channel between two devices that does not require the use of physical cabling.

With respect to the above description, it is to be realized that the optimum dimensional relationship for the various components of the invention described above and in Figures 1 through 10 include variations in size, materials, shape, form, function, and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by the invention.

It shall be noted that those skilled in the art will readily recognize numerous adaptations and modifications which can be made to the various embodiments of the present invention which will result in an improved invention, yet all of which will fall within the spirit and scope of the present invention as defined in the following claims. Accordingly, the invention is to be limited only by the scope of the following claims and their equivalents.

CLAIMS

1. A translation process comprising

a logical device;

wherein the logical device further comprises a plurality of language modules;

wherein the plurality of language modules further comprises a sign language to speech translation module and a speech to sign language translation module;

wherein the logical device forms the platform that supports the operation of the sign language to speech translation module and the speech to sign language translation module.

2. The translation process according to claim 1

wherein each language module selected from the plurality of language modules forms a natural language processing structure;

wherein each language module selected from the plurality of language modules receives a first natural language communication;

wherein each language module selected from the plurality of language modules translates the intellectual content of the first natural language message into a second natural language;

wherein a sign language is chosen as the natural language communication for a natural language selected from the group consisting of the first natural language and the second natural language.

3. The translation process according to claim 2

wherein the sign language to speech translation module is the natural language processing structure that translates sign language as the first natural language into the second natural language;

wherein the sign language to speech translation module is an automated process.

4. The translation process according to claim 3

wherein the speech to sign language translation module is the natural language processing structure that translates the first natural language into sign language as the second natural language;

wherein the speech to sign language translation module is an automated process.

5. The translation process according to claim 4

wherein the sign language to speech translation module comprises an image sensor, a pattern recognition module, an image to speech natural language module, and a speech generation module;

wherein the pattern recognition module further comprises a first output and a first input;

wherein the image to speech natural language module further comprises a second output and a second input;

wherein the speech generation module further comprises a third output and a third input;

wherein the sign language to speech translation module generates the translated second natural language communication into a speech based third output;

wherein the third output is transmitted to the logical device;

wherein the logical device processes the third output as a message selected from the group consisting of: a) a speech based message that is displayed on an individual speech station; and, b) an audible message that is announced over an individual headset.

6. The translation process according to claim 5

wherein the speech to sign language translation module further comprises a speech to image natural language module and an image generation module;

wherein the speech to image natural language module further comprises a fourth output and a fourth input;

wherein the image generation module further comprises a fifth output and a fifth input;

wherein the logical device transmits a speech message that becomes the fourth input of the speech to image natural language module;

wherein the speech to image natural language module generates the fourth output that becomes an input into the fifth input of the image generation module;

wherein the image generation module generates the fifth output that becomes an input into the logical device;

wherein the speech to sign language translation module generates the translated second natural language communication into a visually based fifth output in the form of sign language.

7. The translation process according to claim 6

wherein the image sensor is an electric sensor;

wherein the image sensor converts light into one or more electric signals;

wherein the image sensor captures the images of the sign language communication that forms the first natural language communication;

wherein the image sensor transmits the captured images of the first natural language communication to the pattern recognition module.

8. The translation process according to claim 7

wherein the pattern recognition module receives the first input from the image sensor;

wherein the pattern recognition module generates the first output that becomes the second input of the image to speech natural language module;

wherein the image to speech natural language module generates the second output that becomes the third input of the speech generation module;

wherein the speech generation module generates the third output that becomes an input into the logical device;

wherein the pattern recognition module receives the captured images of the sign language communication from the image sensor;

wherein the pattern recognition module identifies within the captured images of the sign language communication the signs and gestures that form the sign language communication;

wherein the pattern recognition module identifies within the captured images of the sign language communication the order in which the signs and gestures occur.

9. The translation process according to claim 8

wherein the pattern recognition module transmits the identified order of the signs and gestures identified within the captured images of the sign language communication to the first output;

wherein the image to speech natural language module receives the identified order of the signs and gestures from the first output as the second input;

wherein the image to speech natural language module translates the identified order of the signs and gestures received from the pattern recognition module into a sentiment expressed in the second natural language;

wherein the image to speech natural language module transmits the translated sentiment to the second output.

10. The translation process according to claim 9

wherein the speech generation module receives the translated sentiment from the second output as the third input;

wherein the speech generation module converts the translated sentiment into a speech based data file that is transmitted to the third output;

wherein the data file generated by the speech generation module provides a speech version of the translated sentiment in the second language that is suitable for display on the individual speech station display.

11. The translation process according to claim 10

wherein the logical device receives the speech based third output from the speech generation module of the sign language to speech translation module;

wherein the logical device determines the delivery requirement of the third output;

wherein the delivery requirement is selected from the group consisting of: a) an announcement of the third output through an individual headset; and b) a visibly displayed speech message displayed on an individual speech station;

wherein the logical device determines the delivery requirement from an externally provided input method;

wherein if the logical device is required to process the third output through an announcement on the individual headset, the speech based message received as the third

output is initially processed through the speech to speech technology and the subsequently transmitted to the individual headset;

wherein if the logical device is required to process the third output through the visual display of speech, the logical device transmits the third output directly to the individual speech station.

12. The translation process according to claim 11 wherein the logical device transmits the fifth output as a video image that is displayed on the individual speech station display of the individual speech station.

13. The translation process according to claim 12

wherein the speech to image natural language module receives a speech format communication in a first natural language;

wherein the speech to image natural language module converts the received speech format communication into the order of a series of the signs and gestures of a sign language based second natural language;

wherein the speech to image natural language module transmits the signs and gestures of the sign language based communication to the fourth output.

14. The translation process according to claim 13

wherein the image generation module receives the identified order of the signs and gestures from the fourth output as the fifth output;

wherein the image generation module translates the identified order of the signs and gestures received from the speech to image natural language module into a sentiment expressed in the in the visual images of the sign language that forms the second natural language;

wherein the image generation module transmits the sentiment of the speech based communication in the form of the generated images of the sign language used to from the second natural language.

15. The translation process according to claim 14

wherein the logical device receives a communication from a message source selected from the group consisting of: a) a speech based message generated from an individual headset; and, b) a speech based message generated from an individual speech station;

wherein if the speech to sign language translation module is required to generate a sign language translation of a speech message, the logical device transmits the received speech based message directly to the fourth input of the speech to image natural language module;

wherein if the speech to sign language translation module is required to generate a sign language translation of an audible message, the logical device first processes the received audible message through the speech to speech technology and then subsequently transmits the converted speech format message to the fourth input of the speech to image natural language module;

wherein the logical device receives the visual images of the sign language translation of the message received from the message source through the fifth output of the image generation module;

wherein the logical device transmits the received sign language translation to the individual speech station.

16. A translation process comprising

a logical device;

wherein the logical device further comprises a plurality of language modules;

wherein the plurality of language modules further comprises a sign language to text translation module and a text to sign language translation module;

wherein the logical device forms the platform that supports the operation of the sign language to text translation module and the text to sign language translation module.

17. The translation process according to claim 16

wherein each language module selected from the plurality of language modules forms a natural language processing structure;

wherein each language module selected from the plurality of language modules receives a first natural language communication;

wherein each language module selected from the plurality of language modules translates the intellectual content of the first natural language message into a second natural language;

wherein a sign language is chosen as the natural language communication for a natural language selected from the group consisting of the first natural language and the second natural language.

18. The translation process according to claim 17

wherein the sign language to text translation module is the natural language processing structure that translates sign language as the first natural language into the second natural language;

wherein the sign language to text translation module is an automated process.

19. The translation process according to claim 18

wherein the text to sign language translation module is the natural language processing structure that translates the first natural language into sign language as the second natural language;

wherein the text to sign language translation module is an automated process.

20. The translation process according to claim 19

wherein the sign language to text translation module comprises an image sensor, a pattern recognition module, an image to text natural language module, and a text generation module;

wherein the pattern recognition module further comprises a first output and a first input;

wherein the image to text natural language module further comprises a second output and a second input;

wherein the text generation module further comprises a third output and a third input;

wherein the sign language to text translation module generates the translated second natural language communication into a text based third output;

wherein the third output is transmitted to the logical device;

wherein the logical device processes the third output as a message selected from the group consisting of: a) a text based message that is displayed on an individual text station; and, b) an audible message that is announced over an individual headset.

21. The translation process according to claim 20

wherein the text to sign language translation module further comprises a text to image natural language module and an image generation module;

wherein the text to image natural language module further comprises a fourth output and a fourth input;

wherein the image generation module further comprises a fifth output and a fifth input;

wherein the logical device transmits a text message that becomes the fourth input of the text to image natural language module;

wherein the text to image natural language module generates the fourth output that becomes an input into the fifth input of the image generation module;

wherein the image generation module generates the fifth output that becomes an input into the logical device;

wherein the text to sign language translation module generates the translated second natural language communication into a visually based fifth output in the form of sign language.

22. The translation process according to claim 21

wherein the image sensor is an electric sensor;

wherein the image sensor converts light into one or more electric signals;

wherein the image sensor captures the images of the sign language communication that forms the first natural language communication;

wherein the image sensor transmits the captured images of the first natural language communication to the pattern recognition module.

23. The translation process according to claim 22

wherein the pattern recognition module receives the first input from the image sensor;

wherein the pattern recognition module generates the first output that becomes the second input of the image to text natural language module;

wherein the image to text natural language module generates the second output that becomes the third input of the text generation module;

wherein the text generation module generates the third output that becomes an input into the logical device;

wherein the pattern recognition module receives the captured images of the sign language communication from the image sensor;

wherein the pattern recognition module identifies within the captured images of the sign language communication the signs and gestures that form the sign language communication;

wherein the pattern recognition module identifies within the captured images of the sign language communication the order in which the signs and gestures occur.

24. The translation process according to claim 23

wherein the pattern recognition module transmits the identified order of the signs and gestures identified within the captured images of the sign language communication to the first output;

wherein the image to text natural language module receives the identified order of the signs and gestures from the first output as the second input;

wherein the image to text natural language module translates the identified order of the signs and gestures received from the pattern recognition module into a sentiment expressed in the second natural language;

wherein the image to text natural language module transmits the translated sentiment to the second output.

25. The translation process according to claim 24

wherein the text generation module receives the translated sentiment from the second output as the third input;

wherein the text generation module converts the translated sentiment into a text based data file that is transmitted to the third output;

wherein the data file generated by the text generation module provides a text version of the translated sentiment in the second language that is suitable for display on the individual text station display.

26. The translation process according to claim 25

wherein the logical device receives the text based third output from the text generation module of the sign language to text translation module;

wherein the logical device determines the delivery requirement of the third output;

wherein the delivery requirement is selected from the group consisting of: a) an announcement of the third output through an individual headset; and b) a visibly displayed text message displayed on an individual text station;

wherein the logical device determines the delivery requirement from an externally provided input method;

wherein if the logical device is required to process the third output through an announcement on the individual headset, the text based message received as the third output is initially processed through the speech to text technology and the subsequently transmitted to the individual headset;

wherein if the logical device is required to process the third output through the visual display of text, the logical device transmits the third output directly to the individual text station.

27. The translation process according to claim 26 wherein the logical device transmits the fifth output as a video image that is displayed on the individual text station display of the individual text station.

28. The translation process according to claim 27

wherein the text to image natural language module receives a text format communication in a first natural language;

wherein the text to image natural language module converts the received text format communication into the order of a series of the signs and gestures of a sign language based second natural language;

wherein the text to image natural language module transmits the signs and gestures of the sign language based communication to the fourth output.

29. The translation process according to claim 28

wherein the image generation module receives the identified order of the signs and gestures from the fourth output as the fifth output;

wherein the image generation module translates the identified order of the signs and gestures received from the text to image natural language module into a sentiment expressed in the in the visual images of the sign language that forms the second natural language;

wherein the image generation module transmits the sentiment of the text based communication in the form of the generated images of the sign language used to from the second natural language.

30. The translation process according to claim 29

wherein the logical device receives a communication from a message source selected from the group consisting of: a) a speech based message generated from an individual headset; and, b) a text based message generated from an individual text station;

wherein if the text to sign language translation module is required to generate a sign language translation of a text message, the logical device transmits the received text based message directly to the fourth input of the text to image natural language module;

wherein the text to sign language translation module is able to operate in reverse in terms of first receiving the received audible message and thereafter converting to the text message;

wherein if the text to sign language translation module is required to generate a sign language translation of an audible message, the logical device first processes the received audible message through the text to speech technology and then subsequently transmits the converted text format message to the fourth input of the text to image natural language module;

wherein the logical device receives the visual images of the sign language translation of the message received from the message source through the fifth output of the image generation module;

wherein the logical device transmits the received sign language translation to the individual text station.