

25

- (b) selecting a data packet at a head of the ordered list of the data packets to be decoded for a current player, if:
 - (i) a predetermined maximum number of decoded data packets has not yet been reached;
 - (ii) the ordered list is not empty; and
 - (iii) the data packet at the head of the ordered list was not chosen previously;
- (c) incrementing a counter of decoded data packets that is used to determine if the predetermined maximum number has been reached;
- (d) eliminating the data packet at the head of the ordered list, in each ordered list in which it appears; and
- (e) repeating the preceding three steps (b)–(d) for each successive player who will listen to the content of the data packets.

23. The method of claim 22, wherein the step of decoding is carried out by a digital signal processor.

24. A memory medium having machine executable instructions for carrying out the steps of claim 13.

25. A system for decoding compressed data conveyed in data packets in a plurality of listening channels during play of an electronic game, comprising:

- (a) a processor;
- (b) a memory that is coupled to the processor, said memory storing machine instructions for causing the processor to carry out a plurality of functions, said functions including executing an instance of an electronic game;
- (c) audio input transducers and audio output transducers, coupled to the processor and employed for input and output of audio signals, each audio input transducer providing an audio signal to a corresponding audio channel to be encoded and transmitted to at least one recipient, and each audio output transducer being employed to play an audio signal received from a source comprising another player participating in the play of an electronic game;
- (d) a selected number of decoders used to decode the data packets received by the system, to recover the audio content conveyed by the data packets, wherein each decoder is associated with a different listening channel, wherein the machine instructions cause the processor to carry out a plurality functions, including:
 - (i) creating queues of data packets received from audio sources in different listening channels, each listening channel including data packets from one or more sources for decoding by the decoder associated with the listening channel;
 - (ii) if a data packet for an audio source is missing in a stream of data packets in a listening channel, replicating a content of a previous data packet for said source, for use instead of the data packet that was missing;
 - (iii) selecting data packets from the queues to be decoded, but not exceeding the number of decoders available; and
 - (iv) decoding the data packets that were selected, using the decoders.

26. The system of claim 25, wherein the machine instructions further cause the processor to enable each player to mask any listening channel to which the player does not want to listen.

26

27. The system of claim 25, wherein the machine instructions further cause the processor to enable each player to selectively mute a specific source having data packets in a queue, so that the data packets from the specific source are not selected for decoding for said player.

28. The system of claim 25, wherein the machine instructions further cause the processor to sort the data packets that will be decoded for each player according to any priority assigned by the player relative to a source of the data packets.

29. The system of claim 25, wherein the machine instructions further cause the processor to apply a priority defined by the electronic game that is being played, in determining the data packets included in each listening channel to be heard by a player when decoded.

30. The system of claim 25, wherein the machine instructions further cause the processor to order the data packets as a function of a volume of the content of the data packets, and eliminate each data packet in the queues as thus ordered that includes a substantially silent content.

31. The system of claim 30, wherein for each player that will listen to the data packets that are decoded, the machine instructions cause the processor to decode a first predetermined number of the data packets that were ordered, using silent compressed data for the content that will be heard in place of any inexistent data packets.

32. The system of claim 25, wherein the machine instructions further cause the processor to mix the content of data packets from a plurality of sources, before decoding the data packets.

33. The system of claim 25, wherein the machine instructions further cause the processor to mix the content received from a plurality of sources, after decoding the data packets.

34. The system of claim 25, wherein the machine instructions further cause the processor to

- (a) order the data packets to produce an ordered list for each player receiving and listening to the content of the data packets;
- (b) select a data packet at a head of the ordered list of the data packets to be decoded for a current player, if:
 - (i) a predetermined maximum number of decoded data packets has not yet been reached;
 - (ii) the ordered list is not empty; and
 - (iii) the data packet at the head of the ordered list was not chosen previously;
- (b) increment a counter of decoded data packets that is used to determine if the predetermined maximum number has been reached;
- (c) eliminate the data packet at the head of the ordered list, in each ordered list in which it appears; and
- (d) repeat the preceding three steps (b)–(d) for each successive player who will listen to the content of the data packets.

35. The system of claim 25, wherein each decoder comprises a digital signal processor.

* * * * *