Patent Claims

1. A method for correcting errors in packet data, where code words are used over a plurality of data packets, having the following steps:

- redundancy information for correcting errors is added while retaining the original packet data structure, specifically at the cost of a free data field or of a stuffing data field or useful data field,
- the cycle of error protection, particularly its code word length, is chosen as a multiple of a minimum size for a packet length.

2. The method as claimed in claim 1, characterized in that the packet data used are DAB data packets.

3. The method as claimed in claim 1 or 2, characterized in that an outer code word length is provided as a multiple of 24 bytes or an inner code word length is provided as a multiple of 24 bytes.

4. The method as claimed in either of claims 2 or 3, characterized in that the error recognition information in the data packet containing the redundancy information for correcting errors is associated with the next respective code word.

5. The method as claimed in one of claims 1 to 4, characterized in that to recognize that redundancy information for correcting errors is contained in a data packet and/or to find the position of the code word in the data stream an appropriate identifier is provided in the packet header, e.g. a set command bit, or in the sync word.

6. The method as claimed in one of claims 1 to 5, characterized in that to correct errors a REED-Solomon code is used which is shortened particularly to the

packet lengths used.

7. The method as claimed in one of claims 1 to 6, characterized in that a separate data packet is used for the redundancy information, said data packet being appended to the data packets for useful information.

8. The method as claimed in claim 7, characterized in that only the redundancy information is evaluated for decoding the data packet with the redundancy information, and the rest is discarded.

9. The method as claimed in one of claims 1 to 8, characterized in that the data packets are arranged in rows and the code words in columns.

10. The method as claimed in claim 9, characterized in that burst errors within packets are distributed over a plurality of code words.

11. The method as claimed in either of claims 9 and 10, characterized in that a shortened packet header is used, and the data capacity resulting from shortening is filled with redundancy bytes.

Patent Claims

1. A computer-implemented method for error correction of data transmitted in packet mode, wherein code words are used over multiple data packets in a data stream, comprising: providing, by a processor, a redundancy information for error correction while maintaining the original packet data structure; and selecting, by the processor, a cycle of error protection represented by a length of the code word; wherein: the redundancy information is provided in at least one of a free data field, a stuffing data field, and a useful data field of at least one data packet of the multiple data packets in the data stream; the data transmitted are digital audio broadcasting data packets; one of: a) an outer code word length is provided as a multiple of 24 bytes; and b) an inner code word length is provided as a multiple of 24 bytes; and a selected identifier in one of a packet header and a synchronization word is provided for at least one of: a) indicating that the redundancy information for error correction is contained in a data packet; and b) indicating the position of the code word in the data stream.

2. The computer-implemented method as recited in claim 1, wherein an error recognition information of a data packet, which data packet contains the redundancy information for error correction in connection with a first code word, is assigned to a next code word in the data stream.

3. The computer-implemented method as recited in claim 1, wherein a Reed-Solomon code is used for error correction, which Reed-Solomon code is shortened to the packet lengths being used in the data stream.

4. The computer-implemented method as recited in claim 1, wherein a separate data packet is provided for the redundancy information, which separate data packet is appended to data packets for useful information.

5. The computer-implemented method as recited in claim 4, wherein, for decoding of the data packet containing the redundancy information, only the redundancy information is analyzed and the remaining bytes of the data packet are discarded.

6. The computer-implemented method as recited in claim 1, wherein the multiple data packets are arranged in rows and the code words are arranged in columns.

7. The computer-implemented method as recited in claim 6, wherein burst errors within the data packets are distributed over multiple

code words.

8. The computer-implemented method as recited in claim 7, wherein a shortened packet header is used, and wherein a data capacity resulting from the shortened packet header is used for accommodating the redundancy information.

9. The computer-implemented method as recited in claim 6, wherein a shortened packet header is used, and wherein a data capacity resulting from the shortened packet header is used for accommodating the redundancy information.

10. The computer-implemented method of claim 1, wherein 24 bytes is a minimum size for a packet length of a data packet according to the packet mode.

11. A computer-implemented method for error correction of data transmitted in packet mode, wherein code words are used over multiple data packets in a data stream, comprising: providing, by a processor, a redundancy information for error correction while maintaining the original packet data structure; and selecting, by the processor, a cycle of error protection represented by a length of the code word; wherein: the redundancy information is provided in at least one of a free data field, a stuffing data field, and a useful data field of at least one data packet of the multiple data packets in the data stream; the data transmitted are digital audio broadcasting data packets; one of: a) an outer code word length is provided as a multiple of a minimum size for a packet length of a data packet that a receiver to which the data is transmitted is configured to decode; and b) an inner code word length is provided as a multiple of the minimum size; and a selected identifier in one of a packet header and a synchronization word is provided for at least one of: a) indicating that the redundancy information for error correction is contained in a data packet; and b) indicating the position of the code word in the data stream.

12. The computer-implemented method as recited in claim 11, wherein the minimum size is 24 bytes.

13. The computer-implemented method as recited in claim 11, wherein an error recognition information of a data packet, which data packet contains the redundancy information for error correction in connection with a first code word, is assigned to a next code word in the data stream.

14. The computer-implemented method as recited in claim 11, wherein a Reed-Solomon code is used for error correction, which

Reed-Solomon code is shortened to the packet lengths being used in the data stream.

15. The computer-implemented method as recited in claim 11, wherein a separate data packet is provided for the redundancy information, which separate data packet is appended to data packets for useful information.

16. The computer-implemented method as recited in claim 15, wherein, for decoding of the data packet containing the redundancy information, only the redundancy information is analyzed and the remaining bytes of the data packet are discarded.

17. The computer-implemented method as recited in claim 11, wherein the multiple data packets are arranged in rows and the code words are arranged in columns.

18. The computer-implemented method as recited in claim 17, wherein burst errors within the data packets are distributed over multiple code words.

19. The computer-implemented method as recited in claim 17, wherein a shortened packet header is used, and wherein a data capacity resulting from the shortened packet header is used for accommodating the redundancy information.

20. A computer-implemented method for error correction of data transmitted in packet mode, wherein code words are used over multiple data packets in a data stream, comprising: providing, by a processor, a redundancy information for error correction while maintaining the original packet data structure; and selecting, by the processor, a cycle of error protection represented by a length of the code word; wherein: the redundancy information is provided in at least one of a free data field, a stuffing data field, and a useful data field of at least one data packet of the multiple data packets in the data stream; the data transmitted are digital audio broadcasting data packets; one of: a) an outer code word length is provided as a multiple of a minimum size, as predefined by the packet mode, for a packet length of a data packet; and b) an inner code word length is provided as a multiple of the minimum size; and a selected identifier in one of a packet header and a synchronization word is provided for at least one of: a) indicating that the redundancy information for error correction is contained in a data packet; and b) indicating the position of the code word in the data stream.