element 22 and so forth. Parametric side information for obtaining an upmix of audio signals out of a downmix audio signal as defined by one or more frame elements 22 is collected to form another frame element within frame 20. In that case, the frame element conveying this side information relates to, or forms a kind of extension data for, other frame elements. Naturally, such extensions are not restricted to multi-channel or multi-object side information.

One possibility is to indicate within each frame element 22 of what type the respective frame element is. Advantageously, such a procedure allows for coping with future extensions of the bitstream syntax. Decoders which are not able to deal with certain frame element types, would simply skip the respective frame elements within the bitstream by exploiting respective length information within these frame elements. Moreover, it is possible to allow for standard conform decoders of different type: some are able to understand a first set of types, while others understand and can deal with another set of types; alternative element types would simply be disregarded by the respective decoders. Additionally, the encoder would be able to sort the frame elements at his discretion so that decoders which are able to process such additional frame elements may be fed with the frame elements within the frames 20 in an order which, for example, minimizes buffering needs within the decoder. Disadvantageously, however, the bitstream would have to convey frame element type information per frame element, the necessity of which, in turn, negatively affects the compression rate of the bitstream 12 on the one hand and the decoding complexity on the other hand as the parsing overhead for inspecting the respective frame element type information occurs within each frame element.

Naturally, it would be possible to otherwise fix the order among the frame elements 22, such as per convention, but such a procedure prevents encoders from having the freedom to rearrange frame elements due to, for example, specific properties of future extension frame elements necessitating or suggesting, for example, a different order among the frame elements.

Accordingly, there is a need for another concept of a bitstream, encoder and decoder, respectively.

Accordingly, ~~it is the object~~ example embodiments of the present invention seek to provide a bitstream, an encoder and a decoder which solve the just-outlined problem and allow for obtaining a more efficient way of frame element positioning.

This ~~object is~~ may be achieved by the subject matter of the pending independent claims.

~~The~~ Example embodiments of the present invention is based on the finding that a better compromise between a too high bitstream and decoding overhead on the one hand and flexibility of frame element positioning on the other hand may be obtained if each of the sequence of frames of the bitstream comprises a sequence of N frame elements and, on the other hand, the bitstream comprises a configuration block comprising a field indicating the number of elements N and a type indication syntax portion indicating, for each element position of the sequence of N element positions, an element type out of a plurality of element types with, in the sequences of N frame elements of the frames, each frame element being of the element type indicated, by the type indication portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements of the respective frame in the bitstream. Thus, the frames are equally structured in that each frame comprises the same sequence of N frame elements of the frame element type indicated by the type indication syntax portion, positioned within the bitstream in the same sequential order. This sequential order is commonly adjustable for the sequence of frames by use of the type indication syntax portion which indicates, for each element position of the sequence of N element positions, an element type out of a plurality of element types.

By this measure, the frame element types may be arranged in any order, such as at the encoder's discretion, so as to choose the order which is the most appropriate for the frame element types used, for example.

The plurality of frame element types may, for example, include an extension element type with frame elements of the extension element type comprising a length information on a length of the respective frame element so that decoders not supporting the specific extension element type, are able to skip these frame elements of the extension element type using the length information as a skip interval length. On the other hand, decoders able to handle these frame elements of the extension element type accordingly process the content or payload portion thereof and as the encoder is able to freely position these frame elements of the extension element type within the sequence of frame elements of the frames, buffering overhead at the decoders may be minimized by choosing the frame element type order appropriately and signaling same within the type indication syntax portion.

Advantageous implementations of embodiments of the present invention are the subject of the dependent claims.

Accordingly, in one aspect of the present application there is provided a bitstream comprising a configuration block and a sequence of frames respectively representing consecutive time periods of an audio content, wherein the configuration block comprises

a field indicating a number of elements N, and a type indication syntax portion indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types;

and wherein each of the sequence of frames comprises a sequence of N frame elements, wherein each frame element is of the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements of the respective frame in the bitstream.

In another aspect, there is provided a decoder for decoding a bitstream comprising a configuration block and a sequence of frames respectively representing consecutive time periods of an audio content, wherein the configuration block (UsacConfig) comprises a field (numElements) indicating a number of elements N, and a type indication syntax portion indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types, and wherein each of the sequence of frames comprises a sequence of N frame elements, wherein the decoder is configured to decode each frame by

decoding each frame element in accordance with the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements of the respective frame in the bitstream.

In another aspect, there is provided an encoder for encoding of an audio content into a bitstream, the encoder being configured to encode consecutive time periods of the audio content into a sequence of frames respectively representing the consecutive time periods of the audio content, such that each frame comprises a sequence of a number of elements N of frame elements with each frame element being of a respective one of a plurality of element types so that frame elements of the frames positioned at any common element position of a sequence of N element positions of the sequence of frame elements are of equal element type,

encode into the bitstream a configuration block which comprises a field indicating the number of elements N, and a type indication syntax portion indicating, for each element position of the sequence of N element positions, the respective element type, and

encode, for each frame, the sequence of N frame elements into the bitstream so that each frame element of the sequence of N frame elements which is positioned at a respective element position within the sequence of N frame elements in the bitstream is of the element type indicated, by the type indication portion, for the respective element position.

In another aspect, there is provided a method for decoding a bitstream comprising a configuration block and a sequence of frames respectively representing consecutive time periods of an audio content, wherein the configuration block comprises a field indicating a number of elements N, and a type indication syntax portion indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types, and wherein each of the sequence of frames comprises a sequence of N frame elements, wherein the method comprises decoding each frame by

decoding each frame element in accordance with the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements of the respective frame in the bitstream.

In another aspect, there is provided a method for encoding of an audio content into a bitstream, the method comprising

encoding consecutive time periods of the audio content into a sequence of frames respectively representing the consecutive time periods of the audio content, such that each frame comprises a sequence of a number of elements N of frame elements with each frame element being of a respective one of a plurality of element types so that frame elements of the frames positioned at any common element position of a sequence of N element positions of the sequence of frame elements are of equal element type,

encoding into the bitstream a configuration block which comprises a field indicating the number of elements N, and a type indication syntax portion indicating, for each element position of the sequence of N element positions, the respective element type, and

encoding, for each frame, the sequence of N frame elements into the bitstream so that each frame element of the sequence of N frame elements which is positioned at a respective element position within the sequence of N frame elements in the bitstream is of the element type indicated, by the type indication portion, for the respective element position.

Claims

1. A bitstream comprising a configuration block (28) and a sequence of frames (20) respectively representing consecutive time periods (18) of an audio content (10), wherein the configuration block (28) comprises

a field (50) indicating a number of elements N, and

a type indication syntax portion (52) indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types;

and wherein each of the sequence of frames (20) comprises

a sequence of N frame elements (22), wherein each frame element is of the element type indicated, by the type indication syntax portion (52), for the respective element position at which the respective frame element (22) is positioned within the sequence of N frame elements of the respective frame (20)in the bitstream (12).

2. Bitstream according to claim 1, wherein the type indication syntax portion (52) comprises a sequence of N syntax elements (54) with each syntax element (54) indicating the element type for the respective element position at which the respective syntax element (54) is positioned within the type indication syntax portion (52).

3. Bitstream according to claim 1 or 2, wherein the configuration block (28) comprises a sequence of N configuration elements (56) with each configuration element (56) comprising configuration information for the element type for the respective element position at which the respective configuration element (56) is positioned in the sequence of N configuration elements.

4. Bitstream according to claim 3, wherein the type indication syntax portion (52) comprises a sequence of N syntax elements (54) with each syntax element (54) indicating the element type for the respective element position at which the respective syntax element (54) is positioned within the type indication syntax portion (52), and the configuration elements (56) and the syntax elements are arranged in the bitstream alternately.

5. Bitstream according to any of claims 1 to 4, wherein the plurality of element types comprises an extension element type, wherein each frame element (22) of the extension element type of any frame (20) comprises a length information (58) on a length of the respective frame element.

6. Bitstream according to claim 5, wherein the configuration block (28) comprises, for each element position for which the type indication portion indicates the extension element type, a configuration element (56) comprising configuration information for the extension element type, wherein any configuration information for the extension element type comprises default payload length information (60) on a default extension payload length and the length information (58) of the frame elements (22) of the extension element type comprises a conditional syntax portion (62) in the form of a default extension payload length flag (64) followed, if the default payload length flag (64) is not set, by an extension payload length value (66), wherein any frame element of the extension element type has the default extension payload length in case the default extension payload length flag (64) of the length information (58) of the respective frame element (22b) of the extension element type is set, and has an extension payload length corresponding to the extension payload length value (60) of the length information (58) of the respective frame element (22b) of the extension element type in case of the default extension payload length flag (64) of the length information (58) of the respective frame (22b) of the extension element type is not set.

7. Bitstream according to claim 5 or 6, wherein the length information (58) of any frame element of the extension element type comprises an extension payload present flag (70), wherein any frame element (22b) of the extension element type, the extension payload present flag (70) of the length information (58) of which is not set, merely consists of the extension payload present flag (70), and the length information (58) of any frame element (22b) of the extension element type, the payload data present flag (70) of the length information (58) of which is set, further comprises a syntax portion indicating an extension payload length of the respective frame (22b) of the extension element type.

8. Bitstream according to any of claims 5 to 7, wherein the configuration block (28) comprises, for each element position for which the type indication portion indicates (52) the extension element type, a configuration element (56) comprising configuration information for the extension element type, wherein the configuration information comprises an extension element type field (72) indicating a payload

data type out of a plurality of payload data types, wherein the plurality of payload data types comprises a multi-channel side information type and a multi-object coding side information type, wherein the configuration information for the extension element type of configuration elements, the extension element type field (72) of which indicates the multi-channel side information, also comprises multi-channel side information configuration data (74), and the configuration information for the extension element type of configuration elements the extension element type field (72) of which indicates the multi-object side information type, also comprise multi-object side information configuration data (74), and the frame elements (22b) of the extension element type positioned at any element position for which the type indication portion indicates the extension element type, convey payload data of the payload data type indicated by the extension element type field (72) of the configuration information of the configuration element for the respective element position.

9. Decoder for decoding a bitstream (12) comprising a configuration block (28) and a sequence of frames (20) respectively representing consecutive time periods of an audio content (10), wherein the configuration block (UsacConfig) comprises a field (numElements) indicating a number of elements N, and a type indication syntax portion (52) indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types, and wherein each of the sequence of frames comprises a sequence of N frame elements, wherein the decoder is configured to decode each frame (20) by

decoding each frame element (22) in accordance with the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements (22) of the respective frame (20) in the bitstream (12).

10. Decoder according to claim 9, wherein the decoder is configured to read a sequence of N syntax elements (54) from the type indication syntax portion (52), with each element indicating the element type for the respective element position at which the respective syntax element is positioned in the sequence of N syntax elements.

11. Decoder according to claim 9 or 10, wherein the decoder is configured to read a sequence of N configuration elements (56) from the configuration block (28), with each configuration element comprising configuration information for the element type for the respective element position at which the respective configuration

element is positioned in the sequence of N configuration elements, wherein the decoder is configured to, in decoding each frame element (22) in accordance with the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements (22) of the respective frame (20) in the bitstream (12), use the configuration information for the element type for the respective element position at which the respective frame element is positioned within the sequence of N frame elements (22) of the respective frame (20) in the bitstream (12).

12. Decoder according to claim 11, wherein the type indication syntax portion (52) comprises a sequence of N syntax elements (54), with each syntax element indicating the element type for the respective element position at which the respective syntax element is positioned in the sequence of N syntax elements, and the decoder is configured to read the configuration elements (56) and the syntax elements (54) from the bitstream (12) alternately.

13. Decoder according to any of claims 9 to 12, wherein the plurality of element types comprises an extension element type, wherein the decoder is configured to

read, from each frame element (22b) of the extension element type of any frame (20), a length information (58) on a length of the respective frame element,

skip at least a portion of at least some of the frame elements (22) of the extension element type of the frames (20) using the length information (58) on the length of the respective frame element as skip interval length.

14. Decoder according to claim 13, wherein

the decoder is configured to read, for each element position for which the type indication portion indicates the extension element type, a configuration element (74) comprising configuration information for the extension element type from the configuration block (28), with, in reading the configuration information for the extension element type, reading default payload length information (60) on a default extension payload length from the bitstream,

the decoder is also configured to, in reading the length information (58) of the frame elements (22) of the extension element type, read a default extension payload

length flag (64) of a conditional syntax portion (62) from the bitstream (12), check as to whether the default payload length flag (64) is set, and, if the default payload length flag (64) is not set, read an extension payload length value (66) of the conditional syntax portion (62) from the bitstream (12) so as to obtain an extension payload length of the respective frame element, and, if the default payload length flag (64) is set, set the extension payload length of the respective frame element to be equal to the default extension payload length,

the decoder is also configured to skip a payload section (68) of at least some of the frame elements (22) of the extension element type of the frames (20) using the extension payload length of the respective frame element as skip interval length.

15. Decoder according to claim 13 or 14, wherein

the decoder is configured to, in reading the length information (58) of any frame element of the extension element type of the frames, read an extension payload present flag (70) from the bitstream (12), check as to whether the extension payload present flag (70) is set, and, if the extension payload present flag (70) is not set, cease reading the respective frame element (22b) of the extension element type and proceed with reading another frame element (22) of a current frame (20) or a frame element of a subsequent frame (20), and if the payload data present flag (70) is set, read a syntax portion indicating an extension payload length of the respective frame of the extension element type from the bitstream, and skip, at least for some of the frame elements (22) of the extension element type of the frames (20) the extension payload present flag (70) of the length information of which is set, a payload section (68) thereof by using the extension payload length of the respective frame element (22b) of the extension element type read from the bitstream as skip interval length.

16. Decoder according to claim 13 or 14, wherein

the decoder is configured to, in reading the default payload length information (60),

read a default payload length present flag from the bitstream (12),

check as to whether the default payload length present flag is set,

if the default payload length present flag is not set, set the default extension payload length to be zero, and

if the default payload length present flag is set, explicitly read the default extension payload length from the bit stream.

17. Decoder according to any of claims 13 to 16, wherein

the decoder is configured to, in reading the configuration block (28), for each element position for which the type indication portion (52) indicates the extension element type,

read a configuration element (56) comprising configuration information for the extension element type from the bitstream (12), wherein the configuration information comprises an extension element type field (72) indicating a payload data type out of a plurality of payload data types.

18. Decoder according to claim 17, wherein the plurality of payload data types comprises a multi-channel side information type and a multi-object coding side information type,

the decoder is configured to, in reading the configuration block (28), for each element position for which the type indication portion (52) indicates the extension element type,

if the extension element type field (72) indicates the multi-channel side information type, read multi-channel side information configuration data (74) as part of the configuration information from the data stream (12), and if the extension element type field (72) indicates the multi-channel side information type, read multi-object side information configuration data (74) as part of the configuration information from the data stream, and

the decoder is configured to, in decoding each frame,

decode the frame elements of the extension element type positioned at any element position for which the type indication portion indicates the extension element type, and for which the extension element type of the configuration element (56) indicates the multi-channel side information type, by configuring a multi-channel

decoder (44e) using the multi-channel side information configuration data (74) and feeding the thus configured multi-channel decoder (44e) with payload data (68) of the respective frame elements (22b) of the extension element type as multi-channel side information, and

decode the frame elements of the extension element type positioned at any element position for which the type indication portion indicates the extension element type, and for which the extension element type of the configuration element (56) indicates the multi-object side information type, by configuring a multi-object decoder (44d) using the multi-object side information configuration data (74) and feeding the thus configured multi-object decoder (44d) with payload data (68) of the respective frame elements (22) of the extension element type as multi-object information.

19. Decoder according to claim 17 or 18, wherein the decoder is configured to, for any element position for which the type indication portion indicates the extension element type,

read a configuration data length field (76) from the bitstream (12) as part of the configuration information of the configuration element for the respective element position so as to obtain a configuration data length,

check as to whether the payload data type indicated by the extension element type field (72) of the configuration information of the configuration element for the respective element position, belongs to a predetermined set of payload data types being a subset of the plurality of payload data types,

if the payload data type indicated by the extension element type field (72) of the configuration information of the configuration element for the respective element position, belongs to the predetermined set of payload data types,

read payload data dependent configuration data (74) as part of the configuration information of the configuration element for the respective element position from the data stream (12), and

decode the frame elements of the extension element type at the respective element position in the frames (20), using the payload data dependent configuration data (74), and

if the payload data type indicated by the extension element type field (72) of the configuration information of the configuration element for the respective element position, does not belong to the predetermined set of payload data types,

skip the payload data dependent configuration data (74) using the configuration data length, and

skip the frame elements of the extension element type at the respective element position in the frames (20) using the length information (58) therein.

20. Decoder according to any of claims 13 to 19, wherein

the decoder is configured to, in reading the configuration block (28), for each element position for which the type indication portion (52) indicates the extension element type,

read a configuration element (56) comprising configuration information for the extension element type from the bitstream (12), wherein the configuration information comprises an fragmentation use flag (78), and

the decoder is configured to, in reading frame elements (22) positioned at any element position for which the type indication portion indicates the extension element type, and for which the fragmentation use flag (78)of the configuration element is set,

read a fragment information from the bitstream, and

use the fragment information to put payload data of these frame elements of consecutive frames together.

21. Decoder according to any of claims 9 to 20, wherein the decoder is configured such that the decoder, in decoding frame elements (22) in the frames (20) at element positions for which the type indication syntax portion indicates a single channel element type, reconstruct an audio signal.

22. Decoder according to any of claims 9 to 21, wherein the decoder is configured such that the decoder, in decoding frame elements (22) in the frames (20) at element positions for which the type indication syntax portion indicates a channel pair element type, reconstruct two audio signals.

23. Decoder according to any of claims 9 to 22, wherein the decoder is configured to use the same variable length code to read the length information (80), the extension element type field (72), the configuration data length field (76), .

24. Encoder for encoding of an audio content into a bitstream, the encoder being configured to

encode consecutive time periods (18) of the audio content (10) into a sequence of frames (20) respectively representing the consecutive time periods (18) of the audio content (10), such that each frame (20) comprises a sequence of a number of elements N of frame elements (22) with each frame element (22) being of a respective one of a plurality of element types so that frame elements (22) of the frames positioned at any common element position of a sequence of N element positions of the sequence of frame elements are of equal element type,

encode into the bitstream (12) a configuration block (28) which comprises a field indicating the number of elements N, and a type indication syntax portion indicating, for each element position of the sequence of N element positions, the respective element type, and

encode, for each frame (20), the sequence of N frame elements (22) into the bitstream (12) so that each frame element (22) of the sequence of N frame elements which is positioned at a respective element position within the sequence of N frame elements (22) in the bitstream (12) is of the element type indicated, by the type indication portion, for the respective element position.

25. Method for decoding a bitstream (12) comprising a configuration block (28) and a sequence of frames (20) respectively representing consecutive time periods of an audio content, wherein the configuration block (28) comprises a field (50) indicating a number of elements N, and a type indication syntax portion (52) indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types, and wherein each of the sequence

of frames comprises a sequence of N frame elements, wherein the method comprises decoding each frame (20) by

decoding each frame element (22) in accordance with the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements (22) of the respective frame (20) in the bitstream (12).

26. Method for encoding of an audio content into a bitstream, the method comprising

encoding consecutive time periods (18) of the audio content (10) into a sequence of frames (20) respectively representing the consecutive time periods (18) of the audio content (10), such that each frame (20) comprises a sequence of a number of elements N of frame elements (22) with each frame element (22) being of a respective one of a plurality of element types so that frame elements (22) of the frames positioned at any common element position of a sequence of N element positions of the sequence of frame elements are of equal element type,

encoding into the bitstream (12) a configuration block (28) which comprises a field indicating the number of elements N, and a type indication syntax portion indicating, for each element position of the sequence of N element positions, the respective element type, and

encoding, for each frame (20), the sequence of N frame elements (22) into the bitstream (12) so that each frame element (22) of the sequence of N frame elements which is positioned at a respective element position within the sequence of N frame elements (22) in the bitstream (12) is of the element type indicated, by the type indication portion, for the respective element position.

27. Computer program for performing, when running on a computer, the method of claim 25 or claim 26.

Claims

1. A bitstream comprising a configuration block and a sequence of frames respectively representing consecutive time periods of an audio content, wherein the configuration block comprises

a field indicating a number of elements N, and

a type indication syntax portion indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types;

and wherein each of the sequence of frames comprises

a sequence of N frame elements, wherein each frame element is of the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements of the respective frame in the bitstream.

2. Bitstream according to claim 1, wherein the type indication syntax portion comprises a sequence of N syntax elements with each syntax element indicating the element type for the respective element position at which the respective syntax element is positioned within the type indication syntax portion.

3. Bitstream according to claim 1 or 2, wherein the configuration block comprises a sequence of N configuration elements with each configuration element comprising configuration information for the element type for the respective element position at which the respective configuration element is positioned in the sequence of N configuration elements.

4. Bitstream according to claim 3, wherein the type indication syntax portion comprises a sequence of N syntax elements with each syntax element indicating the element type for the respective element position at which the respective syntax element is positioned within the type indication syntax portion, and the configuration elements and the syntax elements are arranged in the bitstream alternately.

5. Bitstream according to any of claims 1 to 4, wherein the plurality of element types comprises an extension element type, wherein each frame element of the extension element type of any frame comprises a length information on a length of the respective frame element.

6. Bitstream according to claim 5, wherein the configuration block comprises, for each element position for which the type indication portion indicates the extension element type, a configuration element comprising configuration information for the extension element type, wherein any configuration information for the extension element type comprises default payload length information on a default extension payload length and the length information of the frame elements of the extension element type comprises a conditional syntax portion in the form of a default extension payload length flag followed, if the default payload length flag is not set, by an extension payload length value, wherein any frame element of the extension element type has the default extension payload length in case the default extension payload length flag of the length information of the respective frame element of the extension element type is set, and has an extension payload length corresponding to the extension payload length value of the length information of the respective frame element of the extension element type in case of the default extension payload length flag of the length information of the respective frame of the extension element type is not set.

7. Bitstream according to claim 5 or 6, wherein the length information of any frame element of the extension element type comprises an extension payload present flag, wherein any frame element of the extension element type, the extension payload present flag of the length information of which is not set, merely consists of the extension payload present flag, and the length information of any frame element of the extension element type, the payload data present flag of the length information of which is set, further comprises a syntax portion indicating an extension payload length of the respective frame of the extension element type.

8. Bitstream according to any of claims 5 to 7, wherein the configuration block comprises, for each element position for which the type indication portion indicates the extension element type, a configuration element comprising configuration information for the extension element type, wherein the configuration information comprises an extension element type field indicating a payload data type out of a plurality of payload data types, wherein the plurality of payload data types comprises a multi-channel side information type and a multi-object coding side

information type, wherein the configuration information for the extension element type of configuration elements, the extension element type field of which indicates the multi-channel side information, also comprises multi-channel side information configuration data, and the configuration information for the extension element type of configuration elements the extension element type field of which indicates the multi-object side information type, also comprise multi-object side information configuration data, and the frame elements of the extension element type positioned at any element position for which the type indication portion indicates the extension element type, convey payload data of the payload data type indicated by the extension element type field of the configuration information of the configuration element for the respective element position.

9. Decoder for decoding a bitstream comprising a configuration block and a sequence of frames respectively representing consecutive time periods of an audio content, wherein the configuration block (UsacConfig) comprises a field (numElements) indicating a number of elements N, and a type indication syntax portion indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types, and wherein each of the sequence of frames comprises a sequence of N frame elements, wherein the decoder is configured to decode each frame by

decoding each frame element in accordance with the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements of the respective frame in the bitstream.

10. Decoder according to claim 9, wherein the decoder is configured to read a sequence of N syntax elements from the type indication syntax portion, with each element indicating the element type for the respective element position at which the respective syntax element is positioned in the sequence of N syntax elements.

11. Decoder according to claim 9 or 10, wherein the decoder is configured to read a sequence of N configuration elements from the configuration block, with each configuration element comprising configuration information for the element type for the respective element position at which the respective configuration element is positioned in the sequence of N configuration elements, wherein the decoder is configured to, in decoding each frame element in accordance with the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame

elements of the respective frame in the bitstream, use the configuration information for the element type for the respective element position at which the respective frame element is positioned within the sequence of N frame elements of the respective frame in the bitstream.

12. Decoder according to claim 11, wherein the type indication syntax portion comprises a sequence of N syntax elements, with each syntax element indicating the element type for the respective element position at which the respective syntax element is positioned in the sequence of N syntax elements, and the decoder is configured to read the configuration elements and the syntax elements from the bitstream alternately.

13. Decoder according to any of claims 9 to 12, wherein the plurality of element types comprises an extension element type, wherein the decoder is configured to

read, from each frame element of the extension element type of any frame, a length information on a length of the respective frame element,

skip at least a portion of at least some of the frame elements of the extension element type of the frames using the length information on the length of the respective frame element as skip interval length.

14. Decoder according to claim 13, wherein

the decoder is configured to read, for each element position for which the type indication portion indicates the extension element type, a configuration element comprising configuration information for the extension element type from the configuration block, with, in reading the configuration information for the extension element type, reading default payload length information on a default extension payload length from the bitstream,

the decoder is also configured to, in reading the length information of the frame elements of the extension element type, read a default extension payload length flag of a conditional syntax portion from the bitstream, check as to whether the default payload length flag is set, and, if the default payload length flag is not set, read an extension payload length value of the conditional syntax portion from the bitstream so as to obtain an extension payload length of the respective frame element, and, if

the default payload length flag is set, set the extension payload length of the respective frame element to be equal to the default extension payload length,

the decoder is also configured to skip a payload section of at least some of the frame elements of the extension element type of the frames using the extension payload length of the respective frame element as skip interval length.

15. Decoder according to claim 13 or 14, wherein

the decoder is configured to, in reading the length information of any frame element of the extension element type of the frames, read an extension payload present flag from the bitstream, check as to whether the extension payload present flag is set, and, if the extension payload present flag is not set, cease reading the respective frame element of the extension element type and proceed with reading another frame element of a current frame or a frame element of a subsequent frame, and if the payload data present flag is set, read a syntax portion indicating an extension payload length of the respective frame of the extension element type from the bitstream, and skip, at least for some of the frame elements of the extension element type of the frames the extension payload present flag of the length information of which is set, a payload section thereof by using the extension payload length of the respective frame element of the extension element type read from the bitstream as skip interval length.

16. Decoder according to claim 13 or 14, wherein

the decoder is configured to, in reading the default payload length information,

read a default payload length present flag from the bitstream,

check as to whether the default payload length present flag is set,

if the default payload length present flag is not set, set the default extension payload length to be zero, and

if the default payload length present flag is set, explicitly read the default extension payload length from the bit stream.

17. Decoder according to any of claims 13 to 16, wherein

the decoder is configured to, in reading the configuration block, for each element position for which the type indication portion indicates the extension element type,

read a configuration element comprising configuration information for the extension element type from the bitstream, wherein the configuration information comprises an extension element type field indicating a payload data type out of a plurality of payload data types.

18. Decoder according to claim 17, wherein the plurality of payload data types comprises a multi-channel side information type and a multi-object coding side information type,

the decoder is configured to, in reading the configuration block, for each element position for which the type indication portion indicates the extension element type,

if the extension element type field indicates the multi-channel side information type, read multi-channel side information configuration data as part of the configuration information from the data stream, and if the extension element type field indicates the multi-channel side information type, read multi-object side information configuration data as part of the configuration information from the data stream, and

the decoder is configured to, in decoding each frame,

decode the frame elements of the extension element type positioned at any element position for which the type indication portion indicates the extension element type, and for which the extension element type of the configuration element indicates the multi-channel side information type, by configuring a multi-channel decoder using the multi-channel side information configuration data and feeding the thus configured multi-channel decoder with payload data of the respective frame elements of the extension element type as multi-channel side information, and

decode the frame elements of the extension element type positioned at any element position for which the type indication portion indicates the extension element type, and for which the extension element type of the configuration element indicates the multi-object side information type, by configuring a multi-object decoder using the multi-object side information configuration data and feeding the thus configured

multi-object decoder with payload data of the respective frame elements of the extension element type as multi-object information.

19. Decoder according to claim 17 or 18, wherein the decoder is configured to, for any element position for which the type indication portion indicates the extension element type,

read a configuration data length field from the bitstream as part of the configuration information of the configuration element for the respective element position so as to obtain a configuration data length,

check as to whether the payload data type indicated by the extension element type field of the configuration information of the configuration element for the respective element position, belongs to a predetermined set of payload data types being a subset of the plurality of payload data types,

if the payload data type indicated by the extension element type field of the configuration information of the configuration element for the respective element position, belongs to the predetermined set of payload data types,

read payload data dependent configuration data as part of the configuration information of the configuration element for the respective element position from the data stream, and

decode the frame elements of the extension element type at the respective element position in the frames, using the payload data dependent configuration data, and

if the payload data type indicated by the extension element type field of the configuration information of the configuration element for the respective element position, does not belong to the predetermined set of payload data types,

skip the payload data dependent configuration data using the configuration data length, and

skip the frame elements of the extension element type at the respective element position in the frames using the length information therein.

20. Decoder according to any of claims 13 to 19, wherein

the decoder is configured to, in reading the configuration block, for each element position for which the type indication portion indicates the extension element type,

read a configuration element comprising configuration information for the extension element type from the bitstream, wherein the configuration information comprises an fragmentation use flag, and

the decoder is configured to, in reading frame elements positioned at any element position for which the type indication portion indicates the extension element type, and for which the fragmentation use flag of the configuration element is set,

read a fragment information from the bitstream, and

use the fragment information to put payload data of these frame elements of consecutive frames together.

21. Decoder according to any of claims 9 to 20, wherein the decoder is configured such that the decoder, in decoding frame elements in the frames at element positions for which the type indication syntax portion indicates a single channel element type, reconstruct an audio signal.

22. Decoder according to any of claims 9 to 21, wherein the decoder is configured such that the decoder, in decoding frame elements in the frames at element positions for which the type indication syntax portion indicates a channel pair element type, reconstruct two audio signals.

23. Decoder according to any of claims 9 to 22, wherein the decoder is configured to use the same variable length code to read the length information, the extension element type field, the configuration data length field.

24. Encoder for encoding of an audio content into a bitstream, the encoder being configured to

encode consecutive time periods of the audio content into a sequence of frames respectively representing the consecutive time periods of the audio content, such that each frame comprises a sequence of a number of elements N of frame elements

with each frame element being of a respective one of a plurality of element types so that frame elements of the frames positioned at any common element position of a sequence of N element positions of the sequence of frame elements are of equal element type,

encode into the bitstream a configuration block which comprises a field indicating the number of elements N, and a type indication syntax portion indicating, for each element position of the sequence of N element positions, the respective element type, and

encode, for each frame, the sequence of N frame elements into the bitstream so that each frame element of the sequence of N frame elements which is positioned at a respective element position within the sequence of N frame elements in the bitstream is of the element type indicated, by the type indication portion, for the respective element position.

25. Method for decoding a bitstream comprising a configuration block and a sequence of frames respectively representing consecutive time periods of an audio content, wherein the configuration block comprises a field indicating a number of elements N, and a type indication syntax portion indicating, for each element position of a sequence of N element positions, an element type out of a plurality of element types, and wherein each of the sequence of frames comprises a sequence of N frame elements, wherein the method comprises decoding each frame by

decoding each frame element in accordance with the element type indicated, by the type indication syntax portion, for the respective element position at which the respective frame element is positioned within the sequence of N frame elements of the respective frame in the bitstream.

26. Method for encoding of an audio content into a bitstream, the method comprising

encoding consecutive time periods of the audio content into a sequence of frames respectively representing the consecutive time periods of the audio content, such that each frame comprises a sequence of a number of elements N of frame elements with each frame element being of a respective one of a plurality of element types so that frame elements of the frames positioned at any common element position of a sequence of N element positions of the sequence of frame elements are of equal element type,

encoding into the bitstream a configuration block which comprises a field indicating the number of elements N, and a type indication syntax portion indicating, for each element position of the sequence of N element positions, the respective element type, and

encoding, for each frame, the sequence of N frame elements into the bitstream so that each frame element of the sequence of N frame elements which is positioned at a respective element position within the sequence of N frame elements in the bitstream is of the element type indicated, by the type indication portion, for the respective element position.

27. Computer program for performing, when running on a computer, the method of claim 25 or claim 26.