DESCRIPTION

Title of Invention: RECORDING MEDIUM, PLAYBACK METHOD, AND PLAYBACK DEVICE

Technical Field

[0001]

The present disclosure relates to a recording medium in which is recorded an encoded video stream, a playback method of the video stream, and a playback device.

Background Art

[0002]

Technology relating to DVDs has conventionally been disclosed (e.g., PTL 1).

Citation List

Patent Literature

[0003]

PTL 1: Japanese Unexamined Patent Application Publication No. 9-282848

Summary

[0004]

Recorded in a recording medium according to an aspect of the present disclosure are a video stream of standard-luminance range, and a video stream of high-luminance range that is a broader luminance range than the standard-luminance range, a subtitle stream of the standard-luminance range, and a subtitle stream of the high-luminance range, and a playlist file storing playback control information of content, the playlist file including a management region and an extended region. The management region stores first playback control information specifying all the subtitle streams of the high-luminance range that may be used when the video stream of the high-luminance is to be played. The extended region stores second playback control information specifying all the subtitle streams of the standard-luminance range that may be used when the video stream of the standard-luminance is to

be played.

[0004a] In another aspect, there is provided a playback method of reading out and playing content from a recording medium in which is recorded a video stream of standard-luminance range, and a video stream of high-luminance range that is a broader luminance range than the standard-luminance range, a subtitle stream of the standard-luminance range, and a subtitle stream of the high-luminance range, and a playlist file storing playback control information of content, the playlist file including a management region and an extended region, the management region storing first playback control information specifying all the subtitle streams of the high-luminance range that may be used when the video stream of the high-luminance is to be played, and the extended region storing second playback control information specifying all the subtitle streams of the standard-luminance range that may be used when the video stream of the standard-luminance is to be played, the playback method comprising: reading out and playing a video stream of the high-luminance range and a subtitle stream of the high-luminance range, based on the first playback control information, in a case of playing the content as a content of the high-luminance range; and reading out and playing a video stream of the standard-luminance range and a subtitle stream of the standard-luminance range, based on the second playback control information, in a case of playing the content as a content of the standard-luminance range.

[0004b] In another aspect, there is provided that a playback device that reads out and plays content from a recording medium in which is recorded a video stream of standard-luminance range, and a video stream of high-luminance range that is a broader luminance range than the standard-luminance range, a subtitle stream of the standard-luminance range, and a subtitle stream of the high-luminance range, and a playlist file storing playback control information of content, the playlist file including a management region
and an extended region, the management region storing first playback control information specifying all the subtitle streams of the high-luminance range that may be used when the video stream of the high-luminance is to be played, and the extended region storing second playback control information specifying that a video stream of the standard-luminance range and a subtitle stream of the standard-luminance range are to be played in combination, the playback device comprising: a video playback unit that (1) reads out and plays a video stream of

the high-luminance range and a subtitle stream of the high-luminance range, based on the first playback control information, in a case of playing the content as a content of the high-luminance range, and (2) reads out and plays a video stream of the standard-luminance range and a subtitle stream of the standard-luminance range, based on the second playback control information, in a case of playing the content as a content of the standard-luminance range.

CLAIMS

[Claim 1]

A recording medium in which is recorded

a video stream of standard-luminance range, and a video stream of high-luminance range that is a broader luminance range than the standard-luminance range, a subtitle stream of the standard-luminance range, and a subtitle stream of the high-luminance range, and

a playlist file storing playback control information of content, the playlist file including a management region and an extended region,

wherein the management region stores first playback control information specifying all the subtitle streams of the high-luminance range that may be used when the video stream of the high-luminance is to be played,

and wherein the extended region stores second playback control information specifying all the subtitle streams of the standard-luminance range that may be used when the video stream of the standard-luminance is to be played.

[Claim 2]

The recording medium according to Claim 1,

wherein part of the second playback control information has a common data structure with the first playback control information.

[Claim 3]

The recording medium according to either Claim 1 or 2,

wherein the recording medium further has recorded therein a management information file including a map region storing map information indicating a position of an independently decodable picture included in a video stream, and an extended map region,

wherein the map region stores first map information indicating a position, in a video stream of the high-luminance range, of an independently decodable picture included in a video stream of the high-luminance range,

and wherein the extended map region stores second map information indicating a position, in a video stream of the standard-luminance range, of an

independently decodable picture included in a video stream of the standard-luminance range.

[Claim 4]

The recording medium according to any one of Claims 1 through 3,

wherein the recording medium further has recorded therein a sub-playlist file storing the playback control information relating to a sub-stream played at the same time as the main stream file,

and wherein third playback control information relating to an enhanced video stream for extending the luminance range of the video stream of the high-luminance range is stored in the sub-playlist file.

[Claim 5]

The recording medium according to of Claim 3,

wherein the recording medium further has recorded therein a sub-playlist file storing the playback control information relating to a sub-stream played at the same time as the main stream file,

wherein third playback control information relating to an enhanced video stream for extending the luminance range of the video stream of the high-luminance range is stored in the sub-playlist file,

and wherein the map region stores the first map information, and third map information indicating a position, in the enhanced video stream, of an independently decodable picture included in the enhanced video stream.

[Claim 6]

A playback method of reading out and playing content from a recording medium in which is recorded

a video stream of standard-luminance range, and a video stream of high-luminance range that is a broader luminance range than the standard-luminance range,

a subtitle stream of the standard-luminance range, and a subtitle stream of the high-luminance range, and

a playlist file storing playback control information of content, the playlist file including a management region and an extended region,

the management region storing first playback control information specifying all the subtitle streams of the high-luminance range that may be used when the video stream of the high-luminance is to be played, and

the extended region storing second playback control information specifying all the subtitle streams of the standard-luminance range that may be used when the video stream of the standard-luminance is to be played,

the playback method comprising:

reading out and playing a video stream of the high-luminance range and a subtitle stream of the high-luminance range, based on the first playback control information, in a case of playing the content as a content of the high-luminance range; and

reading out and playing a video stream of the standard-luminance range and a subtitle stream of the standard-luminance range, based on the second playback control information, in a case of playing the content as a content of the standard-luminance range.

[Claim 7]

The playback method according to Claim 6,

wherein part of the second playback control information has a common data structure with the first playback control information.

[Claim 8]

The playback method according to either Claim 6 or 7,

the recording medium further having recorded therein a management information file including a map region storing map information indicating a position of an independently decodable picture included in a video stream, and an extended map region,

the map region storing first map information indicating a position, in a video stream of the high-luminance range, of an independently decodable picture included in a video stream of the high-luminance range,

and the extended map region storing second map information indicating a position, in a video stream of the standard-luminance range, of an independently decodable picture included in a video stream of the standard-luminance range,

the playback method further comprising:

reading out and playing a video stream of the high-luminance range and a subtitle stream of the high-luminance range, based on the first playback control

information and the first map information, in a case of playing the content as a content of the high-luminance range; and

reading out and playing a video stream of the standard-luminance range and a subtitle stream of the standard-luminance range, based on the second playback control information and the second map information, in a case of playing the content as a content of the standard-luminance range.

[Claim 9]

The playback method according to any one of Claims 6 through 8,

the recording medium further having recorded therein a sub-playlist file storing the playback control information relating to a sub-stream played at the same time as the main stream file,

and third playback control information relating to an enhanced video stream for extending the luminance range of the video stream of the high-luminance range being stored in the sub-playlist file,

the playback method further comprising:

reading out and playing a video stream of the high-luminance range and a subtitle stream of the high-luminance range, based on the first playback control information, and also reading out and playing the enhanced video stream based on the third playback control information, in a case of playing the content as a content of a luminance range that has been extended beyond the high-luminance range..

[Claim 10]

The playback method according to Claim 8,

the recording medium further having recorded therein a sub-playlist file storing the playback control information relating to a sub-stream file played at the same time as the main stream file,

third playback control information relating to an enhanced video stream for extending the luminance range of the video stream of the high-luminance range being stored in the sub-playlist file,

and the map region storing the first map information, and third map information indicating a position, in the enhanced video stream, of an independently decodable picture included in the enhanced video stream,

the playback method further comprising:

reading out and playing a video stream of the high-luminance range and a

subtitle stream of the high-luminance range, based on the first playback control information and the first map information, and also reading out and playing the enhanced video stream based on the third playback control information and the third map information, in a case of playing the content as a content of a luminance range that has been extended beyond the high-luminance range.

[Claim 11]

A playback device that reads out and plays content from a recording medium in which is recorded

a video stream of standard-luminance range, and a video stream of high-luminance range that is a broader luminance range than the standard-luminance range, a subtitle stream of the standard-luminance range, and a subtitle stream of the high-luminance range, and

a playlist file storing playback control information of content, the playlist file including a management region and an extended region,

the management region storing first playback control information specifying all the subtitle streams of the high-luminance range that may be used when the video stream of the high-luminance is to be played,

and the extended region storing second playback control information specifying that a video stream of the standard-luminance range and a subtitle stream of the standard-luminance range are to be played in combination,

the playback device comprising:

a video playback unit that (1) reads out and plays a video stream of the high-luminance range and a subtitle stream of the high-luminance range, based on the first playback control information, in a case of playing the content as a content of the high-luminance range, and (2) reads out and plays a video stream of the standard-luminance range and a subtitle stream of the standard-luminance range, based on the second playback control information, in a case of playing the content as a content of the standard-luminance range.