Non-Patent Document 1: MPEG-DASH (Dynamic Adaptive Streaming over HTTP)(URL:http://mpeg.chiariglione.org/standards/mpeg-dash/media-presentation-description-and-segment-formats/text-isoiec-23009-12012-dam-1)

SUMMARY OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0005]

However, no consideration is given to an improvement in efficiency of acquiring a predetermined type of audio data among a plurality of types of audio data of a video content.

[0006]

Embodiments of the present invention are capable of improving the efficiency of acquiring a predetermined type of audio data among a plurality of types of audio data.

SOLUTIONS TO PROBLEMS

[0007]

According to a first aspect of the present invention, there is provided an information processing apparatus, inlcuding: a file generation unit configured to:generate an audio stream having a structure divided into a plurality of tracks, wherein a type of audio data of each track of the plurality of tracks is different, and generate an audio file including the audio stream.

[0007a]

According to a second aspect of the present invention, there is provided an information processing apparatus, including a file generation unit configured to: allocate a track to an audio stream for each type of audio data from a plurality of types of audio data; and generate a plurality of audio files, comprising an audio file of the plurality of audio files for each type of audio data.

[0008]

According to a third aspect of the present invention, there

is provided an information processing method including a file generation step of:generating an audio stream having a structure divided into a plurality of tracks, the audio stream comprising one track of the plurality of tracks for each type of audio data from a plurality of types of audio data; and allocating the audio stream to an audio file.

[0008a]

According to a fourth aspect of the present invention, there is provided an information processing method comprising a file generation step of: allocating a track to an audio stream for each type of audio data from a plurality of types of audio data; and generating a plurality of audio files, comprising an audio file of the plurality of audio files for each type of audio data.

[0009]

In an embodiment, audio data of the predetermined track in the file in which the plurality of types of audio data are divided into the plurality of tracks depending on the types and the tracks arranged is acquired.

[0010]

Disclosed herein is an information processing apparatus including a generation unit that generates a file in which a plurality of types of audio data are divided into a plurality of tracks depending on the types and the tracks are arranged.

[0011]

Disclosed herein is an information processing method according to the above disclosed information processing apparatus.

[0012]

In an embodiment, the file in which the plurality of types of audio data are divided into the plurality of tracks depending on the types and the tracks are arranged is generated.

[0013]

Note that the information processing apparatuses according to the above aspects can be implemented by causing a computer to

execute a program.

[0014]

Further, in order to achieve the information processing apparatuses according to the above aspects, a program executed by a computer can be provided by transmitting the program via a transmission medium, or by recording the program in a recording medium.

EFFECTS OF THE INVENTION

[0015]

According to the above aspects of the presentinvention, audio data can be acquired. Further, according to the above aspects of the present invention, a predetermined type of audio data among a plurality of types of audio data can be acquired efficiently.

[0016]

According to the above aspects of the present invention, a file can be generated. Further, according to the above aspects of the present invention, a file that improves the efficiency of acquiring a predetermined type of audio data among a plurality of types of audio data can be generated.

BRIEF DESCRIPTION OF DRAWINGS

[0017]

Fig. 1 is a diagram illustrating an outline of a first example of an information processing system to which the present disclosure is applied.

Fig. 2 is a diagram showing an example of a file.

Fig. 3 is a diagram illustrating an object.

Fig. 4 is a diagram illustrating object position information.

Fig. 5 is a diagram illustrating image frame size information.

Fig. 6 is a diagram showing a structure of an MPD file.

Fig. 7 is a diagram showing a relationship among

CLAIMS

1. An information processing apparatus comprising:

a file generation unit configured to:

generate an audio stream having a structure divided into a plurality of tracks, wherein a type of audio data of each track of the plurality of tracks is different, and

generate an audio file including the audio stream.

2. The information processing apparatus according to claim 1, wherein the type is configured as Channel audio, Object audio, HOA audio, or metadata.

3. The information processing apparatus according to claim 1, further comprising a coding unit that encodes the plurality of types of audio data for each type of audio data.

4. The information processing apparatus according to any of claims 1-3,

wherein the file generation unit is further configured to store information about the plurality of types of audio data to the audio file.

5. The information processing apparatus according to any of claims 1-4,

wherein the information about the plurality of types of audio data is stored in a sample entry, wherein the sample entry is arranged in a moov box.

6. The information processing apparatus according to any of claims 1-5, wherein:

the audio stream comprises audio data of a plurality of objects and metadata of the audio data of each of the plurality

of objects; and

the file generation unit is further configured to allocate the metadata to a metadata track different from the plurality of tracks, and to allocate the metadata track to the audio stream.

7. The information processing apparatus according to any of claims 1-5, wherein:

the audio stream comprises audio data of a plurality of objects and metadata of the audio data of each of the plurality of objects; and

the file generation unit is configured to allocate the metadata for each of the plurality of objects to a metadata track of a plurality of metadata tracks, the plurality of metadata tracks being different to the plurality of tracks, and to allocate the plurality of metadata tracks to the audio stream.

8. An information processing apparatus,

comprising a file generation unit configured to:

allocate a track to an audio stream for each type of audio data from a plurality of types of audio data; and

generate a plurality of audio files, comprising an audio file of the plurality of audio files for each type of audio data.

9. The information processing apparatus according to claim 1 or claim 8,

wherein information about the plurality of types of audio data is stored in one of the plurality of tracks.

10. The information processing apparatus according to claim 1 or claim 8,

wherein information about the plurality of types of audio data is arranged as a base track, wherein the base track is a track different from the plurality of tracks.

11. The information processing apparatus according to any of claims 8 to 10, further comprising:

an MPD generation unit configured to generate an MPD file in which information for managing the audio file is stored in a "Representation" portion for managing the segment of an audio file.

12. The information processing apparatus according to claim 11,

wherein the information for managing the audio file includes object position information for each of a plurality of objects in the file.

13. The information processing apparatus according to claim 1,

wherein the file is configured to include codec information of the plurality of types of audio data of each of the plurality of tracks.

14. An information processing method comprising a file generation step of:

generating an audio stream having a structure divided into a plurality of tracks, the audio stream comprising one track of the plurality of tracks for each type of audio data from a plurality of types of audio data; and

allocating the audio stream to an audio file.

15. An information processing method comprising a file generation step of:

allocating a track to an audio stream for each type of audio data from a plurality of types of audio data; and

generating a plurality of audio files, comprising an audio file of the plurality of audio files for each type of audio data.