Claims

1. Apparatus for generating an enhanced sound field description, comprising:

a sound field generator for generating at least one sound field description indicating a sound field with respect to at least one reference location; and

a meta data generator for generating meta data relating to spatial information of the sound field,

wherein the at least one sound field description and the meta data constitute the enhanced sound field description,

wherein the sound field generator is configured to generate a DirAC (DirAC = Directional Audio Coding) description of a sound field having one or more downmix signals and individual direction data and optionally diffuseness data for different time-frequency bins, and wherein the meta data generator is configured to generate additional individual depth information for the different time-frequency bins as the meta data.

2. Apparatus of claim 1,

wherein the sound field generator is configured to estimate the additional individual depth information from audio signals used by the sound field generator or from video signals associated with the audio signals or from a depth map used in stereoscopic (three dimensional) imaging/video or light field technology or from geometric information of a computer graphics scene.

3. Apparatus of claim 1,

wherein the meta data generator is configured to generate, as the additional individual depth information, a depth map comprising, for the individual direction data indicating different directions, corresponding distance information.

4. Apparatus of one of the preceding claims, further comprising an output interface for generating an output signal for transmission or storage, the output signal comprising,

for a time frame, one or more audio signals derived from the sound field and the spatial information for the time frame.

5. Apparatus in accordance with one of the preceding claims,

wherein the sound field generator is configured to derive the individual direction data from the sound field, the individual direction data referring to a direction of arrival of sound for a time period or a frequency bin, and, wherein the meta data generator is configured to derive the spatial information as data items associating a distance information to the individual direction data.

6. Apparatus of claim 5,

wherein the sound field generator is configured to derive the individual direction data for the different time-frequency bins per time frame of the sound field description,

wherein the meta data generator is configured to derive the data items associating a distance information to the individual direction data for the time frame, and

wherein an output interface is configured to generate the output signals so that the data items for the time frame are linked to the individual direction data for the different time-frequency bins.

7. Apparatus of one of the claims 1, 5, or 6,

wherein the additional individual depth information comprises a depth map comprising a plurality of direction of arrival data items as the individual direction data, and a plurality of associated distances, so that each direction of arrival of the plurality of direction of arrival data items has an associated distance.

8. Apparatus of one of the preceding claims,

wherein the sound field generator is configured to generate diffuseness information for a plurality of time-frequency bins of a time frame of the sound field, and

wherein the meta data generator is configured to only generate a distance information for a time-frequency bin, when the diffuseness value for the time-frequency bin is lower than a diffuseness threshold, or wherein the meta data generator is configured to only generate a distance meta data being different from a predetermined value, when the diffuseness value for the time-frequency bin is lower than a threshold diffuseness value.

9. Method of generating an enhanced sound field description, comprising:

generating at least one sound field description indicating a sound field with respect to at least one reference location; and

generating meta data relating to spatial information of the sound field,

wherein the at least one sound field description and the meta data constitute the enhanced sound field description,

wherein the generating the at least one sound field description comprises generating a DirAC (DirAC = Directional Audio Coding) description of a sound field having one or more downmix signals and individual direction data and optionally diffuseness data for different time-frequency bins, and wherein the generating the meta data comprises generating additional individual depth information for the different time-frequency bins as the meta data.

10. Computer program for performing, when running on a computer or a processor, the method of claim 9.

11. Enhanced sound field description, comprising:

at least one sound field description indicating a sound field with respect to at least one reference location and meta data relating to spatial information of the sound field,

wherein the at least one sound field description comprises a DirAC description of a sound field having one or more downmix signals and individual direction data and optionally diffuseness data for different time-frequency bins, and wherein the meta

data comprises additional individual depth information for the different time-frequency bins.

12. Enhanced sound field description of claim 11, wherein the meta data comprises, as the additional individual depth information, a depth map associating distance data information items to direction data items.