Patent Document 1: Japanese Patent Application Laid-Open No. 2008-148230

NON-PATENT DOCUMENT

[0005]

Non-Patent Document 1: Digital Video Broadcasting (DVB); Frame structure channel coding and modulation for a second generation digital terrestrial television broadcasting system (DVB-T2)

SUMMARY OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0006]

Here, an Emergency Warning System has been also introduced in the DVB standard and there is a demand to execute a process related to emergency alert information more quickly at a low power consumption.

[0007]

Embodiments of the present invention realize an execution of a process related to emergency warning information in the DVB-T2 standard more quickly at a low power consumption.

SOLUTIONS TO PROBLEMS

[0008]

According to a first aspect of the present invention, there is provided a transmission device including: an emergency warning information acquisition unit configured to acquire emergency warning information; a content acquisition unit configured to acquire a content; a transmission frame generation unit configured to generate a transmission frame that includes emergency warning notification information indicating that the emergency warning information is being transmitted in P1 signaling or L1-pre signaling, as a transmission frame, according to the digital video broadcasting-terrestrial 2 (DVB-T2) standard, composed of a first preamble signal of the P1 signaling, a second preamble signal of

the L1-pre signaling, and the content data; and a transmission unit configured to transmit the transmission frame as a digital broadcast signal.

[0009]

When included in the L1-pre signaling, the emergency warning notification information may be placed in a reserved bit of the L1-pre signaling.

[0010]

The emergency warning notification information may be a 1-bit emergency warning flag, and the emergency warning information may be transmitted using service information (SI) information, an auxiliary stream, or a particular physical layer pipe (PLP) which are defined in the DVB-T2 standard.

[0011]

When included in the P1 signaling, the emergency warning notification information may be placed in a reserved bit of the P1 signaling.

[0012]

The emergency warning notification information may be a particular bit sequence, and the emergency warning information may be transmitted using SI information, an auxiliary stream, or a particular PLP which are defined in the DVB-T2 standard.

[0013]

A signaling generation unit configured to generate the P1 signaling and the L1-pre signaling may be further included.

[0014]

The transmission device may be an independent device or an internal block that composes a device.

[0015]

According to a second aspect of the present invention, there is provided a transmission method of a transmission device, the transmission device executing steps of: acquiring emergency warning information; acquiring content; generating a transmission frame

that includes emergency warning notification information indicating that the emergency warning information is being transmitted in P1 signaling or L1-pre signaling as a transmission frame, according to the DVB-T2 standard, composed of a first preamble signal including the P1 signaling, a second preamble signal including the L1-pre signaling, and content data; and transmitting the transmission frame as a digital broadcast signal.

[0016]

In the above aspects of the transmission device and transmission method , emergency warning information is acquired, a content is acquired, a transmission frame including emergency warning notification information indicating the emergency warning information is being transmitted in the P1 signaling or the L1-pre signaling, as a transmission frame according to the DVB-T2 standard, composed of a first preamble signal including the P1 signaling, a second preamble signal including the L1-pre signaling, and the content data, and the transmission frame is transmitted as a digital broadcast signal.

[0017]

According to a third aspect of the present invention, there is provided a reception device including: a reception unit configured to receive, as a digital broadcast signal, a transmission frame, according to DVB-T2 standard, composed of a first preamble signal including P1 signaling, a second preamble signal including L1-pre signaling, and content data; and a demodulation unit configured to demodulate the first preamble signal, or the first preamble signal and the second preamble signal and monitor emergency warning notification information indicating that emergency warning information is being transmitted in the P1 signaling included in the first preamble signal or the L1-pre signaling included in the second preamble signal.

[0018]

When included in the L1-pre signaling, the emergency warning

notification information may be placed in a reserved bit of the L1-pre signaling.

[0019]

The emergency warning notification information may be a 1-bit emergency warning flag, the emergency warning information may be transmitted using SI information, an auxiliary stream, or a particular PLP which are defined by the DVB-T2 standard, and a control unit configured to be activated when the emergency warning notification information indicates that the emergency warning information is being transmitted, and acquire the emergency warning information transmitted using the SI information, the auxiliary stream, or the particular PLP may be further included.

[0020]

When included in the P1 signaling, the emergency warning notification information may be placed in a reserved bit of the P1 signaling.

[0021]

The emergency warning notification information may be a particular bit sequence, the emergency warning information may be transmitted using SI information, an auxiliary stream, or a particular PLP, which are defined in the DVB-T2 standard, and a control unit configured to be activated when the emergency warning notification information indicates that the emergency warning information is being transmitted, and acquire the emergency warning information transmitted using the SI information, the auxiliary stream, or the particular PLP may be further included.

[0022]

The reception device may be an independent device or an internal block that composes a device.

[0023]

According to a fourth aspect of the present invention, there is provided a reception method of a reception device, the reception device executing steps of: receiving, as a digital broadcast signal,

a transmission frame, according to DVB-T2 standard, composed of a first preamble signal including P1 signaling, a second preamble signal including L1-pre signaling, and content data; and demodulating the first preamble signal, or the first preamble signal and the second preamble signal, and monitoring emergency warning notification information indicating that emergency warning information is being transmitted in the P1 signaling included in the first preamble signal or the L1-pre signaling included in the second preamble signal.

[0024]

In the above aspects of the reception device and reception method , a transmission frame according to the DVB-T2 standard, which is composed of a first preamble signal including P1 signaling, a second preamble signal including L1-pre signaling, and content data is received as a digital broadcast signal, the first preamble signal, or the first preamble signal and the second preamble signal are demodulated, and emergency warning notification information indicating that emergency warning information is being transmitted is monitored in the P1 signaling included in the first preamble signal or the L1-pre signaling included in the second preamble signal.

EFFECTS OF THE INVENTION

[0025]

According to the above aspects of the present invention, a process related to emergency warning information can be executed in the DVB-T2 standard more quickly at a low power consumption.

[0026]

Here, the above described effects are not always limited and may be any one of the effects described in this disclosure.