[0080]

For example, when the CCH message assigned with the CCH time zone as the transmission time zone is present in the transmission queue, the channel switch section F5 is caused to designate the control channel as the communication-target channel in the next CCH time zone to then transmit the CCH message.

[0081]

In contrast, when the CCH message assigned with the SCH time zone as the transmission time zone is present in the transmission queue, the channel switch section F5 is caused to designate the control channel as the communication-target channel in the next SCH time zone to then transmit the CCH message. This CCH communication processor section F6 is equivalent to the CCH transmission processor section or the CCH transmission processor.

[0082]

The SCH communication processor section F7 collaborates with the channel switch section F5, and transmits the SCH message stored in the transmission queue via the SCH time zone. It is because the SCH time zone is assigned to the SCH message as a transmission time zone.

[0083]

<Relating to operation of short-range service provision device 1>

The following explains an operation of the short-range service provision device 1. The short-range service provision device 1 generates a WSA as a CCH message which should be transmitted in the CCH time zone successively (each 100 milliseconds, e.g.), and generates also an SCH message which should be transmitted in the SCH time zone successively.

[0084]

The channel switch section F5 of the short-range service provision device 1 thus switches the communication-target channels according to the transitions of the communication time zones, as in FIG. 6. In detail, the control channel is designated as the communication-target channel during a period of time for which the CCH time zone takes place; the service channel is designated as the communication-target channel during a period of time for which the SCH time zone takes place. As a result,

[0144]

The short-range classification threshold value or the wide-range classification threshold value may be designed suitably. For example, the short-range classification threshold values may be tens of meters such as 20 meters. In addition, the wide-range classification threshold value may be a relatively long distance such as 400 meters.

[0145]

Naturally, the number of classifications of the communication area may be not only three but also more than three. Even under such a configuration, when the service provision area is less than a constant reference, a generated CCH message may be determined to have a high-importance level.

[0146]

[Fifth modification example]

The above exemplifies a configuration where the criterion of determination whether the importance of a CCH message is a high-importance level or a low-importance level employs whether or not the communication area of the service provision device is a short range, but not limited to. The criterion of determination whether the importance of a CCH message is a high-importance level or a low-importance level does not necessarily employ the magnitude of the communication area. For instance, whether the importance of a CCH message is a high-importance level or a low-importance level may be determined based on whether a service provision device is mobile or not, or based on whether the priority of a provided service is greater than a predetermined threshold value.

[0147]

[Sixth modification example]

The above exemplifies a configuration where among CCH messages, a message other than the WSA is determined to be a data having a low-importance level, but not limited to. For instance, a service provision device may be configured to be an emergency vehicle approach message that is a message announcing an approach of an emergency vehicle such as a police vehicle, a fire fighting vehicle, or ambulance vehicle. Such an emergency vehicle approach message having a high

CLAIMS

1. A communication device in a mobile communication system switching alternately two communication time zones of a control channel (CCH) time zone and a service channel (SCH) time zone, the CCH time zone being a time zone in which communication using a control channel assigned with a predetermined radio-wave frequency is performed, the SCH time zone being a time zone different from the CCH, the SCH time zone in which communication using a service channel is performed,

the communication device being provided along a road to perform wireless communication using the control channel and the service channel with an in-mobile device that is a device used in a mobile object, to provide a predetermined service to a user of the in-mobile device,

the communication device comprising:

a time holder section configured to hold clock time information used to determine a communication time zone at present;

a time zone determiner section configured to determine whether the communication time zone at present corresponds to the CCH time zone or the SCH time zone, based on the clock time information held by the time holder section;

a CCH transmission processor section configured to transmit data using the control channel;

a data generator section configured to generate, as a data that is to be transmitted using the control channel, a service advertisement message that advertises a kind of a service provided by the communication device to the in-mobile device;

a storage in which information on magnitude of a service provision area of the communication device is registered; and

an importance determiner section configured to determine an importance of the service advertisement message based on the magnitude of the service provision area registered in the storage when the data generated by the data

generator section corresponds to the service advertisement message,

wherein:

when determining that the magnitude of the service provision area registered in the storage is smaller than a predetermined reference, the importance determiner section determines that the service advertisement message has a high-importance level, whereas when determining that the magnitude of the service provision area registered in the storage is not smaller than the predetermined reference, the importance determiner section determines that the service advertisement message has a low-importance level; and

when the importance determiner section determines that the service advertisement message generated by the data generator section has a high-importance level, the CCH transmission processor section transmits the service advertisement message in the CCH time zone, whereas when the importance determiner section determines that the service advertisement message generated by the data generator section has a low-importance level, the CCH transmission processor section transmits the service advertisement message in the SCH time zone.

2. The communication device according to claim 1, wherein:

the data generator section generates a different-device-use data that is a data whose transmission destination is a different communication device having an identical function; and

the importance determiner section determines that the different-device-use data is a data having a low-importance level.