of the secondary systems is not small, consideration of interference between channels may possibly become necessary. However, in order to accurately evaluate such various factors for all of the secondary systems, calculation cost for allocating the transmission power will increase, and extra load will be imposed on a control node controlling the secondary use.

[0008]

Accordingly, it is desirable that a system be provided that suppresses the load to calculate the transmission power of the secondary systems and that appropriately prevents detrimental interference to the primary system.

Solution to Problem

[0009]

~~According to the present invention, there is provided a doing apparatus including a communication control device including a power allocation unit configured to allocate transmission power for secondary use of a frequency channel protected for a primary system to a secondary system. The power allocation unit switches power allocation methods between a first group of secondary systems of which a distance from the primary system is less than a prescribed threshold and a second group of secondary systems of which a distance from the primary system exceeds the prescribed threshold.~~

According to a first aspect of the present invention, there is provided a communication control device comprising a power allocation unit configured to allocate transmission power for secondary use of a frequency channel protected for a primary system to a secondary system, wherein the power allocation unit switches power allocation methods between a first group of secondary systems of which a distance from the primary system is less than a prescribed threshold and a second group of secondary systems of which a distance from the primary system exceeds the prescribed threshold.

[0010]

~~In addition, according to the present invention, there is provided a method for allocating transmission power for secondary use of a frequency channel protected for a primary system to a secondary system, the method including obtaining a distance to the secondary system from the primary system, allocating transmission power to the secondary system with the first power allocation method when the obtained distance is less than a prescribed threshold, and allocating~~

~~transmission power to the secondary system with the second power allocation method that requires calculation cost lower than that of the first power allocation method when the obtained distance exceeds the prescribed threshold.~~

According to a second aspect of the present invention, there is provided a method for allocating transmission power for secondary use of a frequency channel protected for a primary system to a secondary system, the method comprising: obtaining a distance to the secondary system from the primary system; allocating transmission power to the secondary system with the first power allocation method when the obtained distance is less than a prescribed threshold; and allocating transmission power to the secondary system with the second power allocation method that requires calculation cost lower than that of the first power allocation method when the obtained distance exceeds the prescribed threshold.

[0011]

~~In addition, according to the present invention, there is provided~~ Disclosed herein is a program for causing a computer of a communication control device to function as a power allocation unit to allocate transmission power for secondary use of a frequency channel protected for a primary system to a secondary system. The power allocation unit switches power allocation methods between a first group of secondary systems of which a distance from the primary system is less than a prescribed threshold and a second group of secondary systems of which a distance from the primary system exceeds the prescribed threshold.

Advantageous Effects of Invention

[0012]

According to ~~the technology related to the present disclosure~~ embodiments of the present invention, it is possible to suppress load to calculate transmission power of the secondary systems and to appropriately prevent detrimental interference to the primary system.

Brief Description of Drawings

[0013]

[FIG. 1] FIG. 1 is an explanatory diagram for explaining an interference a node of a primary system suffers upon secondary usage of a frequency.

[FIG. 2] FIG. 2 is an explanatory diagram for explaining an interference in a channel and an interference between channels.

[FIG. 3] FIG. 3 is an explanatory diagram for explaining a configuration of a communication control system according to one embodiment.

[FIG. 4] FIG. 4 is a sequence diagram illustrating an exemplary schematic flow of a communication control processing performed in the communication control system according to one embodiment.

[FIG. 5] FIG. 5 is a block diagram illustrating an exemplary configuration of the communication control device according to one embodiment.

[FIG. 6] FIG. 6 is a flowchart illustrating an exemplary flow of a power allocation process according to one embodiment.

[FIG. 7] FIG. 7 is a block diagram illustrating of an exemplary configuration of a