performing transmission power control together with selection of an interleave pattern in order to eliminate interference between the users more effectively.

Citation List

Patent Literature

[0005]

Patent Literature 1: JP 2013-123158A

Disclosure of Invention

Technical Problem

[0006]

In the technical field related to IDMA, however, a further improvement in performance is desired. Hence, embodiments of the present invention provide a novel and improved communication control apparatus, radio communication apparatus, communication control method, radio communication method, and program that are capable of contributing to improving a radio communication technology related to IDMA.

Solution to Problem

[0007]

According to a first aspect, there is provided a communication control apparatus including: a communication unit configured to communicate with a radio communication apparatus of a radio communication system using interleave division multiple access (IDMA); and a control unit configured to allocate an interleaver type of an interleaver to be used for IDMA by the radio communication apparatus, wherein the control unit is configured to set a management area, and allocate the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

[0008]

According to a second aspect, there is provided a radio communication apparatus including: a radio communication unit configured to perform radio communication using IDMA with a base station; and a control unit configured to control the radio communication unit to perform interleave processing for IDMA by using an interleaver of an allocated interleaver type, wherein the control unit is configured to set a management area, and allocate the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

[0009]

According to a third aspect, there is provided a communication control method

including: communicating with a radio communication apparatus of a radio communication system using interleave division multiple access (IDMA); and allocating, by a processor, an interleaver type of an interleaver to be used for IDMA by the radio communication apparatus, wherein the step of allocating the interleaver type comprises setting a management area, and allocating the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

[0010]

According to a fourth aspect, there is provided a radio communication method including: performing radio communication using IDMA with a base station; and performing control by a processor to perform interleave processing for IDMA by using an interleaver of an allocated interleaver type, wherein the step of performing the interleave processing for IDMA comprises setting a management area, and allocating the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

[0011]

According to a fifth aspect, there is provided a program causing a computer to function as: a communication unit configured to communicate with a radio communication apparatus of a radio communication system using interleave division multiple access (IDMA); and a control unit configured to allocate an interleaver type of an interleaver to be used for IDMA by the radio communication apparatus, wherein the control unit is configured to set a management area, and allocate the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

[0012]

According to a sixth aspect, there is provided a program causing a computer to function as: a radio communication unit configured to perform radio communication using IDMA with a base station; and a control unit configured to control the radio communication unit to perform interleave processing for IDMA by using an interleaver of an allocated interleaver type, wherein the control unit is configured to set a management area, and allocate the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

Advantageous Effects of Invention

[0013]

According to embodiments of the present invention, it is possible to contribute to improving a radio communication technology related to IDMA.

Note that the effects described above are not necessarily limitative. With

CLAIMS

1. A communication control apparatus comprising:

a communication unit configured to communicate with a radio communication apparatus of a radio communication system using interleave division multiple access (IDMA); and

a control unit configured to allocate an interleaver type of an interleaver to be used for IDMA by the radio communication apparatus,

wherein the control unit is configured to set a management area, and allocate the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

2. The communication control apparatus according to claim 1, wherein the communication unit transmits a message including information indicating the interleaver type allocated by the control unit to the radio communication apparatus.

3. The communication control apparatus according to claim 2, wherein the message is transmitted using a system information block (SIB) or downlink control information (DCI).

4. The communication control apparatus according to claim 1, wherein the control unit allocates the interleaver type on the basis of attribute information related to the radio communication apparatus.

5. The communication control apparatus according to claim 1, wherein the control unit allocates the interleaver type on the basis of a communication state related to the radio communication apparatus.

6. The communication control apparatus according to claim 1, wherein the control unit allocates an interleave pattern to be used for IDMA by the radio communication apparatus.

7. The communication control apparatus according to claim 6, wherein the control unit allocates different interleave patterns to radio communication apparatuses to which the same interleaver type is allocated.

8. The communication control apparatus according to claim 6, wherein the communication unit transmits a message including information indicating the interleave pattern allocated by the control unit to the radio communication apparatus.

9. The communication control apparatus according to claim 8, wherein the information indicating the interleave pattern is a parameter used by the control unit to allocate the interleave pattern.

10. A radio communication apparatus comprising:

a radio communication unit configured to perform radio communication using IDMA with a base station; and

a control unit configured to control the radio communication unit to perform interleave processing for IDMA by using an interleaver of an allocated interleaver type,

wherein the control unit is configured to set a management area, and allocate the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

11. The radio communication apparatus according to claim 10, wherein the radio communication unit transmits a message requesting allocation of the interleaver type to the base station.

12. The radio communication apparatus according to claim 10, wherein the control unit controls the radio communication unit to perform interleave processing for IDMA by using an allocated interleave pattern.

13. The radio communication apparatus according to claim 10, wherein the control unit selects an interleave pattern to be used for the interleave processing performed by the radio communication unit.

14. The radio communication apparatus according to claim 13, wherein the control unit controls the radio communication unit to transmit a message including information indicating the selected interleave pattern to the base station.

15. The radio communication apparatus according to claim 14, wherein the message is included in uplink control information (UCI).

16. A communication control method comprising:

communicating with a radio communication apparatus of a radio communication system using interleave division multiple access (IDMA); and

allocating, by a processor, an interleaver type of an interleaver to be used for IDMA by the radio communication apparatus,

wherein the step of allocating the interleaver type comprises setting a management area, and allocating the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

17. A radio communication method comprising:

performing radio communication using IDMA with a base station; and

performing control by a processor to perform interleave processing for IDMA by using an interleaver of an allocated interleaver type,

wherein the step of performing the interleave processing for IDMA comprises setting a management area, and allocating the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

18. A program causing a computer to function as:

a communication unit configured to communicate with a radio communication apparatus of a radio communication system using interleave division multiple access (IDMA); and

a control unit configured to allocate an interleaver type of an interleaver to be used for IDMA by the radio communication apparatus,

wherein the control unit is configured to set a management area, and allocate the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.

19. A program causing a computer to function as:

a radio communication unit configured to perform radio communication using IDMA with a base station; and

a control unit configured to control the radio communication unit to perform interleave processing for IDMA by using an interleaver of an allocated interleaver type,

wherein the control unit is configured to set a management area, and allocate the same interleaver type preferentially to radio communication apparatuses belonging to the set management area.