IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.:   12/168,855   Confirmation No.: 8234
Applicant(s): Yan-Xiu Zheng
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Examiner: Jeffrey M. Rutkowski
Title: METHOD FOR CONSTRUCTING FRAME STRUCTURES

Docket No.:   054788/347709
Customer No.: 00826

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Reply to Office Action

Sir:

   In response to the Office Action dated November 23, 2011, please enter the following:

   Amendments to the Claims are reflected in the listing of claims beginning on page 2 of this paper; and

   Remarks begin on page 14 of this paper.

Amendments to the Claims:

1. (Currently Amended) A method of constructing a frame structure for data transmission, the method comprising:

generating a first section comprising data configured in a first format compatible with a first communication system using symbols;

generating a second section following the first section, the second section comprising data configured in a second format compatible with a second communication system using symbols, wherein the first communication system and the second communication system co-exist in one transmission scheme and wherein:

the second format is compatible with the second communication system configured to support higher mobility than the first communication system, wherein each symbol in the second communication system has a shorter symbol period than that in the first communication system;

generating at least one non-data section containing information describing an aspect of data in at least one of the first section and the second section; and

combining the first section, the second section and the at least one non-data section to form the frame structure.

2. (Original) The method of claim 1, wherein the non-data section comprises mapping information for at least one of the first section and the second section.

3. (Original) The method of claim 1, wherein the non-data section comprises at least one of a preamble, a frame control header (FCH), a burst, and a map of at least one of the first section and the second section.

4. (Original) The method of claim 3, wherein the second section follows the first section in at least one of time sequence and frequency spectrum.

5. (Canceled)

6. (Currently Amended) A method of constructing a frame structure for data transmission, the method comprising:

generating a first section comprising data configured in a first format compatible with a first communication system;

generating a second section following the first section, the second section comprising data configured in a second format compatible with a second communication system, wherein the first communication system and the second communication system co-exist in one transmission scheme and wherein the second communication system has pilot symbols that are denser than those in the first communication system;

generating at least one non-data section containing information describing an aspect of data in at least one of the first section and the second section; and

combining the first section, the second section and the at least one non-data section to form the frame structure.

7. (Canceled)

8. (Previously presented) The method of claim 1, wherein a portion of the first section may be in guard band or non-communicational region of the first system.

9. (Original) The method of claim 1, wherein each of the first section and the second section carries at least one of uplink and downlink data.

10. (Original) The method of claim 1, wherein the second section carries mapping information for data in the second section.

11. (Currently Amended) A method of generating a frame for a communication system having a first communication system and a second communication system, the method comprising:

generating a first sub-frame for downlink transmission, wherein the first sub-frame comprises:

a first region comprising first mapping information;

a second region comprising second mapping information; and

a third region carrying data to be transferred in the downlink transmission, the third region comprising a first sub-region and a second sub-region, wherein the first sub-region and second sub-region are defined by the first mapping information, the first sub-region being configured to carry first data of the first communication system and the second sub-region being configured to carry second data of the second communication system in the downlink transmission, wherein the third region further comprises a fifth sub-region, the fifth sub-region being configured to carry fifth data of the first communication system or the second communication system under high mobility in the downlink transmission and each symbol in the fifth sub-region has a shorter symbol period than that in at least one of the first or second communication system, and

generating a second sub-frame for uplink transmission, wherein the second sub-frame comprises:

a fourth region configured to carry data to be transferred in the uplink transmission, the fourth region comprising a third sub-region and a fourth sub-region, wherein the third sub-region and the fourth sub-region are defined by the second mapping information, the third sub-region being configured to carry third data of the first communication system and the fourth sub-region being configured to carry fourth data of the second communication system in the uplink transmission, wherein the first communication system and the second communication system co-exist in one transmission scheme.

12. (Original) The method of claim 11, wherein the second sub-region further comprises third mapping information for data placement in the second sub-region.

13. (Canceled)

14. (Currently Amended) A method of generating a frame for a communication system having a first <u>communication</u> system and a second <u>communication</u> system, the method comprising:

generating a first sub-frame for downlink transmission, wherein the first sub-frame comprises:

a first region comprising first mapping information;

a second region comprising second mapping information; and

a third region carrying data to be transferred in the downlink transmission, the third region comprising a first sub-region and a second sub-region, wherein the first sub-region and second sub-region are defined by the first mapping information, the first sub-region being configured to carry first data of the first <u>communication</u> system and the second sub-region being configured to carry second data of the second <u>communication</u> system in the downlink transmission, wherein the third region further comprises a fifth sub-region having pilot symbols that are denser than those in at least one of the first or second sub-region, and

generating a second sub-frame for uplink transmission, wherein the second sub-frame comprises:

a fourth region configured to carry data to be transferred in the uplink transmission, the fourth region comprising a third sub-region and a fourth sub-region, wherein the third sub-region and the fourth sub-region are defined by the second mapping information, the third sub-region being configured to carry third data of the first <u>communication</u> system and the fourth sub-region being configured to carry fourth data of the second <u>communication</u> system in the uplink transmission<u>, wherein the first communication system and the second communication system co-exist in one transmission scheme</u>.

15. (Canceled)

16. (Previously presented) The method of claim 11, wherein the fifth sub-region is defined by the first mapping information.

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