WHAT IS CLAIMED IS:

1. A method for resource allocation, the method comprising the steps of:

dividing a time and frequency resource block into a plurality of equal duration resource elements in a time and frequency domain, with a subset of the plurality of resource elements being data resource elements that are available for data transmission;

segmenting a data block to be transmitted into a plurality of code blocks; and

assigning substantially equal number of data resource elements to the plurality of code blocks.

2. The method of claim 1, comprised of the number of data resource elements assigned to a code block being established by:

$$M_j = \left\lceil \frac{N-j}{N_{seg}} \right\rceil, \text{ for } j = 0, \quad 1, \quad \cdots, \quad N_{seg}-1,$$

where M_j is the number of the data resource elements assigned to a code block having an index of j, N is the number of the data resource elements in the time and frequency resource block, and N_{seg} is the number of the code blocks in the time and frequency resource block.

3. The method of claim 1, comprised of the number of data resource elements assigned to a code block being established by:

$$M_j = \left\lceil \frac{N/2-j}{N_{seg}} \right\rceil \times 2, \text{ for } j = 0, \quad 1, \quad \cdots, \quad N_{seg}-1,$$

where M_j is the number of the data resource elements assigned to a code block having an index of j, N is the number of the data resource elements in the time and frequency resource block, and N_{seg} is the number of the code blocks in the time and frequency resource block.

4. The method of claim 1, comprised of the number of data resource elements assigned to a code block being established by:

$$M_j = \left\lceil \frac{(N-1)/2-j}{N_{seg}} \right\rceil \times 2, \text{ for } j = 0, \quad 1, \quad \cdots, \quad N_{seg}-1,$$

where M_j is the number of the data resource elements assigned to a code block having an index of j, N is the number of the data resource elements in the time and frequency resource block, and N_{seg} is the number of the code blocks in the time and frequency resource block.

5. A method for resource allocation, the method comprising the steps of:

dividing a time and frequency resource block into a plurality of equal duration frequency resource units in a frequency-domain, and dividing the time and frequency resource block into a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and frequency resource block being data resource elements that are available for data transmission;

segmenting a data block to be transmitted into a plurality of code blocks; and

assigning the data resource elements to the plurality of code blocks, with at least one data block corresponding to the data resource elements in a continuous set of time resource units.

6. The method of claim 5, comprised of:

assigning an index-within-a-time-resource-unit to each data resource element within each time resource unit, with the index-within-a-time-resource-unit for a data resource element in a time resource unit having an index i being $I_i(x)$, where x is a natural-order-index of the data resource element within the time resource unit i, $x = 0, 1, ..., N_i - 1$, N_i is the number of data resource elements within the time resource unit i, $i = 1, 2, ..., i_T$, and i_T is the total number of time resource units within the time and frequency resource block; and

assigning an index-within-an-assignment to each data resource element within the time and frequency resource block, with the index-within-an-assignment of a data resource element having an index-within-a-time-resource-unit of $I_i(x)$ being $I_A(x,i)$, and:

$$I_A(x,i) = I_i(x) + \sum_{k=1}^{i-1} N_k \text{, for } i = 1, 2, ..., i_T \text{, and } x = 0, 1, ..., N_i - 1,$$

where $I_A(x,i) = 0,\ 1,\ \cdots,\ N-1$, N is the number of data resource elements in the time and frequency resource block, and $N = \sum_{i=1}^{i_T} N_i$.

7. The method of claim 6, comprised of the index-within-a-time-resource-unit, $I_i(x)$, of a data resource element being equal to the natural-order-index, x, of the data resource element within a time resource unit having an index of j.

8. The method of claim 6, comprised of the index-within-a-time-resource-unit, $I_i(x)$, of a data resource element being related to the natural-order-index, x, of the data resource element within a time resource unit having an index of j, in accordance with an interleaving function.

9. The method of claim 6, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$\sum_{k=0}^{j-1}\left\lfloor \frac{N-j}{N_{seg}} \right\rfloor \le I_A(x,i) < \sum_{k=0}^{j}\left\lfloor \frac{N-j}{N_{seg}} \right\rfloor,$$

where $j = 0, 1, ..., N_{seg}-1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

10. The method of claim 6, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$j\times\left\lfloor \frac{N}{N_{seg}} \right\rfloor \le I_A(x,i) < (j+1)\times\left\lfloor \frac{N}{N_{seg}} \right\rfloor, \text{ if } 0 \le j < (N \bmod N_{seg}), \text{ and}$$

$$N-(N_{seg}-j)\times\left\lfloor \frac{N}{N_{seg}} \right\rfloor \le I_A(x,i) < N-(N_{seg}-j-1)\times\left\lfloor \frac{N}{N_{seg}} \right\rfloor, \text{ if } (N \bmod N_{seg}) \le j < N_{seg}$$

where $j = 0, 1, ..., N_{seg}-1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

11. The method of claim 6, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$\sum_{k=0}^{j-1}\left\lceil \frac{N/2-j}{N_{seg}} \right\rceil \times 2 \le I_A(x,i) < \sum_{k=0}^{j}\left\lceil \frac{N/2-j}{N_{seg}} \right\rceil \times 2,$$

where $j = 0, 1, ..., N_{seg}-1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

12. The method of claim 6, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$2\times j\times\left\lceil \frac{N}{2\times N_{seg}} \right\rceil \le I_A(x,i) < 2\times(j+1)\times\left\lceil \frac{N}{2\times N_{seg}} \right\rceil, \text{ if } 0 \le j < (N \bmod N_{seg}), \text{ and}$$

$$N-2\times(N_{seg}-j)\times\left\lfloor \frac{N}{2\times N_{seg}} \right\rfloor \le I_A(x,i) < N-2\times(N_{seg}-j-1)\times\left\lceil \frac{N}{2\times N_{seg}} \right\rceil,$$

$$\text{if } (N \bmod N_{seg}) \le j < N_{seg},$$

where $j = 0, 1, ..., N_{seg}-1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

13. A method for resource allocation, the method comprising the steps of:

dividing a time and frequency resource block into a plurality of equal duration frequency resource units in a frequency-domain, and dividing the time and frequency resource block into a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and frequency resource block being data resource elements that are available for data transmission;

segmenting a data block to be transmitted into a plurality of code blocks; and

assigning the data resource elements to the plurality of code blocks, with at least one time resource unit corresponding to all of the code blocks.

14. The method of claim 13, comprised of:

assigning an index-within-a-time-resource-unit to each data resource element within each time resource unit, with the index-within-a-time-resource-unit for a data resource element in a time resource unit having an index i being $I_i(x)$, where x is a natural-order-index of the data resource element within the time resource unit i, $x = 0, 1, ..., N_i - 1$, N_i is the number of data resource elements within the time resource unit i, $i = 1, 2, ..., i_T$, and i_T is the total number of time resource units within the time and frequency resource block; and

assigning an index-within-an-assignment to each data resource element within the time and frequency resource block, with the index-within-an-assignment of a data resource element having an index-within-a-time-resource-unit of $I_i(x)$ being $I_A(x,i)$, and:

$$I_A(x,i) = I_i(x) + \sum_{k=1}^{i-1} N_k \text{, for } i = 1, 2, ..., i_T \text{, and } x = 0, 1, ..., N_i - 1,$$

where $I_A(x,i) = 0, \quad 1, \quad \cdots, \quad N-1$, N is the number of data resource elements in the time and frequency resource block, and $N = \sum_{i=1}^{i_T} N_i$.

15. The method of claim 14, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$I_A(x,i) = m \times N_{seg} + j, \text{ for } m = 0, \quad 1, \quad \cdots, \quad \left\lceil \frac{N-j}{N_{seg}} \right\rceil - 1,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

16. The method of claim 14, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$j = I_A(x,i) \bmod N_{seg}, \text{ for } I_A(x,i) = 0, \quad 1, \quad \cdots, \quad N-1,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

17. The method of claim 14, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$\left\lfloor \frac{I_A(x,i)}{2} \right\rfloor = m \times N_{seg} + j, \text{ for } m = 0, \ 1, \ \cdots, \ \left\lceil \frac{N/2 - j}{N_{seg}} \right\rceil - 1,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

18. The method of claim 14, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$j = \left\lfloor \frac{I_A(x,i)}{2} \right\rfloor \bmod N_{seg}, \text{ for } I_A(x,i) = 0, \ 1, \ \cdots, \ N-1,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

19. A method for resource allocation, the method comprising the steps of:

dividing a time and frequency resource block into a plurality of equal duration frequency resource units in a frequency-domain, and dividing the time and frequency resource block into a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and frequency resource block being data resource elements that are available for data transmission;

segmenting a data block to be transmitted into a plurality of code blocks; and

assigning the data resource elements to the plurality of code blocks in dependence upon a number of the code blocks, with:

when the number of the code blocks is larger than a certain threshold value, at least one of the plurality of code blocks corresponding to a subset of continuous time resource units that are available for data transmission; and

when the number of the code blocks is less than the certain threshold value, at least one of the plurality of code blocks corresponding to all of the time resource units that are available for data transmission.

20. The method of claim 19, comprised of the certain threshold value being different for different unit of user equipment.

21. The method of claim 19, comprised of the certain threshold value being constant for different unit of user equipment.

22. A method for resource allocation, the method comprising the steps of:

dividing a time and frequency resource block into a plurality of equal duration frequency resource units in a frequency-domain, and dividing the time and frequency resource block into a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and frequency resource block being data resource elements that are available for data transmission;

segmenting a data block to be transmitted into a plurality of code blocks; and

assigning the data resource elements to the plurality of code blocks in dependence upon a size of the data block, with:

when the size of the data block is larger than a certain threshold value, at least one of the plurality of code blocks corresponding to a subset of continuous time resource units that are available for data transmission; and

when the size of the data block is less than the certain threshold value, at least one of the plurality of code blocks corresponding to all of the time resource units that are available for data transmission.

23. The method of claim 22, comprised of the certain threshold value being different for different unit of user equipment.

24. The method of claim 22, comprised of the certain threshold value being constant for different unit of user equipment.

25. A method for resource allocation, the method comprising the steps of:

dividing a time and frequency resource block into a plurality of equal duration frequency resource units in a frequency-domain, and dividing the time and frequency resource block into a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and

frequency resource block being data resource elements that are available for data transmission;

segmenting a data block to be transmitted into a plurality of code blocks; and

assigning the data resource elements to the plurality of code blocks in dependence upon a data rate, with:

when the data rate is larger than a certain threshold value, at least one of the plurality of code blocks corresponding to a subset of continuous time resource units that are available for data transmission; and

when the data rate is less than the certain threshold value, at least one of the plurality of code blocks corresponding to all of the time resource units that are available for data transmission.

26. The method of claim 25, comprised of the certain threshold value being different for different unit of user equipment.

27. The method of claim 25, comprised of the certain threshold value being constant for different unit of user equipment.

28. A method of communication, the method comprising the steps of:

encoding a plurality of transport blocks to be transmitted to generate a plurality of code blocks, with each data transport block corresponding to at least one code block; and

segmenting each of the plurality of transport blocks into a plurality of code blocks, with at least two of the plurality of transport blocks containing same number of code blocks.

29. The method of claim 28, comprised of the number of the code blocks within the at least two transport blocks being determined in dependence upon one of the at least two transport blocks having a larger number of information bits.

30. A method of communication, the method comprising the steps of:

segmenting a plurality of transport blocks to be transmitted to generate a plurality of code blocks, with each transport block corresponding to at least one code block; and

assigning time-frequency transmission resources to the plurality of code blocks, with the time-frequency transmission resources assigned to at least a first code block within a first transport block comprising the time-frequency transmission resources assigned to a second code block within a second transport block.

31. A method of communication, the method comprising the steps of:

segmenting a plurality of transport blocks to be transmitted to generate a plurality of code blocks, with each transport block corresponding to at least one code block; and

assigning time-frequency transmission resources to the plurality of code blocks, with the time-frequency transmission resources assigned to at least a first code block within a first transport block being the same as the time-frequency transmission resources assigned to a second code block within a second transport block.

32. A wireless terminal in a communication system, comprising:

a memory unit storing a resource grid structure of a time and frequency resource block divided into a plurality of equal duration resource elements in a time and frequency domain, with a subset of the plurality of resource elements being data resource elements that are available for data transmission;

a code block generation unit segmenting a data block to be transmitted into a plurality of code blocks;

a resource mapping unit assigning substantially equal number of data resource elements to the plurality of code blocks; and

at least one transmission antenna transmitting the plurality f code blocks by using the data resource elements.

33. The wireless terminal of claim 32, comprised of the number of data resource elements assigned to a code block being established by:

$$M_j = \left\lceil \frac{N-j}{N_{seg}} \right\rceil, \text{ for } j = 0, \quad 1, \quad \cdots, \quad N_{seg}-1,$$

where M_j is the number of the data resource elements assigned to a code block having an index of j, N is the number of the data resource elements in the

time and frequency resource block, and N_{seg} is the number of the code blocks in the time and frequency resource block.

34. The wireless terminal of claim 32, comprised of the number of data resource elements assigned to a code block being established by:

$$M_j = \left\lfloor \frac{N/2 - j}{N_{seg}} \right\rfloor \times 2, \text{ for } j = 0, \ 1, \ \cdots, \ N_{seg} - 1,$$

where M_j is the number of the data resource elements assigned to a code block having an index of j, N is the number of the data resource elements in the time and frequency resource block and N is an even number, and N_{seg} is the number of the code blocks in the time and frequency resource block.

35. A wireless terminal in a communication system, comprising:

a memory unit storing a resource grid structure of a time and frequency resource block comprising a plurality of equal duration frequency resource units in a frequency-domain, and a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and frequency resource block being data resource elements that are available for data transmission;

a code block generation unit segmenting a data block to be transmitted into a plurality of code blocks;

a resource mapping unit assigning the data resource elements to the plurality of code blocks, with at least one data block being assigned the data resource elements in a continuous set of time resource units; and

at least one transmission antenna transmitting the plurality f code blocks by using the data resource elements.

36. The wireless terminal of claim 35, comprised of the memory unit comprising an indexing unit, with the indexing unit:

assigning an index-within-a-time-resource-unit to each data resource element within each time resource unit, with the index-within-a-time-resource-unit for a data resource element in a time resource unit having an index i being $I_i(x)$, where x is a natural-order-index of the data resource element within the

time resource unit i, $x = 0, 1, ..., N_i - 1$, N_i is the number of data resource elements within the time resource unit i, $i = 1, 2, ..., i_T$, and i_T is the total number of time resource units within the time and frequency resource block; and

assigning an index-within-an-assignment to each data resource element within the time and frequency resource block, with the index-within-an-assignment of a data resource element having an index-within-a-time-resource-unit of $I_i(x)$ being $I_A(x,i)$, and:

$$I_A(x,i) = I_i(x) + \sum_{k=1}^{i-1} N_k \text{, for } i = 1, 2, ..., i_T \text{, and } x = 0, 1, ..., N_i - 1,$$

where $I_A(x,i) = 0, 1, \cdots, N-1$, N is the number of data resource elements in the time and frequency resource block, and $N = \sum_{i=1}^{i_T} N_i$.

37. The wireless terminal of claim 36, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$\sum_{k=0}^{j-1} \left\lceil \frac{N-j}{N_{seg}} \right\rceil \le I_A(x,i) < \sum_{k=0}^{j} \left\lceil \frac{N-j}{N_{seg}} \right\rceil,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

38. The wireless terminal of claim 36, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$j \times \left\lceil \frac{N}{N_{seg}} \right\rceil \le I_A(x,i) < (j+1) \times \left\lceil \frac{N}{N_{seg}} \right\rceil, \text{ if } 0 \le j < (N \bmod N_{seg}), \text{ and}$$

$$N - (N_{seg} - j) \times \left\lfloor \frac{N}{N_{seg}} \right\rfloor \le I_A(x,i) < N - (N_{seg} - j - 1) \times \left\lceil \frac{N}{N_{seg}} \right\rceil, \text{ if } (N \bmod N_{seg}) \le j < N_{seg}$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

39. The wireless terminal of claim 36, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$\sum_{k=0}^{j-1}\left\lceil\frac{N/2-j}{N_{seg}}\right\rceil\times 2 \le I_A(x,i) < \sum_{k=0}^{j}\left\lceil\frac{N/2-j}{N_{seg}}\right\rceil\times 2,$$

where $j = 0, 1, ..., N_{seg}-1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

40. The wireless terminal of claim 36, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$2\times j\times\left\lceil\frac{N}{2\times N_{seg}}\right\rceil \le I_A(x,i) < 2\times(j+1)\times\left\lceil\frac{N}{2\times N_{seg}}\right\rceil, \text{ if } 0 \le j < (N \bmod N_{seg}), \text{ and}$$

$$N-2\times(N_{seg}-j)\times\left\lfloor\frac{N}{2\times N_{seg}}\right\rfloor \le I_A(x,i) < N-2\times(N_{seg}-j-1)\times\left\lceil\frac{N}{2\times N_{seg}}\right\rceil,$$

$$\text{if } (N \bmod N_{seg}) \le j < N_{seg},$$

where $j = 0, 1, ..., N_{seg}-1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

41. A wireless terminal in a communication system, comprising:

a memory unit storing a resource grid structure of a time and frequency resource block comprising a plurality of equal duration frequency resource units in a frequency-domain, and a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and frequency resource block being data resource elements that are available for data transmission;

a code block generation unit segmenting a data block to be transmitted into a plurality of code blocks;

a resource mapping unit assigning the data resource elements to the plurality of code blocks, with at least one time resource unit corresponding to all of the code blocks; and

at least one transmission antenna transmitting the plurality f code blocks by using the data resource elements.

42. The wireless terminal of claim 41, comprised of the memory unit comprising an indexing unit, with the indexing unit:

assigning an index-within-a-time-resource-unit to each data resource element within each time resource unit, with the index-within-a-time-resource-unit for a data resource element in a time resource unit having an index i being $I_i(x)$, where x is a natural-order-index of the data resource element within the time resource unit i, $x = 0, 1, ..., N_i - 1$, N_i is the number of data resource elements within the time resource unit i, $i = 1, 2, ..., i_T$, and i_T is the total number of time resource units within the time and frequency resource block; and

assigning an index-within-an-assignment to each data resource element within the time and frequency resource block, with the index-within-an-assignment of a data resource element having an index-within-a-time-resource-unit of $I_i(x)$ being $I_A(x,i)$, and:

$$I_A(x,i) = I_i(x) + \sum_{k=1}^{i-1} N_k \text{, for } i = 1, 2, ..., i_T \text{, and } x = 0, 1, ..., N_i - 1,$$

where $I_A(x,i) = 0, \quad 1, \quad \cdots, \quad N-1$, N is the number of data resource elements in the time and frequency resource block, and $N = \sum_{i=1}^{i_T} N_i$.

43. The wireless terminal of claim 42, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$I_A(x,i) = m \times N_{seg} + j \text{, for } m = 0, \quad 1, \quad \cdots, \quad \left\lceil \frac{N-j}{N_{seg}} \right\rceil - 1,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

44. The wireless terminal of claim 42, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$j = I_A(x,i) \bmod N_{seg} \text{, for } I_A(x,i) = 0, \quad 1, \quad \cdots, \quad N-1,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

45. The wireless terminal of claim 42, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$\left\lfloor \frac{I_A(x,i)}{2} \right\rfloor = m \times N_{seg} + j, \text{ for } m = 0, \quad 1, \quad \cdots, \quad \left\lceil \frac{N/2 - j}{N_{seg}} \right\rceil - 1,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

46. The wireless terminal of claim 42, comprised of assigning a data resource element having an index-within-an-assignment of $I_A(x,i)$ to a code block having an index of j, such that:

$$j = \left\lfloor \frac{I_A(x,i)}{2} \right\rfloor \bmod N_{seg}, \text{ for } I_A(x,i) = 0, \quad 1, \quad \cdots, \quad N - 1,$$

where $j = 0, 1, ..., N_{seg} - 1$, and N_{seg} is the number of code blocks in the time and frequency resource block.

47. A wireless terminal in a communication system, comprising:

a memory unit storing a resource grid structure of a time and frequency resource block comprising a plurality of equal duration frequency resource units in a frequency-domain, and a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and frequency resource block being data resource elements that are available for data transmission;

a code block generation unit segmenting a data block to be transmitted into a plurality of code blocks;

a resource mapping unit assigning the data resource elements to the plurality of code blocks, with:

when the number of the code blocks is larger than a certain threshold value, at least one of the plurality of code blocks corresponding to a subset of continuous time resource units that are available for data transmission; and

when the number of the code blocks is less than the certain threshold value, at least one of the plurality of code blocks corresponding to all of the time resource units that are available for data transmission; and

at least one transmission antenna transmitting the plurality f code blocks by using the data resource elements.

48. The wireless terminal of claim 47, comprised of the certain threshold value being specific for the wireless terminal.

49. A wireless terminal in a communication system, comprising:

a memory unit storing a resource grid structure of a time and frequency resource block comprising a plurality of equal duration frequency resource units in a frequency-domain, and a plurality of equal duration time resource units in a time-domain, with one frequency resource unit in one time resource unit being a resource element, and a subset of resource elements within the time and frequency resource block being data resource elements that are available for data transmission;

a code block generation unit segmenting a data block to be transmitted into a plurality of code blocks;

a resource mapping unit assigning the data resource elements to the plurality of code blocks, with:

when the size of the data block is larger than a certain threshold value, at least one of the plurality of code blocks corresponding to a subset of continuous time resource units that are available for data transmission; and

when the size of the data block is less than the certain threshold value, at least one of the plurality of code blocks corresponding to all of the time resource units that are available for data transmission; and

at least one transmission antenna transmitting the plurality f code blocks by using the data resource elements.

50. The wireless terminal of claim 49, comprised of the certain threshold value being specific for the wireless terminal.

51. A wireless terminal in a communication system, comprising:

a segmentation unit segmenting a plurality of transport blocks to be transmitted to generate a plurality of code blocks, with each transport block corresponding to at least one code block; and with at least two of the plurality of data transport blocks containing same number of code blocks.

52. The wireless terminal of claim 51, comprised of the number of the code blocks within the at least two transport blocks being determined in

dependence upon one of the at least two transport blocks having a larger number of information bits.

53. A wireless terminal in a communication system, comprising:

a segmentation unit segmenting a plurality of transport blocks to be transmitted to generate a plurality of code blocks, with each transport block corresponding to at least one code block; and

a resource mapping unit assigning time-frequency transmission resources to the plurality of code blocks, with the time-frequency transmission resources assigned to at least a first code block within a first transport block comprising the time-frequency transmission resources assigned to a second code block within a second transport block.

54. A wireless terminal in a communication system, comprising:

a segmentation unit segmenting a plurality of transport blocks to be transmitted to generate a plurality of code blocks, with each transport block corresponding to at least one code block; and

a resource mapping unit assigning time-frequency transmission resources to the plurality of code blocks, with the time-frequency transmission resources assigned to at least a first code block within a first transport block being the same as the time-frequency transmission resources assigned to a second code block within a second transport block.

WHAT IS CLAIMED IS:

1. A method for receiving data at a receiver in a communication system, the method comprising:

receiving, from a transmitter, at least one code block through one or more antennas based on resources allocated by the transmitter; and

collecting the received at least one code block, decoding the collected code block, and outputting information bits,

wherein a plurality of resources are allocated to each of the at least one code block, and the number of the resources is determined based on N, N_{seg}, and whether a transmit diversity scheme is applied or not, N being a value related to the number of resources available for data transmission and N_{seg} being the number of code blocks, and

wherein if the transmit diversity scheme is applied, the number of resources allocated to each of the at least one code block is determined by multiplying 2 to a value derived by dividing N by N_{seg}, the 2 being a value set by applying the transmit diversity scheme.

2. The method of claim 1, wherein if the transmit diversity such as space frequency block coding (SFBC) is applied, the number of resources is determined by [Equation 1],

[Equation 1]

$$M_j = \left\lceil \frac{N/2 - j}{N_{seg}} \right\rceil \times 2, \text{ for } j = 0, \quad 1, \quad \cdots, \quad N_{seg} - 1,$$

wherein M_j is the number of resources allocated to a code block with index j.

3. The method of claim 1, wherein coded information bits are received mapped to the allocated resources from a first code block to a last code block by ascending order of resource indexes.

4. A receiver in a communication system, the receiver comprising:

a memory configured to store a resource grid structure of a time and frequency resource block, each being divided into a plurality of equal duration resource elements in a time and frequency domain, and a subset of resource elements available for data transmission;

one or more reception antennas configured to receive, from a transmitter, at least one code block based on resources allocated by the transmitter;

a collector configured to collect the received at least one code block; and

a decoder configured to decode the collected code block and output information bits,

wherein a plurality of resources are allocated to each of the at least one code block, and the number of the resources is determined based on N, N_{seg}, and whether a transmit diversity scheme is applied or not, N being a value related to the number of resources available for data transmission and N_{seg} being the number of code blocks, and

wherein if the transmit diversity scheme is applied, the number of resources allocated to each of the at least one code block is determined by multiplying 2 to a value derived by dividing N by N_{seg}, the 2 being a value set by applying the transmit diversity scheme.

5. The receiver of claim 4, wherein if the transmit diversity such as space frequency block coding (SFBC) is applied, the number of resources is determined by [Equation 2],

[Equation 2]

$$M_j = \left\lceil \frac{N/2 - j}{N_{seg}} \right\rceil \times 2, \text{ for } j = 0, \ 1, \ \cdots, \ N_{seg} - 1,$$

wherein M_j is the number of resources allocated to a code block with index j.

6. The receiver of claim 4, wherein coded information bits are received mapped to the allocated resources from a first code block to a last code

block by ascending order of resource indexes.

7. A method for allocating resources at a transmitter in a communication system, the method comprising:

segmenting a plurality of information bits into a plurality of code blocks;

encoding the information bits on a code block basis;

allocating a plurality of resources to each of at least one code block, and determining the number of resources based on N, N_{seq}, and the number of transmission layers; and

transmitting a signal derived from an output of the encoding to a receiver through one or more antennas based on the allocated resources,

wherein N is a value related to the number of resources available for data transmission, N_{seg} is the number of code blocks, and if the transmit diversity scheme is applied, the number of resources allocated to each of the at least one code block is determined by multiplying 2 to a value derived by dividing N by N_{seg}, the 2 being a value set by applying the transmit diversity scheme.

8. The method of claim 7, wherein if the transmit diversity such as space frequency block coding (SFBC) is applied, the number of resources is determined by [Equation 3],

[Equation 3]

$$M_j = \left\lceil \frac{N/2 - j}{N_{seg}} \right\rceil \times 2, \text{ for } j = 0, \ 1, \ \cdots, \ N_{seg} - 1,$$

wherein M_j is the number of resources allocated to a code block with index j.

9. The method of claim 7, further comprising mapping the coded information bits to the allocated resources from a first code block to a last code block by ascending order of resource indexes.

10. A transmitter in a communication system, the transmitter comprising:

a memory configured to store a resource grid structure of a time and frequency resource block, each being divided into a plurality of equal duration resource elements in a time and frequency domain, and a subset of resource elements available for data transmission;

a code block generator configured to divide a plurality of information bits into a plurality of code blocks;

an encoder configured to encode the information bits on a code block basis;

a resource mapping unit configured to allocate a plurality of resources to each of at least one code block, and determine the number of resources based on N, N_{seq}, and the number of transmission layers; and

at least one transmission antenna configured to transmit a signal derived from an output of the encoder to a receiver based on the allocated resources,

wherein N is a value related to the number of resources available for data transmission, N_{seg} is the number of code blocks, and if the transmit diversity scheme is applied, the number of resources allocated to each of the at least one code block is determined by multiplying 2 to a value derived by dividing N by N_{seg}, the 2 being a value set by applying the transmit diversity scheme.

11. The transmitter of claim 10, wherein if the transmit diversity such as space frequency block coding (SFBC) is applied, the number of resources is determined by [Equation 4],

[Equation 4]

$$M_j = \left\lfloor \frac{N/2 - j}{N_{seg}} \right\rfloor \times 2, \text{ for } j = 0, \quad 1, \quad \cdots, \quad N_{seg} - 1,$$

wherein M_j is the number of resources allocated to a code block with index j.

12. The transmitter of claim 10, wherein the resource mapping unit

maps the coded information bits to the allocated resources from a first code block to a last code block by ascending order of resource indexes.

13. A method for receiving data at a receiver in a communication system, the method comprising:

receiving, from a transmitter, at least one code block through one or more antennas based on resources allocated by the transmitter; and

collecting the received at least one code block, decoding the collected code block, and outputting information bits,

wherein a plurality of resources are allocated to each of the at least one code block, and the number of the resources is determined based on N, N_{seg}, and the number of transmission layers, N being a value related to the number of resources available for data transmission and N_{seg} being the number of code blocks, and

wherein if a transmit diversity scheme is applied, the number of resources allocated to each of the at least one code block is determined by multiplying 2 to a value derived by dividing N by N_{seg}, the 2 being a value set by applying the transmit diversity scheme.

14. The method of claim 13, wherein if the transmit diversity such as space frequency block coding (SFBC) is applied, the number of resources is determined by [Equation 1],

[Equation 5]

$$M_j = \left\lfloor \frac{N/2 - j}{N_{seg}} \right\rfloor \times 2, \text{ for } j = 0, \quad 1, \quad \cdots, \quad N_{seg} - 1,$$

wherein M_j is the number of resources allocated to a code block with index j.

15. The method of claim 13, wherein coded information bits are received mapped to the allocated resources from a first code block to a last code block by ascending order of resource indexes.

16. A receiver in a communication system, the receiver comprising:

a memory configured to store a resource structure of a time and frequency resource blocks, each being into a plurality of equal duration resource elements in a time and frequency domain, and a subset of resource elements available for data transmission;

one or more reception antennas configured to receive, from a transmitter, at least one code block based on resources allocated by the transmitter;

a collector configured to collect the received at least one code block; and

a decoder configured to decode the collected code block and output information bits,

wherein a plurality of resources are allocated to each of the at least one code block, and the number of the resources is determined based on N, N_{seg}, and the number of transmission antennas, N being a value related to the number of resources available for data transmission and N_{seg} being the number of code blocks, and

wherein if a transmit diversity scheme is applied, the number of resources allocated to each of the at least one code block is determined by multiplying 2 to a value derived by dividing N by N_{seg}, the 2 being a value set by applying the transmit diversity scheme.

17. The receiver of claim 16, wherein if the transmit diversity such as space frequency block coding (SFBC) is applied, the number of resources is determined by [Equation 1],

[Equation 5]

$$M_j = \left\lceil \frac{N/2 - j}{N_{seg}} \right\rceil \times 2, \text{ for } j = 0, \quad 1, \quad \cdots, \quad N_{seg} - 1,$$

wherein M_j is the number of resources allocated to a code block with index j.

18. The receiver of claim 16, wherein coded information bits are

received mapped to the allocated resources from a first code block to a last code block by ascending order of resource indexes.