

CLAIMS

What is claimed is:

1. A resource indication method, comprising:

determining a first resource in a first slot and a second resource in a second slot, wherein the

first resource and the second resource are to be used to send data;

determining a resource indication value (RIV) ~~of resource indication information~~ based on a frequency domain starting position of the first resource, a frequency domain starting position of the second resource, a first frequency domain bandwidth, and a second frequency domain bandwidth, the RIV is used to indicate the frequency domain starting position of the first resource and the frequency domain starting position of the second resource, wherein the first frequency domain bandwidth is a frequency domain bandwidth of the first resource or a frequency domain bandwidth of the second resource, the frequency domain bandwidth of the first resource is the same as the frequency domain bandwidth of the second resource, and the second frequency domain bandwidth is a frequency domain bandwidth of a resource pool; and

sending the resource indication information in a third slot, wherein a value of the resource indication information is the RIV, the second slot and the first slot are later than the third slot.

2. The method according to claim 1, wherein the method further comprises:

sending a first data packet on a third resource in the third slot, sending a second data packet on the first resource, and sending a third data packet on the second resource, wherein the second data packet and the third data packet are different from the first data packet, or the second data packet and the third data packet are retransmitted data packets of the first data packet.

3. The method according to claim 1 or 2, wherein the determining a resource indication value (RIV) ~~of resource indication information~~ based on a frequency domain starting position of the first resource, a frequency domain starting position of the second resource, a first frequency domain bandwidth, and a second frequency domain bandwidth comprises:

determining the ~~value of the resource indication information~~ RIV based on the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, the second frequency domain bandwidth, the square of the second frequency domain bandwidth, and a difference between the second frequency domain bandwidth and the first frequency domain bandwidth.

4. The method according to any one of claims 1 to 3, wherein the ~~value of the resource indication information~~ relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth satisfies:

5
$$RIV = f(N) - f(N - (L - 1)) + (N - (L - 1)) * S_0 + S_1$$
, wherein S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; N represents the second frequency domain bandwidth; S_0 , S_1 , N , and L are integers; ~~RIV represents the value of the resource indication information;~~ and $f(N)$ represents a function of an input value N .

5. The method according to claim 4, wherein $f(N)$ satisfies: $f(N) = N(N + 1)(2N + 1) / 6$.

6. The method according to any one of claims 1 to 5, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth ~~value of the resource indication information~~ satisfies:

15
$$RIV = N(N + 1)(2N + 1) / 6 - (N - L + 1)(N - L + 2)(2N - 2L + 3) / 6 + (N - (L - 1)) * S_0 + S_1$$
, wherein ~~RIV represents the value of the resource indication information;~~ S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; and N represents the second frequency domain bandwidth, wherein N and L are integers.

7. The method according to any one of claims 1 to 6, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth ~~value of the resource indication information~~ satisfies:

25
$$RIV = S_1 + S_0 \times (N - (L - 1)) + \sum_{i=1}^{L-1} (N + 1 - i)^2$$
, wherein ~~RIV represents the value of the resource indication information;~~ S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; and N represents the second frequency

domain bandwidth, wherein N and L are integers.

8. The method according to claim 1 or 2, wherein the ~~RIV value of the resource indication information~~ is determined based on one element or a combination of a plurality of elements of the following elements:

5 N^2 , S_0 , S_1 , $(L-1)$, $(N-L-S_0)$, $(N-1-S_1)$, and/or $N-L+1$, wherein S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; N represents the second frequency domain bandwidth; and S_0 , S_1 , N , and L are integers.

10 9. The method according to claim 8, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth value of the resource indication information satisfies:

$$RIV = N^2 * (L-1) + (N-L+1) * S_0 + S_1 \quad \text{or} \quad RIV = N^2 * (N-L+1) + L * (N-L-S_0) + (N-1-S_1),$$

wherein

15 ~~RIV represents the value of the resource indication information;~~ N represents the second frequency domain bandwidth; L represents the first frequency domain bandwidth; S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; and S_0 , S_1 , N , and L are integers.

20 10. The method according to any one of claims 1 to 9, wherein a quantity of bits occupied by the resource indication information is less than or equal to a first threshold.

11. The method according to claim 10, wherein the first threshold is obtained according to a formula $\left\lfloor \log_2^{(N(N+1)(2N+1)/6)} \right\rfloor$ or $\left\lceil \log_2^{(N(N+1)(2N+1)/6)} \right\rceil$, where N represents the second frequency domain bandwidth.

12. A resource determining method, comprising:

25 receiving resource indication information from a first device in a third slot, wherein a value of the resource indication information is a resource indication value (RIV) ~~is used to indicate a frequency domain position of a first resource in a first slot and a frequency domain position of a second resource in a second slot, the first slot and the second slot are later than the third slot, and~~

~~the first resource and the second resource are candidate to-be-sent resources of the first device;~~
and

determining a frequency domain starting position of ~~the a first resource in a first slot,~~ a frequency domain starting position of ~~the a second resource in a second slot,~~ and a first frequency domain bandwidth based on the ~~value of the resource indication information~~ RIV, wherein the first slot and the second slot are later than the third slot, the first resource and the second resource are candidate to-be-sent resources of the first device, the first frequency domain bandwidth is a frequency domain bandwidth of the first resource or a frequency domain bandwidth of the second resource, and the frequency domain bandwidth of the first resource is the same as the frequency domain bandwidth of the second resource.

13. The method according to claim 12, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth~~value of the resource indication information~~ satisfies:

$$RIV = f(N) - f(N - (L - 1)) + (N - (L - 1)) * S_0 + S_1$$
, wherein S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; N represents a second frequency domain bandwidth, wherein the second frequency domain bandwidth is a frequency domain bandwidth of a resource pool; S_0 , S_1 , N , and L are integers;
~~RIV represents the value of the resource indication information;~~ and $f(N)$ represents a function of an input value N .

14. The method according to claim 13, wherein $f(N)$ satisfies: $f(N) = N(N + 1)(2N + 1) / 6$.

15. The method according to any one of claims 12 to 14, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth~~value of the resource indication information~~ satisfies:

$$RIV = N(N + 1)(2N + 1) / 6 - (N - L + 1)(N - L + 2)(2N - 2L + 3) / 6 + (N - (L - 1)) * S_0 + S_1$$

wherein ~~RIV represents the value of the resource indication information,~~ S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain

starting position of the second resource; L represents the first frequency domain bandwidth; and N represents a second frequency domain bandwidth, wherein the second frequency domain bandwidth is a frequency domain bandwidth of a resource pool, and N and L are integers.

16. The method according to any one of claims 12 to 15, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth value of the resource indication information satisfies:

$$RIV = S_1 + S_0 \times (N - (L - 1)) + \sum_{i=1}^{L-1} (N + 1 - i)^2$$
, wherein ~~RIV represents the value of the resource indication information,~~ S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; and N represents the second frequency domain bandwidth, wherein the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and N and L are integers.

17. The method according to claim 12, wherein the first frequency domain bandwidth is determined based on the ~~value of the resource indication information~~ RIV and the square of a second frequency domain bandwidth, and the second frequency domain bandwidth is a frequency domain bandwidth of a resource pool.

18. The method according to claim 17, wherein the first frequency domain bandwidth satisfies: $L = a + 1$, $L = a$, or $L = N + 1 - a$, wherein $a = RIV / N^2$, $a = \lfloor RIV / N^2 \rfloor$, or $a = \lceil RIV / N^2 \rceil$; and

L represents the first frequency domain bandwidth, and N represents the second frequency domain bandwidth, ~~and RIV represents the value of the resource indication information.~~

19. The method according to any one of claims 12 to 18, wherein the determining a frequency domain starting position of the first resource and a frequency domain starting position of the second resource based on the ~~value of the resource indication information~~ RIV comprises:

determining the frequency domain starting position of the first resource and the frequency domain starting position of the second resource based on the ~~value of the resource indication information~~ RIV and the second frequency domain bandwidth, wherein the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool.

20. The method according to any one of claims 12 to 18, wherein

the frequency domain starting position of the first resource or the frequency domain starting position of the second resource is determined based on the ~~value of the resource indication information~~ RIV , the square of the second frequency domain bandwidth of the resource pool, and the first frequency domain bandwidth, wherein the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool.

21. The method according to any one of claims 12 to 20, wherein when a first value is less than or equal to a third limit,

the frequency domain starting position of the first resource or the frequency domain starting position of the second resource is determined using $RIV - N^2 * (L - 1)$, wherein L represents the first frequency domain bandwidth, and N represents the second frequency domain bandwidth, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and the first value is determined by the RIV ~~and RIV represents the value of the resource indication information.~~

22. The method according to any one of claims 12 to 21, wherein the frequency domain starting position of the first resource satisfies:

$$S_0 = (RIV - N^2 * (L - 1)) / (N - L + 1) \text{ and/or } S_1 = (RIV - N^2 * (L - 1)) \bmod (N - L + 1); \text{ or}$$

$$S_0 = g\left(\left\{\left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV\right) / L\right\}\right) \text{ and/or}$$

$$S_1 = \left\{\left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV\right)\right\} \bmod L, \text{ wherein } g(\) \text{ represents a function}$$

for rounding up or rounding down an input variable, L represents the first frequency domain bandwidth, N represents the second frequency domain bandwidth, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, S_0 represents the frequency domain starting position of the first resource, and S_1 represents the frequency domain starting position of the second resource, ~~and RIV represents the value of the resource indication information.~~

23. The method according to any one of claims 12 to 21, wherein when the first value is less than or equal to the third limit, the frequency domain starting position of the first resource satisfies:

$$S_0 = (RIV - N^2 * (L - 1)) / (N - L + 1); \text{ and}$$

the frequency domain starting position of the second resource satisfies:

$S_1 = (RIV - N^2 * (L - 1)) \bmod (N - L + 1)$, wherein

L represents the first frequency domain bandwidth, N represents the second frequency domain bandwidth, ~~RIV represents the value of the resource indication information,~~ S_0 represents the frequency domain starting position of the first resource, ~~and~~ S_1 represents the frequency domain starting position of the second resource, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and the first value is determined by the RIV.

24. The method according to any one of claims 12 to 20, wherein when a first value is greater than or equal to a fourth limit, the frequency domain starting position of the first resource or the frequency domain starting position of the second resource is determined using $N^2(N - L + 1)$; or

the frequency domain starting position of the first resource or the frequency domain starting position of the second resource is determined using $N^2(N - L + 1) + (L + 1)(N - 1) - RIV$, wherein

L represents the first frequency domain bandwidth, ~~and~~ N represents the second frequency domain bandwidth, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and the first value is determined by the RIV.

25. The method according to any one of claims 12 to 24, wherein when the first value is greater than or equal to the fourth limit,

the frequency domain starting position of the first resource satisfies:

$$S_0 = \left\lfloor \left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV \right) / L \right\rfloor \text{ or}$$

$$S_0 = \left\lceil \left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV \right) / L \right\rceil; \text{ and/or}$$

the frequency domain starting position of the second resource satisfies:

$$S_1 = \left\{ \left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV \right) \right\} \bmod L; \text{ wherein}$$

L represents the first frequency domain bandwidth, N represents the second frequency domain bandwidth, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and the first value is determined by the RIV.

26. A communications apparatus, comprising:

a processing module, configured to determine a first resource in a first slot and a second resource in a second slot, wherein the first resource and the second resource are to be used to send data, wherein

the processing module is further configured to determine a resource indication value (RIV)
~~of resource indication information~~ based on a frequency domain starting position of the first
resource, a frequency domain starting position of the second resource, a first frequency domain
bandwidth, and a second frequency domain bandwidth, the RIV is used to indicate the frequency
5 domain starting position of the first resource and the frequency domain starting position of the
second resource, wherein the first frequency domain bandwidth is a frequency domain bandwidth
of the first resource or a frequency domain bandwidth of the second resource, the frequency
domain bandwidth of the first resource is the same as the frequency domain bandwidth of the
second resource, and the second frequency domain bandwidth is a frequency domain bandwidth
10 of a resource pool; and

a communications module, configured to send the resource indication information in a third
slot, wherein a value of the resource indication information is the RIV, the second slot and the first
slot are later than the third slot.

27. The apparatus according to claim 26, wherein the communications module is further
15 configured to: send a first data packet on a third resource in the third slot, send a second data packet
on the first resource, and send a third data packet on the second resource, wherein the second data
packet and the third data packet are different from the first data packet, or the second data packet
and the third data packet are retransmitted data packets of the first data packet.

28. The apparatus according to claim 26 or 27, wherein the processing module is configured
20 to:

determine the RIV~~value of the resource indication information~~ based on the frequency
domain starting position of the first resource, the frequency domain starting position of the second
resource, the first frequency domain bandwidth, the second frequency domain bandwidth, the
square of the second frequency domain bandwidth, and a difference between the second frequency
25 domain bandwidth and the first frequency domain bandwidth.

29. The apparatus according to any one of claims 26 to 28, wherein the relationship between
the RIV and the frequency domain starting position of the first resource, the frequency domain
starting position of the second resource, the first frequency domain bandwidth, and the second
frequency domain bandwidth~~value of the resource indication information~~ satisfies:

30
$$RIV = f(N) - f(N - (L - 1)) + (N - (L - 1)) * S_0 + S_1$$
, wherein S_0 represents the frequency

domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; N represents the second frequency domain bandwidth; S_0 , S_1 , N , and L are integers; ~~RIV represents the value of the resource indication information;~~ and $f(N)$ represents a function of an input value N .

30. The apparatus according to claim 29, wherein $f(N)$ satisfies: $f(N) = N(N+1)(2N+1)/6$.

31. The method according to any one of claims 26 to 30, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth~~value of the resource indication information~~ satisfies:

$$RIV = N(N+1)(2N+1)/6 - (N-L+1)(N-L+2)(2N-2L+3)/6 + (N-(L-1)) * S_0 + S_1,$$

wherein ~~RIV represents the value of the resource indication information;~~ S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; and N represents the second frequency domain bandwidth, wherein N and L are integers.

32. The method according to any one of claims 26 to 31, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth~~value of the resource indication information~~ satisfies:

$RIV = S_1 + S_0 \times (N - (L - 1)) + \sum_{i=1}^{L-1} (N + 1 - i)^2$, wherein ~~RIV represents the value of the resource indication information;~~ S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; and N represents the second frequency domain bandwidth, wherein N and L are integers.

33. The apparatus according to claim 26 or 27, wherein the ~~value of the resource indication information~~ RIV is determined based on one element or a combination of a plurality of elements of the following elements:

N^2 , S_0 , S_1 , $(L-1)$, $(N-L-S_0)$, $(N-1-S_1)$, and/or $N-L+1$, wherein S_0 represents

the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; N represents the second frequency domain bandwidth; and S_0 , S_1 , N , and L are integers.

34. The apparatus according to claim 33, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth value of the resource indication information satisfies:

$$RIV = N^2 * (L-1) + (N-L+1) * S_0 + S_1 \quad \text{or} \quad RIV = N^2 * (N-L+1) + L * (N-L-S_0) + (N-1-S_1),$$

wherein

~~RIV~~ represents the value of the resource indication information; N represents the second frequency domain bandwidth; L represents the first frequency domain bandwidth; S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; and S_0 , S_1 , N , and L are integers.

35. The apparatus according to any one of claims 26 to 34, wherein a quantity of bits occupied by the resource indication information is less than or equal to a first threshold.

36. The apparatus according to claim 35, wherein the first threshold is obtained according to a formula $\lfloor \log_2^{(N(N+1)(2N+1)/6)} \rfloor$ or $\lceil \log_2^{(N(N+1)(2N+1)/6)} \rceil$, where N represents the second frequency domain bandwidth.

37. A communications apparatus, comprising:

a communications module, configured to receive resource indication information from a first device in a third slot, wherein a value of the resource indication information is a resource indication value (RIV) ~~used to indicate a frequency domain position of a first resource in a first slot and a frequency domain position of a second resource in a second slot, the first slot and the second slot are later than the third slot, and the first resource and the second resource are candidate to be sent resources of the first device;~~ and

a determining module, configured to determine a frequency domain starting position of ~~the~~ a first resource in a first slot, a frequency domain starting position of ~~the~~ a second resource in a second slot, and a first frequency domain bandwidth based on the ~~value of the resource indication information~~ RIV, wherein the first slot and the second slot are later than the third slot, the first

resource and the second resource are candidate to-be-sent resources of the first device, the first frequency domain bandwidth is a frequency domain bandwidth of the first resource or a frequency domain bandwidth of the second resource, and the frequency domain bandwidth of the first resource is the same as the frequency domain bandwidth of the second resource.

38. The apparatus according to claim 37, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth value of the resource indication information satisfies:

$$RIV = f(N) - f(N - (L - 1)) + (N - (L - 1)) * S_0 + S_1$$
, wherein S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; N represents a second frequency domain bandwidth, wherein the second frequency domain bandwidth is a frequency domain bandwidth of a resource pool; S_0 , S_1 , N , and L are integers; ~~RIV represents the value of the resource indication information;~~ and $f(N)$ represents a function of an input value N .

39. The apparatus according to claim 38, wherein $f(N)$ satisfies: $f(N) = N(N + 1)(2N + 1) / 6$.

40. The apparatus according to any one of claims 37 to 39, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second frequency domain bandwidth value of the resource indication information satisfies:

$$RIV = N(N + 1)(2N + 1) / 6 - (N - L + 1)(N - L + 2)(2N - 2L + 3) / 6 + (N - (L - 1)) * S_0 + S_1$$
, wherein ~~RIV represents the value of the resource indication information;~~ S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource; L represents the first frequency domain bandwidth; and N represents a second frequency domain bandwidth, wherein the second frequency domain bandwidth is a frequency domain bandwidth of a resource pool, and N and L are integers.

41. The apparatus according to any one of claims 37 to 40, wherein the relationship between the RIV and the frequency domain starting position of the first resource, the frequency domain starting position of the second resource, the first frequency domain bandwidth, and the second

frequency domain bandwidth ~~value of the resource indication information~~ satisfies:

$RIV = S_1 + S_0 \times (N - (L - 1)) + \sum_{i=1}^{L-1} (N + 1 - i)^2$, wherein ~~RIV represents the value of the resource indication information~~, S_0 represents the frequency domain starting position of the first resource; S_1 represents the frequency domain starting position of the second resource;
5 L represents the first frequency domain bandwidth; and N represents the second frequency domain bandwidth, wherein the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and N and L are integers.

42. The apparatus according to claim 37, wherein the first frequency domain bandwidth is determined based on the ~~value of the resource indication information~~ RIV and the square of a
10 second frequency domain bandwidth, and the second frequency domain bandwidth is a frequency domain bandwidth of a resource pool.

43. The apparatus according to claim 42, wherein the first frequency domain bandwidth satisfies: $L = a + 1$, $L = a$, or $L = N + 1 - a$, wherein $a = RIV / N^2$, $a = \lfloor RIV / N^2 \rfloor$, or $a = \lceil RIV / N^2 \rceil$; and

15 L represents the first frequency domain bandwidth, and N represents the second frequency domain bandwidth, ~~and RIV represents the value of the resource indication information~~.

44. The apparatus according to any one of claims 37 to 43, wherein the processing module is configured to determine the frequency domain starting position of the first resource and the
20 frequency domain starting position of the second resource based on the ~~value of the resource indication information~~ RIV and the second frequency domain bandwidth, wherein the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool.

45. The apparatus according to any one of claims 37 to 44, wherein
25 the frequency domain starting position of the first resource or the frequency domain starting position of the second resource is determined based on the ~~value of the resource indication information~~ RIV , the square of the second frequency domain bandwidth of the resource pool, and the first frequency domain bandwidth, wherein the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool.

46. The apparatus according to any one of claims 37 to 41, wherein when a first value is less

than or equal to a third limit,

the frequency domain starting position of the first resource or the frequency domain starting position of the second resource is determined using $RIV - N^2 * (L - 1)$, wherein L represents the first frequency domain bandwidth, and N represents the second frequency domain bandwidth, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and the first value is determined by the ~~RIV~~ and ~~RIV~~ represents the value of the resource indication information.

47. The apparatus according to any one of claims 37 to 46, wherein the frequency domain starting position of the first resource satisfies:

$$S_0 = (RIV - N^2 * (L - 1)) / (N - L + 1) \text{ and/or } S_1 = (RIV - N^2 * (L - 1)) \bmod (N - L + 1); \text{ or}$$

$$S_0 = g\left(\left\{\left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV\right) / L\right\}\right) \text{ and/or}$$

$$S_1 = \left\{\left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV\right)\right\} \bmod L, \text{ wherein } g(\) \text{ represents a function}$$

for rounding up or rounding down an input variable, L represents the first frequency domain bandwidth, N represents the second frequency domain bandwidth, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, S_0 represents the frequency domain starting position of the first resource, and S_1 represents the frequency domain starting position of the second resource, and ~~RIV~~ represents the value of the resource indication information.

48. The apparatus according to any one of claims 37 to 45, wherein when a first value is less than or equal to a third limit, the frequency domain starting position of the first resource satisfies:

$$S_0 = (RIV - N^2 * (L - 1)) / (N - L + 1); \text{ and}$$

the frequency domain starting position of the second resource satisfies:

$$S_1 = (RIV - N^2 * (L - 1)) \bmod (N - L + 1), \text{ wherein}$$

L represents the first frequency domain bandwidth, N represents the second frequency domain bandwidth, ~~RIV~~ represents the value of the resource indication information, S_0 represents the frequency domain starting position of the first resource, and S_1 represents the frequency domain starting position of the second resource, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and the first value is

determined by the RIV.

49. The apparatus according to any one of claims 37 to 45, wherein when a first value is greater than or equal to a fourth limit, the frequency domain starting position of the first resource or the frequency domain starting position of the second resource is determined using $N^2(N - L + 1)$;

or

the frequency domain starting position of the first resource or the frequency domain starting position of the second resource is determined using $N^2(N - L + 1) + (L + 1)(N - 1) - RIV$, wherein

L represents the first frequency domain bandwidth, and N represents the second frequency domain bandwidth, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and the first value is determined by the RIV.

50. The apparatus according to any one of claims 37 to 49, wherein when the first value is greater than or equal to the fourth limit,

the frequency domain starting position of the first resource satisfies:

$$S_0 = \left\lfloor \left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV \right) / L \right\rfloor \text{ or}$$

$$S_0 = \left\lceil \left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV \right) / L \right\rceil; \text{ and/or}$$

the frequency domain starting position of the second resource satisfies:

$$S_1 = \left\{ \left(N^2(N - L + 1) + (L + 1)(N - 1) - RIV \right) \right\} \bmod L; \text{ wherein}$$

L represents the first frequency domain bandwidth, N represents the second frequency domain bandwidth, the second frequency domain bandwidth is the frequency domain bandwidth of the resource pool, and the first value is determined by the RIV.

51. A computer-readable storage medium, wherein the computer-readable storage medium stores a computer program or instructions; and when the computer program is executed or the instructions are executed by a communications apparatus, the method according to any one of claims 1 to 11 is implemented, or the method according to any one of claims 12 to 25 is implemented.

52. A computer program product, comprising a computer program or instructions, wherein when the computer program is executed or the instructions are executed by a communications apparatus, the communications apparatus is enabled to implement the method according to any one of claims 1 to 11, or the communications apparatus is enabled to implement the method according to any one of claims 12 to 25.

53. A component, comprising means adapted to execute the method according to any one of claims 1 to 11 is implemented, or the method according to any one of claims 12 to 25 is implemented.