CLAIMS

1. A wireless communication method in a wireless network comprising an access point and a plurality of nodes, the method comprising, at the access point, the step of sending a trigger frame to the nodes, the trigger frame reserving at least one communication channel of the wireless network for a transmission opportunity and defining a plurality of resource units to be accessed by respective accessing nodes and splitting the communication channel in the frequency domain,

wherein the trigger frame includes one indicator per resource unit and thus per accessing node, each indicator restricting data to be sent by the accessing node on the respective resource unit to data having a restricted traffic type of data.

2. A wireless communication method in a wireless network comprising an access point and a plurality of nodes, the method comprising, at one of said nodes:

receiving a trigger frame from the access point, the trigger frame reserving at least one communication channel of the wireless network for a transmission opportunity and defining a plurality of resource units to be accessed by respective accessing nodes and splitting the communication channel in the frequency domain, wherein the trigger frame includes one indicator per resource unit and thus per accessing node, each indicator restricting data to be sent by the accessing node on the respective resource unit to data having a restricted traffic type of data;

determining, from the trigger frame, an indicator defining a restricted traffic type of data authorized for at least one of the resource units;

determining, from local transmitting memory, data having a traffic type corresponding to the determined restricted traffic type of data; and

transmitting the determined data to the access point on the said resource unit.

3. The wireless communication method of Claim 1 or 2, wherein the restricted traffic type of data is one of the four access categories defined in the 802.11 standard, namely AC_BK for background data, AC_BE for best-effort data, AC_VI for video applications and AC_VO for voice applications.

4. The wireless communication method of Claim 1, further comprising determining the restricted traffic type of data from a plurality of predefined traffic types, based on: either network statistics on the amount of data received in one or more previous

transmission opportunities for each of the predefined traffic types, or a total queue size for each of the predefined traffic types, a total queue size for a predefined traffic type summing the sizes of transmission queues that are associated, in the nodes, with the predefined traffic type.

5. The wireless communication method of Claim 2, wherein determining, from local transmitting memory, data having a traffic type corresponding to the determined restricted traffic type of data includes selecting data in a transmitting queue storing data having only the determined restricted traffic type of data.

6. The wireless communication method of Claim 2, wherein the node's local transmitting memory includes a plurality of transmitting queues, each being associated with a dynamic priority value and with a traffic type, and the method further comprises:

successively considering the transmitting queue according to an highest-to-lowest priority value order, until data is sent on a resource unit,

and for each transmitting queue successively considered, determining whether a resource unit in the communication channel has the restricted traffic type, and in case of positive determination, transmitting data from the transmitting queue currently considered on the determined resource unit.

7. The wireless communication method of Claim 1, further comprising determining a frequency of sending a trigger frame having a restricted traffic type indicator, based on network statistics on one or more previous transmission opportunities.

8. The wireless communication method of Claim 1, further comprising determining the number of resource units forming the communication channel, based on network statistics on one or more previous transmission opportunities.

9. The wireless communication method of Claim 7 or 8, wherein the network statistics include one or more from:

a number of nodes registered to the access point in the wireless network,

a number of collisions or a collision ratio occurring during the one or more previous transmission opportunities,

a distribution of packet sizes received by the access point, in particular a packet size distribution relative to a maximum packet size,

an amount of data transmitted by the nodes,

an amount of data transmitted by the nodes for each traffic type from among a plurality of predefined traffic types,

a ratio of medium busyness, for instance the ratio of a medium busy time on a given period (e.g. one second).

10. The wireless communication method of Claim 1 or 2, wherein the trigger frame defines various restricted types of data for various respective resource units.

11. A communication device acting as an access point in a wireless network also comprising a plurality of nodes, the communication device acting as an access point comprising at least one microprocessor configured for carrying out the step of sending a trigger frame to the nodes, the trigger frame reserving at least one communication channel of the wireless network for a transmission opportunity and defining a plurality of resource units to be accessed by respective accessing nodes and splitting the communication channel in the frequency domain,

wherein the trigger frame includes one indicator per resource unit and thus per accessing node, each indicator restricting data to be sent by the accessing node on the respective resource unit to data having a restricted traffic type of data.

12. A communication device in a wireless network comprising an access point and a plurality of nodes, the communication device being one of the nodes and comprising at least one microprocessor configured for carrying out the steps of:

receiving a trigger frame from the access point, the trigger frame reserving at least one communication channel of the wireless network for a transmission opportunity and defining a plurality of resource units to be accessed by respective accessing nodes and splitting the communication channel in the frequency domain, wherein the trigger frame includes one indicator per resource unit and thus per accessing node, each indicator restricting data to be sent by the accessing node on the respective resource unit to data having a restricted traffic type of data;

determining, from the trigger frame, an indicator defining a restricted traffic type of data authorized for at least one of the resource units;

determining, from local transmitting memory, data having a traffic type corresponding to the determined restricted traffic type of data; and

transmitting the determined data to the access point on the said resource unit.

13. A non-transitory computer-readable medium storing a program which, when executed by a microprocessor or computer system in a device of a wireless network, causes the device to perform the wireless communication method of Claim 1 or 2.

14. A communication apparatus comprising:

a sending unit configured to send, in order to cause a plurality of communication apparatuses other than the communication apparatus to send data in one or more communication channels, a trigger frame including information of a plurality of resource units to be accessed by respective accessing nodes and splitting the one or more communication channels in a frequency domain, wherein the trigger frame includes one indicator per resource unit and thus per accessing node, each indicator restricting data to be sent by the accessing node on the respective resource unit to data having a restricted traffic type of data; and

a receiving unit configured to receive data from the plurality of communication apparatuses other than the communication apparatus having responded to the trigger frame sent by the sending unit,

wherein the trigger frame includes, for each of the plurality of resource units, information indicating an access category specified in the IEEE802.11 series standard.

15. The communication apparatus according to Claim 14, wherein the data received by the receiving unit includes a plurality of MAC Protocol Data Units.

16. The communication apparatus according to Claim 14 or 15, wherein the information indicating the access category is information indicating any of AC_BK for background data, AC_BE for best-effort data, AC_VI for a video application and AC_VO for a voice application.

17. The communication apparatus according to any one of Claims 14 to 16, further comprising a creation unit configured to create the trigger frame on a basis of a status of a wireless network to which the communication apparatus and the plurality of communication apparatuses belong.

18. The communication apparatus according to Claim 17, further comprising a determination unit configured to determine the number of the plurality of resource units, which is indicated by the information included in the trigger frame, on a basis of the status of the wireless network,

wherein the information included in the trigger frame created by the creation unit is information of the determined number of the plurality of resource units.

19. The communication apparatus according to Claim 17 or 18, wherein the status of the wireless network is at least any one of the number of apparatuses belonging to the wireless network, the number of collisions of communication or the number or a ratio of collisions of communication, quantity of data of communication in the wireless network, quantity of data, for per the access category, of communication in the wireless network and a ratio of medium busyness.

20. The communication apparatus according to any one of Claims 14 to 19, wherein the trigger frame is a trigger frame compliant with the IEEE802.11ax standard.

21. The communication apparatus according to any one of Claims 14 to 20, wherein each of the plurality of resource units is a resource unit compliant with the IEEE802.11ax standard.

22. The communication apparatus according to any one of Claims 14 to 21, wherein a frequency width of the resource unit is a minimal frequency width defined in the IEEE802.11ax standard.

23. The communication apparatus according to any one of Claims 14 to 22, wherein each of the plurality of resource units includes a plurality of sub-carriers constituting Orthogonal Frequency Division Multiplexing.

24. The communication apparatus according to any one of Claims 14 to 23, wherein the receiving unit, using communication compliant with Orthogonal Frequency Division Multiplexing Access, receives data from the plurality of communication apparatuses other than the communication apparatus.

25. The communication apparatus according to any one of Claims 14 to 24, wherein the trigger frame further includes information of time secured for the plurality of communication apparatuses other than the communication apparatus to send data.

26. A communication method in a communication apparatus comprising the following steps:

sending, in order to cause a plurality of communication apparatuses other than the communication apparatus to send data in one or more communication channels, a trigger frame including information of a plurality of resource units to be accessed by respective accessing nodes and splitting the one or more communication channels in a frequency domain, wherein the trigger frame includes one indicator per resource unit and thus per accessing node, each indicator restricting data to be sent by the accessing node on the respective resource unit to data having a restricted traffic type of data; and

receiving data from the plurality of communication apparatuses other than the communication apparatus having responded to the sent trigger frame,

wherein the trigger frame includes, for each of the plurality of resource units, information indicating an access category specified in the IEEE802.11 series standard.

27. A non-transitory computer-readable medium storing a program which, when executed by a microprocessor or computer system in a communication apparatus, causes the communication apparatus to perform the communication method of Claim 26.