CLAIMS

1. A method for regulating user data traffic in a wireless network (100) comprising a wireless communication device, WCD, (101), the method performed by the WCD (101) comprises:

receiving (204, 502) admittance information, AI, indicating a threshold value to regulate the uplink traffic representing at least one condition of: a maximum number of small data transmissions or packets or messages per unit of time, under which the WCD is admitted to transmit user data to a radio access network, RAN, node;

initiating (504) the uplink, UL, transmission of user data via the wireless network;

performing admission control (302, 506) for regulating said UL transmission of user data based on the received AI.

2. The method of claim 1, further comprising:

the WCD storing status information relating to previously transmitted user data, wherein the step of performing admission control with respect to said UL transmission of user data comprises:

the WCD using the status information to determine whether the WCD may at this time transmit the user data to the RAN node; and

in response to determining that the WCD may not at this time transmit the user data to the RAN node, the WCD i) discarding the user data or ii) transmitting the user data at a later point in time.

3. The method of claim 2, wherein

the status information comprises a data transmission value (V) corresponding to at least one of: i) a number of wireless data transmissions made by the WCD, ii) an amount of data transmitted wirelessly by the WCD, or iii) a number of logical tokens within a logical bucket,

using the status information to determine whether the WCD may at this time transmit the user data to the node via the wireless network comprises comparing the data transmission value (V) with the threshold value (T), and

the method further comprising updating V as a result of transmitting the user data.

4. The method of claim 3, wherein the data transmission value (V) corresponds to: a number of packets transmitted wirelessly by the WCD or a number of small data messages transmitted wirelessly by the WCD.

5. The method of claim 3, further comprising:

at the later point in time, the WCD using the status information to determine whether the WCD may at this time transmit the user data to the node via the wireless network; and

in response to determining that the WCD may transmit the user data via the wireless network, the WCD transmitting the user data via the wireless network and the WCD increasing said data transmission value (V).

6. The method of claim 1, further comprising:

the WCD transmitting an initial Non-Access Stratus (NAS) message to a network node; and

the WCD receiving a NAS response message transmitted by a network node as a result of the network node processing the initial NAS message, wherein

the NAS response message comprises said AI, and

the WCD obtains said AI from the NAS response message, wherein

the initial Non-Access Stratus (NAS) message is one of an Attach Request message or a Tracking Area Update Request message, and

the NAS response message is one of an Attach Accept message or a Tracking Area Update Accept message.

7. The method of claim 3, wherein transmitting the user data at a later point in time comprises one of:

a) waiting at least a certain amount of time, and then, after the amount of time has elapsed, retrying to transmit the user data,

b) waiting at least until V has been reset and then transmitting the user data, or

c) using a Data Radio Bearer (DRB) to transmit said user data together with other user data that was previously buffered for uplink transmission.

8. The method of claim 1, wherein the WCD is a Cellular Internet of Things (CIoT) device.

9. A wireless communication device, WCD, (101) for regulating user data traffic, the WCD comprising:

a data storage system, DSS, (1112); and

a data processing system, DPS, (1102) coupled to the data storage system, wherein the WCD is configured to:

receive (204, 502) and store in the DSS admittance information,, AI, indicating a threshold value to regulate the uplink traffic representing at least one condition of: a maximum number of small data transmissions or packets or messages per unit of time, under which the WCD is admitted to transmit user data to a radio access network, RAN, node; and

perform admission control (302, 506) for regulating uplink,UL, transmission of user data based on the received AI.

10. The WCD of claim 9, wherein the WCD is further configured to:

store in the DSS status information relating to previously transmitted user data, wherein the WCD is configured to perform admission control with respect to said UL transmission of user data by:

using the status information to determine whether the WCD may transmit the user data to the RAN node; and

discard the user data or transmit the user data at a later point in time in response to determining that the WCD may not transmit the user data to the RAN node.

11. The WCD of claim 10, wherein

the status information comprises a data transmission value (V) corresponding to at least one of: i) a number of wireless data transmissions made by the WCD, ii) an amount of data transmitted wirelessly by the WCD, or iii) a number of logical tokens within a logical bucket,

using the status information to determine whether the WCD may transmit the user data to the node via the wireless network comprises comparing the data transmission value (V) with the threshold value (T), and

the WCD is further configured to update V as a result of the WCD transmitting the user data.

12. The WCD of claim 11, wherein the data transmission value (V) corresponds to: a number of packets transmitted wirelessly by the WCD or a number of small data messages transmitted wirelessly by the WCD.

13. The WCD of claim 9, wherein the WCD is further configured to:

employ a transmitter to transmit an initial Non-Access Stratus (NAS) message to a network node; and

receive a NAS response message transmitted by the network node as a result of the network node processing the initial NAS message, wherein

the NAS response message comprises said AI, and

the WCD obtains said AI from the NAS response message, wherein

the initial Non-Access Stratus (NAS) message is one of an Attach Request message or a Tracking Area Update Request message, and

the NAS response message is one of an Attach Accept message or a Tracking Area Update Accept message.

14. A method for regulating user data traffic in a wireless network (100) comprising a core serving node, CSN, (106), the method performed by the CSN (106) comprises:

obtaining (202, 802) admittance information (AI) indicating a threshold value representing at least one condition of: a maximum number of small data transmissions or packets or messages per unit of time, under which a WCD (101) is admitted to transmit or receive user data;

the CSN storing the obtained AI;

the CSN receiving user data transmitted by the WCD or transmitted to the WCD by another node; and

in response to receiving the user data, the CSN performing admission control for regulating the received user data using the AI.

15. A core serving node, CSN, (106) for regulating user data traffic, the CSN comprising:

a network interface (1005);

a data storage system, DSS, (1012); and

a data processing system, DPS, (1002) coupled to the network interface and the DSS, wherein the CSN is configured to

obtain admittance information, AI, indicating a threshold value representing at least one condition of: a maximum number of small data transmissions or packets or messages per unit of time, under which a WCD (101) is admitted to transmit or receive user data;

store the obtained AI;

receive user data transmitted by the WCD or transmitted to the WCD by another node; and

in response to receiving the user data, perform admission control for regulating the received user data using the AI.