selection. The Node-B MAC-e entity handles H-ARQ transmissions and retransmissions, enhanced dedicated channel (E-DCH) scheduling and MAC-e demultiplexing. The RNC MAC-e entity provides in-sequence delivery and handles combining of data from different Node-Bs.

[0009] The WTRU MAC-e comprises an EU rate request/assignment entity, a priority handling entity, a TFC selection entity and an H-ARQ entity. The EU rate request/assignment entity sends a rate request to a Node-B for transmitting a data via E-DCH and for processing a rate grant received from the Node-B. The priority handling entity manages assignment of the data and an H-ARQ process in accordance with priority of the data to be transmitted. The TFC selection entity selects a TFC for the data. The H-ARQ entity retransmits the data in accordance with a transmission feedback from the Node-B. The Node-B MAC-e comprises a scheduler, a demultiplexer and an H-ARQ entity.

[0009a] According to an aspect, there is provided a wireless transmit/receive unit (WTRU) comprising: circuitry configured to transmit a request for uplink resources, wherein the request for uplink resources is a request to transmit data over an enhanced dedicated channel (E-DCH); circuitry configured to receive an uplink scheduling grant in response to the request for uplink resources; circuitry configured to multiplex data from medium access control for dedicated channel (MAC-d) flows into a medium access control for enhanced uplink (MAC-e) protocol data unit (PDU); circuitry configured to select a transport format combination (TFC) for transmission of the MAC-e PDU, wherein the TFC selection is at least based on the uplink scheduling grant, a maximum allowed transmit power, and logical channel priority; and circuitry configured to transmit the MAC-e PDU over the E-DCH using a hybrid automatic repeat request (H-ARQ) process.

[0009b] According to another aspect, there is provided a method for processing data in a wireless transmit/receive unit (WTRU) comprising: transmitting a request for uplink resources, wherein the request for uplink resources is a request to transmit data over an enhanced dedicated channel (E-DCH); receiving an uplink scheduling grant in response to the request for uplink resources; multiplexing data from medium access control for dedicated channel (MAC-d) flows into a medium access control for enhanced uplink (MAC-e) protocol data unit (PDU); selecting a transport format combination (TFC) for transmission of the MAC-e PDU, wherein the TFC selection is at least based on the uplink scheduling grant, a maximum allowed transmit power, and logical channel priority; and transmitting the MAC-e PDU over the E-DCH using a hybrid automatic repeat request (H-ARQ) process.

[0010] BRIEF DESCRIPTION OF THE DRAWINGS

[0011] A more detailed understanding of the invention may be had from the following description of a preferred embodiment, given by way of example and to be understood in conjunction with the accompanying drawing wherein:

[0012] Figure 1 is a block diagram of a wireless communication system in accordance with the present invention;

[0013] Figure 2 is a block diagram of a protocol architecture of a WTRU in accordance with the present invention;

[0014] Figure 3 is a block diagram of MAC-e architecture in a WTRU in accordance with the present invention;

[0015] Figure 4 is a block diagram of MAC-e architecture in a Node-B in accordance with the present invention; and

[0016] Figure 5 is a block diagram of MAC-e architecture of a WTRU and a Node-B along with signaling process between the WTRU and the Node-B in accordance with the present invention.