achieve successful transmission, which wastes radio resources utilized for the initial preempted transmissions.

[0013] SUMMARY

[0014] The present invention is a method and apparatus for dynamically allocating H-ARQ processes in the WTRU for supporting EU transmissions. The H-ARQ processes in the WTRU are reserved for specific transport channels (TrCHs), dedicated channel medium access control (MAC-d) flows or logical channels associated with different data transmission priority classes. The WTRU allocates H-ARQ processes from those reserved H-ARQ processes that are available. Optionally, a higher priority channel may be allowed to allocate an H-ARQ process reserved for lower priority channels. Lower priority H-ARQ processes may be preempted. The preemption may be restricted by urgency of data transmission, (for example, close to expiration of lifespan timer), or by RNC configuration of H-ARQ processes. Alternatively, a common pool of H-ARQ processes may be configured and an H-ARQ process may be allocated from the common pool in accordance with a priority of each channel, and lower priority H-ARQ may be preempted.

[0015] In accordance with the present invention, lower priority data may achieve maximum data rates, and higher priority transmissions may be initiated at any time without requiring the need for H-ARQ process preemption. By reserving H-ARQ processes for specific channels and allowing the WTRU to dynamically allocate these H-ARQ processes, the EU data rate and transmission latency for these channels can be better guaranteed to meet their QoS requirements.

[0015a] According to an aspect, there is provided a wireless transmit/receive unit (WTRU) comprising: means for configuring a set of hybrid automatic repeat request (H-ARQ) processes for supporting transmission over an enhanced uplink (EU) channel, wherein each WTRU medium access control for dedicated channel (MAC-d) flow has access to each H-ARQ process in the set of H-ARQ processes; means for receiving information, wherein for a particular MAC-d flow, the

information limits the particular MAC-d flow to a limited set of H-ARQ processes out of the set of H-ARQ processes, wherein the information is received via radio resource control (RRC) signaling; means for determining whether a first H-ARQ process from the limited set of H-ARQ processes is available for transmitting data from the particular MAC-d flow for a transmission time interval (TTI); and means for transmitting data from the particular MAC-d flow in the TTI over the EU channel using the first H-ARQ process, on a condition that the first H-ARQ process is available for transmitting data from the particular MAC-d flow for the TTI.

[0015b] According to another aspect, there is provided a method for supporting enhanced uplink (EU) transmissions implemented by a wireless transmit/receive unit (WTRU), the method comprising: configuring a set of hybrid automatic repeat request (H-ARQ) processes for supporting transmission over an EU channel, wherein each WTRU medium access control for dedicated channel (MAC-d) flow has access to each H-ARQ process in the set of H-ARQ processes; receiving information, wherein for a particular MAC-d flow, the information limits the particular MAC-d flow to a limited set of H-ARQ processes out of the set of H-ARQ processes, wherein the information is received via radio resource control (RRC) signaling; determining whether a first H-ARQ process from the limited set of H-ARQ processes is available for transmitting data from the particular MAC-d flow for a transmission time interval (TTI); and transmitting data from the particular MAC-d flow in the TTI over the EU channel using the first H-ARQ process, on a condition that the first H-ARQ process is available for transmitting data from the particular MAC-d flow for the TTI.

[0016] BRIEF DESCRIPTION OF THE DRAWINGS

[0017] 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:

[0018] Figure 1 is a block diagram of a wireless communication system in