ABSTRACT

METHOD AND APPARATUS FOR DATA SECURITY AND AUTOMATIC REPEAT REQUEST IMPLEMENTATION IN A WIRELESS COMMUNICATION SYSTEM

A method and apparatus for implementing data security and automatic repeat request (ARQ) in a wireless communication system are disclosed. Cipher entities are included in a wireless transmit/receive unit (WTRU) and an access gateway (aGW), and outer ARQ, (or radio link control (RLC)), entities are included in the WTRU and an evolved Node-B (eNode-B). Each cipher entity is located on top of an outer ARQ entity. The cipher entities cipher and decipher a data block by using a generic sequence number (SN) assigned to the data block. The outer ARQ entities may segment the ciphered data block to multiple packet data units (PDUs), may concatenate multiple ciphered data blocks to a PDU, or may generate one PDU from one data block. The outer ARQ entities may segment or re-segment the PDU when a transmission failure occurs.

Fig. 3