the received RLC-PDU and the HARQ-RLC-Control-PDU, respectively, to the 10 ms radio frame through the coding, the interleaving and the modulation process, then transmits the 10 ms radio frame to the UE through the physical channel, such as the PDSCH at step **108**.

[**0131**] The physical layer of the node B transmits the received TFI1 and TFI2 to the UE through the physical layer, such as the DPCH at step **109**.

[**0132**] Then, the UE-L1 of the receiver receives the 10 ms radio frame, which has the RLC-PDU and the HARQ-RLC-Control-PDU, from node B-L1 through the physical channel, such as the PDSCH and receives the TFI1 and the TFI2 through the physical channel, such as the DPCH then, transforms the TFI2 and the 10 ms radio frame, which has the HARQ-RLC-Control-PDU, after carrying out the demodulation, the deinterleaving and the decoding process. After that, the UE-L1 transmits the MAC-PDU and the data identifier to the UE-MAC-C/SH protocol entity through the transport channel (PHY-Data-IND primitive), such as the DSCH at step **110**.

[**0133**] The UE-MAC-C/SH protocol entity transforms the received MAC-PDU to the HARQ-RLC-Control-PDU and transmits the HARQ-RLC-Control-PDU and the data identifier to the UE-MAC-D protocol entity b using the MAC-C-/SH-Data-IND primitive at step **111**.

[**0134**] Next, the UE-MAC-D protocol entity transmits the HARQ-RLC-Control-PDU and the data identifier to the UE-RLC protocol entity through the logical channel (MAC-D-Data-IND primitive), such as the DCCH at step **112**. At this time, in case of using same type of logical channel, the UE-MAC-D protocol entity transmits the HARQ-RLC-Control-PDU and the data identifier to the UE-RLC protocol entity through the logical channel (MAC-D-Data-IND primitive), such as the DTCH.

[**0135**] Subsequently, the UE-RLC protocol entity extracts a sequence number and a version number by interpreting the received HARQ-RLC-Control-PDU. The data identifier, the sequence number and the version number are transmitted as a primitive of the CRLC-HARQ-IND to the UE-RRC protocol entity by using the control SAP which is defined between the UE-RLC and the UE-RRC at step **113**.

[**0136**] The UE-RRC protocol entity transmits the CPHY-HARQ-REQ primitive having the sequence number and the version number as a parameter of the primitive, to the UE-L1 by using control SAP defined between the current UE-L1 and the UE-RRC **114**.

[**0137**] After that, the UE-L1 extracts the 10 ms radio frame having the RLC-PDU stored in the buffer, and the TFI1 and transforms the 10 ms radio frame, which is extracted by using the TFI1, the sequence number and the version number, to the MAC-PDU through the demodulation, the deinterleaving and the decoding process then, transmits the MAC-PDU having the RLC-PDU to the UE-MAC-C/SH protocol entity through the transport channel (PHY-Data-IND primitive), such as the DSCH at step **115**.

[**0138**] The UE-MAC-C/SH protocol entity interprets the received MAC-PDU and transforms it to the RLC-PDU then, transmits the RLC-PDU to the UE-MAC-D protocol entity by using the MAC-C/SH Data-IND at step **116**.

[**0139**] The LE-MAC-D protocol entity transmits the received RLC-PDU to the UE-RLC protocol entity through the logical channel (MAC-D-Data-IND primitive), such as the DTCH at step **117**.

[**0140**] Finally, the UE-RLC protocol entity interprets the received RLC-PDU to transform it to original data form and transmits it to the upper layer, then transmits a response to the SRNC-RLC protocol entity at step **118**.

[**0141**] The effectiveness of the present invention is as below.

[**0142**] First, the present invention can regulate each of coding rate by constructing essential information between the data, e.g., a sequence number and a version number, etc. to the different PDU, such as the RLC-PDU and the HARQ-RLC-Control-PDU.

[**0143**] Second, the present invention can decrease an error-generating rate of the PDU that has essential information of the data by constructing essential information between the data, e.g., a sequence number and a version number, etc. to a different PDU.

[**0144**] Third, the present invention can carry out a data combining which is performed in the physical layer in case of realizing the hybrid ARQ type II/III, because it firstly checks the HARQ-RLC-Control-PDU between the RLC-PDU and the HARQ-RLC-Control-PDU.

[**0145**] Fourth, the present invention can use radio resource efficiently because it uses a transport channel such as DSCH and can reduce a time delay followed by a resource allocating operation.

[**0146**] Fifth, the present invention can reduce a time delay problem between Iur and Iub because it uses one transport channel.

[**0147**] Although the preferred embodiments of the invention have been disclosed for illustrative purposes, those skilled in the art will appreciate that various modifications, additions and substitutions are possible, without departing from the scope and spirit of the invention as disclosed in the accompanying claims.

We claim:

1. A data processing method for a hybrid ARQ type II/III on a downlink of a wide-band radio communication system, wherein a serving radio network controller (hereinafter, referred to as a SRNC) which is directly connected to a user equipment to allocate wireless resources to the user equipment and provides services by interlocking with a wireless communication core network in case of a call connection and a controlling radio network controller (hereinafter, referred to as a CRNC) which controls a sharing channel of a radio network are located on the different radio network, comprising the steps of:

a) generating a radio link control—protocol data unit (hereinafter, referred to as a RLC-PDU) in a radio link control (hereinafter, referred to as a RLC) layer of the SRNC and generating a protocol data unit having RLC-PDU information needed for supporting the hybrid ARQ type II/III based on a header of the RLC-PDU (hereinafter, referred to as a HARQ-RLC-Control-PDU);