FIG. **7** depicts a block diagram of wireless station **502**, as shown in FIG. **5**, in accordance with the illustrative embodiment of the present invention.

FIG. **8** depicts a data-flow diagram for the illustrative embodiment of the present invention.

DETAILED DESCRIPTION

FIG. **5** depicts a schematic diagram of the salient components of wireless terminal **500** in accordance with the illustrative embodiment of the present invention. Wireless terminal **500** comprises: host computing device **501**, wireless station **502**, memory **503**, and printer peripheral **504**, interconnected by shared bus **505**.

Host computing device **501** sends data to wireless station **502** for transmission to other wireless terminals, and similarly, wireless station **502** receives data from other wireless terminals and sends these data to host computing device **501**.

Memory **503** is capable of storing programs and data used by processor **503**, as is well known in the art, and might be any combination of random-access memory (RAM), flash memory, disk drive, etc. As is well known in the art, in some embodiments signals might be transferred between shared bus **505** and memory **503** via an input/output controller (not shown in FIG. **5**), while in some embodiments signals might be transferred between shared bus **505** and memory **503** via a direct connection. It will be clear to those skilled in the art, after reading this specification, how to make and use memory **503**.

Peripheral **504** is an input/output device such as a keyboard, display, or printer. In some embodiments signals might be transferred between shared bus **505** and peripheral **504** via an input/output controller (not shown in FIG. **5**), while in some embodiments signals might be transferred between shared bus **505** and peripheral **504** via a direct connection.

Shared bus **505** enables communications between host computing device **501** and other peripherals (e.g., disk drives, printers, etc.), as is well known in the art. As shown in FIG. **5**, shared bus **505** also enables bi-directional communications between host computing device **501**, wireless station **502**, and memory **503**.

FIG. **6** depicts a block diagram of the salient components of host computing device **501** in accordance with the illustrative embodiment of the present invention. Host computing device **501** comprises: processor **601**, higher-layers module **605**, logical link control (LLC) **610**, and upper medium access control **620**, interconnected as shown.

Processor **601** is a general-purpose processor that is capable of executing instructions and transferring data to and from memory via bus **505**, in well known fashion. As shown in FIG. **6**, processor **601** sends data to and receives data from higher-layers module **305**.

Higher-layers module **605** is identical to higher-layers module **305**; it will be clear to those skilled in the art how to make and use higher-layers module **605**.

Logical-link control **610** is identical to logical-link control **310**; it will be clear to those skilled in the art how to make and use logical-link control **610**.

Upper medium access control **620** is the same as upper medium access control **410** except that it communicates with the lower medium access control by passing data by reference via shared bus **505** and memory **503**. Upper medium access control **620** sends data to lower medium access control **710** (which is located in wireless station **502** and is described below) by storing the data at an address in memory **503** via shared bus **505**, and then sending the address to lower medium access control **710** via shared bus **505**. Similarly, upper medium access control **620** receives data from the lower medium access control by receiving an address via shared bus **505**, and then fetching via shared bus **505** the data at that address in memory **503**.

FIG. **7** depicts a block diagram of the salient components of wireless station **502** in accordance with the illustrative embodiment of the present invention. Wireless station **502** comprises: processor **703**, lower medium access control **710**, physical control **730**, transmitter **740**, and receiver **750**, interconnected as shown.

Processor **703** is identical to processor **303**; it will be clear to those skilled in the art how to make and use processor **703**.

Lower medium access control **710** is the same as lower medium access control **420** except that it communicates with the upper medium access control by passing data by reference via shared bus **505** and memory **503**. Lower medium access control **710** sends data to upper medium access control **620** by storing the data at an address in memory **503** via shared bus **505**, and then sending the address to upper medium access control **620** via shared bus **505**. Similarly, lower medium access control **710** receives data from upper medium access control **620** by receiving an address via shared bus **505**, and then fetching via shared bus **505** the data at that address in memory **503**.

Physical control **730** is identical to physical control **330**; it will be clear to those skilled in the art how to make and use physical control **730**.

Transmitter **740** is identical to transmitter **340**; it will be clear to those skilled in the art how to make and use transmitter **740**.

Receiver **750** is identical to receiver **350**; it will be clear to those skilled in the art how to make and use receiver **750**.

FIG. **8** depicts data-flow diagram **800** for the illustrative embodiment of the present invention. As shown in FIG. **8**, upper medium access control **620** receives a service data unit (SDU-**1**) from logical link control **610**; performs the appropriate functions with respect to SDU-**1** in accordance with the requested service (i.e., functions without hard real-time constraints and independent of physical control **730**), as is well understood in the art; generates a protocol data unit (PDU-**1**); and outputs PDU-**1**, accompanied in some cases by control information (e.g. desired transmit data rate and/or modulation, packet lifetime or retry limits, transmission priority, etc.) to lower medium access control **710**. Lower medium access control **710** receives PDU-**1** as a service data unit (SDU-**2**); performs the appropriate functions with respect to SDU-**2** in accordance with the requested service (i.e., functions with hard real-time constraints and/or dependent on physical control **730**); generates protocol data unit PDU-**2**; and outputs PDU-**2** and associated control information (e.g. channel selection, modulation type, preamble length, etc.) to physical control **730**.

Physical control **730** transmits an outgoing signal based on PDU-**2** and receives an incoming signal (e.g., acknowledgement [ACK], etc.), as is well known in the art, and outputs data and reception status (e.g. received signal strength, signal quality, modulation utilized by sender, etc.) based on the incoming signal to lower medium access control **710**. Lower medium access control **710** receives the outputted data from physical control **730** as protocol data unit PDU-**3**; performs the appropriate functions with respect to PDU-**3** and associated reception status in accordance with the indicated service; generates service data unit SDU-**3**; and outputs SDU-**3** to upper medium access control **620**. Upper medium access control **620** receives SDU-**3** from lower medium access control **710** as protocol data unit PDU-**4**; performs the appropriate functions with respect to PDU-**4** in accordance with the