

sible for causing the removal of RTP/UDP/IP header information (or alternatively, making sure that the RTP/UDP/IP information is not generated) for outbound traffic.

[0076] The various layers and modules in the mobile **500** can be implemented as software, hardware, or a combination of both. Software is executable on a control unit **530**, which is coupled to a storage unit **532**. The storage unit **532** stores various data, such as header configuration information **534**, and instructions of software. The header configuration information **534** is derived from the DOWNLINK PROTOCOL HEADER CONFIGURATION message or DOWNLINK PROTOCOL HEADER RECONFIGURATION message that is received from the radio network controller **502**.

[0077] The radio network controller **502** includes an RF layer **540**, an MAC layer **542**, and an RLC layer **544**. The radio network controller **502** also includes a relay function **546** that forwards data received from one node to the next node in the route. In the radio network controller **502**, the relay function **546** forwards data between the interface to the wireless link **506** and the interface to the SGSN **24**, which is made up of a physical layer **552** (or L1 layer) and upper layers **550**.

[0078] The radio network controller **502** also includes a header control module **548** that is responsible for removing and reconstructing RTP/UDP/IP headers. The various layers in the radio network controller **502** can be implemented in software, hardware, or a combination thereof. Software is executable on a control unit **554**, which is coupled to a storage unit **556**. The storage unit stores various data (including header configuration information **558**) and instructions of software. The header configuration information **558** is derived from UPLINK PROTOCOL HEADER CONFIGURATION messages. Note that the radio network controller **502** can store header configuration information **558** of multiple mobile stations.

[0079] The various devices and systems discussed each includes various software routines or modules. Such software routines or modules are executable on corresponding control units. Each control unit includes a microprocessor, a microcontroller, a processor card (including one or more microprocessors or microcontrollers), or other control or computing devices. As used here, a "controller" refers to a hardware component, software component, or a combination of the two. Although used in the singular sense, a "controller" can also refer to plural hardware components, plural software components, or a combination thereof.

[0080] The storage units referred to in this discussion include one or more machine-readable storage media for storing data and instructions. The storage media include different forms of memory including semiconductor memory devices such as dynamic or static random access memories (DRAMs or SRAMs), erasable and programmable read-only memories (EPROMs), electrically erasable and programmable read-only memories (EEPROMs) and flash memories; magnetic disks such as fixed, floppy and removable disks; other magnetic media including tape; and optical media such as compact disks (CDs) or digital video disks (DVDs). Instructions that make up the various software routines or modules in the various devices or systems are stored in respective storage units. The instructions when executed by a respective control unit cause the corresponding device or system to perform programmed acts.

[0081] The instructions of the software routines or modules are loaded or transported to each device or system in one of many different ways. For example, code segments including instructions stored on floppy disks, CD or DVD media, a hard disk, or transported through a network interface card, modem, or other interface device are loaded into the device or system and executed as corresponding software routines or modules. In the loading or transport process, data signals that are embodied in carrier waves (transmitted over telephone lines, network lines, wireless links, cables, and the like) communicate the code segments, including instructions, to the device or system. Such carrier waves are in the form of electrical, optical, acoustical, electromagnetic, or other types of signals.

[0082] While the invention has been disclosed with respect to a limited number of embodiments, those skilled in the art will appreciate numerous modifications and variations therefrom. It is intended that the appended claims cover such modifications and variations as fall within the true spirit and scope of the invention.

What is claimed is:

1. A method of communicating data over a wireless link between a mobile station and a wireless access system, comprising:

communicating, over the wireless link, control signaling for setting up a packet-switched communications session between the mobile station and an endpoint;

communicating packets containing real-time data over the wireless link; and

removing at least one protocol header associated with packet-switched communications from each packet before communicating the packet over the wireless link.

2. The method of claim 1, wherein removing the at least one protocol header is performed by a radio network controller.

3. The method of claim 2, wherein removing the at least one protocol header is performed by a GSM/EDGE radio access network (GERAN) radio network controller.

4. The method of claim 2, wherein removing the at least one protocol header is performed by a UMTS radio access network (UTRAN) radio network controller.

5. The method of claim 1, wherein removing the at least one protocol header is performed by the mobile station.

6. The method of claim 1, wherein removing the at least one protocol header comprises removing one or more of an Internet Protocol header, User Datagram Protocol header, and Real-Time Protocol header.

7. The method of claim 1, wherein communicating the packets containing real-time data comprises communicating packets containing voice data.

8. An article comprising at least one storage medium containing instructions that when executed cause a system to:

receive real-time data over a wireless link, the real-time data associated with a packet-switched communications session;

construct at least one protocol header for the packet-switched communications session; and