[0033] The network system also includes a hardware interface within the Data Link Layer of the Open Systems Interconnection (OSI) Reference Model comprising a multiplexer/demultiplexer unit and a plurality of slot allocation units.

[0034] The master devices described herein, in addition to carrying out its functions as a master device, may also carry out functions as a slave device as described above. For example, the master device may also engage in data transfer of non-protocol related data with a slave device.

[0035] An object of the invention is to provide a baseband wireless network system which overcomes the deficiencies in the prior art.

[0036] Another object of the invention is to provide a baseband wireless network system which provides isochronous data communication between at least two node devices on the network.

[0037] Another object of the invention is to provide a baseband wireless network system which provides a master device which manages network data communication between the other nodes devices of the network.

[0038] Another object of the invention is to provide a baseband wireless network system which provides a time division multiple access frame definition which provides each node device on the network at least one transmit time slot for data communication.

[0039] Another object of the invention is to provide a baseband wireless network system which provides a time division multiple access frame definition which provides means for sharing the data communication medium between the node devices on the network.

[0040] Another object of the invention is to provide a baseband wireless network system which provides baseband wireless data communication between the node devices of the network.

[0041] Further objects and advantages of the invention will be brought out in the following portions of the specification, wherein the detailed description is for the purpose of fully disclosing the preferred embodiment of the invention without placing limitations thereon.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

[0042] The present invention will be more fully understood by reference to the following drawings, which are for illustrative purposes only.

[0043] **FIG. 1** is a functional block diagram showing a network system in accordance with the invention.

[0044] **FIG. 2** is a functional block diagram of a transceiver node device in accordance with the invention.

[0045] **FIG. 3*a*** is a functional block diagram of a master clock synchronization unit.

[0046] **FIG. 3*b*** is a functional block diagram of a slave clock synchronization unit.

[0047] **FIG. 4** is a time division multiple access frame definition in accordance with the present invention.

[0048] **FIG. 5** is a functional block diagram of the Medium Access Control hardware interface of the present invention.

[0049] **FIG. 6** is a functional block diagram of a slot allocation unit provided in the Medium Access Control hardware.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0050] Persons of ordinary skill in the art will realize that the following description of the present invention is illustrative only and not in any way limiting. Other embodiments of the invention will readily suggest themselves to such skilled persons having the benefit of this disclosure.

[0051] Referring more specifically to the drawings, for illustrative purposes the present invention is embodied in the apparatus shown **FIG. 1** through **FIG. 6**. It will be appreciated that the apparatus may vary as to configuration and as to details of the parts, and that the method may vary as to details and the order of the steps, without departing from the basic concepts as disclosed herein. The invention is disclosed generally in terms of a wireless network for isochronous data communication, although numerous other uses for the invention will suggest themselves to persons of ordinary skill in the art.

[0052] Referring first to **FIG. 1**, there is shown generally a wireless network system **10** in accordance with the invention. The network system **10** comprises a "master" transceiver device **12** and one or more "slave" transceiver devices **14*a*** through **14*n***. The master device may also be referred to as a "base" transceiver, and slave devices may also be referred to as "mobile" transceivers. Master transceiver **12** and slave transceivers **14*a*** through **14*n*** include a transmitter or other means for transmitting data to the other transceivers of the network **10** via a corresponding antenna **18**, **20*a*** through **20*n***. Transceivers **12**, **14*a*** through **14*n*** further include a receiver or other means for receiving data from the other transceivers via its corresponding antenna **18**, **20*a*** through **20*n***. While the illustrative network **10** shows the transceiver devices **12**, **14*a*** through **14*n*** using a corresponding single shared antenna **18**, **20*a*** through **20*n*** for both transmission and reception, various arrangements known in the art may be used for providing the functions carried out by the antenna **18**, **20*a*** through **20*n***, including for example, providing each of the transceiver devices **12**, **14*a*** through **14*n*** a first antenna for transmission and a second antenna for reception.

[0053] As described further below, the master transceiver **12** carries out the operation of managing network communication between all transceivers **12**, **14*a*** through **14*n*** of the network **10**. The master transceiver **12** includes means for managing the data transmission between the transceiver nodes of the network **10** as described further below.

[0054] Referring now to **FIG. 2** as well as **FIG. 1, a** functional block diagram of the "Physical layer" implementation of a transceiver node device **22** in accordance with the present invention is shown. The "Physical layer" as described herein refers to the Physical layer according to the Open Systems Interconnection (OSI) Reference Model. This model is based on a proposal developed by the International Standards Organization (ISO) to deal with connecting systems that are open for communication with other systems.