ties. Examples of the apparatus include but are not limited to UE, a mobile phone, communicator, PDA, application server or a computer.

[0053] The apparatus **200** comprises an interfacing unit **202**, a central processing unit (CPU) **208**, and a memory **210**, that are all being electrically interconnected. The interfacing unit comprises an input **204** and an output unit **206** that provide, respectively, the input and output interfaces to the apparatus. The input and output units may be configured or arranged to send and receive data and/or messages according to one or more protocols used in the abovementioned communication standards. The memory may comprise one or more applications that are executable by the CPU.

[0054] The CPU may comprise a set of registers, an arithmetic logic unit, and a control unit. The control unit is controlled by a sequence of program instructions transferred to the CPU from the memory. The control unit may contain a number of microinstructions for basic operations. The implementation of micro-instructions may vary, depending on the CPU design. The program instructions may be coded by a programming language, which may be a high-level programming language, such as C, Java, etc., or a low-level programming language, such as a machine language, or an assembler. The electronic digital computer may also have an operating system, which may provide system services to a computer program written with the program instructions. The memory may be a volatile or a non-volatile memory, for example EEPROM, ROM, PROM, RAM, DRAM, SRAM, firmware, programmable logic, etc.

[0055] An embodiment provides a computer program embodied on a distribution medium, comprising program instructions which, when loaded into an electronic apparatus, cause the CPU to perform according to an embodiment of the present invention.

[0056] The computer program may be in source code form, object code form, or in some intermediate form, and it may be stored in some sort of carrier, which may be any entity or device capable of carrying the program. Such carriers include a record medium, computer memory, read-only memory, electrical carrier signal, telecommunications signal, and software distribution package, for example. Depending on the processing power needed, the computer program may be executed in a single electronic digital computer or it may be distributed amongst a number of computers.

[0057] The apparatus **200** may also be implemented as one or more integrated circuits, such as application-specific integrated circuits ASIC. Other hardware embodiments are also feasible, such as a circuit built of separate logic components. A hybrid of these different implementations is also feasible. When selecting the method of implementation, a person skilled in the art will consider the requirements set for the size and power consumption of the apparatus **200**, necessary processing capacity, production costs, and production volumes, for example.

[0058] In an embodiment the input unit may provide circuitry for obtaining data, signalling, signalling messages and/or transmissions to the apparatus. The obtaining may comprise receiving radio frequency signals from an antenna, for example. In another example the obtaining may comprise receiving baseband signals from an RF unit. Accordingly, data, signalling, signalling messages and transmissions in embodiments of the present disclosure may be provided as RF signals or baseband signals.

[0059] In an embodiment the output unit may provide circuitry for transmitting data, signalling, signalling messages and/or transmissions from the apparatus. The transmitting may comprise transmitting radio frequency signals from an antenna, for example. In another example the transmitting may comprise transmitting baseband signals to an RF unit. Accordingly, data, signalling, signalling messages and transmissions in embodiments of the present disclosure may be provided as RF signals or baseband signals.

[0060] It should be appreciated that in an embodiment, the one or more parts described in the apparatus **200** may be provided as separate physical entities.

[0061] For example, according to an embodiment, the interfacing unit may be provided as a separate unit that constitutes a transmission point that communicates on RF communications signals on a communications channel and on baseband frequency communications signals on a connection to a centralized baseband processing unit. The interfacing unit may provide transmission or reception, or both transmission and reception of RF signals on the communications channel and/or on the connection to the centralized baseband processing unit.

[0062] FIGS. **3**, **4**, and **6** illustrate accessing a communications network, according to an embodiment, where operations performed by a network node coordinating a plurality of transmission points in a communications network, e.g. a centralized baseband processing unit or eNB, may be referred to simply as operations performed at the "network" or "network side".

[0063] The methods of FIGS. **3**, **4** and **6** will now be explained with reference to each of the FIGS. **3**, **4**, and **6** and FIG. **5** illustrating an association between reference signals used by transmission points and preambles when providing access in a communications network according to an embodiment.

[0064] FIG. **3** illustrates a method of providing access to a communications network according to an embodiment. The method may be performed by a network node coordinating a plurality of transmission points in a communications network. The network node may comprise an eNB or a centralized baseband processing unit described earlier, for example. An example of such a network node is illustrated in FIG. **2**.

[0065] The method starts in **302**, where each of the plurality of transmission points may be configured with a reference signal or a group of reference signals. The reference signals configured to each transmission point may be transmitted to enable UE to measure channel quality in downlink from the transmission points on the basis of the reference signal transmitted by each of the transmission points.

[0066] In an embodiment, the transmission points may belong to a single cell or to different cells. Transmission points in different cells may be configured with the same reference signal. However, one part of transmission points and another part of transmission points in the same cell may be configured with different reference signals to provide separation of the transmission points at the UE.

[0067] In **304**, information of reference signals associated with each of the transmission points may be transmitted to the UE. The information may be transmitted in a System Information (SI) message for example. In one example an existing SI message may be extended or a new SI message including the information may be used.

[0068] The SI may include information for UE to access to the network. Examples of the information include: frequency