Claims

1. A user equipment in a mobile communication system, the user equipment comprising:

processing circuitry, which in operation, determines whether the user equipment, being located in a first radio access network notification area, first RNA, is moving to a second radio access network notification area, second RNA, different from the first RNA, the user equipment being in an inactive state out of an idle state, a connected state and the inactive state the user equipment can be in,

a transmitter, which in operation, transmits identification information of user equipment related context information used by the user equipment to exchange data with a radio base station of the first RNA to a second radio base station of the second RNA, when determining that the user equipment is moving to the second RNA, and

a receiver, which in operation, receives from the second radio base station the user equipment related context information usable by the user equipment to exchange uplink and downlink data with the second radio base station.

2. The user equipment according to claim 1, wherein the transmitter, when transmitting the identification information of the user equipment related context information to the second radio base station, transmits the identification information of the user equipment related context information in a third message of the random access channel procedure.

3. The user equipment according to claim 1, wherein the transmitter, when transmitting the identification information of the user equipment related context information to the second radio base station, transmits the identification information of the user equipment related context information together with a first message of a random access channel procedure, wherein the first message of the random access channel procedure comprises a random access preamble.

4. The user equipment according to claim 1, wherein the transmitter, when transmitting the identification information of the user equipment related context information to the second radio base station, transmits the identification information of the user equipment related context information in a Medium Access Protocol, MAC, control element, wherein the user equipment uses, for transmitting the MAC control element, radio resources allocated by the second radio base station to the user equipment as part of a random access channel procedure.

5. The user equipment according to claim 1, wherein the transmitter, when transmitting the identification information of the user equipment related context information to the second radio base station, transmits the identification information of the user equipment related context information in a Packet Data Convergence Protocol, PDCP, Control Packet Data Unit, PDU, wherein the user equipment uses, for transmitting the PDCP Control PDU, radio resources allocated by the second radio base station to the user equipment as part of a random access channel procedure.

6. The user equipment according to claim 2, wherein the receiver, when receiving the user equipment related context information from the second radio base station, receives the user equipment related context information with a fourth message of a random access channel procedure.

7. The user equipment according to claim 3, wherein the receiver, when receiving the user equipment related context information from the second radio base station, receives the user equipment related context information with a second message of a random access channel procedure, wherein the second message of the random access channel procedure comprises an assignment of uplink radio resources to the user equipment.

8. The user equipment according to one of claims 1 to 7, wherein the receiver, when in operation, receives from the second radio base station identification information of the second RNA, wherein the identification information of the second RNA is broadcast by the second radio base station throughout its radio cell in system information, and

wherein the processing circuitry, when determining whether the user equipment moves to the second RNA, determines that the user equipment moves to the second RNA in case the identification information of the first RNA is different from the identification information of the second RNA.

9. The user equipment according to one of claims 1 to 7, wherein the user equipment related context information comprises at least one of the following:

- security information usable between the second radio base station and the user equipment, wherein the security information includes a ciphering key to cipher data before transmission and a deciphering key to decipher data after reception,

- information on data connections at least between the second radio base station and the user equipment.

10. The user equipment according to one of claims 1 to 7, wherein the identification information of user equipment related context information is usable by the second radio base station to obtain the user equipment related context information for the first RNA, and/or

wherein the transmitter, when transmitting the identification information of the user equipment related context information to the second radio base station, also transmits to the second radio base station an identifier of the user equipment, usable by the second radio station to contact an entity in the core network to update context information in said core network entity relating to the user equipment.

11. The user equipment according to one of claims 1 to 7, wherein the receiver, when in operation, receives from the second radio base station a new user identification valid for the second RNA.

12. The user equipment according to one of claims 1 to 7, wherein the transmitter, when in operation, transmits user data to the second radio base station using the received user equipment related context information, and/or

the receiver, when in operation, receives user data from the second radio base station based on the received user equipment related context information.

13. A method for operating a user equipment in a mobile communication system, comprising the following steps performed by the user equipment:

determining whether the user equipment, being located in a first radio access network notification area, first RNA, is moving to a second radio access network notification area, second RNA, different from the first RNA, the user equipment being in an inactive state out of an idle state, a connected state and the inactive state the user equipment can be in,

transmitting identification information of user equipment related context information used by the user equipment to exchange data with a radio base station of the first RNA to a second radio base station of the second RNA, when determining that the user equipment is moving to the second RNA, and

receiving from the second radio base station the user equipment related context information usable by the user equipment to exchange uplink and downlink data with the second radio base station.

14. A radio base station of a second radio access network notification area, second RNA, in a mobile communication system, the radio base station comprising:

receiver, which in operation, receives from a user equipment identification information of user equipment related context information used by the user equipment to exchange data with a radio base station of a first RNA, at which the user equipment was located before moving to the second RNA, the user equipment being in an inactive state out of an idle state, a connected state and the inactive state the user equipment can be in,

processor, which in operation, obtains the user equipment related context information for the first RNA based on the received identification information, and

a transmitter, which in operation, transmits to the user equipment the obtained user equipment related context information.

15. A method performed by a radio base station of a second radio access network notification area, second RNA, in a mobile communication system, the method comprising:

receiving from a user equipment identification information of user equipment related context information used by the user equipment to exchange data with a radio base station of a first RNA, at which the user equipment was located before moving to the second RNA, the user equipment being in an inactive state out of an idle state, a connected state and the inactive state the user equipment can be in,

obtaining the user equipment related context information for the first RNA based on the received identification information, and

transmitting to the user equipment the obtained user equipment related context information.

16. An integrated circuit which, in operation, controls a process of a user equipment in a mobile communication system, the process comprising:

determining whether the user equipment, being located in a first radio access network notification area, first RNA, is moving to a second radio access network notification area, second RNA, different from the first RNA, the user equipment being in an inactive

state out of an idle state, a connected state and the inactive state the user equipment can be in,

transmitting identification information of user equipment related context information used by the user equipment to exchange data with a radio base station of the first RNA to a second radio base station of the second RNA, when determining that the user equipment is moving to the second RNA, and

receiving from the second radio base station the user equipment related context information usable by the user equipment to exchange uplink and downlink data with the second radio base station.

17. An integrated circuit which, in operation, controls a process of a radio base station of a second radio access network notification area, second RNA, in a mobile communication system, the process comprising:

receiving from a user equipment identification information of user equipment related context information used by the user equipment to exchange data with a radio base station of a first RNA, at which the user equipment was located before moving to the second RNA, the user equipment being in an inactive state out of an idle state, a connected state and the inactive state the user equipment can be in,

obtaining the user equipment related context information for the first RNA based on the received identification information, and

transmitting to the user equipment the obtained user equipment related context information.