

U.S. Patent No. 9,549,426 B2 Claim Listing

No.	Limitation
1[p]	A method for controlling an attach state of a user equipment in an attach control node of a telecommunications system further comprising a subscriber database containing subscription data of the user equipment, the method comprising:
1[a]	receiving in a first transfer stage a first set of subscription data from the subscriber database and
1[b]	storing the first set of subscription data in the attach control node,
1[c]	wherein, as received, the first set of subscription data, being configured as a partial subset of a complete set of subscription data that are required for enabling establishing a communication session between the user equipment and the telecommunications system, is insufficient for enabling establishing a communication session between the user equipment and the telecommunications system,
1[d]	subsequent to receiving the first set of subscription data, receiving in a second transfer stage following the first transfer stage a second set of subscription data from the subscriber database in the attach control node,
1[e]	and storing the second set of subscription data in the attach control node,
1[f]	wherein, as received, the second set of subscription data is configured to be an additional partial subset of the complete set of subscription data that in combination with the first set of subscription data is the complete set of subscription data that is sufficient for enabling establishing a communication session between the user equipment and the telecommunications system.
6	The method according to claim 1, further comprising deleting from the combination of the first set of subscription data and the second set of subscription data the second set of subscription data at the attach control node after a precondition has been fulfilled.

8[p]	A non-transitory computer-readable medium having instructions stored thereon that, upon execution by one or more processors of an attach control node of a telecommunications system comprising the attach control node and a subscriber database containing subscription data of a user equipment, cause the attach control node to carry out operations including:
8[a]	receiving in a first transfer stage a first set of subscription data from the subscriber database and
8[b]	storing the first set of subscription data in the attach control node,
8[c]	wherein, as received, the first set of subscription data, being configured as a partial subset of a complete set of subscription data that are required for enabling establishing a communication session between the user equipment and the telecommunications system, is insufficient for enabling establishing a communication session between the user equipment and the telecommunications system, and
8[d]	if establishing a communication session is required between the user equipment and the telecommunications system, subsequent to receiving the first set of subscription data, receiving in a second transfer stage following the first transfer stage a second set of subscription data from the subscriber database in the attach control node,
8[e]	and storing the second set of subscription data in the attach control node,
8[f]	wherein, as received, the second set of subscription data is configured to be an additional partial subset of the complete set of subscription data that in combination with the first set of subscription data is the complete set of subscription data that is sufficient for enabling establishing a communication session between the user equipment and the telecommunications system; and
8[g]	if an authentication step is required, receiving authentication data in the attach control node prior to the receiving in the first transfer stage.

9[p]	A subscriber database system configured for use in a telecommunications system, wherein the telecommunications system comprises an attach control node, the subscriber database system comprising:
9[a]	a subscriber database containing subscription data of a user equipment;
9[b]	a processor having access to instructions that when executed cause the database system to carry out operations including:
9[c]	in a first transfer stage, providing to the attach control node a first set of subscription data from the subscriber database,
9[d]	wherein, as provided, the first set of subscription data, being configured as a partial subset of a complete set of subscription data that are required for enabling establishing a communication session between the user equipment and the telecommunications system, is insufficient for enabling establishing a communication session between the user equipment and the telecommunications system, and
9[e]	if establishing a communication session is required between the user equipment and the telecommunications system, subsequent to providing the first set of subscription data, then in a second transfer stage following the first transfer stage, providing to the attach control node a second set of subscription data from the subscriber database,
9[f]	wherein, as provided, the second set of subscription data is configured to be an additional partial subset of the complete set of subscription data that in combination with the first set of subscription data is the complete set of subscription data that is sufficient for enabling establishing a communication session between the user equipment and the telecommunications system, and
9[g]	wherein, if the attach control node has received authentication data in an authentication step, the first transfer stage is carried out following the authentication step.

10[p]	A telecommunications node configured for use in a telecommunications system, wherein the telecommunications system comprises a subscriber database containing subscription data of a user equipment, the telecommunications node comprising:
10[a]	a processor having access to instructions that when executed cause the telecommunications node to carry out operations including:
10[b]	receiving in a first transfer stage a first set of subscription data from the subscriber database and
10[c]	storing the first set of subscription data in the telecommunications node,
10[d]	wherein, as received, the first set of subscription data, being configured as a partial subset of a complete set of subscription data that are required for enabling establishing a communication session between the user equipment and the telecommunications system, is insufficient for enabling establishing a communication session between the user equipment and the telecommunications system;
10[e]	if establishing a communication session is required between the user equipment and the telecommunications system, subsequent to receiving the first set of subscription data, receiving in a second transfer stage following the first transfer stage a second set of subscription data from the subscriber database, and
10[f]	storing the second set of subscription data in the telecommunications node,
10[g]	wherein, as received, the second set of subscription data is configured to be an additional partial subset of the complete set of subscription data that in combination with the first set of subscription data is the complete set of subscription data that is sufficient for enabling establishing a communication session between the user equipment and the telecommunications system; and
10[h]	if an authentication step is required, receiving authentication data prior to the receiving in the first transfer stage.

14	The telecommunications node according to claim 10, wherein the operations further include deleting from the combination of the first set of subscription data and the second set of subscription data the second set of subscription data at the telecommunications node after a precondition has been fulfilled and, if the telecommunications system is a Long Term Evolution (LTE) telecommunications system, removing a default bearer for the user equipment.
18	The method of claim 1, wherein authentication of the user equipment is required, and wherein the method further comprising receiving authentication data in the attach control node prior to receiving the first set of subscription data in the first transfer stage.