CLAIMS

1. A base station for wireless communication, wherein the base station is a first target base station for layer 1/layer 2 (L1/L2)-triggered mobility (LTM), comprising:

at least one memory;

at least one processor coupled with the at least one memory; and configured to cause the base station to:

determine a first security key to be used between a user equipment (UE) and a second target base station for the LTM and a next hop (NH) chaining counter (NCC) to be used for a key derivation for a cell switch by the UE; and

transmit, to the UE, the NCC.

2. The base station of claim 1, wherein the at least one processor is further configured to:

transmit, to the second target base station, the first security key and the NCC.

3. The base station of claim 2, wherein the first target base station includes a first target central unit (CU) and one or more distributed units (DUs), and the one or more DUs include a first target DU serving the UE.

4. The base station of claim 3, wherein the base station further includes a second processor of the first target DU, and wherein the second processor is configured cause the first target DU to:

transmit, to the UE, the NCC received from the first target CU, such that the NCC is used by the UE to perform a second security key derivation to determine a second security key to be used between the UE and the second target base station.

5. The base station of claim 4, wherein the second processor is further configured to cause the first target DU to:

transmit, to the UE, a second indicator indicating whether the security update is needed during the cell switch to the target cell, wherein the second indicator is determined by the first target DU based on the first indicator.

6. The base station of claim 5, wherein the second indicator includes:

a security update indicator indicating whether the security update is needed;

a CU indicator indicating that a CU of the target cell is different from the first target CU;

an inter-CU LTM indicator indicating that the cell switch is associated with an inter-CU LTM; or

a CU node identifier (ID) indicating an ID of a CU of the target cell.

7. The base station of claim 1, wherein the NCC is transmitted to the UE from the first target base station via a medium access control (MAC) control element (CE).

8. The base station of claim 7, wherein the MAC CE is an LTM cell switch command.

9. The base station of claim 4, wherein the second processor is further configured to cause the first target DU to:

receive, from the UE, a first security update failure message indicating a failure of the security update.

10. A method performed by a first target base station for layer 1/layer 2 (L1/L2)-triggered mobility (LTM), the method comprising:

determining a first security key to be used between a user equipment (UE) and a second target base station for the LTM and a next hop (NH) chaining counter (NCC) to be used for a key derivation for a cell switch by the UE; and

transmitting the NCC to the UE.

11. A user equipment (UE) for wireless communication, comprising:

at least one memory;

at least one processor coupled with the at least one memory and configured to cause the UE to:

receive, from a first target base station for layer 1/layer 2 (L1/L2)-triggered mobility (LTM), a next hop (NH) chaining counter (NCC) to be used for a key derivation for a cell switch by the UE; and

perform a key derivation by using the NCC to determine a first security key to be used between the UE and a second target base station for the LTM.

12. The UE of claim 11, wherein the key derivation comprises:

when a value of the NCC is equal to a value of a current NCC associated with a current security key used by the first target base station and the UE, computing the security key from the current security key; or

when the value of the NCC is different from the value of the current NCC, synchronizing a locally kept NH parameter iteratively and increasing the value of the current NCC, and computing the security key from the synchronized NH parameter in the case that the value of the current NCC matches the value of the NCC received from the first target base station.

13. The UE of claim 11, wherein the at least one processor is further configured to cause the UE to:

receive, from the first target base station, an indicator indicating whether a security update is needed during a cell switch to a target cell, and

perform the key derivation in case the indicator indicates that the security update is needed.

14. The UE of claim 13, wherein the indicator includes:

a security update indicator indicating whether the security update is needed;

a CU indicator indicating that a CU of the target cell is different from the first target CU;

an inter-CU LTM indicator indicating that the cell switch is associated with an inter-CU LTM; or

a CU node identifier (ID) indicating an ID of a CU of the target cell.

15. The UE of claim 11, wherein the NCC is received by the UE from the first target base station via a medium access control (MAC) control element (CE).

16. The UE of claim 15, wherein the MAC CE is an LTM cell switch command.

17. The UE of claim 13, wherein the at least one processor is further configured to cause the UE to:

transmit, to the first target base station, a first security update failure message indicating a failure of the security update.

18. The UE of claim 11, wherein the at least one processor is further configured to cause the UE to:

receive, from the first target base station, information on security update parameters issued by an access and mobility management function (AMF); and

update an NH parameter associated with the first security key based on the information on security update parameters.

19. The UE of claim 18, wherein the information on security update parameters indicates that a non-access stratum (NAS) security context different from a currently active NAS security context is activated by the AMF.

20. A method performed by a user equipment (UE), the method comprising:

receiving, from a first target base station for layer 1/layer 2 (L1/L2)-triggered mobility (LTM), a next hop (NH) chaining counter (NCC) to be used for a key derivation for a cell switch by the UE; and

performing a key derivation by using the NCC to determine a first security key to be used between the UE and a second target base station for the LTM.