

CLAIMS

What is claimed is:

1. A method performed by core network equipment (16) configured for use in a core network (10A) of a wireless communication system (10), the method comprising:
 - 5 switching (105) to using a new non-access stratum, NAS, security context between a user equipment (14) and the core network equipment (16); and
 - during or in association with a handover procedure for handover of the user equipment (14), signaling (110) from the core network equipment (16) that the new NAS security context between the user equipment (14) and the core network
 - 10 equipment (16) is to be used as a basis for an access stratum (AS) security context between the user equipment (14) and radio access network equipment (12).
2. The method of claim 1, further comprising performing said signaling responsive to
 - 15 determining that the new NAS security context has been activated, that the new NAS security context is different from a NAS security context on which a currently active AS security context is based, and that the core network equipment (16) has not yet performed an explicit security context modification procedure that prompts the radio access network equipment (12) and the user equipment (14) to switch to using a new AS security context based on the new NAS
 - 20 security context.
3. The method of any of claims 1-2, wherein the handover procedure is for handover of the user equipment (14) to target radio access network equipment, wherein the method further comprises receiving a path switch request from the target radio access network equipment after
 - 25 the handover procedure, and wherein the signaling comprises, after the handover procedure, transmitting a path switch request acknowledgement message to the target radio access network equipment responsive to the path switch request, wherein the path switch request acknowledgement message includes a field indicating that the new NAS security context is to be used as a basis for the AS security context.
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4. The method of claim 3, wherein the field is a new security context indicator field.
5. The method of any of claims 1-2, wherein the handover procedure is for handover of the user equipment (14) from source radio access network equipment to target radio access

- network equipment, wherein the core network equipment (16) comprises source core network equipment associated with the source radio access network equipment, and wherein the signaling comprises, during the handover procedure and responsive to receiving a handover required message from the source radio access network equipment, transmitting a forward relocation request message from the core network equipment (16) to target core network equipment associated with the target radio access network equipment, wherein the forward relocation request message includes a field indicating that the new NAS security context is to be used as a basis for the AS security context.
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6. The method of any of claims 1-2, wherein the handover procedure is for handover of the user equipment (14) from source radio access network equipment to target radio access network equipment, and wherein the signaling comprises, during the handover procedure, transmitting a handover request message from the core network equipment (16) to the target radio access network equipment, wherein the handover request message includes a field that indicates that the new NAS security context is to be used as a basis for the AS security context.
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7. The method of any of claims 5-6, wherein the field is a key change indicator field that indicates a NAS security context key has changed.
8. The method of any of claims 1-7, wherein the core network equipment (16) implements an access and mobility management function, AMF, in a core network.
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9. A method performed by equipment (12, 14, 16-T) configured for use in a wireless communication system, the method comprising:
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- during or in association with a handover procedure for handover of a user equipment (14), receiving signaling from core network equipment (16) indicating that a new non-access stratum (NAS) security context between the user equipment (14) and the core network equipment (16) is to be used as a basis for an access stratum (AS) security context between the user equipment (14) and radio access network equipment.
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10. The method of claim 9, further comprising:
- determining, based on the signaling, a NAS security context to use as a basis for the AS security context; and

using the AS security context as based on the determined NAS security context.

11. The method of any of claims 9-10, further comprising, based on the signaling from the core network equipment (16), signaling towards the user equipment (14):
- 5 that the NAS security context on which the AS security context is based has changed; or
 that the new NAS security context between the user equipment (14) and the core network equipment (16) is to be used as the basis for the AS security context.
12. The method of claim 11, wherein the signaling towards the user equipment (14) is
- 10 performed by transmitting a key change indicator to the user equipment (14) in a radio resource control, RRC, connection reconfiguration message.
13. The method of any of claims 9-12, wherein the handover procedure is for handover of the user equipment (14) to target radio access network equipment, wherein said equipment (12,
- 15 14, 16-T) is the target radio access network equipment (12-T), and wherein receiving the signaling comprises, after the handover procedure, receiving from the core network equipment (16) a path switch request acknowledgement message including a field indicating that the new NAS security context is to be used as a basis for the AS security context.
- 20 14. The method of claim 13, wherein the field is a new security context indicator field.
15. The method of any of claims 9-12, wherein the handover procedure is for handover of the user equipment (14) from source radio access network equipment (12-S) to target radio access network equipment (12-T), wherein the core network equipment (16) comprises source
- 25 core network equipment (16-S) associated with the source radio access network equipment (12-S), wherein said equipment (12, 14, 16-T) is target core network equipment (16-T) associated with the target access radio access network equipment (12-T), and wherein receiving the signaling comprises, during the handover procedure, receiving from the source core network equipment (16-S) a forward relocation request message including a field indicating that the new
- 30 NAS security context is to be used as a basis for the AS security context.
16. The method of any of claims 9-12, wherein the handover procedure is for handover of the user equipment (14) from source radio access network equipment (12-S) to target radio access network equipment (12-T), wherein said equipment (12, 14, 16-T) is the target radio

access network equipment (12-T), and wherein receiving the signaling comprises, during the handover procedure, receiving from the core network equipment (16) a handover request message including a field that indicates that the new NAS security context is to be used as a basis for the AS security context.

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17. The method of any of claims 15-16, wherein the field is a key change indicator field that indicates a NAS security context key has changed.

18. The method of any of claims 9-17, wherein the core network equipment (16) implements an access and mobility management function, AMF, in a core network.

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19. Core network equipment (16) configured for use in a core network of a wireless communication system, the core network equipment (16) configured to:

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switch to using a new non-access stratum, NAS, security context between a user equipment (14) and the core network equipment (16); and

during or in association with a handover procedure for handover of the user equipment (14), signal from the core network equipment (16) that the new NAS security context between the user equipment (14) and the core network equipment (16) is to be used as a basis for an access stratum AS security context between the user equipment (14) and radio access network equipment (12).

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20. The core network equipment of claim 19, configured to perform the method of any of claims 2-8.

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21. Core network equipment (16) configured for use in a core network of a wireless communication system, the core network equipment (16) comprising:

processing circuitry and memory, the memory containing instructions executable by the processing circuitry whereby the core network equipment (16) is configured to: switch to using a new non-access stratum, NAS, security context between a user equipment (14) and the core network equipment (16); and

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during or in association with a handover procedure for handover of the user equipment (14), signal from the core network equipment (16) that the new NAS security context between the user equipment (14) and the core network equipment (16) is to be used as a basis for an access stratum AS

security context between the user equipment (14) and radio access network equipment.

22. The core network equipment (16) of claim 21, wherein the core network equipment (16)
5 is configured to perform the method of any of claims 2-8.

23. Equipment (12, 14, 16-T, 500, 600, 900, 1000) configured for use in a wireless communication system (10), the equipment (12, 14, 16-T, 500, 600, 900, 1000) configured to:
during or in association with a handover procedure for handover of a user equipment
10 (14), receive signaling from core network equipment (16) indicating that a new non-access stratum (NAS) security context between the user equipment (14) and the core network equipment (16) is to be used as a basis for an access stratum (AS) security context between the user equipment (14) and radio access network equipment (12).

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24. The equipment of claim 23, configured to perform the method of any of claims 10-18.

25. Equipment (12, 14, 16-T, 500, 600, 900, 1000) configured for use in a wireless communication system, the equipment (12, 14, 16-T, 500, 600, 900, 1000) comprising:
20 processing circuitry (510, 700, 910) and memory (530, 720, 903), the memory (530, 720, 903) containing instructions executable by the processing circuitry (510, 700, 910) whereby the equipment (12, 14, 16-T, 500, 600, 900, 1000) is configured to, during or in association with a handover procedure for handover of a user equipment (14), receive signaling from core network equipment (16) indicating
25 that a new non-access stratum (NAS) security context between the user equipment (14) and the core network equipment (16) is to be used as a basis for an access stratum (AS) security context between the user equipment (14) and radio access network equipment.

30 26. The equipment of claim 25, wherein the equipment is configured to perform the method of any of claims 10-18.

27. A computer program comprising instructions which, when executed by at least one processor of equipment (12, 14, 16) configured for use in a wireless communication system, causes the equipment (12, 14, 16) to perform the method of any of claims 1-18.
- 5 28. A carrier containing the computer program of claim 27, wherein the carrier is one of an electronic signal, optical signal, radio signal, or computer readable storage medium.