

CLAIMS

1. A method operational at a wireless communication device, comprising:
receiving a communication from a public land mobile network (PLMN), the communication indicating an acceptance of a user equipment (UE) registration with the PLMN;
ascertaining whether a steering of roaming (SoR) indicator associated with a home PLMN (HPLMN) is embedded within the communication; and
managing PLMN selection for the wireless communication device according to the SoR indicator.
2. The method of claim 1, further comprising:
configuring the wireless communication device to perform steering of roaming for wireless service.
3. The method of claim 2, wherein configuring the wireless communication device to perform steering of roaming for wireless service includes storing steering of roaming information within a universal subscriber identify module of the wireless communication device.
4. The method of claim 1, further comprising:
performing an integrity check on the SoR indicator based on a key shared with the HPLMN.
5. The method of claim 4, wherein the key is an Authentication Server Function (AUSF) key.
6. The method of claim 4, wherein the key is derived from an Authentication Server Function (AUSF) key.
7. The method of claim 1, further comprising:
verifying integrity of the SoR indicator using a message authentication code (MAC-S) received as part of the communication.

8. The method of claim 1, wherein ascertaining whether the SoR indicator is embedded within the communication comprises ascertaining that the SoR indicator is embedded within the communication; and

wherein the method further comprises:

ascertaining whether the SoR indicator passes an integrity check; and
if the SoR indicator failed the integrity check, performing at least one of:
lowering a priority of the PLMN; or
switching from the PLMN to an alternative PLMN.

9. The method of claim 1, wherein ascertaining whether the SoR indicator is embedded within the communication comprises ascertaining that the SoR indicator is not embedded within the communication; and

wherein the method further comprises performing at least one of:

lowering a priority of the PLMN; or
switching from the PLMN to an alternative PLMN.

10. The method of claim 1, wherein ascertaining whether the SoR indicator is embedded within the communication comprises ascertaining that the SoR indicator is embedded within the communication; and

wherein the method further comprises:

ascertaining whether the SoR indicator passes an integrity check; and
ascertaining whether the communication is further embedded with
updated steering information.

11. The method of claim 10, wherein if the SoR indicator passes the integrity check, the method further comprises:

updating steering information, if the communication is embedded with
updated steering information.

12. The method of claim 10, wherein if the SoR indicator passes the integrity check, the method further comprises:

remaining connected with the PLMN, if the communication is not
embedded with updated steering information.

13. A wireless communication device, comprising:
a transceiver configured to receive a communication from a public land mobile network (PLMN), the communication indicating an acceptance of a user equipment (UE) registration with the PLMN;
a processing circuit coupled to the transceiver, the processing circuit configured to:
ascertain whether a steering of roaming (SoR) indicator associated with a home PLMN (HPLMN) is embedded within the communication; and
manage PLMN selection for the wireless communication device according to the SoR indicator.

14. The wireless communication device of claim 13, wherein the processing circuit is further configured to:
perform an integrity check on the SoR indicator based on a key shared with the HPLMN.

15. The wireless communication device of claim 14, wherein the key is an Authentication Server Function (AUSF) key or is derived from the Authentication Server Function (AUSF) key.

16. The wireless communication device of claim 14, wherein the processing circuit is further configured to:
ascertain, upon receipt of the communication, whether the SoR indicator is embedded within the communication; and
ascertain, if the SoR indicator is embedded, whether the SoR indicator passes an integrity check.

17. The wireless communication device of claim 16, wherein the processing circuit is further configured to:
lower a priority of the PLMN or switch to an alternative PLMN, if the SoR indicator is not embedded within the communication or the SoR indicator failed the integrity check.

18. A method operational at a network entity, comprising:

configuring a user equipment (UE) to operate according to a steering of roaming (SoR) configuration, wherein the SoR configuration comprises configuring the UE to ascertain whether an SoR indicator is embedded within a communication from a public land mobile network (PLMN);

obtaining the SoR indicator, wherein the SoR indicator is associated with a home PLMN (HPLMN); and

transmitting the SoR indicator to the UE via the PLMN.

19. The method of claim 18, wherein obtaining the SoR indicator comprises deriving the SoR indicator from a key shared with the UE.

20. The method of claim 19, wherein the key is an Authentication Server Function (AUSF) key or is derived from the Authentication Server Function (AUSF) key.

21. The method of claim 18, further comprising:
including the SoR indicator for calculating a message authentication code (MAC-S) prior to transmission.

22. The method of claim 21, wherein the SoR configuration further comprises configuring the UE to lower a priority of the PLMN, if the UE ascertains that the SoR indicator is not embedded within the communication from the PLMN or that the SoR indicator failed an integrity check.

23. The method of claim 21, wherein the SoR configuration further comprises configuring the UE to switch from the PLMN to an alternative PLMN, if any alternative PLMNs are available.

24. The method of claim 18, wherein the SoR configuration further comprises:

configuring the UE to ascertain whether the communication from the PLMN is further embedded with updated steering information, if the UE ascertains that the SoR indicator is embedded within the communication from the PLMN and that the SoR indicator passed an integrity check.

25. The method of claim 24, wherein the SoR configuration further comprises configuring the UE to:

update steering information, if the communication from the PLMN is embedded with the updated steering information; and

remain connected with the PLMN, if the communication from the PLMN is not embedded with the updated steering information.

26. A network device, comprising:

a transceiver to communicate with one or more user equipment;

a processing circuit coupled to the transceiver, wherein the processing circuitry is configured to:

configure a user equipment (UE) to operate according to a steering of roaming (SoR) configuration, wherein the SoR configuration comprises configuring the UE to ascertain whether an SoR indicator is embedded within a communication from a public land mobile network (PLMN);

obtain the SoR indicator, wherein the SoR indicator is associated with a home PLMN (HPLMN); and

transmit the SoR indicator to the UE via the PLMN.

27. The network device of claim 26, wherein obtaining the SoR indicator comprises deriving the SoR indicator from a key shared with the UE.

28. The network device of claim 27, wherein the key is an Authentication Server Function (AUSF) key or is derived from the Authentication Server Function (AUSF) key.

29. The network device of claim 26, wherein the processing circuit is further configured to:

include the SoR indicator to calculate a message authentication code (MAC-S) prior to transmission.