

Claims

What is claimed is:

1. A method comprising:
constructing, at given user equipment in a communication system, a unified
5 subscription identifier data structure;
wherein the unified subscription identifier data structure comprises a plurality of fields
that specify information for a selected one of two or more subscription identifier types and
selectable parameters associated with the selected subscription identifier type, and wherein the
information in the unified subscription identifier data structure is useable by the given user
10 equipment to access one or more networks associated with the communication system based
on an authentication scenario corresponding to the selected subscription identifier type;
wherein the given user equipment comprises a processor and memory configured to
execute the constructing step.
- 15 2. The method of claim 1, wherein the plurality of fields comprises a subscription
identifier type field.
3. The method of claim 2, wherein the subscription identifier type is selectable from a
group comprising a Concealed Subscription Identifier (SUCI), a Subscriber Permanent
20 Identifier (SUPI) and an International Mobile Station Identifier (IMSI).
4. The method of claim 1, wherein the plurality of fields comprises a network entity
selection parameter field.
- 25 5. The method of claim 4, wherein the network entity performs one or more of a unified
data management (UDM) function and an authentication server function (AUSF).
6. The method of claim 1, wherein the plurality of fields comprises an encryption on/off
field.
- 30

7. The method of claim 6, wherein the plurality of fields comprises an encryption algorithm identifier field.

8. The method of claim 1, wherein the plurality of fields comprises a key derivation
5 function field.

9. The method of claim 8, wherein the plurality of fields comprises a key derivation function parameter field.

10. The method of claim 1, wherein the plurality of fields comprises a mobile country
10 code field.

11. The method of claim 1, wherein the plurality of fields comprises a mobile network
code field.

12. The method of claim 1, wherein the plurality of fields comprises a field specifying
15 a selected curve from an elliptic curve integrated encryption scheme.

13. The method of claim 1, wherein the plurality of fields comprises an ephemeral
20 public key pair field.

14. The method of claim 1, wherein the plurality of fields comprises a field specifying
a length of an encrypted Mobile Station Identification Number (MSIN) field.

15. The method of claim 14, wherein the plurality of fields comprises an encrypted
25 MSIN field.

16. The method of claim 14, wherein the plurality of fields comprises an MSIN
message authentication code field.

30

17. The method of claim 1, wherein the communication system comprises a 5G system.

18. The method of claim 1, further comprising sending the unified subscription identifier data structure to at least one network entity in the communication system to gain
5 access to the one or more networks associated with the communication system.

19. The method of claim 1, wherein the plurality of fields comprises a profile selection field.

10 20. The method of claim 19, wherein the profile selection field enables the given user equipment to notify one or more network entities in the one or more networks associated with the communication system to use pre-established values for one or more selectable parameters associated with the selected subscription identifier type.

15 21. The method of claim 20, further comprising sending the unified subscription identifier data structure with the profile selection field and a reduced set of fields to at least one of the one or more network entities in the communication system to gain access to the one or more networks associated with the communication system.

20 22. An apparatus comprising:
given user equipment in a communication system configured to:
construct a unified subscription identifier data structure;
wherein the unified subscription identifier data structure comprises a plurality of fields
that specify information for a selected one of two or more subscription identifier types and
25 selectable parameters associated with the selected subscription identifier type, and wherein the
information in the unified subscription identifier data structure is useable by the given user
equipment to access one or more networks associated with the communication system based
on an authentication scenario corresponding to the selected subscription identifier type;
wherein the given user equipment comprises a processor and memory configured to
30 construct the unified subscription identifier data structure.

23. An article of manufacture comprising a non-transitory computer-readable storage medium having embodied therein executable program code that when executed by a processor causes the processor to:

5 construct a unified subscription identifier data structure;

 wherein the unified subscription identifier data structure comprises a plurality of fields that specify information for a selected one of two or more subscription identifier types and selectable parameters associated with the selected subscription identifier type, and wherein the information in the unified subscription identifier data structure is useable by the given user
10 equipment to access one or more networks associated with the communication system based on an authentication scenario corresponding to the selected subscription identifier type.