Claims

1. A method of handling an authorization request for a packet-based service in a mobile network, comprising:
a policy controller (30) receiving the authorization request from a node (80); and
in response to receiving the authorization request (302; 402):
- the policy controller (30) performing an authorization check (305; 405) to determine an authorization status of the service;
- the policy controller (30) sending an authorization response (306; 406) to the node (80), said authorization response (306; 406) indicating the authorization status of the service;
- the policy controller (30) performing at least one further authorization check (310; 411) to redetermine the authorization status of the service;
- if the further authorization check (310; 411) indicates that the authorization status of the service has changed, the policy controller (30) sending a message (311; 412) to the node (80), said message indicating that the authorization status of the service has changed.

2. The method according to claim 1,
wherein the authorization response (306; 406) indicates that the service is temporarily not authorized.

3. The method according to claim 1 or 2,
wherein the authorization response (306) indicates a component of the service which is not authorized.

4. The method according to any one of the preceding claims, comprising:
the policy controller (30) controlling resources for conveying data packets of the service.

5. The method according to any one of the preceding claims, comprising:
the policy controller (30) receiving subscription data from a subscriber database (38) of the mobile network; and
the policy controller performing the authorization check (305; 405) and/or the further authorization check (310; 411) on the basis of the received subscription data.

6. The method according to any one of the preceding claims,
wherein the authorization request (302; 402) comprises an indication that the node (80) is to be informed if the authorization status of the session changes.

7. A method of handling an authorization request for a packet-based service in a mobile network, comprising:
a node (80) sending the authorization request (302; 402) to a policy controller (30) of the mobile network; and
the node (80) receiving an authorization response (306; 406) from the policy controller (30), said authorization response (306; 406) indicating an authorization status of the service as determined by the policy controller (30);
the node (80) receiving a message (311; 412) from the policy controller (30), said message (311; 412) indicating that the authorization status of the service has changed; and
the node (80) controlling its operation in relation to the service depending on the authorization status indicated by the authorization response (306; 406) and the message (311; 412) indicating that the authorization status of the service has changed.

8. The method according to claim 7,
wherein the authorization response (306) indicates that the service is temporarily not authorized.

9. The method according to claim 7 or 8,
wherein the authorization response (306) indicates a component of the service which is not authorized.

10. The method according to claim 9, comprising:
after receiving the authorization response (306), the node (80) continuing at least one activity with respect to an authorized component of the service.

11. The method according to any one of claims 7 to 10, comprising:
if the authorization response (306) indicates that the service is temporarily not authorized, the node (80) sending no further authorization requests for the service until receiving the message (311) indicating that the authorization status of the service has changed.

12. The method according to any one of claims 7 to 11, comprising:
if the authorization response (306) indicates that the service is temporarily not authorized, the node (80) stopping at least one activity with respect to components of the service which are not authorized until receiving the message (311) that the authorization status of the service has changed.

13. The method according to claim 7, comprising:
if the authorization response (406) indicates that the session is authorized, the node (80) stopping at least one activity with respect to the service in response to receiving the message (412) that the authorization status of the session has changed.

14. The method according to any one of claims 7 to 13,
wherein the authorization request (302; 402) comprises an indication that the node (80) is to be informed if the authorization status of the service changes.

15. A policy controller (30) for controlling resources in a mobile network, comprising:
an interface (120) for communication with a node (80); and
a processor (150),
wherein the processor (150) is configured to:
receive via the interface (120) an authorization request (302; 402) for a packet-based service in the mobile network; and
in response to receiving the authorization request (302; 402):
- perform an authorization check (305; 405) to determine an authorization status of the service;
- send via the interface (120) an authorization response (306; 406) to the node (80), said authorization response (306; 406) indicating the authorization status of the service;
- perform a further authorization check (310; 411) to redetermine the authorization status of the service; and
- if the further authorization check (310; 411) indicates a that the authorization status of the service has changed, send via the interface a message (311; 412) to the node (80), said message (311; 412) indicating that the authorization status of the service has changed.

16. The policy controller (30) according to claim 15, comprising:
a further interface (130) for communicating with a subscriber database (38) of the mobile network,
wherein the processor (150) is configured to receive subscription data via the further interface (130) from the subscriber database (38) and to perform the authorization check (305; 405) and/or the further authorization check (310; 411) on the basis of the received subscription data.

17. The policy controller (30) according to claim 15 or 16, comprising:
a control interface (140) for controlling resources for conveying data packets of the service.

18. The policy controller (30) according to any one of claims 15 to 17,
wherein the processor (150) is configured to perform steps of a method as defined by any one of claims 1 to 6.

19. A node (80), comprising:
an interface (240) for communication with a policy controller (30) of a mobile network; and
a processor (250),
wherein the processor (250) is configured to:
- send via the interface (240) to the policy controller (30) an authorization request (302; 402) for a packet-based service in the mobile network;
- receive via the interface (240) an authorization response (306; 406) from the policy controller (30), said authorization response (306; 406) indicating an authorization status of the service as determined by the policy controller (30);
- receive via the interface (240) a message (311; 412) from the policy controller (30), said message (311; 412) indicating that the authorization status of the service has changed; and
- control operation of the node (80) with respect to the service depending on the authorization status indicated by the authorization response (306; 406) and the status change message (311; 412).

20. The node (80) according to claim 19,
wherein the processor (150) is configured to perform steps of a method as defined by any one of claims 7 to 14.

The invention claimed is:

1. A method of handling an authorization request, the method comprising:

a policy controller receiving an authorization request transmitted by an application function (AF) network node in response to signaling received from an end user device for initiating a service provided by the AF network node; and

in response to receiving the authorization request transmitted by said AF network node in response to the signaling received from the end user device for initiating a service provided by the AF network node, the policy controller:

performing a first authorization check to determine a first authorization status of the service;

sending an authorization response to the AF network node, said authorization response indicating the first authorization status of the service;

performing a second authorization check to determine a second authorization status of the service;

determining whether the second authorization status is different than the first authorization status; and

sending to the AF network node a message indicating that the authorization status of the service has changed in response to determining that the second authorization status is different than the first authorization status, wherein

performing the first authorization check comprises the policy controller obtaining from a subscriber database, at a first point in time, first subscription data associated with the end user device and using the obtained first subscription data to determine the first authorization status; and

performing the second authorization check comprises the policy controller receiving from a subscriber database, at a later point in time, second subscription data associated with the end user device and using the obtained second subscription data to determine the second authorization status.

2. The method according to claim 1, wherein the authorization response indicates that the service is temporarily not authorized.

3. The method according to claim 1, wherein the authorization response indicates a component of the service which is not authorized.

4. The method according to claim 1, further comprising: the policy controller controlling resources for conveying data packets of the service.

5. The method according to claim 1, wherein the authorization request comprises an indication that the AF network node is to be informed if the authorization status of the session changes.

6. A authorization method, the authorization method comprising:

an application function (AF) network node receiving a message related to a service provided by the AF network node, wherein the message was transmitted by an end user device;

the AF network node, in response to receiving the message transmitted by the end user device, sending an authorization request to a policy controller of a mobile network;

the AF network node receiving a first authorization message from the policy controller, said first authorization message indicating an authorization status of the service as determined by the policy controller;

the AF network node controlling its operation in relation to the service depending on the authorization status indicated by the first authorization message;

the AF network node receiving a second authorization message from the policy controller, said second authorization message indicating that the authorization status of the service has changed;

the AF network node changing its operation in relation to the service based on the second authorization message indicating that the authorization status of the service has changed; and

if the first authorization message indicates that the service is temporarily not authorized, the AF network node stopping at least one activity with respect to

components of the service which are not authorized until receiving the second authorization message indicating that the authorization status of the service has changed.

7. The method according to claim 6, wherein the first authorization message indicates that the service is temporarily not authorized.

8. The method according to claim 6, wherein the first authorization message indicates a component of the service which is not authorized.

9. The method according to claim 8, further comprising: after receiving the first authorization message, the AF network node continuing at least one activity with respect to an authorized component of the service.

10. The method according to claim 6, further comprising:

if the first authorization message indicates that the service is temporarily not authorized, the AF network node sending no further authorization requests for the service until receiving the second authorization message indicating that the authorization status of the service has changed.

11. The method according to claim 6, further comprising:

if the first authorization message indicates that the session is authorized, the AF network node stopping at least one activity with respect to the service in response to receiving the second authorization message indicating that the authorization status of the session has changed.

12. The method according to claim 6, wherein the authorization request comprises an indication that the AF network node is to be informed if the authorization status of the service changes.

13. A policy controller for controlling resources in a mobile network, comprising:

an interface for communication with an application function (AF) network node;

and

a processor,

wherein the processor is configured to:

receive via the interface an authorization request for a packet-based service in the mobile network, wherein the authorization request is transmitted by the AF network node in response to signaling received from an end user device; and

in response to receiving the authorization request transmitted by the AF network node in response to signaling received from an end user device:

perform, at a first point in time, a first authorization check to determine a first authorization status of the service;

send via the interface an authorization response to the AF network node, said authorization response indicating the first authorization status of the service;

perform, at a later point in time, a second authorization check to determine a second authorization status of the service; and

if the second authorization status is different than the first authorization status, send via the interface a message to the AF network node, said message indicating that the authorization status of the service has changed, wherein

the policy controller is configured to perform the first authorization check by obtaining from a subscriber database, at a first point in time, first subscription data associated with the end user device and using the obtained first subscription data to determine the first authorization status; and

the policy controller is configured to perform the second authorization check by obtaining from a subscriber database, at a later point in time, second subscription data associated with the end user device and using the obtained second subscription data to determine the second authorization status.

14. The policy controller according to claim 13, further comprising:

a further interface for communicating with a subscriber database of the mobile network, wherein the processor is configured to receive subscription data via the further interface from the subscriber database and to perform the first authorization check and/or the second authorization check on the basis of the received subscription data.

15. The policy controller according to claim 13, further comprising: a control interface for controlling resources for conveying data packets of the service.

16. An application function (AF) network node, comprising:

a receiver;

a transmitter; and

one or more processor coupled to the receiver and the transmitter, wherein the AF network node is configured to:

employ the transmitter to send an authorization request to a policy controller of a mobile network in response to receiving a message for initiating a service that was transmitted by an end user device;

control its operation in relation to the service depending on an authorization status of the service indicated by a first authorization message received from the policy controller; and

change its operation in relation to the service based on a second authorization message received from the policy controller and indicating that the authorization status of the service has changed, wherein

the AF network node is further configured such that, if the first authorization message indicates that the service is temporarily not authorized, the AF network node stops at least one activity with respect to components of the service which are not authorized until receiving the second authorization message indicating that the authorization status of the service has changed.