CLAIMS

What is claimed is:

1. A method of handling roaming services for mobile devices, the method comprising:

receiving, at a hub breakout system, a request for data access associated with a user network device roaming in a visited communications network, the user network device being subscribed to a home communications network;

assigning, by the hub breakout system, an Internet protocol (IP) address to the user network device; and

routing, by the hub breakout system, data packets, associated with the data access requested by the user network device, to and from at least one corresponding data source using the assigned IP address.

2. The method according to claim 1 further comprising:

selecting a gateway module in the hub breakout system, the gateway module being configured to assign the IP address to the user network device.

3. The method according to claim 2 further comprising:

sending an indication of the selected gateway module to the home communications network; and

causing a connection to be established between the selected gateway module and another gateway module associated with the home communications network, the established connection being used to exchange data packets associated with the requested data access with the home communications network.

4. The method according to claim 2, wherein the gateway module is selected based on at least one of the following:

the visited communications network;

the home communications network;

a group of users;

geographical location of the selected gateway module, the visited communications network, or the home communications network;

business reasons;

delay associated with a corresponding communications path; and

capacity of a corresponding communications link.

5. The method according to claim 3, wherein the connection is a general radio packet service (GPRS) tunneling protocol (GTP) tunnel to be established between the hub breakout system and the visited communications network.

6. The method according to claim 3, wherein sending an indication of the selected gateway module to the home communications network includes:

modifying a service profile, associated with a user of the user network device, received from the home communications network; and

sending the modified service profile to the visited network.

7. The method according to claim 1, wherein the at least one data source includes at least one of:

an internet network; and

a private network associated with the home communications network.

8. The method according to claim 1 further comprising:

designating a private subnet, at the hub breakout system, to the home communications network, the private subnet including one or more IP addresses.

9. The method according to claim 1, wherein routing the data packets includes:

employing one or more routing policies for routing data packets based on the IP address assigned to the user network device.

10. The method according to claim 1, wherein routing the IP address includes a private IP address or a public IP address.

11. The method according to Claim 1 further comprising sending charging data associated with the requested data access to the home communications network.

12. The method according to claim 1, wherein the home communications network and the visited communications network are wireless networks.

13. The method according to claim 1, wherein the user network device includes at least one of the following:

a mobile device;

a tablet computer; and

a laptop computer.

14. The method according to claim 1, wherein the request for data access includes a request to access at least one of the following:

a voice service;

a messaging service;

a video service; and

a data service.

15. A hub breakout communications system comprising:

a gateway subsystem configured to receive a request for data access associated with a user network device roaming in a visited communications network, the user network device being subscribed to a home communications network, and configured to assign an internet protocol (IP) address to the user network device; and

a router subsystem configured to route data packets, associated with the data access requested by the user network device, to and from at least one corresponding data source using the assigned IP address.

16. The hub breakout communications system according to claim 15 wherein the gateway subsystem is further configured to:

select a gateway module in the hub breakout communications system, the gateway module being configured to assign the IP address to the user network device.

17. The hub breakout communications system according to claim 16 wherein the gateway subsystem is further configured to:

send an indication of the selected gateway module to the home communications network; and

cause a connection to be established between the selected gateway module and another gateway module associated with the home communications network, the established connection being used to exchange data packets associated with the requested data access with the home communications network.

18. The hub breakout communications system according to claim 16, wherein the gateway module is selected based on at least one of the following:

the visited communications network;

the home communications network;

a group of users;

geographical location of the selected gateway module, the visited communications network, or the home communications network;

business reasons;

delay associated with a corresponding communications path; and

capacity of a corresponding communications link.

19. The hub breakout communications system according to claim 17, wherein the connection is a general radio packet service (GPRS) tunneling protocol (GTP) tunnel to be established between the hub breakout communications system and the visited communications network.

20. The hub breakout communications system according to claim 17, wherein gateway subsystem sending an indication of the selected gateway module to the home communications network includes:

modifying a service profile, associated with a user of the user network device, received from the home communications network; and

sending the modified service profile to the visited network.

21. The hub breakout communications system according to claim 15, wherein the at least one data source includes at least one of:

an internet network; and

a private network associated with the home communications network.

22. The hub breakout communications system according to claim 15 wherein the router subsystem is further configured to:

designate a private subnet, at the hub breakout communications system, to the home communications network, the private subnet including one or more IP addresses.

23. The hub breakout communications system according to claim 15, wherein the routing subsystem routing the data packets includes:

employing one or more routing policies for routing data packets based on the IP address assigned to the user network device.

24. The hub breakout communications system according to claim 15, wherein the routing subsystem routing the IP address includes a private IP address or a public IP address.

25. The hub breakout communications system according to Claim 15 further comprising a charging gateway configured to:

send charging data associated with the requested data access to the home communications network.

26. The hub breakout communications system according to Claim 15, wherein the home communications network and the visited communications network are wireless networks.

27. The hub breakout communications system according to Claim 15, wherein the user network device includes at least one of the following:

a mobile device;

a tablet computer; and

a laptop computer.

28. The hub breakout communications system according to Claim 15, wherein the request for data access includes a request to access at least one of the following:

a voice service;

a messaging service;

a video service; and

a data service.

29. A non-transitory computer-readable medium comprising computer code instructions stored therein, the computer code instructions, when executed by at least one processor, cause a hub breakout system to:

receive a request for data access associated with a user network device roaming in a visited communications network, the user network device being subscribed to a home communications network;

assign an internet protocol (IP) address to the user network device; and

route data packets, associated with the data access requested by the user network device, to and from at least one corresponding data source using the assigned IP address.

30. The non-transitory computer-readable medium according to claim 29 wherein the computer code instructions further cause the hub breakout system to:

select a gateway module in the hub breakout system, the gateway module being configured to assign the IP address to the user network device.

31. The non-transitory computer-readable medium according to claim 30 wherein the computer code instructions further cause the hub breakout system to:

send an indication of the selected gateway module to the home communications network; and

cause a connection to be established between the selected gateway module and another gateway module associated with the home communications network, the established connection being used to exchange data packets associated with the requested data access with the home communications network.

32. The non-transitory computer-readable medium according to claim 30, wherein the gateway module is selected based on at least one of the following:

the visited communications network;

the home communications network;

a group of users;

geographical location of the selected gateway module, the visited communications network, or the home communications network;

business reasons;

delay associated with a corresponding communications path; and

capacity of a corresponding communications link.

33. The non-transitory computer-readable medium according to claim 31, wherein the connection is a general radio packet service (GPRS) tunneling protocol (GTP) tunnel to be established between the hub breakout system and the visited communications network.

34. The non-transitory computer-readable medium according to claim 31, wherein sending an indication of the selected gateway module to the home communications network includes:

modifying a service profile, associated with a user of the user network device, received from the home communications network; and

sending the modified service profile to the visited network.

35. The non-transitory computer-readable medium according to claim 29, wherein the at least one data source includes at least one of:

an internet network; and

a private network associated with the home communications network.

36. The non-transitory computer-readable medium according to claim 29 wherein the computer code instructions further cause the hub breakout system to:

designate a private subnet, at the hub breakout system, to the home communications network, the private subnet including one or more IP addresses.

37. The non-transitory computer-readable medium according to claim 29, wherein routing the data packets includes:

employing one or more routing policies for routing data packets based on the IP address assigned to the user network device.

38. The non-transitory computer-readable medium according to claim 29, wherein routing the IP address includes a private IP address or a public IP address.

39. The non-transitory computer-readable medium according to Claim 29 wherein the computer code instructions further cause the hub breakout system to:

sending charging data associated with the requested data access to the home communications network.

40. The non-transitory computer-readable medium according to Claim 29, wherein the home communications network and the visited communications network are wireless networks.

41. The non-transitory computer-readable medium according to Claim 29, wherein the user network device includes at least one of the following:

a mobile device;

a tablet computer; and

a laptop computer.

42. The non-transitory computer-readable medium according to Claim 29, wherein the request for data access includes a request to access at least one of the following:

a voice service;

a messaging service;

a video service; and

a data service.

CLAIMS

What is claimed is:

1. A method of handling roaming services for mobile devices, the method comprising:

receiving, at a hub breakout system, a request for data access associated with a user network device roaming in a visited communications network, the user network device being subscribed to a home communications network;

assigning, by the hub breakout system, an internet protocol (IP) address to the user network device; and

routing, by the hub breakout system, data packets, associated with the data access requested by the user network device, to and from at least one corresponding data source using the assigned IP address;

wherein both the home communications network and the visited communications network are independent and separate of the hub breakout system.

2. The method according to claim 1 further comprising:

selecting a gateway module in the hub breakout system, the gateway module being configured to assign the IP address to the user network device.

3. The method according to claim 2 further comprising:

sending an indication of the selected gateway module to the home communications network; and

causing a connection to be established between the selected gateway module and another gateway module associated with the home communications network, the established connection being used to exchange data packets associated with the requested data access with the home communications network.

4. The method according to claim 2, wherein the gateway module is selected based on at least one of the following:

the visited communications network;

the home communications network;

a group of users;

geographical location of the selected gateway module, the visited communications network, or the home communications network;

business reasons;

delay associated with a corresponding communications path; and

capacity of a corresponding communications link.

5. The method according to claim 3, wherein the connection is a general radio packet service (GPRS) tunneling protocol (GTP) tunnel to be established between the hub breakout system and the visited communications network.

6. The method according to claim 3, wherein sending an indication of the selected gateway module to the home communications network includes:

modifying a service profile, associated with a user of the user network device, received from the home communications network; and

sending the modified service profile to the visited network.

7. The method according to claim 1, wherein the at least one data source includes at least one of:

an internet network; and

a private network associated with the home communications network.

8. The method according to claim 1 further comprising:

designating a private subnet, at the hub breakout system, to the home communications network, the private subnet including one or more IP addresses.

9. The method according to claim 1, wherein routing the data packets includes:

employing one or more routing policies for routing data packets based on the IP address assigned to the user network device.

10. The method according to claim 1, wherein routing the IP address includes a private IP address or a public IP address.

11. The method according to Claim 1 further comprising sending charging data associated with the requested data access to the home communications network.

12. The method according to claim 1, wherein the home communications network and the visited communications network are wireless networks.

13. The method according to claim 1, wherein the user network device includes at least one of the following:

a mobile device;

a tablet computer; and

a laptop computer.

14. The method according to claim 1, wherein the request for data access includes a request to access at least one of the following:

a voice service;

a messaging service;

a video service; and

a data service.

15. A hub breakout communications system comprising:

a gateway subsystem configured to receive a request for data access associated with a user network device roaming in a visited communications network, the user network device being subscribed to a home communications network, and configured to assign an internet protocol (IP) address to the user network device; and

a router subsystem configured to route data packets, associated with the data access requested by the user network device, to and from at least one corresponding data source using the assigned IP address;

wherein both the home communications network and visited communications network are independent and separate of the hub breakout communications system.

16. The hub breakout communications system according to claim 15 wherein the gateway subsystem is further configured to:

select a gateway module in the hub breakout communications system, the gateway module being configured to assign the IP address to the user network device.

17. The hub breakout communications system according to claim 16 wherein the gateway subsystem is further configured to:

send an indication of the selected gateway module to the home communications network; and

cause a connection to be established between the selected gateway module and another gateway module associated with the home communications network, the established connection being used to exchange data packets associated with the requested data access with the home communications network.

18. The hub breakout communications system according to claim 16, wherein the gateway module is selected based on at least one of the following:

the visited communications network;

the home communications network;

a group of users;

geographical location of the selected gateway module, the visited communications network, or the home communications network;

business reasons;

delay associated with a corresponding communications path; and

capacity of a corresponding communications link.

19. The hub breakout communications system according to claim 17, wherein the connection is a general radio packet service (GPRS) tunneling protocol (GTP) tunnel to be established between the hub breakout communications system and the visited communications network.

20. The hub breakout communications system according to claim 17, wherein gateway subsystem sending an indication of the selected gateway module to the home communications network includes:

modifying a service profile, associated with a user of the user network device, received from the home communications network; and

sending the modified service profile to the visited network.

21. The hub breakout communications system according to claim 15, wherein the at least one data source includes at least one of:

an internet network; and

a private network associated with the home communications network.

22. The hub breakout communications system according to claim 15 wherein the router subsystem is further configured to:

designate a private subnet, at the hub breakout communications system, to the home communications network, the private subnet including one or more IP addresses.

23. The hub breakout communications system according to claim 15, wherein the routing subsystem routing the data packets includes:

employing one or more routing policies for routing data packets based on the IP address assigned to the user network device.

24. The hub breakout communications system according to claim 15, wherein the routing subsystem routing the IP address includes a private IP address or a public IP address.

25. The hub breakout communications system according to Claim 15 further comprising a charging gateway configured to:

send charging data associated with the requested data access to the home communications network.

26. The hub breakout communications system according to Claim 15, wherein the home communications network and the visited communications network are wireless networks.

27. The hub breakout communications system according to Claim 15, wherein the user network device includes at least one of the following:

a mobile device;

a tablet computer; and

a laptop computer.

28. The hub breakout communications system according to Claim 15, wherein the request for data access includes a request to access at least one of the following:

a voice service;

a messaging service;

a video service; and

a data service.

29. A non-transitory computer-readable medium comprising computer code instructions stored therein, the computer code instructions, when executed by at least one processor, cause a hub breakout system to:

receive a request for data access associated with a user network device roaming in a visited communications network, the user network device being subscribed to a home communications network;

assign an internet protocol (IP) address to the user network device; and

route data packets, associated with the data access requested by the user network device, to and from at least one corresponding data source using the assigned IP address;

wherein both the home communications network and visited communications network are independent and separate of the hub breakout communications system.

30. The non-transitory computer-readable medium according to claim 29 wherein the computer code instructions further cause the hub breakout system to:

select a gateway module in the hub breakout system, the gateway module being configured to assign the IP address to the user network device.

31. The non-transitory computer-readable medium according to claim 30 wherein the computer code instructions further cause the hub breakout system to:

send an indication of the selected gateway module to the home communications network; and

cause a connection to be established between the selected gateway module and another gateway module associated with the home communications network, the established connection being used to exchange data packets associated with the requested data access with the home communications network.

32. The non-transitory computer-readable medium according to claim 30, wherein the gateway module is selected based on at least one of the following:

the visited communications network;

the home communications network;

a group of users;

geographical location of the selected gateway module, the visited communications network, or the home communications network;

business reasons;

delay associated with a corresponding communications path; and

capacity of a corresponding communications link.

33. The non-transitory computer-readable medium according to claim 31, wherein the connection is a general radio packet service (GPRS) tunneling protocol (GTP) tunnel to be established between the hub breakout system and the visited communications network.

34. The non-transitory computer-readable medium according to claim 31, wherein sending an indication of the selected gateway module to the home communications network includes:

modifying a service profile, associated with a user of the user network device, received from the home communications network; and

sending the modified service profile to the visited network.

35. The non-transitory computer-readable medium according to claim 29, wherein the at least one data source includes at least one of:

an internet network; and

a private network associated with the home communications network.

36. The non-transitory computer-readable medium according to claim 29 wherein the computer code instructions further cause the hub breakout system to:

designate a private subnet, at the hub breakout system, to the home communications network, the private subnet including one or more IP addresses.

37. The non-transitory computer-readable medium according to claim 29, wherein routing the data packets includes:

employing one or more routing policies for routing data packets based on the IP address assigned to the user network device.

38. The non-transitory computer-readable medium according to claim 29, wherein routing the IP address includes a private IP address or a public IP address.

39. The non-transitory computer-readable medium according to Claim 29 wherein the computer code instructions further cause the hub breakout system to:

sending charging data associated with the requested data access to the home communications network.

40. The non-transitory computer-readable medium according to Claim 29, wherein the home communications network and the visited communications network are wireless networks.

41. The non-transitory computer-readable medium according to Claim 29, wherein the user network device includes at least one of the following:

a mobile device;

a tablet computer; and

a laptop computer.

42. The non-transitory computer-readable medium according to Claim 29, wherein the request for data access includes a request to access at least one of the following:

a voice service;

a messaging service;

a video service; and

a data service.

43. A method of handling roaming services for mobile devices, the method comprising:

receiving, at a hub breakout system, a request for data access associated with a user network device roaming in any one of a plurality of visited communications networks, the user network device being subscribed to a home communications network;

assigning, by the hub breakout system, an internet protocol (IP) address to the user network device; and

routing, by the hub breakout system, data packets, associated with the data access requested by the user network device, to and from at least one corresponding data source using the assigned IP address.