CLAIMS

What is claimed is:

1. A system comprising:

a data inspection module configured to:

inspect data traffic originating from a mobile device assigned a first international mobile subscriber identity (IMSI) associated with a first mobile network,

determine an identity of a data service the mobile device is requesting or accessing from the inspected data traffic, the identity of the data service being an identity of at least one of: (i) a software application executed by the mobile device requesting or accessing a data connection, (ii) an internet website requested by the mobile device, and (iii) an internet protocol address the mobile device has requested access to; and

a switching logic module communicatively coupled to the data inspection module and configured to:

select a second IMSI associated with a second mobile network to assign to the mobile device, said selecting of the second IMSI at least partially based on the identity of the data service received from the data inspection module and determined from the inspected data traffic originating from the mobile device, and

assign the second IMSI to the mobile device.

2. The system of Claim 1 wherein the switching logic module is further configured to determine the second IMSI is not included in a list of IMSIs to avoid before assigning the second IMSI to the mobile device.

3. The system of Claim 1 wherein the data inspection module is further configured to:

inspect the data originating from the mobile device for signatures of data services, and to determine the identity of the data service the mobile device is requesting or accessing from the inspected data traffic by comparing a signature of a data service from the inspected data traffic to known signatures of data services stored in a signature database.

4. The system of Claim 1 wherein the data inspection module is configured to use deep packet inspection to inspect the data traffic originating from the mobile device.

5. The system of Claim 1 wherein the switching logic module is configured to select the second IMSI based on a rate the second mobile network charges for the identified data service being requested or accessed by the mobile device, the rate the second mobile network charges being specific to the identified data service.

6. The system of Claim 1 wherein said selecting of the-second IMSI is further based on any one or more of the following: condition of the first or second mobile network, type of data the mobile device is requesting, and amount of data requested by the mobile device.

7. The system of Claim 3 wherein

the data inspection module is further configured to:

track an amount of data used by a plurality of mobile devices over a given period of time, each mobile device assigned an IMSI associated with the first mobile network; and

the switching logic module is further configured to:

select different IMSIs to assign to at least some of the plurality of mobile devices, each different IMSI associated with a network other than the first mobile network, and said selecting at least partially based on the amount of data used by the plurality of mobile devices over the given period of time, and

assign the selected different IMSIs to the at least some of the plurality of mobile devices.

8. The system of Claim 3 wherein the data inspection module is further configured to determine network performance metrics for a given mobile network based on inspecting data traffic from a plurality of mobile devices, each of the plurality of mobile devices assigned an IMSI associated with the given mobile network.

9. The system of Claim 3 wherein the data inspection module is further configured to deny, allow or modify an inspected data traffic based on a data policy associated with a currently assigned IMSI of the mobile device.

10. The system of Claim 3 wherein the data inspection module is further configured to deny, allow or modify an inspected data traffic based on a type of the mobile device.

11. The system of Claim 1 wherein said selecting of the second IMSI is further based on any one or more of the following:

country of the first mobile network or the second mobile network,
location of the mobile device,
operator of the first mobile network or the second mobile network,
data rate cost of the first mobile network or the second mobile network, and
quality of service of first mobile network or the second mobile network.

12. The system of Claim 3 wherein the mobile device is roaming on the first mobile network before the mobile device is assigned the second IMSI.

13. A method comprising:

inspecting traffic originating from a mobile device assigned a first international mobile subscriber identity (IMSI) associated with a first mobile network;

determining an identity of a data service the mobile device is requesting or accessing from the inspected data traffic, the identity of the data service being an identity of at least one of: (i) a software application executed by the mobile device requesting or accessing a data connection, (ii) an internet website the mobile device is requesting, and (iii) an internet protocol address the mobile device is requesting access to;

selecting a second IMSI associated with a second mobile network to assign to the mobile device, the selection of the second IMSI at least partially based on the identity of the data service determined from the inspected data traffic originating from the mobile device; and

assigning the second IMSI to the mobile device.

14. The method of Claim 13 further comprising determining the second IMSI is not included in a list of IMSIs to avoid before assigning the second IMSI to the mobile device.

15. The method of Claim 13 further comprising inspecting the data ~~requests~~ traffic originating from the mobile device for signatures of data services, and determining the identity of the data service the mobile device is requesting or accessing from the inspected data traffic to known signatures of data services stored in a signature database.

16. The method of Claim 15 wherein the data traffic is inspected using deep packet inspection.

17. The method of Claim 13 wherein selecting the second IMSI is based on a rate the second mobile network charges for the identified data service being requested or accessed by the mobile device, the rate the second mobile network charges being specific to the identified data service.

18. The method of Claim 13 wherein said selecting of the second IMSI is further based on any one or more of the following: condition of the first or second mobile network, type of data the mobile device is requesting and amount of data requested by the mobile device.

19. The method of Claim 15 further comprising:

tracking an amount of data used by a plurality of mobile devices over a given period of time, each mobile device assigned an IMSI associated with the first mobile network;

selecting different IMSIs to assign to at least some of the plurality of mobile devices, each different IMSI associated with a network other than the first mobile network, and the selection at least partially based on the amount of data used by the plurality of mobile devices over the given period of time; and

assigning the selected different IMSIs to the at least some of the plurality of mobile devices.

20. The method of Claim 15 further comprising denying, allowing or modifying ~~an~~ inspected data traffic based on a data policy associated with a currently assigned IMSI of the mobile device.

21. The method of Claim 15 further comprising determining network performance metrics for a given mobile network based on inspecting data traffic from a plurality of mobile devices, each of the plurality of mobile devices assigned an IMSI associated with the given mobile network.

22. The method of Claim 15 further comprising denying, allowing or modifying an inspected data traffic based on a type of the mobile device.

23. The method of-Claim 13 wherein said selecting of the second IMSI is further based on any one or more of the following:

country of the first mobile network or the second mobile network,

location of the mobile device,

operator of the first mobile network or the second mobile network,

data rate cost of the first mobile network or the second mobile network, and

quality of service of first mobile network or the second mobile network.

24. The method of Claim 15 wherein the mobile device is roaming on the first mobile network before the mobile device is assigned the second IMSI.

25. A system comprising:

a data inspection module configured to:

inspect data traffic originating from a mobile device assigned a first international mobile subscriber identity (IMSI) associated with a mobile network;

determine, from the data traffic inspected, an identity of a data service the mobile device is requesting or accessing, the identity identifying at least one of: (i) a software application executed by the mobile device requesting or accessing a data connection, (ii) an internet website requested by the mobile device, and (iii) an internet protocol address to which the mobile device has requested access; and

send the identity determined to a switching logic module, the switching logic module configured to assign a second IMSI to the mobile device, the second IMSI selected by the switching logic module based, at least partially, on the identity of the data service determined.

26. The system of Claim 25, further comprising the switching logic module and wherein the data inspection module is further configured to inspect the data traffic originating from the mobile device for signatures of data services and wherein, to determine the identity of the data service, the data inspection module is further configured to compare a given signature of a given data service, the given signature present in the data traffic inspected, to known signatures of data services stored in a signature database.

27. The system of Claim 25, wherein the data inspection module is further configured to use deep packet inspection to inspect the data traffic originating from the mobile device.

28. The system of Claim 25, wherein the mobile network is a first mobile network, wherein the second IMSI is associated with a second mobile network, and wherein the switching logic module is further configured to select the second IMSI further based on a condition of the first or second mobile network, type of data the mobile device is requesting, amount of data requested by the mobile device, or a combination thereof.

29. The system of Claim 25, wherein the data inspection module is further configured to track an amount of data used by a plurality of mobile devices over a given period of time, wherein each mobile device of the plurality of mobile devices is assigned an IMSI associated with the mobile network, and wherein the switching logic module is further configured to:

select different IMSIs to assign to at least some of the plurality of mobile devices, each different IMSI associated with a network other than the mobile network;

select the second IMSI further based on the amount of data used by the plurality of mobile devices over the given period of time; and

assign the different IMSIs selected to the at least some of the plurality of mobile devices.

30. The system of Claim 25, wherein the data inspection module is further configured to determine network performance metrics for a given mobile network based on inspecting data traffic from a plurality of mobile devices, each mobile device of the plurality of mobile devices assigned an IMSI associated with the given mobile network.

31. The system of Claim 25, wherein the data inspection module is further configured to deny, allow, or modify at least a portion of the data traffic inspected based on a data policy associated with a currently assigned IMSI of the mobile device.

32. The system of Claim 25, wherein the data inspection module is further configured to deny, allow, or modify at least a portion of the data traffic inspected based on a type of the mobile device.

33. The system of Claim 25, further comprising the switching logic module and wherein the mobile network is a first mobile network, wherein the second IMSI is associated with a second mobile network, and wherein the switching logic module is further configured to select the second IMSI further based on a country of the first mobile network or the

second mobile network, location of the mobile device, operator of the first mobile network or the second mobile network, data rate cost of the first mobile network or the second mobile network, quality of service of the first or second mobile network, or a combination thereof.

34. The system of Claim 25, wherein the mobile network is a first mobile network, wherein the second IMSI is associated with a second mobile network, and wherein the mobile device is roaming on the first mobile network before the mobile device is assigned the second IMSI.

35. A system comprising:

a switching logic module configured to:

select an international mobile subscriber identity (IMSI), associated with a mobile network, selection of the IMSI based, at least partially, on a received identity of a data service, the data service requested or accessed by a mobile device, the received identity based on inspection of data traffic originating from the mobile device; and

assign the IMSI selected to the mobile device.

36. The system of Claim 35, wherein the switching logic module is further configured to determine the IMSI is not included in a list of IMSIs to avoid before assigning the IMSI to the mobile device.

37. The system of Claim 35, wherein the switching logic module is further configured to select the IMSI based on a rate the mobile network charges for the data service, and wherein the rate the mobile network charges is specific to the data service.

38. The system of Claim 35, wherein the mobile device is assigned a first IMSI associated with a first mobile network, wherein the mobile network is a second mobile network, wherein the IMSI is a second IMSI associated with the second mobile network, and wherein the switching logic module is further configured to select the second IMSI further based on a condition of the first or second mobile network, type of data the mobile device is requesting, amount of data requested by the mobile device, or a combination thereof.

39. The system of Claim 35, wherein the mobile device is assigned a first IMSI associated with a first mobile network, wherein the mobile network is a second mobile network, wherein the IMSI is a second IMSI associated with the second mobile network, and wherein the switching logic module is further configured to:

select different IMSIs to assign to at least some of a plurality of mobile devices, each different IMSI associated with a network other than the first mobile network;

select the second IMSI further based on an amount of data used by the plurality of mobile devices over a given period of time; and

assign the different IMSIs selected to the at least some of the plurality of mobile devices.

40. The system of Claim 35, wherein the mobile device is assigned a first IMSI associated with a first mobile network, wherein the mobile network is a second mobile network, wherein the IMSI is a second IMSI associated with the second mobile network, and wherein the switching logic module is further configured to select the second IMSI further based on a country of the first mobile network or the second mobile network, location of the mobile device, operator of the first mobile network or the second mobile network, data rate cost of the first mobile network or the second mobile network, quality of service of first mobile network or the second mobile network, or a combination thereof.

41. The system of Claim 35, wherein the mobile device is assigned a first IMSI associated with a first mobile network, wherein the mobile network is a second mobile network, wherein the IMSI is a second IMSI associated with the second mobile network, and wherein the mobile device is roaming on the first mobile network before the mobile device is assigned the second IMSI.

42. A method comprising:

inspecting data traffic originating from a mobile device assigned a first international mobile subscriber identity (IMSI) associated with a mobile network;

determining, from the data traffic inspected, an identity of a data service the mobile device is requesting or accessing, the identity identifying at least one of: (i) a software application executed by the mobile device requesting or accessing a data

connection, (ii) an internet website requested by the mobile device, and (iii) an internet protocol address to which the mobile device has requested access; and

sending the identity determined to enable a second IMSI to be assigned to the mobile device, the second IMSI selected based, at least partially, on the identity of the data service determined.

43. The method of Claim 42, further comprising inspecting the data traffic originating from the mobile device for signatures of data services and wherein determining the identity of the data service includes comparing a given signature of a given data service, the given signature present in the data traffic inspected, to known signatures of data services stored in a signature database.

44. The method of Claim 42, wherein the inspecting includes using deep packet inspection to inspect the data traffic originating from the mobile device.

45. The method of Claim 42, wherein the mobile network is a first mobile network, wherein the second IMSI is associated with a second mobile network, and wherein the second IMSI is selected further based on a condition of the first or second mobile network, type of data the mobile device is requesting, amount of data requested by the mobile device, or a combination thereof.

46. The method of Claim 42, wherein the mobile network is a first mobile network, wherein the second IMSI is associated with a second mobile network, and wherein the method further comprises:

tracking an amount of data used by a plurality of mobile devices over a given period of time, wherein each mobile device of the plurality of mobile devices is assigned an IMSI associated with the first mobile network, wherein the second IMSI is selected further based on the amount of data used by the plurality of mobile devices over the given period of time;

selecting different IMSIs to assign to at least some of the plurality of mobile devices, each different IMSI associated with a network other than the first mobile network; and

assigning the different IMSIs selected to the at least some of the plurality of mobile devices.

47. The method of Claim 42, further comprising determining network performance metrics for a given mobile network based on inspecting data traffic from a plurality of mobile devices, each of the plurality of mobile devices assigned an IMSI associated with the given mobile network.

48. The method of Claim 42, further comprising denying, allowing, or modifying inspected data traffic based on a data policy associated with a currently assigned IMSI of the mobile device.

49. The method of Claim 42, further comprising denying, allowing, or modifying at least a portion of the data traffic inspected based on a type of the mobile device.

50. The method of Claim 42, wherein the mobile network is a first mobile network, wherein the second IMSI is associated with a second mobile network, and wherein selecting the second IMSI is further based on a country of the first mobile network or the second mobile network, location of the mobile device, operator of the first mobile network or the second mobile network, data rate cost of the first mobile network or the second mobile network, quality of service of the first or second mobile network, or a combination thereof.

51. The method of Claim 42, wherein the mobile network is a first mobile network, wherein the second IMSI is associated with a second mobile network, and wherein the mobile device is roaming on the first mobile network before the mobile device is assigned the second IMSI.

52. A method comprising:

selecting an international mobile subscriber identity (IMSI), associated with a mobile network, the selecting based, at least partially, on a received identity of a data service, the data service requested or accessed by a mobile device, the received identity based on inspection of data traffic originating from the mobile device; and

assigning the IMSI to the mobile device.

53. The method of Claim 52, further comprising determining the IMSI is not included in a list of IMSIs to avoid before assigning the IMSI to the mobile device.

54. The method of Claim 52, further comprising selecting the IMSI based on a rate the mobile network charges for the data service, wherein the rate the mobile network charges is specific to the data service.

55. The method of Claim 52, wherein the mobile device is assigned a first IMSI associated with a first mobile network, wherein the mobile network is a second mobile network, wherein the IMSI is a second IMSI associated with the second mobile network, and wherein the selecting is further based on a condition of the first or second mobile network, type of data the mobile device is requesting, amount of data requested by the mobile device, or a combination thereof.

56. The method of Claim 52, wherein the mobile device is assigned a first IMSI associated with a first mobile network, wherein the mobile network is a second mobile network, wherein the IMSI is a second IMSI associated with the second mobile network, and wherein the method further comprises:

selecting different IMSIs to assign to at least some of a plurality of mobile devices, each different IMSI associated with a network other than the first mobile network;

selecting the second IMSI further based on an amount of data used by the plurality of mobile devices over a given period of time; and

assigning the different IMSIs selected to the at least some of the plurality of mobile devices.

57. The method of Claim 52, wherein the mobile device is assigned a first IMSI associated with a first mobile network, wherein the mobile network is a second mobile network, wherein the IMSI is a second IMSI associated with the second mobile network, and wherein the selecting is further based on a country of the first mobile network or the second mobile network, location of the mobile device, operator of the first mobile network or the second mobile network, data rate cost of the first mobile network or the second mobile network, quality of service of first mobile network or the second mobile network, or a combination thereof.

58. The method of Claim 52, wherein the mobile device is assigned a first IMSI associated with a first mobile network, wherein the mobile network is a second mobile network, wherein the IMSI is a second IMSI associated with the second mobile network, and

wherein the mobile device is roaming on the first mobile network before the mobile device is assigned the second IMSI.