CLAIMS

1. A method of managing quality of service (QoS) in a data network, the method comprising: receiving at an access network (AN) node in an AN, from a core network (CN), QoS policy information, the QoS policy information comprising one or more QoS parameters and one or more data session descriptors; determining a QoS policy based on at least a portion of the QoS policy information; storing the QoS policy and the one or more data session descriptors in a QoS map that links one or more QoS policies with one or more respective descriptors; and applying the QoS policy to a flow between the CN and a user equipment (UE) when a descriptor in a packet in the flow corresponds to the QoS policy; wherein the determining the QoS policy comprises: selecting, from the QoS map, the QoS policy that is linked to the descriptor in the packet; and selecting AN resources for the flow based on the QoS policy.

2. The method of claim 1, wherein the QoS parameters include QoS parameters corresponding to a second network other than the data network, the method further comprising: applying the QoS parameters corresponding to the second network to the flow when the UE is reselecting between the AN and a legacy access network that utilizes the QoS parameters corresponding to the second network.

3. The method of claim 1, further comprising: receiving, within the QoS policy information, information that indicates that the QoS policy is a pre-authorized QoS policy applicable to a future flow that is not yet initiated at the time of the determining of the QoS policy.

4. The method of claim 3, further comprising: receiving the packet from the UE prior to an establishment of a data session that utilizes the pre-authorized QoS policy; and determining that the descriptor in the packet corresponds to the pre-authorized QoS policy.

5. The method of claim 3, further comprising: determining a user plane gateway (UP-GW) to which to transmit the flow based on the QoS policy information, either by selecting a default UP-GW identified in the QoS policy information, or by selecting the UP-GW based on the QoS policy information.

6. The method of claim 1, further comprising: receiving the packet in an uplink transmission from the UE, wherein the descriptor is applied to the packet by the UE; or receiving the packet in a downlink transmission from the CN, wherein the descriptor is applied to the packet by the CN.

7. The method of claim 1, wherein the determining the QoS policy comprises determining the QoS policy with respect to a data network (DN) session; wherein a set of one or more data sessions is associated with the DN session; and wherein the flow is a data session within the set of one or more data sessions associated with the DN session, the method further comprising applying the QoS policy, determined with respect to the DN session, to each data session within the set of one or more data sessions associated with the DN session.

8. The method of claim 1, further comprising: receiving, within the QoS policy information, information that indicates that a separate, dedicated resource is needed for a data session utilizing the QoS policy; and allocating the separate, dedicated resource for the data session, wherein the separate, dedicated resource comprises at least one of a dedicated radio bearer, separate encryption, or a separate QoS.

9. An access network (AN) node within an AN and configured for managing quality of service (QoS) in a data network, the AN node comprising: a processor; a memory communicatively coupled to the processor; a transceiver communicatively coupled to the processor and configured for wireless communication with a user equipment (UE); and a core network (CN) interface communicatively coupled to the processor and configured for communication with a CN, wherein the processor and the memory are configured to: receive, from the CN, QoS policy information, the QoS policy information comprising one or more QoS parameters and one or more data session descriptors; determine a QoS policy based on at least a portion of the QoS policy information; store the QoS policy and the one or more data session descriptors in a QoS map that links one or more QoS policies with one or more respective descriptors; and apply the QoS policy to a flow between the CN and the UE when a descriptor in a packet in the flow corresponds to the QoS policy; wherein the processor and the memory, being configured to determine the QoS policy, are further configured to: select, from the QoS map, the QoS policy that is linked to the descriptor in the packet; and select AN resources for the flow based on the QoS policy.

10. The AN node of claim 9, wherein the QoS parameters include QoS parameters corresponding to a second network other than the data network, and wherein the processor and the memory are further configured to apply the QoS parameters corresponding to the second network to the flow when the UE is reselecting between the AN and a legacy access network that utilizes the QoS parameters corresponding to the second network.

11. The AN node of claim 9, wherein the processor and the memory are further configured to: receive, within the QoS policy information, information that indicates that the QoS policy is a pre-authorized QoS policy applicable to a future flow that is not yet initiated at the time of the determining of the QoS policy.

12. The AN node of claim 11, wherein the processor and the memory are further configured to: receive the packet from the UE prior to an establishment of a data session that utilizes the pre-authorized QoS policy; and determine that the descriptor in the packet corresponds to the pre-authorized QoS policy.

13. The AN node of claim 11, wherein the processor and the memory are further configured to: determine a user plane gateway (UP-GW) to which to transmit the flow based on the QoS policy information, either by selecting a default UP-GW identified in the QoS policy information, or by selecting the UP-GW based on the QoS policy information.

14. The AN node of claim 9, wherein the processor and the memory are further configured to: receive the packet in an uplink transmission from the UE, wherein the descriptor is applied to the packet by the UE; or receive the packet in a downlink transmission from the CN, wherein the descriptor is applied to the packet by the CN.

15. The AN node of claim 9, wherein the processor and the memory, being configured to determine the QoS policy, are further configured to determine the QoS policy with respect to a data network (DN) session, wherein a set of one or more data sessions is associated with the DN session; wherein the flow is a data session within the set of one or more data sessions associated with the DN session; and wherein the processor and the memory are further configured to apply the QoS policy, determined with respect to the DN session, to each data session within the set of one or more data sessions associated with the DN session.

16. The AN node of claim 9, wherein the processor and the memory are further configured to: receive, within the QoS policy information, information that indicates that a separate, dedicated resource is needed for a data session utilizing the QoS policy; and allocate the separate, dedicated resource for the data session, wherein the separate, dedicated resource comprises at least one of a dedicated radio bearer, separate encryption, or a separate QoS.

17. An access network (AN) node within an AN and configured for managing quality of service (QoS) in a data network, the AN node comprising: means for receiving, from a core network (CN), QoS policy information, the QoS policy information comprising one or more QoS parameters and one or more data session descriptors; means for determining a QoS policy based on at least a portion of the QoS policy information; means for storing the QoS policy and the one or more data session descriptors in a QoS map that links one or more QoS policies with one or more respective descriptors; and means for applying the QoS policy to a flow between the CN and a user equipment (UE) when a descriptor in a packet in the flow corresponds to the QoS policy; wherein the means for determining the QoS policy is further configured for: selecting, from the QoS map, the QoS policy that is linked to the descriptor in the packet; and selecting AN resources for the flow based on the QoS policy.

18. The AN node of claim 17, wherein the QoS parameters include QoS parameters corresponding to a second network other than the data network, and wherein the AN node further comprises: means for applying the QoS parameters corresponding to the second network to the flow when the UE is reselecting between the AN and a legacy access network that utilizes the QoS parameters corresponding to the second network.

19. The AN node of claim 17, further comprising: means for receiving, within the QoS policy information, information that indicates that the QoS policy is a pre-authorized QoS policy applicable to a future flow that is not yet initiated at the time of the determining of the QoS policy.

20. The AN node of claim 19, further comprising: means for receiving the packet from the UE prior to an establishment of a data session that utilizes the pre-authorized QoS policy; and means for determining that the descriptor in the packet corresponds to the pre-authorized QoS policy.

21. The AN node of claim 19, further comprising: means for determining a user plane gateway (UP-GW) to which to transmit the flow based on the QoS policy information, either by selecting a default UP-GW identified in the QoS policy information, or by selecting the UP-GW based on the QoS policy information.

22. The AN node of claim 17, further comprising: means for receiving the packet in an uplink transmission from the UE, wherein the descriptor is applied to the packet by the UE; or means for receiving the packet in a downlink transmission from the CN, wherein the descriptor is applied to the packet by the CN.

23. The AN node of claim 17, wherein the means for determining the QoS policy is further configured for determining the QoS policy with respect to a data network (DN) session; wherein a set of one or more data sessions is associated with the DN session; wherein the flow is a data session within the set of one or more data sessions associated with the DN session; and wherein the AN node further comprises means for applying the QoS policy, determined with respect to the DN session, to each data session within the set of one or more data sessions associated with the DN session.

24. The AN node of claim 17, further comprising: means for receiving, within the QoS policy information, information that indicates that a separate, dedicated resource is needed for a data session utilizing the QoS policy; and means for allocating the separate, dedicated resource for the data session, wherein the separate, dedicated resource comprises at least one of a dedicated radio bearer, separate encryption, or a separate QoS.

25. A non-transitory computer readable medium storing computer executable code comprising instructions for causing an access network (AN) node within an AN to: receive, from a core network (CN), quality of service (QoS) policy information, the QoS policy information comprising one or more QoS parameters and one or more data session descriptors; determine a QoS policy based on at least a portion of the QoS policy information; store the QoS policy and the one or more data session descriptors in a QoS map that links one or more QoS policies with one or more respective descriptors; and apply the QoS policy to a flow between the CN and a user equipment (UE) when a descriptor in a packet in the flow corresponds to the QoS policy; wherein the instructions for causing the AN node to determine the QoS policy are further configured to cause the AN node to: select, from the QoS map, the QoS policy that is linked to the descriptor in the packet; and select AN resources for the flow based on the QoS policy.

26. The non-transitory computer readable medium of claim 25, wherein the QoS parameters include QoS parameters corresponding to a second network other than the data network, and

wherein the computer executable code further comprises instructions for causing the AN node to: apply the QoS parameters corresponding to the second network to the flow when the UE is reselecting between the AN and a legacy access network that utilizes the QoS parameters corresponding to the second network.

27. The non-transitory computer readable medium of claim 25, further comprising instructions for causing the AN node to: receive, within the QoS policy information, information that indicates that the QoS policy is a pre-authorized QoS policy applicable to a future flow that is not yet initiated at the time of the determining of the QoS policy.

28. The non-transitory computer readable medium of claim 27, further comprising instructions for causing the AN node to: receive the packet from the UE prior to an establishment of a data session that utilizes the pre-authorized QoS policy; and means for determining that the descriptor in the packet corresponds to the pre-authorized QoS policy.

29. The non-transitory computer readable medium of claim 27, further comprising instructions for causing the AN node to: determine a user plane gateway (UP-GW) to which to transmit the flow based on the QoS policy information, either by selecting a default UP-GW identified in the QoS policy information, or by selecting the UP-GW based on based on the QoS policy information.

30. The non-transitory computer readable medium of claim 25, further comprising instructions for causing the AN node to: receive the packet in an uplink transmission from the UE, wherein the descriptor is applied to the packet by the UE; or receive the packet in a downlink transmission from the CN, wherein the descriptor is applied to the packet by the CN.

31. The non-transitory computer readable medium of claim 25, wherein the instructions for causing the AN node to determine the QoS policy are further configured for causing the AN node to determine the QoS policy with respect to a data network (DN) session; wherein a set of one or more data sessions is associated with the DN session; wherein the flow is a data session within the set of one or more data sessions associated with the DN session; and wherein the computer executable code further comprises instructions for causing the AN node to apply the QoS policy, determined with respect to the DN session, to each data session within the set of one or more data sessions associated with the DN session.

32. The non-transitory computer readable medium of claim 25, further comprising instructions for causing the AN node to: receive, within the QoS policy information, information that indicates that a separate, dedicated resource is needed for a data session utilizing the QoS policy; and allocate the separate, dedicated resource for the data session, wherein the separate, dedicated resource comprises at least one of a dedicated radio bearer, separate encryption, or a separate QoS.

33. A method of managing quality of service (QoS) in a data network, the method comprising:
receiving at a user equipment (UE), from a core network (CN), QoS policy information;
receiving at the UE an indication of a resource for communicating with the CN utilizing a data session, wherein the data session utilizes a QoS policy based on the QoS policy information; and
communicating with the CN utilizing the data session.

34. The method of claim 33, further comprising:
transmitting information indicating a request to establish the data session; and
receiving the QoS policy information from the CN in response to the request to establish the data session.

35. The method of claim 33, further comprising at least one of:
transmitting an unclassified uplink flow utilizing best-effort delivery;
transmitting an unclassified uplink flow, the unclassified uplink flow comprising an explicit QoS request; or
transmitting an explicit QoS request to the CN utilizing control plane (CP) signaling.

36. A user equipment (UE) configured for wireless communication in a data network, comprising:
a processor;
a memory communicatively coupled to the processor; and
a transceiver communicatively coupled to the processor and configured for communication with a core network (CN) via an access network (AN) node,
wherein the processor and the memory are configured to:
receive, from the CN, quality of service (QoS) policy information;
receive an indication of a resource for communicating with the CN utilizing a data session, wherein the data session utilizes a QoS policy based on the QoS policy information; and
communicate with the CN utilizing the data session.

37. The UE of claim 36, wherein the processor and the memory are further configured to:
transmit information indicating a request to establish the data session; and
receive the QoS policy information from the CN in response to the request to establish the data session.

38. The UE of claim 36, wherein the processor and the memory are further configured for at least one of:
transmitting an unclassified uplink flow utilizing best-effort delivery;
transmitting an unclassified uplink flow, the unclassified uplink flow comprising an explicit QoS request; or
transmitting an explicit QoS request to the CN utilizing control plane (CP) signaling.

39. A user equipment (UE) configured for wireless communication in a data network, comprising:
means for receiving, from a core network (CN), QoS policy information;

means for receiving an indication of a resource for communicating with the CN utilizing a data session, wherein the data session utilizes a QoS policy based on the QoS policy information; and means for communicating with the CN utilizing the data session.

40. The UE of claim 39, further comprising:
means for transmitting information indicating a request to establish the data session; and means for receiving the QoS policy information from the CN in response to the request to establish the data session.

41. The UE of claim 39, further comprising at least one of:
means for transmitting an unclassified uplink flow utilizing best-effort delivery;
means for transmitting an unclassified uplink flow, the unclassified uplink flow comprising an explicit QoS request; or
means for transmitting an explicit QoS request to the CN utilizing control plane (CP) signaling.

42. A non-transitory computer readable medium storing computer executable code comprising instructions for causing a user equipment (UE) configured for wireless communication in a data network to:
receive, from a core network (CN), quality of service (QoS) policy information;
receive an indication of a resource for communicating with the CN utilizing a data session, wherein the data session utilizes a QoS policy based on the QoS policy information; and communicate with the CN utilizing the data session.

43. The non-transitory computer readable medium of claim 42, further comprising instructions for causing the UE to:
transmit information indicating a request to establish the data session; and
receive the QoS policy information from the CN in response to the request to establish the data session.

44. The non-transitory computer readable medium of claim 42, further comprising at least one of:
instructions for causing the UE to transmit an unclassified uplink flow utilizing best-effort delivery;
instructions for causing the UE to transmit an unclassified uplink flow, the unclassified uplink flow comprising an explicit QoS request; or
instructions for causing the UE to transmit an explicit QoS request to the CN utilizing control plane (CP) signaling.