WHAT IS CLAIMED IS:

1. A method comprising:

under control of a node of a multi-channel communication network:

receiving information to be transmitted to a destination, wherein receiving the information comprises receiving the information from a first neighbor node along with an indication that the information is to be transmitted to the destination;

querying a busy device list maintained in memory of the node, the busy device list including information regarding availability of one or more neighbor nodes and including information indicating a duration that the one or more other neighbor nodes will be busy;

determining a link quality of links between the node and the one or more neighbor nodes;

identifying a second neighbor node, based at least in part on the busy device list and the determined link quality, to receive transmissions and to transmit the information to the destination;

delaying a transmission until a device on the busy device list, having a determined link quality that is higher than a currently available device, becomes available; and

transmitting the information to the identified second neighbor node via the device.

2. The method of claim 1, wherein receiving the information comprises receiving the information from a local metrology module of the node, the information including resource consumption data to be transmitted to the destination.

3. The method of claim 1, wherein the busy device list is maintained at a medium access control (MAC) sub layer of the node.

4. The method of claim 1, further comprising updating the busy device list based on reservation information contained in messages overheard by the node on a control channel of the multi-channel communication network, the reservation information including an indication of nodes that are busy and a duration that they will be busy.

5. The method of claim 4, wherein the messages overheard by the node include:

request-to-send (RTS) messages addressed to other nodes of the multi-channel communication network; and/or

clear-to-send (CTS) messages addressed to other nodes of the multi-channel communication network.

6. The method of claim 1, further comprising:

listening on a control channel of the multi-channel communication network;

overhearing messages transmitted by and/or directed to other nodes on the control channel, the overheard messages indicating unavailability and duration of unavailability of the other nodes; and

updating the busy device list to include the unavailability and duration of unavailability of the other nodes based on the overhead messages.

7. The method of claim 1, wherein transmitting the information to the identified neighbor node comprises:

sending a request-to-send (RTS) message to the identified neighbor node on a control channel, the RTS indicating a size of information to be sent and a data channel on which the information is to be sent;

receiving a clear-to-send (CTS) message from the identified neighbor node, the CTS message indicating that:

the identified neighbor node is available to receive the information;

a confirmation that the data channel on which the information is to be sent is acceptable, or designation of an alternate data channel on which to send the information; and

an anticipated duration of transmission of the information, the anticipated duration of transmission being based on the size of the information and a maximum data rate of transmission between the node and the identified neighbor node; and

sending the information to the identified neighbor node on the data channel confirmed in the CTS or the alternate data channel specified in the CTS.

8. The method of claim 1, wherein the node comprises a smart utility meter.

9. A network computing device comprising:

one or more processors;

memory communicatively coupled to the one or more processors;

a busy device list maintained in the memory of the network computing device, the busy device list indicating an unavailability and duration of unavailability of other network computing devices of a multi-channel communication network;

a qualification module to determine a link quality of links between the network computing device and one or more of the other network computing devices; and

a routing module stored in the memory and executable by the one or more processors to route communications from the network computing device based at least in part on the busy device list, wherein the routing module utilizes availability as indicted by the busy device list and utilizes the link quality of the links as indicated by the qualification module, and wherein the routing of a communication is delayed until a device on the busy device list, having a determined link quality that is higher than a currently available device, becomes available lo route the communication.

10. The network computing device of claim 9, further comprising a multi-channel radio capable of sending and receiving communications on multiple different channels.

11. The network computing device of claim 10, further comprising a frequency hopping module configured to switch between the multiple different channels in accordance with a predefined frequency hopping pattern of the multi-channel

communication network.

12. The network computing device of claim 9, wherein the routing module is further configured to update the busy device list based on reservation information contained in messages overheard by the network computing device on a control channel of the multi-channel communication network, the reservation information including an indication of network computing devices that are busy and a duration that they will be busy.

13. The network computing device of claim 9, further comprising a qualification module stored in the memory and executable on the one or more processors to:

determine a link quality of links between the network computing device and one or more other network computing devices;

qualify one or more of the links between the network computing device and the respective network computing devices in response to the determining that the link quality of the one or more links meets the predetermined threshold quality; and

store a list of qualified links in the memory of the network computing device.

14. The network computing device of claim 9, further comprising a metrology module stored in the memory and executable by the one or more processors to collect resource consumption data from a physical location of the network computing device.

15. The network computing device of claim 14, wherein the resource consumption data comprises electricity consumption data, water consumption data, and/or natural gas consumption data.

16. A network computing device, comprising:

one or more processors;

memory communicatively coupled to the one or more processors;

a busy device list maintained in the memory of the network computing device by operation of the one or more processors, the busy device list indicating availability information and a duration that busy devices will be busy, for one or more neighbor nodes of the network computing device in a multi-channel communication network;

a qualified links list comprising link quality of a predetermined number of links to a subset of the one or more neighbor nodes; and

a routing module stored in the memory and executable by the one or more processors to route communications from the network computing device based at least in part on the busy device list and based at least in part on the qualified links list, wherein a communication is delayed until a device on the busy device list, having a determined link quality that is higher than a currently available device, becomes available and routes the communication.

17. The network computing device of claim 16, further comprising:

a multi-channel radio capable of sending and receiving communications on multiple different channels; and

a frequency hopping module configured to switch between the multiple different channels in accordance with a predefined frequency hopping pattern of the multi-channel communication network.

18. The network computing device of claim 16, wherein the routing module is further configured to update the busy device list based on reservation information contained in messages overheard by the network computing device on a control channel of the multi-channel communication network, the reservation information including an indication of network computing devices that are busy and a duration that they will be busy.

19. The network computing device of claim 16, further comprising a qualification module stored in the memory and executable by the one or more processors to:

determine a link quality of links between the network computing device and one or more other network computing devices;

qualify one or more of the links between the network computing device and the respective network computing devices in response to the determining that the link quality of the one or more links meets the predetermined threshold quality; and

store a list of qualified links in the memory of the network computing device.

20. The network computing device of claim 16, further comprising:

a metrology module stored in the memory and executable by the one or more processors to collect resource consumption data from a physical location of the network computing device;

wherein the resource consumption data comprises electricity consumption data, water consumption data, and/or natural gas consumption data.

WHAT IS CLAIMED IS:

1. A method comprising:

under control of a node of a multi-channel communication network:

receiving information to be transmitted to a destination;

querying a busy device list maintained in memory of the node, the busy device list including information regarding availability of one or more neighbor nodes;

identifying a neighbor node that, according to the busy device list, is available to receive transmissions and is capable of propagating the information to the destination; and

transmitting the information to the identified neighbor node.

2. The method of claim 1, wherein receiving the information comprises receiving the information from a neighbor node along with an indication that the information is to be transmitted to the destination.

3. The method of claim 1, wherein receiving the information comprises receiving the information from a local metrology module of the node, the information including resource consumption data to be transmitted to the destination.

4. The method of claim 1, wherein the busy device list is maintained at a medium access control (MAC) sub layer of the node.

5. The method of claim 1, further comprising updating the busy device list based on reservation information contained in messages overheard by the node on a control channel of the multi-channel communication network, the reservation information including an indication of nodes that are busy and a duration that they will be busy.

6. The method of claim 5, wherein the messages overheard by the node include:

request-to-send (RTS) messages addressed to other nodes of the multi-channel communication network; and/or

clear-to-send (CTS) messages addressed to other nodes of the multi-channel communication network.

7. The method of claim 1, further comprising:

listening on a control channel of the multi-channel communication network;

overhearing messages transmitted by and/or directed to other nodes on the control channel, the overheard messages indicating unavailability and duration of unavailability of the other nodes; and

updating the busy device list to include the unavailability and duration of unavailability of the other nodes based on the overhead messages.

8. The method of claim 1, wherein transmitting the information to the identified neighbor node comprises:

sending a request-to-send (RTS) message to the identified neighbor node on a control channel, the RTS indicating a size of information to be sent and a data channel on which the information is to be sent;

receiving a clear-to-send (CTS) message from the identified neighbor node, the CTS message indicating that:

the identified neighbor node is available to receive the information;

a confirmation that the data channel on which the information is to be sent is acceptable, or designation of an alternate data channel on which to send the information; and

an anticipated duration of transmission of the information, the anticipated duration of transmission being based on the size of the information and a maximum data rate of transmission between the node and the identified neighbor node; and

sending the information to the identified neighbor node on the data channel confirmed in the CTS or the alternate data channel specified in the CTS.

9. The method of claim 1, wherein the node comprises a smart utility meter.

10. One or more computer-readable media of a node of a multi-channel communication network storing instructions that, when executed by one or more processors of the node, configure the node to perform the method of any of the preceding claims.

11. A network computing device comprising:

one or more processors;

memory communicatively coupled to the one or more processors;

a busy device list maintained in the memory of the network computing device, the busy device list indicating an unavailability and duration of unavailability of other network computing devices of a multi-channel communication network; and

a routing module stored in the memory and executable by the one or more processors to route communications from the network computing device based at least in part on the busy device list.

12. The network computing device of claim 11, further comprising:

a multi-channel radio capable of sending and receiving communications on multiple different channels; and

a frequency hopping module configured to switch between the multiple different channels in accordance with a predefined frequency hopping pattern of the multi-channel communication network.

13. The network computing device of claim 11, wherein the routing module is further configured to update the busy device list based on reservation information contained in messages overheard by the network computing device on a control channel of the multi-channel communication network, the reservation information including an indication of network computing devices that are busy and a duration that they will be busy.

14. The network computing device of claim 11, further comprising a qualification module stored in the memory and executable on the one or more processors to:

determine a link quality of links between the network computing device and one or more other network computing devices;

qualify one or more of the links between the network computing device and the respective network computing devices in response to the determining that the link quality of the one or more links meets the predetermined threshold quality; and

store a list of qualified links in the memory of the network computing device.

15. The network computing device of claim 11, further comprising:

a metrology module stored in the memory and executable by the one or more processors to collect resource consumption data from a physical location of the network computing device, wherein the resource consumption data comprises electricity consumption data, water consumption data, and/or natural gas consumption data.