CLAIMS

What is claimed is:

1. A method of transferring data, comprising:

communicating one or more messages via a control channel;

determining, based at least in part on the communicating the one or more messages, a particular data channel from multiple data channels and a modulation technique to be utilized on the particular data channel, the control channel and the multiple data channels being channels on a same network;

switching to the particular data channel based at least in part on the determining the particular data channel;

sending or receiving data via the particular data channel based at least in part on the modulation technique; and

switching to the control channel upon completion of sending or receiving the data via the particular data channel.

2. The method of claim 1, wherein the one or more messages identify the particular data channel, the modulation technique, a data rate of the particular data channel, and a number of data units that will be sent via the particular data channel.

3. The method of claim 1, further comprising:

sending or receiving an acknowledgment indicating that the data was received,

wherein the switching to the control channel includes switching to the control channel in response to sending or receiving the acknowledgement.

4. The method of claim 1, wherein:

the communicating the one or more messages includes sending a message indicating a request to send the data to a node, and

the sending or receiving includes sending the data to the node via the particular data channel.

5. The method of claim 1, wherein:

the communicating the one or more messages includes receiving a message indicating a request to send the data to a node, and

the sending or receiving includes receiving the data at the node via the particular data channel.

6. The method of claim 1, wherein the sending or receiving includes sending or receiving the data via the particular data channel between first and second nodes while other data is transferred between third and fourth nodes via another data channel of the multiple data channels.

7. The method of claim 1, wherein:

the method is implemented by a first node in communication with a second node, and

the determining includes determining the modulation technique to be utilized on the particular data channel based at least in part on capabilities of the first and second nodes.

8. The method of claim 1, wherein:

the method is implemented by a first node in communication with a second node, and

the determining includes determining the modulation technique to be utilized during the sending or receiving of the data based at least in part on a distance from the first node to the second node.

9. The method of claim 1, further comprising:

frequency hopping the control channel over the plurality of channels based on a frequency hopping sequence.

10. The method of claim 1, wherein the one or more messages communicated via the control channel are each smaller in data size than the data sent or received via the particular data channel.

11. The method of claim 1, wherein:

the communicating the one or more messages includes communicating the one or more messages via the control channel at a first data rate, and

the sending or receiving the data includes sending or receiving the data via the particular data channel at a second data rate which is greater than the first data rate.

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

13. A transceiver, comprising:

an antenna to receive and/or transmit signals;

one or more processors; and

memory storing operational logic which when executed causes the one or more processors to perform acts including:

causing a first message to be sent or received via a control channel,

determining, based at least in part on the first message, a particular data channel from multiple data channels and a modulation technique to be utilized on the particular data channel, the control channel and the multiple data channels being channels on a same network,

causing switching to the particular data channel based at least in part on the determining the particular data channel,

causing data to be transferred via the particular data channel based at least in part on the modulation technique, and

causing switching to the control channel after the data has been transferred.

14. The transceiver of claim 13, wherein the transceiver comprises a multiprotocol transceiver configured to send and/or receive multiple different types of modulated signals.

15. The transceiver of claim 13, wherein the causing the first message to be sent or received includes,

causing the first message to be sent a first time via the control channel based at least in part on a first modulation technique, and

causing the first message to be sent a second time via the control channel based

at least in part on a second modulation technique when a response to the first message sent the first time is not received at the transceiver within a predetermined time period, the second modulation technique being different than the first modulation technique.

CLAIMS

WHAT IS CLAIMED IS:

1. A method, comprising:

communicating, between nodes of a network that include at least one different communication capability, one or more messages via a control channel, the at least one different communication capability being due to the nodes comprising different types of devices, different generations of devices, different versions of devices, and/or different models of devices, the one or more messages indicating a maximum data rate that is supported by at least one of the nodes, each of the nodes being associated with a utility meter;

determining, based at least in part on the communicating the one or more messages, a particular data channel from multiple data channels, the control channel and the multiple data channels being channels of the network;

determining a maximum common data rate that is supported by the nodes based at least in part on the one or more messages;

switching to the particular data channel based at least in part on the determining the particular data channel;

sending or receiving, by one of the nodes, data via the particular data channel at the maximum common data rate; and

switching to the control channel upon completion of sending or receiving the data via the particular data channel.

2. The method of claim 1, wherein the one or more messages identify the particular data channel, the modulation technique, and a number of data units that will be sent via the particular data channel.

3. The method of claim 1, further comprising:

sending or receiving an acknowledgment indicating that the data was received,

wherein the switching to the control channel includes switching to the control channel in

response to sending or receiving the acknowledgement.

4. The method of claim 1, wherein:

the communicating the one or more messages includes sending a message indicating a request to send the data to a node of the nodes, and

the sending or receiving includes sending the data to the node via the particular data channel.

5. The method of claim 1, wherein:

the communicating the one or more messages includes receiving a message indicating a request to send the data to a node of the nodes, and

the sending or receiving includes receiving the data at the node via the particular data channel.

6. The method of claim 1, wherein the sending or receiving includes sending or receiving the data via the particular data channel between the nodes while other data is transferred between other nodes via another data channel of the multiple data channels.

7. The method of claim 1, further comprising:

determining a modulation technique to be utilized during the sending or receiving of the data based at least in part on a distance between the nodes.

8. The method of claim 1, further comprising:

frequency hopping the control channel over the plurality of channels based on a frequency hopping sequence.

9. The method of claim 1, wherein the one or more messages communicated via the control channel are each smaller in data size than the data sent or received via the particular data channel.

10. The method of claim 1, wherein:

the communicating the one or more messages includes communicating the one or more messages via the control channel at a data rate that is less than the maximum common data rate.

11. A system, comprising:

a single radio frequency (RF) transceiver configured to implement a plurality of different

modulation techniques and/or data rates;

one or more processors; and

memory storing operational logic which when executed causes the one or more processors to perform acts including:

causing a message to be received by the single RF transceiver via a control channel, the message being received from a node that is associated with a utility meter and specifying a type of the node, a version of the node, a generation of the node, and/or a model of the node, the message indicating a number of data units that will be sent and a maximum data rate that is supported by the node,

determining a particular data channel from multiple data channels, the control channel and the multiple data channels being channels on a same network,

determining, based at least in part on the message, a maximum common data rate that is supported by the node and the system,

causing switching to the particular data channel based at least in part on the determining the particular data channel,

causing the data units to be received by the single RF transceiver via the particular data channel at the maximum common data rate, and

causing switching to the control channel after the data units have been received.

12. The system of claim 11, wherein the data units are received via the particular data channel while one or more other data units are received at another node via another data channel of the multiple data channels.

13. The system of claim 11, wherein the message includes less bits and/or bytes than at least one of the data units.

14. The system of claim 11, wherein:

the message is received via the control channel at a data rate that is less than the maximum common data rate.

15. One or more non-transitory computer-readable media storing computer-executable instructions that, when executed by one or more processors of one of the nodes, cause the one or more processors to perform the method of claim 1.

16. A system, comprising:

a single radio frequency (RF) transceiver configured to implement a plurality of different modulation techniques and/or data rates;

one or more processors; and

memory storing operational logic which when executed causes the one or more processors to perform the method of claim 1 at least in part using the single RF transceiver.

17. One or more non-transitory computer-readable media storing computer-executable instructions that, when executed by one or more processors of a node, cause the one or more processors to perform operations comprising:

sending a message via a control channel to another node, the message specifying a maximum data rate that is supported by the node that is due to a type of the node, a generation of the node, a version of the node, and/or a model of the node, at least one of the node or the other node being associated with a utility meter;

receiving another message via the control channel from the other node indicating that the message was received by the other node, the message and/or the other message specifying a data channel from among a plurality of data channels, the other message specifying a maximum common data rate that is supported by the node and the other node to be used for communicating via the data channel;

in response to receiving the other message, switching to the data channel;

sending data via the data channel to the other node at the maximum common data rate; and

switching to the control channel upon completion of sending the data via the data channel.

18. The one or more non-transitory computer-readable media of claim 17, wherein the sending the message comprises:

sending the message a first time via the control channel based at least in part on a first modulation technique; and

sending the message a second time via the control channel based at least in part on a second modulation technique when a response to the message sent the first time is not received within a predetermined time period, the second modulation technique being different than the first modulation technique.

19. The one or more non-transitory computer-readable media of claim 17, wherein the message is sent via the control channel at a data rate that is less than the maximum common data rate.

20. The one or more non-transitory computer-readable media of claim 17, wherein the message includes a customized payload portion that specifies the maximum data rate that is supported by the node.