WHAT IS CLAIMED IS:

1. A computer-implemented method for discovering potential parent nodes within a wireless mesh network, the method comprising:

determining a first time slot number based on a first estimate of current time;

determining that a discovery process should be executed during a first time slot based on the first time slot number;

determining a first set of channels to use when performing the discovery process based on a plurality of available channels and the first time slot number; and

transmitting one or more packets to a potential parent node during the first time slot and across the first set of channels to establish a communication link with the potential parent node.

2. The computer-implemented method of claim 1, wherein the first estimate of current time comprises a first Universal Coordinated Time (UTC) time value.

3. The computer-implemented method of claim 2, further comprising identifying a sequence of time slots based on a sequence of estimates of current time, wherein the sequence of time slots includes the first time slot and the sequence of estimates of current time includes the first estimate of current time.

4. The computer-implemented method of claim 3, wherein the discovery process is only executed during every Nth time slot included in the sequence of time slots, N being an integer value.

5. The computer-implemented method of claim 1, wherein the one or more packets are transmitted to the potential parent node using a first power setting that is associated with a hybrid mode of operation.

6. The computer-implemented method of claim 1, wherein the one or more packets are transmitted to the potential parent node during the first time slot across each channel included in the first set of channels, and further comprising:

receiving a first packet from the potential parent node, wherein the potential parent node transmits the first packet in response to at least one packet included in the one or more packets; and

identifying the potential parent node based on the first packet.

7. The computer-implemented method of claim 6, wherein the potential parent node transmits the first packet during a response window that begins subsequent to when the first time slot ends.

8. The computer-implemented method of claim 1, wherein the first set of channels includes fewer channels than the plurality of available channels.

9. The computer-implemented method of claim 1, wherein the potential parent node:

determines a second time slot number based on an independent estimate of current time;

determines that the discovery process should be executed during a second time slot based on the second time slot number; and

independently determines the first set of channels based on the plurality of available channels and the second time slot number.

10. The computer-implemented method of claim 9 wherein the first time slot number and the second time slot number have the same value, and the first time slot and the second time slot at least partially overlap with one another.

11. A non-transitory computer-readable medium storing program instructions that, when executed by a processor, cause the processor to discover potential parent nodes within a wireless mesh network by performing the steps of:

determining a first time slot number based on a first estimate of current time;

determining that a discovery process should be executed during a first time slot based on the first time slot number;

determining a first set of channels to use when performing the discovery process based on a plurality of available channels and the first time slot number; and

transmitting one or more packets to a potential parent node during the first time slot and across the first set of channels to establish a communication link with the potential parent node.

12. The non-transitory computer-readable medium of claim 11, further comprising identifying a sequence of time slots based on a sequence of estimates of current time, wherein the sequence of time slots includes the first time slot, the sequence of estimates of current time includes the first estimate of current time, and the discovery process is only executed during a subset of time slots included in the sequence of time slots.

13. The non-transitory computer-readable medium of claim 11, wherein the one or more packets are transmitted to the potential parent node during only a first interval within the first time slot.

14. The non-transitory computer-readable medium of claim 11, wherein the one or more packets are transmitted to the potential parent node using a first power setting that is associated with a hybrid mode of operation.

15. The non-transitory computer-readable medium of claim 11, wherein the one or more packets are transmitted to the potential parent node during the first time slot across each channel included in the first set of channels, and further comprising:

receiving a first packet from the potential parent node, wherein the potential parent node transmits the first packet in response to at least one packet included in the one or more packets; and

identifying the potential parent node based on the first packet, wherein the potential parent node transmits the first packet using a first channel included in the plurality of available channels.

16. A system, comprising:

a potential parent node that resides within a wireless mesh network; and

a discovering node that resides within the wireless mesh network and performs the steps of:

determining a first time slot number based on a first estimate of current

time,

determining that a discovery process should be executed during a first time slot based on the first time slot number,

determining a first set of channels to use when performing the discovery process based on a plurality of available channels and the first time slot number, and

transmitting one or more packets to the potential parent node during the first time slot and across the first set of channels to establish a communication link with the potential parent node.

17. The system of claim 16, wherein the discovering node transmits the one or more packets during the first time slot across each channel included in the first set of channels, and further comprising:

receiving a first packet from the potential parent node; and

identifying the potential parent node based on the first packet.

18. The system of claim 17, wherein the potential parent node performs the additional step of transmitting the first packet to the discovering node in response to at least one packet included in the one or more packets.

19. The system of claim 18, wherein the first packet is transmitted using a first channel included in the plurality of available channels and during a response window that begins subsequent to when the first time slot ends.

20. The system of claim 16, wherein the discovering node includes:

a memory storing a software application; and

a processor that, upon executing the software application, is configured to perform the steps of:

determining the first time slot number,

determining that the discovery process should be executed,

determining the reduced set of channels, and

transmitting the one or more packets to the potential parent node.

WHAT IS CLAIMS IS:

1. A computer-implemented method for discovering potential parent nodes within a wireless mesh network, the method comprising:

determining a first time slot number included in a plurality of time slot numbers based on a first estimate of current time, wherein each time slot number included in the plurality of time slot numbers corresponds to a different time slot included a plurality of time slots;

determining that a discovery process should be executed during a first time slot based on the first time slot number and that the discovery process should not be executed during a second time slot included in the plurality of time slots based on a second time slot number corresponding to the second time slot;

determining a first set of channels to use when performing the discovery process based on a plurality of available channels and the first time slot number; and

transmitting one or more packets to a potential parent node during the first time slot and across the first set of channels to establish a communication link with the potential parent node.

2. The computer-implemented method of claim 1, wherein the first estimate of current time comprises a first Universal Coordinated Time (UTC) time value.

3. The computer-implemented method of claim 2, further comprising identifying a sequence of time slots based on a sequence of estimates of current time, wherein the sequence of time slots includes the first time slot and the sequence of estimates of current time includes the first estimate of current time.

4. The computer-implemented method of claim 3, wherein the discovery process is only executed during every Nth time slot included in the sequence of time slots, N being an integer value.

5. The computer-implemented method of claim 1, wherein the one or more packets are transmitted to the potential parent node using a first power setting that is associated with a hybrid mode of operation.

6. The computer implemented method of claim 1, wherein the one or more packets are transmitted to the potential parent node during the first time slot across each channel included in the first set of channels, and further comprising:

receiving a first packet from the potential parent node, wherein the potential parent node transmits the first packet in response to at least one packet included in the one or more packets; and

identifying the potential parent node based on the first packet.

7. The computer-implemented method of claim 6, wherein the potential parent node transmits the first packet during a response window that begins subsequent to when the first time slot ends.

8. The computer-implemented method of claim 1, wherein the first set of channels includes fewer channels than the plurality of available channels.

9. The computer-implemented method of claim 1, wherein the potential parent node:

determines a third time slot number based on an independent estimate of current time;

determines that the discovery process should be executed during a third time slot based on the third time slot number; and

independently determines the first set of channels based on the plurality of available channels and the third time slot number.

10. The computer-implemented method of claim 9 wherein the first time slot number and the third time slot number have the same value, and the first time slot and the third time slot at least partially overlap with one another.

11. One or more non-transitory computer-readable media storing program instructions that, when executed by one or more processors, cause the one or more processors to discover potential parent nodes within a wireless mesh network by performing the steps of:

determining a first time slot number included in a plurality of time slot numbers based on a first estimate of current time, wherein each time slot number included in the plurality of time slot numbers corresponds to a different time slot included a plurality of time slots;

determining that a discovery process should be executed during a first time slot based on the first time slot number and that the discovery process should not be executed during a second time slot included in the plurality of time slots based on a second time slot number corresponding to the second time slot;

determining a first set of channels to use when performing the discovery process based on a plurality of available channels and the first time slot number; and

transmitting one or more packets to a potential parent node during the first time slot and across the first set of channels to establish a communication link with the potential parent node.

12. The one or more non-transitory computer-readable media of claim 11, further comprising identifying a sequence of time slots based on a sequence of estimates of current time, wherein the sequence of time slots includes the first time slot, the sequence of estimates of current time includes the first estimate of current time, and the discovery process is only executed during a subset of time slots included in the sequence of time slots.

13. The one or more non-transitory computer-readable media of claim 11, wherein the one or more packets are transmitted to the potential parent node during only a first interval within the first time slot.

14. The one or more non-transitory computer-readable media of claim 11, wherein the one or more packets are transmitted to the potential parent node using a first power setting that is associated with a hybrid mode of operation.

15. The one or more non-transitory computer-readable media of claim 11, wherein the one or more packets are transmitted to the potential parent node during the first time slot across each channel included in the first set of channels, and further comprising:

receiving a first packet from the potential parent node, wherein the potential parent node transmits the first packet in response to at least one packet included in the one or more packets; and

identifying the potential parent node based on the first packet, wherein the potential parent node transmits the first packet using a first channel included in the plurality of available channels.

16. A system, comprising:

a potential parent node that resides within a wireless mesh network; and

a discovering node that resides within the wireless mesh network and performs the steps of:

determining a first time slot number included in a plurality of time slot numbers based on a first estimate of current time, wherein each time slot number included in the plurality of time slot numbers corresponds to a different time slot included a plurality of time slots,

determining that a discovery process should be executed during a first time slot based on the first time slot number and that the discovery process should not be executed during a second time slot included in the plurality of time slots based on a second time slot number corresponding to the second time slot,

determining a first set of channels to use when performing the discovery process based on a plurality of available channels and the first time slot number, and

transmitting one or more packets to the potential parent node during the first time slot and across the first set of channels to establish a communication link with the potential parent node.

17. The system of claim 16, wherein the discovering node transmits the one or more packets during the first time slot across each channel included in the first set of channels, and further comprising:

receiving a first packet from the potential parent node; and

identifying the potential parent node based on the first packet.

18. The system of claim 17, wherein the potential parent node performs the additional step of transmitting the first packet to the discovering node in response to at least one packet included in the one or more packets.

19. The system of claim 18, wherein the first packet is transmitted using a first channel included in the plurality of available channels and during a response window that begins subsequent to when the first time slot ends.

20. The system of claim 16, wherein the discovering node includes:

a memory storing a software application; and

a processor that, upon executing the software application, is configured to perform the steps of:

determining the first time slot number,

determining that the discovery process should be executed,

determining the first set of channels, and

transmitting the one or more packets to the potential parent node.

21. The one or more non-transitory computer-readable media of claim 11, further comprising:

determining a third time slot number based on a second estimate of current time, wherein the second estimate of current time is different from the estimate of current time;

determining that a second discovery process should be executed during a third time slot based on the third time slot number;

determining a second set of channels to use when performing the second discovery process based on the plurality of available channels and the third time slot number, wherein the second set of channels is different from the first set of channels; and

transmitting one or more packets to at least one potential parent node during the third time slot and across the second set of channels to establish a communication link with the at least one potential parent node.