CLAIMS

1. A method for wireless communication by a wireless communication device, comprising:

establishing a primary communication link between the wireless communication device and a second wireless device, the primary communication link being associated with one or more first wireless channels, access to the primary communication link being based on contention among the wireless communication device and the second wireless device;

selectively accessing a secondary communication link between the wireless communication device and the second wireless device based at least in part on having access to the primary communication link, the secondary communication link being associated with one or more second wireless channels; and

selectively reassigning the primary communication link from the one or more first wireless channels to the one or more second wireless channels based at least in part on one or more channel conditions of the first wireless channels or the second wireless channels.

2. The method of claim 1, wherein the one or more channel conditions includes an indication of an amount of activity on the first or second wireless channels, and wherein the selectively reassigning comprises:

reassigning the primary communication link to the one or more second wireless channels when the indication of the amount of activity on the first wireless channels is above a first threshold level, the indication of the amount of activity on the second wireless channels is below a second threshold level, the indication of the amount of activity on the first wireless channels exceeds the amount of activity on the second wireless channels, or a combination thereof.

3. The method of claim 2, wherein the amount of activity is based on a frequency of busy channel conditions on the first or second wireless channels or a number of failed attempts to access the first or second wireless channels.

4. The method of claim 1, wherein the selectively reassigning comprises:

transmitting primary link information to the second wireless device, the primary link

information indicating a change in the primary communication link.

5. The method of claim 4, wherein transmitting the primary link information includes broadcasting the primary link information in a first beacon frame on the one or more first wireless channels.

6. The method of claim 5, wherein the selectively reassigning further comprises:

broadcasting the primary link information, in a second beacon frame, on the one or more second wireless channels.

7. The method of claim 4, wherein transmitting the primary link information includes transmitting a data frame, a management frame, or a control frame, the data frame, management frame or control frame including an Operating Mode Indication (OMI) control field that includes the primary link information.

8. The method of claim 4, further comprising receiving an uplink transmission from the second wireless device, wherein transmitting the primary link information includes transmitting a trigger message to the second wireless device in response to the uplink transmission, the trigger message including the primary link information.

9. The method of claim 4, wherein transmitting the primary link information includes transmitting a trigger message to the second wireless device based at least in part on a target wake time (TWT) service period for the second wireless device, the trigger message including the primary link information.

10. The method of claim 4, wherein the primary link information further indicates a primary-switching time at which the change is to occur, and wherein the selectively reassigning comprises reassigning the primary communication link to the one or more second wireless channels at the primary-switching time.

11. The method of claim 10, wherein the primary-switching time coincides with at least

one of a target beacon transmission time (TBTT) or a target wake time (TWT) service period of the second wireless device, and wherein the primary link information further includes a countdown timer indicating a number of TBTTs or TWTs remaining until the primary-switching time.

12. A wireless communication device, comprising:

one or more processors; and

a memory storing instructions that, when executed by the one or more processors, cause the wireless communication device to:

establish a primary communication link between the wireless communication device and a second wireless device, the primary communication link being associated with one or more first wireless channels, access to the primary communication link being based on contention among the wireless communication device and the second wireless device;

selectively access a secondary communication link between the wireless communication device and the second wireless device based at least in part on having access to the primary communication link, the secondary communication link being associated with one or more second wireless channels; and

selectively reassign the primary communication link from the one or more first wireless channels to the one or more second wireless channels based at least in part on one or more channel conditions of the first wireless channels or the second wireless channels.

13. The wireless communication device of claim 12, wherein the one or more channel conditions includes an indication of an amount of activity on the first or second wireless channels, and wherein execution of the instructions for selectively reassigning the primary communication link causes the wireless communication device to reassign the primary communication link to the one or more second wireless channels when the indication of the amount of activity on the first wireless channels is above a first threshold level, the indication of the amount of activity on the second wireless channels is below a second threshold level, the indication of the amount of activity on the first wireless channels exceeds the amount of activity on the second wireless channels, or a combination thereof.

14. The wireless communication device of claim 12, wherein the execution of the

instructions for selectively reassigning the primary communication link causes the wireless communication device to:

transmit primary link information to the second wireless device, the primary link information indicating a change in the primary communication link.

15. The wireless communication device of claim 14, wherein execution of the instructions for transmitting the primary link information causes the wireless communication device to broadcast the primary link information in a beacon frame on the one or more first wireless channels or the one or more second wireless channels.

16. The wireless communication device of claim 14, wherein execution of the instructions for transmitting the primary link information causes the wireless communication device to transmit a trigger message to the second wireless device in response to an uplink transmission or based at least in part on a target wake time (TWT) service period for the second wireless device, the trigger message including the primary link information.

17. The wireless communication device of claim 14, wherein the primary link information further indicates a primary-switching time at which the change is to occur, and wherein execution of the instructions for selectively reassigning the primary communication link further causes the wireless communication device to reassign the primary communication link to the one or more second wireless channels at the primary-switching time, wherein the primary-switching time coincides with at least one of a target beacon transmission time (TBTT) or a TWT of the second wireless device, and wherein the primary link information further includes a countdown timer indicating a number of TBTTs or TWTs remaining until the primary-switching time.

18. A method performed by a wireless station (STA), comprising:

establishing a primary communication link between the STA and an access point (AP), the primary communication link being associated with one or more first wireless channels, access to the primary communication link being based on contention among the STA and the AP;

selectively accessing a secondary communication link between the STA and the AP based

at least in part on having access to the primary communication link, the secondary communication link being associated with one or more second wireless channels;

receiving primary link information from the AP indicating a change in the primary communication link; and

dynamically changing the primary communication link from the one or more first wireless channels to the one or more second wireless channels based at least in part on the primary link information.

19. The method of claim 18, wherein the receiving comprises receiving a beacon frame broadcast by the AP, the beacon frame including the primary link information.

20. The method of claim 18, wherein the receiving comprises receiving a data frame, a management frame, or a control frame transmitted by the AP, the data frame, management frame, or control frame including an Operating Mode Indication (OMI) control field that includes the primary link information.

21. The method of claim 18, wherein the receiving comprises:

waking up from a power save state; and

receiving a trigger message from the AP after waking up from the power save state, the trigger message including the primary link information.

22. The method of claim 21, wherein receiving the trigger message comprises:

initiating an uplink transmission to the AP upon waking up from the power save state, the trigger message being received from the AP in response to the uplink transmission.

23. The method of claim 18, wherein the primary link information further indicates a primary-switching time at which the change is to occur, and wherein the dynamically changing comprises changing the primary communication link to the one or more second wireless channels at or after the primary-switching time.

24. The method of claim 23, wherein the primary-switching time coincides with at least

one of a target beacon transmission time (TBTT) or a target wake time (TWT) of the STA, and wherein the primary link information further includes a countdown timer indicating a number of TBTTs or TWTs remaining until the primary-switching time.

25. The method of claim 23, wherein the dynamically changing further comprises:

entering a power save state after receiving the primary link information;

waking up from the power save state at or after the primary-switching time; and

using the one or more second wireless channels for the primary communication link upon waking up from the power save state.

26. A wireless station (STA), comprising:

one or more processors; and

a memory storing instructions that, when executed by the one or more processors, cause the STA to:

establish a primary communication link between the STA and an access point (AP), the primary communication link being associated with one or more first wireless channels, access to the primary communication link being based on contention among the STA and the AP;

selectively access a secondary communication link between the STA and the AP based at least in part on having access to the primary communication link, the secondary communication link being associated with one or more second wireless channels;

receive primary link information from the AP indicating a change in the primary communication link; and

dynamically change the primary communication link from the one or more first wireless channels to the one or more second wireless channels based at least in part on the primary link information.

27. The wireless station of claim 26, wherein execution of the instructions for receiving the primary link information from the AP causes the STA to:

wake up from a power save state;

initiate an uplink transmission to the AP upon waking up from the power save state; and

receive a trigger message from the AP in response to the uplink transmission, the trigger message including the primary link information.

28. The wireless station of claim 26, wherein the primary link information further indicates a primary-switching time at which the change is to occur, and wherein execution of the instructions for dynamically changing the primary communication link causes the STA to change the primary communication link to the one or more second wireless channels at or after the primary-switching time.

29. The wireless station of claim 28, wherein the primary-switching time coincides with at least one of a target beacon transmission time (TBTT) or a target wake time (TWT) of the STA, and wherein the primary link information further includes a countdown timer indicating a number of TBTTs or TWTs remaining until the primary-switching time.

30. The wireless station of claim 28, wherein execution of the instructions for dynamically changing the primary communication link further causes the STA to:

enter a power save state after receiving the primary link information;

wake up from the power save state at or after the primary-switching time; and

use the one or more second wireless channels for the primary communication link upon waking up from the power save state.