

The DPS operation allows a DPS STA to operate in lower capability (LC) mode and to transition to higher capability (HC) mode upon reception of an ICF [TBD] transmitted by its associated DPS assisting STA. The DPS STA in higher capability (HC) mode transitions back to the LC mode under TBD conditions.

A DPS STA that is in LC mode shall be capable of receiving TBD PPDU (e.g., with non-HT (duplicate) format using a rate of 6 Mb/s, 12 Mb/s, 24Mb/s [TBD]). A DPS STA that is in HC mode (e.g., operating BW, NSS and MCSs) shall be capable of receiving all supported PPDU formats corresponding to the HC mode.

A DPS assisting STA shall solicit the transition of the peer DPS STA to HC mode by sending an ICF, which is transmitted in non-HT (duplicate) PPDU using a rate of 6 Mb/s, 12 Mb/s, or 24 Mb/s [TBD]. The ICF addressed to the DPS STA shall include an intermediate FCS field if the DPS STA has indicated a non zero DPS padding delay and shall include sufficient padding to ensure that the padding requirement(s) of the DPS STA(s) that are addressed by that ICF are satisfied as defined in 37.20 (Padding for an ICF). It is TBD whether a DPS assisting STA shall initiate any frame exchange with a DPS STA by sending an ICF or only some frame exchanges.

37.15.2 Multi-Link power management signaling

A non-AP MLD that has dot11UHRMLPMImplemented set to 1 supports Multi-Link power management signaling, is called an MLPM non-AP MLD and shall set to 1 the Multi-Link Power Management Support field in the UHR MAC Capabilities Information field in Management frames that it transmits.

An AP MLD that has dot11UHRMLPMImplemented set to 1 supports Multi-Link power management signaling, is called an MLPM AP MLD and shall set to 1 the Multi-Link Power Management Support field in the UHR MAC Capabilities Information field in Management frames that it transmits.

A non-AP STA affiliated with an MLPM non-AP MLD may transmit a frame that carries an MLPM Control field to indicate the power management mode of the other non-AP STA(s) affiliated with the same non-AP MLD and operating on an enabled link. (Signaling TBD)

A non-AP STA affiliated with the MLPM non-AP MLD, for which a power management mode change has been indicated through the MLPM signaling, follows the rules defined in 11.2.3.2 (non-AP STA power management modes) for that changed power management mode.

If an MLPM AP MLD receives, via an affiliated AP, a power management mode change for a non-AP STA affiliated with an associated MLPM non-AP MLD and operating on an enabled link, then the AP affiliated with the MLPM AP MLD and operating on the corresponding enabled link follows the rules defined in 11.2.3.6 (AP operation) and 35.3.12 (ML power management) for the changed power management mode of the non-AP STA, as if it had received, on the link, a frame, from the non-AP STA, that indicates the same power management change.

37.16 Non-primary channel access (NPCA)

A STA that supports NPCA operation is called an NPCA STA. An AP that supports NPCA operation is called an NPCA AP. A non-AP NPCA STA shall set the NPCA Supported field of the UHR MAC Capabilities Information field of the UHR Capabilities element to 1. A non-AP NPCA STA may enable the NPCA mode only if it is associated with an NPCA AP. It is TBD how the non-AP STA enables NPCA mode.

An NPCA AP that has an operating bandwidth less than TBD (but either 80 or 160 MHz) shall not enable NPCA operation. An AP of a multiple BSSID set which enables NPCA operation shall indicate the same NPCA primary channel as all of the other APs of the same multiple BSSID set which have enabled NPCA operation.

1 An NPCA AP that has enabled NPCA operation shall include the NPCA Operation Information field in its
 2 UHR Operation element and indicate its NPCA switching delay and NPCA switch back delay respectively
 3 in the NPCA Switching Delay field and NPCA Switch Back Delay field of the TBD frames.
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 6 (#2697) An NPCA AP with dot11HEPSROptionImplemented set to true shall set the TXVECTOR parameter
 7 SPATIAL_REUSE to PSR_DISALLOW for PPDU that it transmits, and shall set the PSR Disallowed
 8 subfield in the SR Control field of the Spatial Reuse Parameter Set element to 1 in Management frames it
 9 transmits before enabling NPCA operation in its BSS and while NPCA operation remains enabled.
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 12 A non-AP STA that supports NPCA operation shall announce its NPCA switching delay and NPCA switch
 13 back delay respectively in the NPCA Switching Delay field and NPCA Switch Back Delay fields of the
 14 TBD frames.
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 17 An NPCA AP may enable a mode of operation in which untriggered UL transmissions on the NPCA
 18 primary channel by NPCA non-AP STAs is not permitted. Whether the mode is for all associated non-APs
 19 or per non-AP is TBD. Whether MU EDCA parameters mechanism is used for this or not is TBD.
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 22 A non-AP NPCA STA shall not switch to the NPCA primary channel for NPCA operation if the value of the
 23 most recently received NPCA Operation Information Present field from its associated AP is equal to 0. An
 24 NPCA AP shall not switch to the NPCA primary channel for NPCA operation if the value of its most
 25 recently transmitted NPCA Operation Information Present field is equal to 0.
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27
 28 An NPCA STA may switch to the NPCA primary channel for NPCA operation if the value of the most
 29 recently received or transmitted NPCA Operation Information Present field corresponding to the BSS of
 30 which it is a member is equal to 1 and either condition 1) or 2) is met:

- 31 1) the STA received a PPDU and/or received a PHY-RXSTART.indication primitive for an HE/
 32 EHT/UHR PPDU on the BSS primary channel and all of the following conditions are true:
 33
 - 34 a. the PPDU is classified by the STA as an inter-BSS PPDU following the procedure defined
 35 in 26.2.2 (Intra-BSS and inter-BSS PPDU classification).
 36
 - 37 b. the duration of the PPDU, (determined by the MAC in a manner TBD, but necessarily
 38 involving some of the parameters of the RXVECTOR associated with the received PPDU)
 39 or the duration of the PPDU plus the value of the RXVECTOR parameter
 40 TXOP_DURATION of the PPDU, is greater than the value indicated in the most recently
 41 received or transmitted NPCA Minimum Duration Threshold field corresponding to the
 42 BSS of which it is a member.
 43
 - 44 i) whether the RXVECTOR parameter TXOP_DURATION of the PPDU is considered
 45 for this comparison and whether it is indicated by the AP is TBD.
 46
 - 47 c. the 20/40/80/160 MHz channel occupied by the PPDU is identified by the STA, based on
 48 the Bandwidth field in the PHY preamble of the PPDU and the channel allocations in the
 49 corresponding band, and the channel occupied by the PPDU does not overlap with the
 50 NPCA primary channel.
 51
 - 52 d. TBD conditions.
- 53 2) the STA received a PPDU containing a Control frame and a PPDU containing an initial
 54 response frame of a Control frame exchange on the BSS primary channel and all of the
 55 following conditions apply:
 56
 - 57 a. the received PPDU(s) are classified by the STA as inter-BSS PPDU(s) following the
 58 procedure defined in 26.2.2 (Intra-BSS and inter-BSS PPDU classification).
 59
 - 60 b. the TXOP duration, determined from the Duration field of the received frame(s), is greater
 61 than the value indicated in the most recently received or transmitted NPCA Minimum
 62 Duration Threshold field corresponding to its BSS.
 63
 64
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- i) Whether the RXVECTOR parameter TXOP_DURATION of the received PPDU(s) are considered for this comparison is **TBD**.
- c. the 20/40/80/160 MHz channel occupied by the received PPDU(s), identified by the STA based on the channel allocations in the corresponding band and the PPDU bandwidth that is signaled in the received PPDU(s) or obtained from the RXVECTOR parameter CH_BANDWIDTH_IN_NON_HT of the received PPDU(s), does not overlap with the NPCA primary channel.
 - i) if the Control frame is an RTS frame in a non-HT (duplicate) PPDU, then it includes a bandwidth signaling TA and the signaled PPDU bandwidth is 20 MHz, 40 MHz, 80 MHz, or 160 MHz.
 - ii) identification of the channel occupied by a received CTS frame in a non-HT (duplicate) PPDU is determined by examining the RTS frame or the MU-RTS frame that elicited the CTS response.
- d. **TBD conditions.**

When an NPCA STA switches to the NPCA primary channel for NPCA operation, then the following rules apply:

- 1) If the STA switches from the BSS primary channel to the NPCA primary channel based on a meeting condition 1) above, the STA shall initiate the switch at the NPCA HE switch time and it shall be ready to transmit and receive frames (subject to its capabilities and operating mode) on the NPCA primary channel no later than the value of its most recently indicated NPCA switching delay after the NPCA HE switch time, where NPCA HE switch time is defined as follows:
 - a. **TBD.**
- 2) If the STA switches from the BSS primary channel to the NPCA primary channel based on meeting condition 2) above, the STA shall initiate the switch at the NPCA NHT switch time and it shall be ready to transmit and receive frames addressed to it (subject to its capabilities and operating mode) on the NPCA primary channel no later than the value of its most recently indicated NPCA switching delay after the NPCA NHT switch time, where NPCA NHT switch time is defined as follows:
 - a. **TBD.**
- 3) The STA shall use the same EDCA parameter set, MU EDCA parameter set, and EPCS EDCA parameter set values for operation on the NPCA primary channel as it uses on the BSS primary channel.
- 4) Once the STA becomes ready to transmit on the NPCA primary channel, the STA may initiate a TXOP on the NPCA primary channel by following the rules defined in 10.23.2.2 (EDCA backoff procedure) and 10.23.2.4 (Obtaining an EDCA TXOP) with the following exceptions:
 - a. Each time that the STA switches to the NPCA primary channel, it shall initialize CW_NPCA[AC] to **TBD** value and randomly choose a new initial value between 0 and CW_NPCA[AC] for the backoff counter (BO_NPCA[AC]).
 - b. QSRC_NPCA[AC] shall be set to 0.
 - c. If the STA is a non-AP STA and the associated AP has disabled the use of untriggered UL transmissions on the NPCA primary channel for that STA, then the STA shall not initiate a TXOP on the NPCA primary channel.

NOTE—The baseline EDCA procedure is followed on the BSS primary channel. The values of CW_NPCA[AC] and BO_NPCA[AC] are discarded by the NPCA STA when it switches back to the BSS primary channel.

- 5) The STA shall not initiate a transmission on the NPCA primary channel to another STA until that STA's NPCA switching delay time has elapsed since the NPCA HE switch time if switching due to condition 1) above or NPCA NHT switch time if switching due to condition 2) above.

- 6) The STA shall begin all frame exchanges on the NPCA primary channel with an NPCA ICF using non-HT PPDU or non-HT duplicate PPDU format using a rate of 6 Mb/s, 12 Mb/s, or 24 Mb/s.
 - a. Details on the NPCA ICF are **TBD**.
- 7) An NPCA AP that transmits a Trigger frame on the NPCA primary channel shall indicate RU index values that use the NPCA primary channel as the reference primary channel. The Trigger frame shall include an explicit indication that it is being transmitted on the NPCA primary channel. Signaling details **TBD**.
- 8) The 20 MHz channels occupied by PPDU transmitted by the STA shall meet all of the following conditions:
 - a. include at least the NPCA primary channel.
 - b. all be within the BSS bandwidth.
 - c. not include any of the channels occupied by the inter-BSS traffic that caused the STA to switch from the BSS primary channel to the NPCA primary channel.
 - d. not include channels that are indicated as punctured in the Disabled Subchannel Bitmap field in the EHT Operation element.
 - e. It is **TBD** whether a frame that solicits a response other than TB PPDU can puncture 20 MHz subchannels not indicated as punctured in the Disabled Subchannel Bitmap field of the EHT Operation element.

37.17 Unavailability reporting and parameter updates

37.17.1 General

The unavailability reporting and parameter updates subclause describes a set of mechanisms that allow a STA to inform a peer STA of its unavailabilities. Subclause 37.17.2 (Dynamic Unavailability Operation (DUO) mode) describes how a non-AP STA can indicate unavailability in certain Control frames, where the unavailability might overlap with the ongoing TXOP. Subclause 37.17.3 (Non-AP STA periodic unavailability operation (PUO) mode) describes how a non-AP STA can inform its associated AP about periodic service periods where the STA will be unavailable. Subclause 37.17.4 (AP PUO mode) describes how and under which conditions an AP can operate its BSS with periodic service period(s) during which the AP will be unavailable. Finally, Subclause 37.17.5 (Non-AP STA Parameter Update mechanism) describes a parameter update mechanism that allows a non-AP STA to limit its operation capabilities when experiencing in-device coexistence issues.

37.17.2 Dynamic Unavailability Operation (DUO) mode

A non-AP STA that has dot11DUOOptionImplemented equal to 1 supports DUO, is called a DUO non-AP STA and shall set the DUO Supported field of the UHR MAC Capabilities Information field of the UHR Capabilities element to 1. An AP STA that has dot11DUOOptionImplemented equal to 1 supports DUO, is called a DUO Supporting AP and shall set the DUO Supported field of the UHR MAC Capabilities Information field of the UHR Capabilities element to 1.

To enable DUO mode with its associated DUO Supporting AP:

- The DUO non-AP STA shall transmit to the AP an **TBD Request frame (TBD)** with the DUO Mode subfield in the frame set to 1
- The AP shall transmit an **TBD Response frame**, after the AP is ready to serve the non-AP STA in DUO operation, as a response to the received **TBD Request frame**, to the non-AP STA.
- It is **TBD** whether the AP can reject the request to enable the DUO mode at the STA side and the enablement procedure is **TBD**.