TO: Carlos Bonilla
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FCC Equipment Authorization Branch

From: Christopher Moritz
Sr. Director System Engineering
Axxcelera Broadband Wireless

RE: OJB-APC4-365, Correspondence Number 38985, Confirmation Number EA886705

Date: June 25, 2010

Mr. Bonilla,

We've received your latest correspondence with the following question:

Our understanding is that the dedicated 20 usec period is a guaranteed quiet period used by the base station to monitor the channel for other contention activity and to declare a contention interval state, however you also state that the base station also listens prior to every transmission and if interference is detected it also declares a contention interval state. In either case (in the dedicated quiet periods or prior to each transmission) you state that the access point will continue to measure the channel activity level during the contention interval state and will resume transmission if the link is idle (time not stated) or if the contention interval expires. What happens in the monitoring time to determine a contention state and what happens in the case when the contention interval expires and the channel is busy? Your description indicates that your system transmits even if the channel is still occupied.

The dedicated 20usec period is a guaranteed quiet period that occurs in every frame, and immediately precedes the portion of the frame used by the access point for data transmission. In that regard, we listen before every transmission. There is no separate additional listening period apart from the 20usec timeslot.

Once a contention interval is initiated, the access point will resume transmission when the channel is determined to be available or the contention interval timer expires, whichever occurs first. During the contention interval, the access point monitors the channel (20usec timeslot) for an available transmission opportunity, and even though the contention interval timer may not have yet expired, will resume transmission if the channel is determined to be available. If the contention interval does expire, and assuming the channel remains busy, only a single transmission burst will occur, followed by immediate entry into a new contention interval.

The probability that the contention interval timer expires before a clear transmission opportunity is found is directly proportional to the channel duty cycle and inversely proportional to length of the contention interval. The goal of fair channel sharing implies no system should consume the channel with a very high or 100% duty cycle indefinitely. The likelihood of finding a clear transmission opportunity, before expiration of an active Contention interval, increases as the detect-and-backoff cycle repeats itself.

Thank you for your consideration Carlos, and please let us know of any additional questions.

Best Regards,

Christopher Moritz
Sr. Director System Engineering
Axxcelera Broadband Wireless