

Project: IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs)

Submission Title: [Comment resolution for CID 400 related to turnaround time]

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Re: [Response to LB50 comments]

Abstract: [This document describes the comment resolution for CID 400 related to turnaround time]

Purpose: [To resolve the LB technical comment of CID 400]

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Comment resolution for CID 400 related to turnaroud time

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CID 400

CID	Name	Clause	Subclause	Page	Line	Type	Comment	SuggestedRemedy
400	Cristina Seibert	6	6.5.1	45	24	T	A turnaround time of 0 symbols does not seem feasible. This constant appears to get used in the MAC ACK timing, thus an appropriate value should be chosen that gives the PHY enough time to finish processing and turn around the chains.	Set constant aTurnaroundTime to appropriate value for this PHY

Table 24—PHY constants

Constant	Description	Value
aMaxPHYPacketSize	The maximum PSDU size (in octets) the PHY shall be able to receive.	64 kB
aTurnaroundTime	RX-to-TX or TX-to-RX maximum turnaround time (see 6.9.1 and 6.9.2)	zero symbol periods

Turnaroundtime described in D1

- 6.9.1 TX-to-RX turnaround time
 - The TX-to-RX turnaround time shall be less than *aTurnaroundTime* (see 6.5.1).
 - The TX-to-RX turnaround time shall be measured at the air interface from the trailing edge of the last transmitted symbol until the receiver is ready to begin the reception of the next PHY packet.

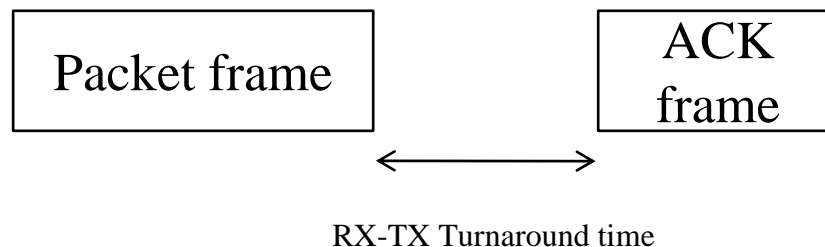
- 6.9.2 RX-to-TX turnaround time
 - The RX-to-TX turnaround time shall be less than *aTurnaroundTime* (see 6.5.1).
 - The RX-to-TX turnaround time shall be measured at the air interface from the trailing edge of the last chip (of the last symbol) of a received packet until the transmitter is ready to begin transmission of the resulting acknowledgment. Actual transmission start times are specified by the MAC sublayer.

TX-to-RX turnaround time

- TX-to-RX turnaround time described in the clause 6.9.1 seems to be a propagation time.
 - So, we think this value might be zero symbol periods.

RX-to-TX turnaround time

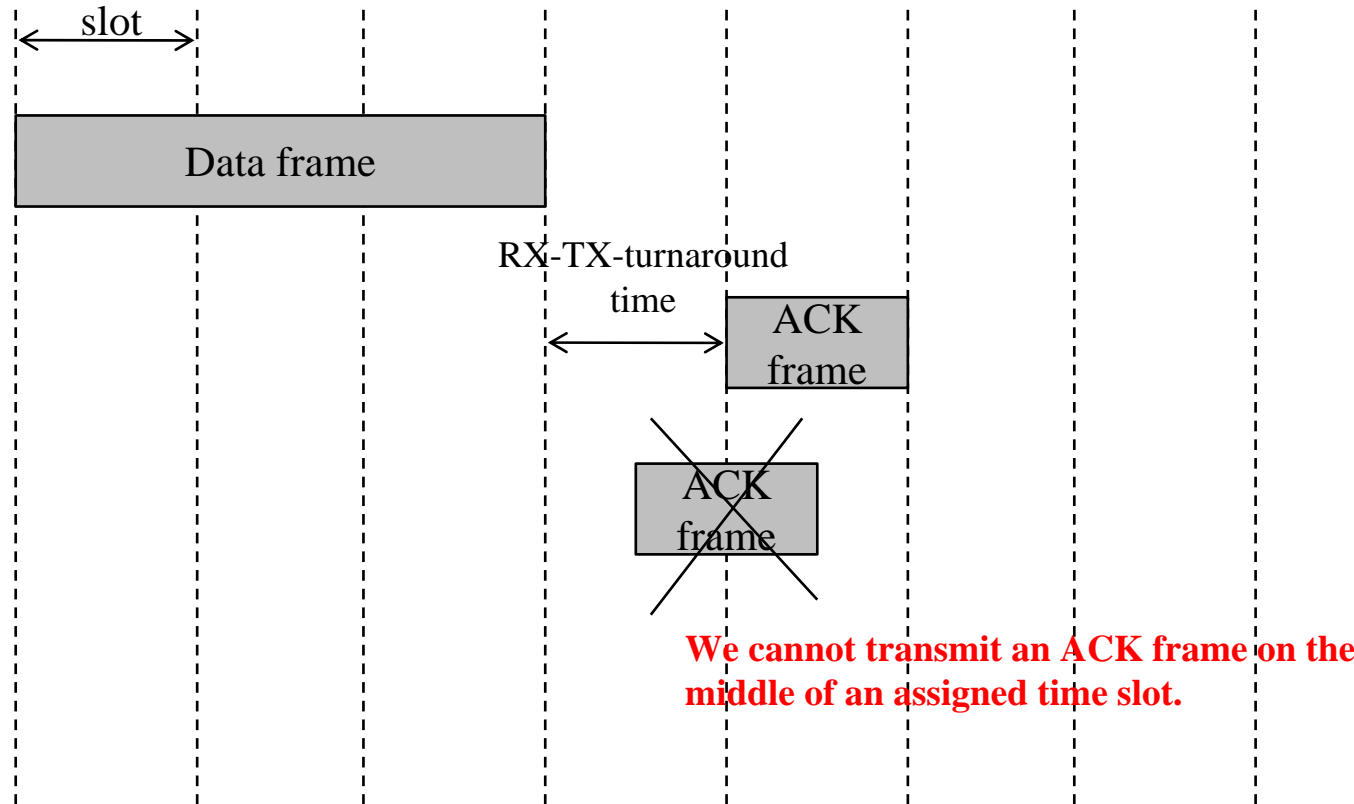
- However, we think RX-to-TX turnaround time is not zero symbol periods.
 - A receiver shall send an ACK frame after receiving a packet frame.
 - So a receiver need time to decide whether the received packet frame has some error or not.



Reference

- In IEEE 802.15.4, this value is 12 symbol periods.

Procedures transmitting an ACK frame



- After receiving a data frame, an Rx will do channel decoding, deinterleaver and CRC checking, and then an Rx will transmit an ACK frame.

Suggestion on Turnaround Time

- So, an Rx will transmit an ACK frame under the time slot unit system when an ACK frame is transmitted.
- We cannot transmit an ACK frame on the middle of an assigned time slot.
- Therefore, we think that **the use of unit of time slot is more reasonable than the use of symbol when we define the turnaround.**