102. EPoC PHY Link

102.1 PHY Link overview and architecture

102.2 Downstream PHY Link

102.2.1 DS PHY Link physical layer

102.2.2 DS preamble

102.2.3 DS frame

102.2.4 DS PHY Link FEC

102.2.5 DS State Diagrams

102.2.5.1 Constants

EPFHtp
TYPE: integer
This value represents the PHY Link message type for the EPoC PHY Frame Header message block
VALUE: 0x0A

FPMBtp
TYPE: integer
This value represents the PHY Link message type for the FEC Parity message block
VALUE: 0x0C

MaxFmLen
TYPE: integer
This constant represents the maximum number of bits, excluding the preamble, the PHY Link can transmit in a single frame.
VALUE: TBD

MaxMBLen
TYPE: integer
This constant represents the maximum number of bits in the downstream PHY Link frame minus the length of the FEC Pointer message block and excluding FEC Parity.
VALUE: 2824

TMBtp
TYPE: integer
This value represents the PHY Link message type for the the Timestamp message block
VALUE: 0x09

102.2.5.2 Counters

TmStmp
TYPE: 32 bit unsigned
This counter holds the value of the local Timestamp. The counter is advanced by the OFDM clock (1/204.8) and rolls over to zero from 0xFFFFFFFF. At the CLT the counter shall track the transmit clock, while at the CNU the counter shall track the receive clock. For accuracy of receive clock, see {ref}. Changing the value of this variable while running using Layer Man-

agement is highly undesirable and is unspecified.
TYPE: 32 bit unsigned

102.2.5.3 Variables

BEGIN

TYPE: boolean
This variable is used when initiating operation of the functional block state diagram. It is set to TRUE following initialization and every reset.

PhyDA

TYPE: 15 bit unsigned integer
This variable represents the CNU_ID of the intended recipient of the EPoC message blocks included in the PHY Link frame.

DS_CID

TYPE: 2 bit unsigend integer
This variable represents the downstream Configuration ID value as described in 102.2.3.1.1.

FmLen

TYPE: integer
This variable represents the total number of bits transmitted in the current PHY Link frame.

PhyTD

TYPE:bit array
This variable represents a bit array corresponding to data to be sent over the PHY Link.This variable is used to accumulate payload of outgoing PHY Link message blocks, for example to set the Timetamp Message BLock.

RF_ID

TYPE: 8 bit integer
This variable represents the Response Frame ID as described in 102.2.3.1.1.

RT

TYPE: boolean
This variable represents the Response Type as described in 102.2.3.1.1.

StrtOfFm

TYPE: boolean
Whne this variable transitions from FALSE to TRUE it indicates the beginning of an OFDM frame.

TxEnable

TYPE: boolean
This variable enables the device to transmit onto the media when TRUE. It is set to FALSE following initialization and every reset.

PhyTxFIFO

TYPE: bit array
This variable holds a series of PHY Instructions to be transmitted in the next PHY frame. Each entry in the fifo includes Opcode, Count, Variable Group Index and Data fields for each instruction.

TxPre

TYPE: boolean
When TRUE this variable indicates the PHY Link should be sending the preamble pattern as defined in 102.2.2.

US_CID

TYPE: 2 bit integer
This variable represents the upstream Configuration ID value as described in 102.2.3.1.1.

102.2.5.4 Functions

CRC32(x)
: This function returns a 32 bit CRC of the bit array n (See 3.2.9).

POP()
: This function removes one record from the PhyTxFIFO.

PUSH()
: This function returns one record from the PhyTxFIFO

102.2.5.5 Timers

102.2.5.6 Messages

102.2.5.7 State diagrams

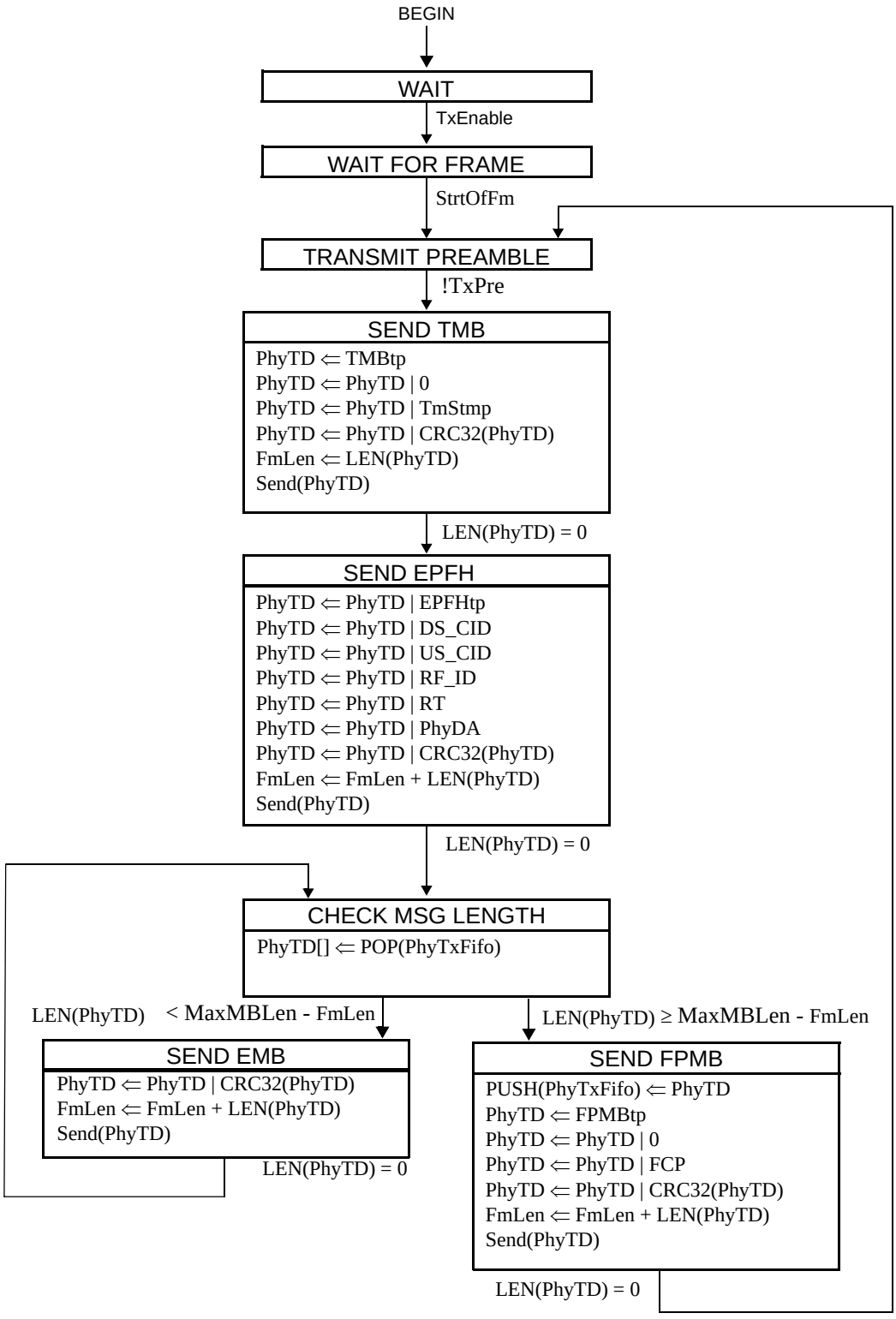

Figure 102–1—CLT PHY Link transmission control state diagram