

Proposed FEC_Overhead equations

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FEC_Overhead (1)

- MPCP sends and receives bytes to/from the MAC.
- MPCP layer only understands time quanta.
 - No knowledge of underlying physical layer overhead (8B/10B, 64B/66B)
- Any delay or overhead can only be an integer number of time quanta.
- Current overhead is four 66-bit blocks for every twenty-seven 66-bit blocks.
 - For every 216 bytes of either data or idle, we need to take into add 32 bytes of overhead.
- **This is equivalent to an overhead of 4 TQ for every 27 TQ.**
- MPCP can keep track of how much idle and data it is sending in terms of TQ. It can calculate how many times it has transmitted 27 TQ worth of data/idle and add overhead of 4 TQ for each.

FEC_Overhead (2)

- Definitions

LocalTime = current timestamp value
PrevTime = time when previous frame leaves MPCP
LocalTime - PrevTime = Number of TQ of idle sent between frames
PayloadBalance = Uncompensated TQ from previous transmission
FrameLength = Length of frame and preamble in TQ
FEC_Overhead = Number of TQ to wait before sending next frame

- Equations

PayloadBalance = PayloadBalance + FrameLength + (LocalTime-PrevTime)
FEC_Overhead = Floor(PayloadBalance / 27) * 4
PayloadBalance = PayloadBalance MOD 27
PrevTime = LocalTime + FEC_Overhead