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PHY Link Timestamp

Proposed in kilger_3bn_01b_0713 but no details

Functions

- Times US PHY Link transmissions
- Allows CLT to adjust OFDM phase (timing offset) of individual CNUs
- Network Synchronization/ToD?
- Other?

Components of Timestamp 1 of 3

- Need a fine grain portion to adjust OFDM Phase
  - Directly clocked from OFDM clock is logical choice
- A second part could be used to set CP length
  - A 5 bit timer clocked by 64/204.8 can precisely define all possible CPs allowed

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Components of Timestamp 2 of 3

- Symbol Counter
  - Logical choice for all US PHY Link transmissions (all transmissions must begin on sym boundary)
  - Size depends on largest frame
    - 8 bits – 5.34 ms (min CP / 8k FFT)
    - 10 bits – 21.4 ms (min CP / 8k FFT) long enough to cover worst cast round trip

1) Times based on minimum CP & 8k FFT

Components of Timestamp 3 of 3

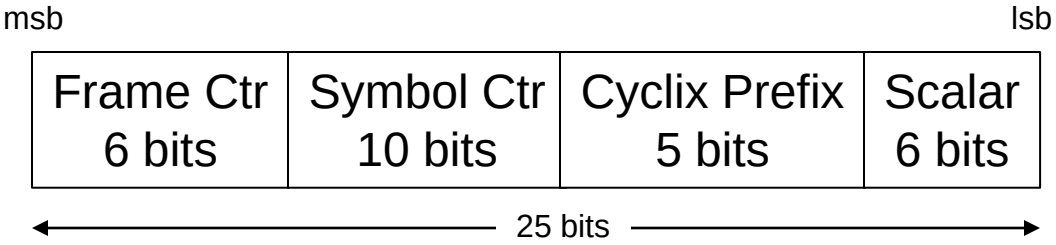
- Frame counter
  - Might be prudent to also include a frame counter to allow a more explicit description of US transmission window
  - Size does not need to be very large (a few bits, say 6)

Functional realization

- Scalar – allows CLT to set the offset of any CNU to within 4.88 ns
- CP Timer – Allows CLT to set CP size (US & DS)
- Frame/Symbol counters allow CLT to direct CNU admission control to US PHY Link

Timestamp

- Proposal
  - Set of chained counters totaling 25 bits
  - Driven from OFDM clock (204.8 MHz)
    - 6 bits for Frame count
    - 10 bits for Symbol count
    - 5 bits for CP timer
    - 6 bit Scalar (clocked directly from 1/204.8 MHz)



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Questions? Comments?

THANKS