

WAN PHY DEFINITIONS

Aims and Objectives

This terminology document was created by an ad-hoc for the purpose of improving communication during committee meetings.

This terminology does not represent an official position on the part of the P802.3ae TF.

Presenters are encouraged to review these definitions and use them as appropriate.

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Some definitions for us from 802.3 and SONET

'802.3 MAC'

- a) 802.3 standard.
- b) MAC client above.
- c) Reconciliation sublayer below.
- d) Single channel, no multiplexor.
- e) Full duplex (for 10GbE), no CSMA/CD.
- f) No buffering.

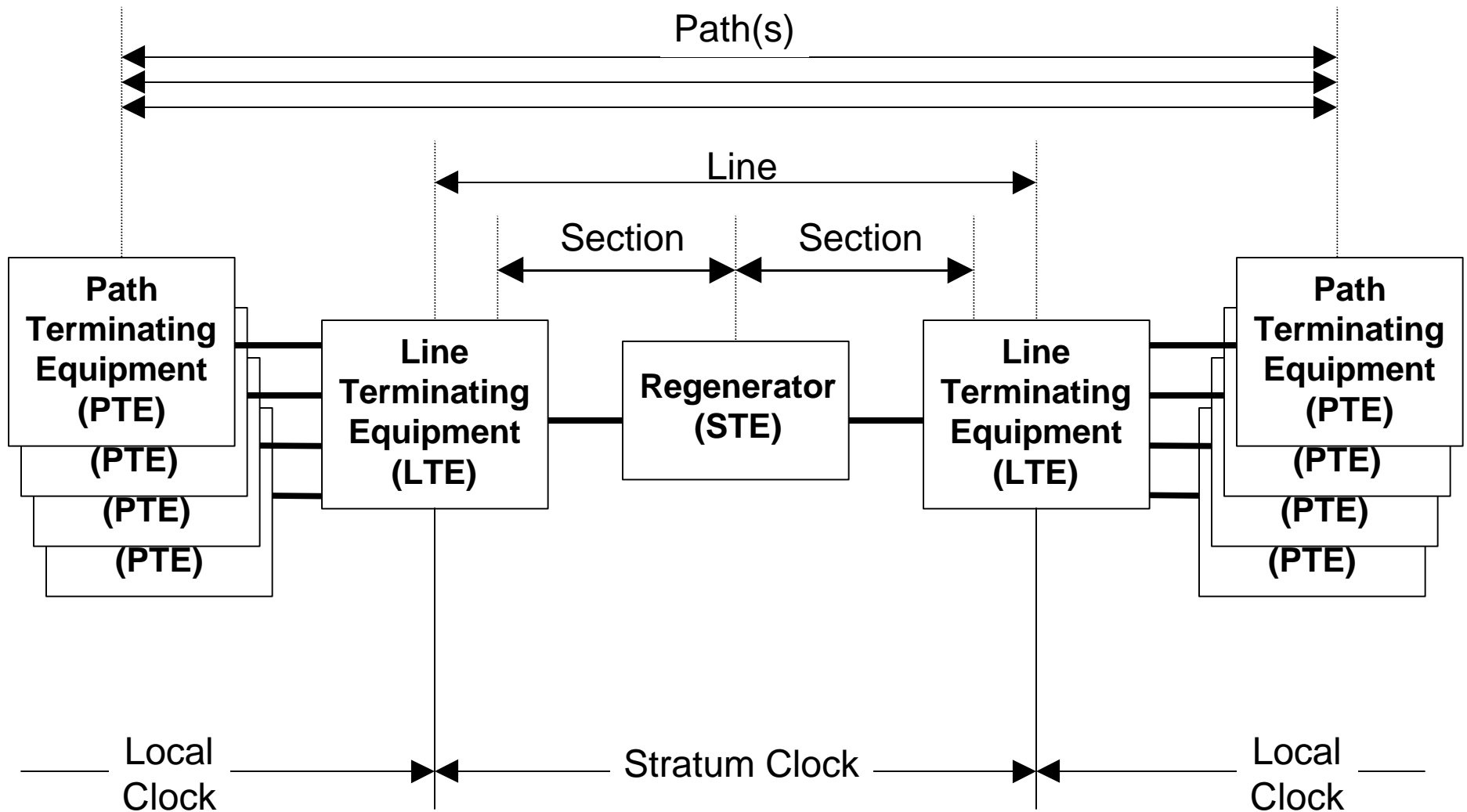
'802.1D Relay'

- a) Connects elements (eg MACs) at MAC-client interface to create a bridge / switch.
- b) A MAC client.
- c) Packet store and forward (no cut through).
- d) Accommodates speed changes port to port.

'802.3 Repeater'

- a) 10, 100, 1000 single speed.
- b) Half-duplex, CSMA/CD only (no full-duplex).
- c) Shared access to a single channel.
- d) Bit store and forward for clock tolerance differences.
- e) Fractional packet latency.

'Path', 'Line', 'Section'



Note: A Line can be longer than two Sections

'SONET Regenerator'

- a) Full-duplex (dual-simplex).
- b) Operates on one and only one wavelength in each direction.
- c) Input wavelength equals the output wavelength in each direction.
- d) Forward wavelength may or may not equal the reverse wavelength.
- e) Couples SONET *Sections* within a *Line*.
- f) Buffer-less. Pipeline fixed delay. Transmit clock is the recovered receive clock.

continued ...

'SONET Regenerator' (cont')

- g) Examines and/or writes SONET section overhead.
- h) Payload, *Line* and *Path* information are passed through unmodified.
- i) Unscrambles and re-scrambles to support g).
- j) Keeps output *Section* active even if input *Section* fails (fault isolation).
- k) This is a '3R' (re-amplify, re-shape, re-time).
- l) This is a 'STE' (Section Terminating Equipment)

SONET 'Line Terminating Equipment (LTE)'

- a) Everything a SONET Regenerator does plus:
- b) Terminates a *Line* and the associated *Section*.
- c) Operates on Stratum clock.
- d) Multiplexes *Paths* onto a *Line* and de-multiplexes a *Line* into *Paths*.
- e) It is a dual simplex *Path* mux.
- f) Maintenance/Protection switching for muxed *Paths* between *LTEs*.

SONET 'Path Terminating Equipment (PTE)'

- a) Terminates a *Path* and the associated *Line* and *Section*.
- b) Operates on Local clock.
- c) This is where the SONET path overhead is processed.

'SONET Transponder'

- a) Couples differing optical PMDs back to back.
- b) E.G. wavelength 1 to wavelength 2, multimode to singlemode, 850nm to 1300nm.
- c) Dual simplex.

'Passive Transponder' (emerging term) :

- d) Transparently passes all bits (Items a, b, c).

'Active Transponder' (emerging term) :

- e) This is a special case of SONET *Regenerator* because of item a).
- f) Terminates *Section* (see *Regenerator*) and *Line* (see *LTE*).