

# PreFEC BER Signaling Features

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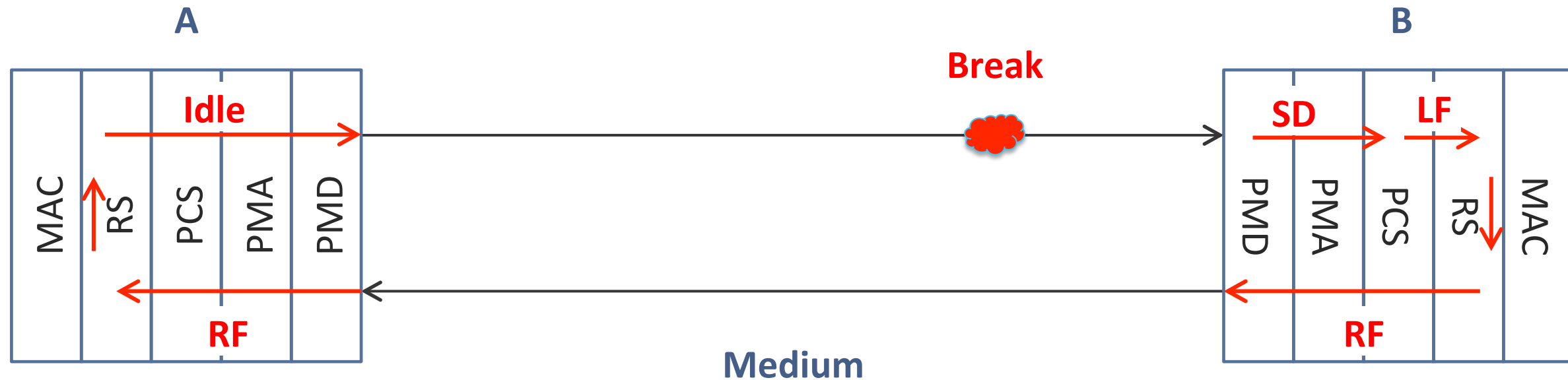
2016-05 Whistler

# Supporters

# Background

- Working to add PreFEC BER monitoring features to 802.3bs
  - maki\_3bs\_01a\_1115.pdf – Background and Justification
  - ofelt\_3bs\_01a\_0116.pdf – Initial proposal
  - ofelt\_3bs\_01\_0316.pdf
  - ofelt\_3bs\_01\_0416\_logic.pdf
- Status:
  - Detailed PreFEC SER signaling proposal made at March meeting
  - Consensus is positive for the features, but not the current details
  - Punted it to the May meeting so we can work out the issues
  - Presented at last logic ad-hoc meeting
  - Lots of feedback and work from Pete Anslow and Mark Gustlin

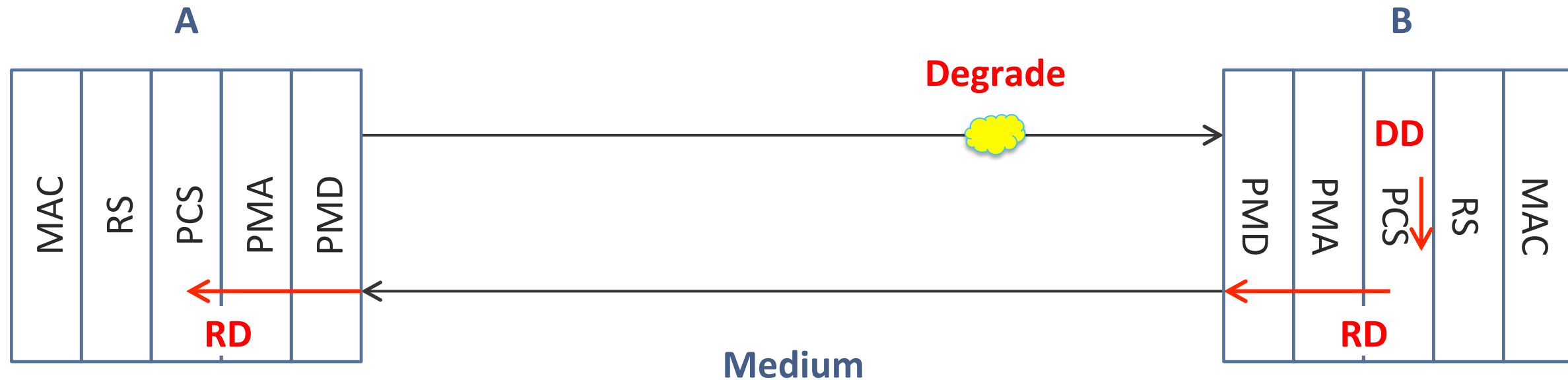
# Existing local fault / remote fault



Use-case figures from Pete Anslow, Ciena

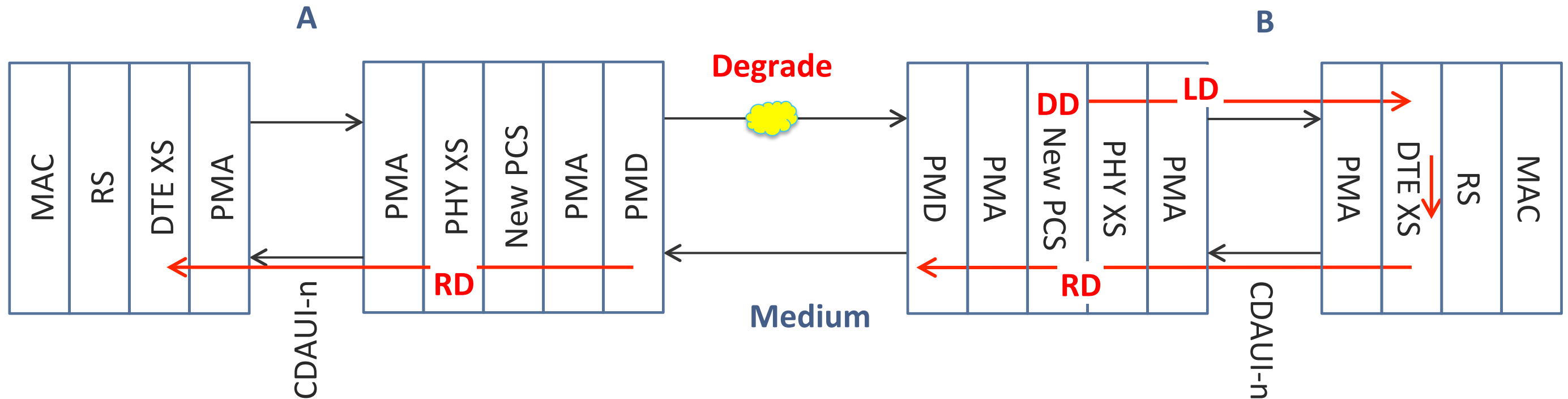
- PMD Rx at B sets SIGNAL\_DETECT (SD) to FAIL
- PCS at B sends local fault (LF) to RS at B
- RS at B sends remote fault (RF) to A
- RS at A receives RF and sends all idle characters

# Pre-FEC degrade no extender sublayer



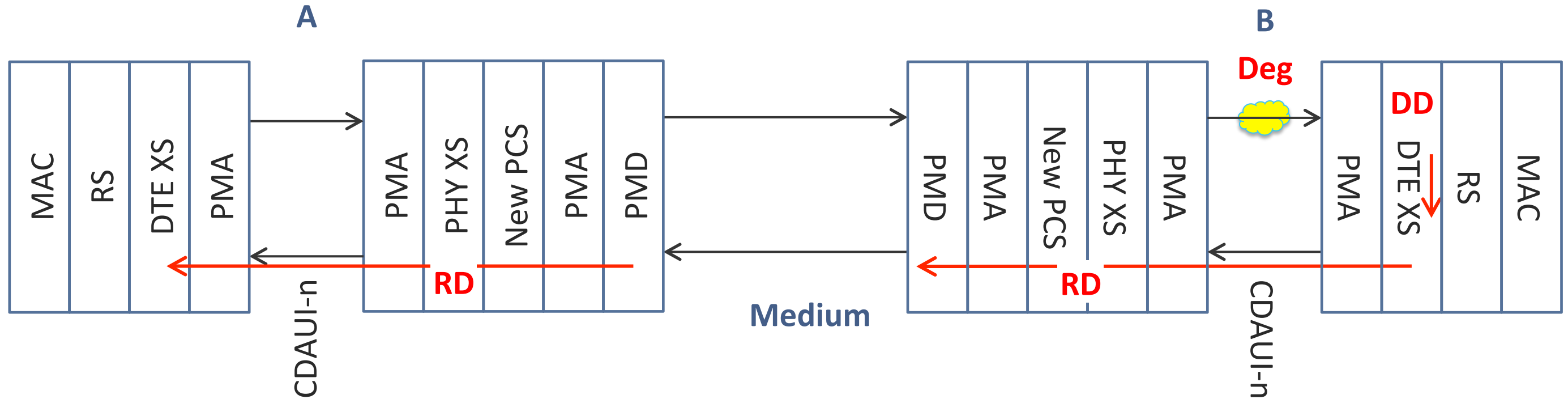
- PCS at B exceeds pre-FEC symbol error ratio (SER) threshold and detects degrade (DD)
- PCS at B sends remote degrade (RD) to PCS at A
- Traffic unaffected

# Pre-FEC degrade with extender sublayer 1



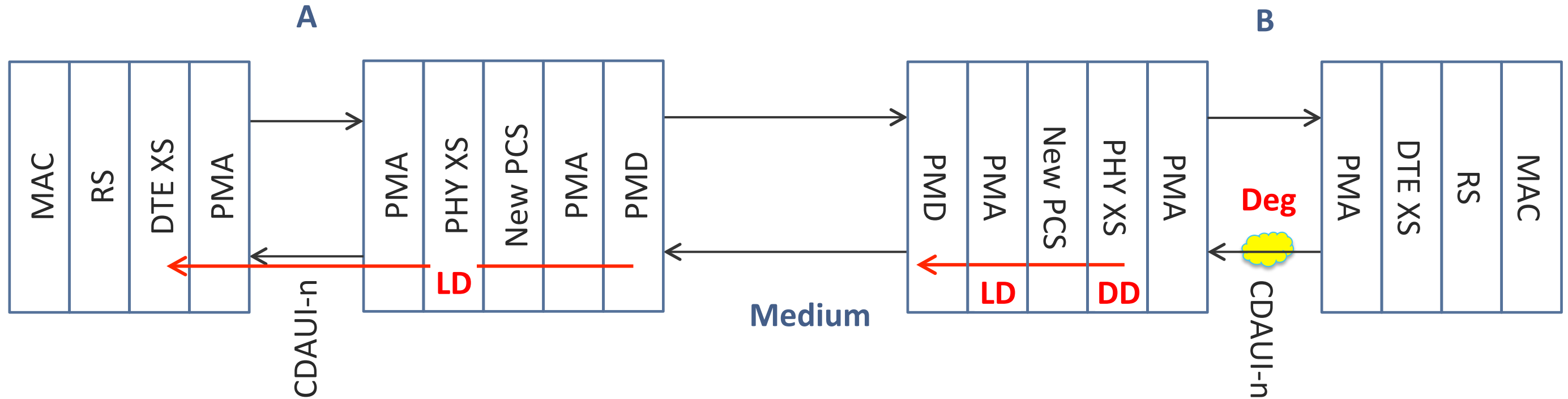
- New PCS at B exceeds pre-FEC symbol error ratio (SER) threshold and sends local degrade (LD) to DTE XS at B
- DTE XS at B sends remote degrade (RD) to DTE XS at A
- Traffic unaffected

# Pre-FEC degrade with extender sublayer 2



- DTE XS at B exceeds pre-FEC symbol error ratio (SER) threshold and sends remote degrade (RD) to DTE XS at A
- Traffic unaffected

# Pre-FEC degrade with extender sublayer 3

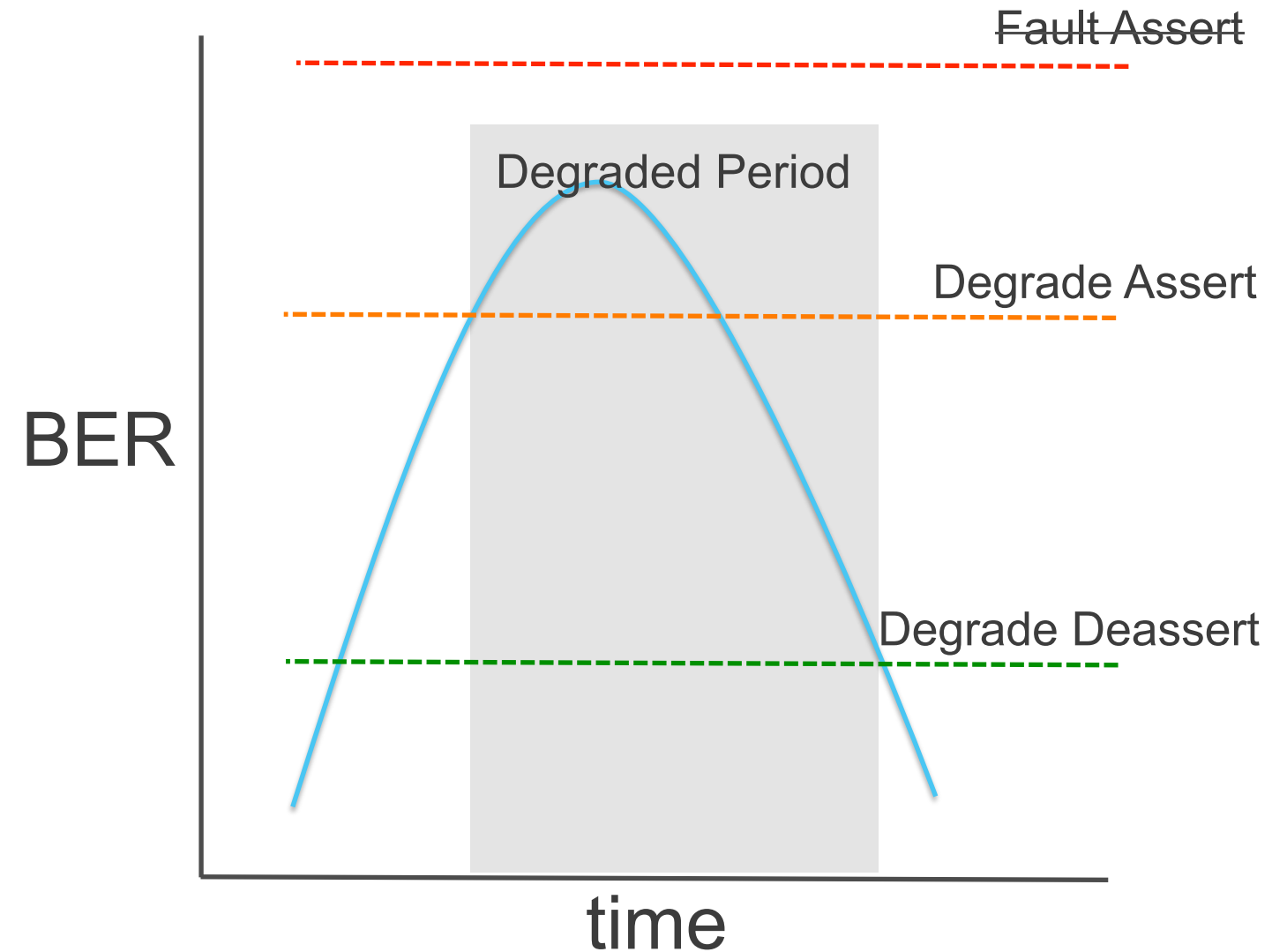


- PHY XS at B exceeds pre-FEC symbol error ratio (SER) threshold and sends local degrade (LD) to DTE XS at A
- Traffic unaffected



# PreFEC Fault and Degrad

- Fault
  - Single threshold & interval
- Degrad
  - Separate activate and de-activate threshold with shared interval



# Changes From March

- Removed PreFEC Fault feature
  - Consensus was that it did not add much value
- FEC Degrade SER feature now uses a single interval
  - Still has separate Assert and Deassert thresholds
- Extender Sublayer support formalized
  - DTE XS == Host side of the Extender Sublayer
  - PHY XS == External device side of the Extender Sublayer

# Overview of Edits

- Edits presented as separate document
  - Changes made against a pre-release version of D1.4 to simplify logistics
- Clauses modified:
  - 45 – new and updated management registers
  - 118 – Changes for the Extender Sublayer
  - 119 – Changes for the PCS
- Some complexity due to the way we document PCS, DTE XS, and PHY XS layers

# Review Document



ofelt\_3bs\_02\_0516.pdf

# Thanks

