MATLAB code for TWDP

Proposed resolution for comment
#109

TWDP background clause 68.6.5.2

- Transmitter & Waveform Dispersion Penalty
- Method for estimating dispersion penalty of TP2 combined with channel
  - Total dispersion line item in budget
    - See http://grouper.ieee.org/groups/802/3/aq/public/nov04/lindsay_3_1104.pdf
  - Method captures actual TP2 waveform on scope
  - Channels based on TP3 work
- Penalty calculation requires SW tool
  - Basis of comment #109

- SW tool is MATLAB code
  - Agreed as preferred approach
  - Code reviewed and agreed in TP2 calls
  - Informative overview also presented and discussed in TP2 calls
    - Submitted as separate comment #110
      - See http://grouper.ieee.org/groups/802/3/aq/public/comments/d1.0/P802.3aqD1.0com110Lindsay_TWDPalgorithm.pdf
      - to go into Annex?

TWDP code comparison vs. PIE-D

- CDF comparison of code to John Ewen PIE-D data

- Comparison based on
  - 47.1 psec 20-80% Gaussian prbs9 simulated waveform
  - 7.5 GHz BT4 filter on capture
  - Cambridge r2.1 (108 comparisons)
  - 20 micron fixed offset launch
  - No connectors

Comparison results

CDFs x108@20

Penalty differences vs PIE-D
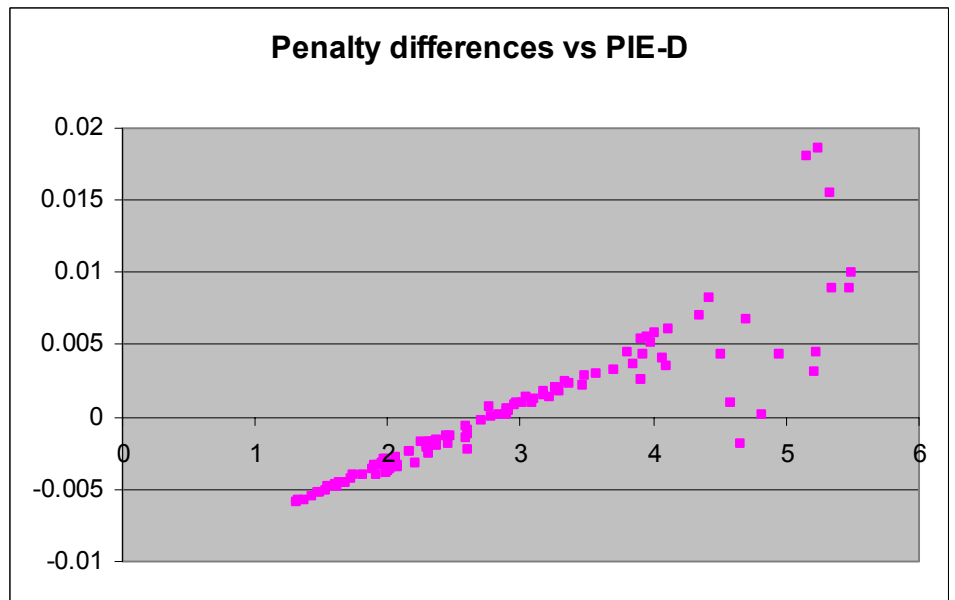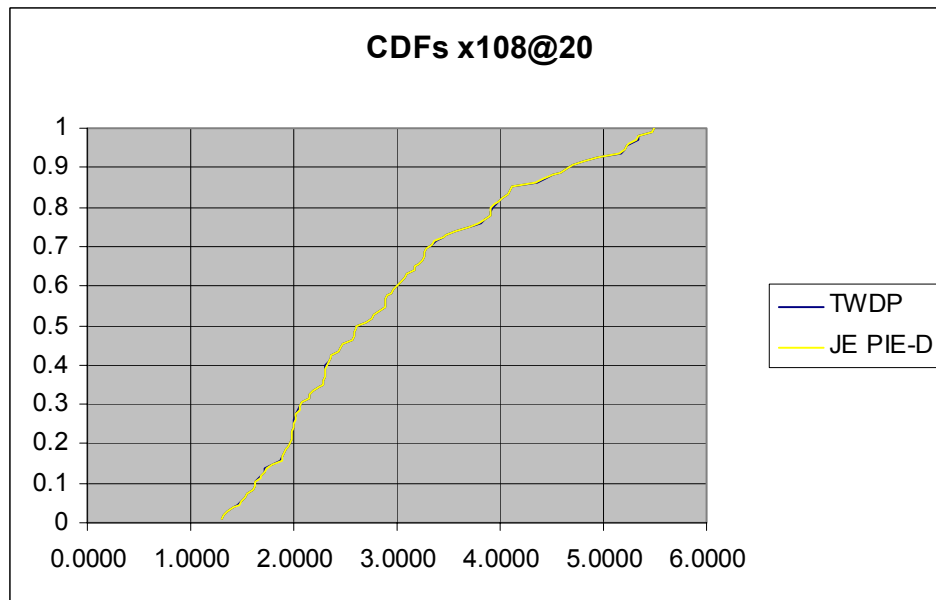
Within 0.02 dB; negative differences possibly explained by round-off errors in PIE-D, simulated waveform, or elsewhere.

Summary of proposed resolution for #109

- Instruct the editor to include the MATLAB code discussed and agreed on TP2 calls into clause 68.6.5.2, Figure 68-6.