TP2 con-call summary

Mar 24 – May 12 (6 calls)
Tom Lindsay & others (see next page)
802.3aq
Austin Tx, May 2005

ClariPhy Communications, Inc.

Attendees

some more regular than others…

- Lew Aronson
- Ernie Bergmann
- Roy Blake
- David Cunningham
- Piers Dawe
- John Dallesasse
- Mike Dudek
- John Ewen
- Ali Ghiasi
- Joe Gwinn
- John Jaeger
- Bharath Jagannathan
- Greg Lecheminant
- Tom Lindsay
- Jan Peeters Weem
- Petar Pepeljugoski
- Albrecht Rommel
- Norm Swenson
- Vivek Telang
- Matt Traverso
- Andre Van Schyndel
- Paul Voois
- Paul Wachtel
- Pavel Zivny
- Others?

TWDP waveforms

- Measured waveforms
  - Agreed on format
  - Agreed on web page organization
  - Numerous waveforms pre-processed and uploaded for analysis
  - More waveforms requested, especially to represent conditions
- Waveform analysis
  - Multiple ClariPhy and Broadcom presentations tested most web waveforms across numerous EQ lengths and compared to Gaussian
    - Stressors from D2.0 plus example new stressors per Ewen
    - Most behaviors as expected, but some waveforms where finite length implementation penalties exceeded Gaussian – no conclusions drawn
    - corroborated TWDP codes

TWDP waveforms, cont'd

- Sampling & interpolation
  - Popular topic
  - Agilent showed that "smoothing" interpolation methods are more accurate
    - Cubic spline, cubic Hermite; sin(x)/x should be okay
    - However, no methods showed severe problems (presumably if initial sampling rate is high enough)
  - Agilent presentation also shows little sensitivity to sampling as low as 4 per UI and that code runs at rates lower than 16 per UI
    - 4 per UI corroborates internal ClariPhy study with fast laser & cubic spline

OMA and TWDP

- Many have observed that OMA is not the correct penalty reference
  - OMA is not complete as a metric for signal strength unless signal shape is exactly known
  - When normalized with OMA, pre-distortion misappropriates signal strength into penalty
- ClariPhy proposal for modified metrics
  - base signal strength on SNR or SNR margin at slicer input
  - base “equalizability” on loss of SNR through DFE compared to matched filter bound (MFB)
    - MFB based on optical modulation standard deviation (OMSD)
  - Straightfoward extensions from current code
- Comments expected

Misc. topics

** = comments expected*

- RIN test and back reflection*
  - Agreement to use MMF
- AC coupling for RIN*
  - Some discussion about low frequency cutoff
- Jitter waveform*
  - Discussion re number & type of edges; no conclusion, retain single edge
  - Agreement to submit mixed waveform figure
- Jitter magnitude
  - No proposals; retain current value
- Test patterns
  - No proposals, retain current patterns
- Peak Tx power*
  - Discussion on whether peak power spec is required; no conclusion, retain max OMA and max average
- Eye mask*
  - Any mask changes must follow conclusion of TWDP work