Channel Modeling ad hoc report

IEEE P802.3bq 40GBASE-T Task Force

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Channel Modeling ad hoc co-chairs

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Channel Modeling ad hoc charter and scope/deliverables

- Define a set of channel models for PHY complexity evaluation, including host channel model
- Provide early feedback on key parameters to cabling bodies (Can a parameter be improved? Is a relaxation a cost benefit?)

Channel Modeling ad hoc activity since Victoria meeting

- Three well attended channel modeling ad hoc calls – June 5th, June 19th, July 3rd (two week cadence)
  - MDI-to-MDI cabling subteam has held 3x additional meetings to further facilitate cable channel modeling activities
- Meeting minutes and contributions are available at the 40GBASE-T website channel modeling ad hoc area
  http://www.ieee802.org/3/bq/public/channelmodeling/index.html

Channel Modeling ad hoc activity since Victoria meeting

- Meeting highlights
  - Reached consensus on a path forward. Direction is to decompose the PHY-to-PHY channel model into three segments - the system PCB transmission line and noise, the MDI and isolation path, and the MDI-to-MDI cable channel - with subteams focusing on each element
    - See diminico_3bq_01_0713.pdf
  - Converging on cable topologies to be used in modeling efforts, ranging from ~3m up to 30m in both symmetrical and asymmetrical configurations.
    - Cable RL and IL parameters modeled with these topologies using 3x different mathematical methodologies show good agreement
  - Reached consensus on using Touchstone (or SnP) 16-port network parameter data file format for model and measurement outputs
    - Ongoing dialog on model and measurement port definition and port-pair mapping trending toward consensus and closure

Channel Modeling ad hoc next steps

- Further work
  - Consensus on port/pair mapping definitions
  - Refine cable channel definitions and share model/measurement results
  - PCB transmission line & noise and MDI and isolation path characterization and measurements/model inputs
  - Develop, evaluate and deliver PHY-to-PHY models, i.e. a complete build of PHY-to-PHY s-parameter models and post to the Task Force
- Future meetings
  - Will be scheduled on alternate Wednesdays at 8:00AM PDT between now and the York meeting
  - Next ad hoc July 31, 2013
- Thanks to all ad hoc contributors and participants
  - You can be a contributor, too!

Thank You!