Channel Modeling ad hoc report

IEEE P802.3bq 40GBASE-T Task Force

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Channel Modeling ad hoc chair

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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 May 2014

- Two well attended channel modeling ad hoc calls – May 20th and July 8th
- 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

- Recent topics: Cable dynamics problem statement, MDI and isolation elements, and “housekeeping”

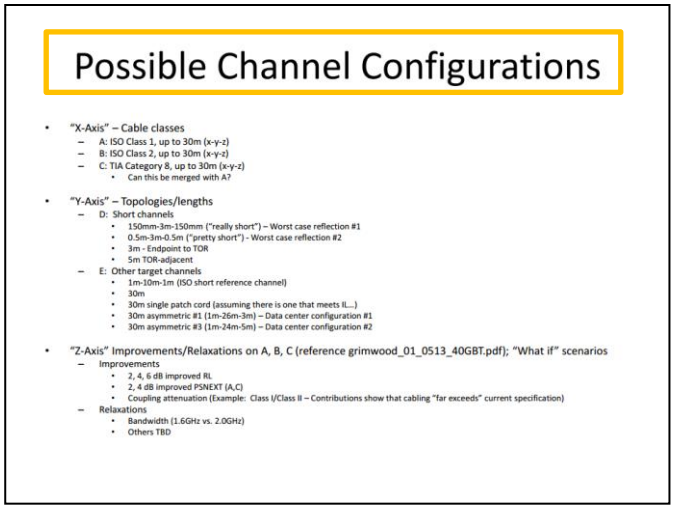
Channel Modeling ad hoc activity since May 2014

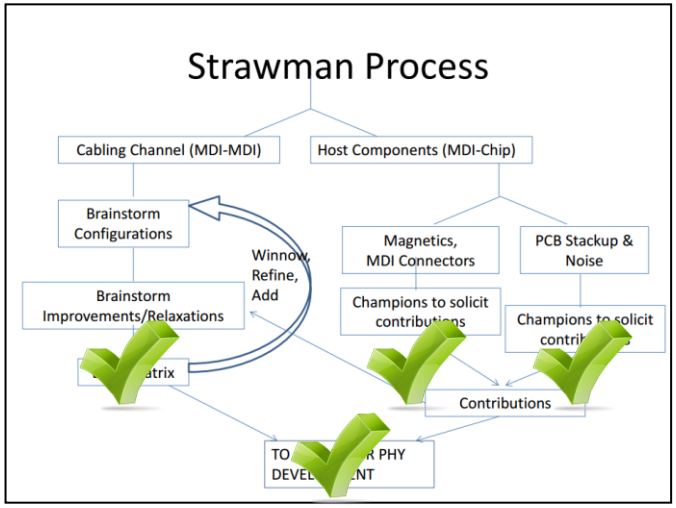
- Meeting highlights
  - Cable dynamics behavior has been clarified in a more concise problem statement, and end-user concerns have been communicated to PHY participants
    - No specific follow-up actions were defined for this issue, which has been addressed in the 10GBASE-T ecosystem with PHY-based solutions.
    - It is anticipated that 40GBASE-T PHYs can adopt similar solutions
  - Ongoing improvements have been noted in both ARJ45 and RJ45 ICMs from several suppliers
- Reminder: A basic set of elements for an end-to-end channel is available at the P802.3bq Task Force channel data area
  - http://www.ieee802.org/3/bq/public/channeldata/index.html
  - We now have a large number of potential model elements available
  - A model element “decoder ring” workbook that summarizes existing components has been created and will be maintained by the Channel Modeling ad hoc chair
- And last but not least… **The fundamental work of the P802.3bq Channel Modeling ad hoc is complete!**

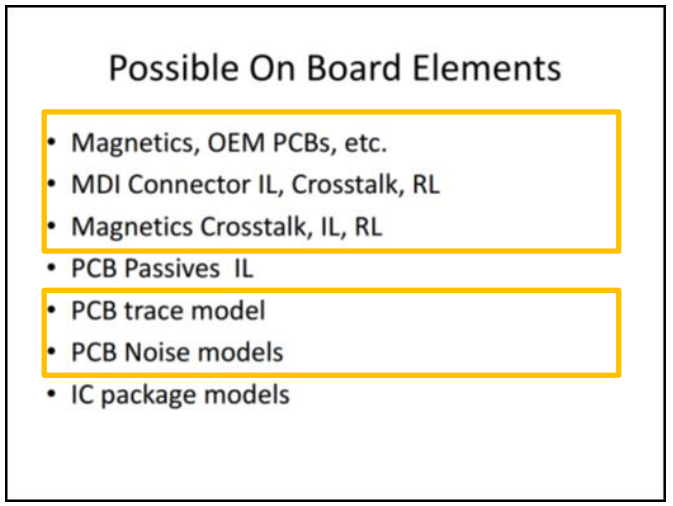
ad hoc Starting Point

- Initial ad hoc discussions from May 2013 (Victoria, BC) and high-level status

Slide Source: Potential Path Forward for Channel Modeling Ad Hoc, [zimmerman_02_0513_40GBTah.pdf]







Channel Modeling ad hoc Summary

- The Channel Modeling ad hoc has completed the fundamental work outlined in our “Potential Path Forward”
  - Basic elements modeling the host PCB transmission line, MDI & isolation, and MDI-to-MDI cable channels are publicly available
  - Host PCB transmission line models have been refined to include impedance variations and PCB routing via effects
  - Host PCB channel noise has been characterized and noise measurements are available for review and use by PHY developers
  - Channel modeling collateral (“read me”s, s16p files) has been summarized and is available in the P802.3bq Channel Data area
- Next meetings
  - Calendar placeholders will be set up to accommodate future contributions related to the work of the ad hoc as requested by the P802.3bq Task Force or the PHY Baseline Proposal ad hoc.
  - Channel Modeling ad hoc participants are encouraged to follow the activities of our PHY Baseline Proposal ad hoc and the P802.3bq Task Force to identify opportunities for future work.
- ***Thank you to all Channel Modeling ad hoc participants!***

Thank You!