Chief Editor's Report

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May 13, 2008

Overview

- To go to Working Group Ballot, the Task Force needs to come up with a technically complete draft
  - Changes to existing standard 802.3
  - New Clauses
  - See ganga_02_1107 for the proposed document structure

Existing clauses

- Clause 1 – Introduction to 802.3
  - Add appropriate normative references, definitions, description of compatibility interfaces, and abbreviations
- Annex A –Bibliography
  - Add appropriate informative references
- Clause 4, Annex 4A –Media access control
  - Mostly speed independent, update Table 4-2 MAC parameters
- Clause 30, Annex 30A & 30B –Management
  - Need presentation - Add new objects, attributes, and enumerations for 40Gb/s and 100Gb/s functions

Existing clauses (cont'd)

- Annex 31B –MAC control PAUSE operation
  - Need presentation - Update timing considerations for PAUSE
- Clause 45 Management data input/output (MDIO) interface.
  - Add new registers for the control and management of 40Gb/s and 100Gb/s PHY types
  - Add new MMDs if any, control/status of PMA/PMD and PCS
  - Update Backplane Auto-Negotiation and FEC registers
  - Presentations to other clauses to include the required management variables

Existing clauses (cont'd)

- Annex 69A –Interference tolerance testing
  - Need presentation - 40GbE test methodology
- Annex 69B –Interconnect characteristics
  - Need presentation - 40GbE cross-talk limits if needed
- Clause 72 –10GBASE-KR PMD
  - Changes if any due to 40GbE
- Clause 73 –Auto-Negotiation for Backplane Ethernet
  - Add technology ability bit for new 40GbE PHY
- Clause 74 –Forward error correction for 10GBASE-KR
  - Changes for 4 lane KR operation
- Clause 74A –FEC block coding examples
  - Additional patterns for 4 lanes if needed
- Need to select a proposal for 40Gb/s Backplane Ethernet

New Clauses

- Introduction to 40Gb/s and 100Gb/s operation
  - Based on presentations for other new clauses
  - Global PICs - separate PICS tables for 40 and 100Gb/s Sub-layers
  - Need to select an architecture proposal for baseline
- Reconciliation Sublayer and Media Independent Interface(s)
  - Need presentation to reference for baseline
- Physical Coding Sublayer clause(s)
  - Need to select a proposal for baseline
- PMA Sublayer clause(s)
  - Need presentation to reference for baseline(s)
- nAUI Electrical interface if included in adopted baseline proposals
  - Need presentation to reference for baseline
- FEC sublayer for optical PMDs if included in adopted baseline proposals
  - Need presentation to reference for baseline

New Clauses

- 40G Backplane PMD Sublayer
  - Need to select a proposal for baseline
- 40G / 100G Cu Cable PMD(s) Sublayer
  - Need to select a proposal for baseline
- 40G / 100G MMF PMD(s) Sublayer
  - Need to select a proposal for baseline
- 40G 10Km MMF PMD(s) Sublayer
  - Need presentation to reference for baseline
- 100G 10km SMF PMD(s) Sublayer
  - Need presentation to reference for baseline
- 100G 40km SMF PMD(s) Sublayer
  - Need presentation to reference for baseline
- Additional annexes to describe test methods, channel characteristics, coding details, etc.,
  - Need presentations to reference for baseline(s)

Proposed Nomenclature

- Nomenclature for the 3 part suffix
  - Speed
    - 40 = 40Gb/s, 100 = 100Gb/s
  - Medium type
    - Copper
      - K = Backplane
      - C = Cable assembly
    - Optical
      - S = Short Reach (100m)
      - L = Long Reach (10Km)
      - E = Extended Long Reach (40Km)
  - Coding scheme
    - R = 64B/66B block coding
  - Number of lanes or wavelengths
    - Copper: n = 4 or 10
    - Optical: n = number of lanes or wavelengths
    - n=1 not required as serial is implied

PHY description	Port Type
40G Backplane PHY	40GBASE-KR4
40G Cable Assembly PHY 100G Cable Assembly PHY	40GBASE-CR4 100GBASE-CR10
40G MMF 100m PHY (Ribbon) 100G MMF 100m PHY (Ribbon)	40GBASE-SR4 100GBASE-SR10
40G SMF 10Km PHY 100G SMF 10Km PHY	40GBASE-LR4 100GBASE-LR4
100G SMF 40Km PHY	100GBASE-ER4

Progress so far..

- **The progress/consensus shown in this table is my personal opinion and does not reflect the official position of the task force**

Functional area	Status (as of Mar '08)	Consensus*	Next Steps
40/100G Architecture/Interfaces	Proposal made to TF		▪ Select baseline proposal
RS/XLGMII/CGMII	Need proposal to TF		▪ Need baseline proposal to TF ▪ Finalize alignment, clock, data/control width
XLAUI/CAUI electrical interface	Proposal made to TF		▪ Decide on channel characteristics ▪ Select baseline proposal
PCS	Multiple Proposals made to TF		▪ Select baseline proposal
PMA	Part of PCS proposals, need specific PMA proposal to TF		▪ Need baseline proposal to TF
Management	We have agreement, but baselines to include mgmt. requirements		▪ Need baseline proposal, or individual baselines should include mgmt. requirements
Backplane 40GBASE-KR4	Baseline proposal made to TF based on 10GBASE-KR		▪ KR channel models to be available to TF ▪ 40G simulations ▪ Select baseline proposal

Progress so far..(2)

Functional area	Status (as of Mar '08)	Consensus*	Next Steps
Copper cable 40GBASE-CR4	Baseline proposal made to TF based on 10GBASE-KR signaling		▪ Cable assy. channel models to be available to TF ▪ 40G simulations ▪ Backward compatibility
Copper cable 100GBASE-CR10	Baseline proposal made to TF		▪ Cable assy. channel models to be available to TF ▪ Decision on connector
40G MMF PMD	Proposal made to TF for Ribbon No proposal made for Duplex		▪ Select baseline proposal
100G MMF PMD	Proposal made to TF		▪ Select baseline proposal
40G 10Km SMF PMD	No baseline proposal to TF		▪ Need baseline proposal to TF
100G 10Km SMF PMD	Alternatives discussed		▪ Need baseline proposal to TF
100G 40Km SMF PMD	No baseline proposal to TF		▪ Need baseline proposal to TF
Appropriate OTN support	Need proposal to TF		▪ Need baseline proposal to TF

Summary

- It is essential to have complete proposals that provide solution to all the objectives to create a “technically complete 802.3ba draft” to go to Working Group Ballot

Next Steps

- Need presentations to address each section highlighted in this action plan
  - See 802.3ae 10G blue book as reference http://www.ieee802.org/3/ae/public/blue_book.pdf
  - This presentation gives an idea of the expected technical details in baselines
- Build consensus on baseline proposals
- Compile adopted baselines to create the draft

Editorial Team Volunteers (1)

Editor	Affiliation	Responsibilities, Clause(s), Annexes(s)
Ilango Ganga	Intel	Editor-in-Chief, 40/100G Intro
Mark Gustlin	Cisco	Sub-task force chief editor* for logic track, RS (XL/CGMII) and PCS
Chris Di Minico	MC Communications	Sub-task force chief editor * for copper track, 40/100G copper PMDs
Pete Anslow	Nortel	Sub-task force chief editor* for optical track, SMF PMD

Note: * To be appointed by the Chair and confirmed by the Task Force

Editorial Team Volunteers (2)

Editor	Affiliation	Clause(s), Annexes(s)
Hugh Barrass	Cisco	Management clauses 30 & 45, MAC/MAC control pause
Steve Trowbridge	Alcatel-Lucent	PMA
Arthur Marris	Cadence	40G Backplane Ethernet clauses
Jonathan King	Finisar	SMF PMD
Piers Dawe	Avago Technologies	40/100G MMF PMDs

Additional responsibilities

- Test functionality for copper PMDs
  - Need volunteers to work with respective clause editors
- Test functionality for optical PMDs
  - Need volunteers to work with respective clause editors
- PICS for individual clauses and global PICS
  - UNH to commit resources
- Comment database manager
  - Editor-in-Chief, with the help of sub-task force chief editors