802.3ae Report (Including Ottawa Interim Meeting)

La Jolla, California

Jonathan Thatcher
jonathan@worldwidepackets.com

Ottawa Demographic Survey

- **Total Number: 191**
- **1st Time Attendees: 48**
  - Plan to attend only this meeting: 0
  - Plan to become regular members of 802.3ae: 29
- **802.3 Voters: 89**
  - On Track to Be 802.3 Voters in July: 130
- **Attendees work for:**
  - System Integrator: 47
  - Chip Vendors: 59
  - Optical Transceiver Vendors: 43
  - Fiber Infrastructure Vendors: 19
  - Consultants: 8
  - “End Users”: 6
  - University: 5

Ottawa Synopsis

- **P802.3ae has a fairly strong *consensus* on the**
  - MAC
  - CODING SUBLAYERS
  - OPTIONAL INTERFACES
- **P802.3ae appears *split* on PMD selection**
  - One contingent supports 5 PMDs:
    - 850 nm, 1310 nm, and 1550 nm Serial
    - 850 nm and 1310 nm WWDM
  - One contingent supports 3 PMDs:
    - 1310 nm and 1550 nm Serial
    - 1310 nm WWDM

Presentations

Bruce Tolley (Cisco) – Customer Applications

- **Growth Estimates**
- **Example LAN / MAN / WAN Diagrams**

Brad Booth (Intel) – Tentative Document Structure

- **Clauses that need change**
- **New clauses**
- **Volunteer Status**

Shimon Muller (Sun) – MAC Rate Control

- **Options (Word; Carrier Sense; Busy; Self Pace)**
- **Busy Idle requirements shown; contention that this is too complicated**
- **Self Pacing requirements shown; new Pascal code for MAC shown**
- **Issues (imprecision; there is a method to fix)**

Presentations

Roy Bynum (MCI-Worldcom) – OAM&P RQMTs

- **Additional SONET overhead bytes: M0/M1/Z2 (FEBE) to previous proposals**

Osamu Ishida (NTT) – LSS Proposal

- **Method of extending OAM&P to LAN PHY**
- **Transparent “out of band signaling”**

Rich Taborek (nSerial) – XAUI Review/Update

- **Highly repetitive idles have high power spectra content -> primary EMI source**
- **EMI reduction via randomization of the spacing of the different idle character types (/A/K/R/)**
- **Theory, simulation and measured data**

Rick Walker (Agilent) -- 64b/66b

- **Modification of control codes**
- **Addition of bit sequence**

Presentations

Paul Bottorff (Nortel) – WIS

- **Review and more detailed explanation of proposal**
- **More focus on SUPI and XBI**

Howard Frazier – Comparison of Hold Mech.

- **Pro's and Con's of each method (clock stretch, word hold, busy idle, open loop, frame based flow control)**
- **Straw Poll: preference for open loop**

Stuart Robinson (PMC-Sierra) -- XBI

- **16 (differential) x 2 (direction) I/F to PMA**
- **+ Clocks**
- **Utilize OIF work; but STANDARDIZE and control**

Presentations

Joseph Babanezhad – Architecture for 10G Copper

- **25 meters on Cat 5 Cable using 10X 1000BASE-T**
- **Simulation results shown**

Chris Diminico – TIA FO-2.2.1 liaison report

- **FYI: working on HBW MMF specification**
- **MMF recommended for building infrastructure**

Michael Hackert – TIA FO-2.2.1 tech report

- **With restricted loss, 500 meters on 62 micron fiber at 1.25 Gb/s demonstrated**
  - Documentation process has begun
  - FOTPs in final stage of development
  - RML measurement on fiber required
- **HBW 50 um MMF spec under development**
  - Proposals under development
  - Schedule should meet 802.3ae

Presentations

Ed Chang (NetWorth) – 850 nm, WWDM using RML

- **220 m on 62.5; 300 on 50 MMF; 550 m on new HBW MMF**

Jack Jewell (Picolight) – Merits of 850 nm PMD

- **“Clear cost advantage”**
- **Cost / volumes likely to follow GbE market**

Jack Jewell (Picolight) – 850 nm Serial Experiments

- **Feasibility demonstrated**
- **Various fiber measurements show good results**

Jim Tatum (Honeywell) – 5 PMDs Recommended

- **Serial: 850, 1310, 1550; WDM: 850, 1310**
- **“Best opportunity for 75% support”**
- **No reason to exclude any of the 5**
- **All are cost effectiveness and reliable**

Presentations

Paul Kolesar (Lucent) – Modeling, Sim., Experimental Study of 50 MMF 10 Gig Link

- **Characterization of link configuration and specification, simulation model, etc.**
- **Relationship between fiber BW measurements with specific encircled flux looks good**

Bill Wiedemann (Blaze) – 850 nm WWDM Proposal

- **Update on proposal; specification recommendations**
- **Cost, risk, schedule, suitability, market support**

Paul Kolesar (Lucent) – 5 PMD Set Proposal

- **Potential for 80% of link < 300 meters**
- **Relative costs; component costs vs time; risk characterization; HBW MMF market acceptance**
- **Specification Recommendations**

Presentations

Michael Fisk (Luminent)– 1550 nm Long Distance WDM

- **4 channel; uncooled DFB; 20 nm spacing**
- **40 km a beyond demonstrated**
- **Benefits wrt chirp and dispersion vs serial**
- **No external modulator, opto-isolator…**
- **Uses CMOS technology**

Krister Frojdh (OptoTronic)– Common Rx for 1310 & 1550

- **Allowing Rx spec's to support both wavelengths increases vendor flexibility**

Ed Chang (NetWorth) – Support all PMDs

Del Hanson (Agilent) – 3 PMD Proposal

- **1310 & 1550 nm Serial + 1310 nm WWDM**
- **Review of previous proposal**

Presentations

Rich Taborek (nSerial) – WWDM LAN PCS/PMA

- **Layer Diagram and explanation (XAUI like)**
- **Use to create a WAN PHY Bridge**

David Law (3COM) – 10 Gig Management MIB

David Law (3COM) – MDC/MDIO Proposal

- **Analysis indicates needs for greater number of registers than previously indicated**

Gary Nicoll (Cisco) – WIS Proposal Update

- **Clock Jitter and Tolerance Discussion: Match SONET?**
- **Recommend support of B2 in addition to B1**
- **Recommend support of M1**
- **Much more!!!**

Presentations

Brad Booth (Intel) – From the Editor….

- **Recommendation on structure**
- **Status of volunteers**

Brad Booth (Intel) – Implications of PMD Choices on Nomenclature

- **5 PMD X WAN/LAN PHYs = 10 Port Types**
- **Choices of style discussed**

Stephen Haddock (Extreme) – How Many PMDs

- **System company perspective**
- **Analysis of the question; recommended process for selection based on 3 application spaces**

Business

1 Hour Open Discussion on PMDs

- **37 people spoke given 1 minute each**
- **See details in minutes**

Howard Frazier (Cisco) – Warriors of the Net Movie

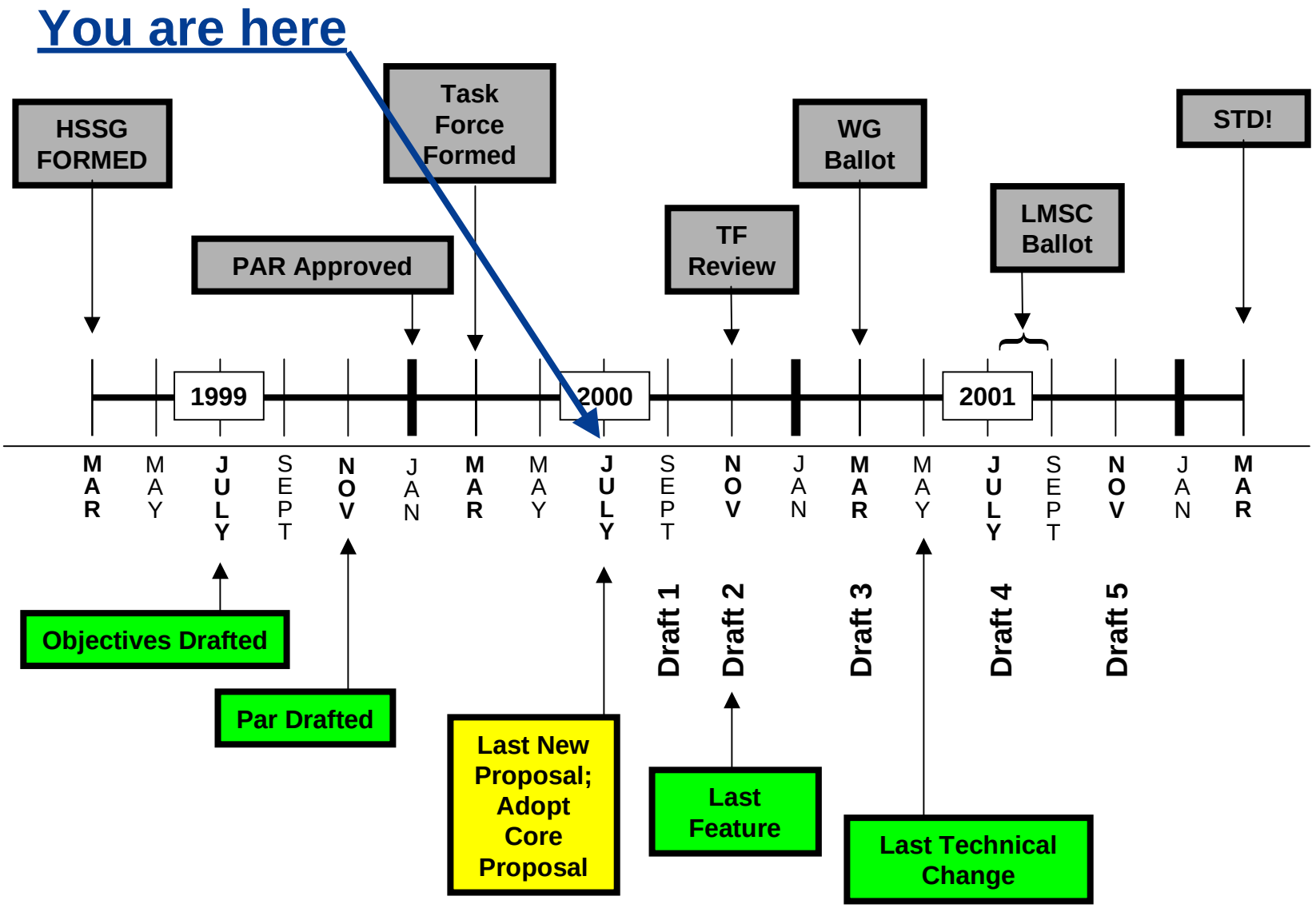
- **http://www warriorsofthe..net/**

Motion to adopt Open Loop Rate Mechanism: approved by acclamation

Strawpoll to include XBI: Y:45; N:10

802.3ae Plan for July

Long Term Schedule



Goals For The Week (1 of 2)

"Selection Phase" (March – July)

- **March:**
  - Survey membership for current "state of mind"
  - Reduce number of PMD proposals (7 or less?)
- **May:**
  - Stage for July final selection of proposals
  - Identify final candidates (e.g. coding schemes);
  - Consolidate proposals; identify clause structure
- **July:**
  - Adopt and refine baseline proposal (CUTOFF)
  - Plan 1st draft (September)

Goals For This Week (2 of 2)

Note: At this meeting we *transition* from discussing what we are going to do *to GETTING IT DONE*

OUR FOCUS IS TO COMPLETE THE CORE PROPOSAL

802.3ae Voting

802.3 Chair Has REQUIRED us to "move [our] votes up to the Working Group…"

Therefore:

802.3 members will vote all technical motions in 802.3ae (may optionally, additionally record attendee votes)

After vote complete, TF chair will ask if any 802.3 voter will challenge vote in 802.3

- **If No: put in "request 802.3 affirm" BOM [1]**
- **If Yes:**
  - Build distinct motion for 802.3
  - Recruit/Assign 2 advocates to present to 802.3

Note: will only be interesting if vote "hugs" 75%

1. Bucket of Motions

802.3ae, therefore, formally requests a up-to-the minute copy of the 802.3 voters list in SOFT COPY by 8:30 a.m. tomorrow morning