2006 Mar 07 IEEE PoEPlus Task Force Minutes

Start at 09:00.

Agenda:
- Wireless
- Appoint Recording Secretary
- Discussion of order
- Intros
- Background stuff
- Presentations
- Review of Objective, timeline
- Approve Minutes / other motions

Meeting Order
- Tue – 09:00-17:00 P802.3at
- Wed – 09:00-12:00 802.3au / 13:00-17:00 P802.3at
- Thu – 09:00-17:00 P802.3at

Motion to approve schedule by Derek Koonce, seconded by Boris Katzenberg
    Approve by voice without opposition

Ground Rules – mutual respect and consideration
- No cost, product pitches, etc
- All may speak and vote
- No restrictions on presentations or materials
- No prices in any currency
- 802.3 rules apply

Rules – in general… behave
Rules – web sites presented for bylaws, operating rules, etc presented. Also Roberts

IEEE Structure reviewed

Patent Policy read by Mike McCormack
- Links provided
- Any patents disclosed requested – none
- questions or patent applications issues brought up
    - Discussion about if company A was involved with standard, and is either patenting or plans to patent a method, then decides, after standard is passed, to enforce patents, is this ethical and allowed?

Electronic information
- Web address – www.ieee802.org/3/at/index.html
- eMail reflector – stds-802-3-poep@ieee.org
- Next meeting – watch www.ieee802.org/meeting/index.html

802.3au Information – link provided with user name and password

Presentations

Belopolski
Robbins
Darshan
Stanford
Sharif

Request to have Wed afternoon dedicated to Classification Methods ad-hoc. No dissention on the idea.

False Detection Problem – robbins_2_0306.pdf
- Problem in .af discovered while testing PSE products
- Provided suggested correction to ensure false detection does not occur

Extended Detection Protocol for 4P PSE – robbins_1_0306.pdf
- Presented single-source and dual-source topologies
- Presented a PSE detection cycle such that there are 3 sample points.
- This would still need two detection cycles to avoid false detection as stated in "False Detection Problem" presentation.

PoE and PoEP and Its Impact on Cabling Systems – walling_2_0306.pdf & walling_1_0306.pdf
- Cabling view from an outsider's perspective.
- CAT6 has 20% less resistance than CAT5 cabling
- 420mA could be acceptable for CAT6, but not for CAT5
- Discussion about Dr. Walling wanting more details of what we want. The group rebuttal is that we want to know what is possible.
- Provided method to resolve the problems on the installed base – testing procedure
- Test method has been developed withing IEC 46C WG7, refined and finalized. Method is available to this group and presented.
    - Agreed that the maximum current allowed by such test would be absolute maximum current that .3at would allow overall.

Magnetics for Higher DC Imbalance – buckmeier_1_0306.pdf
- Reviews what the magnetic companies could do in regards to current imbalance.
- Targeted 24 mA and 34 mA dc imbalance; distortion of insertion/return losses; et. al.
- Result
    - Return loss does not distort w/ 700 mA
    - Return loss does not degrade using magnetics for 24 mA imbalance design
    - Return loss still meets IEEE 802.3 10/100/1000Base-T specifications
- Wire resistance of 0.38 Ohm in magnetics; see 5.9°C rise @ 70°C
- Magnetic increase for higher current is from 10 to 20%
- Conclusions: distortion with dc bias is not an issue; about 6°C rise at 70°C at 800 mA

- Future work
  - Different circuit topologies
  - 1000Base-T backward compatible magnets are capable of supporting 34 mA of dc bias but require further test validation.
- Size: height and width would stay the same, but the depth would increase

Power-over-Ethernet Connecting Hardware Durability Under Electrical Load - belopolsky_1_0306.pdf
- Connector durability under load
- Connectors tested and there was little change in resistance; though damage to contacts were seen. Erosion was seen outside of the wiping zone – more where disconnect occurs. Plating was not exposed.
- Conclusion: need more testing w/ 10m cable. So far no real affect on contact resistance.

Final Summary IEEE 802.3at Classification Ad-hoc Meetings - stanford_1_0306.pdf
- Discussion on Layer 2 being optional should be moved to "strong agreement" section
- Strong Agreement modifications
  - A PSE power path will be used to implement mutual identification.
  - Successive refinement of classification by either PSE or PD will not be used.
- Weak Agreement modifications
  - Lower end of classification power range is 2W.
  - High end of class power range extends beyond maximum power up to LPS limit.
  - Add footnote: Layer 1 is the PSE power path; Layer 2 is a MAC based data path (similar wording)
  - Dynamic power negotiation will not be done in layer 1.
  - The MIB shall include information to support power management. Use of the MIB is optional.
  - (also a few other minor changes)
Will continue Wednesday.
Meeting adjourned at 17:00

Start at 13:10.

Presentations
PoEP Power Management – altmann_1_0306.pdf
- PD can have a 1:4 load variation.

What is Power Management in PoE – darshan_6_0306.pdf
      And …
Classification – Why Do We Need It? – darshan_5_0306.pdf
- Discussed why we need some form of layer 1 classification and to make layer 2 optional.

System Requirements for Classification - schindler_1_0306.pdf
- Motion made by Wiel Diab:
  - The IEEE 802.3at Task Force affirms that a PD requiring more than 12.95W will support a Layer-1 Classification extension and a Layer -2 Classification mechanism. Endpoint PSEs must support Layer-2 classification or Layer-1 classification extension for PDs requiring more than 12.95W.
  - Seconded by Fred Schindler
  - Martin Patoka requests to call the motion
  - Chair rules this is a technical motion
  - All – yea: 33; nay: 0; abstain: 2
  - .3 voters – yea: 17; nay: 0; abstain: 1
  - Motion passes

Final Summary IEEE 802.3at Classification Ad-hoc Meetings - stanford_class requirements rev 3.pdf
- Review of ad-hoc after yesterday's discussions
- Bullet 4, page 2 changed to motion wording as above.
- Other discussions ensued regarding the "Not Agreed Upon" foil. These were modified or deleted. Refer to a more up dated version than what this file is.

Motion by Martin Patoka:
- Motion to charter the ad-hoc to make a proposal for the number of classifications.
- Second by Wiel Diab
- Procedural by the Chair
- All (by voice): passes without opposition

Worst-Case Analysis of PoE System Efficiency - robbins_3_0306.pdf
- Mathematical analysis presentation on number of classification w/ equations
- For 30 class levels, being above ~25 W best to use an exponential scale; below this, a linear scale minimizes system losses.
- Provided cost analysis/savings as well
- Discussion regarding validity / methodology of analysis

Motion to close for the day – passed @ 17:25

2006 Mar 09 IEEE PoEPlus Task Force Minutes

Start at 09:00.

2005 Sept meeting minutes – motion to approve by Yair Darshan, seconded by Matthew Landry - passes without opposition

2005 Nov meeting minutes – motion to approve by Matthew Landry, seconded by Chad Jones - passes without opposition

Interim date and location:
- Leading contender is Seoul, Korea
    - Definitely – 11
    - Might – 16
    - Total number of people – 41

Presentations
Enhanced Classification Economical and Technical Worst case Analysis - darshan_Economical and Technical Classification Worst case Analysis rev 001.pdf
- Looks at a method to determine the number of classes to use and the step increment
- Looks at relative financial analysis of cost of testing per number of classes
    - Recommends that number of classes <68
- Discussion of an "Ethernet PoE hub" was discussed as a potential market where this could force more efficiency on the PD devices.
- In .af, the cable drop was computed within the number of classes.
- It was proposed for people to put together cost analysis of testing PSE and PD systems based on number of classes – due for next meeting.

Mike McCormack – who would vote against standard for Layer 1 number of classes, if it included more than
- 100 – majority people
- 50 – majority people
- 25 – 9 people

2006 Jan meeting minutes – motion to approve by Hugh Barass, seconded by Phil Brownlee - passes without opposition

Power Measurement Accuracy - altmann_2_0306.pdf
- Final recommendation is to have fewer levels since there is errors within the PSE current measuring method.

Motion to adjourn for the day – passes without opposition at 11:45.

Presentations not covered in this meeting:

Contribution for the IEEE 802.3at Classification Ad-hoc Group Preliminary Presentation Table - darshan_1_0306.pdf

Modified Time Based Concept, An Extended Classification Proposal - darshan_3_0306.pdf

Technical Review of Multiple Classification Attempts / Ping Pong – darshan_4_0306.pdf

Submitted by Derek Koonce, acting secretary