2005 Jan 26

PoE-Plus Study Group

0845 start of meeting
Agenda
- Introductions
- Appoint Recoding Secretary
- Ground Rules
- IEEE Patent Policy
- IEEE structure, rules and process
- Goals for the meeting
- Web and e-mail and other SG stuff
- Presentations
- Motions

Ground Rules
- Mutual Respect
- All may speak
- All may vote
- O product pitches
- No corporate pitches
- No restrictions on presentations or materials
- No prices
  - No cost in any currency, complexity is OK
- 802.3 rules apply

IEEE-SA Standards Board Bylaws on Patents in Standards, section 6 was read in completely by the chair.
Inappropriate Topics for IEEE WG Meetings
- Don't discuss licensing terms or conditions, etc….

IEEE Structure was outlined.
- IEEE
  - IEEE-SA (Standards Association)
    - Standards Board – RevCom & NesCom
    - IEEE 802 – 802.3 – Task Forces & Study Groups
- Study Group does have the objective to come up with a PAR and 5-criteria (802) & objectives (802.3 requirement).
- This moves on for approval. And process goes on.

Rules
- Bylaws of the IEEE Standards Association:
  - http://standards.ieee.org/sa
- Bylaws of IEEE Standards Association:
  - http://standards.ieee.org/board/index.htm

In summary:

Follow the "ground rules"

A study group exists to create a PAR, 5 Criteria ad objectives – some research on topic

A study group exists from Plenary to Plenary – become a TF, get extension approval or die

Everything in the structure chart approve the TF – do a good job on bullet 2

A study group does not write a spec or select a solution

Meeting Goals

Learn the ropes

The tools: website, e-mail meetings

The task: PAR, 5 Criteria, Objectives and the IEEE process

Develop some consensus

Set some bounds on the scope

Set some objectives

Lay the ground work for the next meeting

Website and E-mail

Web address

http://www.ieee802.org/3/poep_study/index.html

e-mail – send an e-mail to

listserve@ieee.org

containing the body text

subscribe standards-802-3-poep <yourfirstname> <yourlastname>

next meeting (Atlanta)

http://www.ieee802.org/meeting/index.html

possibly Tue & Wed

Consensus is that we will only do edits to clause 33 and not create a new clause completely.

Mike commented that we should review the presentation that resulted in this group.

Review presentations (in the listed order by file name) located at web site

http://www.ieee802.org/3/poep_study/public/nov04/index.html

Feldman_1_1104.pdf

Request to start with slide page 8 as a starting point for the study group.

Limits for max power can be varied from voltage limits to size of data transformers.

Previous limit based on old equipment capability and voltage limitations.

DiMinico_1_1104.pdf – modified

Any drafts to TIA 568 addendum need to be reviewed – request to get group together to review this.

Some discussion on connector capability in environment and aged conditions.

We need to work within the PHYS for cable current limits. We are not going to be able to write a new cabling spec.

McCormack_2_1104.pdf

Letter received from ISO/IEC JTC 1/SC 25/WG3 Customer premises cabling (Allen discussed)

10BASE-T is sensitive to insertion loss. Letter says cabling can support up to 10 W per pair and thus 40 W for a 4-pair cabling channel. We need to work with this group to allow them to study our proposal if we go higher than 40W. European standard is less than 10 W per pair due to safety and other factors. 72V was based on the connector rating voltage.

Alen Flatman will be the liason for the ISO/IEC group from the 802.3. Any requests for communications will go through the chair first.

TIA SP-4425-AD6-D [Draft 5.0] (TIA/EIA-568-B.1-6)

http://www.ieee802.org/3/private/liaison_docs/index.html

*** username: XXXX

*** password: XXXX

Need to have ad-hoc committee to review this document and make comments.

Meeting in this room at 1900 hours to address this.

Presentations

Feldman_1_0105

Market-related Criteria

40W and below potential is 80M units by ’08 (based on several sources)

Firewire established up to 45W

Darshan_1_0105

Economical Feasibility

Cost numbers are relative and actual values are available upon request.

Issues of cost came up when looking at a linear wall-wart compared to a switch-mode wall-wart.

Slide 8 comes into controversy if supplying max power to every port. This slide addresses only the same amount of power, but distributing at different power amounts. This analysis needs to account for the data transformer cost increase.

Austerman_1_0105

Classification of the 802.3 Construction

Demo system has been shown in the lab.

Patoka_1_0105

General Comments

Would like to see current go up and not go to 4 pairs.

Darshan_2_0105
IEEE802.3poep Study Group Technical Aspects

Page 7, option 4 in table will be addressed by the PD providing some signal to the user that the device is plugged into an .af PSE. This was verbally agreed upon at the Call for Interest meeting.

McCormack_1_0105
PoE Effect on Cable Temperature Variance

Actions:

Get a group to review TIA 568 drafts to get consensus of operability into PoEP project.
Derek Koonce to get NASA cable specifications or MIL-STANDARD charts.
Hank Hinrich present info on magnetic cost increases.
Steve Ellsworth will present on current imbalance.
Yair Darshan will address, in next presentation, average usage compared to capability of the system, and how power management can reduce the cost.
Joe Dupuis – will present data showing 4-pair power insertion at next meeting.
The PoEP will need to ensure some signal is generated by the PD if it is connected into a .af PSE.

Thursday's agenda

- PAR
- 5 Criteria
- Objectives

Meeting was adjourned at approximately 5:00 PM local time.

2005 Jan 27

PoE-Plus Study Group

0845 start of meeting
Agenda

- PAR
- 5 Criteria
- Objectives

What is a PAR

- Project Authorization Request
- Sent to NesCom to authorize the development of a standard.
- Largely legal document

Sample PAR shown.

- Sect. 4: Need to define title past "Amendment"
- Sect 12: Scope – description of what it is and what are you doing.

Sect 13: Purpose – why is this being done
Sect 15: Market justification of doing the standard

5 Criteria
Set to 802 to authorize the development of a standard
Some legal content
Broad Market Potential
Broad set of applications
Multiple vendors, multiple users
Balance cost, LAN vs. attached stations
Compatibility with IEEE Standard 802.3
Conformance w/ CSMA/ CD MAC, PLS
Conformance w/ 802.2
Conformance w/ 802 Functional Requirement.
(may best to pull this from the .af PAR)
Distinct Identity
Substantially different from other 802.3 spec / solution
Unique solution for problem (not two alternatives / problem)
Easy for document reader to select relevant spec
(why we should do this and not mess up the .af specification)
Technical Feasibility
Demonstrated feasibility; reports – working models
Proven technology, reasonable testing
Confidence in reliability
Economic Feasibility
Cost factors known, reliable data
Reasonable cost for performance expected
Total Installation costs considered

Objectives
Sent to 802.3 WG to authorize the development of a standard
Bounds the scope of the work to be done
Very much pure content with a little legal wording

PoE-Plus Objective Development

CFI Promises
High Power – to the limits of the physics
Interoperation with 802.3 and other standards.
Power redundancy management at the port level
Power Forwarding
Power Redundancy
Distinction between 802.3af PD's and high power PD's
New PDs will indicate to the user they are attached to a legacy PSE
Enhancements as may come before the committee

Objective 1

PoEPlus will enhance 802.3af and work within its framework – there will be no new clause.

Objective 2

The target infrastructure for PoEPlus will be ISO/IEC 11801-1995 Class D or higher systems. Further we will not cause a safety issue for a legacy installation conformant to ISO/IEC60950.

Objective 3

IEEE STD 802.3 will continue to comply to the limited power source and SEL V requirements as defined in ISO/IEC 60950.

Objective 4

The PSE shall (or "be investigated") be interoperable with 1000BASE-T in both midspan and endpoint environments.

Hard objective (shall) – 10 Soft objective (be investigated) – 16

Not a full consensus to solidify this objective. We will have to revisit this objective about 1G and possible 10G.

However the following is agreed upon at this time.

The PSE shall operate in all modes of IEEE STD 802.3af as well as enhanced modes.

Objective 5

The enhanced standard will provide the maximum power to the PD as allowed within practical limits.

Objective 6

PoEPlus shall support a minimum of 30 Watts of power at the PD PI.

Incremental poll for minimum power to determine 'xx': still in at…

40 W – 22; oppose – 0; abstain - 4

35 W – 22; oppose – 0; abstain – 4

30 W – 22; oppose – 0; abstain – 4

25 W – 9; oppose – 9; abstain – 6

20 W – 1; oppose – 15; abstain – 8

Consensus of 30 W was instituted.

Objective 7

PoEPlus PDs, when connected to a legacy 802.3af PSE, will provide the user an indication that a PoEPlus PSE is required. This indication is in addition to any optional management indication provided.

Objective X

PoEPlus PSE will allow an optional power redundancy at the port level for two pair powered PDs. – Yair will present; see action items

Discussion on Power Forwarding by the way of Power Management implementation. Mike will give presentation; see action items.

Objective 8

Able to meet FCC / CISPR Class A and / or B with data for all supported PHYs.

Objective Y

Research raising the power on 2 pairs, as well as using four pairs for even higher power. – Deleted since this will also be covered in Objective 5.

Objective 9

Research of potential extension of power classification to support PoEPlus modes.

Objective 10

Research the operation of midspan PSEs for 1000BASE-T.

Objective 11

Research the operation of midspan and endpoint PSEs for 10GBASE-T including providing cable heating data for evaluation by IEEE P802.3an.

Chad Jones wants to make sure that the TF will look at increasing power for a 2 pair.

Next meeting potential.
Following is a count of who can make what meetings.
Plenary meeting attendance for March 14th week, Tue/Wed – 18 people say they can attend.
16th May week in Barcelona – 10 people OR 16th May week in Austin – 18 people

Actions:

Chair will request for an extension for this Study Group for March Plenary.
Yair Darshan will generate presentation to discuss power redundancy at the port level for two pair powered PDs.
Mike McCormick will present material on Power Forwarding.

These minutes of the PoE Plus Study Group submitted by
Derek Koonce
Recording Secretary