Minutes IEEE 802.3cg 10SPE TF AdHoc meeting 14 December 2016

Prepared by Peter Jones

Proposed Agenda:

1. Agenda/Admin Peter Jones

Presentations posted at:

http://www.ieee802.org/3/10SPE/public/adhoc/index.html Today
http://www.ieee802.org/3/cg/i public/adhoc/index.html Real Soon Now

Agenda/Admin Peter Jones:

Meeting began at 7:05am PT.

1. Reviewed the Attendance information related to the ad hoc.
2. Displayed post-par patent slide deck, and reviewed patent policy.
   a. Call for patents at 7:10AM Pacific Time, no responses.
3. Reminded participants to indicate full names and employer/affiliation correctly for the meeting minutes.
4. Asked for approval of 6 & 30 November minutes?
   a. Approved without objection.
5. Presented the proposed agenda.
   a. Approved without objection.

Presentations/Discussion.

Chair's Comments George Zimmerman CME

- We are a Task Force!
  - Website will change to www.ieee802.org/3/cg/index.html
  - Reflector is unchanged
  - Focus of the group will now turn to technical decisions on baseline proposals
    - Need to resolve any outstanding issues on objectives (i.e., multidrop, any specifics on powering) as soon as possible – plan presentations for January!
  - Presentation requests for January are due on Monday January 2, AOE, presentations are due Thursday, January 5, AOE. Meeting will start 8AM Monday January 9 in Huntington Beach

Update to 1000m link proposal Matthias Fritsche/Dieter Schicketanz HARTING Electronics GmbH/Consultant, Reutlingen University

- This is an update to the last presentation with loop resistance info.
- Slide 2 – "Note: in ISO the IEEE link is named channel" – needs clarification or maybe just delete note.

    - Chris Diminico offers a presentation on these definitions for Jan Interim
- Some question about the specification of Alien crosstalk, coupling attenuation not so interesting, the transfer function is what matters to PHY vendors.

DC Powering Steffen Graber Pepperl+Fuchs

- Slide 10
    - Question about voltages on each side of the field barrier, presenter offers to add note.
- Slide 11
    - Question about resistance – always loop resistance.
    - Question about formulae – this is rule of thumb used to design the cable plant.
    - Question about cable construction – some details of assumptions about cable construction (stranded vs solid etc) not in the deck – presenter will add.
    - Question about delivery efficiency – looks like less than 60% (13W to deliver 7.74W), designed based on other constraints including controlling the rate of current change.
- Slide 17
    - Question about 17.5V, 0.38 A, wondering about use case? Device used for IS and non-IS, there are a number of component available that are high efficiency at less than ~ 22 V.
    - Comment – we should not miss the chance to improve efficiency.

PD power, Vpse and Rcable Chad Jones Cisco

- Please add slide numbers next time ☺ (note: posted presentation has been updated)
- Note: in powerpoint version, posted after the meeting, numbers on the graphs may be seen by hovering on a point.
- Efficiency slide
    - Need to add a new row for 91W (Class 8 – non-extended power) case?

Discussion – All

- For very long reach, is a second cable an option?
    - Cost of cable installation relative to the rest of the system can be prohibitive.
    - Can this be addressed by defining the total impedance and let the cable plant figure out if it's 1 pair, 2 pair, etc.?
    - Not pretty – would need changes to current practice – may be barrier to adoption.
    - Need to consider the efficiency goals of the project vs the relative amount of energy in the full system. Often the control system is a very small percentage of the energy use of the full installation.
- Need to agree where to optimize for powering. If the bulk of installations are ~300m-500m (really the equivalent loop resistance), we should optimize for that case, and live with lower efficiency for the longer (bigger resistance) links.
- Local power storage/accumulator vs higher instantaneous power delivery – different system tradeoffs.

    - Batteries in hazardous areas are problematical.
- Many devices need to be awake very often to report operational status, even if the main function is idle.

Plan for next meeting George Zimmerman CME

- Happy to see power profiles proposed – good to spark discussions
- Focus on loop resistance, not length. That's what limits the powering scope.
- Cancel AdHoc for 12/28, next meeting is Interim.
- Circulate ideas early on reflector.
- Chris Diminico offers a "ground hog day" terminology presentation – hopes first draft will be sent out before/during the break, so people can align to terminology for January.

Meeting closed – 8:52AM PT

Attendees (from Webex + emails)

Name	Affiliation	attended 12/14
Alexander Felgenhauer	Yazaki	y
Bob Voss	Panduit	y
Brian Franchuck	Emerson	y
Brett McClellan	Marvell	y
Chris Diminico	MC Communications/Panduit	y
Chad Jones	Cisco	y
Craig Gunther	Harmen	y
Dale Borgeson	Emerson	y
Daniel Wiesmayer	DRÄXLMAIER	y
David Brandt	Rockwell Automation	y
David Hoglund	Johnson Controls	y
David Law	HPE	y
Dayin Xu	Rockwell Automation	y
Dieter Schicketanz	Consultant, Reutlingen University	y
Eric DiBiaso	TE	y
Geoff Thompson	Independent	y
George Zimmerman	CME Consulting / Commscope, LTC & Aquantia	y
Hans Lackner	QoSCom GmbH	y
Heath Stewart	Linear Technology	y
Helge Zinner	Continental Corp.	y
Kirsten Matheus	BMW	y

Larry Matola	Delphi	y
Laura Schweitz	Turck	y
Ludwig Winkel	Siemens	y
Maris Graube	Relcom Inc.	y
Markus Wucher	Endress+Hauser	y
Matthias Fritsche	HARTING Electronics GmbH	y
Matthias Jaenecke	Yazaki	y
Mick McCarthy	Analog Devices	y
Oisín Ó Cuanacháin	Analog Devices	y
Paul Vanderlaan	Berk-Tek	y
Peter Jones	Cisco	y
Peter Wu	Marvell	y
Phillip Brownele	TDK	y
Steffen Grabber	Pepperl+Fuchs	y
Thomas Mueller	Rosenberger	y
Tobias Belitz	Renesas	y
Ulrich Nowack	Delphi	y
Attendee count		38