Minutes IEEE P802.3ch Multigig Automotive Ethernet PHY TF AdHoc meeting June 14, 2017

Prepared by George Zimmerman

Proposed Agenda:

1. Agenda/Admin: George Zimmerman, agenda_3chah_01_061417.pdf
2. SG Chair's comments: Steve Carlson, no presentation
3. Presentations:
    a. Link Segment Configuration, Proposal for Testing – Mike Gardner & Harsh Patel, Molex LLC
    b. NGAUTO Sleep/Wake-up Concept – Stefan Buntz, Daimler AG
4. Discussion & Next steps – All

Presentations were posted to the adhoc webpage the evening before

Agenda/Admin George Zimmerman acting as ad hoc chair:

Meeting began at 7:05am PT.

Introductions & Affiliations.

Presented file: agenda_3chah_01_053017.pdf

1. Reviewed the Attendance information related to the ad hoc.
2. Displayed the Participation slide and reviewed it.
3. Displayed patent slide deck, and reviewed it.
   Call for Patents was made at 7:17AM Pacific Time, none responded
4. Reminded participants to indicate full names and employer/affiliation for the meeting minutes.

The reflector and website are now up, and we are now using the NGAUTO reflector. Instructions for subscribing to the reflector may be found at http://www.ieee802.org/3/ch/reflector.html. If you cannot subscribe to the reflector for some reason, and need additional assistance please contact the Task Force chair.

Files will be posted under the new Task Force ad hoc area.

Presentations/Discussion:

Chair's Comments & Discussion Steve Carlson, Chair, IEEE P802.3ch Task Force: Steve welcomed the group and discussion moved to the cabling data needed and formats requested for 802.3ch PHY studies.

Presentation: Mike Gardner & Harsh Patel, Molex LLC, Link Segment Configuration, Proposal for Testing (link_segment_measurement.pdf)

The presenter discussed proposed test configurations for measurement input to the Task Force.

Discussion: there was some discussion of what is the shortest length of a section that could be made. General agreement on the topology presented for measurements. 250mm is the shortest segment to be used, based on coax manufacturers.

PHY vendors will need to know limit lines for insertion loss and return loss, and that these will need to be defined in a repeatable way, to come up with worst-case parameters. There was some discussion to use the Gardner presentation as a starting point to get a reasonable worst case for PHY analysis.

Presentation: Stefan Buntz, NG Auto Channel Data Request (buntz_NGAUTO_02_0617.pdf)

The presenter discussed wake-up / sleep need for automotive links. He stated the following problem:

> The expressed desire was to have a quick way to bring up an entire network (or subnetwork) based upon an individual node becoming active.

This problem is not unique to 802.3ch, but would be applicable to 802.3cg and preferably the other automotive PHYs as well.

Discussion: There was considerable discussion about where a PHY waking up an entire switch was in 802.3 scope, but general agreement that except for the PHY's part in the signaling, this is a higher level problem than just the PHY signaling, which is necessary to solve this.

In the course of discussion, the problem to be solved was described in more detail:

- The desire was to have the PHY go completely silent when inactive, so that designers would be able to minimize power to the greatest extent possible (100microamps for the entire ECU)
- The PHY is able to send the wake information in substantially less than normal fast-training time
- After the wake is sent, the PHYs could then train in normal fast-train time.

There was some discussion that the wake signal could be the usual wake used with Energy Efficient Ethernet, coupled with some protocol in the switch to broadcast the wake event and wake other ports.

George Zimmerman offered an overview of EEE wake signaling at the next ad hoc call.

Geoff suggested this might be a good topic for an 802.3 level ad hoc, with notification to 802.1 (because of port-to-port switch implications), at the Berlin meeting.

Closing Business

Next meeting on 6/28 – expect at least one contribution mentioned above. Hopefully we can make progress on both the link segment and on the wake issue.

Meeting closed –9:00 am PT

Attendees (from Webex + emails)

First	Last	Affiliation
Dale	Amason	Nxp
Amrik	Bains	Cisco
Tobias	Belitz	Renesas
Mark	Bohm	Microchip
Rich	Boyer	Delphi
David	Brandt	Rockwell Automation
Stefan	Buntz	Daimler
Steve	Carlson	High Speed Design / Robert
Mandeep	Chadha	Microsemi
Mabud	Choudhury	OFS
Leo	Chung	UL
Eric	DiBiaso	TE
Marc	Dupuis	Webindustries
Matthias	Fritsche	Harting
Mike	Gardner	Molex
Craig	Gunther	Harman
Anhtuan	Huynh	Leoni
Yasuhiro	Hyakutake	Adamant
Dalibor	Ignjatovic	Acome
Chad	Jones	Cisco
Tomohiro	Kikuta	Adamant
David	Malicoat	Senko
Kirsten	Matheus	BMW
Brett	McClellan	Marvell
Greg	McSorley	Amphenol
Wes	Mir	Delphi
Takeshi	Nish	Yeu
Douglas	Oliver	Ford
Sujan	Pandey	Nxp
Harsh	Patel	Molex
Phong	Pham	usconec
Rainer	Pöhmerer	Leoni
Vimalli	Raman	Yazaki
Rob	Schmidt	Rockwell Automation
Hossein	Sedarat	Aquantia
Mehmet	Tazebay	Broadcom

Geoff	Thompson	GraCaSi (Independent)
Alex	Umnov	Corning
Karl	Weber	Beckhoff
Christoph	Wechsler	Audi
Natalie	Wienckowski	GM
Peter	Wu	Marvell
Kent	Younglove	Yazaki
John	Yurtin	Delphi
George	Zimmerman	CME Consulting/ADI, Aquantia,
Helge	Zinner	Continental