IEEE 802.3cg 10SPE TF/802.3 10BP SG AdHoc meeting
28 MARCH 2018

Prepared by Peter Jones

Proposed Agenda:

1. Agenda/Admin Peter Jones

Presentations posted at:

http://www.ieee802.org/3/cg/public/adhoc/index.html

Agenda/Admin Peter Jones:

Meeting began at 7:05am PT.

1. Reviewed the Attendance information related to the ad hoc(s).
2. Displayed pre & post-par slide deck, reviewed patent policy, participation conditions.
   https://development.standards.ieee.org/myproject/Public/mytools/mob/preparslides.pdf (10BP)
   https://development.standards.ieee.org/myproject/Public/mytools/mob/slideset.ppt (10SPE)
   https://mentor.ieee.org/802-ec/dcn/17/ec-17-0093-05-0PNP-ieee-802-participation-slide-ppt.ppt
3. Made potentially essential patents call for 802.3cg – 10SPE
   No-one responded.
4. Reminded participants to indicate full names and employer/affiliation correctly for the meeting minutes.
5. Approval of minutes for previous meeting
   a. No request today.

Presentations/Discussion.

802.3cg 10SPE Editors Preview Valerie Maguire Siemon

- D1.2 TF Review – on schedule.
- Draft to be posted March 29th
- Close of cycle April 29th
- Proposed resolution May 7th

802.3cg 10SPE Status of Draft etc George Zimmerman CME (*)

- Objectives approved by 802.3.
- PAR/CSD approved 802.3 & 802 EC.
- Pending approval from IEEE NESCOM – expected in May before the Pittsburgh meeting
- Start lining up changes needed for 10BPE – early presentations to AdHoc are strongly encouraged.
- D 1.2 – heading towards D2.0 for WG ballot. Target is July.

- Need to close technical gaps (not required to be perfect).
- Getting into WG enables us to accelerate progress, we want to be there.

802.3cg 10SPE Proposal for T1S scrambler adoption Piergiorgio Beruto Canova Tec

- We need a scrambler to improve EMI in the case of repetitive data patterns
- Where to scramble?
    - After 4B/5B gives best EMI, but means that we have trouble finding the special 5B symbols (adding system complexity).
    - Scrambling before 4B/5B is simpler for us, what about EMI?
- Scrambler type:
    - Side-Stream – some issues regarding seed selection
    - Self-Synchronizing – propagates errors – is this an issue for us?
        - Propagated errors are not independent (from the scrambler polynomial).
- Self-Synchronizing looks better
    - Careful choice of polynomial removes the possibility of undetected errors (though FCS collision).
    - X^17+x^14+1 seems to meet the needs.
    - Minimizes changes to draft (none in 148)
- Slides will be posted with minor updates, including “25dB reduction in transmit PSD”.
- Comments from the call supportive of the proposal.
- Q: polynomial O(17)?
    - A: just a better result in PSD.
- Q: data dependent, what was used?
    - A: Various worst case (all 0s, all 1s, etc). Will post patterns.
- Want to check against other patterns to ensure the solution is resilient. What about packet sizes?
    - Always a question about how to evaluate and what cases need to be evaluated.
    - Believe enough data has been provided so that instead of asking “what about case xyz?” an individual can run the simulation and check
- Q: What are you sending during scrambler sync? 55555? If it is just 5555, the scrambler is like a fixed seed scrambler, ….
    - A: - scrambler not reset between packets.
- Q: Do we need a defined sequence to selfSync the scrambler?
    - A: No – always self synchronizes – used in many other places, For example, 10GBASE-R and the 40/100GBASE-Rs, clause 55 10GBASE-T, all the multigigabit BASE-T PHYs.
- Q: Is O(17) sufficient to minimize the probability of worst-case sequences (other Ethernet specs use higher order scrambler polynomials) ?
    - A: Could be investigated. What is the problem?
- Next steps?

- Post updated slides, including new slide for PCS RX state machine.
- Post additional results that were not included in this deck.
- Individuals to check for worst-cases.

Meeting closed – ~8:30am PT

Attendees (from Webex + emails)

Name	Employer	Affiliation	Attended 3/28
Alessandro Ingrassia	Canova Tech	Canova Tech	y
Amrit Gopal	Ford	Ford	y
Aniruddha Phatak	Renesas	Renesas	y
Antonio Orzelli	Canova Tech	Canova Tech	y
Bernd Sostawa	MicroChip	MicroChip	y
Brett McClellan	Marvell	Marvell	y
Brian Franchuck	Emerson	Emerson	y
Christopher DiMinico	MC Communications/Panduit	MC Communications/ Panduit	y
Clark Carty	Cisco	Cisco	y
Conrad Zerna	Fraunhofer IIS	Fraunhofer IIS	y
Craig Gunther	Harmen	Harmen	y
Dale Borgeson	ED Engineering	Emerson	y
Daniel Wiesmayer	DRÄXLMAIER	DRÄXLMAIER	y
Dave Hess	CordData	CordData	y
David Brandt	Rockwell Automation	Rockwell Automation	y
Dieter Schicketanz	Consultant, Reutlingen University	Consultant, Reutlingen University	y
Doug Oliver	Ford	Ford	y
Eric DiBiaso	TE	TE	y
Fatma Caliskan	MicroChip	Microchip	y
Gary Irwin	CommScope	CommScope	y
Geoff Thompson	GraCaSI S.A.	Independent	y
George Zimmerman	CME Consulting	ADI, APL Group, Aquantia, BMW, Cisco, Commscope	y
Gergely Huszak	Kone	Kone	y
Harald Zweck	Infineon	Infineon	y
Henry Muyshondt	Microchip	Microchip	y
Hongming An	Microchip	Microchip	y
Jay Cordaro	Broadcom	Broadcom	y
Jean Picard	TI	TI	y

Jens Gottron	Siemens	Siemens	y
Jim Bauer	Marvell	Marvell	y
Larry Matola	Aptiv	Aptiv	y
Laura Schweitz	Turck	Turck	y
Lennart Yseboodt	Phillips	Phillips	y
Les Farkas	Alarm.com	Alarm.com	y
Lokesh Kabra	Synopsys	Synopsys	y
Masood Shariff	CommScope	CommScope	y
Matthias Fritsche	HARTING Electronics GmbH	HARTING Electronics GmbH	y
Mike Gardner	Molex	Molex	y
Nicola Scantamburlo	Canova Tech	Canova Tech	y
Oisín Ó Cuanacháin	Analog Devices	Analog Devices	y
Paul Vanderlaan	Berk-Tek	Berk-Tek	y
Peter Jones	Cisco	Cisco	y
Phillip Brownele	TDK	TDK	y
Piergiorgio Beruto	Canova Tech	Canova Tech	y
Scott Griffiths	Rockwell Automation	Rockwell Automation	y
Shiva Akkihal	Microchip	Microchip	y
Steffen Graber	Pepperl+Fuchs	Pepperl+Fuchs	y
Sujan Pandey	NXP	NXP	y
Thomas Mueller	Rosenberger	Rosenberger	y
Tim Baggett	Microchip	Microchip	y
Valerie Maguire	Siemon	Siemon	y
Venkat Iyer	Microchip	Microchip	y
Attendee count			51