

Approved Minutes
IEEE 802.3 Higher Speed Study Group
Interim Meeting – July 16, 2007
Plenary Meeting – July 17 -19, 2007
San Francisco, California

Prepared by: George Oulundsen

HSSG Interim Meeting convened at 9:04 am, Monday, July 16, 2007.

Agenda & General Information

By – John D'Ambrosia

See – agenda_01_0707.pdf

- Introductions
- Appointed Secretary – George Oulundsen appointed by Chair as Secretary for this meeting with no objections
- Motion to approve the agenda-
 - Moved by Joel Goergen, 2nd by Ilango Ganga
 - Approved by voice vote without objection
- Motion to approve the May Interim Meeting Minutes
 - Motion moved to accept minutes by Pete Anslow, 2nd by Brad Turner.
 - May Interim Meeting Minutes were approved by voice vote without objection
- Chair reviewed the HSSG organization
- Goals for meeting
 - Hear presentations related to objectives and 5 Criteria
 - Finalize HSSG Objectives
 - Finalize number of recommended PAR
 - Completion and approval of PAR A
 - Project Authorization Request (PAR)s
 - 5 Criteria Responses
 - If there is a new PAR, then
 - Project Authorization Request (PAR)s
 - 5 Criteria Responses
 - Tutorial preparations
- Ground Rules
- IEEE Structure, Bylaws & Rules
- IEEE Patent policy reviewed by Chair.
 - Chair advised the HSSG to review the tutorial on the IEEE website on the new Patent policy.
 - Chair read the IEEE Patent Policy
 - The Chair advised the HSSG that:
 - The IEEE's patent policy is consistent with the ANSI patent policy and is described in Clause 6 of the *IEEE-SA Standards Board Bylaws*;
 - Early identification of patent claims which may be essential for the use of standards under development is encouraged;

- There may be Essential Patent Claims of which the IEEE is not aware. Additionally, neither the IEEE, the WG, nor the WG Chair can ensure the accuracy or completeness of any assurance or whether any such assurance is, in fact, of a Patent Claim that is essential for the use of the standard under development.
 - It is recorded that the Chair reviewed the IEEE Patent Policy and its five relative slides with the study group.
 - The chair provided an opportunity for participants to identify patent claim(s)/patent application claim(s) and/or the holder of patent claim(s)/patent application claim(s) that the participant believes may be essential for the use of that standard. No one came forward.
- Study Group function
 - Function is to draft a complete PAR and Five Criteria
 - Provide a plenary week tutorial to the LMSC
 - Gain approval at the WG 802.3, 802 SEC, IEEE NesCom and IEEE-SA Standards Board.
 - SG only exists for 6 months
 - Extensions can be requested, voted on by 802.3, ratified by SEC
 - The HSSG has requested and has been granted 2 extensions.
 - Development of Objectives helps set the goals for the Task Force
 - Consensus (>75%) required to move forward
 - Not a goal – choosing a solution
- IEEE Standards Process Flow and Study group creation (July 2006)
- Reviewed HSSG Objectives
- Reviewed HSSG “PAR A” (Working Draft)
- Reviewed voting privileges and requirements to maintain those rights.
- Chair reminded the HSSG to make sure they declared their affiliation.
- Reviewed list of presentations

Presentation #1

Title – Moving Forward...
 By – John D'Ambrosia, Force 10 Networks
 See – dambrosia_01_0707.pdf

After presentation Chair opened floor for discussion. None took place.

Motion to adjourn - moved by Paul Kolesar; 2nd by Steve Trowbridge
 Approved by voice vote without objection

HSSG Interim Meeting adjourned at 10:08 AM July 16, 2007

HSSG Interim Meeting (7/16/2007) Attendance Sheet

Last Name	First Name	Affiliation
Abbas	Ghani	Ericsson, UK
Abbott	John	Corning
Akasaka	Youichi	Fujitsu Labs
Alping	Arne	Ericsson AB
Anslow	Pete	Nortel
Belhadj	Med	Cortina Systems
Booth	Brad	AMCC
Braun	Ralf-Peter	Deutsche Telekom, T-Systems
Bresser	Ad	KPN
Chang	Frank	Vitesse
Chow	Jacky	Marvell
D'Ambrosia	John	Force 10 Networks
Dawe	Piers	Avago Technologies
DiMinico	Chris	DNI
Dineen	Thomas	Self
Dove	Dan	DoveNetworking - Procurve by HP
D'Souza	Godfrey	Cswitch Corp.
Dudek	Mike	JDSU
Duelk	Marcus	Alcatel-Lucent
Fischer	Thomas	Siemens Networks
Flatman	Alan	LAN Technologies
Folkens	Norbert	JDSU
Frazier	Howard	Broadcom
Ganga	Ilango	Intel
Goergen	Joel	Force 10 Networks
Green	Larry	Ixia
Hankins	Greg	Force 10 Networks
Hays	Robert	Intel
Herve	Pierre	Intel
Hronik	Stan	IDT
Ishibe	Kazuhiko	Anristu
Ishida	Osamu	NTT
Isono	Hideki	Fujitsu Ltd.
Jaeger	John	Infinera
Jewell	Jack	JDSU
Jiang	Wenbin	JDSU
Karam	Mansour	Arastra
Kawatsu	Yasuaki	Hitachi-Cable
Kipp	Scott	Brocade
Kobayashi	Shoukei	NTT
Kojima	Keisuke	Mitsubishi Electric Res. Lab
Kolesar	Paul	CommScope
Lee	Hyeong	ETRI
Maki	Jeffery	Juniper Networks
McDonough	John	NEC America
McGrath	Jim	Molex
Miao	Tremont	Analog Devices Inc.

Moorwood	Andy	Extreme Networks
Muller	Shimon	Sun
Nabili	Babak	Scintera
Nadeau	Gerard	UNH - IOL
Nicholl	Gary	Cisco
Nowell	Mark	Cisco
Obara	Satoshi	Fujitsu
Oganessyan	Gourgen	Molex
Oulundsen	George	OFS
Patel	Shashi	Foundry Networks
Peeters Weem	Jan	Aprius
Pepeljugoski	Petar	IBM
Pimpinella	Rick	Panduit Corp.
Salisbury	Neil	Optium
Sanchex	Oliver	OCP Inc.
Savi	Olindo	The Siemon Co.
Schoenmaker	Peter	NTT
Seely	Ted	Sprint
Shigematsu	Masayuki	Innovation Core SEI, Inc.
Steerman	Henk	AMS-1X
Swanson	Steve	Corning
Szczepanek	Andre	Texas Instruments
Takeda	Noriyuki	KDDI R&D Laboratories Inc.
Takeda	Norbiyuki	KDDI R&D Laboratories Inc.
Theodoras	Jim	Cisco
Thiagarajan	Sashi	Ciena
Toyoda	Hidehiro	Hitachi
Traverso	Matt	Opnext
Trowbridge	Steve	Alcatel-Lucent
Van Deusen	Herb	Gore Associates
vanDoorn	Schelto	Intel
Vareljian	Albert	Altera Corp.
Weil	Jason	Cox Comm.
Weitlner	Andy	Marvell
Wertz	Jason	Sandia National Laboratories
Zhong	Charlie	LSI Logic

HSSG Plenary Meeting convened at 9:03 AM July 17, 2007

Agenda & General Information

By – John D'Ambrosia

See – agenda_01_0707.pdf

- Introductions
 - Member of the Press is present – Jim Theodoras, Liason Editor for Optical Communication Supplement to IEEE Communication Magazine
- Appointed Secretary – George Oulundsen appointed by Chair as Secretary for this meeting with no objections
- Motion to approve the agenda-
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-

Presentation #1

Title – ITU Liaison

By – Pete Anslow, Nortel

See – 0707_ITU_SG15_to_802_3_LS165.pdf

Discussion –

- Need to draft a response letter to ITU – Mark Nowell has agreed to prepare a response letter.

Presentation #2

Title – Technical Feasibility of 4x10G and 10x10G Electrical Interfaces

By – Lew Aronson and Chris Cole, Finisar

See – aronson_01_0707.pdf

Presentation #3

Title – Advantage of Linear Interface for 4x and 10x Links

By – Ali Ghiasi, Broadcom

See – ghiasi_01_0707.pdf

Break at 10:42 AM

Reconvened at 11:01 AM

Presentation #4

Title – Higher Speed Copper Operation

By – Ali Ghiasi, Broadcom

See – ghiasi_02_0707.pdf

Presentation #5

Title – Server Use Cases for 40GE and 100GE
By – Robert Winter, Dell
See – winter_01_0707.pdf

Break for lunch at 11:46 AM
Reconvened at 1:17 PM

Presentation #6

Title – 40G PHY Options
By – Robert Hays, Intel
See – hays_01_0707.pdf

Presentation #7

Title – Cost analysis of 40G & 100G MMF variants, an update of kolesar_01_0507
By – Paul Kolesar, Systimax
See – kolesar_01_0707.pdf

Presentation #8

Title – Link Aggregation in Server End Stations
By – Ilango Ganga, Intel
See – ganga_01_0707.pdf
Estimated attendance is ~120 people at 2:23 PM

Presentation #9

Title – SAN and NAS Bandwidth Requirements
By – Scott Kipp, Brocade
See – kipp_01_0707.pdf

Break at 3:20 PM
Reconvened at 3:41 PM

Presentation #10

Title – 40 GbE Transport
By – Marcus Duell and Steve Trowbridge, Alcatel-Lucent
See – duell_01_0707.pdf

Presentation #11

Title – How can 40 Gb Ethernet be designed to fit existing ODU3 transport?
By – Steve Trowbridge, Alcatel-Lucent
See – trowbridge_01_0707.pdf

Presentation #12

Title – 40GE/100GE - network Operator's View
By – Ralf-Peter Braun, Deutsche Telekom
See – braun_01_0707.pdf

Presentation #13

Title – Survey of Operators on 40 GE longer distance transport
By – Ted Woodward, Telecordia
See – woodward_01_0707.pdf

- Presenter received some last minute data from his survey and asked the Chair if he could include the new data in his presentation. The Chair asked the HSSG if there were any objections to including the new data in “woodward_01_0707.pdf”. There were no objections. The Chair will upload the modified “woodward_01_0707.pdf” to the website as soon as possible.

Presentation #14

Title – Two Par Proposal
By – Dan Dove, Dove Networking
See – dove_01_0707.pdf

Presentation #15

Title – Proposal for HSSG Objectives
By – Robert Hays, Intel; and Gary Nicholl, Cisco
See – hays_02_0707.pdf

Presentation #16

Title – HSSG PAR Proposal
By – Howard Frazier, Broadcom; and Mark Nowell, Cisco
See – frazier_01_0707.pdf

- Presenter notified the Chair and HSSG that the list of supporters has been updated. The Chair will upload the updated presentation to the website as soon as possible.

Presentation #17

Title – Proposal for 5 Criteria Responses
By – John Jaeger, Infinera; and Ilango Ganga, Intel
See – jaeger_01_0707.pdf

Chair proposed that we stop for the night and reconvene tomorrow to discuss Motions.

Break at 6:00 PM on July 17, 2007
Reconvened at 9:20 AM on July 18, 2007

Chair encouraged everyone to attend the IEEE closing plenary meeting and vote.

Presentation #18

Title – Moving Forward Today...
By – John D'Ambrosia, Force 10 Networks
See – dambrosia_02_0707.pdf

- Chair reviewed an outline of motions that we need to address in the next few days.
- Chair opened the floor for motions, discussion and debate.

- **Motion #1:** Move that the HSSG adopt the following objective

- Allow transparent transport over OTN

- Moved by – Steve Trowbridge

- Second by – Pete Anslow

- Technical ($\geq 75\%$)

- Results

- All: Yes - No – Abstain –

- 802.3 Voters: Yes - No – Abstain –

- Motion

- **Motion #2:** Move to amend Motion #1 to read as follows:

- Consider appropriate support for OTN

- Moved by – Joel Goergen

- Second by – Dan Dove

- Technical ($\geq 75\%$)

- Results

- All: Yes - No – Abstain –

- 802.3 Voters: Yes - No – Abstain –

- Motion

- **Motion #3:** Move to amend Motion #2 to read as follows:

- Provide appropriate support for OTN

- Moved by – Robert Lingle, Jr.

- Second by – George Oulundsen

- Technical ($\geq 75\%$)

- Results

- All: Yes - 74 No – 5 Abstain – 23

- 802.3 Voters: Yes - 33 No – 3 Abstain – 13

- Motion Passes

- **Motion #2 (vote results):** Move to amend Motion #1 to read as follows:
 - Provide appropriate support for OTN
 - Technical ($\geq 75\%$)
 - Results
 - All: Yes - No – Abstain –
 - 802.3 Voters: Yes - No – Abstain –
 - Motion Passes by voice vote

- **Motion #1 (vote results):** Move that the HSSG adopt the following objective:
 - Provide appropriate support for OTN
 - Technical ($\geq 75\%$)
 - Results
 - All: Yes - 96 No – 0 Abstain – 11
 - 802.3 Voters: Yes - 46 No – 0 Abstain – 6
 - Motion Passes

- **Motion #4:** Move that the HSSG adopt the following objectives in replacement of existing HSSG objectives:
 - Support full-duplex operation only
 - Preserve the 802.3 / Ethernet frame format utilizing the 802.3 MAC
 - Preserve minimum and maximum FrameSize of current 802.3 standard
 - Support a BER better than or equal to 10⁻¹² at the MAC/PLS service interface
 - Provide appropriate support for OTN
 - Support a MAC data rate of 40 Gb/s
 - Provide Physical Layer specifications which support 40 Gb/s operation over:
 - at least 100m on OM3 MMF
 - at least 10m over a copper cable assembly
 - at least 1m over a backplane
 - Support a MAC data rate of 100 Gb/s
 - Provide Physical Layer specifications which support 100 Gb/s operation over:
 - at least 40km on SMF
 - at least 10km on SMF
 - at least 100m on OM3 MMF
 - at least 10m over a copper cable assembly
 - Moved by – Mark Nowell
 - Second by – Robert Hays
 - Technical ($\geq 75\%$)
 - Results
 - All: Yes - 105 No – 6 Abstain - 8
 - 802.3 Voters Yes - 49 No – 4 Abstain - 4
 - Motion Passes

Discussion

The Question was Called by Joel Goergen. The Chair asked the room if there were any objections, and none were made. An objection was made to calling the question without a second, and a vote (Motion

#5) was taken to confirm calling the question. The Chair ruled a majority (>50%) was needed. The vote was (y/n) 59 to 18, and the question was called.

Break at 10:38 AM

Reconvened at 11:00 AM

- **Motion #6:** Move that the HSSG adopt
 - HSSG_PARA_PAR_WD_0507.pdf with the PAR text from frazier_01_0707.pdf and grant editorial license to the HSSG Chair.
 - Moved by – Joel Goergen
 - Second by – Howard Frazier
 - Technical (>=75%)
 - Results
 - All: Yes - 106 No – 4 Abstain – 11
 - 802.3 Voters: Yes - 52 No – 2 Abstain – 7
 - Motion Passes

- **Motion #7:** Move that the HSSG adopt the Broad Market Potential response in jaeger_01_0707.pdf.
 - Moved by – Joel Goergen
 - Second by – John Jaeger
 - Technical (>=75%)
 - Results
 - All: Yes - 105 No – 1 Abstain – 8
 - 802.3 Voters: Yes - 50 No – 1 Abstain – 6
 - Motion Passes

- **Motion #8:** Move that the HSSG adopt the Compatibility response in jaeger_01_0707.pdf.
 - Moved by – Joel Goergen
 - Second by – Ilango Ganga
 - Technical (>=75%)
 - Results
 - All: Yes – 103 No – 0 Abstain – 9
 - 802.3 Voters: Yes - 49 No – 0 Abstain – 5
 - Motion Passes

- **Motion #9**: Move that the HSSG adopt the Distinct Identity response in jaeger_01_0707.pdf.
 - Moved by – Joel Goergen
 - Second by – Ilango Ganga
 - Technical ($\geq 75\%$)
 - Results
 - All: Yes - 98 No – 0 Abstain – 13
 - 802.3 Voters: Yes - 47 No – 0 Abstain – 7
 - Motion Passes

- **Motion #10**: Move that the HSSG adopt the Technical Feasibility response in jaeger_01_0707.pdf.
 - Moved by – Joel Goergen
 - Second by – Petar Pepeljuginoski
 - Technical ($\geq 75\%$)
 - Results
 - All: Yes - 111 No – 0 Abstain – 6
 - 802.3 Voters: Yes - 56 No – 0 Abstain – 3
 - Motion Passes

- **Motion #11**: Move that the HSSG adopt the Economic Feasibility response in jaeger_01_0707.pdf.
 - Moved by – Joel Goergen
 - Second by – John Jaeger
 - Technical ($\geq 75\%$)
 - Results
 - All: Yes - 105 No – 0 Abstain – 9
 - 802.3 Voters: Yes - 50 No – 0 Abstain – 6
 - Motion Passes

The Chair asked if the HSSG would object to working through lunch. There were some objections, so the Chair asked for a show of hands. The majority of the HSSG selected to work through lunch.

- **Motion #12:** Move that the HSSG:
 - Submit the project documentation to the 802.3 Working Group for approval.
 - Request that the 802.3 Working Group submit the project documentation to the 802 Executive Committee for consideration at the November 2007 Plenary Session.
 - Request that the 802.3 Working Group request that the LMSC Chair submit the PAR to NESCOM for consideration at the December 2007 meeting.
 - Moved by – Howard Frazier
 - Second by – Joel Goergen
 - Technical (>=75%)
 - Results
 - All: Yes - 100 No – 0 Abstain – 1
 - 802.3 Voters: Yes - 47 No – 0 Abstain – 0
 - Motion Passes

- **Motion #13:** Move that:
 - The HSSG requests that IEEE 802.3 extend the Higher Speed Study Group.
 - Moved by – Tom Palkert
 - Second by – Schelto Van Doorn
 - Procedural (>50%)
 - Results
 - All: Yes - 104 No – 0 Abstain - 1
 - Motion Passes

- **Motion #14:** Motion to approve nowell_01_0707 as a communication response to the ITU-T SG15.
 - Moved by Mark Nowell
 - Second by Howard Frazier
 - Procedural (>50%)
 - Results
 - All: Yes - 101 No - 0 Abstain – 3
 - Motion Passes

- **Straw Poll #1:** Will you be attending the meeting in Korea?
 - Requested by – John D'Ambrosia
 - Yes – 33
 - No - 40
 - Maybe – 21

Motion to adjourn –
 Moved by John McDonough; 2nd by Howard Frazier
 Motion passes by acclamation

Meeting adjourned at 1:05 PM on July 18, 2007.

HSSG Plenary Meeting (7/17-7/19 2007) Attendance Sheet

Last Name	First Name	Affiliation
Abbas	Ghani	Ericsson, UK
Abbott	John	Corning
Abbott	Justin	Gennum
Akasaka	Youichi	Fujitsu Labs
Alping	Arne	Ericsson AB
Anslow	Pete	Nortel
Babanezhad	Joseph	Plato Networks
Barrass	Hugh	Cisco
Barrick	Scott	Mentor Graphics
Beaudoin	Denis	Texas Instruments
Beckwith	Jon	UNH - IOL
Belhadj	Med	Cortina Systems
Booth	Brad	AMCC
Braun	Ralf-Peter	Deutsche Telekom, T-Systems
Bresser	Ad	KPN
Bruckman	Leon	Corringent
Cady	Ed	MERITEC
Chalupsky	David	Intel
Chan	Allen	Altera
Chang	Frank	Vitesse
Cole	Chris	Finisar
Connaughton	Mike	Belden
Conroy	Keith	AMCC
Cummings	Uri	Fulcrum
Cunningham	David	Avago Technologies
D'Ambrosia	John	Force 10 Networks
Dawe	Piers	Avago Technologies
DiMinico	Chris	DNI
Dineen	Thomas	Self
Donnay	Beth	Force 10 Networks
Dove	Dan	DoveNetworking - Procurve by HP
D'Souza	Godfrey	Cswitch Corp.
Dudek	Mike	JDSU
Duelk	Marcus	Alcatel-Lucent
Eaton	George	Sierra Monolithics
Erikson	Russ	Network General
Ewen	John	IBM
Firoozmano	Farzin	SMI
Fischer	Thomas	Siemens Networks
Flatman	Alan	LAN Technologies
Folkens	Norbert	JDSU
Frazier	Howard	Broadcom
Fujimoto	Koichiro	NEC
Ganga	Ilango	Intel
Gavrilovic	Paul	Cisco
Ghiasi	Ali	Broadcom
Goergen	Joel	Force 10 Networks
Gokhale	Milind	Santor

Green	Larry	Ixia
Gustlin	Mark	Cisco
Hankins	Greg	Force 10 Networks
Hays	Robert	Intel
Healey	Adam	Agere Systems
Helster	David	Tyco Enterprises
Herve	Pierre	Intel
Hornbuckle	Craig	Sierra Monolithics
Horner	Rita	Avago Technologies
Hronik	Stan	IDT
Ishibe	Kazuhiko	Anristu
Ishida	Osamu	NTT
Isono	Hideki	Fujitsu Ltd.
Jaeger	John	Infinera
Jewell	Jack	JDSU
Jiang	Wenbin	JDSU
Joo	Bheom Soon	ETRI
Kang	Tae-kyu	ETRI
Karam	Mansour	Arastra
Kawatsu	Yasuaki	Hitachi-Cable
King	Jonathan	Finisar
Kipp	Scott	Brocade
Kirkpatrick	Peter	Aprius
Kobayashi	Shoukei	NTT
Kojima	Keisuke	Mitsubishi Electric Res. Lab
Kolesar	Paul	CommScope
Krishnamurthy	Subi	Force 10 Networks
Lackner	Hans	QoSCom
Langari	Abdolreza	Qlogic
Lenkisch	Andreas	Schroff Gmbk Germany
Lingle, Jr.	Robert	OFS
Maki	Jeffery	Juniper Networks
Maplass	Trey	Malpass Technology - Huawei
Martin	Arlon	Kotura
McDonough	John	NEC America
McGrath	Jim	Molex
McSorley	Greg	Amphenol
Mei	Richard	Commscope
Miao	Tremont	Analog Devices Inc.
Moorwood	Andy	Extreme Networks
Mueller	Wayne	NetEffect
Muller	Shimon	Sun
Nabili	Babak	Scintera
Nicholl	Gary	Cisco
Nordin	Ron	Panduit Corp.
Nowell	Mark	Cisco
Obara	Satoshi	Fujitsu
Oganessyan	Gourgen	Molex
Oulundsen	George	OFS
Palkert	Tom	Xilinx, Luxtera

Parady	Bodo	Pentum Group
Patel	Shashi	Foundry Networks
Peers	Neil	ADVA Optical Networking LTD
Peeters Weem	Jan	Aprius
Pepeljugoski	Petar	IBM
Pepper	Gerald	Ixia
Perkins	Drew	Infinera
Petrilla	John	Avago Technologies
Piede	David	SiOptical
Pimpinella	Rick	Panduit Corp.
Rabinovich	Rick	Spirent Communications
Rautenberg	Peter	Nexans
Ring	Bill	WSR Optical Device Soln's rep OIDA
Ryan	Bill	Foundry Networks
Salisbury	Neil	Optium
Sambasivan	Sam	AT&T
Sanchex	Oliver	OCP Inc.
Saurdep	Ross	Stratalight
Savi	Olindo	The Siemon Co.
Schoenmaker	Peter	NTT
Schulz	Armin	AMCC
Seely	Ted	Sprint
Sendelbaugh	Lee	IBM
Shigematsu	Masayuki	Innovation Core SEI, Inc.
Song	Steve	Excelight
Steerman	Henk	AMS-1X
Svensson	Lars	Xelerated
Swanson	Steve	Corning
Szczepanek	Andre	Texas Instruments
Takeda	Noriyuki	KDDI R&D Laboratories Inc.
Takeda	Noriyuki	KDDI R&D Laboratories Inc.
Tavana	Sodry	Egenera Inc.
Theodoras	Jim	Cisco
Thiagarajan	Sashi	Ciena
Tomaszewski	Pete	Force 10 Networks
Toyoda	Hidehiro	Hitachi
Traverso	Matt	Opnext
Trowbridge	Steve	Alcatel-Lucent
Turner	Brad	Juniper
Van Deusen	Herb	Gore Associates
vanDoorn	Schelto	Intel
Vareljian	Albert	Altera Corp.
Veatch	Tony	Siemon Co.
Wang	Leah	Intel
Weil	Jason	Cox Comm.
Weitlner	Andy	Marvell
Wertz	Jason	Sandia National Laboratories
Winter	Robert	Dell
Wise	Jeffrey	Motorola
Woodward	Ted	Telcordia

Zhong

Charlie

LSI Logic