IEEE 802.1 Minutes, July 2007

John Fuller

Attendees

NAME	SURNAME	Affiliation
Ghani	Abbas	Ericsson
Bernard	Aboba	NOT CONFIRMED
Jay	Agarwal	NOT CONFIRMED
Zehavit	Alon	Nokia Siemens Networks
Yoshikashu	Azuma	Ricoh
Boris	Balacheff	HP
Florin	Balus	Alcatel-Lucent
Alan K	Bartky	Self
Alexei	Beliaev	Self
Davide	Bergamasco	Cisco
Jan	Bialkowski	Infinera, Inc
Rob	Boatright	Harman Pro
Paul	Bottorff	Nortel Inc
Rudolf	Brandner	Nokia Siemens Networks
Leon	Bruckman	Corrigent Systems
Robert	Brunner	Ericsson
Head	Bubba	Credit Suisse
Frank	Chao	Cisco Systems, Inc
Mukund	Chavan	NOT CONFIRMED
Jin Seek	Choz	NOT CONFIRMED
Edgar	Chung	NOT CONFIRMED
Paul	Congdon	Hewlett Packard
Alex	Conta	Transwitch corporation
Diego	Crupnicoff	Mellanox
William	Dai	Broadcom
Seamus	Daly	AVICI Systems
Arjan	de Heer	Alcatel-Lucent
Claudio	Desanti	Cisco
Ximing	Dong	NOT CONFIRMED
Linda	Dunbar	Futurewei Technologies
Ian	Duncan	Ciena
Hesham	Elbakoury	Nortel
David	Elie-Dit-Cosaque	Alcatel-Lucent
Yacine	Elkolli	Canon
Janos	Faricas	Ericsson
Don	Fedyk	Nortel
Felix Feifei	Feng	Samsung
Norm	Finn	Cisco Systems
Bob	Frazier	Ericsson
John	Fuller	Gibson Guitar
Edna	Ganon	MRV
Geoffrey	Garner	Samsung
Anoop	Ghanwani	Brocade
Steve	Gorshe	PMC-Sierra
Mark	Gravel	Pro Curve Networking by HP

Eric	Gray	Ericsson
Steve	Gray	NOT CONFIRMED
Sudhakar	Gundubogula	NOT CONFIRMED
Craig	Gunther	Harman Pro
Mitch	Gusat	IBM Research
Steve	Haddock	Self
Takashi	Hasegawa	Hitachi Cable
Brian	Hassink	Hatteras Networks
Myron	Hattig	Intel
Brian	Hausauer	Net Effect, Inc
Asif	Hazarika	Fujitsu
David	Huo	NOT CONFIRMED
Romain	Insler	France Telecom
Raj	Jain	Washington University in Saint Louis
David	James	Wife
Tony	Jeffree	Self, Cisco, Broadcom, Hewlett Packard, Adva
Paul Hongkyu	Jeong	Samsung
Thomas	Joergensen	Vitesse
Peter	Johansson	Pulse Link, Inc
Michael	Johas Teener	Broadcom
Seong Soon	Joo	ETRI
Thomas	Jost	Vitesse
Mansour	Karam	NOT CONFIRMED
Keti	Kilcrease	Cisco Systems
Byungsuk	Kim	Samsung
Dae Young	Kim	NOT CONFIRMED
Tae-eun	Kim	Extreme Networks
Yongbum	Kim	Broadcom
Marc	Kimpe	Adtran
Philippe	Klein	Broadcom
Mike	Ko	IBM
David	Koenen	HP
Raghu	Kondapalli	Marvell
Subi	Krishnamurthy	NOT CONFIRMED
Victor	Kueh	NOT CONFIRMED
Bruce	Kwan	Broadcom Corp
Pascal	Lagrange	Canon
Kari	Laihonen	Teliasonera
Yannick	Le Goff	France Telecom
John	Lemon	Adtran
Meg	Lin	NOT CONFIRMED
Zhi-Hern	Loh	Fulcrum Systems
Ben	Mack-Crane	Huawei
David	Martin	Nortel Networks
Marco	Mascitto	Telion Consulting Inc
Tom	Mathey	Independent
Alan	McGuire	British Telecommunications PLC
John	Messenger	Adva Optical Networking Ltd
Dinesh	Mohan	Nortel
Matthew Xavier	Mora	Apple Inc
Kevin	Nolish	Ericsson
Satoshi	Obara	NOT CONFIRMED
Karen	O'Donoghue	NSWCDD (US Navy)
Stephen	Oliva	Sprint
David	Olsen	Harman Pro

Richard	Paine	Boeing
Rong	Pan	Cisco Systems
Don	Pannell	Marvell
Glenn	Parsons	Nortel Networks
Mark	Pearson	Hewlett-Packard
Joe	Pelissier	Brocade
Brian	Petersen	NOT CONFIRMED
Haim	Porat	Ethos Networks
Max	Pritikin	Cisco
Charles	Qi	NOT CONFIRMED
Ananda	Rajagopal	Foundry Networks
Karen	Randall	NSA/IAD
Dwayne	Reeves	Fujitsu Network Communications
Maximilian	Riegel	Nokia Siemens Networks
Guenter	Roeck	Teak Technologies
Derek	Rohde	Qlogic
Dan	Romascanu	Avaya
Moran	Roth	Corrigent Systems
Ali	Sajassi	Cisco
Panagiotis	Saltsidis	Ericsson
John	Sauer	Tellabs
Mick	Seaman	Mick Seaman
Koichiro	Seto	Hitachi Cable
Himanshu	Shah	Ciena Corp
Malhar	Shah	Force10
Ravi	Shenoy	Emulex
Gopi	Sirineni	Marvell
Nurit	Sprecher	Nokia Siemens Networks
Kevin B	Stanton	Intel
Rajagiopalan	Subbiah	Juniper Networks
Bob	Sultan	Huawei Technologies
Richard	Sun	Dallas Semiconductor
Muneyoshi	Suzuki	NTT
George	Swallow	Cisco Syatems
Daniel	Tai	NOT CONFIRMED
Attila	Takacs	Ericsson
Bert	Tanaka	Woven Systems
John	Terry	Brocade Communications
Pat	Thaler	Broadcom
Oliver	Thorp	Fujitsu
Gilles	Thouenon	FT R&D
Manoj	Wadekar	Intel
Yan	Wang	Huawei
Bert	Wijnen	Alcatel-Lucent
Ludwig	Winkel	Siemens AG
David	Wong	NOT CONFIRMED
Fred	Worley	Hewlett Packard
Chien-Hsien	Wu	Broadcom
Guanggin	Wu	NOT CONFIRMED
Zong Liang	Wu	Entropic Communications Inc
Dong	Yang	NOT CONFIRMED
Ken	Young	Gridpoint Systems

Opening Session, Monday, July 16, 2007
Tony Jeffree, Process
Slides used in this opening session are here:
http://www.ieee802.org/1/files/public/minutes/2007-07-opening-plenary-slides.pdf

Voting rules and what it consists of
Membership
      Must tell Tony of intention as well as meet attendance requirements
      Must sign the attendance sheet and must declare affiliation
      Should be able to read any 802 web sites, if can't, let Tony know
How We Operate
      Steve Haddock is Interworking Task Group Chair
      Mick Seaman is the Security Task Group Chair
      Pat Thaler is the Congestion Management Task Group Chair
      Michael Johas Teener is the AVB Task Group Chair
      We take fewer ballots than a number of other 802 groups do. Consequence is that
        input from non-members is treated same as others.
      Discussion of ballot procedure – TG, WG, and Sponsor ballots
Patent Policy – Tony Jeffree
      There are new patent rules in place and the new slide set was presented.
      Tony discussed the IEEE patent policy and showed the required five slides and
        ensured everyone in the room was aware of the IEEE patent policy
      A call for patents was made, and one declaration was made: David James has
        indicated that he has relevant IP and is in the process of submitting LoA.
      Inappropriate topics for the WG meetings
Use of AV devices – Tony Jeffree
      Can not record meeting without everyone agreeing to it – this is part of IEEE rules
      Members of the press, including public blogs, must announce their presence
      Cell phones in off or vibrate
Presentation Material – Tony Jeffree
      Keep the size down and no copyrights!
      Tony does not want to impose a standard template on presenters but it depends upon
        the thoughtful use of the presenters
Future Meetings – Tony Jeffree
      September 4-7 Stockholm
      January 2008 meeting – hosts sought. As SG13 meets 24-25 Jan and CES is 7-10 Jan,
        preferable date for 802.1 would be Jan 28th. Singapore? Need decision on
        Thursday.
      May 2008 – .3 week of May 12th
      September 2008 – York?
Exec meeting – "Highlights"
      802.1ak published.
      802.1Qay PAR approved.
      Tutorials tonight on Energy efficient Ethernet and Emergency services for 802.
Interpretation requests outstanding
      802.1AB interp request
      2 interp request on 802.1ak
        Need urgent action as there is a bug in the protocol

Liaison reports

No new reports.

At least 8 reports previous reports need responses. Briefly discussed and assigned or postponed.

TG agendas

Interworking

Monday AM	.1ah-d3.6 comment resolution (pre-meeting)
Tuesday AM	.1ak MRP interpretation
	.1aj-d2.1 comment resolution
Tuesday PM	.1ah-d3.6 comment resolution
Wednesday AM	.1ap MIB (Parsons)
	.1Qay PBB-TE (Alon, Martin, Mohan)
Wednesday PM	.1ah-d3.6 comment resolution
Thursday AM	.1aq SPB (Fedyk, Sajassi)
	.1ah PBB Conclusions
	CM Joint session

Security

All day Tuesday and Wednesday and Thursday AM:

.1af Key exchange

.1ar Device ID

AVB

- Magic decoder ring

Presenter: AB/Alan Barkey, ABe/Alexei Beliaev, CG/Craig Gunther, CH/Chuck Harrison, DO/David Olsen, DP/Don Pannell, DVJ/David James, FF/Felix Feng, GC/George Claseman, GG/Geoff Garner, GT/Geoff Thompson, HB/Hal Baht, JNF/John Fuller, KS/Kevin Stanton, MH/Myron Hattig, MJT/Michael Johas Teener, OAM/Osama Aboul-Magd, NF/Norm Finn, PJ/Paul Jeong, RB/Robert Boatright, SO/Shlomo Ovadia, SSJ/Seong-Soon Joo, TJ/Tony Jeffree, ZW/Zong Wu, ??/everyone

Length: minutes, where the main headings are the totals for that heading, with AM usually 180 minutes (9am-noon), and PM usually 240 minutes (1PM-5PM)

Topic	Presenter	Length
- Mon PM (802.1 plenary)		30
- Request for 802.3 action: timing interface	MJT/KS	30
- Tue AM		180
- administrivia	MJT	10
- Assumptions	DP	50
- 802.1AS review	GG	90
- New state machines for 802.1AS/802.11v interface	KS	30
- Tue		240
- Joint meeting with 802.11 VTSG	??	90
- Request for 802.3 action: timing interface	MJT/KS?	30
- Link-dependent sync frames	DVJ	30
- Bridge service-interface definitions	DVJ	20
- Homogeneous messages	DVJ	20

- (additional .1AS discussions ...)		50
- Wed AM		180
- 802.1Qat review	FF	60
- Dynamic Bandwidth Reservation at Audio Video Bridging	PJ	30
- TSPEC survey	OAM	30
- (other 802.1Qat discussions)		60
- (11AM, MJT to present AVB summary to EEE --- AVB discussions to continue in parallel)	MJT	
- Wireless bridges	NF	
- Wed PM		240
- AVB policies	DP	60
- Performance Goals of the AVB and Observation Intervals	SSJ	30
- 802.1Qav review	TJ	30
- (other 802.1Qav discussions)		120
- Thu AM		180
- (other 802.1Qav discussions)		180
- Thu PM (802.1 plenary)		10
- Request for 802.1AS TG ballot	GG	10

Congestion Management

Tuesday

09:00	Agenda Update and Approval	Pat Thaler
	Patent slides	Pat Thaler
	Simulation Ad Hoc Report	Monoj Wadekar
60 min	On Flow Completion Time Benchmarking in Datacenters	
		Balaji Prabahakar
60 min	QCN simulation results	Davide Bergamascosd
30 min	Design critera for Congestion Notification	Ken Young
120 min	Simulation results	Guenter Roeck

Wednesday AM

Congestion Management discussion
> Either choose a proposal or determine what additional work is necessary to get us to the selection point.

Wednesday PM

90 min	Review proposed flow control PAR	Joe Pelissier
90 min	Review proposed transmission selection PAR	Pat Thaler

Presentation by Mike Ko: "Ethernet Enhancements for Storage in a Datacenter"

T11 is considering layering Fibre Channel over Ethernet (FCoE), but FCoE uses PAUSE mechanism to prevent frame loss. This causes problems for other traffic on the LAN. Proposed PAR for Per Priority PAUSE (see uploaded file new-cm-barrass-pause-proposal). The proposal was met with much resistance.

Closing Plenary, Thursday, July 19, 2007

Review of opening plenary slides, Tony Jeffree
> Requirement to state affiliation.
> List of current voters.
> Access to 802.XX websites/reflectors
> Call for patents slides were shown and an opportunity was given to declare, there
> were no responses.

Future meetings
> September interim:
>> 4-7 September, Stockholm, Sweeden
> January 2008 interim:
>> Where? (Northern CA; Eilat, Israel; Singapore)
>> Week of 28th?
>> Email poll to decide when more information available for each location.
> May 2008 interim – 802.3 week of May 12th
> September 2008 – York, UK?

Scope of P802.1aq
> Some doubt as to whether some of the proposed work in this area is within scope of
> the PAR.

Task group reports
> <u>Interworking</u>
>> Project status was reviewed.
> <u>Security</u>
>> Progress made on DevID.
>> At start of each day of the Security TG meeting a call for patents was made.
>> LOA received on ECC technology for DevID (802.1AR)
>> Comments reviewed for 802.1af (Key exchange). Possible to convert PAR
>> from an amendment to a revision (look for motion in November).
> <u>AVB</u>
>> Project status was reviewed. Two TG ballots requested (.1AS & .1Qat)
>> A joint meeting with 802.11 VTS SG was held
>>> Bridging in 802.11
>> Impact of AVB on EEE / impact of EEE on AVB
> <u>Congestion Management</u>
>> Progress toward a PAR. Six presentations on current PAR simulations. Two
>> motions for PARs to be considered. Agreed to generate a draft based on
>> common material from four proposals.

Workload review
> 18 projects in progress with one more AVB PAR anticipated.

802.3 Congestion Management project (Norm Finn)
> Per something pause – if done should be done in 802.1
> Output rate limiting – interesting for two port relay

Do we want to generate a liaison letter with 802.1's opinion on these?

Motions – see:
http://www.ieee802.org/1/files/public/minutes/2007-07-closing-plenary-slides.pdf

A correction to May 2007 minutes of changing the references to "Dallas 2005" be corrected to "Geneva 2007"

Motion to Adjourn
Proposed
Second
Unanimous

Interworking TG Meeting minutes of IEEE802.1 Plenary Meeting: July, 2007

Tuesday (July 17, 2007) Morning:
- Steve made Call for Patents on the Tuesday morning session.
    o During the discussion, Nortel announced that they are submitting patent disclosure for 802.1Qay.
- Tony hosted the discussion on resolving 2 requests for interpretation of 802.1ak which is just published.
    o Both of them are bugs, one is essential which has to be fixed; the other one is also bug.
    o The MRPDU PDU, the Vector attribute has just been parsed and next two byte
    o Second issue is not having the length field for the protocol version. The intent is to let higher version running lower version when deployed in a network where lower version is used.
- Tony hosted 802.1aj comment resolution session, which went very smoothly.

Tuesday Afternoon:
- Steve presented slides to address comments on CBP address translation by several people in the group. The resolution is not reached during the discussion.
- Continued on 802.1ah comment resolution.

Wed (July 18, 2007) Morning:
- Steve went through the patent rule and called floor for any awareness of patents related to projects being discussed. There was no announcement from the floor.
- Glenn went through major changes made to 802.1ap to incorporate the MIB from 802.1ah.
    o PBB issues: ieee8021 BridgeBaseComponentType. Need to add Component Type to the ComponentID defined in the Clause 12.3 in 802.1ah. Steve suggested lumping together with existing comments to 802.1ah D3.6.
    o Ieee8021CistTable:
    o Glenn suggests doing the sponsor ballot after 802.1ah. However, Steve suggests doing the 802.1ap and 802.1ah in parallel. Therefore, it is necessary to move 802.1ap to working group ballot by Sept so that to make it possible to run the two sponsor ballots in parallel.
- 802.1Qay Discussion. There are 4 presentations.
    o Zahavit Alon from Nokia: http://www.ieee802.org/1/files/public/docs2007/ay-zehavit-scope-and-protection-0707-v01.pdf
        ▪ Suggest using G.8031 as a reference for protection switching.
        ▪ Proposed possible solutions for 1:1 protection switching 1:1 unidirectional protection. Concluded that PBB-TE should be bi-directional to make protection switching behave better, this

triggered a lot of discussion. Some people expressed that PBB-TE shouldn't be limited to bi-directional. Some people think it should.
- Alan McGuire suggests that either APS or CC can be used to achieve protection. Panos and Nurit don't think that APS should be in the scope of the PAR.
- Paul and Steve both think that grey area of the scope should be cleared out.
- Paul expressed opinion that APS should be in the scope and multi domain should be in the scope too.
-

o David Martin from Nortel: http://www.ieee802.org/1/files/public/docs2007/ay-martin-protection-0707-v01.pdf
- David gave a good introduction of 1:1 Protection Switching
- General background of G.8031
- G.8031 applicability to PBB-TE
- People expressed that "extra traffic" shouldn't be included in the PAR because load sharing is included in the PAR. Therefore, it is not necessary to make it more complicated.
- Linda Dunbar suggested Link Aggregation approach and the service instances protection II described in 802.1ah should be considered for PBB-TE protection. Alan McGuire pointed out that we are working on path protection, not link protection. Suggest nailing down the OAM mechanism which enables the protection first.

o Dinesh Mohan from Nortel gives a presentation on CFM extension to 802.1Qay. http://www.ieee802.org/1/files/public/docs2007/ay-mohan-cfm-0707-v01.pdf
- The presentation is based on the assumption that ESP is bi-directional, which has some controversial from previous discussion.
- Alan McGuire stated focus should be on fault localization mechanism instead of how to use Link Trace.
- John wants people to give a presentation on PBB-TE architecture because PBB-TE introduce a brand new scheme. PBB-TE is not a minor change to PBB.
- Dinesh thinks Link trace is not needed because the trace is along the same way.
- Enhancement #1: Unicast CCM. Most people support this addition.
- Enhancement #2: support change in VID value in LBR at loopback point. People expressed the necessity of group reaching agreement if LBR and LTR have to come back along PBB-TE or can come back via PBB route or even go back to NMS.
- John doesn't think we should design at this point.

- Enhancement #3: PBB-TE ESP MIPs should be able to intercept LBM intended for it. PBB-TE ESP MIPs should be able to ignore LBMs not intended for it.
- John pointed out that ESP intermediate nodes could have information on all the ESP, so that they can associate the LBM and LTM for the ESP.
- Enhancement #4: PBB-TE ESP MIPs should be able to intercept LTM for specific ESP.
  - Raj Jain gave a presentation on Partial Fault Notification and Shared Protection within PBB-TE. http://www.ieee802.org/1/files/public/docs2007/ay-jain-partial-faults-0707-v01.pdf
    - The purpose is to identify problem, not drill down to solution.
    - Allow Ethernet link to be 90% up. Declaring 90% link totally useless can be very expensive, especially for high speed link.
    - Ethernet is elastic but TDM is not.
    - David Martin pointed out that there was liaison from ITU-T for the situation. John Messenger stated this work led by Raj is in responding to ITU-T's liaison.
  - Steve concluded the session by stating more requirements is needed but doesn't exclude solution proposals.

Wed (July 18, 2007) Afternoon discussion:
- Steve Haddock and Paul led the 802.1ah comment resolution starting from Clause 7 and completed all of the comments except a few controversial ones left from discussion.
- Steve hosted discussion on some controversial comments
  - Naming of SAP-ID and Connection-ID
    - Agreed that SAP-ID stays in
    - Many people have sympathy towards Alex's thinking of Connection-ID being confusing and misleading. Connection-ID has been used by many technologies, such as FrameRelay, to represent connection-oriented connections. But Steve strongly believes changing the wording will invite a lot more negative comments because the "connection-ID" was used to replace "associated-data" as the result of people's comments.
    - Agreed to change "dynamically created associations" to "dynamically created connectivity associations" and add a reference to 6.1.8.
  - Comment on using 24 bits for forwarding:
    - Steve thinks 24 bits being used for forwarding has been discussed before 802.1ah was started. It was clear from the discussion that 24 bits should not be used for forwarding
    - Bob Sultan thinks that 24 bits for forwarding is not outrageous idea, therefore, it shouldn't be excluded for further work, even though it should not be in this project.

- Conclusion is not to allow 24 bits being used for forwarding.

Thursday (July 19, 2007) Morning Discussion:
- Don Fedyk from Nortel presented the 802.1aq Shortest Path Bridging Design Implications. http://www.ieee802.org/1/files/public/contrib/aq-fedyk-design-implications-0707-v1.0.pdf
    o Steve question if there will be any difference if the approach is used to PBN network. Answer is "Yes" because the PBN space is bigger with Customer MAC and Provider MAC, v.s. PBB's space is limited to PBBN MAC address.
    o A lot of discussions are on if the protocol itself consumes any VID. The answer is No.
    o Panos thinks what is proposed here is a different PAR. Don thinks the solution in the current PAR didn't scale. If it is true, Panos stated that the original PAR should be dead and to be replaced by a new PAR. Steve thinks that people started the PAR were Mick and Norm, but none of them are present. Therefore, Steve suggests the PAR discussion should be deferred to closing plenary.
    o Eric Grey said that the work done by TRILL group is going towards a different direction. Question is if the two groups should work together to avoid having different solutions. Ali thinks that it is the very reason for IEEE802.1 to work on this. Ali thinks the functionality is same as TRILL. The difference is implementation. However, it will be good that the two groups can work together.
    o There is no shared medium in this proposal. The proposed solution is mainly for Point to Point applications.
- Ali Sajassi from Cisco presented 802.1aq Link State protocol – Part II. http://www.ieee802.org/1/files/public/docs2007/aq-sajassi-lsp-part-II-0707-v01.pdf
    o This is continuing the Part I which was presented in May Interim meeting.
    o The main point of the presentation is the comparison between VID STP versus MAC STP.
    o Using IS/IS for multicast
    o Concluded in last presentation that reverse path and forward path don't have to be congruent, however Unicast and Multicast should be congruent.
    o Having reverse path and forward path not being congruent can cause issue of CFM. E.g. Lookback mechanism can only check one side of the path. For other side, you have to do another loopback. Since using IS/IS can build congruency path very easily, therefore, there isn't any need to make changes to CFM messages.
    o Some modification to CFM: reverse PATH having different B-VID, therefore, the CCM, LBM, or LTM return path need the B-VID associated with reverse Path.
    o In MAC STP approach, source B-MAC address is used to identify the STP tree with has the several implications in PBBN.

- o MAC STP can potentially support more than 4K trees but it can also be limited to fewer than 4K based on hierarchical assignment in the MAC address.
  - o Conclusion: advocating VID based STP.
  - o Floor discussions: need to finalize the need of number of trees. Some people think that 4K trees are already plenty. Not sure if there is any need to have more trees.
- Oliver Thorp hosted discussion on the remaining issues of 802.1ah's CBP Address translation
  - o Ben expressed that letting PIP to choose address is not a good choice. Steve thinks that there was objection from Norm of putting location specific stuff in CFM.
  - o Paul thinks that CFM addresses should replicate Data plane addresses.
  - o There is strong objection to the proposal of allowing translating the destination MAC address of frames which use the CCM or LTM multicast address.
  - o There is nothing to be changed to CFM. Only change is to require CFM state machine looking at more frames.
  - o Dinesh is a little concerned that making the change to CFM will make it applicable to other cases. But Dinesh is agreeing with the proposal.
  - o John stated that current 802.1ag doesn't allow replying to Lookback with Multicast address. Allowing reply to multicast address should be added to 802.1ag.
  - o Dinesh: 802.1ag doesn't include MEP sending Multicast LBM/LTM. The proposal is allowing multicast LBM be sent out. Then there is a need to add time delay in sending back response.
- Tony doesn't have time to work on 802.1aj comment resolution. Therefore, 802.1aj comment resolution has to be continued to Sept Stockholm meeting.

Thursday (July 19, 2007) Closing Plenary
- Tony reiterates the policy of stating affiliation on sign-up sheet.
- Presented voter list. The voter list has gone up. Around 80s. Some people are dropping out. However, attendees are much more than the voters.
- Tony stated patent policy again. We are subject to the patent policy.
- Ask questions of if there is anyone in the room awaring of any patents related to 802.1 projects.
- Future meetings:
  - o Jan 28: Singapore (36 preferred), Eait (34 preferred), Bay area (35 preferred)
- Interpretation to 802.1AB request
- Scope of P802.1aq discussion: Question raised during discussion whether if the PBBN is in the scope or STP should be taken out. Mick thinks STP shouldn't be taken out of the scope, even though many people are interested in IS-IS approach.
- Steve reported Interworking projects progress.
- Mick reported security projects progress.

- Pat reported CN group progress
- Tony presented the current load in 802.1
  - o Some people prefer to old method on task group ballot which doesn't require voting member to vote Abstain. However, more people prefer the new method which requires voting member to submit "Abstain" ballot.
- Norm stated the status of 802.3AR (congestion management). Norm thinks that the Output limiting in 802.3AR is useful to TPMR. But other part is not useful.
- Motion:
  - o Meeting minutes of March 2007 and May 2007.
  - o Have pre-meeting before the Nov 802 Plenary meeting. For: 49. Against: 0. Abstain: 1
  - o Continue AVB task group weekly conferences.
  - o 802.1ah moving to sponsor ballot. But Tony doesn't think it is ready to go sponsor ballot giving the number of comments. The motion changes to another round of re-circulation of 802.1ah.
  - o

IEEE 802.1Qau Plenary meeting

Chair: Pat Thaler

Tuesday 07/17/2007, 9.00am

Recording Secretary: Manoj Wadekar

Attendees: 33 in room

Minutes:

1. Pat Thaler: Opening and agenda discussion
   1. Affiliation declaration policy was described
   2. Patent policy was read
   3. **Call responses**:
      1. AMD may have a patent related to Granular PAUSE - should be looked into it - whether company needs to be notified for letter of assurance - chair responds: we don't have a PAR in this area and IEEE isn't prepared to accept a LOA without a PAR.
      2. Intel has a patent about L2-Congestion Indication seems close to QCN - 3-point architecture support for DE bit
      3. There is a possibly related patent from IB related work : HP, IBM, Emulex jointly owning it. Letter requesting LOA has been sent.
   4. Agenda discussion
2. Manoj Wadekar: Simulation Ad-Hoc Report
   1. http://www.ieee802.org/1/files/public/docs2007/au-sim-wadekar-adhoc-report-071707-v1.pdf
   2. Comment: Pseudo-code for all the protocols is not available on the web-site. Can it be uploaded?
      1. Request made to all the proposal-owners to upload their pseudo-codes
3. Prof. Balaji Prabhakar
   1. http://www.ieee802.org/1/files/public/docs2007/au-prabhakar-qcn-scalability-transience.pdf
   2. Discussion on Foil 5: Single rate limiter - whether appropriate allocation can be achieved for multiple flows with different rates
   3. Discussion on DE bit: This is present only in S-tag (as defined by 802.1ad). CFI bit in normal Q-tag is deprecated - but it is not DE bit.
      1. If CFI bit is set - it can get dropped in legacy bridges
      2. During Geneva meeting it was discussed that for CM-cloud could specifically define this bit for use within cloud
      3. For now - this is being referred as single-bit information in the header

4. Foil 11: Q: With single RL how many flows can be supported? A: As many as one wants - however, combination is always at cost of possible performance tradeoff. However, similar problem can also be seen for single flow going through multiple paths due to multi-pathing.

5. Foil 14: Q: A=12Mbps is fixed and does it limit number of flows? A: No, it does not. Answer in details in following slides. Large number of sources -> fair share rate is C/N. So, this is smaller and time spent in AI counting out same number of bytes is larger! Hence this allows the stability for 2-point QCN.

6. Foil 17:Q: Will stability stick for large latency in the network, e.g. 400uS? A: Yes, it will. Simulation results will be provided for this as we progress.

7. Q: Discussion has been only with sampling on packets. How will it work with bytes? A: Uses so far packet sampling as packets are fixed size. Can easily be changed to byte sampling.

8. Comments: Many tweaks are being made to scheme and continues to evolve. How do we know what parameters are required for the mechanism? A: Basic framework is defined. This presentation is sharing additional studies.

9. Q: Pseudocode does not define all the parameters. A: This should be discussed in ad-hoc conference call.

10. Q: Can we assume future work in QCN will be for 2-point? A: Yes.

4. Davide Bergamasco:
   1. http://www.ieee802.org/1/files/public/docs2007/au-bergamasco-ecm-qcn-benchmarks-20070717.pdf
   2. W/o extra-fast recovery: QCN recovers rate very slowly. Essential for stability.
   3. QCN (2-pt and 3-pt) : BW recovery is slower than ECM
      1. Since AI depends upon byte-counting - it is driven by data being present in Rate Limiter queues. AI moves from exponential to linear increase after it exhausts data in the buffer
      2. Comment: Drift timer can improve recovery since it is timer based.
   4. Q: Why ECM has better response while it is sampling only at 1%? A: It uses BCN-MAX. Provides more feedback.
   5. QCN 3-pt generates lot of control traffic: in absence of congestion - Fb=0 is always generated!

5. Ken Young:
   1. http://www.ieee802.org/1/files/public/docs2007/au-kyoung-criteria-thoughts-0717.pdf
   2. #12: ..non-real-time Ethernet services..: These mechanisms may be used for other traffic types than Storage within Data center and hence mechanism should be explained well for its impact on other criteria like latency etc.
   3. Group should make sure that set of parameters are easier for users to understand and most importantly this set should be very small.
   4. Q: Is there is proof behind "Explicit mode is extremely complex.."? A: No concrete proof is presented here, this is more of personal recommendation based on past experience.

5. Q: If you had to draw a line on your objectives, where will it be? A: Around #12
6. Q: Ease of config is very important, would you like to include it in objectives? A: Yes! It will be in among top few.

6. Guenter Roeck:
1. http://www.ieee802.org/1/files/public/docs2007/au-roeck-simulation-results-071707.pdf
2. Q: Foil7: QCN-2, why is it in Tagged? A: A mistake, needs to be fixed.
3. Foil 13: Qsc and Qmc are swapped. Need correction
4. Q: What is N0? A: Number of initial flows competing at CP.
5. Confusion around misaligned time scale on Slide 20 and 23.
6. Q: Can following be added - overhead, useful throughput? A: Yes, needs more work.
7. Q: -P proposals seemed to be more stable than -PR. Why are you recommending probes in final slide? A: Difficult to choose between fairness and stability over large number of hops. (Large topology, with each link congested, in really a contrived Do not situation).
   1. Discussion: Useful throughput may be more important than fairness.
8. Comment: Linear increase in drift - can put limit on network size. (Large networks can get instability due to linear increase)

7. Head Bubba:
1. http://www.ieee802.org/1/files/public/docs2007/au-bubba-service-oriented-fabric-0707.pdf
2. Q: Deadlocks vs. loss - what is the lesser evil? A: Difficult to decide. Need to accommodate both.
3. Q: Is solution acceptable if Deadlock can be detected and recovered? A: Yes. However, don't have metric yet on how fast.
4. If "new" devices guarantee "no loss" and "deadlock detection/recovery" it WILL be deployed in "islands" and adopted.
5. Q: What is the accuracy of "clock sync"? A: Currently there is none. Hence any solution is an improvement.
   1. Within trading fabric/datacenter. Sync'ed with each other.
6. Q: Why not slow-start? A: App does not run for some time - then it takes some time for slow-start to ramp. Bad for early trades - loosing money.
7. CM to SLA-manager API is required
8. Ethernet is one standard fabric: If it can provide all the appropriate hooks.
9. Need to optimize small size packets as well as large size.

Wednesday, 7/18/2007, 9.00am

Attendees in room: 34

1. The chair reminded participants that the meeting is subject to the patent policy that was shown on the first day.

2. Prof. Raj Jain
   1. http://www.ieee802.org/1/files/public/docs2007/au-jain-fecn-multistage-hotspot-0707.pdf
      1. Comment: BCN foils referred are without BCN-MAX and oversampling. With these features, results improve.
   2. http://www.ieee802.org/1/files/public/docs2007/au-jain-congestion-principles-0707.pdf
      1. BCN has unfairness due to positive feedback.
      2. QCN has very slow transient response because there is no +ve feedback
      3. Comment: Implicit method is trying to make good-enough solution without cost of explicit information. And Timer mechanism added to AI will make it better. Stay tuned.
      4. Comment: Response time is slow only when congestion goes away! So, this results in little underutilization, congestion is addressed immediately. Also the complexity of algorithm is dependent upon implementation complexity and not number of lines in p-code.
      5. Rate is better than queue for detection.
      6. Division can be achieved easily - 1mS is not the only time value, other values can be chosen as well
         1. Comment: Division is not good for instability. Q: How can this be addressed? A: Do not agree that FECN has stability issue. Would like to see simulation results showing so.
      7. Comment: Assertion that we don't need to specify how switch divides the rates - it is very dangerous to leave such things unspecified. People implement incorrectly and system in total is unstable at that time. Whole loop needs to be specified. A: As long as external behavior is rigorously specified, one can achieve correct specification w/o nailing specific implementation algorithm. But, option is for room to decide on this.
      8. Simultation Ad-Hoc should define workload that tests:
         1. Single source/rate limiter with multiple flows
      9. Q: In FECN, when 2 flows to different paths share RL, how is probe defined? A: FECN was not designed for parallel paths. Will need to be addressed - not in current pseudo-code.
      10. Cost is very important and hence supporting practical implementations with limited RL is important goal for the solutions.
      11. FECN supports BCN-0.
      12. Overhead for CM solutions should be small. Should put price to the overhead.
3. Mitch Gusat:
   1. http://www.ieee802.org/1/files/public/docs2007/au-ZRL-prelim-QCN-r1.01.pdf
   2. All scenarios have PAUSE enabled
   3. Q: Does ECM have BCN(0) enabled? A: No, it is disabled.
   4. Discussion on Foil 10: for QCN - Q takes ~300mS to stability to Qeq
   5. Q: For QCN, is drift always running (also when link is PAUSE'ed)? A: yes, drift is always on.

6. Slide 15/16: Overshoot on aggregate throughput after HS has disappeared : due to emptying of filled up queues.
7. Comment: From analytical point of view phases: (Backoff+Recovery) and drift with Active Increase
   1. Every back-off is followed by recovery.
8. IBA has only timer based recovery. There is no rate feedback, only queue occupancy based feedback.
9. Slide 30: Since it is single RL and single CP - it is equivalent to single flow in one RL. It is not clear why rate does not seem to be recovering at all. A: Will check and get back
10. Proposal to use ECM and baseline and add QCN/E2CM elements for enhancements.
    1. Needs acceptance of CPID
    2. Or use QCN as baseline framework and add positive feedback (QCN-P: Guenter)
    3. CPID challenges:
       1. Binding external node state to local state. Not a good idea. May bind other protocols to this CPID association.
       2. CPID may vanish or there may not be traffic in that path: could be recovered by timer - but increases complexity
4. Discussion - Where do we go from here?
   1. Discussed "Objectives" and "Metrics"
      1. http://www.ieee802.org/1/files/public/docs2007/au-thaler-CN-Objectives-0906.pdf
      2. http://www.ieee802.org/1/files/public/docs2007/au-thaler-CN-metrics-070124.pdf
   2. Using Manoj Wadekar presentation to drive convergence discussion:
      1. http://www.ieee802.org/1/files/public/docs2007/au-wadekar-convergence-thoughts_v1.pdf
   3. Discussion on "Queue Based Congestion Detection":
      1. Do all switches have same queueing structure? - IEEE 802.1 defines only one structure - output queued.
      2. Raj made a point that FECN uses this only during rate installation
   4. How many people feel we can use a "2-point" architecture as baseline and start from there?
      1. CP sends notification to receiver
      2. Strawpoll => Yes: 22 No: 2
      3. There is consensus
      4. Chair requests Editor to include Objectives and Metrics to the draft.
      5. Chair requests Editor to start drafting with 2-point architecture
   5. Add to Objectives: "End Station should not be required to maintain per-flow state at Receiver"
5. Joe Pelissier:
   1. http://www.ieee802.org/1/files/public/docs2007/new-cn-pelissier-draft-pfc-par-5c-rev1.2.pdf
   2. How does Per-priority-pause get defined in .1 architecture?
      1. Singaling could be defined and leave implementation out.

3. Interoperability between PAUSE and Per-priority-pause could become user issue. Should be addressed at appropriate time.
6. Pat Thaler:
    1. http://www.ieee802.org/1/files/public/docs2007/new-cn-thaler-trans-select-par-070716.pdf
    2. What is difference between this work and AVB work?
        1. AVB has BW reservation, latency sensitive workload - and has much more stringent requirements. And elaborate work in this area.
        2. CM wants very gross BW allocation discipline.
        3. AV cloud uses specified higher TCs for remaining BW allocation scheme is still required.
7. Meeting Adjourned.