

## **IEEE 802.1 Minutes, May 2007**

John Messenger

### **Opening Session, Monday, May 28, 2007**

#### **Tony Jeffree, Process**

##### 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 now 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 no declarations were forthcoming

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

Following week ITUT SG 15 meeting and workshop (31 May – 1 June)

May 8-10 Security Interim in Sacramento, registration via web site

September 4-7 Stockholm

January 2008 meeting – hosts sought, preferably in USA. As SG13 meets 24-25 Jan and CES is 7-10 Jan, preferable date for 802.1 would be Jan 28<sup>th</sup>.

##### Liaison from 802.11 on priorities

Conflict between mandatory 802.11 priorities and informative 802.1Q priorities. Does 802.1 intend to make its version mandatory? No, but we can't commit to 802.1's future actions. Some implementations send voice at priority 5 and others priority 6.

Task Group Agenda for Security and Internetworking – Steve Haddock

Five ballots closed since the last meeting: 802.1AB, 802.1ag, 802.1ah (300+ comments), 802.1Qaw (200 comments), 802.1ap.

802.1AB Revision ballot – Tony Jeffree

Go over ballot comments, starting with editorial.

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802.1AB Revision ballot – Tony Jeffree (continued)

Currently LLDP is only allowed to be sent on the “controlled” port (802.1X/af). It was proposed that this restriction should be removed as there are security applications which would benefit from use of the “uncontrolled” port, such as identifying which network this is prior to authenticating. More text will be required to document this.

It was decided to allow sending to unicast addresses specifically to allow 802.11 associations to use them.

Interworking – 802.1ah working group ballot – Paul Bottorff

Reviewed timeline – earliest likely standard is May 2008.

369 comments (will be 400) from 65 voters; 11 Yes, 20 No and 34 abstain.

Comment resolution. Major topics:

Architectural

- PIP/CBP stack architecture doesn't align between 6 and 26
- Address translation – remove except for manipulation of multicasts
- Default Backbone Destination
- PCP and DEI operation
- Frame format details

Clause 17 (MIB) relationship to 802.1ap – Paul wants to move it into 802.1ap.

L2 gateway protocol state machines

Service interface variations

- Should S-tagged frames be included on a port-based interface
- Bundling modes of the S-tagged interface
- B-VID in CBP service instance table

MIB and Information Database issues

- Information database persistency; string sizes; description text

Feature creep

- Reduced learning for point-to-point I-SIDs
- Additional S-tagged Peer E-NNI
- 802.1ad “compatibility”

Wording

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- o “connection” in connection\_identifier
- o Connection\_identifier and service\_access\_point\_identifier

Interworking – 802.1ah addressing – Steve Haddock

To address around 20 comments, Steve presented

<http://www.ieee802.org/1/files/public/docs2007/ah-haddock-addressing-v1-0507.pdf>.

## **Tuesday AM, May 29, 2007 - Interworking**

Interworking - 802.1ah Ballot resolution – Norm Finn

Ballot comment resolution.

Ballot results:

Ballot Open Date: 03/26/2007

Ballot Close Date: 04/25/2007

RESPONSE RATE

This ballot has met the 75% returned ballot requirement.

108 eligible people in this ballot group.

77 affirmative votes

4 negative votes with comments

0 negative votes without comments

7 abstention votes

88 votes received = 81 % returned

8 % abstention

APPROVAL RATE

The 75% affirmation requirement is being met.

77 affirmative votes

4 negative votes with comments

81 votes = 95% affirmative

All TR, ER and GR comments were addressed, all T comments, and many E comments. By the end of the session, Norm felt that all “required” comments had been addressed with only one comment requiring confirmation from the commenter. We need to better understand the desirability and mechanics of getting floor-generated comments into Myballot.

## **Tuesday PM, May 29, 2007 - Interworking**

Interworking - 802.1ah Ballot resolution – Paul Bottorff and Steve Haddock

Ballot comment resolution

Interworking – 802.1ah CBP PIP stack – Steve Haddock

This presentation explained the editor’s decisions relating to the choice of the B-space model at the end of the last meeting.

<http://www.ieee802.org/1/files/public/docs2007/ah-haddock-CBP-PIP-stack-v1-0507.pdf>

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We accepted the suggested resolutions with the specific comment that we need to split the 6.9 functionality out of 6.10.

Interworking - 802.1ah Ballot resolution – Paul Bottorff

Paul continued with the comment resolution on clauses 25 and 6.

Maarten Vissers wanted to break 6.11 down into components. This was not supported by the group.

**Wednesday AM, May 30, 2007 - Interworking**

Interworking – 802.1Qaw – Linda Dunbar

Review of draft and resolution of comments on the initial draft. There were around 200 comments.

The tester and reflector should be in the same MA as the service being tested. There was not enough time for a complete review of ballot comments – older projects get a higher priority than newer ones in order to keep the number of projects under some semblance of control.

Interworking – 802.1aq – Link State Protocol for SPB

Ali Sajassi made a presentation supporting link state protocol (IS-IS) use in SPB.

Congruence of forward and reverse paths is unimportant.

Congruence of unicast and multicast paths is important.

Equal Cost Multicast Tree.

Reverse Path Forwarding Check per VLAN for loop mitigation.

Wants to carry the hop-count in part of the I-tag.

Interworking – 802.1aq – SPB Discussion and Proposals – Don Fedyk

Use IS-IS link state protocol as the only solution.

Use RPF. Not convinced of benefit of hop-count.

Interworking – 802.1Qay – Panos Saltzidis

Initial draft review

**Wednesday PM, May 30, 2007 - Interworking**

Interworking – 802.1ah – Paul Bottorff and Steve Haddock

Ballot comment resolution continued and was completed.

**Thursday AM, May 31, 2007**

**Interworking**

802.1ag – CFM – Norm Finn

All TR comments from the sponsor ballot have been addressed. One voter has yet to agree to the dispositions on his comments. A “clean ballot” was achieved.

802.1ap – Bridge MIB – Glenn Parsons

Ballot comment resolution

## **Tuesday, May 29 2007 – Congestion Management**

Meeting Minutes:

1. Chair, Pat Thaler, read Patent policy to the room.
2. Manoj Wadekar:
  - a. <http://www.ieee802.org/1/files/public/docs2007/au-sim-wadekar-adhoc-report-052907-v1.pdf>
  - b. Need to make decision about algorithm and notification for simulation ad-hoc to focus its effort
3. Mitch Gusat:
  - a. <http://www.ieee802.org/1/files/public/docs2007/au-sim-ZRL-FCT-BMRK-r03.pdf>
  - b. More burstiness as "alpha" approaches 1.0
  - c. What is right "alpha" for data center? - Not known.
  - d. Discussion: Ethernet is already heavy-tailed. (Campus - 1G study show this)
  - e. Closed loop (TCP, any L2 CN mechanisms) affects traffic distributions on the wire.
  - f. Discussion: When looking at throughput or latency - it is important to look at "flows" not "packets/bytes"
  - g. Q: What is Bsize? A: Burst-size, but read it as "flow size"
  - h. Discussion: Instead of measuring part-put - consider: src/dst counting packets tx/expected. Add penalty-based retx for dropped frames for FCT calculation
4. Prof. Raj Jain:
  - a. <http://www.ieee802.org/1/files/public/docs2007/au-jain-fecn-enhanced-20070530v2.pdf>
  - b. Basic difference between BCN and FECN: detection and feedback is based on Queue for BCN; it is based on rate for FECN. FECN provides rate back to the source.
  - c. Discussion: FECN requires rate limiter for each flow to start (due to slow start). Hence needs more rate limiters.
    - i. Response: change is being proposed to address this.
5. Cyriel Minkenberg:
  - a. <http://www.ieee802.org/1/files/public/docs2007/au-sim-ZRL-E2CM-InterimGeneva-v1.0.ppt>
  - b. Foil 7: Question: If RLT is being used for ECM in this simulation - non-CM domain will not operate correctly - as payload can not be interpreted by non-CM switch, isn't this correct? A: Yes, that is an issue.
  - c. Foil 7: Q: If ECM does not start - how does probing begin? A: This is the reason continuous probing is introduced.

- d. Lot of discussion around effect of PAUSE on cold flow - increase in FCT: no penalty is added in the simulations yet for dropped frames. However, FCT impact is large.
- 6. Guenter Roeck:
  - a. <http://www.ieee802.org/1/files/public/contrib/au-roeck-cm-implementation-perspective-052907.pdf>
  - b. Discussion on complexity of adding processing/per-flow-state on NIC RX- it is expensive and difficult to handle processing in NIC Rx and should be avoided as much as possible.
  - c. Using Probes instead of tags: Discussion: this is very challenging - as one does not have sampling probability

### **Wednesday, 5/30/2007 – Congestion Management**

- 7. Balaji Prabhakar:
  - a. [http://www.ieee802.org/1/files/public/docs2007/au\\_prabhakar\\_qcn\\_overview\\_geneva.pdf](http://www.ieee802.org/1/files/public/docs2007/au_prabhakar_qcn_overview_geneva.pdf)
  - b. Q: Why only RefP can send reflections w/o tag? A: every node within path can't reflect Fb=0 because that does not mean congestion has disappeared in the path. Unless that was the switch that triggered CM at the reaction point. This can be known only if the packets carried CPID - hence tag.
  - c. Q: how does one ensure Fb value at each switch with different buffers are maintained consistent? A: That is not required. Because source needs to keep changing rate till congestion disappears at the CP. Buffers are local property - goal is to get source to adjust its rate appropriately till that local property is satisfied. Fb just defines "behavior" of the RP.
  - d. Q: How does Fb=0 reach RP? A: At Dest RefP: Take Fb=0 bit from Rxed packet, form a packet and ship it back to the Source Address.
  - e. Q: If this packet does not get reflected, what is the consequence? A: None, we fall back to 2-point architecture and it continues to work.
  - f. Q: What is reflection point, NIC? A: Could be end station or last switch.
  - g. Q: DE bit is defined in .1ah - if switch treats it as CFI - then all "already reflected" bit packets may get dropped.  
A: In CM cloud - every switch needs to treat bit as DE and not as CFI.

- h.  $F_b=0$  does not necessarily mean congestion has disappeared. Good probability is that congestion has disappeared.

8. Rong Pan:

- a. <http://www.ieee802.org/1/files/public/docs2007/au-pan-qcn-details-053007.pdf>
- b. Q: what are the latency constraints on reflection? A: As quick as possible - counts into the total control loop delay.
- c. Q: what is the packet size for self-clocking? A: Could be byte based too.
- d. Foil 6: Q: how is the slope selected? A: it is linear slope  $p$  from 1 to 10 for  $F_b$ -min to  $F_b$ -max
- e. Foil 11: Packet drops should be looked at for relative advantage of changing sampling prob with  $F_b$ . BCN is fixed at 1% and QCN is increasing it based on  $F_b$
- f. Number of multiplications are reduced in QCN.
- g. Foil 12: Q: is the fairness acceptable in this slide? A: fairness is for long term. It is acceptable for given cost.
  - i. Discussion: it matters what is most important. Total fairness vs. complexity/reaction time/drops - when compared - it is not most important factor - as long as there is no extreme unfairness (a flow getting shut off). Right trade-off is important. This may result in compromise. Network is inherently unfair.
  - ii. E2CM seems more fair. Could be run on the top of this mechanism if a deployment needs fairness - as extra feature.
  - iii. Q: Fairness in simple scenario is so bad - will be worse in more complex scenarios. If a source hunts and gets higher rate, he will not give up and other flows will suffer? A: No, everybody hunts and hence there will be search for optimal rates.

9. Straw Polls:

- a. Fairness on Straw Poll #1: "extreme unfairness is not acceptable" is assumed, and fairness talks about "close to ideal sharing"
- b. Straw Poll #1:

Which metrics are key in .1au evaluation of proposed mechanisms? (20 in room)

Metric:

Buffer size: 12

Aggregate Utilization: 15

Fairness: 2

Max-min fairness: 2

Proportional fairness: 1  
Convergence time: 15  
Flow completion time: 6  
Drop episodes: 12  
Implementation complexity: 19

c. Straw Poll #2:

What is the preferred notification mechanism that .1au should use?

Forward: 2

Backward: 9

Both forward and backward: 11

d. Straw Poll #3:

Should .1au use a new tag on data packet?

yes: 0

no: 14

Abstain: 7

e. Straw Poll #4:

Should .1au use probing?

yes: 8

no: 4

Abstain: 9

f. Straw Poll #5:

Are you ready to choose a proposal for .1au?

Yes: 9

No: 7

Abstain: 1

g. Straw Poll #6:

Proposals that should be considered further in .1au?

ECM: 5

E2CM: 10

FECN: 4

QCN: 16

10. Mike Ko:

a. <http://www.ieee802.org/1/files/public/docs2007/au-ko-fabric-convergence-0507.pdf>

11. Joe Pelissier:

a. Penalty of packet drops is much higher than just the retransmission overhead. FC traffic stays quiet for some time and bursts large amount of data. Any packet drop results into resetting whole exchange and gets bursty lossy behavior.



- b. Shim layer: burden NIC little more? But it also translates to having such mechanism in gateway functionality in the boundary devices. Adds significant complexity to such devices.
- c. Deadlocks:
  - i. Additional line should be added to slide 10: "CM will reduce the probability of deadlock happening"
- d. CM mechanism reduces need to apply PPP - so reduces risk. Happens during only during bursty peak utilization of buffers. Good CM mechanism reduces that period.
- e. Template proposal for per-priority-pause is uploaded:
  - i. <http://www.ieee802.org/1/files/public/docs2007/new-cm-barrass-pause-proposal.pdf>

12. Straw Polls: (Total people 22)

a. Straw Poll #1

The CM task group should draft a PAR, 5 criteria and objectives for "transmission selection" for 802.1Q bridges and end nodes to provide priority grouping and per-group traffic class allocation, for review by IEEE 802.1 at the July plenary

Results:

Yes: 11

No: 0

Abstain: 9

b. Straw Poll #2:

I intend to actively contribute to the development of a PAR, 5 criteria and objectives for the "priority grouping" work in 802.1Q spec

Results:

Yes: 9

c. Straw Poll #3:

The CM task group should draft a PAR, 5 criteria and objectives for granular (per priority) link level flow control for 802.1Q bridges for review by IEEE 802.1 at the July plenary

Results:

Yes: 14

No: 2

Abstain: 4

d. Straw Poll #4:

I intend to actively contribute to development of a PAR, 5 criteria and objectives for the "per priority link flow control" work in 802.1Q spec

Results:

Yes: 13

## 802.1 AVB TG Meeting Notes, May 2007

### Tue AM:

1. administrivia (Michael Johas Teener - MJT, 10 minutes), introductions and reading of patent policy, agreement on agenda (10 minutes)
2. Joint meeting with 802.11 VTSG in July (MJT, 10 minutes). There will be a joint meeting with the 802.11 Video Transport Study Group at the SF Plenary in July.
3. Assumptions for sources of time synchronization error in IEEE 802.1AS, Rev. 03 (Geoff Garner - GG, 30 minutes)
4. 802.1AS draft review (GG, 90 minutes) including:
  - a. Summary (outline) of new material in D0.7 and D0.8 (revision history)
  - b. Conventions (Clause 6), with emphasis on data types (6.4)
  - c. Media-independent layer P2P TC specifications (Clause 10) - layering, service primitives, state machine)

### Tue PM

1. 802.1AS draft review, continued (GG, 150 minutes)
  - a. Media-dependent layer P2P TC specifications (Clause 11)
  - b. Message attributes and detailed formats (11.2, 11.3) layering, service primitives, and state machine for processing of Sync and Follow\_Up -layering, service primitives, and state machine for Pdelay mechanism
  - c. Entities used in 802.1AS (Clause 8)

### Wed AM

1. AVB assumptions review (Don Pannel - DP, 120 minutes)
2. Stream Setup and Teardown (John Nels Fuller -JNF, 30 minutes)
3. MoCA technical summary (Shlomo Ovadia - SO, 60 minutes)
4. 802.11 and 802.1AVB (Myron Hattig - MH, 20 minutes)

### Wed PM

1. Dynamic Bandwidth Reservation at Audio Video Bridging (Paul Jeong - PJ, 30 minutes)
2. Qat Policies review(DP, 30 minutes)
3. UPnP TSPEC mapping (MJT, 10 minutes)
4. 802.1Qat draft review (Felix Feng - FF, 120 minutes)
5. 802.1Qav draft review/status (Tony Jeffree - TJ, 60 minutes)

### Thu AM

Additional discussions on queuing and forwarding.

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## **Attendees (all tracks):**

<b><u>NAME</u></b>	<b><u>SURNAME</u></b>	<b><u>Affiliation</u></b>
Osama	Aboul-Magid	Nortel Networks
Zehavit	Alon	Nokia Siemens Networks
Carmi	Arad	NOT CONFIRMED
Hugh	Barrass	Cisco
Jan	Bialkowski	Infinera, Inc
Jean-Michel	Bonnamy	France-Telecom
Paul	Bottorff	Nortel Inc
Rudolf	Brandner	Nokia Siemens Networks
Robert	Brunner	Ericsson
Craig W.	Carlson	Qlogic
Rao	Cherukuri	Juniper Networks
Diego	Crupnicoff	Mellanox
Kevin	Daines	World Wide Packets
Seamus	Daly	Avici Systems
Sharam	Davari	NOT CONFIRMED
Arjan	de Heer	Alcatel-Lucent
Claudio	Desanti	Cisco
Thomas	Dineen	Self
Linda	Dunbar	Futurewei Technologies
David	Elie-Dit-Cosaque	Alcatel-Lucent
Yacine	Elkolli	Canon
Don	Fedyk	Nortel
Felix Feifei	Feng	Samsung
Norm	Finn	Cisco Systems
Bob	Frazier	Ericsson
Laurent	Frouin	NOT CONFIRMED
John	Fuller	Gibson Guitar
Chris	Gallon	Fujitsu
Sridhara	Gangula	Adva Optical Networking
Geoffrey	Garner	Samsung
Anoop	Ghanwani	Brocade
Rieinhard	Glozer	Nokia Siemens Networks
Franz	Goetz	Siemens
Eric	Gray	Ericsson
Mitch	Gusat	IBM Research
Steve	Haddock	Extreme Networks
Brian	Hassink	Hatteras Networks
Myron	Hattig	Intel
Asif	Hazarika	Fujitsu
Romain	Inslar	France Telecom
Raj	Jain	Washington University in Saint Louis
Mark	Janoska	NOT CONFIRMED
Tony	Jeffree	Self, Cisco, Broadcom, Hewlett Packard, Adva
Paul Hongkyu	Jeong	Samsung
Michael	Johas Teener	Broadcom
Nevin	Jones	NOT CONFIRMED
Byungsuk	Kim	NOT CONFIRMED

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Yongbum	Kim	Broadcom
Philippe	Klein	Broadcom
Mike	Ko	IBM
Bruce	Kwan	Broadcom Corp
Kari	Laihonen	Teliasonera
Yannick	Le Goff	France Telecom
John	Lemon	Adtran
Ronald	Luijten	NOT CONFIRMED
Gael	Mace	Thomson
David	Martin	Nortel Networks
Mashahiro	Maruyoshi	NOT CONFIRMED
David	Melman	Marvell
John	Messenger	Adva Optical Networking Ltd
Cyril	Minkenber	NOT CONFIRMED
Dinesh	Mohan	Nortel
Hiroshi	Ohta	NTT
Shlomo	Ovadia	Entropic Communications
Rong	Pan	Cisco Systems
Don	Pannell	Marvell
Glenn	Parsons	Nortel
Joe	Pelissier	Brocade
Haim	Porat	Ethos Networks
Robert	Roden	Lightstorm Networks
Guenter	Roeck	Teak Technologies
Josef	Roese	Deutsche Telecom
Dan	Romascanu	Avaya
Ali	Sajassi	Cisco
Panagiotis	Saltsidis	Ericsson
Sam	Sambasivan	AT&T
Mick	Seaman	Mick Seaman
Koichiro	Seto	Hitachi Cable
Nurit	Sprecher	Nokia Siemens Networks
Kevin B	Stanton	Intel
Muneyoshi	Suzuki	NTT
Attila	Takacs	Ericsson
John	Terry	Brocade Communications
Pat	Thaler	Broadcom
Oliver	Thorp	Fujitsu
Gilles	Thouenon	FT R&D
Maarten	Vissers	Alcatel-Lucent
Manoj	Wadekar	Intel
Yan	Wang	Huawei
Karl	Weber	Siemens
Bert	Wijnen	Alcatel-Lucent
Aidan	Williams	Audinate
Ludwig	Winkel	Siemens AG
Chang-Ching`	Wu	TrendChip Technologies
Lucy	Yong	NOT CONFIRMED
Ken	Young	Gridpoint Systems