

**IEEE 802.1 Minutes, July 2004****Meeting attendees**

Osama	Aboul-Magid	Bill	Lane
Brandon	Barry	Tom	Mathey
Les	Bell	Bill	McIntosh
M	Borza	Dinesh	Mohan
Paul	Bottorff	Ken	Mooney
Rudolf	Brandner	Bob	Moskowitz
Jim	Burns	Ravi	Nalamati
Dirceu	Cavendish	Satoshi	Obara
Vincent	Chanal	Don	O'Connor
Rongfeng	Chang	Karen	O'Donoghue
Paul	Congdon	Hiroshi	Ohta
Sharam	Davari	Glenn	Parsons
Arjan	de Heer	Ken	Patton
Craig	Easley	Harry	Peng
Anush	Elangovan	Rick W.	Pimpinella
Hesham	Elbakoury	John	Roese
David	Elie-Dit-Cosaque	Josef	Roese
Norm	Finn	Allyn	Romanow
Bersani	Florent	Dan	Romascanu
David	Frattura	Jessy V	Rouyer
Gerard	Goubert	Ali	Sajassi
Ken	Grewal	Dolors	Sala
Steve	Haddock	Sam	Sambasivan
Onn	Haran	John	Sauer
Takashi	Hasegawa	Mick	Seaman
Ran	Ish-Shalom	Kapil	Sood
Vipin	Jain	Matt	Squire
Neil	Jarvis	Muneyoshi	Suzuki
Tony	Jeffree	Yoshihiro	Suzuki
Peter	Jones	Geoff	Thompson
Ulf	Jonsson	John	Viega
Mohan	Kalkunte	Preeti	Vinayakray-Jani
Tetsuya	Kawakami	John	Vollbrecht
Do-Yeon	Kim	Dennis	Volpano
Kwangjo	Kim	Karl	Weber
Yongbum	Kim	Ludwig	Winkel
Sreenivas	Kottapalli	Robert	Wu
Glen	Kramer		

## **Pre-Meeting Monday, July 12, 2004**

Two simultaneous meetings - AB and AD. AB doing disposition of comments.

### 802.1AD- Mick Seaman

Need a new approach.  
Several people not happy with scaling of provider bridges  
Break this out into a new PAR

### Backbone Provider Bridging Networks - Paul Bottorff,

<http://www.ieee802.org/1/files/public/docs2004/BB%20Provider%20Bridge%20v6.pdf>

PAR - Backbone Provider Bridge PAR  
backbone is separate from the provider bridge  
Comment - this is MAC in MAC, with different terminology  
This is Paul's understanding of where the MAC and MAC technology is  
Mick- thinks if split things are split apart this way, it's more useful

## **Opening Plenary Monday, July 12, 2004**

### Agenda - Tony Jeffree

Administrative Stuff-

Website <http://www.ieee802.org/1/>

Voting Membership - Review of voting rules – need to attend 5 sessions, if attend 2 such meetings, can gain voting rules at the next Plenary meeting.

Credits valid within the span of 4 plenary meetings

To maintain, must attend two meetings, one of which is plenary, within a 4-plenary time period.

Voting is obligation to participate

Review of 802.1 WG and Task Group operation

Review of different types of ballots

Review of IEEE patent policy

Slides #1 and #2 were shown to the committee and the policy was reviewed.

It is up to the patent owner to assert their patent is used in a standard

Scheduling interim

Will be Oct. 4 in Ottawa– It was very difficult to schedule, because of too many conflicts in September.

Review of inappropriate topics of conversation for IEEE WG Meetings

Liaison reports

Craig Easley- liaison to 802.3

802.3ah EFM was ratified

Backplane, 10G-BT, technical presentation

Joint plenary tues am to discuss frame format extensions,

New CFI from Nortel and others, including Gibson Guitar, on Residential

Ethernet for Audio Visual over Ethernet

SG on Congestion management

Ongoing maintenance activities

Bob Moskowitz- 802.11

11.s has approved PAR, mesh networks

11.p vehicular system requirements

IETF – Paul Congdon

Processes to share info between IEEE and IETF

Questions on proper review of work

EAP methods run over IEEE

SNMP mibs

RADIUS attributes- new WG RADIUS extensions WG, including specific to IEEE networks

TIA – need a liaison

Tony circulated proposed PARs for new work. We have a chance to comment, but must be by end of day Tuesday. Tony felt not much we cared about, but could be wrong. Check and see.

What's been happening in the EXEC? Met Monday morning- Tony Jeffree reported

Approvals – 802.3ah, 802.11i, and 802.17

IEEE continues to expand attendance – 1400 this week

Task Force between 802 and IEEE Standards Association (SA)

Indemnification – looks like everyone will be covered

Downloads- they need more money for them

Tutorials- Norm Finn, Connectivity Fault Management 6:30-8 Monday

Policies & Procedures – rules for 802 going through revision

New P&P so that SA can review them better

Online training materials for would-be 802 officers

There has been a face to face effort, now going to make permanent web based resources available.

Tues 8-9:30 on use of Frame Maker. Jennifer Longman running it

This week 802.3 is raising PAR for extending of frame size

IETF asked for access to IEEE working drafts.

Formation of new 802 Architecture Group- Paul Nikolich asked this be done.

Tony is heading it up. Will be a standing committee of the SEC, appointed

representatives from each working group, two representatives from each.

People with broad understanding as well as in depth on the particular WG.

Will be Sunday afternoons at plenary meetings. Known problems of how architecture of different MAC groups fits in.

802.11 has now formed its own internal architecture group..

#### Agenda Setting- Mick

AE – make sure to have internetworking people there- important to consider security for internetworking

Monday

9.00-10.30 Interworking : P802.1ad Provider Bridges [Queen Marie - ES]  
Backbone/Core scaling proposal (Bottorff et al)

9.00-10.30 Interworking : P802.1AB LLDP [Roy Yates - ES]  
Sponsor Ballot resolution (Paul Congdon)

1.00- 3.00 802.1 WG : Opening Plenary [Queen Marie - ES]  
Chair's opening remarks.  
Agenda setting and confirmation for week.

3.30- 4.00	ITU Q3/13 P802.1ag liaison (Hiroshi Ohta)
4.00- 5.00	P802.1X REV Sponsor recirc ballot resolution (Jeffree)
6.30- 8.00 802	Tutorial : P802.1ag Tutorial (Finn et al)
Tuesday	
9.00-10.30 LinkSec	: P802.1AE MACsec [Fireside - ES]
11.00-12.00	D2 ballot resolution (Romanow)
1.30- 3.00 Interworking	: P802.1ag Connectivity Fault Mgmt [Fireside -ES]
3.30- 5.00	(Sajassi, Bottorff) OAM domain configuration (Elie-Dit-Cosaque)
	Enhancements to EthAIS (Elie-Dit-Cosaque)
1.30- 3.00 LinkSec	: P802.1af KeySec [Roy Yates - ES]
3.30- 5.00	Key Selection Protocol proposal (Seaman)
	Key Management for Link Layer Security (Kim)
Wednesday	
9.00-10.00 Interworking :	P802.1ad Provider Bridges [Fireside - ES]
	Review editor's text for drop precedence (Seaman)
10.30-12.30	Joint Meeting with 802.3 [TBA-ES]
1.30- 3.00 Interworking :	P802.1ad Provider Bridges [Fireside - ES]
3.30- 5.00	Backbone/Core scaling proposal (Bottorff et al)
	Wrap up D2 ballot resolution (Seaman)
1.30- 3.00 LinkSec:	P802.1AE, P802.1af MACsec [Roy Yates - ES]
3.30- 5.00	Progress toward, objectives for task group ballots
Thursday	
9.00-10.30 TBA:	NWI/FYI [Fireside - ES]
10.30-12.00	Per Priority Flow Control (Suzuki)
1:30- 3:00 802.1 WG:	Closing Plenary [Fireside - ES]

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Hiroshi Ohta – Ethernet OAM study in ITU-T SG13, Q.3/13, Current Status,  
<http://www.ieee802.org/1/files/public/docs2004/Jul04-liaison-ITU-T%20SG13-Q3.pdf>

Tony Jeffree – 802.1X Recirculation Ballot Comments

<http://www.ieee802.org/1/files/private/x-REV-drafts/d10/>

Relatively small number of comments, some held over from previous ballot.  
 Two outstanding negative votes  
 Thus need another recirculation ballot because there is a new negative  
 What's the next step? Generate draft 11, along with negative comments from  
 David James and Adrian Stephens, at end of meeting vote to forward to Exec with  
 conditional approval, so they can send to RevCon.

## **Tuesday morning, July 13, 2004**

802.1AE First Disposition of Comments on Draft 2.0 – Allyn Romanow

<http://www.ieee802.org/1/files/private/ae-drafts/d2/802-1ae-d2-0-dis-1.pdf>

Review of all comments except those that seemed to be editorial only in nature.  
 See disposition of comments.

## **Tuesday afternoon, July 13, 2004**

802.1af Overview of KSP- Mick Seaman- slides

doc is <http://www.ieee802.org/1/files/public/docs2004/af-KeySelectionProtocol-seaman-v03.pdf>

Not a spec yet.

Kwangjo Kim- Key Management for Link Level Security - slides

[http://www.ieee802.org/1/files/public/docs2004/AFjul04KimKey\\_Management\\_For\\_Link\\_Layer\\_Security.pdf](http://www.ieee802.org/1/files/public/docs2004/AFjul04KimKey_Management_For_Link_Layer_Security.pdf)

Review of .11i, followed by a new proposal.

Comments on the presentation- the assumptions here don't match our problem.

This isn't the operational environment we're working in, this is point to point only. We don't have this luxury.

Assumes global unique MAC address. This is not a realistic assumption. Too weak to hang security on. MAC address is an "accidental" property of the system. In the L2 world, the MAC address is really a hint to the infrastructure, not really permanent. Need a different type of credential in the system presented.

The presentation has a number of interesting points.

What other standard groups might be interested? .11? They have different constraints than we do.

John Viega- Initial Keying for KEYsec

[http://www.ieee802.org/1/files/public/docs2004/AFJul04Viega\\_KeySec\\_Initial\\_Keying.ppt](http://www.ieee802.org/1/files/public/docs2004/AFJul04Viega_KeySec_Initial_Keying.ppt)

Initial Key installation. Want a simple, out of the box way to install keys

New device- needs to be set up with pair wise keys. Purchase new device, want to have it talk to other device or devices. Want it to be plug and play

Want way to identify and validate own devices. Assign devices unique 128-bit IDs, loaded with MAC address by the manufacturer

32 bit vendor ID, 96 bits vendor dependent, unique, random number is fine

Use RSA to validate device owns ID and exchange pair wise keys

Use mini-PKI. Vendor installs private key and certificate with public key

Certificate signed by vendor's signing credentials.

Its credentials signed by a root certification authority, IETF has offered to do it,

An EAP method could leverage this.

Binds an ID to a device. Don't use MAC address

Auxiliary benefits-

Solves L2 part of ARP problem, would provide signed ARP to IETF to solve problem

Prevents counterfeiting hardware- device that's a clone, stolen, would be able to tell

Provides a basis for establishing trust in firmware

Assuming TPM chip? Or flash? Any write-once memory

Drawbacks

Need to integrate into manufacturing process

Requires hash function for signing, probably SHA1  
DOCSIS does same thing  
Don't have to do it every time, this is initial key installation  
Use this, or other things, to construct a group key, which can be used many times  
Mick's KSP is distribution and derivation, where everyone already shares a single key. Assumes provisioning of group key.  
Requires another protocol for getting group key from pair wise master keys.  
Bob Moscovitz comment – a lot of track record for this type of approach  
Privacy concerns- do you trust the vendor?  
Requires access to support resources- backend resources - Somebody needs to create the ACL-  
Backend necessary for authorization not for authentication  
CA meaning certificate authority, always spell out, so as to not confuse with Connection Association  
Big discussion ensued about registration authorities in this context  
In conclusion, this work may be better done elsewhere

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## **Wednesday AM, July 14, 2004**

Mick Seaman - .802.1AD Interworking  
Went over mapping priorities cl 6.7

Joint meeting with 802.3  
802.1 update

Kevin Daines – update on Frame Expansion, 802.3 Frame Expansion Ad-hoc  
[http://www.ieee802.org/3/frame\\_study](http://www.ieee802.org/3/frame_study)

Also got requests from MPLS  
Ad hoc met yesterday, 30 people  
Frame formats, draft PAR  
Concerns raised - Is this really necessary? Are there any alternatives? All the alternate suggestions were patently unacceptable.  
Is this a guise to standardize 9k jumbo frames?  
Certainly not 802.1's intent. 802.1 has asked to increase \*header\* size.  
It's a different question whether to increase data size  
Backward compatibility  
What happens to overall efficiency? QoS? Increased jitter?  
Questions for 802 .1  
Discovery mechanism, or magically work? How did you think this would work?  
Do other groups also need additional fields, e.g., 802.17?  
UNH has offered to do some testing, experimentation  
Ad hoc meeting to request a SG, Vote had 18 participate, 12 separate orgs.  
Want to submit a PAR after September, 50 day deadline for December Sec meeting. When and where meet in Sept.? Co-locate with 802.1? or prior week near PA. More people wanted to go to Ottawa.

July 2004

Portland, Oregon

Interim plans

Vote on who would attend the frame expansion SG at different proposed dates

9/27 – 20 people

10/4 – 36 people

A decision will be made.

Draft liaison response to ITU-T Q9, Q12/SG 15 from IEEE 802.1 and 802.3

Review of the status of the SG.

## **Wednesday PM, July 14, 2004**

Weds afternoon LinkSec and Interworking WGs meet separately

Linksec

John Vollbrecht - 802.1af Discussion

[http://www.ieee802.org/1/files/public/docs2004/AFjul04Vollbrecht802\\_1\\_ae-af.ppt](http://www.ieee802.org/1/files/public/docs2004/AFjul04Vollbrecht802_1_ae-af.ppt)

Clarification of KSP

Discovery –

Beacon every ½ second, to prove liveness, announcing itself

Review of KaY functions

Review of EAP and RADIUS issues with respect to KaY functions

Not clear that using EAP and RADIUS is doable, if doable, it would take a lot of work

Other option- distribute a weak CAK, the coffee shop model

Vollbrecht – worries that everyone knows same key, vulnerable

Protected the network from me, but not protected me from other members of CAK. Discussion of this.

Weak key proposal

Get weak key, join a provisional CA –

When get credentials, then get onto the real CA

Prevents against the most brain dead attacks

Deployment tool

Not a strong form of security, there to provide services to pull down credentials

Wants to not use RADIUS/EAP

Comments

Coffee house model

Model is point to point – makes the big difference

If shared media- need a muxing method. In worst case, use address

## **Thursday AM, July 15, 2004**

Paul Congdon – Sponsor Ballot comment resolution for 802.1AB

802.1AB Sponsor Ballot comment resolution for comments greater than 72 was covered from 9:00 to 10:30. All AB/D10 Sponsor Ballot comments have been processed at this point and a confirmation ballot will be planned

prior to the next interim meeting.

Allyn Romanow – Task Group Ballot comment resolution 802.1AE  
Continuation from Tuesday.

Muneyoshi Suzuki- Per-priority Flow Control  
[http://www.ieee802.org/1/files/public/docs2004/  
Per-priority Flow Controll.pdf](http://www.ieee802.org/1/files/public/docs2004/Per-priority%20Flow%20Controll.pdf)

## **Closing Plenary Thursday PM, July 15, 2004 Closing Plenary,**

Agenda – Tony Jeffree

Administrative Stuff – Tony Jeffree

Officers

Voting Membership

Voting Members

Current Voters

802.1 WG and TG operation

TG, WG, and Sponsor Ballots

Presentation to Tony of Certificate of Appreciation dated March 1990 – Mick

Seaman

Patent Policy

The required two slides were presented and the committee was made aware of the IEEE patent policy

Inappropriate Topics for WG meetings

Future meetings

Ottawa 4-7 Oct

Jan – Sacramento? –tentatively week of the 10<sup>th</sup> preferred, 24<sup>th</sup> second choice?

May – Barcelona? – tentatively second week?

Sept 2005– not the 8<sup>th</sup> or the 20<sup>th</sup>?

Liaison reports

802.3 Don Pannell

Kevin Daines writing PAR for extending frame size

Residential CFI got a lot of support

When will we meet jointly? 802.3 meeting one week earlier in Ottawa. Bob Grow is considering splitting .3 so that CMSG and Framesize might meet the same week we do

802.11 Bob Moskowitz

Mesh workgroup .11s – security and routing ad hoc design teams, Bob M. is moderating the security ad hoc design team. Get in touch with him if you are interested. Want to have requirements by next plenary, and to have criteria done by November meeting. Sunday there was a meeting to define .11 architecture

802.20 doing security. A few people from 802.1 went. They are doing requirements

802.16 will be getting in touch, see what convergence is possible.

Sanity check on our work Review current PARs and PAR end dates– Tony Jeffree



- 802.1Q-REV: Must drive this forward ASAP. End date is Dec '05. Mostly Tony and Mick will work on it and do a Task Group Ballot. Want draft by end of November
- 802.1X-REV: Nearly done – should be a done deal by November.
- 802.1AB: Nearly done – should be a done deal by November.
- 802.1AC (MAC Service): Initial draft – are we able to make progress on this yet? End date is Dec '05. – nothing contingent on it. 3 pieces of text. The original MAC Service definition. An ISO standard. ISS definition and EISS definition taken from .1D and .1Q. Stuff to be done to it, consequent on .1AD. Needs updating in light of some current work, security in particular.
- 802.1ad (Provider Bridges): TG ballot. End date is Dec '05
- 802.1AE (MAC security): TG ballot. Finishing depends on .1af. End date is May '06
- 802.1af (Key agreement): Editor's draft. End date is Dec '06
- 802.1ag (CFM): Editor's draft. End date is July '07  
Web page needs to be updated – John Messenger

**Motions**

802.1 approves the March '2004 and May '2004 meeting minutes.

802.1 Proposed: Romanow

Second: Congdon

– For: 24 Against: 0 Abstain: 2

Allyn will remove website username and password from March notes

802.1 appoints David Frattura as liaison to TIA TR41.4

802.1 Proposed: Congdon Second: Seaman

– For: 23 Against: 0 Abstain: 2

802.1 resolves to hold an interim session in Ottawa, Mon 4th October 9:00 AM through Thurs 7th October 5:00 PM, hosted by Nortel

Proposed: Parsons

Second: Congdon

– For: 25  
– Against: 0  
– Abstain: 1

802.1 resolves to hold a pre-meeting on the Monday morning of the November 2004 plenary session.

802.1 Proposed: seaman

Second: Finn For: 24 Against: 0 Abstain: 0

802.1 requests conditional approval from the SEC , as per current P&P, to forward P802.1X-REV to RevCom following completion of further recirculation ballot(s).

802.1 Proposed: Bell Second: Sala

For: 25 Against: 0 Abstain: 0

SEC Proposed: Jeffree, Second:  
For: Against: Abstain:

802.1 requests conditional approval from the SEC, as per current P&P, to forward the P802.1AB draft to RevCom following completion of the upcoming recirculation ballot(s).

802.1 Proposed: Congdon Second: Lane  
For: 24 Against: 0 Abstain: 0

SEC Proposed: Jeffree, Second:  
– For: Against: Abstain:

802.1 resolves to assign the following group MAC address: 01-80-C2-00-00-0E, taken from Table 7-10 of 802.1D, as the “all stations this LAN” MAC address, and the OID arc value “2” for use in P802.1AB.

802.1 Proposed: Congdon Second: Lane  
– For: 23 Against: 0 Abstain: 1

802.1 instructs the Second editor of P802.1ad to prepare a further draft taking into account the discussions during the July 2004 meeting, and issue the draft for a further Task Group ballot.

802.1 Proposed: Seaman : Haddock  
– For: 27 Against: 0 Abstain: 0

802.1 instructs the Chair to forward the P802.1ah “Backbone Provider Bridges” PAR to the SEC per the 30-day rule, taking account of comments/changes made during the October interim meeting.

802.1 Proposed: Bottorff Second: Finn  
– For: 21 Against: 1 Abstain: 4

802.1 instructs the Chair to forward the P802.1ak “VGARP” PAR to the SEC per the 30-day rule, taking account of comments/changes made during the October interim meeting.

802.1 Proposed: Finn Second: Bottorff  
For: 22 Against: 0 Abstain: 4

802.1 authorizes its October interim meeting to further develop the “Media Converter” PAR, and to instruct the Chair to forward the PAR to the SEC per the 30-day rule, should the proposal be considered by that meeting to be ready to go forward.

802.1 Proposed: Finn Second: Bottorff  
For: 21 Against: 0 Abstain: 3

802.1 approves the attached liaison statement to ITU-T SG13 regarding LLDP.

Proposed: Congdon Second: Finn  
For: 19 Against: 0 Abstain: 0

Text of statement from 802.1 to ITU-TSG13 regarding LLDP:

To ITU-T Q.16/13  
Ref: COM13-LS05-E  
From: IEEE 802.1

IEEE 802.1 appreciates the need of the edge router to discover the topology of an attached bridged network. Some explanation of the purpose of IEEE P802.1AB Link Layer Discovery Protocol is in order:

1. The function of LLDP is to collect the data from which the topology of the network may be deduced. The transmission of the collected data to a central location is a separate problem, one with well-known existing solutions (e.g. SNMP), and is therefore out of the scope of LLDP.
2. All information passed by LLDP must fit into a single data frame.
3. LLDP cannot pass through a bridge, so is restricted to a single LAN.
4. LLDP is prohibited from relaying information from one port to another port on one device, and therefore prohibited from relaying information through a bridged network.
5. LLDP is not a stimulus-response protocol, but an advertisement-discovery protocol. LLDP typically runs on a 30-second transmit timer. Therefore, it may not meet your expectations for timely and reliable collection of topology information.

These restrictions on LLDP are purposely severe. The amount of information that one device might want to know about its neighbor is very large. Therefore, the purpose of LLDP is to provide the minimum amount of information required to make it likely that a system administrator with access to one device can acquire enough information about a neighboring device to enable the administrator to access that neighbor device with further queries. By minimizing the complexity of LLDP, the probability that implementers will include LLDP in their products is maximized. The collection function described in TD 24 Rev. 1 (WP 2/13), Annex A, point (2), lies out of the scope of P802.1AB.

We would point out that, if a Layer 2 solution for the collection function is required, there exists an Ethertype for carrying SNMP queries and responses at Layer 2. Also, at Layer 3, SNMP can be transmitted over TCP, rather than UDP, in order to simplify the reliable collection of data.

As to the three specific data items you mention for inclusion in LLDP:

1. The spanning tree state of a device is available in that device's Bridge MIB.
2. The link speed is available in the Interfaces MIB, as well as the 802.3 Auto-negotiation TLV.
3. The full/half duplex state of a port is transmitted through LLDP, in the 802.3 Auto-negotiation TLV, described in Annex G of P802.1AB Draft 10.