

IEEE 802 Interim Meeting  
 March 2010, Santa Fe, New Mexico  
**802.1 Meeting Minutes, 9-12 May 2011**

**Attendees**

<b>Last Name</b>	<b>First Name</b>	<b>Middle Name</b>	<b>Affiliation</b>
Agarwal	Puneet		802.1
Ashwood-Smith	Peter		Huawei Technologies Co. Ltd Hochschule Deggendorf - University, Hirschmann Automation & Control
Boiger	Christian		Hewlett-Packard Development Company, L.P.
Bottorff	Paul		QLogic Corporation
Carlson	Craig		Hewlett-Packard Development Company, L.P.
Congdon	Paul		National Instruments Corporation
Cummings	Rodney		Microsoft
Dabagh	Alireza		Cisco Systems, Inc.
DeSanti	Claudio		Chelsio Communication
Eiriksson	Asgeir		Ericsson
Farkas	Janos		Cisco Systems, Inc.
Finn	Norman		Intel Corporation
Ganga	Ilango		SAMSUNG
Garner	Geoffrey		Brocade
Ghanwani	Anoop		Siemens
Goetz	Franz		Hewlett-Packard Development Company, L.P.
Gravel	Mark		Telefon AB, LM Ericsson
Gray	Eric		Huawei Technologies Co. Ltd
GU	Yingjie		HARMAN INTERNATIONAL INDUSTRIES, INCORPORATED
Gunther	Craig		Extreme Networks
Haddock	Stephen		Universidad de Alcala de Henares
Ibanez	Guillermo		inIT-Institut Industrial IT
Imtiaz	Jahanzaib		hp, broadcom
Jeffree	Anthony		Apple
Jones	Girault		FUJITSU
Joshi	Mandar		IBM
Kamath	Daya		Avaya Inc.
Keesara	Srikanth		Broadcom Corporation
Kim	Yongbum		Broadcom Corporation
Klein	Philippe		IHP GmbH
Krause	Michael		ZTE Corporation
li	lin		IBM
Lynch	Jeff		Huawei Technologies Co. Ltd
Mack-Crane	Thomas		Ciena Corporation
Martin	David		ADVA Optical Networking Ltd.
Messenger	John		Rockwell Automation Inc.
Moldovansky	Anatoly		

Morris	John		Spirent
Multanen	Eric		Intel Corporation
Nakagawa	Yukihiro		FUJITSU
Nakamura	Masafumi		Envital
Pannell	Donald		Marvell Semiconductor, Inc.
Parsons	Glenn		Ericsson AB
Pearson	Mark		Hewlett-Packard Development Company, L.P.
Pelissier	Joseph		Cisco Systems
Raeber	Rene		Cisco Systems, Inc.
Roese	Josef		Deutsche Telekom AG
Roitshtein	Amir		Marvell
Rouyer	Jessy		ALCATEL-LUCENT
Sajassi	Ali		Cisco Systems
Saltsidis	Panagiotis		Ericsson
Sathe	Satish		Applied Micro (AMCC)
Srinivasan	Arvind		Oracle, Inc.
Stanton	Kevin	B	Intel Corporation
Sultan	Robert		Huawei Technologies Co. Ltd
Tanaka	Jun		FUJITSU
Teener	Michael	Johas	Broadcom Corporation
Thaler	Patricia		Broadcom Corporation
Vissers	Maarten		Huawei Technologies Co. Ltd
Wei	Yuehua		ZTE Corporation

# Task Group Minutes

## Interworking Minutes

Monday, 9 May

Meeting called to order at 9:00am.

Stephen Haddock presented patent policy slides. No response to the call for patents.

Stephen Haddock presented the preliminary agenda for the week.

**Liaison:** Stephen Haddock showed four liaisons, one from the ITU-T and three from the MEF. The one from the ITU-T was discussed at the Singapore plenary meeting, however a response was not generated. Instead a motion was passed authorizing a response to be drafted at this interim, voted on by 802.1 Working Group email ballot, and then (if the ballot passes) sent prior to the June ITU-T meeting. Discussion and drafting a response is scheduled following the completion of other work for this meeting. The first two MEF liaisons are from the most recent MEF meeting in April, and do not require a response. If any 802.1 members wish to propose a response anyway, this can be discussed during this meeting and voted on at the July plenary meeting. The last MEF liaison was sent in July 2008, however it appears that it fell through the cracks and was never considered during any 802.1 meetings. The MEF has not made any further requests regarding this liaison, so at this point no response is necessary, however if any members feel a response is appropriate it can be discussed at this meeting and voted on at the July plenary meeting.

<http://www.ieee802.org/1/files/public/docs2011/liaison-itut-sg15-ols-277-0311.doc>

<http://www.ieee802.org/1/files/public/docs2011/liaison-mef-100130-000-liaison-to-ieee-802-1-latching-loopback-bjorkman-0411.doc>

<http://www.ieee802.org/1/files/public/docs2011/liaison-mef-100131-000-liaison-soam-fm-and-pm-mib-status-bjorkman-0411.doc>

<http://www.ieee802.org/1/files/public/docs2011/liaison-mef-100067-000-liaison-to-ieee-and-itu-t-accurate-frame-loss-bjorkman.doc>

**Maintenance:** Stephen Haddock showed the following maintenance request regarding the determination of the VID to be used in LoopBack Reply messages. Further discussion of this issue will be taken up later in the week.

[http://www.ieee802.org/1/files/public/maint/requests/maint\\_0003.pdf](http://www.ieee802.org/1/files/public/maint/requests/maint_0003.pdf)

**802.1Qbp ECMP:** Ben Mack-Crane presented an outline of the subclauses in 802.1Q that he expects to be updated in the course of 802.1Qbp.

<http://www.ieee802.org/1/files/public/docs2011/bp-mackcrane-editor-notes-0511.pdf>

Break for lunch at 11:45am.

Resume at 1:30pm.

**802.1Qbp ECMP:** Ali Sajassi gave a presentation regarding I-SID to B-VID mappings, ECMP frame formats and CFM Flows:

<http://www.ieee802.org/1/files/public/docs2011/bp-sajassi-bridge-model-0411-v01.pdf>

Ben Mack-Crane gave a presentation on ECMP frame formats, and a presentation on multi-path for multicast:

<http://www.ieee802.org/1/files/public/docs2011/bp-mackcrane-tag-format-0511.pdf>

<http://www.ieee802.org/1/files/public/docs2011/bp-mackcrane-multicast-spreading-0511.pdf>

Adjourn at 6:00pm.

Tuesday, 10 May

Meeting called to order at 9:00am.

Presented patent policy slides. Puneet Agarwal responded to the call for patents saying that Broadcom held some patents on the subject he was presenting, and he would endeavor to get Broadcom to submit a Letter of Assurance to the IEEE.

**802.1Qbp ECMP:** Puneet Agarwal gave a presentation regarding a proposed hash algorithm and simulation results:

<http://ieee802.org/1/files/public/docs2011/bp-agarwal-hash-proposal-0411-v1.pdf>

**802.1AXbq DRNI:** Norm Finn walked through the initial draft of Link Aggregation – Distributed Resilient Network interface. He also gave a presentation on a Marker Protocol proposal for DRNI:

<http://ieee802.org/1/files/private/axbq-drafts/d0/802-1AXbq-d0-1.pdf>

<http://www.ieee802.org/1/files/public/docs2011/axbq-nfinn-marker-protocol-drni-0511-v1.pdf>

Adjourn at 12:00pm.

Joint meeting with Data Center Bridging called to order at 1:30pm.

Minutes captured with the Data Center Bridging Task Group minutes.

Adjourned at 6:10 PM.

Wednesday, 11 May

Meeting called to order at 9:00am.

Stephen Haddock called for patents. No response to the call for patents.

**802.1AXbq DRNI:** Presentation from Maarten Vissers on DRNI and protection switching :

<http://ieee802.org/1/files/public/docs2011/axbq-vissers-drni-and-sncp-interworking-0511-v00.pptx>

Break for lunch at 12:00pm.

Resume at 1:30pm.

**802.1AXbq DRNI:** Presentations from Janos Farkas and Norm Finn :

<http://ieee802.org/1/files/public/docs2011/axbq-farkas-features-of-simple-DRNI-0511.pdf>

<http://ieee802.org/1/files/public/docs2011/axbq-nfinn-graceful-name-change-0511-v1.pdf>

**New Work:** Guillermo Ibañez gave a update on ARP-Path bridging:  
<http://ieee802.org/1/files/public/docs2011/new-ibanez-All-Path-bridges-0511-v01.pdf>

**Liaison:** Maarten Vissers gave a presentation related to the ITU liaison regarding E-OTN (ols 277). Stephen Haddock then showed a draft response which was edited in committee. The resulting liaison response will be the subject of an 802.1 Working Group email ballot prior to being sent to the ITU.

<http://ieee802.org/1/files/public/docs2011/new-vissers-pbb-pbbte-eotn-common-network-arch-0511-v00.pptx>  
<http://ieee802.org/1/files/public/docs2011/liaison-haddock-proposed-response-q10-15-277-eotn-0511-v00.doc>

Adjourn at 6:20pm.

Wednesday, 12 May

No Interworking meeting was held on 12 May.

## AVB Meeting Minutes

Monday, 9 May

Meeting started at 1 PM

Craig Gunther served as chair in absence of Michael Johas Teener (MJT).

Patents slides were shown.

Discussed use of Google docs for 802 AVB doc sharing and collaboration.

Decided to have MJT expound on this once he arrives, since he's been spearheading this effort. SMPTE TC-34CS "Media Systems, Control and Services" group is doing some command & control work that may overlap with IEEE P1722.1. MJT has mentioned this earlier in the reflector.

Decided to let him talk about it when he arrives.

Craig Gunther solicited additional items to be added to the agenda. A few were added.

Floor was given to Geoff Garner. He spoke about work on a PAR for enhancements and performance improvements for 802.1AS - this work would be called 802.1ASbr. The group seems happy with the PAR as it is. There was little discussion.

Geoff then presented ideas for the PAR for the Corrigendum 1 for 802.1AS-2011.

Geoff gave an update on his work with ITU Question 13, Study Group 15.

The "AVB" presentation that was on agenda wasn't given, since the presenter wasn't there.

Craig Gunther led a discussion about a known problem with the current SRP implementation

Bridges need VLAN ingress filtering. This should be addressed as part of new work.

Girault Jones brought up the issue that MSRP currently cannot support reserving less than 1 packet per observation interval. (64 bytes / 8000th sec for class A, 64 bytes / 4000th sec for class B).

It was suggested that we may want to talk about this under new work.

Girault asked a question about MSRP implementation regarding attributes sticking around when they shouldn't. It seems that is some misunderstanding in our implementation and not a problem in the standard as far as we can tell.

Kevin Stanton made some suggestions for changes to the "gen 2" PAR. He doesn't want us to be obligated to add automatic measurement of link asymmetry.

Meeting adjourned about 5 p.m.

## Tuesday, 10 May

Michael Johas Teener (MJT) started the meeting at 9 AM.

MJT ensured that all had seen the standard patent policy slides.

MJT gave a tour of Google docs and the 802tsn.org<<http://802tsn.org>> website he created. He'd like us to use this for meetings.

Philippe Klein, Broadcom was given the floor to present "SRP Stream Redundant Path Selection".

After lunch, Christian Boiger presented his latency calculations for gen II AVB, which would permit fragmentation of packets. See:

<http://iee802.org/1/files/public/docs2011/new-avb-boiger-worst-case-latency-gen2-0511.pdf>

Christian Boiger then presented "Improved Class A Talker, worst case latency calculations". See:

<http://iee802.org/1/files/public/docs2011/ba-boiger-talker-worst-case-eq-0511.pdf>

Rodney Cummings of National Instruments presented "Requirements from Various Applications". See:

<http://iee802.org/1/files/public/docs2011/new-avb-cummings-various-requirements-0511-v01.pdf>

Meeting adjourned about 5 p.m.

## Wednesday, 11 May

Next plenary meeting was discussed. It is scheduled for Sep 19-22, Nanjing, China.

Tony Jeffree reported about the recent 802.1BA ballot and led the group through comment resolution.

Jahanzaib Imtiaz delivered his presentation on "Reduction of Impacts of Legacy Traffic on Stream Latency". See:

<http://ieee802.org/1/files/public/docs2011/new-imiiaz-goetz-fragmentation-0511.pdf>

Philippe Klein, Broadcom delivered a presentation on IEEE 1905.1.

Meeting adjourned about 5 p.m.

## Thursday, 12 May

Michael Johas Teener started the meeting at 9 a.m.

Geoff Garner presented the latest draft of the 802.1AS Corrigendum. See:  
<http://www.ieee802.org/1/files/public/docs2011/as-garner-p802-1AS-cor-1-draft-par-0511.pdf>

Dr. Guillermo Ibanez Fernandez of the GISTNetserv group, Universidad de Alcalá, Madrid, Spain presented "ARP-Path as a New Bridging Mechanism Unrestricted flood search bridging, diversified path, non deterministic bridging". See:  
<http://www.ieee802.org/1/files/public/docs2011/new-ibanez-ARP-Path-and-Broad-path-0311-v5.pdf>

Dr. Guillermo Ibanez Fernandez then presented "All-Path bridges - Guillermo Ibanez (UAH), Jun Tanaka (Fujitsu), Vinod Kumar (Tejas Networks)". See:  
<http://www.ieee802.org/1/files/public/docs2011/new-ibanez-All-Path-bridges-0511-v01.pdf>

Craig Gunther presented "SR Class fragmentation". See:  
<http://www.ieee802.org/1/files/public/docs2011/avb2-cgunther-sr-class-fragmentation-0511-v01.pdf>

Yong Kim presented "IEEE 802.1 DRAFT PAR and 5C for pre-emption and fragmentation enhancement to 802.1Q"

Meeting adjourned about noon.

## DCB Meeting Minutes

### Monday, 9 May

Agenda for the meeting includes comment resolution for Qbg, Qbh and BR. New work on Thursday.

Some generic issues that were discussed prior to the joint meeting with Interworking:

The possibility of reverting to use of LLDP with extensions instead of ECP – some small interest, but no consensus and – if this is to happen – someone will need to step up and propose specific changes to both (this seems like a big project)

Possibly merging BR back into Qbh – to be discussed during the joint meeting

Tony began comment resolution of Qbg after logistics were covered. Qbg has 337 comments to process.

The ballot is valid, but did not pass. Comment resolution for Qbg continued through Tuesday at Noon (prior to the Wednesday afternoon joint meeting). Comment resolution would be suspended until after new work.

During the comment resolution, the following main points were discussed:

Possibly moving VDP out of Qbg – no consensus to do this.

## Tuesday, 10 May, PM – Joint Interworking/DCB

September Interim: Huawei needs to collect fees sooner than later because they have to make a deposit. There will be a penalty for registering late and the deadline will be pulled up somewhat.

Joe P. presented a few comments from Qbh that require the interaction of the joint meeting. These include:

Merge BR back into Qbh. There was no support for doing this

Qbh seems to be missing information about supporting I-tags. Some explanation of this followed. Because an I-component is based upon an S-component, you basically get this for free. There was no interest in ripping apart I-components internals.

System conformance isn't needed currently for Qbh. A controlling bridge can be specified as a base component with the a set of additional features, so it isn't necessary to augment the base component with options.

Several also commented that a port map should be passed to the PE rather than having the VLAN bridge look-up the E-CID. Everyone seems to like this idea

Possibly moving all of Qbh clause 44 into BR. Essentially not much is left in Qbh. Everyone seems to like this as well, but there are some concerns about how LLDP extensions for PE would be handled. LLDP extensions are difficult to add. LLDP is currently monolithic within extension MIB and we seem to put in the whole MIB when adding small augmentations. We will let Qbg be the first to deal with this.

Possibility that PE could be implemented with PBB-TE. A presentation ensued.

PBB-TE proposal (presented by Paul Bottorff): available at:

<http://www.ieee802.org/1/files/public/docs2011/bh-bottorff-PE-PBB-TE-0511-v3.pdf>.

Some noteworthy discussion points include:

IEEE 802.1X frames (for example) would be stopped at the I-Component inside the PE. This is also the case in the current BR PE as well.

The terminology that Paul has chosen for roots and leafs is not good because it conflicts with E-tree work.

There is a T-component at every edge port of internal network. Ali argues that a single I-component could have been used, but this would change the forwarding and things would become I-SID aware.

Joe asked whether the B-Tag is intended to be included always or not. It is important to allow the priority bits to be present, so most likely the B-Tag will be present. It would also be possible to use CNPs inside the PE network as well, but some debate about complexity

This proposal requires 22 bytes or so where the current BR tag only requires 8 bytes. There are several ways to trade off the overhead, but no question there is more overhead with this proposal.

A current T-Component does not take a port-map to determine a multicast address today, so this would be new functionality. It is essentially the same functionality that the PE must do as well to come up with the E-CID. Given the direction of Qbh, it would appear that no changes to Qbh would really be required to support this proposal

For echo cancellation it is necessary for the port map to be sent back to the port was received on. The information about what port the frame was received is in Clause 44 today.

One argument is that this proposal using an existing relay and that is good because it uses many of our existing features.

There was discussion about considering E-TAGs to be like VLANs and just forward on VLAN. This would not work, because multi-point operation isn't the same and thus echo-cancellation would be handled differently. Point-to-point is similar to VLANs.

A shim or modification of an optional C-Component may be needed to get C-Tag awareness and tagging things. This is also true for either proposal. We must not define C-components that are transparent to BPDUs (except in the 2-port case). The 802.1X frames will get through B-components because encapsulation occurs prior to getting to the C-Component.

The claim is that very few things need to change in PECSP. It is not entirely clear that this is true because of the need for optional feature configuration.

Tony Jeffree provided a report on a TRILL email exchange and phone conversation with Ralph Drums (spelling?). The discussion was around the olive branch offer made at the last plenary. The suggestion made was to get people in the same room to work on the issues. A common location could be scheduled as parallel interim meetings with joint sessions planned. There is a feeling that waiting until our next Interim would be too late, so Ali proposed to start with conference calls.

We reviewed and edited a PAR and 5-C so it can be submitted to process in July.

## Wednesday, 11 May, AM

Joe P embarked on Qbh and BR comment resolution

During discussion of ECP use it became clear that we need the ability to agree upon ECP timer values at the ECP or LLDP layer. Currently VDP sets the timer values for ECP via the EVB TLV within LLDP. It was pointed out that ECP has the ability to synchronize sequence numbers and we could at that point also synchronize timer values. The group would like to explore splitting out the EVB TLV values that configure ECP and putting them in ECP. Thus, PECSP would also configure it's instance of ECP the same way.

The EVB TLV was reviewed to look at the two parameters related to ECP configuration. The ECP process for synchronizing sequence numbers was looked at. The 1<sup>st</sup> PDU that is sent in ECP is empty to synchronize the sequence numbers. The proposal will be to include the parameters TLV in this PDU. We need reasonable defaults to get this initial PDU exchanged; use the existing admin defaults.

The TG broke for lunch to resume at 3PM for new work and hopefully Qbg comments.

## Wednesday, 11 May, PM

Gu Yingjing presented new work on dynamic information migration. See:

<http://www.ieee802.org/1/files/public/docs2011/new-dcb-gu-dynamic-information-migration-on-EVB-0511-v01.pdf>. Some notes include:

RFC 5189 defines how to request dynamic ACL establishment. This is a use case for dynamic information creation that might be needed to migration if a VM migrates.

There is lots of state that gets established in the network once a machine has been running. How to get all this information collected and correctly realigned after migration is the key problem. A subset of this problem is relevant to 802.1.

The specific proposal for IEEE 802.1 DCB asks for a notification protocol that signals the key time for dynamic information migration. This notification comes from the hypervisor to the bridge and could be as simple as a new VDP status type TLV that doesn't impact the state machines. Also, a feedback protocol from the bridge to hypervisor is proposed. There is some concern that the feedback protocol that indicates all dynamic information has properly migrated could be out of scope for 802.1. The presenters are asked to make a further presentation on the big picture at one of the Tuesday presentations.

Tony Jeffree continued Qbg comment resolution.

## Thursday, 12 May, AM

Pat reviewed the patent policy and made the call for patents – no responses

Tony continued with Qbg ballot resolution

The re-occurring discussion about VSI to ERP mapping took place again. If multiple VSIs are sharing an ERP, then we need to assume the VSI are not talking to one another and if they are, it is their problem. Several vendors have made the assumption that there is a 1:1 mapping of VSI to ERP and would like to make this a requirement. The proposal is that if you need different port profiles then you really need to stack another ER on-top of the ERP. It was also noted that once the traffic for the multiple VSIs passes beyond the ERP, it would be up to the above stack to deliver it, so it would be possible to combine the policies of the VSIs into a single new VSI, so it isn't necessary to support multiple VSIs per ERP. Thus the group has concluded that the mapping of VSI to ERP should be 1:1

Another significant discussion was related to multicast addresses in the VDP MAC/VLAN list. It was decided to require only individual addresses in the list.

To minimize MIB churn, we will be looking at doing extension MIBs to the extension MIB. It looks like Qbg will be the first example of doing this. The editors are unclear how to actually do this, but will proceed with that philosophy.

## Thursday PM – DCB Task Group

We discussed revised VDP state machines. A new version will be included in the next draft and reviewed on a Tuesday call

We discussed the port-map scheme and how echo cancellation works. It appears there may need to be two look-ups in the case of echo cancellation.

Paul B will produce an example draft of what BR would look like if the PBB-TE proposal were considered. The headers and footers will be change to make it clear this is not an official draft. Joe P will share the BR source with Paul B.

The target for Sponsor ballot for all these standards is out of the November meeting.