IEEE P802.11
Wireless LANs

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| Date: 2013-01-10 |
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Abstract

This document contains the meeting minutes of the IEEE 802.11ak TGak Group teleconference on 2013-01-07.

Teleconference from 11:06am to 12:00pm

January 7, 2013

Co-Chaired by Donald Eastlake (Huawei) and Norm Finn (Cisco).

Notes taken by Donald Eastlake.

Call for patents by Donald Eastlake: No response.

Norm Finn (Cisco) presented document **12-1441r0 “Problem list for P802.1Qbz / P802.11ak point-to-point model”.**

Comment: Are you aware of the vPort presentation made during the last teleconference? [11-12/1449r0, “Virtual Wireless Port based 802.11 Bridging”]

Answer: Not yet but will study it

Norm: … 802.11-2012 Fig 5-1 “MAC data plane architecture” seems to be generally compatible with 802.1Q-2011 Figure 8-2 “VLAN-aware Bridge architecture” so it might be a small change to make the MAC Relay Entity in the MSDU flow at the top of Figure 5-1 compatible with 802.1Q MAC Relay.

Discussion: There was some discussion of the 802.11 Mesh Forwarding Entity shown in Figure 5-1 with the conclusion among those speaking that use of Mesh forwarding is mutually exclusive with use of the 802.1 MAC relay.

Norm: If you just add a wired port or ports to 802.11-2012 Figure 5-1 as appropriately connected to the MAC Relay Entity, it all looks like point-to-point connectivity.

Comment: It is not so simple.

Comment: The design of 802.11ak can be viewed as varying in 3 axes: centralized or distributed control, appearance to the rest of the network, and address coding / reflection problem solution. Any combination of these can be made to work. For example, you can have centralized control, where non-AP STAs just act like ports and the smarts are all at the AP but it looks to the rest of the network like point-to-point links between bridges.

Answer: Yes but I think it will require more specification for such other models. Almost no additional specification seems required – maybe you can even delete some – with a consistent point-to-point model.

Comment: But with a point-to-point model, direct link establishment and removal change the topology

Answer: Yes, that’s an issue.

Norm: …VLAN tagging: if modelled as point-to-point links, some must be VLAN tagged and some must not. In addition, VLAN tag encoding takes an additional 10 bytes due to LLC encoding.

Discussion: If a port uses “LLC encoding” and is transmitting data that is identified by an Ethertype, then you need 8 bytes of additional encoding [two bytes for frame length, then AA-AA-03-00-00-00] before the Ethertype. But what if there is a VLAN (or other) tag? Some thought that you could just have an Ethertype after such a tag while others thought you needed to restart the LLC encoding. No one on the call was completely sure. [Table P-2 in 802.11-2012 appears to resolve this showing that you do need another AA-AA-03-00-00-00, or six bytes, after a VLAN or similar tag if the next item needs Ethertype labelling.]

Norm: …Unreliable links – need to avoid overly volatile reports…

Comment: Just don’t report outside the virtual bridge…

Norm: …AP to AP communications…

Comments: There is no such thing as a wireless AP-to-AP link in 802.11. [The early 802.11 standards discussed a wireless distribution system (WDS), that could have provided wireless AP-to-AP communication, but not in enough detail for it to be interoperable. This has been further de-emphasized in more recent 802.11 standards.]

Donald and Norm: Thanks for calling in. See you in Vancouver. Bye.

**Attendees:**

Norm Finn (Cisco)

Donald E. Eastlake, 3rd (Huawei)

Philippe Klein (Broadcom)

Mark Hamilton (SpectraLink)
Paul Congdon (HP)

Mitsuru Iwaoka (Yokogawa Electric Co.)

Joseph Levy (InterDigital)

Paul Nickolich (Self-employed, YAS Broadband Ventures, LLC, Samsung, Intel, Silver Spring Networks, and Hewlett Packard)