### IEEE P802.11 Wireless LANs

Clarification of IEEE 802.11s entity classes									
Date: 2006-07-20									
Author(s):									
Name	Company	Address	Phone	email					
Guido R. Hiertz	Philips	ComNets, RWTH Aachen University, Kopernikusstr. 16, 52074 Aachen, Germany	+49-241-802- 5829	hiertz@ieee.org					
W. Steven Conner	Intel Corporation	JF3-206, 2111 NE 25 <sup>th</sup> Ave, Hillsboro OR 97124, USA	+1-503-712-4990	w.steven.conner@inte l.com					
Sebastian Max	Philips	ComNets, RWTH Aachen University, Kopernikusstr. 16, 52074 Aachen, Germany	+49-241-802- 3923	max@ieee.org					
Lothar Stibor	Philips	ComNets, RWTH Aachen University, Kopernikusstr. 16, 52074 Aachen, Germany	+49-241-802- 3923	lothar.stibor@ieee.or g					
Dee Denteneer	Philips	Philips Research, HTC 27 (WL 1.132), 5656 AE Eindhoven, The Netherlands	+31-402-746-937	dee.denteneer@philip s.com					
Michelle Gong	Cisco Systems	170 West Tasman Dr., SJC12/3, San Jose, CA 95134	+1-408-525-6587	migong@cisco.com					
Juan Carlos Zuniga	InterDigital	1000 Sherbrooke W, 10th Floor, Montreal, QC, H4L 3J4 Canada	1-514-904-6251	JuanCarlos.Zuniga@I nterDigital.com					
Erik Schylander	Philips	Philips CTO office, SFF3.11 Eindhoven, The Netherlands	+31-402-735-585	erik.schylander@phili ps.com					

#### Abstract

This document provides normative text specifying a clarification of different WLAN Mesh related entities. It is intended to address CIDs 230, 258 and 259.

**Notice:** This document has been prepared to assist IEEE 802.11. It is offered as a basis for discussion and is not binding on the contributing individual(s) or organization(s). The material in this document is subject to change in form and content after further study. The contributor(s) reserve(s) the right to add, amend or withdraw material contained herein.

**Release:** The contributor grants a free, irrevocable license to the IEEE to incorporate material contained in this contribution, and any modifications thereof, in the creation of an IEEE Standards publication; to copyright in the IEEE's name any IEEE Standards publication even though it may include portions of this contribution; and at the IEEE's sole discretion to permit others to reproduce in whole or in part the resulting IEEE Standards publication. The contributor also acknowledges and accepts that this contribution may be made public by IEEE 802.11.

**Patent Policy and Procedures:** The contributor is familiar with the IEEE 802 Patent Policy and Procedures <<u>http://ieee802.org/guides/bylaws/sb-bylaws.pdf</u>>, including the statement "IEEE standards may include the known use of patent(s), including patent applications, provided the IEEE receives assurance from the patent holder or applicant with respect to patents essential for compliance with both mandatory and optional portions of the standard." Early disclosure to the Working Group of patent information that might be relevant to the standard is essential to reduce the possibility for delays in the development process and increase the likelihood that the draft publication will be approved for publication. Please notify the Chair <<u>stuart.kerry@philips.com</u>> as early as possible, in written or electronic form, if patented technology (or technology under patent application) might be incorporated into a draft standard being developed within the IEEE 802.11 Working Group. If you have questions, contact the IEEE Patent Committee Administrator at <<u>patcom@ieee.org</u>>.

## Background

The current draft 0.02 describes several different WLAN Mesh related entities but does not clearly differentiate the functionalities that each entity will support. This contribution is intended to provide an example comparison of the different functionality of such entities. We provide different functional categories and their relation to the different entity classes.

#### The following is normative text proposed as an amendment to P802.11s/D0.02.

Replace the last paragraph (line 4-6 on page 23) of clause 5.4.7.2 as follows:

WLAN Mesh related entities may operate at various levels of functionality. Not all mesh points may need to use full mesh services. Services like routing may be used partially or not at all. The following two subsections present two levels of such functionality in MPs. Table S1 in Annex P.1 describes several examples of WLAN Mesh related entities with different levels of functionality.

Insert new clause P.1A in Annex P as follows:

#### P.1 Example WLAN Mesh related entities with different levels of functionality

As described in clause 5.4.7.2, different WLAN Mesh related entities may operate at different levels of functionality. Table S1 describes example applicability of different WLAN Mesh related functionalities to different entities. Note that this table is not intended to classify mandatory vs. optional WLAN Mesh features; such classifications are made elsewhere in this specification.

# Table S1: Comparison of different example WLAN Mesh related entities according to an example set of functionalities

	MAD	MD	non- forwarding	Lightweight-
Uses 4 Address frame format	A	A	A	A
Association (providing the DS- service)	A	A	-	-
Association (using the DS-service)	А	A	A	-
To/From DS: 00 To/From DS: 01	- U	-	-	-
To/From DS: 10	-	-	-	-
To/From DS: 11	U	U	U	U
Mesh Link security	А	А	А	А
CCF	А	А	А	А
MDA	А	А	А	А
DFS (5GHz Europe)	А	А	А	А

	Discovery & peer				
	link establishment	A	A	А	А
	Path selection	А	А	А	-
	Forwarding	А	А	-	-
	Interworking	А	А	А	-
	Congestion Control	А	А	А	-
	Beaconing	А	А	А	А
	Synchronization	А	А	А	А
	Power Managment (provide, support neighbors in doing so)	A	A	A	A
	Power Saving (actively going to doze/sleep mode)	-	A	A	A
1	····				

Legend:

= Applicable = Not applicable = Uses/Makes use of "A" " - "

"U"

#### **References:**

- IEEE 802.11s Draft 0.02
- IEEE 802.11 Standard
- D. Engwer, ""WDS" Clarifications," IEEE, Submission 802.11-05/0710r0, July 2005