

Project	IEEE 802.16 Broadband Wireless Access Working Group < <a href="http://ieee802.org/16">http://ieee802.org/16</a> >	
Title	Report on Findings Related to Establishing a Liaison with 802.11 WG Regarding TGy	
Date Submitted	2006-05-23	
Source(s)	Ken Stanwood Cygnus Communications 12670 High Bluff Dr. San Diego, CA 92130	Voice: Fax: mailto:kstanwood@cygnuscom.com
Re:	E-mail requesting investigating liaison relationship.	
Abstract	Description of the activities of 802.11's TGy which may warrant a liaison.	
Purpose	Allow 802.16 to make an informed decision regarding a liaison with 802.11.	
Notice	This document has been prepared to assist IEEE 802.16. 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 802.16.	
Patent Policy and Procedures	The contributor is familiar with the IEEE 802.16 Patent Policy and Procedures < <a href="http://ieee802.org/16/ipr/patents/policy.html">http://ieee802.org/16/ipr/patents/policy.html</a> >, 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 < <a href="mailto:chair@wirelessman.org">mailto:chair@wirelessman.org</a> > 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 802.16 Working Group. The Chair will disclose this notification via the IEEE 802.16 web site < <a href="http://ieee802.org/16/ipr/patents/notices">http://ieee802.org/16/ipr/patents/notices</a> >.	

# Report on Findings Related to Establishing a Liaison with 802.11 WG Regarding TGy

*Ken Stanwood  
Cygnus Communications*

## Venue

802.11's TGy met for approximately 2 hours on Monday, 19 May 2006 at the joint wireless groups' interim meeting in Jacksonville, Florida.

## Background on TGy

TGy is a newly formed task group which is investigating how 802.11 based systems might operate in the 3.65-3.7 GHz band in the US, if this band is allocated. Final decision on allocation of licenses and rules for operating in this band have not yet been made by the FCC.

## Relevant Findings

The 3.65-3.7 GHz band in the US is projected to be allocated as licensed spectrum. However, the licenses granted will be nationwide, non-exclusive licenses. Because of this, once granted a license, an operator will face many of the same challenges, such as interference from other systems of the same or different technologies, face when operating in license exempt bands or when operating in a licensed exempt fashion in bands licensed to a different primary user. Additionally, it appears that the FCC will mandate use of what they have labeled a "contention-based protocol" to ensure all holders of the non-exclusive licenses have access to the spectrum at least part of the time. The FCC has not specified what protocols satisfy this requirement, but the description, contrary to the name, implies that a protocol that allows other systems sufficient opportunity to transmit have a good chance of being allowed.

There are two 802.11 documents that are particularly relevant. IEEE802.11-05/1039r2 <ftp://ftp.802wirelessworld.com/11/05/11-05-1039-03-0000-cbp-sg-candidate-requirements-and-objectives.doc>, "CBP-SG Candidate Requirements and Objectives," was referenced in the TGy meeting as being used as the current starting point for objectives for the task group. In particular, the section entitled "Possible Means from FCC 05-57 Cognitive Radio R&O" on the second half of page 3 is being used as guidance for determining the guidelines for proper use of the 3.65 GHz band. Slides 8 and 9 of the presentation IEEE802.11-06/0668r1 <ftp://ftp.802wirelessworld.com/11/06/11-06-0668-01-000y-3650-3700-mhz-fcc-action.ppt>, "3650-3700 MHz FCC Action," were adopted as the purpose, principles, vision, and expected outcome of TGy. For either document, if the 802.11 FTP website asks you to log in, simply select anonymous login.

Note that slide 8 of IEEE802.11-06/0668r1 places an emphasis on DFS. They use DFS to have its more general meaning from page 3 of IEEE802.11-05/1039r2 of detecting and working things out with any other user rather than the more limited meaning of detecting and avoiding primary users that is used in 802.16. In fact, they are deeply rooted in the belief that they must be able to detect and coexist with other networks and other technologies even though you could argue that CSMA-CA is already a sufficient contention-based protocol.

They also emphasized that the option of "Negotiated Use" from page 3 of IEEE802.11-05/1039r2 is a non-starter because there is no way for it to be enforced. Therefore, they plan to have neither AP-AP negotiations nor negotiations with BTSs of other technologies.

Given:

- 802.16 already has a DFS protocol (albeit underutilized),
- The 3.65-3.7 GHz band may be desirable for use with 802.16 systems, and

- The operational conditions in a non-exclusively licensed band are very similar to the operational conditions in licensed exempt operation being investigated by 802.16's License-Exempt TG, then

There is rationale for 802.16 to work together with 802.11's TGy to form a basis for coexistence between 802.16 and 802.11 systems in whatever band they both occupy.