

Project	IEEE 802.16 Broadband Wireless Access Working Group < http://ieee802.org/16 >	
Title	802.16 Comments on FCC Wireless Broadband Task Force and broadband policies	
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Re:	IEEE 802.18 has requested IEEE 802.16 comments on the FCC public consultation in order to draft an formal IEEE 802 response to the FCC call for comment. (Public notice DA 04-1266)	
Abstract	Comments against the 12 specific questions posed in the consultation document.	
Purpose	802.16 should note and pass to IEEE 802.18	
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802.16 Comments on FCC Wireless Broadband Task Force and broadband policies

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Introduction

The FCC call for public comment in Public Notice DA 04-1266 seeks comment on 12 specific questions by June 3rd 2004. IEEE 802.18 is formalizing a response and is requested to take these comments into account during the drafting process. The comments are presented as a number of bullet points against each question raised.

IEEE 802.16 WG Comments

1. To what extent are both licensed and unlicensed wireless broadband networks providing an alternative facilities-based platform to other broadband services, including cable and DSL? To what extent have wireless broadband service providers increased broadband access and competition in rural and underserved areas? If so, are regulatory changes needed to promote or advance these trends?

WG 802.16 Responses:

- The fixed systems compliant with the 802.16 standard are ideally suited and targeted to provide a viable alternative to other “wired” broadband delivery methods.
- More widespread adoption of wireless access technology has been hampered by a lack of affordable backhaul particularly in rural areas.
- Regulatory developments should consider and address the backhaul issue as well as the “last mile” access.

2. Does the Commission currently provide sufficient spectrum suitable for wireless broadband networks? Is the relative availability of spectrum for licensed services or unlicensed devices appropriate? If not, how so?

WG 802.16 Responses:

- Spectrum available either now or in the future, whether on a licensed or unlicensed basis should be harmonized worldwide. Unique allocations normally results in higher costs to the users and lead to lengthy international sharing discussions.
- Recent developments have greatly increased the availability of unlicensed spectrum but in isolation this may not be sufficient. Access to unlicensed spectrum minimizes the entry barriers for potential operators but to some extent this is offset by the lack of protection from interference. Therefore the availability of unlicensed spectrum should be balanced with licensed spectrum providing a migratory path for greater protection through “exclusive” assignments. This might be specifically true for longer range systems like those standardized in 802.16.
- More spectrum for licensed services would be beneficial. The standardization of systems operating in licensed spectrum is a major element of the 802.16 standard.

3. Do the services offered using unlicensed devices and those using licensed networks complement each other? If so, how?

WG 802.16 Responses:

- For an operator wanting to provide a complete basket of services then operation under the two licensing conditions may be helpful. The possibility for operation within either unlicensed spectrum or licensed spectrum might allow for a variety of service “grades” to be offered helping to encourage competitive services addressing differing sectors of the market.
 - The 802.16 standard provides for fully scheduled traffic to provide close control over the grade of service. It might be argued that licensed spectrum is more consistent with this feature.
4. There are several different regulatory approaches that determine access to the spectrum for wireless broadband service providers. Service providers using networks composed of unlicensed devices do not pay for access to the spectrum, but must not cause interference and must share the spectrum with other operators of unlicensed devices, whereas access to other spectrum is obtained through licensing after successful bidding at auction. In addition, some spectrum has been made available on a first come, first served basis. Has the method for access to spectrum affected the development of wireless technologies and the provisioning of wireless broadband services? If so, how?

WG 802.16 Responses:

- The application of auction procedures have lead to examples around the world where legal or revenue considerations and obligations have carried greater weight than common sense spectrum management. This can lead to non-optimal or delayed spectrum access for new operators (or new technology) that is difficult to resolve in a timely manner.
 - Additionally first come, first served procedures can also lead to spectrum locked up in a way that similarly restricts the access.
 - For wireless broadband to be successful, potential operators must have access to spectrum when they need it and in a way that is consistent with growing networks and evolving services.
5. Wireless broadband offers clear advantages over other broadband alternatives in terms of both portability and mobility. Do the Commission’s rules effectively provide for or account for these capabilities? Could these rules be more flexible? If so, how?

WG 802.16 Responses:

- Apart from a degree of flexibility towards technology, the Commissions rules should recognise the limitations of operation especially in unlicensed spectrum without proper spectrum sharing etiquettes. IEEE 802.16 has recognized this issue and has begun studies that may address the issue for unlicensed operation through the standardization route.
 - Wireless Broadband provides lots of benefits, especially in the area of Portability and Mobility. Many of the commission’s rules, and the spectrum management arrangements, still reflect artificial distinctions between Indoor and Outdoor, Fixed and Mobile. Moving forward the wireless technology (especially 802.16) will ignore these distinctions. It is important that new allocations do not carry any artificial constraints.
6. Are there regulatory incentives that would foster continued investment in and deployment of state-of-the-art technologies? If so, what are they? Are the incentives different for licensed services as compared with services offered using unlicensed devices?

WG 802.16 Responses:

- The regulatory framework should provide a perception of ready access to spectrum of the appropriate “quality” for wireless broadband services to support the standardization efforts of 802.16 participants.
- The spectrum (and licensing framework) should be seen in the context of an overall spectrum allocation strategy that properly accounts for the potential for future growth in terms of services and user demand development.

7. We seek comment on the extent and nature of the deployment of wireless broadband services. For example, we are interested in data regarding market penetration rates; the geographic distribution of wireless broadband services; the extent of competition in the areas in which wireless broadband is deployed; and whether licensed services, unlicensed devices, or a combination of both licensed service and unlicensed devices are used; and the types of technologies used in the networks deployed.

WG 802.16 Responses:

No specific comment.

8. With the continued development of new technologies and network configurations, including mesh networks and integrated wireless broadband networks and devices that use both licensed and unlicensed spectrum, are there any rules that require review for updating or increased flexibility?

WG 802.16 Responses:

- There may an argument for higher power in unlicensed bands although care may be needed for the reasons cited in the response to question 5.
- Is there enough flexibility to provide either access or backhaul services?

9. We also seek comment on the types of applications associated with wireless broadband deployment.
- a. What types of applications are or will be offered over wireless broadband networks? Are they similar to the applications of the wired Internet (email and web surfing), or are other, more personalized, niche applications being developed? Do the applications differ between licensed and unlicensed networks? What is the relationship between network operators and content providers?
 - b. What are typically available data rates, and at what pace are they increasing?
 - c. Is the traffic associated with wireless broadband more typically symmetric or asymmetric? Does the relative distribution of these traffic patterns affect the required bandwidth for wireless broadband systems? If so, how?
 - d. What is the distribution of wireless broadband between fixed, mobile, and portable installations?

WG 802.16 Responses:

- 802.16 standardised systems provide operators with the capability to address the flexibility requirements for a range of traffic demands envisaged for many services.

10. While we are interested in these deployment data across larger geographic regions and on an aggregate basis, we are also interested in information about wireless broadband deployment in specific communities -- rural or urban, large or small, and in varied geographic regions. With a view toward using successful deployments as models or examples for other service providers or communities, have there been pilot or full-scale programs that have been particularly innovative or successful in terms of increasing access to broadband through wireless facilities?

WG 802.16 Responses:

No specific comment.

11. Are there ways in which federal wireless broadband policies could facilitate better available policy options for states and municipalities? If so, how?

WG 802.16 Responses:

No specific comment.

12. What barriers (information, infrastructure) to entry remain for WISP entrepreneurs particularly for unlicensed services? To the extent identified, how can government address these issues?

WG 802.16 Responses:

- By addressing the availability of affordable backhaul as identified in response to question 1.
- In addition to the cost of the backhaul network, the cost of the connection to Internet at high speed (T1, T3, etc.) is an important cost contributor that could make the business case difficult to justify. Subsidizing the interconnection might help, at least for the first year or two, when the customer base is still small.