

**IEEE 802.16 Working Group on Broadband Wireless Access**  
<http://WirelessMAN.org>



Roger B. Marks  
Chair, IEEE 802.16 Working Group  
[r.b.marks@ieee.org](mailto:r.b.marks@ieee.org)  
16 May 2013

To: Dan Pitt, Executive Director, Open Networking Foundation  
Subject: Interest of IEEE 802.16 Working Group in Wireless OpenFlow

Dear Dr. Pitt,

The IEEE 802.16 Working Group would like to express our interest in applying OpenFlow to wireless networking, extending the reach of the OpenFlow controller to include management of links as well as switches. We believe that IEEE 802.16 (which is incorporated in ITU's IMT-2000 and IMT-Advanced standards) is an excellent foundation for such applications. Ever since the first approved version in 2001, IEEE Std 802.16 has supported Ethernet frame transport and has been based on a connection-oriented MAC in which service flows are mapped to transport connections of specified QoS characteristics. IEEE 802.16 uses a rule-based packet matching procedure to map packets to service flows. Therefore, OpenFlow appears quite natural to us. We see opportunities to use the current OpenFlow specification to drive 802.16 connection mapping and management, and we see opportunities for closer control following some OpenFlow enhancement. We also envision an OpenFlow controller selecting from among multiple connections, even selecting from among a set of various available transport technologies, below Layer 2 and therefore without requiring updates to switching tables.

We are currently developing our wireless SDN concepts through the [P802.16r project on small cell backhaul](#). For some relevant contributions we have considered, please see [IEEE 802.16-13-0049](#), [IEEE 802.16-13-0084](#), and [IEEE 802.16-13-0098](#).

We would like to encourage a cooperation between our organizations to further the development of wireless standards to complement OpenFlow. We hope to learn more about your possible interest in pursuing a liaison relationship. Our next opportunity to respond formally will occur at our Session #86 (15-18 Jul 2013 in Geneva).

Further information about the P802.16r activities is available at <http://wirelessman.org/scb>. The project's Call for Contributions toward Session #86 is available as [IEEE 802.16-13-0115](#).

Sincerely,

Roger B. Marks  
Chair, IEEE 802.16 Working Group on Broadband Wireless Access

cc: Paul Nikolich, Chair, IEEE 802 Executive Committee