

November 8, 2013

**SUBMITTED ELECTRONICALLY VIA ECFS**

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, SW  
Washington, DC 20554

**Re: Notice of Ex Parte Presentation**

***ET Docket No. 13-49, Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band***  
***IB Docket No. 13-213, RM-11685, Terrestrial Use of the 2473-2495 MHz Band for Low-Power Mobile Broadband Networks; Amendments to Rules for the Ancillary Terrestrial Component of Mobile Satellite Service Systems***  
***GN Docket No. 12-268, Expanding the Economic and Innovation Opportunities of Spectrum Through Incentive Auctions***  
***GN Docket No. 12-354, Amendment of the Commission's Rules with Regard to Commercial Operations in the 3550-3650 MHz Band***  
***ET Docket No. 07-113, RM-11104, Revision of Part 15 of the Commission's Rules Regarding Operation in the 57-64 GHz Band***

Dear Ms. Dortch:

On November 7, 2013, the following representatives of the Wi-Fi Alliance met with Commissioner Ajit Pai and his Acting Legal Advisor Jeffrey Neumann:

Edgar Figueroa – Chief Executive Officer, Wi-Fi Alliance  
Greg Ennis – Technical Director, Wi-Fi Alliance  
Mary Brown – Cisco Systems, Inc.; Member, Wi-Fi Alliance  
Vijay Auluck – Intel Corporation; Member, Wi-Fi Alliance  
Rob Kubik – Samsung; Member, Wi-Fi Alliance  
Scott Blue – Microsoft Corporation; Member, Wi-Fi Alliance  
Russell Fox – Mintz Levin, Counsel to the Wi-Fi Alliance

The attached presentation was distributed. With respect to proceedings before the Commission:

- The Wi-Fi Alliance noted the importance of the 5 GHz band for Wi-Fi growth, particularly to accommodate wider bandwidths which devices that use IEEE 802.11ac technology will employ. The Wi-Fi Alliance urged the Commission to take a sequenced approach to adopting rules in the 5 GHz proceeding, acting first where there is agreement among the parties and leaving for another phase of this proceeding matters such as the

**Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.**

Marlene H. Dortch

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use of the U-NII-4 and U-NII-2B bands, which require further study. The parties noted rules governing existing Wi-Fi spectrum that can be amended to make more intense use of the 5 GHz U-NII bands.

- The parties noted their continued concern about the proposal by Globalstar, Inc. to more intensely employ the 2.4 GHz band used in Wi-Fi devices. The Wi-Fi Alliance expects to further evaluate the Commission's recently released Notice of Proposed Rulemaking responsive to Globalstar's request to determine the impact on Wi-Fi operations.
- The Wi-Fi Alliance supported the designation of spectrum for unlicensed operations in the 600 MHz band. The parties stated that the Commission should make four channels six megahertz wide available to take advantage of legacy 20 megahertz wide Wi-Fi standards.
- The parties noted their support for unlicensed use in the 3.5 GHz band for small cell operations and asserted that the need to protect incumbent satellite operations is overstated.
- The Wi-Fi Alliance noted its support for the Commission's actions adopting rules permitting the expanded use of the 57-64 GHz band. The parties observed that while the Commission recently eliminated ambiguities related to the outdoor use of the band, additional rule modifications may be required to permit use of the band in aircraft.

Pursuant to Section 1.1206(b)(2) of the Commission's rules, an electronic copy of this letter and the attachment is being filed for inclusion in the above-referenced dockets. Please direct any questions regarding this filing to the undersigned.

Very truly yours,

*/s/ Russell H. Fox*

Russell H. Fox

Attachment

cc: Hon. Ajit Pai (via e-mail, with attachment)  
Jeffrey Neumann (via e-mail, with attachment)

# Wi-Fi Alliance Meeting with Office of Commissioner Pai

November 7, 2013





# Attendees

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## **Wi-Fi Alliance Representatives**

Edgar Figueroa, CEO, Wi-Fi Alliance

Greg Ennis, Technical Director, Wi-Fi Alliance

Russell Fox (Mintz Levin, counsel for WFA)

## **Wi-Fi Alliance Member Company Representatives**

Mary Brown (Cisco)

Rob Kubik (Samsung)

Vijay Auluck (Intel)

Scott Blue (Microsoft)

# Wi-Fi Alliance

- Model collaboration forum of more than 600 member companies, enabling Wi-Fi® adoption
- 195 US member companies
- Wi-Fi CERTIFIED™: a world-class interoperability validation program that delivers the best user experience and promotes accelerated adoption of new technology
- More than 20 distinct initiatives underway in 2013





# Wi-Fi is an FCC Success Story

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- **Since 2001, Wi-Fi device shipments have experienced nearly double-digit growth**
- **One in six people use Wi-Fi at home, at work and on the move**
- **In 2012, Wi-Fi carried 69 percent of the traffic generated by smartphones and tablets and was responsible for carrying 57% of traffic for PCs and laptops**
- **Wi-Fi contributes upwards of \$50 billion in annual economic growth**
- **New Wi-Fi standards (primarily 802.11ac) will drive Wi-Fi growth further**
- **These new technologies require not only more spectrum but wider bandwidths**

# Wi-Fi Alliance certification and market-enabling programs



Wi-Fi CERTIFIED™ programs	
Wi-Fi CERTIFIED™ a/b/g/n/ac	
WPA2™	Tunneled Direct Link Setup
Voice-Personal	Voice-Enterprise
WMM®-Power Save	WMM®-Admission Control
Wi-Fi Protected Setup™	Passpoint™
CWG-RF	Miracast™
WMM® (Wi-Fi Multimedia™)	Protected Management Frames
Wi-Fi Direct®	IBSS with Wi-Fi Protected Setup™



# Wi-Fi Alliance Certification Programs

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- **Wi-Fi CERTIFIED ac**
  - Latest generation of Wi-Fi
  - Wi-Fi Alliance launched certification in June 2013; >190 products already certified
  - Dual-band (2.4 and 5 GHz) networking products will be very widespread
  - Will be useful to address congestion and improve performance
  - [ABI Research](#): 40% of smartphones will support ac this year
  
- **Wi-Fi CERTIFIED Passpoint**
  - Passpoint provides an automated, security-protected connection experience in service provider hotspots
  - Certification program was launched in 2012
  - Trials are ongoing, operational deployments are beginning
  
- **Wi-Fi CERTIFIED Miracast**
  - Connect devices for a rich audio/video experience without cables or a connection to an existing Wi-Fi network
  - >1100 product certifications





# WiGig CERTIFIED: Update

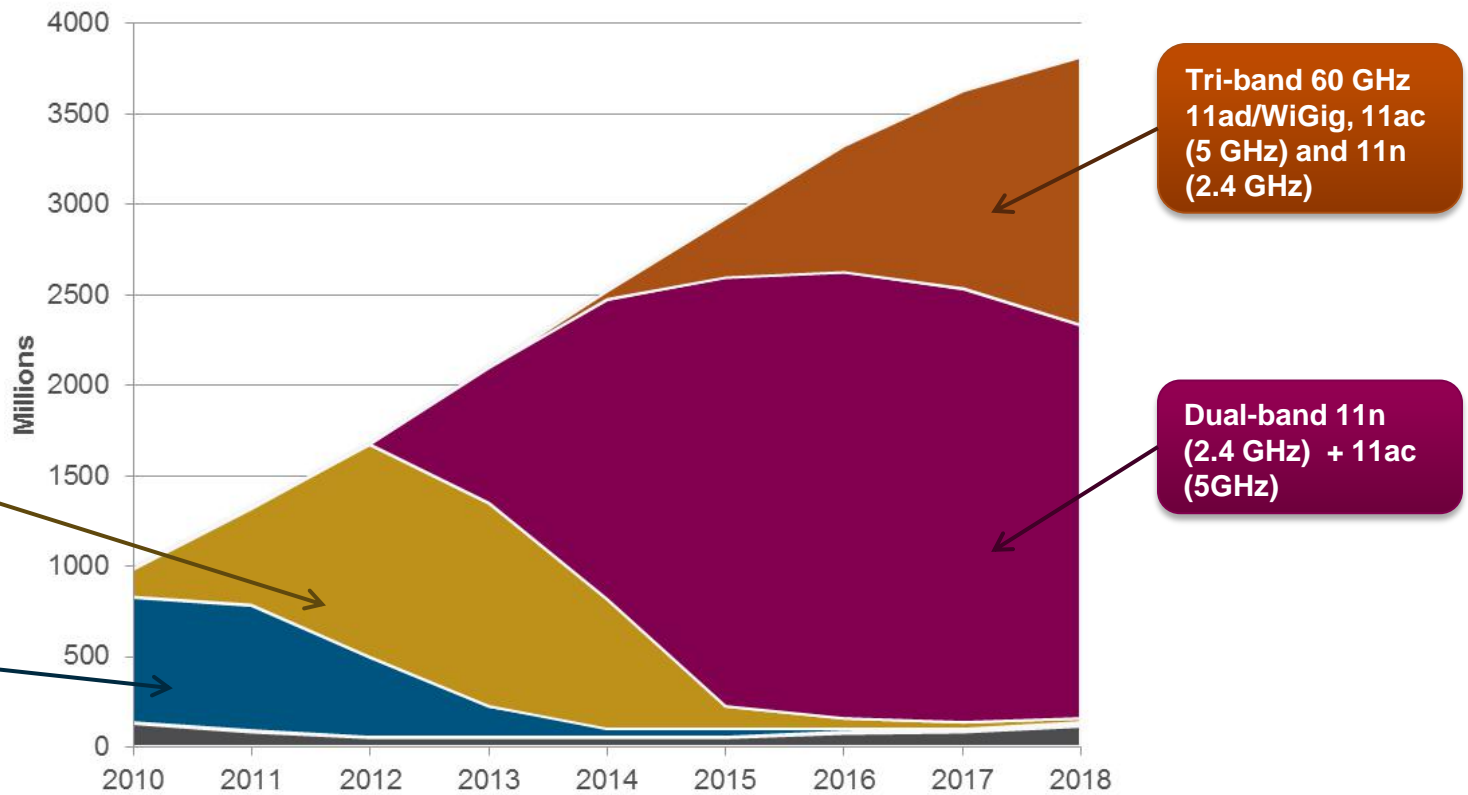
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- Connectivity in 60 GHz band for very high speed applications such as multimedia and docking
- Based on IEEE 802.11ad
- Wi-Fi Alliance and WiGig Alliance have unified, and the integration of WiGig Alliance into Wi-Fi Alliance is now complete
- First interoperability certification program expected to launch in 2014
- WiGig CERTIFIED™ will be the certification brand for products approved in the program and a new certification logo has also been developed

# Chipset Shipments surpass 2B in 2013



## Wi-Fi and WiGig Chipset Shipments by Frequency Band



Source: ABI Research, August 2013

# In Order to Meet Expanding Need, More Spectrum is Needed

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- 5 GHz is the best option to foster Wi-Fi growth
- Other countries are also permitting unlicensed use at 5 GHz, making the band internationally harmonized for that purpose.
- With segments of the 5 GHz band already in use by Wi-Fi, expanding it to support wider channels enables a simple transition
- Expanding unlicensed use to 775 MHz enables up to four 160 MHz-wide channels, needed to achieve 1 Gbps performance

## 5 GHz

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- FCC should take sequenced approach – take some steps now and others later.
  - Dedication of new spectrum (U-NII-4 and U-NII-2B bands) may take more time.
  - However, FCC can now take action to:
    - Adopt rules affirming protection of TDWR operations in U-NII-2A and U-NII-2C bands.
    - Make more complete use of the U-NII-2C band (band has been restricted since 2010).
    - Increase power and permit outdoor use in U-NII-1 band
    - Conform U-NII-2C and U-NII-3 rules.
    - Expand the U-NII-3 band.

# 5 GHz

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- New, more restrictive rules are unnecessary to protect federal operations.
  - Lower emission limits.
  - Geolocation and database requirements.
  - Sensing.
  - NTIA is wrong when it asserts that DFS does not work. There is no evidence that when DFS is properly installed and operational, it fails to protect TDWR.
    - Problems, which the new rules are intended to address, only occur when DFS not properly installed or when bands are accessed without DFS.
- Opposition to Use of New 5 GHz Spectrum is an Overreaction
  - Wi-Fi is a shared service. There is no reason sharing cannot be accomplished in other segments of the 5 GHz band.
  - Wi-Fi Alliance has proposed that the Commission take the lead to convene stakeholder meetings to determine the most effective sharing methodologies.
- No Need to Wait for WRC-15, Additional NTIA Study or Otherwise.



# Additional Spectrum Opportunities

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- **57-64 GHz Band**
  - Wi-Fi Alliance supports FCC making this spectrum available.
  - However, ambiguity regarding rules governing indoor and outdoor use should be resolved.
- **Globalstar**
  - Wi-Fi Alliance very concerned about Globalstar proposal, which will affect use of Wi-Fi spectrum at 2.4 GHz.
  - Globalstar will reduce available spectrum for unlicensed use at 2.4 GHz, causing increased congestion on remaining spectrum.
- **Incentive Auction (600 MHz)**
  - Wi-Fi Alliance supports making some of the recaptured television spectrum available for unlicensed operations.
  - Ideally, four channels six megahertz wide would be available to take advantage of legacy 20 megahertz wide Wi-Fi standards.
- **3.5 GHz**
  - Wi-Fi Alliance supports unlicensed use of the band for small cell operations using cognitive technologies.
  - However, Commission should carefully examine satellite exclusion zones required.