MINTZ LEVIN

Russell H. Fox | 202 434 7483 | rfox@mintz.com

701 Pennsylvania Avenue, N.W.
Washington, D.C. 20004
202-434-7300
202-434-7400 fax
www.mintz.com

January 24, 2014

SUBMITTED ELECTRONICALLY VIA ECFS

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, S.W.
Washington, D.C. 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***

Dear Ms. Dortch:

On January 22, 2013, Edgar Figueroa, President and CEO, and Greg Ennis, Vice President, Technology, both of the Wi-Fi Alliance, and the undersigned counsel met with Commissioner Michael O'Rielly and his legal assistant, Erin McGrath.

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

- The Wi-Fi Alliance supported the designation of spectrum for unlicensed operations in the 600 MHz band. It stated that the Commission should make four channels six megahertz wide available to take advantage of legacy 20 megahertz wide Wi-Fi standards. The Wi-Fi Alliance noted that there has been little use of the spectrum dedicated for white spaces operation because of the uncertainty regarding the future use of the 600 MHz band.
- 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 use of the U-NII-4 and U-NII-2B bands, which require further study. It asked the Commission to permit increased power and outdoor use in the U-NII-1 band, and noted that existing measures are sufficient to protect federal operations in the segments of the 5 GHz bands currently dedicated for Wi-Fi use.

- The Wi-Fi Alliance noted its 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 noted its 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.

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. Michael O'Rielly (via e-mail, w/attachment)
Erin McGrath (via e-mail, w/attachment)

Wi-Fi Alliance
Meeting with Office of Commissioner Michael O'Rielly

January 22, 2014

Proprietary | © Wi-Fi Alliance

Wi-Fi Alliance Attendees

- Edgar Figueroa, President and CEO, Wi-Fi Alliance
- Greg Ennis, Vice President ,Technology, Wi-Fi Alliance
- Russell Fox (Mintz Levin, counsel for WFA)

Topics

- Introduction to Wi-Fi Alliance
- Wi-Fi market and technology update
- Wi-Fi Alliance engagement with FCC
- Need for additional spectrum to support growing consumer demand
- 600 MHz Incentive Auction
- 5 GHz NPRM

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 2014

Wi-Fi is an FCC Success Story

- Wi-Fi's success demonstrates the benefits of unlicensed spectrum allocations
- Since 2001, Wi-Fi device shipments have experienced double-digit growth annually. More than 7 billion Wi-Fi devices have been shipped
- 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 (for example, 802.11ac) will drive Wi-Fi growth further
- More spectrum available for Wi-Fi services will benefit everyone

Wi-Fi CERTFIED ac

- Latest generation of Wi-Fi, provides gigabit data rates in 5 GHz band
- Wi-Fi Alliance launched certification in June 2013; over 290 products already certified. Over 150 smartphones certified for ac
- 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 Alliance Regulatory Activities and FCC Engagement

- Providing input to regulatory authorities worldwide is a major focus within Wi-Fi Alliance
- Member company representatives participate in Spectrum and Regulatory Task Group
  - Formulates consensus Wi-Fi industry positions
  - Develops written input for submissions in response to regulator requests for comment
- Wi-Fi Alliance regularly submits comments and reply comments on FCC NPRMs
- Last November, Wi-Fi Alliance organized a delegation including 10 member company representatives for various meetings at FCC
  - Commissioner Pai
  - Office of Commissioner Rosenworcel
  - Office of Commissioner Clyburn
  - Julius Knapp and OET staff
- *Wi-Fi is a critical component of the nation's communication infrastructure, and we are eager to work with regulators to facilitate the development of sound policy*

In Order to Meet Expanding Need, More Spectrum is Needed

- TV Band
  - White Spaces
  - 600 MHz Incentive Auction
  - Spectrum characteristics will allow for Wi-Fi services with significantly expanded range
- 5 GHz
  - With segments of the 5 GHz band already in use by Wi-Fi, expanding it to support wider channels enables a simple transition
  - Other countries are permitting unlicensed use at 5 GHz, making the band internationally harmonized for that purpose.
  - Expanding unlicensed use to 775 MHz enables up to four 160 MHz-wide channels, needed to achieve 1 Gbps performance
- 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.
- 60 GHz
  - Will soon be put to use in WiGig devices
- Globalstar
  - Proposal represents a threat to use of existing 2.4 GHz spectrum

Incentive Auctions (600 MHz Band)

- Wi-Fi Alliance supports making TV spectrum available for unlicensed use
  - There has thus far been little adoption of Wi-Fi in existing TV bands using TV white spaces devices. Uncertainty regarding incentive auction outcome is a factor
  - A favorable channel map adopted as a result of the incentive auction proceeding will increase the utility of the TV bands for Wi-Fi use

- The 600 MHz band should be restructured to make at least four 6 megahertz channels available for unlicensed operations in densest urban environments
  - Channel bandwidths of greater than 20 megahertz are the basis for legacy 802.11 networks.
  - Channels need not be contiguous

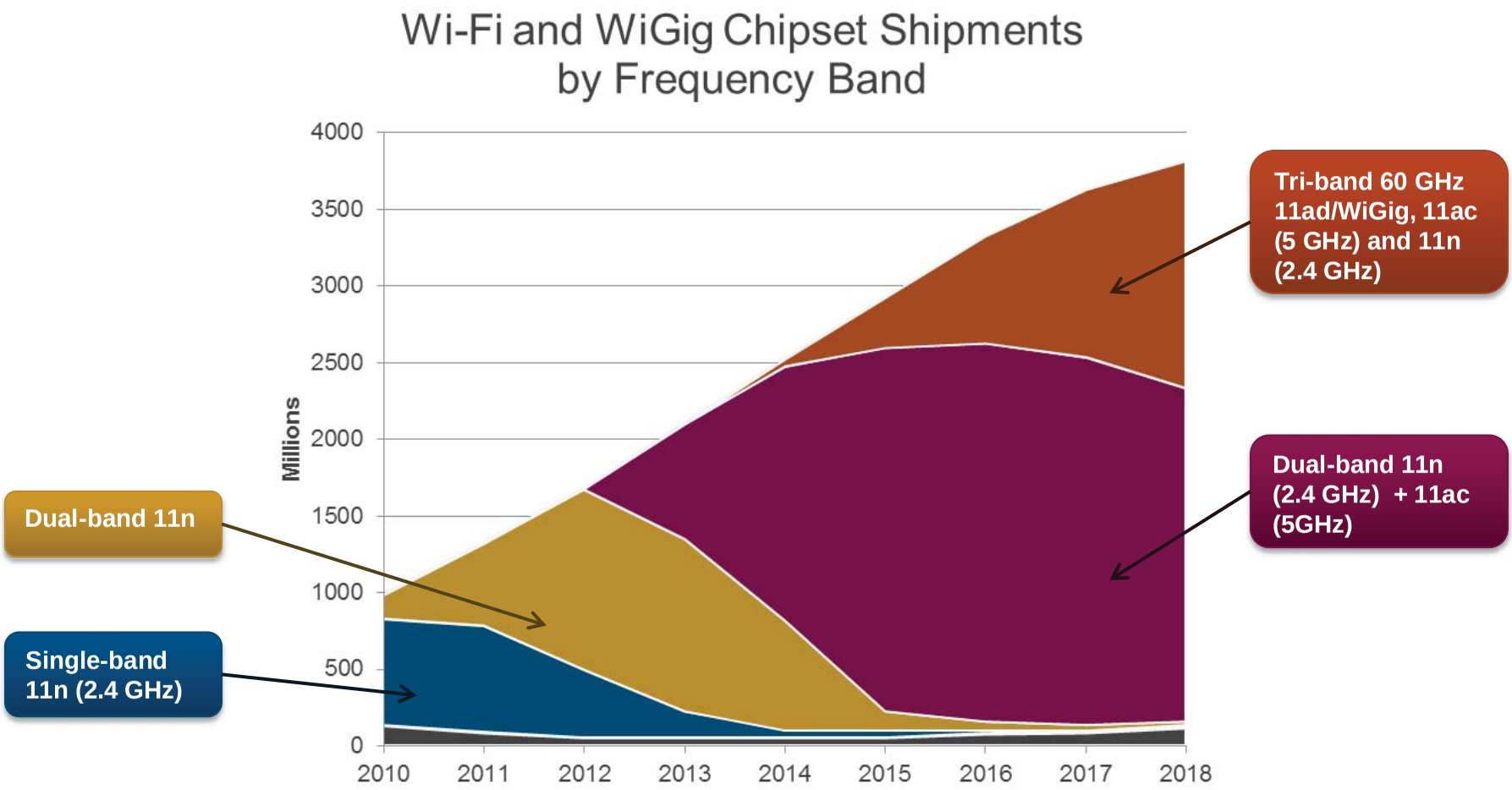
5 GHz NPRM

- 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.
- New, more restrictive rules are unnecessary to protect federal operations
- Wi-Fi can share spectrum with other services

ADDITIONAL BACKUP SLIDES

Proprietary | © Wi-Fi Alliance

Wi-Fi chipset shipments surpass 2 billion in 2013



Source: ABI Research, August 2013

WiGig CERTIFIED: Update

- 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 2015
- WiGig CERTIFIED™ will be the certification brand for products approved in the program and a new certification logo has also been developed

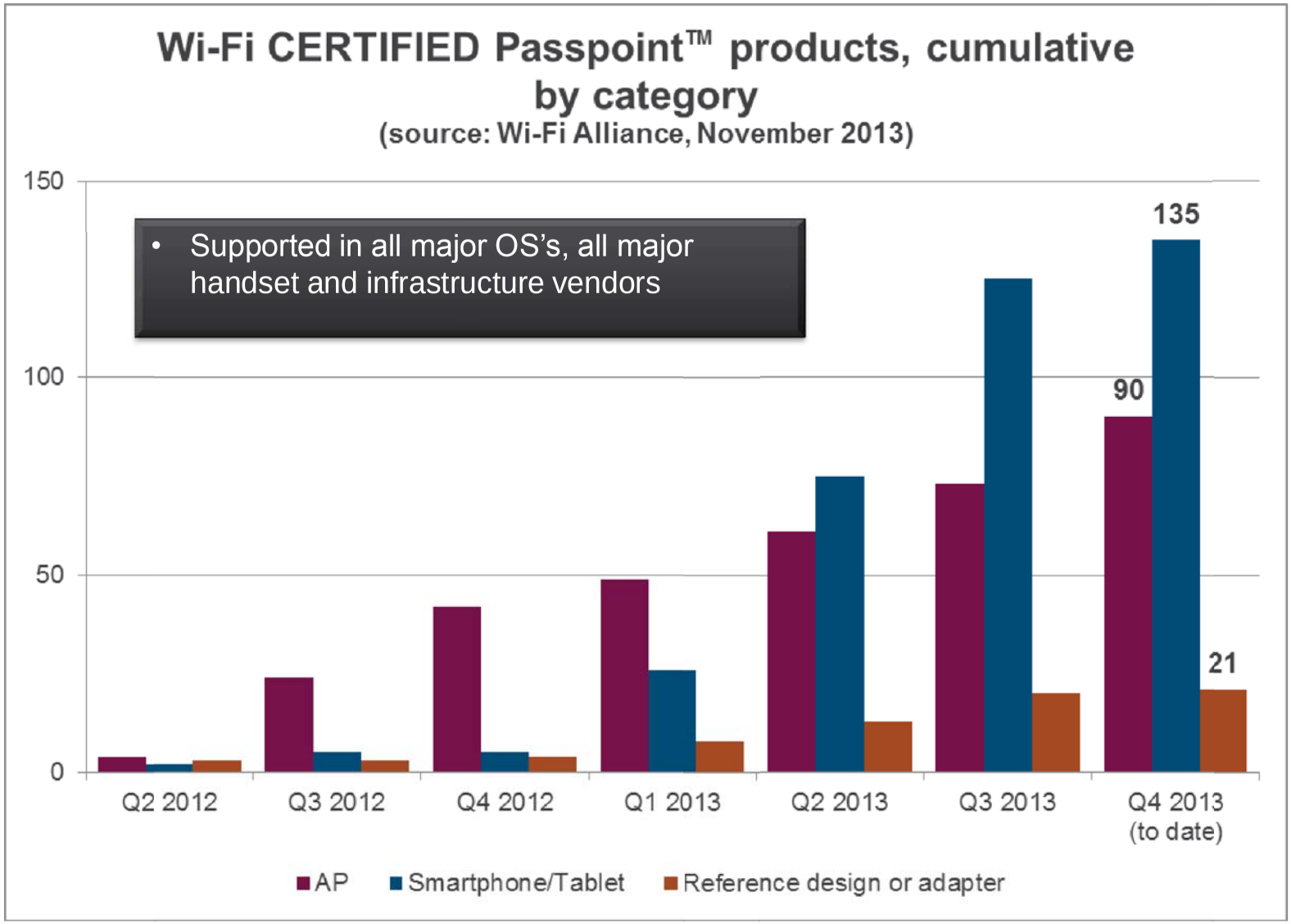
Wi-Fi Alliance certification and market-enabling programs

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 CERTIFIED Passpoint™: Update

- Wi-Fi CERTIFIED Passpoint devices deliver an automated, security-protected connection experience in service provider hotspots
- Certification program was launched in 2012
- Trials are ongoing, operational deployments are beginning
- First Passpoint network: “Boingo Passpoint”
- ~140 Passpoint-certified mobile products today
- Passpoint Release 2, coming mid-2014, adds features to support creation of new accounts on-the-spot, and makes it easier for users to find hotspots recommended by their service provider

Passpoint: A fundamental component of carrier Wi-Fi has momentum among device vendors



- Supported in all major OS's, all major handset and infrastructure vendors