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February 12, 2014

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

Re: WT Docket No. 10-153, ***Amendment of Part 101 to Facilitate Wireless Backhaul Ex Parte Communication***

Dear Ms. Dortch:

On behalf of Aviat U.S., Inc., pursuant to Section 1.1206(b)(2) of the Commission's Rules, I am electronically filing this notice of an oral *ex parte* communication in the above-referenced docket.

Yesterday, Tony Ljubicich and Louis Scialabba of Aviat Networks, Chris Hardy and Will Perkins of Comsearch, Larrie Sutliff of AT&T, and Cheng-yi Liu and I of this firm met with Blaise Scinto, John Schauble, John Leibovitz, Charles Oliver and (by teleconference) Stephen Buenzo and Chris Andes, all of the Commission staff, on the topic of revised antenna standards for the 71-76/81-86 GHz band.

A copy of our presentation is attached.

Please contact me with any questions.

Respectfully submitted

Mitchell Lazarus
Counsel for Aviat U.S., Inc.

cc: Meeting participants

Revised Antenna Standards for 71-76/81-86 GHz

February 11, 2014

ABOUT AVIAT NETWORKS

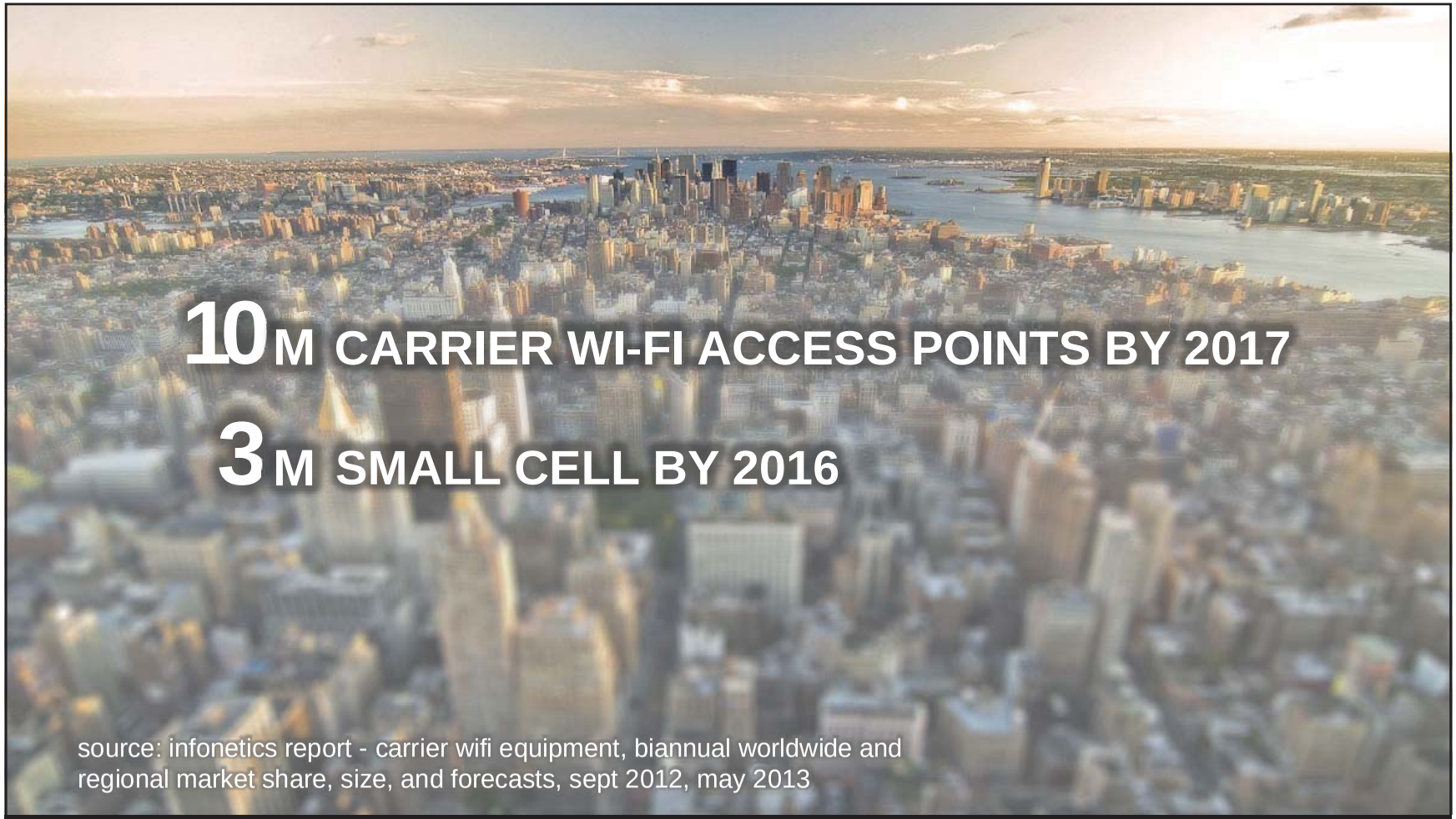
A LEADING PROVIDER OF MICROWAVE NETWORKING SOLUTIONS

- One million systems installed worldwide
- History dates from 1958
- Always headquartered in United States
- Builds Buy American compliant products in Texas
- Employs over 1,000 people in 38 countries, close to 500 in the United States

THE WORLD IS BECOMING URBANIZED

Over 50% of the world's population now lives in cities …

…where people communicate the most
… where networks are stressed the most



10M CARRIER WI-FI ACCESS POINTS BY 2017

3M SMALL CELL BY 2016

source: infonetics report - carrier wifi equipment, biannual worldwide and regional market share, size, and forecasts, sept 2012, may 2013

URBAN BACKHAUL – CHANGE IS NEEDED

Existing backhaul solutions are too big, too expensive, lack enough capacity

- Fiber is often unavailable where needed
- Traditional microwave is too big, too expensive, lacks capacity
- Unlicensed is too unreliable

URBAN BACKHAUL MUST BE …

- **Small** and unobtrusive, to ease planning considerations
- **Short path length**
- **Lightweight** for installation anywhere
- **Easy to install** and commission – within 30 minutes
- **Low power** < 40W
- **High capacity** up to 1Gbps –
  Interference friendly
  - High frequency re-use for high link density
  - Lightly licensed, to protect against interference
- **Low latency** (<50us per link)
- **Highly reliable** (99.999%)
- **71-76/81-86 GHz is ideal**

URBAN APPLICATIONS

MOBILE BACKHAUL:
URBAN MACROCELLS

MOBILE BACKHAUL:
SMALL CELL /
WIFI BACKHAUL

FIXED LINE
BROADBAND ACCESS

CAMPUS/INDUSTRIAL
APPLICATIONS

URBAN BACKHAUL NEEDS SMALLER ANTENNAS

(electronics included)

1GBPS at 1/5 THE WEIGHT and 1/2 POWER CONSUMPTION

COMPARED TO TRADITIONAL ETHERNET MICROWAVE RADIOS

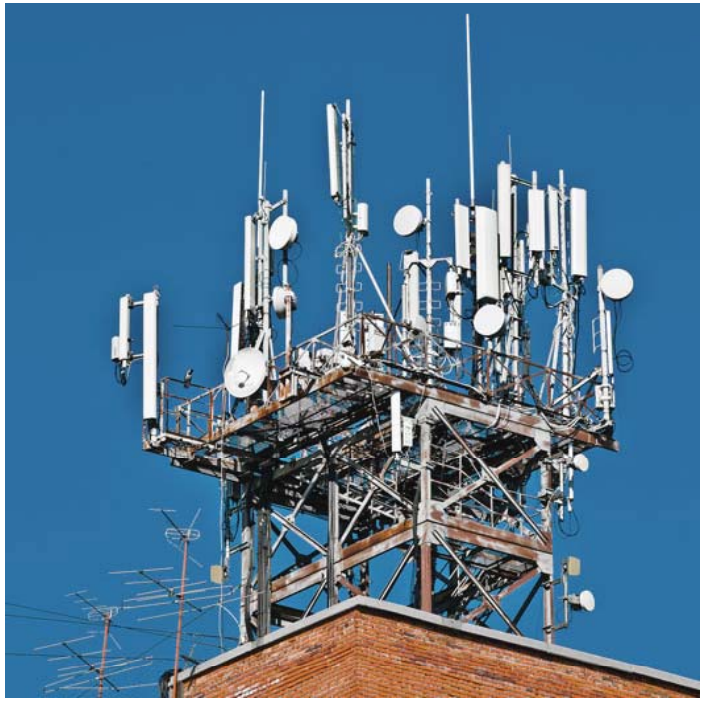
AND EASY TO INSTALL

No Cranes
No Pulleys

AND INCONSPICUOUS

AND MAKES GOOD USE OF SITES

- Less antenna congestion on crowded towers and rooftops
- Additional antennas easily collocated
- Reduces need for new sites



AND “COMMUNITY-FRIENDLY”

- Simplifies:
  - Conformance with city ordinances
  - Zoning approvals
  - New cellsite permits
- Quicker to install – minimal traffic or pedestrian disruption
- Uses embedded ‘invisible antenna’ technology

OTHER ADVANTAGES

- Lower tower lease costs
- Standards flexible as to antenna technologies
- Scalable data capacity from 400 Mbps to 1 Gbps
- Easily integrated into existing macrocell sites
- Lower packaging and shipping costs, warehouse requirements; less waste
- Spectrum congestion relief for “traditional” urban microwave at 18-38 GHz

HIGH DENSITY WITH SMALLER ANTENNAS

- Current rules require high antenna gain to isolate paths
  - High gain ➔ narrow beamwidth ➔ low sidelobes
  - Rules assume very large bandwidths (1-5 GHz), limited use of frequency offset
- Now, adaptive coding, newer modulations give higher capacity in narrower channels
  - New radios use 250-500 MHz channels
  - Users may subdivide bands into smaller channels
- Now, frequency offset will often be available for high density with relaxed (but still effective) antenna standards

NEED FOR RELIEF IS URGENT

- Current antenna standards:
  - hinder innovation
  - inconvenience users
  - raise costs
  - eliminate useful antenna sites
  - delay small-cell deployment
  - dampen economic momentum

PROCEDURAL HISTORY

- Oct. 5, 2012: Fixed Wireless Communications Coalition requested a rulemaking to change antenna standards at 71-76/81-86 GHz.[1]
- April 5, 2013: Aviat U.S., Inc. requested a waiver pending the rulemaking.[2]

[1] Comments of the Fixed Wireless Communications Coalition in Response to the Commission's Notice of Inquiry in WT Docket No. 10-153 (filed Oct. 5, 2012).

[2] Request for Waiver of Aviat U.S., Inc. (filed April 5, 2013).

REQUEST

- Please either:
  - Grant the Aviat Request for Waiver

    or
  - Issue a Notice of Proposed Rulemaking on the Commission's own motion

Thank you!

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